

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
504 NORTH MAIN
AZTEC, NM 87410 - 334-6888

August 20, 1992

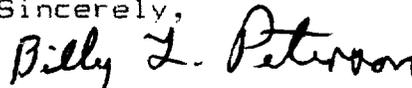
Mr. Arthur Bichan
6750 Colby Lane
Bloomfield Hills, MI 48301

Dear Mr. Bichan:

Enclosed are some wind erosion projections for a site on Crouch Mesa which Tierra Environmental is proposing a land farm. As this technology is designed for Agronomic situations, no attempt to weigh the erodibility of oil saturated dirt has been made.

As you will note, our charts indicate considerable reduction of soil loss from wind erosion by reducing the unsheltered distance and keeping the site ridge roughness at a .5 value.

Sincerely,



Billy L. Peterson
District Conservationist

Arthur Bichan

Crouch Mesa Site

Wind Erosion Situation

Windy Season February 15 - May 15 out of Southwest

L Unsheltered Distance across 80 acres (1320' wide)=1500 ft.

I 134 = Loamy Very Fine Sand; Loamy Fine Sand; Sandy Loam;
or Coarse Sandy Loam

C from Map = 80

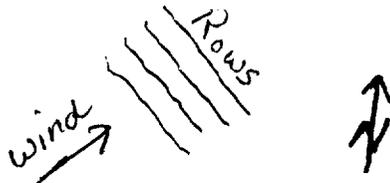
Various Ridge Roughness (K values)

1" Ridge height @ 10" spacing = .8
1 1/2" Ridge height @ 10" spacing = .6
1 1/2" Ridge height @ 12" spacing = .7
2" Ridge height @ 10" spacing = .5
2" Ridge height @ 12" spacing = .6

Attached are examples of various K values and unsheltered distances and the expected wind erosion soil losses

No Residue or Flat Small grain equivalent is used.

All ridge roughness is perpendicular to prevailing wind.
(Rows run NW to SE)



L (Unsheltered Distance) = 1500 ft. Conversion to Cu Yds
No Cover Tons/ac/yr Sandy loam ie 100 lbs/cu ft
K 1.0 105.2 x 2000 ÷ 100 ÷ 27 = 77.9 cu yds/ac
 .8 81.0 = 60.0
 .7 70.0 = 51.8
 .6 58.2 = 43.1
 .5 46.4 = 34.4

L (Unsheltered Distance) = 50 ft.
K 1.0 49.8 Tons/ac/yr = 36.9 cu yds/ac
 .8 31.1 = 23.0
 .7 23.0 = 17.0
 .6 17.3 = 12.8
 .5 12.1 = 8.9

L (60 ft. Strips with 5 foot high Barrier ie Eastern Red Cedar Trees)

5 ft. x 10 = 50' Effective protection
60 - 50 = L of 10 feet

K 1.0	21.7 Tons/ac/yr	= 16.1 cu yds/ac
.8	11.2	= 8.3
.7	6.7	= 4.9
.6	4.1	= 3.0
.5	1.6	= 1.2

Alternative: 20 Tons/ac Tilled dry Manure = FSGE of 1000 lbs
L (Unsheltered Distance) = 100 ft.

K 1.0	20.5	= 15.2 cu yds/ac
.8	11.4	= 8.4
.7	8.1	= 6.0
.6	5.7	= 4.2
.5	3.8	= 2.8

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4384

September 10, 1992

State of New Mexico
Oil Conservation Division
State Land Office Bldg
Sante Fe, N.M. 87504

Attention: Bob Stovall

Sir:

I am in receipt of Mr. Hale's letter of September 8 and the enclosed proposed Permit for Landfarm Facility.

I object to the language of:

"FINDS THAT;

(6) That following testimony by Mr. Cheney and Mr. Bichan, Mr. and Mrs. Vavra withdrew their complaint regarding proper notice under OCD Rule 711."

The Vavras agreed to withdraw their complaint of failure of notice if a new permit with satisfactory provisions to safeguard their property and their children could be agreed upon.

"PROVIDED FURTHER THAT,

(5)"

This paragraph requires only initial addition of moisture. The agreement was that the Applicant would continue to spray (the discussion was about a spray system or use of water trucks, etc) so that evaporation or dust and blowing sand would not occur.

Therefore, I ask the following sentence be inserted after "-----
from natural wind action." and before "Water shall not be added ----"
to wit:

Intermittent light surface spraying shall be continued
so as to keep the surface sufficiently moist as will
prevent evaporation of harmful levels of hydrocarbons
and to prevent blowing dust and sand.

"REPORTING

(3) -----, however Tierra Environmental Company Inc. shall have the
AUTHORITY to deploy additional moisture -----"

I ask that AUTHORITY be changed to DUTY.

Respectfully,

Arthur H. Bichan

cc: Kevin Hale, Atty.
Glenn Vavra

Oil Conservation Division
State Land Office Building
Santa Fe New Mexico 87504

Dear Sir

On page 3 paragraph 5 it should state how the water will be applied. I believe that a sprinkler system set ~~up~~ with a monitor or timer would be far more efficient than a water truck. A water truck would compress the soil and there would be a bigger chance of the water running off or creating pools. On page 4 paragraph 5 I think a photo-ionization detector or similar device should be kept on the downwind side of the land farm to measure the volatile emissions that the wind carries away, and should be examined daily along with the particulate collector. And I would like a copy of all test results on all incoming soils, and soil samples that are taken quarterly, and the results taken from the particulate collector, and photoionization detector, they can be mailed on a quarterly basis. If the tilling methods and wetting of the soil does not solve the wind erosion problem that the planting of trees and shrubs be planted downwind, beyond the pipeline right-of-way.

Thank You
Jim O

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4364

SEPT. 21, 1992

State of New Mexico
Oil Conservation Division
State Land Office Bldg.
Sante Fe, N.M. 87504
FAX 505-827-5741

Attn: Robert Stovall

Sir:

I am in receipt of Mr. Hale's letter of September 8 and the enclosed proposed Permit for Landfarm Facility.

I object to the following parts for the reasons stated.

FINDS THAT;

(1)

At a point in the Hearing where it appeared that the Opponents, the Applicant and the Examiner agreed to a workable procedure for operation of the Landfarm, the meeting was suddenly concluded at noon. I was denied the opportunity to put on the record my objection to the content of the Notice to nearby landowners and occupants.

The notice mailed by the Applicant misstates the law and is so written as to conceal the purpose and intent to evaporate highly toxic toluene, xylene and benzene into the atmosphere when it is known by the Applicant that said materials are a danger to public health and to the environment.

The notice published by the O.C.D. is also faulty in that it not only fails to reasonably advise the public but does misinform when it states "solids containing "non-hazardous" contaminants".

(6)

Mr. Vavra and Mr. Bichan intend that their complaint regarding notice would be withdrawn on condition that the permit assures application of water in sufficient quantity and with sufficient frequency to prevent volatilization of hydrocarbons and prevent blowing dirt and dust.

(7)

The parties agreed that the frequent addition of moisture sufficient to keep the surface damp, if implemented, would be satisfactory.

PROVIDED FURTHER THAT,

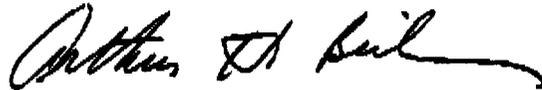
(5)

This paragraph must state that the amount and frequency of the addition of water shall be sufficient to maintain surface dampness as will prevent emission of volatile hydrocarbons and blowing dust and dirt.

OTHER MONITORING

A Recording Photo-Ionization detector should be maintained along the east property line at the point of longest sweep across the landfarm for a 235* (degree) wind. The records should be immediately delivered to the local office of the O.C.D. for availability for public inspection. The detector should be re-calibrated and certified by a competent testing agency at such frequency as is recommended by the manufacturer.

Respectfully,



Arthur H. Bichan

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4364

SEPT. 21, 1992

Kevin Hale, Attorney
1000 West Apache
Farmington, N.M. 87401
FAX 505-326-6177

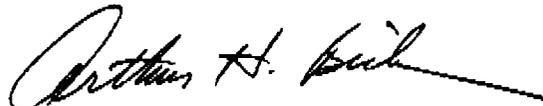
Sir:

Attached please find my comments on the proposed Permit.

The comments previously sent to you, which were not sent to the O.C.C., did not seem to be specific enough to protect us or the Vavras, with certainty.

I hav FAX'd these comments to the O.C.D. this date.

Respectfully,



Arthur H. Bichan

HYNES, HALE,  THROWER
A T T O R N E Y S A T L A W

THOMAS J. HYNES • J. KEVIN HALE • LARRY T. THROWER

1000 West Apache
Farmington, New Mexico 87401
OFF.: 505/325-8813
FAX: 505/326-6177

September 23, 1992

Attn: Bob Stovall
State of New Mexico
Oil Conservation Division
State Land Office Bldg.
Santa Fe, NM 87504

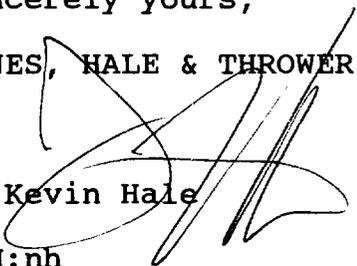
Dear Bob:

We have received Mr. Bichan's comments dated September 21, 1992, regarding our proposed order. The response of Tierra Environmental is attached. I understand that Mr. Vavra may have made some response but we have not been favored with a copy of that response and would appreciate same. We have no problem with the September 10 letter from Mr. Bichan, a copy of which is attached. I note in Mr. Bichan's letter of September 21, that he indicates the September 10 correspondence was never delivered to you and I am attaching that copy for your reference.

Could you please present the attached to the Examiner and any information you could provide as to when a recommendation from the Examiner would be forwarded to the Director would be much appreciated as further delay entails economic loss to my clients.

Sincerely yours,

HYNES, HALE & THROWER

J. Kevin Hale 

JKH:nh

cc: Client

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4364

SEPT. 21, 1992

Kevin Hale, Attorney
1000 West Apache
Farmington, N.M. 87401
FAX 505-326-6177

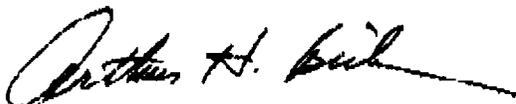
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Arthur H. Bichan

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6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4364

State of New Mexico
Oil Conservation Division
State Land Office Bldg.
Santa Fe, N.M. 87504
FAX 505-827-5741

SEPT. 21, 1992

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Sir:

I am in receipt of Mr. Hale's letter of September 8 and the enclosed proposed Permit for Landfarm Facility.

I object to the following parts for the reasons stated.

FINDS THAT:

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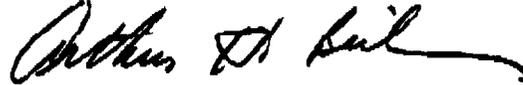
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Respectfully,



Arthur H. Echan

Kevin Hale , Attorney
1000 West Apache
Farmington, New Mexico 87401

RE: COMMENTS TO OCD FROM ARTHUR BICHAN AND GLEN VAVRA,
REGARDING TIERRA LANDFARM:

Dear Kevin:

We have received and reviewed your FAX containing Mr. Bichan's second set of comments, dated September 21, 1992.

As you have requested during our phone conversation this date Tierra makes the following response.

FINDS THAT:

- (1) The Hearing is a matter of record and we would defer to the minutes thereof.

The notice mailed by Tierra cited RCRA Subtitle C as the authority for classification of non-hazardous oilfield waste. Any concerned party should review RCRA Subtitle C and the exemption for constituents of crude oil or any fraction thereof produced as a result of oil and gas exploration, production or processing. They are not declassified as being hazardous per se and are not declassified as potential contaminants or pollutants. They are exempted only for the purpose of practical application in the field and subsequent handling thereof.

It has never been, is not now, nor will it ever be Tierra's intention to remediate materials accepted at the landfarm facility, by volatilization. Bio-degradation is the purpose of the landfarm. Most light end emissions although they are bio-degradable, from material brought to the facility ,would have already evaporated prior to arrival. Heavy hydrocarbons will not volatilize. They must be bio-degraded.

- (6) The hearing is a matter of record and we would defer to the minutes thereof regarding particular conversations.

Tierra has stated in the written draft order we prepared at OCD's direction, that we will add moisture for the purpose of reducing hydrocarbon emissions and to enhance bio-degradation. Moisture cannot be added to the degree that hydraulic drive of contaminants into native soils and/or groundwater would occur.

Soils will be characterized using information from the Soil Conservation Service in order to determine how much moisture is appropriate to stabilize the soil types. Blanket addition of moisture to several different soil types is unreasonable and could result in contaminants being driven into the subsurface. We have also agreed to special tilling practices that would also reduce to the most possible degree, dust and blowing dirt. Tierra has made every attempt to comply not only with the wishes of the protestants but to follow the rules of OCD and good, responsible landfarm management practices. It is our duty, purpose and intent, to protect health, safety and the environment to the best of our ability and according to law.

PROVIDED FURTHER THAT:

- (5) We refer to (6) above.

OTHER MONITORING:

Tierra will not agree to Mr. Bichans comment regarding a recording Photo-Ionization detector. As a stationary device, if there is such a device, it would record vehicle emission and emissions in the air from sources other than the landfarm. The results would not depict accurately air emissions from the facility. Additionally, the Crouch Mesa area has been and is still a target for vandals, as atleast Mr. Vavera is aware. A portable photo-ionization detector is expensive. One that is stationary, with a recorder is no doubt more expensive. It is unreasonable to require Tierra to install such an expensive and ineffective device. The only purpose it would serve, is to invite vandalism and add Tierra as a victim to the vandals list. Most air monitoring is conducted for particulate concentrations emissions. Tierra has agreed to a particulate collector. We have also agreed to conduct headspace testing of newly arrived material and to random sample material being remediated, with a portable photo-ionization detector. That is a standard operating procedure we would follow whether it was required or not by OCD. In the interests of personal safety, we will require our on-site personnel to wear personal monitoring devices that would indicate the amount of exposure they are receiving daily from volatiles. If our personnel who are on site and working with the material being remediated are not over-exposed, persons with in the vicinity of the landfarm facility should have no cause for concern. Tierra intends to keep records of exposure readings from the personal monitoring devices, for our own protection and the protection of our personnel. We would agree to make those records available to OCD for their inspection, when ever required. We would further welcome frequent visits and on-site inspections from OCD or any other agency for the purpose of verification of records, procedures, comment, advice, equipment checks, etc.

COMMENTS FROM MR. VAVRA

In a phone conversation this date with Ms. Brown of OCD, I was informed that comments from Mr. Vavra were also received by OCD. I do not have copies thereof. However according to Ms. Brown, he basically requested to be sent copies of the results of all testing conducted at the facility, including Head Space testing results from newly arrived material.

Information sent to OCD as required by their rules, we assume becomes public record and is available for inspection by the public. We also assume that Tierra would be required to send copies of those same testing results to the local OCD office and that they would also become public record and available therefore. Head Space testing is not included. Records of on-site activity are required to be kept on location by OCD rules for their inspection. If the OCD wishes to forward that information at their expense to concerned parties, we have no objection.

We would object to releasing information, that contained client lists, pricing, or other information that would be of a business nature and of interest to any competitors.

Sincerely,

TIERRA Environmental Company, Inc.



Phillip C. Nobis
Vice President

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4384

September 10, 1992

State of New Mexico
Oil Conservation Division
State Land Office Bldg
Sante Fe, N.M. 87504

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and to prevent blowing dust and sand.

"REPORTING

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AUTHORITY to deploy additional moisture -----"

I ask that AUTHORITY be changed to DUTY.

Respectfully,

Arthur H. Bichan

cc: Kevin Hale, Atty.
Glenn Vavra

Key to the proposed Rough Draft's
submitted / proposed by the
three submitting parties:

 White: Appears to be the original
rough prepared by J. Kevin Hale
on 9/8/92

 Pink: 1st response to 9/8/92 Hale
letter by Bichan. 9/10/92

 Gold: 2nd response to 9/8/92 Hale letter
by Bichan. 9/21/92

 Blue: Final Response by J. Kevin Hale
9/23/92 to Bichan's responses.

*Sept. 8, 1992***PERMIT FOR LANDFARM FACILITY****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.
ORDER NO.

APPLICATION OF TIERRA ENVIRONMENTAL COMPANY, INC.
FOR PERMISSION TO OPERATE A LANDFARM, FOR THE REMEDIATION OF NON-
HAZARDOUS OIL FIELD WASTES:

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 am on September 2, 1992 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ of _____ 1992, the Division director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in these 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) Section 70-2-12 B (15), authorizes the Oil Conservation Division and Commission to regulate the disposition of non-domestic wastes resulting from the exploration, development, production or storage of crude oil or natural gas to protect public health and the environment.

(3) That Tierra Environmental Company, Inc. has applied to the Division pursuant to OCD Rule 711 for permission to operate a landfarm facility for the remediation of non-hazardous hydrocarbon contaminated soils using an enhanced biodegradation process. Said area is to be located in NW/4, SE/4 (Unit J) of Section 2, Township 29, Range 12 West, which is approximately six (6) miles east of the City of Farmington, New Mexico. This application has been administratively determined to be approveable.

(4) That Mr. Arthur Bichan and Mr. and Mrs. Glen Vavera, adjacent landowners to the proposed landfarm facility have within the required time frame and according to OCD rules filed written protests and the necessary pre-hearing statements, objecting to proper notice and to possible emissions from the landfarm operation from hydrocarbon vapors as well as contaminated particulate emission as a result of wind action, which could cause a threat to health, safety and to the environment. Mr. Bichan presented testimony describing wind currents and natural erosion, suggesting to the Hearing Officer and to Tierra that the addition of sufficient moisture to the landfarm facility would reduce the threat of emission from both hydrocarbon vapors as well as contaminated particulate matter. He further testified that specialized tilling techniques should be implemented at the landfarm to further reduce natural wind erosion.

(5) That Tierra Environmental Company, President Richard Cheney PE/PS presented testimony that the addition of moisture if allowed by the division would reduce the threat of emission as well as enhance the natural bio-degradation of contaminants treated at the landfarm facility. He further testified that special soil tilling procedures at the facility would further reduce natural wind erosion.

(6) That following testimony by Mr. Cheney and Mr. Bichan, Mr. and Mrs. Vavera withdrew their complaint regarding proper notice under OCD Rule 711.

(7) That following inquiry by Mr. Bichan, the Examiner, Mr. Stogner and by OCD Council Mr. Stovel, and Tierra Council Kevin Hale, all parties agreed that the addition of moisture to the landfarm facility, the construction of a sheep wire fence, the special tilling practices and some form of air quality monitoring be implemented.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Tierra Environmental Company, Inc. is hereby authorized to construct and operate a landfarm facility at the site in the NW/4, SE/4, Section 2, Township 29, Range 12 West NMPM, San Juan County, New Mexico for the purpose of treating and remediating non-hazardous hydrocarbon contaminated soils using an enhanced bio-degradation process.

PROVIDED HOWEVER THAT, the proposed landfarm shall be constructed in accordance with the engineering plat and topographic map presented as evidence in this case and part of Exhibit 1 "The OCD file" containing the original application and subsequent correspondence and in accordance with such additional conditions and requirements as may be directed by the Division Director, and shall be operated and maintained in such a manner as to preclude spills, fires, limit emissions and protect persons, livestock and the environment. Required fencing shall be changed from four (4) strand barbed wire to Sheep wire and barbed wire in accordance with the New Mexico Highway Department specifications for highway fencing.

PROVIDED FURTHER THAT,

- (1) prior to initiating operations, the facility shall be inspected by a representative of the Aztec District Office in order to determine the adequacy of fences, gates and cattle guards necessary to preclude livestock and unauthorized persons from entering and / or utilizing said facility, and also to determine the adequacy of dikes and berms to assure safe facility operation.
- (2) All contaminated soils received at the facility will be spread and disked within 72 hours of receipt.
- (3) Soils will be spread on the surface in six inch lifts or less.
- (4) Soils will be tilled a minimum of on time every two weeks (bi-weekly) to enhance biodegradation of contaminants. The prevailing winds at the site are from 225 degrees True North, according to a 1981 National Weather Service Survey entitled "Crouch Mesa Airport Study". Methods suggested by the U.S. Soil Conservation Service will be utilized in the tilling of the soils which will reduce to the most possible degree the occurrence of natural wind erosion.
- (5) Moisture shall be added to all contaminated soils received at the facility. All soils received at the facility will be characterized using the Soil Survey of San Juan County New Mexico, prepared by the United States Department of Agriculture, Soil Conservation Service, for the purpose of pre-determining amounts of moisture added to the particular soils, to (1) enhance natural and artificial bio-degradation and (2) to prevent emissions from volatile organic compounds and to suppress erosion of contaminated soils from natural wind action. Water shall not be added to the degree that it creates standing pools or runoff from the facility or will maintain downward migration of contaminants into the native soil and/or groundwater.
- (6) Successive lifts of contaminated soils will not be spread until a laboratory measurement of Total Petroleum Hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), and the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations will be maintained at the facility. Authorization from OCD will be obtained prior to the application of successive lifts.
- (7) Only solids which are RCRA Subtitle C exempt or by characteristic testing will be accepted at the facility. Solids from operations not currently exempt under RCRA Subtitle C or mixed exempt/non-exempt solids will be tested for appropriate hazardous constituents. The test results must be submitted to the OCD along with a request to receive the non-exempt solids, and a written OCD approval (case specific) must be obtained prior to disposal. Any non-oilfield waste which are RCRA Subtitle C exempt or are non-hazardous by characteristic testing will only be accepted on a case-by-case basis and with prior OCD approval.

(8) Comprehensive records of all material disposed of at the facility will be maintained at the facility. The records for each load will include: 1) the origin, 2) analysis for hazardous constituents if required, 3) the transporter, and 4) exact cell location and method of remediation.

(9) No free liquids or soils with free liquids will be accepted at the facility.

TREATMENT ZONE MONITORING:

1. A treatment zone not to exceed two (2) feet beneath the landfarm will be monitored. A minimum of one random soil sample will be taken from each individual cell six (6) months after the first contaminated soils are received in the cell and quarterly thereafter.

2. The soil samples will be analyzed for total petroleum hydrocarbons (TPH) using the HNU Hanby Field Test Method. If TPH is detected then a laboratory analysis will be conducted for BTEX using approved EPA methods. Immediate remedial measures will be taken and no additional contaminated soils will be placed in the cell until testing indicate that the TPH is below 100 ppm, BTEX is below 50 ppm and benzene if any is below 10 ppm.

3. After obtaining the soil samples the borehole will be filled with an impermeable material such as bentonite cement.

4. Annually samples obtained from the treatment zones will be collected and a laboratory analysis conducted using approved EPA methods in accordance with the procedures outlined in item 1.

OTHER MONITORING

5. Tierra Personnel working on the landfarm facility will be required to wear personal monitor devices which indicate the amount of exposure incurred from volatile organic compound vapors and to indicate the nature and extent of volatilization occurring at the site. A Photo-Ionization detector or similar device shall be kept at the facility at all times which is capable of measuring emissions of volatile organic compounds. It will also be used to conduct "Head Space" Testing of newly arrived loads of material for volatile emissions.

6. A particulate collector or similar device shall be kept in place and operational at the prevailing downwind side of the landfarm facility in order to measure particulate emissions drifting off the facility and to insure compliance with New Mexico Air Quality Regulations. The collector shall be examined daily.

REPORTING

1. Analytical results from the treatment zone monitoring will be submitted to the OCD in Santa Fe with in thirty (30) days in written form from Tierra Environmental Company with appropriate laboratory analysis included as may be required.
2. The OCD shall be notified of any break, spill, release, blow out, fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.
3. The OCD shall be notified immediately, in the event that volatile or particulate releases are endanger of violating New Mexico Air Quality Standards. Remedial measures to prevent violations thereof shall be approved by OCD prior to implementation, however Tierra Environmental Company, Inc. shall have the authority to deploy additional moisture as an emergency measure in order to suppress excessive emissions. OCD shall be informed of each such emergency occurrence immediately via telephone followed by a written report with in seven (7) days. No standing, pooling or runoff of water shall be permitted during such emergency application.

BOND

Pursuant to OCD Rule 711 a surety or cash bond in the amount of \$ 25,000.00, in a form approved by the Division, is required prior to commencing construction of the commercial landfarm facility.

CLOSURE

When the facility is to be closed, no new material will be accepted. Existing soils will be remediated until they meet OCD standards in effect at the time of closure. The area will then be resceded with natural grasses and allowed to return to its natural state. Closure will be pursuant to all OCD requirements in effect at the time of closure.

TRANSFERABILITY

Authority for operation of the landfarm facility shall be transferrable only upon written application and approval by the Division Director.

Jurisdiction of this cause is retained for the entry of such further orders as the Division deems necessary.

DONE at Santa Fe, New Mexico, on this ____ day of ____ 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4364

September 10, 1992

State of New Mexico
Oil Conservation Division
State Land Office Bldg
Sante Fe, N.M. 87504

Attention: Bob Stovall

Sir:

I am in receipt of Mr. Hale's letter of September 8 and the enclosed proposed Permit for Landfarm Facility.

I object to the language of:

"FINDS THAT;

(6) That following testimony by Mr. Cheney and Mr. Bichan, Mr. and Mrs. Vavra withdrew their complaint regarding proper notice under OCD Rule 711."

The Vavras agreed to withdraw their complaint of failure of notice if a new permit with satisfactory provisions to safeguard their property and their children could be agreed upon.

"PROVIDED FURTHER THAT,
(5)"

This paragraph requires only initial addition of moisture. The agreement was that the Applicant would continue to spray (the discussion was about a spray system or use of water trucks, etc) so that evaporation or dust and blowing sand would not occur.

Therefore, I ask the following sentence be inserted after "-----
from natural wind action." and before "Water shall not be added -----"
to wit:

Intermittent light surface spraying shall be continued
so as to keep the surface sufficiently moist as will
prevent evaporation of harmful levels of hydrocarbons
and to prevent blowing dust and sand.

"REPORTING

(3) -----, however Tierra Environmental Company Inc. shall have the
AUTHORITY to deploy additional moisture -----"

I ask that AUTHORITY be changed to DUTY.

Respectfully,

Arthur H. Bichan

cc: Kevin Hale, Atty.
Glenn Vavra

ARTHUR H. BICHAN
6750 Colby Lane
Bloomfield Hills, MI 48301
(313) 851-4364

SEPT. 21, 1992

State of New Mexico
Oil Conservation Division
State Land Office Bldg.
Sante Fe, N.M. 87504
FAX 505-827-5741

Attn: Robert Stovall

Sir:

I am in receipt of Mr. Hale's letter of September 8 and the enclosed proposed Permit for Landfarm Facility.

I object to the following parts for the reasons stated.

FINDS THAT;

(1)

At a point in the Hearing where it appeared that the Opponents, the Applicant and the Examiner agreed to a workable procedure for operation of the Landfarm, the meeting was suddenly concluded at noon. I was denied the opportunity to put on the record my objection to the content of the Notice to nearby landowners and occupants.

The notice mailed by the Applicant misstates the law and is so written as to conceal the purpose and intent to evaporate highly toxic toluene, xylene and benzene into the atmosphere when it is known by the Applicant that said materials are a danger to public health and to the environment.

The notice published by the O.C.D. is also faulty in that it not only fails to reasonably advise the public but does misinform when it states "solids containing "non-hazardous" contaminants".

(6)

Mr. Vavra and Mr. Bichan intend that their complaint regarding notice would be withdrawn on condition that the permit assures application of water in sufficient quantity and with sufficient frequency to prevent volatilization of hydrocarbons and prevent blowing dirt and dust.

(7)

The parties agreed that the frequent addition of moisture sufficient to keep the surface damp, if implemented, would be satisfactory.

PROVIDED FURTHER THAT,

(5)

This paragraph must state that the amount and frequency of the addition of water shall be sufficient to maintain surface dampness as will prevent emission of volatile hydrocarbons and blowing dust and dirt.

OTHER MONITORING

A Recording Photo-Ionization detector should be maintained along the east property line at the point of longest sweep across the landfarm for a 235* (degree) wind. The records should be immediately delivered to the local office of the O.C.D. for availability for public inspection. The detector should be re-calibrated and certified by a competent testing agency at such frequency as is recommended by the manufacturer.

Respectfully,



Arthur H. Bichan

Sept. 23, 1992

Kevin Hale , Attorney
1000 West Apache
Farmington, New Mexico 87401

RE: COMMENTS TO OCD FROM ARTHUR BICHAN AND GLEN VAVRA,
REGARDING TIERRA LANDFARM:

Dear Kevin:

We have received and reviewed your FAX containing Mr. Bichan's second set of comments, dated September 21, 1992.

As you have requested during our phone conversation this date Tierra makes the following response.

FINDS THAT:

- (1) The Hearing is a matter of record and we would defer to the minutes thereof.

The notice mailed by Tierra cited RCRA Subtitle C as the authority for classification of non-hazardous oilfield waste. Any concerned party should review RCRA Subtitle C and the exemption for constituents of crude oil or any fraction thereof produced as a result of oil and gas exploration, production or processing. They are not declassified as being hazardous per se and are not declassified as potential contaminants or pollutants. They are exempted only for the purpose of practical application in the field and subsequent handling thereof.

It has never been, is not now, nor will it ever be Tierra's intention to remediate materials accepted at the landfarm facility, by volatilization. Bio-degradation is the purpose of the landfarm. Most light end emissions although they are bio-degradable, from material brought to the facility ,would have already evaporated prior to arrival. Heavy hydrocarbons will not volatilize. They must be bio-degraded.

- (6) The hearing is a matter of record and we would defer to the minutes thereof regarding particular conversations.

Tierra has stated in the written draft order we prepared at OCD's direction, that we will add moisture for the purpose of reducing hydrocarbon emissions and to enhance bio-degradation. Moisture cannot be added to the degree that hydraulic drive of contaminants into native soils and/or groundwater would occur.

October 22, 1992
page two

Soils will be characterized using information from the Soil Conservation Service in order to determine how much moisture is appropriate to stabilize the soil types. Blanket addition of moisture to several different soil types is unreasonable and could result in contaminants being driven into the subsurface. We have also agreed to special tilling practices that would also reduce to the most possible degree, dust and blowing dirt. Tierra has made every attempt to comply not only with the wishes of the protestants but to follow the rules of OCD and good, responsible landfarm management practices. It is our duty, purpose and intent, to protect health, safety and the environment to the best of our ability and according to law.

PROVIDED FURTHER THAT:

- (5) We refer to (6) above.

OTHER MONITORING:

Tierra will not agree to Mr. Bichans comment regarding a recording Photo-Ionization detector. As a stationary device, if there is such a device, it would record vehicle emission and emissions in the air from sources other than the landfarm. The results would not depict accurately air emissions from the facility. Additionally, the Crouch Mesa area has been and is still a target for vandals, as atleast Mr. Vavera is aware. A portable photo-ionization detector is expensive. One that is stationary, with a recorder is no doubt more expensive. It is unreasonable to require Tierra to install such an expensive and ineffective device. The only purpose it would serve, is to invite vandalism and add Tierra as a victim to the vandals list. Most air monitoring is conducted for particulate concentrations emissions. Tierra has agreed to a particulate collector. We have also agreed to conduct headspace testing of newly arrived material and to random sample material being remediated, with a portable photo-ionization detector. That is a standard operating procedure we would follow whether it was required or not by OCD. In the interests of personal safety, we will require our on-site personnel to wear personal monitoring devices that would indicate the amount of exposure they are receiving daily from volatiles. If our personnel who are on site and working with the material being remediated are not over-exposed, persons with in the vicinity of the landfarm facility should have no cause for concern. Tierra intends to keep records of exposure readings from the personal monitoring devices, for our own protection and the protection of our personnel. We would agree to make those records available to OCD for their inspection, when ever required. We would further welcome frequent visits and on-site inspections from OCD or any other agency for the purpose of verification of records, procedures, comment, advice, equipment checks, etc.

PERMIT FOR LANDFARM FACILITY

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.
ORDER NO.

APPLICATION OF TIERRA ENVIRONMENTAL COMPANY, INC.
FOR PERMISSION TO OPERATE A LANDFARM, FOR THE REMEDIATION OF NON-
HAZARDOUS OIL FIELD WASTES:

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 am on September 2, 1992 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ of _____ 1992, the Division director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in these 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.

At a point in the Hearing where it appeared that the Opponents, the Applicant and the Examiner agreed to a workable procedure for operation of the Landfarm, the meeting was suddenly concluded at noon. I was denied the opportunity to put on the record my objection to the content of the Notice to nearby landowners and occupants.

The notice mailed by the Applicant misstates the law and is so written as to conceal the purpose and intent to evaporate highly toxic toluene, xylene and benzene into the atmosphere when it is known by the Applicant that said materials are a danger to public health and to the environment.

The notice published by the O.C.D. is also faulty in that it not only fails to reasonably advise the public but does misinform when it states "solids containing "non-hazardous" contaminants".

(1) The Hearing is a matter of record and we would defer to the minutes thereof.

The notice mailed by Tierra cited RCRA Subtitle C as the authority for classification of non-hazardous oilfield waste. Any concerned party should review RCRA Subtitle C and the exemption for constituents of crude oil or any fraction thereof produced as a result of oil and gas exploration, production or processing. They are not declassified as being hazardous per se and are not declassified as potential contaminants or pollutants. They are exempted only for the purpose of practical application in the field and subsequent handling thereof.

It has never been, is not now, nor will it ever be Tierra's intention to remediate materials accepted at the landfarm facility, by volatilization. Bio-degradation is the purpose of the landfarm. Most light end emissions although they are bio-degradable, from material brought to the facility, would have already evaporated prior to arrival. Heavy hydrocarbons will not volatilize. They must be bio-degraded.

(2) Section 70-2-12 B (15), authorizes the Oil Conservation Division and Commission to regulate the disposition of non-domestic wastes resulting from the exploration, development, production or storage of crude oil or natural gas to protect public health and the environment.

(3) That Tierra Environmental Company, Inc. has applied to the Division pursuant to OCD Rule 711 for permission to operate a landfarm facility for the remediation of non-hazardous hydrocarbon contaminated soils using an enhanced biodegradation process. Said area is to be located in NW/4, SE/4 (Unit J) of Section 2, Township 29, Range 12 West, which is approximately six (6) miles east of the City of Farmington, New Mexico. This application has been administratively determined to be approveable.

(4) That Mr. Arthur Bichan and Mr. and Mrs. Glen Vavra, adjacent landowners to the proposed landfarm facility have within the required time frame and according to OCD rules filed written protests and the necessary pre-hearing statements, objecting to proper notice and to possible emissions from the landfarm operation from hydrocarbon vapors as well as contaminated particulate emission as a result of wind action, which could cause a threat to health, safety and to the environment. Mr. Bichan presented testimony describing wind currents and natural erosion, suggesting to the Hearing Officer and to Tierra that the addition of sufficient moisture to the landfarm facility would reduce the threat of emission from both hydrocarbon vapors as well as contaminated particulate matter. He further testified that specialized tilling techniques should be implemented at the landfarm to further reduce natural wind erosion.

(5) That Tierra Environmental Company, President Richard Cheney PE/PS presented testimony that the addition of moisture if allowed by the division would reduce the threat of emission as well as enhance the natural bio-degradation of contaminants treated at the landfarm facility. He further testified that special soil tilling procedures at the facility would further reduce natural wind erosion.

(6) That following testimony by Mr. Cheney and Mr. Bichan, Mr. and Mrs. Vavra withdrew their complaint regarding proper notice under OCD Rule 711.

The Vavras agreed to withdraw their complaint of failure of notice if a new permit with satisfactory provisions to safeguard their property and their children could be agreed upon.

Mr. Vavra and Mr. Bichan intend that their complaint regarding notice would be withdrawn on condition that the permit assures application of water in sufficient quantity and with sufficient frequency to prevent volatilization of hydrocarbons and prevent blowing dirt and dust.

(6) The hearing is a matter of record and we would defer to the minutes thereof regarding particular conversations.

Tierra has stated in the written draft order we prepared at OCD's direction, that we will add moisture for the purpose of reducing hydrocarbon emissions and to enhance bio-degradation. Moisture cannot be added to the degree that hydraulic drive of contaminants into native soils and/or groundwater would occur.

Soils will be characterized using information from the Soil Conservation Service in order to determine how much moisture is appropriate to stabilize the soil types. Blanket addition of moisture to several different soil types is unreasonable and could result in contaminants being driven into the subsurface. We have also agreed to special tilling practices that would also reduce to the most possible degree, dust and blowing dirt. Tierra has made every attempt to comply not only with the wishes of the protestants but to follow the rules of OCD and good, responsible landfarm management practices. It is our duty, purpose and intent, to protect health, safety and the environment to the best of our ability and according to law.

(7) That following inquiries by Mr. Bichan, the Examiner, Mr. Stogner and by OCD Council Mr. Stovel, and Tierra Council Kevin Hale, all parties agreed that the addition of moisture to the landfarm facility, the construction of a sheep wire fence, the special tilling practices and some form of air quality monitoring be implemented.

The parties agreed that the frequent addition of moisture sufficient to keep the surface damp, if implemented, would be satisfactory.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Tierra Environmental Company, Inc. is hereby authorized to construct and operate a landfarm facility at the site in the NW/4, SE/4, Section 2, Township 29, Range 12 West NMPM, San Juan County, New Mexico for the purpose of treating and remediating non-hazardous hydrocarbon contaminated soils using an enhanced bio-degradation process.

PROVIDED HOWEVER THAT, the proposed landfarm shall be constructed in accordance with the engineering plat and topographic map presented as evidence in this case and part of Exhibit 1 "The OCD file" containing the original application and subsequent correspondence and in accordance with such additional conditions and requirements as may be directed by the Division Director, and shall be operated and maintained in such a manner as to preclude spills, fires, limit emissions and protect persons, livestock and the environment. Required fencing shall be changed from four (4) strand barbed wire to Sheep wire and barbed wire in accordance with the New Mexico Highway Department specifications for highway fencing.

PROVIDED FURTHER THAT,

- (1) prior to initiating operations, the facility shall be inspected by a representative of the Aztec District Office in order to determine the adequacy of fences, gates and cattle guards necessary to preclude livestock and unauthorized persons from entering and / or utilizing said facility, and also to determine the adequacy of dikes and berms to assure safe facility operation.
- (2) All contaminated soils received at the facility will be spread and disked within 72 hours of receipt.
- (3) Soils will be spread on the surface in six inch lifts or less.
- (4) Soils will be tilled a minimum of on time every two weeks (bi-weekly) to enhance biodegradation of contaminants. The prevailing winds at the site are from 225 degrees True North, according to a 1981 National Weather Service Survey entitled "Crouch Mesa Airport Study". Methods suggested by the U.S. Soil Conservation Service will be utilized in the tilling of the soils which will reduce to the most possible degree the occurrence of natural wind erosion.
- (5) Moisture shall be added to all contaminated soils received at the facility. All soils received at the facility will be characterized using the Soil Survey of San Juan County New Mexico, prepared by the United States Department of Agriculture, Soil Conservation Service, for the purpose of pre-determining amounts of moisture added to the particular soils, to (1) enhance natural and artificial bio-degradation and (2) to prevent emissions from volatile organic compounds and to suppress erosion of contaminated soils from natural wind action. Water shall not be added to the degree that it creates standing pools or runoff from the facility or will maintain downward migration of contaminants into the native soil and/or groundwater.

This paragraph requires only initial addition of moisture. The agreement was that the Applicant would continue to spray (the discussion was about a spray system or use of water trucks, etc) so that evaporation or dust and blowing sand would not occur.

Therefore, I ask the following sentence be inserted after "----- from natural wind action." and before "Water shall not be added -----" to wit:

Intermittent light surface spraying shall be continued so as to keep the surface sufficiently moist as will prevent evaporation of harmful levels of hydrocarbons and to prevent blowing dust and sand.

This paragraph must state that the amount and frequency of the addition of water shall be sufficient to maintain surface dampness as will prevent emission of volatile hydrocarbons and blowing dust and dirt.

- (5) We refer to (6) above.

(6) Successive lifts of contaminated soils will not be spread until a laboratory measurement of Total Petroleum Hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), and the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations will be maintained at the facility. Authorization from OCD will be obtained prior to the application of successive lifts.

(7) Only solids which are RCRA Subtitle C exempt or by characteristic testing will be accepted at the facility. Solids from operations not currently exempt under RCRA Subtitle C or mixed exempt/non-exempt solids will be tested for appropriate hazardous constituents. The test results must be submitted to the OCD along with a request to receive the non-exempt solids, and a written OCD approval (case specific) must be obtained prior to disposal. Any non-oilfield waste which are RCRA Subtitle C exempt or are non-hazardous by characteristic testing will only be accepted on a case-by-case basis and with prior OCD approval.

(8) Comprehensive records of all material disposed of at the facility will be maintained at the facility. The records for each load will include: 1) the origin, 2) analysis for hazardous constituents if required, 3) the transporter, and 4) exact cell location and method of remediation.

(9) No free liquids or soils with free liquids will be accepted at the facility.

TREATMENT ZONE MONITORING:

1. A treatment zone not to exceed two (2) feet beneath the landfarm will be monitored. A minimum of one random soil sample will be taken from each individual cell six (6) months after the first contaminated soils are received in the cell and quarterly thereafter.

2. The soil samples will be analyzed for total petroleum hydrocarbons (TPH) using the HNU Hanby Field Test Method. If TPH is detected then a laboratory analysis will be conducted for BTEX using approved EPA methods. Immediate remedial measures will be taken and no additional contaminated soils will be placed in the cell until testing indicate that the TPH is below 100 ppm, BTEX is below 50 ppm and benzene if any is below 10 ppm.

3. After obtaining the soil samples the borehole will be filled with an impermeable material such as bentonite cement.

4. Annually samples obtained from the treatment zones will be collected and a laboratory analysis conducted using approved EPA methods in accordance with the procedures outlined in item 1.

OTHER MONITORING

5. Tierra Personnel working on the landfarm facility will be required to wear personal monitor devices which indicate the amount of exposure incurred from volatile organic compound vapors and to indicate the nature and extent of volatilization occurring at the site. A Photo-Ionization detector or similar device shall be kept at the facility at all times which is capable of measuring emissions of volatile organic compounds. It will also be used to conduct "Head Space" Testing of newly arrived loads of material for volatile emissions.

6. A particulate collector or similar device shall be kept in place and operational at the prevailing downwind side of the landfarm facility in order to measure particulate emissions drifting off the facility and to insure compliance with New Mexico Air Quality Regulations. The collector shall be examined daily.

OTHER MONITORING

A Recording Photo-Ionization detector should be maintained along the east property line at the point of longest sweep across the landfarm for a 235* (degree) wind. The records should be immediately delivered to the local office of the O.C.D. for availability for public inspection. The detector should be re-calibrated and certified by a competent testing agency at such frequency as is recommended by the manufacturer.

OTHER MONITORING:

Tierra will not agree to Mr. Bichans comment regarding a recording Photo-Ionization detector. As a stationary device, if there is such a device, it would record vehicle emission and emissions in the air from sources other than the landfarm. The results would not depict accurately air emissions from the facility. Additionally, the Crouch Mesa area has been and is still a target for vandals, as atleast Mr. Vavera is aware. A portable photo-ionization detector is expensive. One that is stationary, with a recorder is no doubt more expensive. It is unreasonable to require Tierra to install such an expensive and ineffective device. The only purpose it would serve, is to invite vandalism and add Tierra as a victim to the vandals list. Most air monitoring is conducted for particulate concentrations emissions. Tierra has agreed to a particulate collector. We have also agreed to conduct headspace testing of newly arrived material and to random sample material being remediated, with a portable photo-ionization detector. That is a standard operating procedure we would follow whether it was required or not by OCD. In the interests of personal safety, we will require our on-site personnel to wear personal monitoring devices that would indicate the amount of exposure they are receiving daily from volatiles. If our personnel who are on site and working with the material being remediated are not over-exposed, persons with in the vicinity of the landfarm facility should have no cause for concern. Tierra intends to keep records of exposure readings from the personal monitoring devices, for our own protection and the protection of our personnel. We would agree to make those records available to OCD for their inspection, when ever required. We would further welcome frequent visits and on-site inspections from OCD or any other agency for the purpose of verification of records, procedures, comment, advice, equipment checks, etc.

REPORTING

1. Analytical results from the treatment zone monitoring will be submitted to the OCD in Santa Fe with in thirty (30) days in written form from Tierra Environmental Company with appropriate laboratory analysis included as may be required.
2. The OCD shall be notified of any break, spill, release, blow out, fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.
3. The OCD shall be notified immediately, in the event that volatile or particulate releases are endanger of violating New Mexico Air Quality Standards. Remedial measures to prevent violations thereof shall be approved by OCD prior to implementation, however Tierra Environmental Company, Inc. shall have the authority to deploy additional moisture as an emergency measure in order to suppress excessive emissions. OCD shall be informed of each such emergency occurrence immediately via telephone followed by a written report with in seven (7) days. No standing, pooling or runoff of water shall be permitted during such emergency application.

**(3) -----, however Tierra Environmental Company Inc. shall have the AUTHORITY to deploy additional moisture -----"
I ask that AUTHORITY be changed to DUTY.**

BOND

Pursuant to OCD Rule 711 a surety or cash bond in the amount of \$ 25,000.00, in a form approved by the Division, is required prior to commencing construction of the commercial landfarm facility.

CLOSURE

When the facility is to be closed, no new material will be accepted. Existing soils will be remediated until they meet OCD standards in effect at the time of closure. The area will then be reseeded with natural grasses and allowed to return to its natural state. Closure will be pursuant to all OCD requirements in effect at the time of closure.

TRANSFERABILITY

Authority for operation of the landfarm facility shall be transferrable only upon written application and approval by the Division Director.

Jurisdiction of this cause is retained for the entry of such further orders as the Division deems necessary.

DONE at Santa Fe, New Mexico, on this ____ day of ____ 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

HYNES, HALE,  THROWER
A T T O R N E Y S A T L A W

Case No. 10539

THOMAS J. HYNES • J. KEVIN HALE • LARRY T. THROWER

1000 West Apache
Farmington, New Mexico 87401
OFF.: 505/325-8813
FAX: 505/326-6177

September 8, 1992

VIA FEDERAL EXPRESS

State of New Mexico
Energy, Materials and Natural
Resources Department
Oil Conservation Division
State Land Office Building
Santa Fe, NM 87504

Attn: Bob Stovall

Dear Bob:

Pursuant to our hearing on September 2, I attach for the Examiner's review, and the review of Mr. Vavra and Mr. Bichan, what we propose as the final order of the Division in this matter.

I believe our proposed order as attached addresses the issues which we discussed, as well as the notice issue and the ongoing operation of the proposed land farm.

By copy of this letter to Mr. Vavra and Mr. Bichan, I am reminding them of the stipulation that they give their proposed reply and any proposed amendments to this order to the Division and the Examiner within ten (10) days of our proposed order as attached.

I will contact your office on September 21 to see if their amendments have likewise been received, and would appreciate any information you might give as to when we might expect a final order or decision from the Division Director. You will note that we have not proposed windbreaks or planting of trees. We have confirmed with the pipeline company that they specifically prohibit the growing of trees on the pipeline right-of-way. After discussions it seems that wetting and appropriate tilling methods can adequately address the wind erosion problems without the necessity of berms or planting of trees.

State of New Mexico
September 8, 1992
Page 2

Your continued assistance is appreciated.

Sincerely yours,

HYNES, HALE & THROWER

J. Kevin Hale

JKH:ah

cc: Client - Tierra Environmental Company
Arthur H. Bichan
Glenn Vavra

PERMIT FOR LANDFARM FACILITY

**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.
ORDER NO.

APPLICATION OF TIERRA ENVIRONMENTAL COMPANY, INC.
FOR PERMISSION TO OPERATE A LANDFARM, FOR THE REMEDIATION OF NON-
HAZARDOUS OIL FIELD WASTES:

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 am on September 2, 1992 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ of _____ 1992, the Division director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in these 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) Section 70-2-12 B (15), authorizes the Oil Conservation Division and Commission to regulate the disposition of non-domestic wastes resulting from the exploration, development, production or storage of crude oil or natural gas to protect public health and the environment.

(3) That Tierra Environmental Company, Inc. has applied to the Division pursuant to OCD Rule 711 for permission to operate a landfarm facility for the remediation of non-hazardous hydrocarbon contaminated soils using an enhanced biodegradation process. Said area is to be located in NW/4, SE/4 (Unit J) of Section 2, Township 29, Range 12 West, which is approximately six (6) miles east of the City of Farmington, New Mexico. This application has been administratively determined to be approveable.

(4) That Mr. Arthur Bichan and Mr. and Mrs. Glen Vavera, adjacent landowners to the proposed landfarm facility have within the required time frame and according to OCD rules filed written protests and the necessary pre-hearing statements, objecting to proper notice and to possible emissions from the landfarm operation from hydrocarbon vapors as well as contaminated particulate emission as a result of wind action, which could cause a threat to health, safety and to the environment. Mr. Bichan presented testimony describing wind currents and natural erosion, suggesting to the Hearing Officer and to Tierra that the addition of sufficient moisture to the landfarm facility would reduce the threat of emission from both hydrocarbon vapors as well as contaminated particulate matter. He further testified that specialized tilling techniques should be implemented at the landfarm to further reduce natural wind erosion.

(5) That Tierra Environmental Company, President Richard Cheney PE/PS presented testimony that the addition of moisture if allowed by the division would reduce the threat of emission as well as enhance the natural bio-degradation of contaminants treated at the landfarm facility. He further testified that special soil tilling procedures at the facility would further reduce natural wind erosion.

(6) That following testimony by Mr. Cheney and Mr. Bichan, Mr. and Mrs. Vavera withdrew their complaint regarding proper notice under OCD Rule 711.

(7) That following inquiries by Mr. Bichan, the Examiner, Mr. Stogner and by OCD Council Mr. Stovel, and Tierra Council Kevin Hale, all parties agreed that the addition of moisture to the landfarm facility, the construction of a sheep wire fence, the special tilling practices and some form of air quality monitoring be implemented.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Tierra Environmental Company, Inc. is hereby authorized to construct and operate a landfarm facility at the site in the NW/4, SE/4, Section 2, Township 29, Range 12 West NMPM, San Juan County, New Mexico for the purpose of treating and remediating non-hazardous hydrocarbon contaminated soils using an enhanced bio-degradation process.

PROVIDED HOWEVER THAT, the proposed landfarm shall be constructed in accordance with the engineering plat and topographic map presented as evidence in this case and part of Exhibit 1 "The OCD file" containing the original application and subsequent correspondence and in accordance with such additional conditions and requirements as may be directed by the Division Director, and shall be operated and maintained in such a manner as to preclude spills, fires, limit emissions and protect persons, livestock and the environment. Required fencing shall be changed from four (4) strand barbed wire to Sheep wire and barbed wire in accordance with the New Mexico Highway Department specifications for highway fencing.

PROVIDED FURTHER THAT,

- (1) prior to initiating operations, the facility shall be inspected by a representative of the Aztec District Office in order to determine the adequacy of fences, gates and cattle guards necessary to preclude livestock and unauthorized persons from entering and / or utilizing said facility, and also to determine the adequacy of dikes and berms to assure safe facility operation.
- (2) All contaminated soils received at the facility will be spread and disked within 72 hours of receipt.
- (3) Soils will be spread on the surface in six inch lifts or less.
- (4) Soils will be tilled a minimum of on time every two weeks (bi-weekly) to enhance biodegradation of contaminants. The prevailing winds at the site are from 225 degrees True North, according to a 1981 National Weather Service Survey entitled "Crouch Mesa Airport Study". Methods suggested by the U.S. Soil Conservation Service will be utilized in the tilling of the soils which will reduce to the most possible degree the occurrence of natural wind erosion.
- (5) Moisture shall be added to all contaminated soils received at the facility. All soils received at the facility will be characterized using the Soil Survey of San Juan County New Mexico, prepared by the United States Department of Agriculture, Soil Conservation Service, for the purpose of pre-determining amounts of moisture added to the particular soils, to (1) enhance natural and artificial bio-degradation and (2) to prevent emissions from volatile organic compounds and to suppress erosion of contaminated soils from natural wind action. Water shall not be added to the degree that it creates standing pools or runoff from the facility or will maintain downward migration of contaminants into the native soil and/or groundwater.
- (6) Successive lifts of contaminated soils will not be spread until a laboratory measurement of Total Petroleum Hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), and the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations will be maintained at the facility. Authorization from OCD will be obtained prior to the application of successive lifts.
- (7) Only solids which are RCRA Subtitle C exempt or by characteristic testing will be accepted at the facility. Solids from operations not currently exempt under RCRA Subtitle C or mixed exempt/non-exempt solids will be tested for appropriate hazardous constituents. The test results must be submitted to the OCD along with a request to receive the non-exempt solids, and a written OCD approval (case specific) must be obtained prior to disposal. Any non-oilfield waste which are RCRA Subtitle C exempt or are non-hazardous by characteristic testing will only be accepted on a case-by-case basis and with prior OCD approval.

(8) Comprehensive records of all material disposed of at the facility will be maintained at the facility. The records for each load will include: 1) the origin, 2) analysis for hazardous constituents if required, 3) the transporter, and 4) exact cell location and method of remediation.

(9) No free liquids or soils with free liquids will be accepted at the facility.

TREATMENT ZONE MONITORING:

1. A treatment zone not to exceed two (2) feet beneath the landfarm will be monitored. A minimum of one random soil sample will be taken from each individual cell six (6) months after the first contaminated soils are received in the cell and quarterly thereafter.

2. The soil samples will be analyzed for total petroleum hydrocarbons (TPH) using the HNU Hanby Field Test Method. If TPH is detected then a laboratory analysis will be conducted for BTEX using approved EPA methods. Immediate remedial measures will be taken and no additional contaminated soils will be placed in the cell until testing indicate that the TPH is below 100 ppm, BTEX is below 50 ppm and benzene if any is below 10 ppm.

3. After obtaining the soil samples the borehole will be filled with an impermeable material such as bentonite cement.

4. Annually samples obtained from the treatment zones will be collected and a laboratory analysis conducted using approved EPA methods in accordance with the procedures outlined in item 1.

OTHER MONITORING

5. Tierra Personnel working on the landfarm facility will be required to wear personal monitor devices which indicate the amount of exposure incurred from volatile organic compound vapors and to indicate the nature and extent of volatilization occurring at the site. A Photo-Ionization detector or similar device shall be kept at the facility at all times which is capable of measuring emissions of volatile organic compounds. It will also be used to conduct "Head Space" Testing of newly arrived loads of material for volatile emissions.

6. A particulate collector or similar device shall be kept in place and operational at the prevailing downwind side of the landfarm facility in order to measure particulate emissions drifting off the facility and to insure compliance with New Mexico Air Quality Regulations. The collector shall be examined daily.

REPORTING

1. Analytical results from the treatment zone monitoring will be submitted to the OCD in Santa Fe with in thirty (30) days in written form from Tierra Environmental Company with appropriate laboratory analysis included as may be required.
2. The OCD shall be notified of any break, spill, release, blow out, fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.
3. The OCD shall be notified immediately, in the event that volatile or particulate releases are endanger of violating New Mexico Air Quality Standards. Remedial measures to prevent violations thereof shall be approved by OCD prior to implementation, however Tierra Environmental Company, Inc. shall have the authority to deploy additional moisture as an emergency measure in order to suppress excessive emissions. OCD shall be informed of each such emergency occurrence immediately via telephone followed by a written report with in seven (7) days. No standing, pooling or runoff of water shall be permitted during such emergency application.

BOND

Pursuant to OCD Rule 711 a surety or cash bond in the amount of \$ 25,000.00, in a form approved by the Division, is required prior to commencing construction of the commercial landfarm facility.

CLOSURE

When the facility is to be closed, no new material will be accepted. Existing soils will be remediated until they meet OCD standards in effect at the time of closure. The area will then be reseeded with natural grasses and allowed to return to its natural state. Closure will be pursuant to all OCD requirements in effect at the time of closure.

TRANSFERABILITY

Authority for operation of the landfarm facility shall be transferrable only upon written application and approval by the Division Director.

Jurisdiction of this cause is retained for the entry of such further orders as the Division deems necessary.

DONE at Santa Fe, New Mexico, on this ____ day of ____ 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR



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November 17, 1992

HYNES, HALE, & THROWER
Attorneys At Law
1000 West Apache
Farmington, New Mexico 87499

RE: CASE NO. 10539
ORDER NO. R-9772

Dear Sir:

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

Sincerely,

A handwritten signature in cursive script that reads "Florene Davidson".

Florene Davidson
OC Staff Specialist

FD/sl

cc: BLM - Farmington
OCD Aztec Office
Arthur Bichan
Glenn Vavera