

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. 10539  
ORDER NO. R-9772

APPLICATION OF TIERRA ENVIRONMENTAL  
COMPANY, INC. FOR A COMMERCIAL SURFACE WASTE  
DISPOSAL FACILITY, SAN JUAN COUNTY, NEW MEXICO

RECEIVED

NOV 23 1992

OIL CON. DIV.,  
DIST. 3

ORDER OF THE DIVISION

BY THE DIVISION:

✓ This cause came on for hearing at 8:15 a.m. on Wednesday, September 2, 1992, at Santa Fe, New Mexico, before Examiner Michael E. Stogner, in Docket No. 28-92.

✓ NOW, on this 17th day of November, 1992 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

✓ (2) The New Mexico Oil and Gas Act, §70-2-12.B(21) and (22), N.M.S.A. (1978), authorizes the New Mexico Oil Conservation Division (Division) to regulate the disposition of non-domestic wastes resulting from various oil and gas activities and operations and to protect public health and the environment.

✓ (3) Pursuant to that authority the Division has adopted regulations governing the operation of commercial surface waste disposal facilities, (Rule 711 of the *Rules and Regulations of the Oil Conservation Division*).

(4) On April 14, 1992, the applicant, Tierra Environmental Company, Inc., (Tierra) filed its application with the Division pursuant to Rule 711 for authorization to construct and operate a commercial "landfarm" facility for the remediation of soils contaminated with hydrocarbon substances which are exempt from the Federal Resource Conservation and Recovery Act (RCRA), (42 U.S.C. §§6921-6939b), Subtitle C regulations (40 C.F.R. Parts 260 - 272). The facility is located in the NW/4 SE/4 (Unit J) of Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico, which is situated atop Crouch Mesa approximately 6 miles east of Farmington, New Mexico just east off of San Juan County Road No. 3500. Applicant proposes to use an enhanced biodegradation process.

(5) The Division administratively determined that this application was approveable, but suspended the approval to give interested parties the opportunity to request a hearing. A copy of such determination of approval and related correspondence is attached hereto as Exhibit "A".

(6) Within the required time frame and in accordance to Division rules, the following two adjacent landowner interests to the proposed facility filed written protests and requested this hearing on the applications:

Glenn E. and Storme S. Vavera  
P.O. Box 3656  
Farmington, NM 87499-3656

Arthur H. Bichan  
6750 Colby Lane  
Bloomfield Hills, Michigan 48301.

This hearing was scheduled to allow interested parties the opportunity to present technical evidence why this application should not be approved pursuant to the applicable rules of the Division. Arthur H. Bichan and Glenn E. and Storme Vavera and their four children made an appearance and presented testimony and comments to the examiner.

(7) The Examiner incorporated the administrative record of the Division into the record of this case.

(8) It is the intent of the Division in issuing an order in this case to supplement the proposed administrative approval with any applicable changes deemed necessary from the testimony and evidence presented. Any such changes would be incorporated into the permit and would then become a part thereof. Furthermore, in keeping with the procedures instituted by the Division in such facility permits, the entire record in this case will be made a part of the permit and, if deemed necessary by the Director, can in part or in whole be utilized in determining further amendments or changes to the facility.

- (9) Mr. Bichan through comment and questions to applicant's witness discussed wind currents and natural erosion, and expressed concern about the threat of emission from both hydrocarbon vapors as well as contaminated particle matter. He commented that specialized tilling techniques and the keeping of the surface moist should be used at the landfarm to reduce volatilization of hydrocarbons and natural wind erosion.

Mr. Vavera suggested that he would like to see a windbreak of trees planted on the property to help control blowing soil. Both Mr. Bichan and the applicant's witness testified that would probably not be effective.

Tierra Environmental Company President, Richard Cheney PE/PS, testified that the addition of moisture, if allowed by the Division, would reduce the threat of emission as well as enhance the natural biodegradation of contaminants treated at the landfarm facility. He further testified that special soil tilling procedures at the facility would further reduce natural wind erosion.

*In  
conts?*

**FINDING:** Appropriate tilling procedures and application of moisture to the cells during bioremediation will control volatilization and blowing of land farm materials onto neighboring properties; applicant should consult with and/or utilize information readily available from the U.S. Soil Conservation Service, N.M. State University County Extension Office or local Soil and Water Conservation District on soil characteristics in order to determine how much moisture is appropriate to stabilize the soil types found on Crouch Mesa and on the special tilling practices that would also reduce to the most possible degree the amount of dust and blowing dirt.

- (10) Applicant proposed to fence the property using four-strand barbed-wire fence. This may not be adequate fencing for this site because there are domestic animals in the neighborhood which could get through the fencing onto the facility.

*Done  
already*

**FINDING:** Applicant should fence the property with well maintained sheep wire fencing or other mesh or grid type fencing designed to keep out dogs and other larger domestic animals. Access should be controlled by maintaining locked steel gates at all entrances.

- (11) Mrs. Vavera expressed concern about the possible impact of the facility on water quality, because her family intends to drill a water well for their residence. All the parties agreed that fresh water supplies are in excess of 100 feet deep. Division approval required monitoring of a treatment zone below the lifts.

FINDING: Monitoring of a treatment zone below the lifts as required by the Division approval will detect and control contamination movement with more frequent testing.

Cond (12) Monitoring procedures to determine both the levels of volatile organic compounds and the movement of particulate matter should be incorporated into the operating procedures for the facility

(13) Any sale or other transfer of the facility to another operator should be subject to approval by the Division before it takes place.

(14) The Division's approval permit proposed on July 21, 1992, which is Exhibit "A" attached hereto and made a part hereof, should be amended as follows:

(a) under LANDFARM OPERATION, Sub-part 3 shall be amended to read:

3a. Soils will be tilled a minimum of one time every two weeks (bi-weekly) to enhance biodegradation of contaminants. Methods suggested by the U.S. Soil Conservation Service should be utilized in the tilling of the soils which will reduce to the most possible degree the occurrence of natural wind erosion.

3b. Moisture shall be added to all contaminated soils received at the facility. The soils within each individual cell 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 to be added to those particular soils, to (1) prevent emissions from volatile organic compounds, (2) enhance natural and artificial biodegradation, and (3) suppress erosion of contaminated soils from natural wind action.

3c. There will be no ponding, pooling or run-off of water allowed. Any ponding of precipitation will be removed within seventy-two (72) hours of discovery."

(b) again, under LANDFARM OPERATION, Sub-part 9 shall be included:

- "9a. Disposal will only occur when an attendant is on duty. The facility will be secured when no attendant is present.
  - 9b. The facility will have a sign at the entrance. The sign will be legible from at least fifty (50) feet and contain the following information: (a) name of the facility, (b) location by section, township and range, and (c) emergency phone number.
  - 9c. An adequate berm will be constructed and maintained to prevent run-off and run-on for that portion of the facility containing contaminated soils."
- (c) under TREATMENT ZONE MONITORING, Sub-parts 1, 2, and 4 shall be amended and Sub-part 5 included to read:
- "1. A treatment zone not to exceed three (3) feet beneath the landfarm will be monitored. A minimum of one random soil sample will be taken from each individual cell, with no cell being larger than five (5) acres, six (6) months after the first contaminated soils are received and quarterly thereafter. The sample will be taken at two (2) or three (3) feet below the native ground surface.
  - 2. The soil samples will be analyzed for total petroleum hydrocarbons (TPH) using an OCD-approved field method. If TPH is detected, then a laboratory analysis will be conducted for Volatile Aromatic Organics (BTEX) using approved EPA methods. Immediate remedial measures will be taken and no additional contaminated soils will be placed in the cell until testing indicates that the TPH is below 100 ppm, BTEX is below 50 ppm and benzene, if any, is below 10 ppm.
  - 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. The samples will be analyzed for TPH, BTEX, general chemistry, and heavy metals.

5. One (1) background soil sample will be taken from the center portion of the landfarm two (2) feet below the native ground surface prior to operation. The sample will be analyzed for TPH, BTEX, general chemistry and heavy metals using approved EPA methods and for TPH using an OCD-approved field method."

- (d) the following requirement under the heading "OTHER MONITORING" shall be incorporated:

"OTHER MONITORING

1. An OCD-approved device capable of measuring emissions of volatile organic compounds (VOC) will be kept at the facility at all times. A measurement of VOCs will be taken a minimum of four (4) times per working day, which will include one measurement upon opening and one measurement upon closing of the facility. Monitoring of VOCs will be recorded and include the date, time, location, and level measured. Records will be retained at the facility and made available for OCD inspection.

2. A particulate collector or similar device shall be kept in place and operational at the prevailing downwind side of the landfarm facility. The collector shall be examined daily and records will include time, date, location and level of particulate measured. Records will be maintained at the facility and made available for OCD inspection."

- (e) under "REPORTING", Sub-part 1 shall be amended to read:

"1. Analytical results from the treatment zone monitoring will be submitted to the OCD in Santa Fe within thirty (30) days in written form from Tierra Environmental Company with appropriate laboratory analysis included as may be required. Reports will be made for both field and laboratory analyses."

- (f) the following requirement under the heading "TRANSFERABILITY" shall also be incorporated:

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

(15) The Division should have the authority to modify the conditions of this permit should new information or technologic improvements indicate that changes would improve the operation of the facility and better protect public health and the environment.

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 of Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico for the purpose of treating and remediating hydrocarbon contaminated soils, which are exempt from RCRA Subtitle C regulations, using an enhanced biodegradation process.

*In Conjunction*  
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 No. 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 and Transportation Department's specifications for highway fencing.

*2*  
PROVIDED FURTHER THAT, 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 operations.

✓ (2) The permit conditions with the revised language is contained in Exhibit "B" attached hereto and shall become the permit conditions for the facility.

✓ (3) The Director shall have the authority to revise the permit conditions at any time he determines such changes are in the interest of protecting human health and the environment.

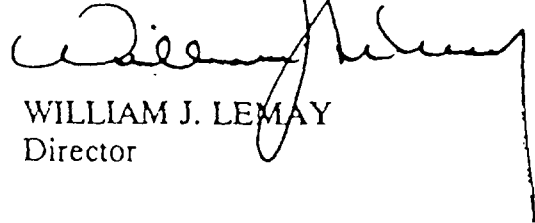
✓ (4) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Case No. 10539  
Order No. R-9772  
Page No. 8

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

S E A L

Exhibit "A"  
Case No. 10539  
Order No. R-9772



BRUCE KING  
GOVERNOR

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

July 21, 1992

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

Mr. Richard P. Cheney, President  
*Tierra Environmental Company, Inc.*  
909 West Apache  
Farmington, NM 87401

RE: Tierra Environmental Commercial Landfarm Application  
San Juan County, NM

Dear Mr. Cheney:

Enclosed is approval of *Tierra Environmental Company, Inc.*'s application for a commercial landfarm under Division Rule 711. Please notice that the approval letter is dated August 11, 1992, and it is not effective until that date.

As you know Arthur and Inez Bichan have filed a protest and request for hearing on your application. Enclosed is a copy of the letter to them advising them of the approval and of their right to file a petition for hearing to rescind the approval. If they do so, the burden will be on them to show why the application should not be approved.

If they do not file their petition before August 10, 1992, your approval will become effective, and you may begin operation. If they do file their petition, your approval will be suspended.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roger Anderson".

Roger Anderson,  
Environmental Bureau Chief



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

BRUCE KING  
GOVERNOR  
ANITA LOCKWOOD  
CABINET SECRETARY

August 11, 1992

POST OFFICE BOX 2084  
STATE LAND OFFICE BUILD.  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT NO. P-670-683-652

Mr. Richard P. Cheney, President  
Tierra Environmental Company Inc.  
909 West Apache  
Farmington, New Mexico 87401

RE: **Tierra Environmental Commercial Landfarm Application**  
**OCD Rule 711 Permit Approval**

Dear Mr. Cheney:

The permit application for the Tierra Environmental Commercial Landfarm located in the NW/4 SE/4, Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico, is hereby approved in accordance with OCD Rule 711 under the conditions contained in the enclosed attachment. The application consists of the original application dated April 13, 1992, and the materials dated June 3, 1992 and June 22, 1992, submitted as supplements to the application.

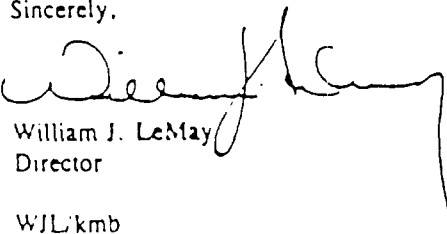
The operation, monitoring and reporting shall be as specified in the enclosed attachment. All modifications and alternatives to the approved landfarming methods must receive prior OCD approval. You are required to notify the Director of any facility expansion or process modification and to file the appropriate materials with the Division.

Please be advised approval of this facility does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations.

Please be advised that all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted or otherwise rendered nonhazardous to migratory birds.

If you have any questions, please do not hesitate to contact Kathy Brown at (505) 827-5884.

Sincerely,

  
William J. LeMay  
Director

WJL:kmb

ATTACHMENT TO OCD 711 PERMIT APPROVAL  
TIERRA ENVIRONMENTAL INC.  
COMMERCIAL LANDFARM  
(August 11, 1992)

LANDFARM OPERATION

1. All contaminated soils received at the facility will be spread and disked within 72 hours of receipt.
2. Soils will be spread on the surface in six inch lifts or less.
3. Soils will be disked a minimum of one time every two weeks (biweekly) to enhance biodegradation of contaminants.
4. 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 the benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations will be maintained at the facility. Authorization from the OCD will be obtained prior to application of successive lifts.
5. Only solids which are non-hazardous by RCRA Subtitle C exemption 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. 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 wastes 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.
6. 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) transporter, and 4) exact cell location and method of remediation.
7. Bio-remediation through the application of microbes will only be permitted in the designated 1-acre area. The microbes will be mixed with water and applied to the contaminated soils. There will be no ponding, pooling or run-off of water allowed during the application phase or afterwards. Any change in the composition (ie. chemical additives), process or location of the bio-remediation program must receive prior OCD approval.
8. 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 land farm 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 then annually thereafter. The sample will be taken at two to three (2-3) feet below the native ground surface.
2. The soil samples will be analyzed for total petroleum hydrocarbons (TPH) and volatile aromatic organics (BTEX) using approved EPA methods.
3. After obtaining the soil samples the boreholes will be filled with an impermeable material such as bentonite cement.
4. Any cells that have moisture added to them will be analyzed on a quarterly basis following the requirements above.

### REPORTING

1. Analytical results from the treatment zone monitoring will be submitted to the OCD Santa Fe Office within thirty (30) days of receipt from the laboratory.
2. The OCD will be notified of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

### BOND

Pursuant to OCD Rule 711 a surety or cash bond in the amount of \$25,000, in a form approved by the Division, is required prior to commencing construction of the commercial surface disposal facility.

### CLOSURE

When the facility is to be closed no new material will be accepted. Existing soils will be remediated until they meet the 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.

ATTACHMENT TO OCD 711 PERMIT APPROVAL  
TIERRA ENVIRONMENTAL COMPANY, INC.  
COMMERCIAL LANDFARM

LANDFARM OPERATION

1. All contaminated soils received at the facility will be spread and disked within 72 hours of receipt.
2. Soils will be spread on the surface in six inch lifts or less.
- 3a. Soils will be tilled a minimum of one time every two weeks (bi-weekly) to enhance biodegradation of contaminants. Methods suggested by the U.S. Soil Conservation Service should be utilized in the tilling of the soils which will reduce to the most possible degree the occurrence of natural wind erosion.
- 3b. Moisture shall be added to all contaminated soils received at the facility. The soils within each individual cell 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 to be added to those particular soils, to (1) prevent emissions from volatile organic compounds, (2) enhance natural and artificial biodegradation, and (3) suppress erosion of contaminated soils from natural wind action.
- 3c. There will be no ponding, pooling or run-off of water allowed. Any ponding of precipitation will be removed within seventy-two (72) hours of discovery.
4. 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 the benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations will be maintained at the facility. Authorization from the OCD will be obtained prior to application of successive lifts.
5. Only solids which are non-hazardous by RCRA Subtitle C exemption 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. 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 wastes 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.

6. 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) transporter, and 4) exact cell location and method of remediation.
7. Bio-remediation through the application of microbes will only be permitted in the designated 1-acre area. The microbes will be mixed with water and applied to the contaminated soils. There will be no ponding, pooling or run-off of water allowed during the application phase or afterwards. Any change in the composition (ie. chemical additives), process or location of the bio-remediation program must receive prior OCD approval.
8. No free liquids or soils with free liquids will be accepted at the facility.
- 9a. Disposal will only occur when an attendant is on duty. The facility will be secured when no attendant is present.
- 9b. The facility will have a sign at the entrance. The sign will be legible from at least fifty (50) feet and contain the following information: (a) name of the facility, (b) location by section, township and range, and (c) emergency phone number.
- 9c. An adequate berm will be constructed and maintained to prevent run-off and run-on for that portion of the facility containing contaminated soils.

#### TREATMENT ZONE MONITORING

1. A treatment zone not to exceed three (3) feet beneath the landfarm will be monitored. A minimum of one random soil sample will be taken from each individual cell, with no cell being larger than five (5) acres, six (6) months after the first contaminated soils are received and quarterly thereafter. The sample will be taken at two (2) or three (3) feet below the native ground surface.

2. The soil samples will be analyzed for total petroleum hydrocarbons (TPH) using an OCD-approved field method. If TPH is detected, then a laboratory analysis will be conducted for Volatile Aromatic Organics (BTEX) using approved EPA methods. Immediate remedial measures will be taken and no additional contaminated soils will be placed in the cell until testing indicates 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. The samples will be analyzed for TPH, BTEX, general chemistry, and heavy metals.
5. One (1) background soil sample will be taken from the center portion of the landfarm two (2) feet below the native ground surface prior to operation. The sample will be analyzed for TPH, BTEX, general chemistry and heavy metals using approved EPA methods and for TPH using an OCD-approved field method.

#### OTHER MONITORING

1. An OCD-approved device capable of measuring emissions of volatile organic compounds (VOC) will be kept at the facility at all times. A measurement of VOCs will be taken a minimum of four (4) times per working day, which will include one measurement upon opening and one measurement upon closing of the facility. Monitoring of VOCs will be recorded and include the date, time, location, and level measured. Records will be retained at the facility and made available for OCD inspection.
2. A particulate collector or similar device shall be kept in place and operational at the prevailing downwind side of the landfarm facility. The collector shall be examined daily and records will include time, date, location and level of particulate measured. Records will be maintained at the facility and made available for OCD inspection.

### REPORTING

1. Analytical results from the treatment zone monitoring will be submitted to the OCD in Santa Fe within thirty (30) days in written form from Tierra Environmental Company with appropriate laboratory analysis included as may be required. Reports will be filed for both the field and laboratory analyses.
2. The OCD will be notified of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

### BOND

1. Pursuant to OCD Rule 711 a surety or cash bond in the amount of \$25,000, in a form approved by the Division, is required prior to commencing construction of the commercial surface disposal facility.

### TRANSFERABILITY

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

### CLOSURE

1. When the facility is to be closed no new material will be accepted. Existing soils will be remediated until they meet the 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.