# 3R - 253

# REPORTS

# DATE: Nov. 2-29,1995

# TIERRA ENVIRONMENTAL COMPANY Inc.



" Because we do not innerit the earth from our parents... We borrow it from our children.."

VOLUNTARY CLEAN-UP OF CRUDE OIL TRANSFER FACILITY BISTI STATION SITE SE 1/4 - SEC 17 - T 26 N - R 11 W SAN JUAN COUNTY, NEW MEXICO

November 2, - November 29, 1995

Project Number 95043

P.O. DRAWER 15250 FARMINGTON, NEW MEXICO 87401-5250 (505) 334-8894 Fax (505) 334-9024

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# SUMARY OF ACTIVITY

#### VOLUNTARY CLEAN-UP OF CRUDE OIL TRANSFER FACILITY

**BISTI STATION SITE** 

November 2-November 29, 1995

#### SUMMARY OF ACTIVITY

The Bisti station Crude oil Transfer Facility is located at section SE 1/4 Section 17, T-26N, R-11W, approximately 10 miles south of Bloomfield on Hwy. 44 and 10 miles west on the Chaco Plant Road in San Juan County New Mexico. The facility is currently owned by Gary Williams Energy, but will be taken over by Giant Industries after the Clean-up by Gary Energy. This is part of a purchase agreement between the two companies. The site consists of six 520 bbl tanks, an overflow pit, Lact unit and transfer point, all contained in an area 75 feet by approximately 40 feet. The tanks themselves were to be cleaned as well as the removal of any contaminated soils in the tank, overflow pit, lact unit and transfer point areas. The area was then to be backfilled and compacted.

On October 6, 1995, Tierra Environmental Company Inc., represented by Todd D. Nobis. Red Top Tanks, Safety Alliance and On-Site Technologies deployed to the Bisti Station Site. Red Top and Safety Alliance were contracted by Tierra to clean the inside of the six tanks. On-site was contracted by Tierra to drill test holes around the tank battery with a hollow stem auger in an effort to gauge the extent of the contamination at the site.

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On that same date a site assessment was conducted pursuant to section 7d-IV-A-2a OCD Environmental Regulation. The site received a total ranking of 0, as the depth to ground water was over 100 feet, over 1000 feet from a water source and/or 200 feet from a private domestic water source and over 1000 feet from a surface water body. This allows residual TPH levels in the 5000 ppm range. A 400 bbl frac tank was taken to the site to store the tank bottoms until results from a TCLP could be obtained. A TCLP sample of the tank bottoms was taken on October 6, 1995 and turned over to On-Site Tech. for analysis. A TCLP of the soils was taken on November 2, 1995 and also taken to On-Site Tech. for analysis. Three test holes were bored around the facility. (see site diagram BH-1 thru BH-3)

Red top began cleaning the tanks out using water to break-up any solid substances in the tanks. The substances were then transferred to the frac tank on scene. The TCLP of the tank bottoms did not pass and approval was not obtained from OCD to accept them. Arrangements were made with Giant Industries to recover the Tank bottoms and take them to their facilities for refining. (TCLP results enclosed)

On November 2, 1995, the dismantling of the facility began, ie; piping, tanks, lact unit etc.. This was completed on November 3, 1995.

On November 6, 1995, verbal approval was received from OCD to remove the contaminated soils. Excavation was started and other buried piping was dismantled. While excavating on the east side of the area (Pit #1), several lines and pipes were uncovered. These lines and pipes varied in sizes. They were full of what appeared to be crude oil product and were not attached to anything that existed on the facility. They were open ended and appeared to be leaking. It appeared that the facility had been redone sometime in the in the past and that the old piping was not removed.

During the initial excavation on pit #1, some of the excavated soils were removed, set aside and then later mixed with clean backfill in an effort to reduce the amount of dirt hauled from the site and also to reduce the TPH levels in the mixed soils. The mixing will increase the natural degradation of the hydrocarbons in the soils. After thoroughly mixing the soils, a headspace test was done with results of 25 ppm, a TPH sample (composite) showed 1039 PPM.

Excavation on pit #1 was completed on November 24, 1995. During the excavation, a dark grayish moist obvious contamination was encountered. The contamination appeared to start at the 4 foot level and in places went as deep as 15 feet. Pit #1 was excavated a maximum of 15 feet and some areas were excavated at a depth of 4 to 5 feet as the contamination appeared to only go down to that depth. Two closure composite samples were taken from Pit #1. A headspace test showed results at 80 PPM. TPH results showed #1 at 2181 PPM and #2 at 934 PPM. Backfill was then started on November 27, 1995 using both clean and mixed backfill. The pit was compacted in two to three foot lifts.

On the same date, excavation was started and completed on Pit #2. As with Pit #1, the dark gray obvious contamination was again encountered. It appeared heaviest where the northern three tanks were set and in the area of the over flow pit. This area was excavated to a maximum depth of approximately 15 feet and also had areas of excavation down to only 4 to 5 feet. Two closure composite samples were then taken from Pit #2. A headspace test showed results of 22 PPM from Pit #2. TPH results showed closure composite #1 at 2970 PPM and closure composite #2 at 2157 PPM. Pit #2 was then backfilled and compacted in two to three foot lifts. The backfill and compaction of the site was completed on November 29, 1995.

Throughout the project, several photographs were taken as the excavation progressed. Approximately 870 cubic yards of contaminated soils were removed from the site and taken to the Tierra Environmental Company Inc. OCD permitted landfarm facility located at 420 CR 3100, San Juan County New Mexico. The material is located in Cell 10 on the facility, where it will be remediated. The backfill used at the site was hauled from Tierra's landfarm virgin backfill stockpile. All laboratory testing was done by On-Site Technologies in Farmington NM. All headspace tests were completed in the field with a 580-B OVM PID.

The site Clean-up was successful in removing the hydrocarbons contaminates in excess of the

New Mexico Oil Conservation Division regulatory limit ie: 5000 PPM range.

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Todd D. Nobis

Environmental Specialist

Tierra Environmental Co. Inc.

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## SITE ASSESSMENT

#### SITE ASSESSMENT

On October 6, 1995, a site assessment was completed in accordance with OCD Environmental Regulations Section 7d-IV-A-2a. The site received a total ranking of 0 and as follows:

1.) D	Depth to groundwater	Ranking Score
	>100 feet	0
2.)	Wellhead Protection Area	N/A
3.)	Distance to Surface Water Body	
	>1000 horizontal feet	0
Total	Ranking Score	0
Degre	e of remediation required:	
Benze BTEX TPH		10ppm 50ppm 5000 ppm

As an added measure of prevention, an excavation to a depth of approximately 25 feet was conducted at the site in pit # 1 where an impermeable layer of clay/shale was encountered. The depth of existing contamination stopped at approximately 15 feet. No groundwater was encountered during this excavation.

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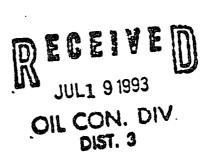
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FID BOX 4390 FARMINGTON NEW MERHOD (ET4-4

William J. Lemay New Mexico Oil Conservation Division 310 Old Santa Fe Trail Santa Fe, NM 87501

RE: Discharge Plan GW-71 Chaco Canyon Gas Processing Plant San Juan County, New Mexico July 14,1993



Dear Mr. Lemay:

El Paso Natural Gas Company is requesting modification of the Chaco Gas Plant Discharge Plan EPNG would like to modify the Discharge Plan to allow the continued use of the unlined ponds for non-contact waste water, and to waive the requirement to test the non-contact drain system. The current Discharge Plan requires the closure of all unlined ponds and the testing of all drain lines in excess of 25 years old. These requirements were designed to ensure that ground water would not be adversely impacted in the vicinity of the plant. Based upon information obtained from wells drilled on Chaco Plant property, EPNG believes continued use of the unlined ponds and drain lines for non-contact water, poses no threat to ground water.

This view is based upon the following:

- Quality of the non-contact waste water exceeds that of the ground water. In 1992 EPNG drilled three deep well ground beds to a depth of 505 feet in the northwest corner of Chaco Plant property. Water analysis were performed on all three deep well ground beds. A, B, and C cooling towers, and ponds 1 - 5. This analysis shows that discharge water quality exceeds that of the ground water. (See tab A)
- 2. At least 50 feet of unsaturated low permeability shale is present above the regional aquifer at the plant site.

The driller's logs show the plant site resting on less than 50 feet of sandy deposits above the lower shale unit of the Nacimento Formation. A 15 to 20 foot thick sandstone of the Ojo Alamo Formation was encountered below the shale unit. (See tab B)

#### 3. Depth to ground water of 120 feet.

The drillers's logs did not indicate a shallow unconfined aquifer. Water was first encountered at a depth of 120 feet in the Ojo Alamo Formation. No other water bearing zones were reported to the total depth of 505 feet. (See tab B)

- 4. Nearest water well to the plant is over a mile away. The closest domestic water well to the plant site as reported by the State Engineer is in section 22 over a mile away. This well was drilled in 1963 to a depth of 255 feet. No information on the current status of the well is available.
- All contact waste water will be routed to a lined pond. To ensure continued protection of ground water quality, all contact waste water will be routed to a lined pond scheduled to be constructed in 1994.

 The contact and non-contact waste water systems will be separate systems. A survey of all contact drain lines will be performed to ensure no contact drain lines are connected to the non-contact drain system.

EPNG believes for the above mentioned reasons that continued use of the unlined ponds for non-contact waste water will not pose a threat to ground water. EPNG also believes that if approval is granted to continue use of the unlined ponds, testing the non-contact discharge lines to the ponds would be unnecessary.

Enclosed is a check covering the filing fee. If you have any questions or comments feel free to call me at (505) 599-2175.

Sincerely,

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Kris Alan Sinclair Compliance Engineer

cc: W.D. Hall, EPNG N.K. Prince, EPNG William Olson, NMOCD Denny Foust, NMOCD

1	DEEP WELL GROUN. D DAT	A		DA	Septemb	er 1. 1992	
	COMPANY EL Paso Natural Gas	Company	cou				
2 · · ·	CONTRACT NO. 5848						
	LOCATION Chaco Sta 20 m						
	GROUNDBED: Depth <u>500</u>						
(	CASING: Size <u>8 5/8</u>	In., Der	oth <u>10</u>	90 Ft	· _/	Inotec SHA-2	
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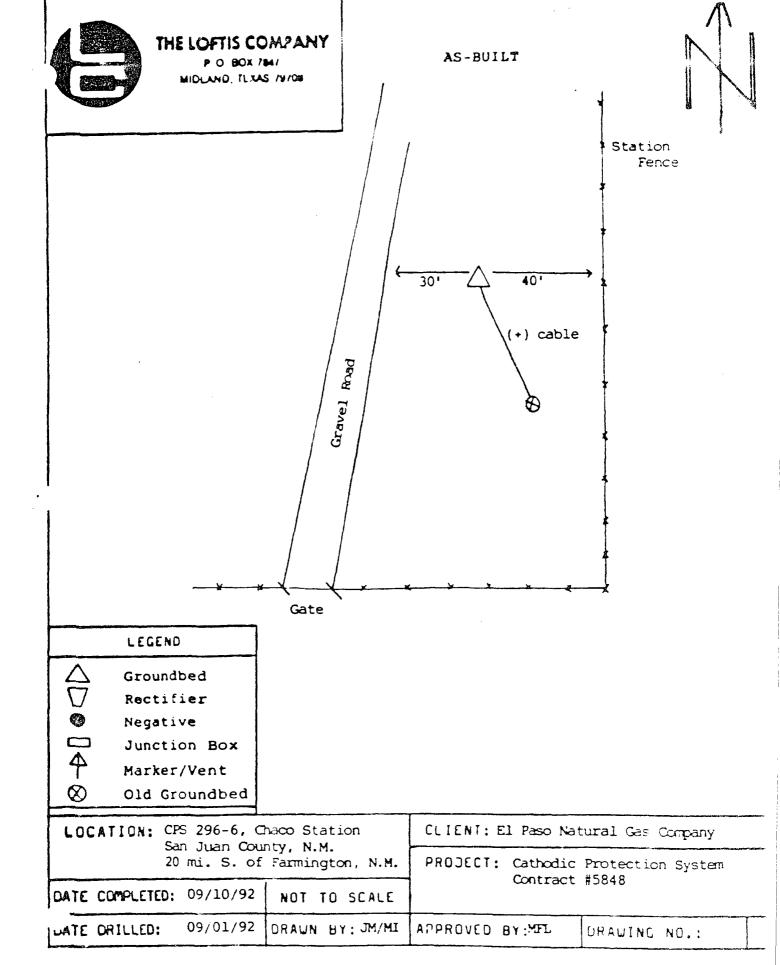
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255	64	1.5				
260	Pr	1.5	18		1.9	5.9
265		1.6				L
270	rt	1.6	17		2.0	6.3
275	74	1.5				<b> </b>
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3.0 SOILS MIXING PROCEDURE

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#### Soils Mixing Procedure

During excavation of the project, all highly saturated soil was removed from the site to the Tierra OCD permitted landfarm at Crouch Mesa in San Juan County. Some of the less contaminated soils were salvaged and mixed with clean backfill in an effort to reduce the amount of soils hauled from the site and also to reduce the TPH level by enhancing or expediting the natural degradation of the hydrocarbons.

This was done by adding Tierra's product Oxy-1 to the soils while they were spread on the ground. The soils were then tilled and allowed to air 24 hours. They were then treated again, tilled and then thoroughly mixed with clean backfill at a ratio of 3 to 1. (3 yards of fresh backfill to 1 yard of treated soil) The soil was then used as backfill for most of the Pit #1 area. TPH results from a composite showed the treated soils at 1039 ppm.

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# CLOSURE REQUEST TO OCD



TIERRA ENVIRONMENTAL --COMPANY Inc. P.O. DRAWER 15250 FARMINGTON, NM 87401

December 8, 1995

Mr. Bill Olsen New Mexico Oil Conservation Division 2040 South Pacheco Santa Fe, New Mexico 87505

RE: REQUEST FOR CLOSURE, BISTI STATION, Southeast 1/4, Section 17, R-11W, approximately ten miles south of Bloomfield on Hwy. 44 and ten miles west on the Chaco Plant Road in San Juan County New Mexico, operated by Gary Williams Energy, TECI Project # 95043.

Dear Mr. Olsen:

Enclosed herewith please find the complete report on voluntary cleanup activities conducted at Bisti Station by Tierra Environmental Company, Inc. on behalf of our client Gary Williams Energy.

As was the case with Apache Station, the cleanup activities were conducted at the site as part of a sale of property agreement between Giant Refining and Gary.

When you visited the site last month, we discussed the issue of depth to groundwater. I did as you had suggested and reviewed the adjacent El Paso Chaco Plant information on file with the OCD office in Aztec. It appears that near the plant's impoundment's east of the Bisti Station that ground water was encountered in the monitor wells at a depth of about 35 feet. However after further reviewing the file I found a 1992 report concerning the placement of cathodic protection on the west property boundary, some distance further west of the location of the monitor wells. In 1992, El Paso drilled three deep well ground beds to a depth of 505 feet. The drillers log's indicated that no water was encountered until a depth of 120 feet was reached. The report went on to say that at least fifty feet of unsaturated low permeability shale is present above the aquifer.

After my review of the Chaco Plant file I studied the topography of the area. The monitor well reports indicated that the shallow ground water encountered at 35 feet showed a directional flow of from southwest to northeast, moving away from the Bisti Station. NAAPI has completed an expansion south of the Chaco Plant. The expansion ends near the west border of plant but does not extend towards the Bisti Station. I would have to assume that the groundwater encountered in the monitor wells is as a result of the NAAPI expansion irrigation and quite possibly migration from El Paso's own impoundments. There is a draw that runs southwest to northeast from the expansion that separates the Chaco Plant and the NAAPI expansion from the Bisti Station.

During excavation of the Bisti Station Site, the average depth reached was approximately 15 feet. However at one point near the old lact unit we had removed at the east end of the site, excavation reached a depth of about 25 feet. At that level a blue clay / shale layer was encountered that appeared to be impermeable. There was no water present. That layer is most likely the same one identified in the El Paso project drillers log from Unit 296-6 that was encountered at 30 feet. The BLM topographic map indicates that the Chaco Plant and the impoundments being monitored thereupon are somewhat higher in elevation than the Bisti Station. Therefore it is logical to asume that if no water was encountered at Bisti Station, what ever water might be present in the monitor wells at 30 to 35 feet is confined to the area near the plant and is isolated from the Bisti Station. The Bisti Station is being monitored thereupon are somewhat higher in the 35 feet is confined to the area near the plant and is isolated from the Bisti Station. The Bisti Station is isolated from the Bisti Station.

Based on the preceding information, the site assessment conducted by Todd Nobis of the Bisti Station site, concluded that location should qualify for closure pursuant to OCD Regulations at 5,000 ppm TPH or less. Therefore on behalf of our client Gary Williams Energy, I respectfully request that the Bisti Station Site be considered for final closure under those parameters based on our enclosed final report.

Please call me if you have any questions or require additional information.

Thank you for your professional assistance and cooperation in this matter.

Sincerely,

Phillip C. Nobis

President

xc: Chris Hawley, GWE D. Foust, OCD Aztec Final Report 5.0

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# PERMITS

<ol> <li>RCRA Exempt: □ Non-Exempt: ■ Rage f Verbal Approval Received: Yes ■ No □ Adderson (Submitting this form for oilfield exempt waste is optional)</li> <li>Destination         TerrA Environment+1 Co. TAC. Crouch mesh LANDAIR         Address of Facility Operator         420 CR 3100 Aztec NM 82410         7. Originating Location of Material (Street Address or ULSTR)         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John, R-11 w SE 1/4 SAN Juan         Section 17. T. John accept non-oilfield exempt wastes will be accompanied by a continuent of a approval to accept non-oilfield exempt wastes will be accompanied by accept non-exempt wastes must be accompanied by necest the meterial is non-hazardous and the Generator's certification of origin. No weste class will be approved.         All requests for approval to accept non-exempt wastes delivered are only         Projected Dates(s) for Transportation:         Soci ContAminateD with Crude oil femoued From         A Six - SOO BBL TANK Facility. Site is Beig         Because of A sake From Gafy Energy to Giant         Facility is A Transportation Terminal         Site is A Transportation Terminal         Soci ContAminateD with Crude oil femoued From         A Six - SOO BBL TANK Facility. Site is Beig         Because of A sake From Gafy Energy to Giant         Facility is A Transportation Terminal         Site is Beight of my topology and base.         Site is A Transportation Terminal         Site is A Transportation Terminal         Site is A Transportation Terminal</li></ol>	rtification of waste from the General a certification of waste status from ent agency; two certificates per job. sary chemical analyses to prove
<ul> <li>1. RCRA Exempt: □ Non-Exempt: ■ No □ Adderson (Submitting this form for oilfield exempt waste is optional)</li> <li>2. Destination</li> <li>Terra Environmental Co. Tric. Crouch mesh LANDAirm</li> <li>3. Address of Facility Operator</li> <li>420 CR 3100 A24ec NM 824/0</li> <li>7. Originating Location of Material (Street Address or ULSTR)</li> <li>Section 17. T. John R-11 w 5E 1/4 SAN Jumn</li> <li>9. Check One</li> <li>□ A. All requests for approval to accept onlifield exempt wastes will be accompanied by a cartificate per job.</li> <li>0. All requests for approval to accept non-oilfield exempt wastes will be accompanied by a cartificate per job.</li> <li>0. All requests for approval to accept non-oilfield exempt wastes will be accompanied by necest the material is non-hazardous and the Generator's certification of origin. No weste claw will be approved.</li> <li>All requests for approval to accept non-exempt wastes delivered are only Benerator and the New Maxico Environment Department or other appropriate governm X(C. All requests for approval to accept non-exempt wastes delivered are only Benerator and the New Maxico Environment Department or other appropriate governm X(C. All requests for approval to accept non-exempt wastes delivered are only will be approved.</li> <li>All transporters must certify that the wastes delivered are only Benerator's certification of origin. No weste claw will be approved.</li> <li>Soci contAminuted with Crude oil removed From A Six - Sio BBL TANK FACility. Site is Beig Because of A sake From GARY Energy to Giant FACility is A Transportation:</li> <li>Because of A sake From GARY Energy to Giant FACility is A Transportation.</li> </ul>	Febico Generator <u>GACY Williams Energy</u> Name of Originating Site <u>B:54</u> : <u>544</u> :00 <u>State</u> <u>Jew Mexico</u> rtification of waste from the General a certification of waste status from the ent agency; two certificates per job. sary chemical analyses to prove
(Submitting this form for gilfield exempt waste is optional)         2. Destination         TerrA Environ mental Co. Two. Crouch mesh LANDAIR         3. Address of Facility Operator         4/20 CR 3100       Aztec NM 874/0         7. Originating Location of Material (Street Address or ULSTR)         Section 17. T.26N, R-11W SE 1/4       SAN JUAN         9. Check One         0 A. All requests for approval to accept oilfield exempt wastes will be accompanied by a contribution of the New Maxico Environment Department or other appropriate governm         C. All requests for approval to accept oilfield exempt wastes will be accompanied by necetificate per job.         0 B. All requests for approval to accept one-sempt wastes must be accompanied by necetification of origin. No waste clawwill be approved.         All requests for approval to accept one-sempt wastes must be accompanied by necetification of origin. No waste clawwill be approved.         All transporters must cartify that the wastes delivered are only         Projected Dates of Faminated With Crude oil removed From         A Six - SJO BBL TAWK FACILity. Site is Being         BecAuse of A SAK From Gary Energy to Giant         FACILity is A Trunsportation Terminal         Simmated Volume       Boo         Yer SAW Section Terminal	. Generator <u>(oAry williams Energy</u> Name of Originating Site <u>B:54</u> : <u>544</u> :on State <u>Jew Mexico</u> rtification of waste from the General a certification of waste status from the ent agency; two certificates per job. sary chemical analyses to prove
<ul> <li>2. Destination Terra Environmental Co. Two. Crouch mesh LANDAIM 3. Address of Facility Operator 430 CR 3100 Aztec NM 82410 7. Originating Location of Material (Street Address or ULSTR) Section 17. T.36N, R-11 w SE 1/4 SAN JUAN 9. Check One 0 A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certificate per job. 0 B. All requests for approval to accept non-oilfield exempt wastes will be accompanied by necessarility of approval to accept non-oilfield exempt wastes will be accompanied by necessarility and the New Mexico Environment Department or other appropriate governm (C. All requests for approval to accept non-exempt wastes must be accompanied by necessarility approved. All transporters must certify that the wastes delivered are only Projected Datesist for Transportation: BRIEF DESCRIPTION OF THE MATERIAL: Soil contaminated with Crube oil removed From A Six - Soo BBL TANK Facility. Site is Being Because of A SAK From GARY Energy to Giant Facility is A Transportation Terminal Simmated Volume 200 Known Volume Itabe entered by the operator at the entered by the operator at the entered and the material store of the material store of the sector of the material store of the sector of the sect</li></ul>	. Generator <u>(oAry williams Energy</u> Name of Originating Site <u>B:54</u> : <u>544</u> :on State <u>Jew Mexico</u> rtification of waste from the General a certification of waste status from the ent agency; two certificates per job. sary chemical analyses to prove
Terra Environmental Co. INC. Crouch MESA LANDFAIM 3. Address of Facility Operator 420 CR 3100 Aztec NM 82410 7. Originating Location of Material (Street Address or ULSTR) Section 17. T. 36W, R-11W SEV4 SAW JUAN 9. Check One 0. All requests for approval to accept oilfield exempt wastes will be accompanied by a c certificate per job. 0. B. All requests for approval to accept on-oilfield exempt wastes will be accompanied by a c certificate per job. 0. B. All requests for approval to accept non-oilfield exempt wastes will be accompanied by a c certificate per job. 0. C. All requests for approval to accept non-exempt wastes must be accompanied by necesi- the material is non-hazardous and the Generator's certification of origin. No waste cla will be approved. All transporters must certify that the wastes delivered are only Projected Dates(s) for Transportation: SRIEF DESCRIPTION OF THE MATERIAL: Soil confaminated with Crude oil removed From A Six - SJO BBL TANK Facility. Site is Beig BecAuse of A SAK From Gary Energy to Giant Facility is A Transportation Terminal stimuted Volume 200 Your Known Volume Ito be entered by the corrector at the en Necesity that the information above is the accompanied by the corrector at the entered by the corecto	<u>CARY</u> <u>Williams Energy</u> Name of Originating Site <u>B:54</u> : <u>544</u> :00 State <u>Jew Mexico</u> rtification of waste from the General a certification of waste status from the ent agency; two certificates per job.
<ul> <li>3. Address of Facility Operator</li> <li><u>430</u> CR 3100 <u>Aztec</u> Nm <u>874/0</u></li> <li>7. Originating Location of Material (Street Address or ULSTR)</li> <li><u>Section 17</u> <u>T.36N</u>, <u>R-11N</u> <u>SE 1/4</u> <u>SAN</u> <u>JUAN</u></li> <li><u>9. Check One</u> <ul> <li>A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certificate per job.</li> <li>B. All requests for approval to accept non-oilfield exempt wastes will be accompanied by a certificate per job.</li> <li>C. All requests for approval to accept non-oilfield exempt wastes will be accompanied by a certificate per job.</li> <li>C. All requests for approval to accept non-exempt wastes must be accompanied by necess the meterial is non-hazardous and the Generator's certification of origin. No weste clawill be approved.</li> </ul> </li> <li>All transporters must certify that the wastes delivered are only Projected Dates(s) for Transportation: <ul> <li>BRIEF DESCRIPTION OF THE MATERIAL:</li> <li>Soil contaminated with Crude oil removed From A S:x - SJO BBL TANK FACILity. Site is Beigg</li> <li>Because of A SALE From GARY Energy to Giant FACILity is A Transportation Terminal</li> </ul> </li> </ul>	B:SF: SFAtion State Jew Mexico rtification of waste from the General a certification of waste status from the ent agency; two certificates per job.
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TYPE OR PRINT NAME Phillip C- Nobis TE	DATE 12/1
	DATE 12/1
his space for State Use)	DATE 12/1
	DATE 12/1
APPROVED BY TITLE	DATE <u>12/1</u> EPHONE NO. <u>(505) 334-95</u>
	DATE 12/1
APPROVED BYTITLE	DATE 12/11 EPHONE NO. (505) 334. 39 DATE

CORPORATE OFFICE

P. O. Drawer 15250 Farmington, NM 87401

(505) 325-0924



TIERRA

ENVIRONMENTAL CORPORATION

#### CERTIFICATE OF WASTE STATUS NON-EXEMPT RCRA WASTE

Originating Site, (Include Name, Section, Township, Range, 1/4, etc.) BISTI TANK FACILITY TZ6N, RIIW, SEC. 17, SE1/4

SAN JUAN COUNTY, NM

Source: SOIL CONTAMINATED WITH CAUDE OIL FROM MINOR SPILLS FROM TRUCK OFFLOADING INTO TANKAGE .

CHRIS HAWLE \_representative GARY-WILLIAMS ENERGY CORP. for BLOOMFIELD REFINING CO.

do hereby certify that the waste described above is non-exempt, according to the Resource Conservation and Recovery Act (RCRA), but has been identified as nonhazardous by characteristic analysis or by product identification.

The appropriate documentation is hereto attached.

Check appropriate line(s)

**MSDS** Information

**CRCRA TCLP Analysis** 

KRCRA Metals

Corrosivity, Ignitability, Reactivity

Letter from Out of State Regulatory Agency

I further certify that there has been no change in the processes employed or chemicals stored / used at the facility generating the waste since

Signature_	Comb Honing	
Title	ENVR. MER.	
Date	7-11-95	

Date

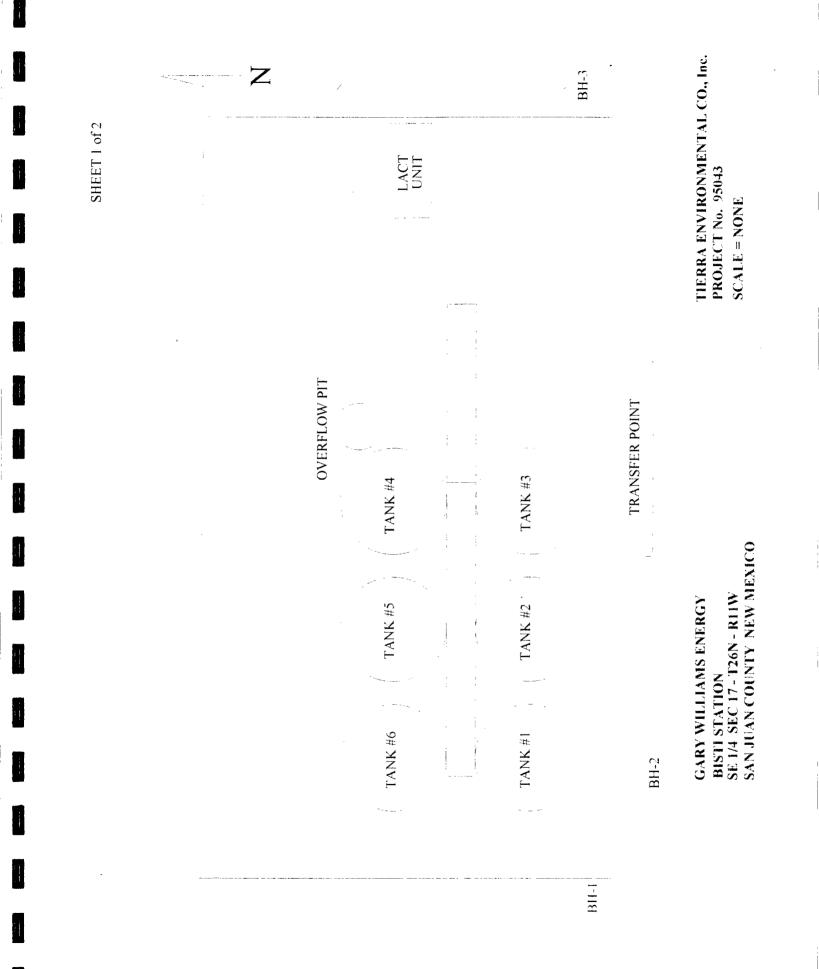
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To Chris Hawley	From PI-1 Nobis
Co. Binnet and DER	co. Tierra
Dept.	Phone #
Fax 132-3911	Fax #

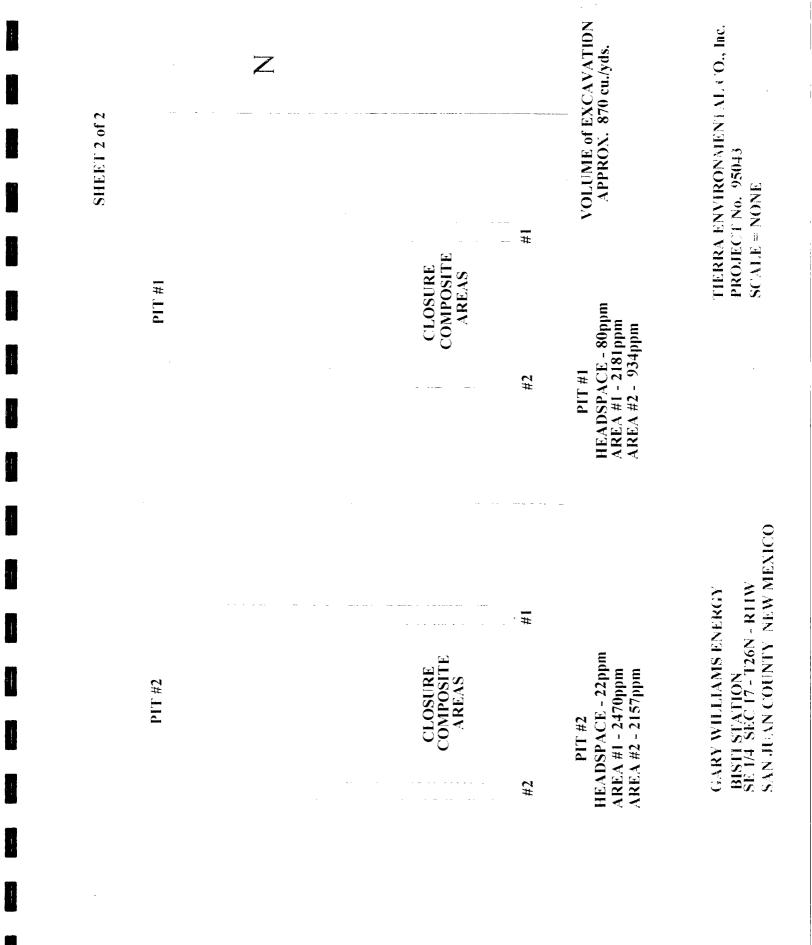
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# SITE DIAGRAMS





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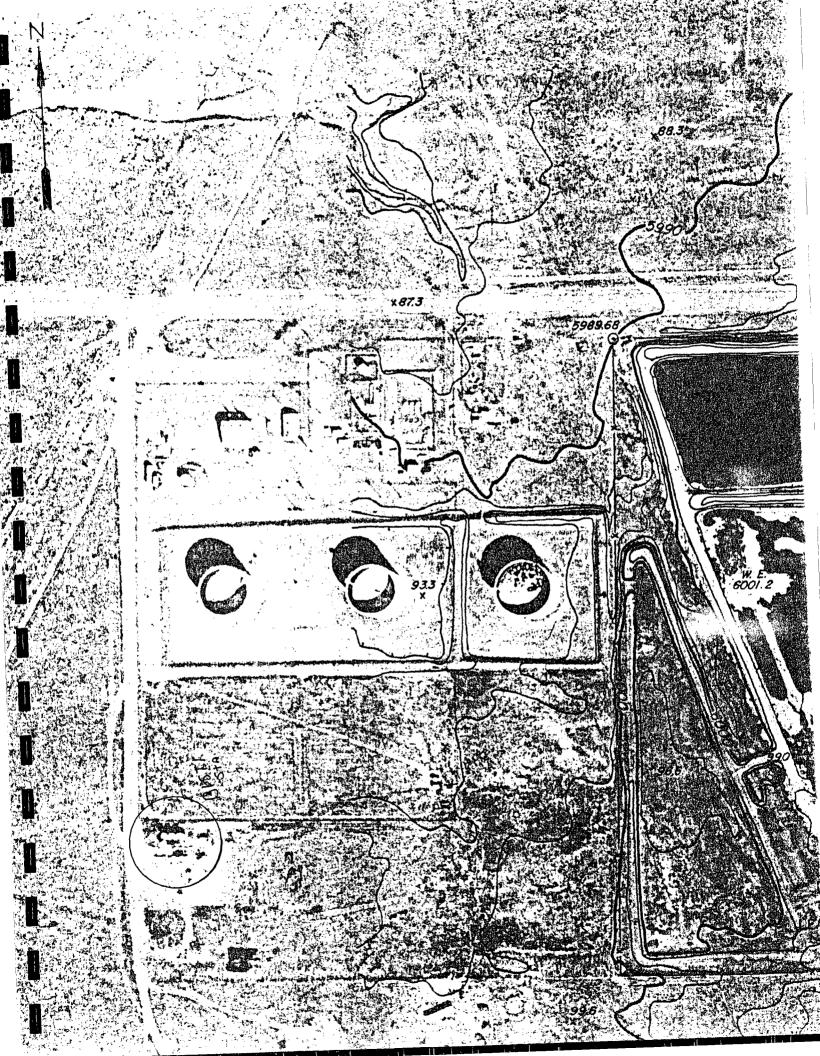
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## AERIAL PHOTOGRAPHS



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# MSDS ON OXY-1



# MATERIAL SAFETY DATA SHEET OXY - 1

SECTION I Product Identification

PRODUCT NAME: OXY - 1

MANUFACTURERS: TIERRA ENVIRONMENTAL COMPANY Inc. P.O. Drawer 15250 Farmington, New Mexico 87401-5250 24 HOUR PHONE No. (505) 334-8894 Fax : (505) 334-9024

HMIS RATING: H-2, F-0, R-1, S-None

DOT HAZARD CLASS: OXIDIZER 5.1 UN # 1490

SECTION II Hazardous Ingredients

INGREDIENT Potassium Permanganate CAS No. 7722647 % by Weight < 5%

SECTION III Physical Data

BOILING POINT: = WATER VAPOR DENSITY: UNKNOWN SPECIFIC GRAVITY: 0.99 pH: 7 VAPOR PRESSURE: UNKNOWN SOLUBILITY (WATER): >99% % VOLATILE: >99

SECTION IV Reactivity Data

**STABLE: STABLE CONDITIONS to AVOID:** CONTACT WITH ORGANIC or READILY OXIDIZABLE MATERIALS

**INCOMPATIBILITY: SEE CONDITIONS TO AVOID** 

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

STEPS TO BE TAKEN IN THE EVENT OF SPILL or LEAK: FLUSH AREA WITH WATER. WASTE DISPOSAL METHOD: CONSULT LOCAL AUTHORITIES.

**ISSUE DATE** 10/01/92

#### SECTION V Fire and Explosion Hazard

FLASH POINT: N/A FLAMMABLE LIMITS: N/A EXTINGUUISHING MEDIA: N/A SPECIAL FIRE FIGHTING PROCEDURES: N/A UNUSUAL FIRE and EXPLOSION HAZARDS: N/A

SECTION VI Health Hazard Data

**THRESHOLD LIMIT VALUE: > 2000ppm** 

**EFFECTS of OVEREXPOSURE: NONE** 

EMERGENCY and FIRST AID PROCEDURES: For contact with eyes, flush with water for 15 minutes and consult with a doctor if irritation persists. If swallowed, give large amount of milk or water and consult doctor immediately.

SECTION VII Special Protection Information

**RESPIRATORY PROTECTION: NONE** VENTILATION: AVOID CONFINED SPACE PROTECTIVE GLOVES: YES EYE PROTECTION: GOGGLES or FACE SHIELD OTHER PROTECTIVE EQUIPMENT: NONE

SECTION VIII Special Precautions

#### PRECAUTIONS to be taken in HANDLING and STORAGE: NONE

CONDITIONS TO AVOID:

Keep out of contact with Alcohol, Arsenites, Bromides, Iodides, Hydrochloric Acid, Charcoal, Organic substances in general, Ferrous or Mercurous Salts. Hypophosphites, Hyposulfites, Sulfites, Peroxides and Oxvlates.

This information herein provided is believed to be accurate but is not warranted to be whether originating with the company or not.

9.0 LAB REPORTS & CHAIN OF CUSTODY 1

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ÓN SITE

OFF: (505) 325-8786

LAB: (505) 325-5667

TECHNOLOGIES, LTD.

# TOTAL PETROLEUM HYDROCARBONS

Address:	P.O. Box	vironmental		Date: COC No.: Sample No. Job No.	10-Oct-95 3532 8524 2-1000
Project Nar Project Loc Sampled by Analyzed b	ation: /:	<b>Bisti Tank Battery BH1 @ 5' Soil Bori</b> TN BV	ng Date: Date:	6-Oct-95 Time: 9-Oct-95	
Type of Sa	,	BV Soil	Date:	3-061-33	

#### Laboratory Analysis

Laboratory		Total Petroleum
<b>Identification</b>	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8524-3532	BH1 @ 5' Soil Boring	<25 <i>mg/kg</i>

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: )a 47 Date: 10/10/95

ON SITE

OFF: (505) 325-8786

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LAB: (505) 325-3667

TECHNOLOGIES, LTD.

### TOTAL PETROLEUM HYDROCARBONS

Attn:	Phil Nobi	s			Date:	10-0ct-95
Company:	Tierra En	vironmental			COC No.:	3532
Address:	P.O. Box	15250			Sample No.	8525
City, State:	: Farmingt	on, NM 87499			Job No.	2-1000
Project Nar	ne:	Bisti Tank B	lattery			
Project Loc	ation:	BH1 @ 10'	Soil Boring			
Sampled by	y:	TN	Date	6-Oct-9	5 Time:	
Analyzed b	y:	BV	Date	9-Oct-9	5	
Type of Sa	mple:	Soil				

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8525-3532	BH1 @ 10' Soil Boring	785 <i>mg/kg</i>

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)~~~~ 10/10/45 Approved by: Date:

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ÓN SITE

OFF: (505) 325-8786

LAB: (505) 325-5667

TECHNOLOGIES, LTD.

# TOTAL PETROLEUM HYDROCARBONS

Attn:	Phil Nobis					Date:	10-0ct-95
Company:	Tierra Envi	ronmental				COC No.:	3532
Address:	P.O. Box 1	5250				Sample No.	8526
City, State:	Farmingtor	n, NM 87499				Job No.	2-1000
Project Nam	ne:	Bisti Tank Ba	attery				
Project Loca	ation:	BH1 @ 15'	Soil Boring				
Sampled by	:	TN		Date:	6-0ct-9	95 Time:	
Analyzed by	<b>/:</b>	BV		Date:	9-0ct-9	95	
Type of Sar	nple:	Soil					

#### Laboratory Analysis

Laboratory		Total Petroleum	
Identification	Sample Identification	Hydrocarbons	
	Bisti Tank Battery		
8526-3532	BH1 @ 15' Soil Boring	58 <i>mg/kg</i>	

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: ) a Gy 10/10/95 Date:

**ON SITE** 

OFF: (505) 325-8786

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LAB: (505) 325-5667

TECHNOLOGIES, LTD.

### TOTAL PETROLEUM HYDROCARBONS

Attn:	Phil Nobis	5		Date:	10-Oct-95
Company:	Tierra Env	/ironmental		COC No.:	3532
Address:	P.O. Box	15250		Sample No.	8527
City, State:	. Farmingto	on, NM 87499		Job No.	2-1000
Project Nar	ne:	Bisti Tank Battery			
Project Loc	ation:	BH2 @ 5' Soil Borii	ng		
Sampled by	/:	TN	Date:	6-Oct-95 Time:	
Analyzed b	<b>y:</b>	BV	Date:	9-Oct-95	
Type of Sa	mple:	Soil			

#### Laboratory Analysis

Laboratory		Total Petroleum	
Identification	Sample Identification	Hydrocarbons	
	Bisti Tank Battery		
8527-3532	BH2 @ 5' Soil Boring	135 <i>mg/kg</i>	

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)~4. 10/10/95 Approved by: Date:

I.

LAB: (505) 325-5667

OFF: (505) 325-8786

TECHNOLOGIES, LTD.

## TOTAL PETROLEUM HYDROCARBONS

**SITE** 

Attn:	Phil Nobis	•			D	ate:	10-Oct-95
Company:	Tierra Env	vironmental			С	OC No.:	3532
Address:	P.O. Box	15250			Sá	ample No.	8528
City, State:	Farmingto	n, NM 87499			J	ob No.	2-1000
Project Nar	ne:	Bisti Tank Ba	attery				
Project Loc	ation:	BH2 @ 10'	Soil Boring				
Sampled by	/:	TN	Dat	te:	6-0ct-95 T	ime:	
Analyzed b	<b>y:</b>	BV	Dat	te:	9-Oct-95		
Type of Sa	mple:	Soil					

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8528-3532	BH2 @ 10' Soil Boring	<25 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

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)a 4 10/10/45 Approved by: Date:

OFF: (505) 325-8786

**I SITE** 

LAB: (505) 325-5667

TECHNOLOGIES, LTD.

# TOTAL PETROLEUM HYDROCARBONS

Attn:	Phil Nobis	5				Date:	10-0ct-95
Company:	Tierra En	vironmental				COC No.:	3532
Address:	P.O. Box	15250				Sample No.	8529
City, State:	Farmingto	on, NM 87499				Job No.	2-1000
Project Nam	ne:	Bisti Tank B	Battery				
Project Loca	ation:	BH2 @ 15'	Soil Boring				
Sampled by	:	TN		Date:	6-Oct-95	Time:	
Analyzed by	/: .	BV		Date:	9-Oct-95		
Type of San	nple:	Soil					

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8529-3532	BH2 @ 15' Soil Boring	211 <i>mg/kg</i>

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)a 4 10/10/45 Approved by: Date:

ON SITE

OFF: (505) 325-8786

Type of Sample:

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LAB: (505) 325-5667

TECHNOLOGIES, LTD.

## TOTAL PETROLEUM HYDROCARBONS

Attn:	Phil Nobis			Date:	10-Oct-95
Company:	Tierra Envi	ronmental		COC No.:	3532
Address:	P.O. Box 1	5250		Sample No.	8530
City, State:	: Farmingtor	n, NM 87499		Job No.	2-1000
Project Nar	ne:	Bisti Tank Battery			
Project Loc	ation:	BH3 @ 5' Soil Boring			
Sampled by	y:	TN	Date:	6-Oct-95 Time:	
Analyzed b	<b>y:</b>	BV	Date:	9-Oct-95	

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8530-3532	BH3 @ 5' Soil Boring	843 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Soil

Approved by: Date: Date: 10/15

LAB: (505) 325-5667



OFF: (505) 325-8786

TECHNOLOGIES, LTD.

## TOTAL PETROLEUM HYDROCARBONS

Company:	P.O. Box 15	250		Date: COC No.: Sample No. Job No.	10-Oct-95 3532 8531 2-1000
Project Nam Project Loca		Bisti Tank Batt BH3 @ 10' So	•		
Sampled by:		TN	Date:	6-Oct-95 Time:	
Analyzed by	: ,	BV	Date:	9-Oct-95	
Type of Sam	nple:	Soil			

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8531-3532	BH3 @ 10' Soil Boring	173 <i>mg/kg</i>

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: Da 4 Date: 10/10/95

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<u>ON SITE</u>

OFF: (505) 325-8786

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LAB: (505) 325-5667

TECHNOLOGIES, LTD.

## TOTAL PETROLEUM HYDROCARBONS

Attn:	Phil Nobis			Date:	10-Oct-95
Company:	Tierra Env	ironmental		COC No.:	3532
Address:	P.O. Box	15250		Sample No.	8532
City, State:	Farmingto	n, NM 87499		Job No.	2-1000
Project Nam	e:	Bisti Tank Batt	ery		
Project Loca	tion:	BH3 @ 15' Se	oil Boring		
Sampled by:	:	TN	Date:	6-Oct-95 Time:	
Analyzed by	:	BV	Date:	9-Oct-95	
Type of Sam	nple:	Soil			

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Tank Battery	
8532-3532	BH3 @ 15' Soil Boring	156 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)a 4 10/10/45 Approved by: Date:

## JOB NUMBER: 952966 CUSTOMER: ONSITE TECHNOLOGIES LIMITED ATTN: DAVE COX

CLIENT 1.D........: 4-1247 DATE SAMPLED......: 10/06/95 TIME SAMPLED.....: 09:05 WORK DESCRIPTION...: TANK BOTTHE 8533-3532 BISTI TANK BATT.

LABORATORY 1.0	952966-0001	
DATE RECEIVED	10/09/95	
TIME RECEIVED:	10:30	
RENARKS:	SAMPLED BY: T	¢0

TEST DESCRIPTION	FINAL RESULT	LIMITS/ PELUTION	UNITS OF MEASURE	TEST METHOD	PATE	. T <b>S</b> SI
TCLP Semivolatiles		*5		EPA SV-846 8270	10/16/95	32
1,4-Dichlorobenzene	<50	50	ug/L	EPA SW-846 8270		
2,4-Dinitrotoluene	<50	50	ug/L	EPA SW-846 8270		
Kaxachlorobenzene	<50	50	ug/L	EPA SH-846 8270		
Nexachlorobutadiene	<0	50	Ug/L	EPA SW-846 8270	1	
Hexachloroethene	<50	50	ug/L	EPA SW-846 8270	1	
Nitrobenzene	<50	50	ug/L	EPA SW-846 8270		
Pentachlorophenol	<250	250	ug/L	EPA SN-846 8270		
2,4,5-Trichlorophenol	<50	50	Ug/L	EPA 80-846 8270		
2,4,6-Trichlorophenol	-50	50	Jug/L	EPA \$4-846 8270		
Pyridine	<50	50	ug/L	EPA SU-846 8270		
p.m-Cresol	110	50	ug/L	EFA SW-846 8270		
o-Cresol	210	50	Ug/L	EPA SW-846 8270		
2-fluorophenol (Surrogata)	57	0	X Recovery	21-83% QC LIMITS		
Phenol-dő (Surrogate)	87	0	X Recovery	24-94% OC LIMITS	1	
Nitrobenzene-d5 (Surrogate)	99	0	X Recovery	35-102% QC LINITS		
2-Fluorobiphenyl (Surrogate)	114	0	X Recovery	43-103X OC LIMITS		
2,4,6-Tribromophenol(Surrogate)	84	Q	X Recovery	28-111X QC LIMITS	1	
Terphonyl-d14 (Surrogate)	90	Û	X Recovery	43-117% QC LINITS		
CLP Volatileg		+100		EPA \$4-846 8260	10/17/95	<b>Ģ</b> P
Benzene	8000	500	ug/L	EPA SH-846 8260		
Carbon tetrachioride	<500	500	Ug/L	EPA SV-846 8260	1	
Chlorobenzene	<500	500	lug/L	EPA 58-846 8260		
Chloroform	~500	500	Ug/L	EPA \$V-846 8260		
Nathyl athyl ketone	<5000	5000	ug/L	EPA SH-846 8260		
Trichloroethene	<500	500	ug/L	EPA SV-846 8260		
Vinyi chloride	<400	400	lug/L	EPA \$V-844 8260		
1,2-Dichloroethane	<500	500	ug/L	EPA SU-846 8260	}	
Tetrachioroethene	<500	500	ug/L	EPA \$9-846 8260		
1,1-Dichloroethene	<500	500	lug/L	EPA SU-846 8260		
Dibromofluoromethanm(Surrogate)	106	0	% Recovery	86-115% QC LINITS	1	
Toluena d-8 (Surrogate)	97	0	X Recovery	88-110% OC LIMITS		
4-Bromofluorobenzens(Surrogate)	94	0	X Recovery	86-115% OC LIMITS	Į	
xtraction - TOLP Semivolatiles	Completed			EPA 54-846 3520	10/11/95	:VEB
ilage Jar Extraction for Metals	Completed			EPA SW-846 1311	10/09/95	002
lass Jar Extraction Servivolatiles	Completed			EPA SU-846 1311	10/09/95	OGP
rsenic (As), extractable TCLP	0.07	0.05	mg/L	EPA SH-846 6010	10/16795	QСI
	1		CORPUS	WIN PADRE ISLAND DRIV CHRISTI, IX 70405 89-2673	۱ ۶	-

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#### TESTS RESULTS LABORATORY 10/17/95

# JOE NUMBER: 952966 CUSTOMER: ONSITE TECHNOLOGIES LINIYED ATTNE DAVE COX

CLIENT 1.D. ..... 4-1247 DATE SAMPLED...... 10/06/95

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TIME SAMPLED .....: 09:05 WORK DESCRIPTION ...: TANK BOTTMS 8533-3532 BISTI TANK BATT.

LABORATORY 1.D ...: 952966-0001 DATE RECEIVED....: 10/09/95 TINE RECEIVED....: 10:30 REMARKS......: SAMPLED BY: TOOD

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TEST DESCRIPTION	FINAL RESULT	LINHS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECH
Berium (88), extractable TELP	2.53	0.05	mg/iL	EPA SH-846 6010	10/16/95	¢¢¢
Cadmfum (Cd), extractable TCLP	<0.05	0.05	mg/L	EPA SH-846 6010	10/16/95	9 <b>0</b> 6
Chromium (Cr), extractable TCLP	<0.05	0.05	mg∕L	EPA SH-846 6010	10/16/95	GCC
Lead (Pb), extractable TCLP	0.11	0.05	mg/L	EPA SW-846 6010	10/16/95	¢¢¢
Selenium (Se), extractable TCLP	<0.05	0.05	mg/L	EPA SW-846 6010	10/16/95	000
Silver (Ag), extractable TCLP	<0.05	0.05	mg/L	EPA SH-846 6010	10/16/95	660
Flammobility Potential	Xegative	[	+ or -	ASTH 04982-89	10/17/95	EBS
Cyanida, Reactive	<5	5	mg/kg	EPA SH-846 7.3.3.2	10/11/95	DEH
Corrocivity by pH	6.1	0.1	pH units	EPA SH-846 9045 C	10/17/95	SEB
Sulfide, Reactive	1660	50	ma/kg	EPA SW-846 7.3.4.2	10/11/95	DEN
Mercury (Hg), extractable, TCLP	<0.02	0.02	ma/L	EPA SW-846 7470	10/13/95	EB\$
Metala Digost on Extracted Sample	Completed			EPA \$9-846 3010	10/12/95	Ęr .
Iero Headspace Extraction-Volatile	Completed			EPA SW-846 1311	10/09/95	USP
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Date:	-

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No. 2.00 **TECHNOLOGIES, LTD.** ON SITE

657 W. Maple • P. O. Box 2606 • Farmington NM 87499 LAB: (505) 325-5667 • FAX: (505) 325-6256

Authorized by:	Method of Shipment:	Relinquished by:	Relinquished by:	Relinquished by:	••••										Sampler:			Sampling Location	E City, State, Zip	SEI NVC TC Address	ND Company	Name	Purchase Order No .:
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# CORE LABORATORIES

CORE LABORATORIES A N A L Y T I C A L R E P O R T Job Number: 953325 Prepared For: ONSITE TECHNOLOGIES LIMITED DAVE COX 657 W. MAPLE FARMINGTON, NM 87401 Date: 11/16/95

Signature

Name: Charles Sassine

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CORE LABORATORIES 1733 NORTH PADRE ISLAND DRIVE CORPUS CHRISTI, TX 78408

Title: Laboratory Supervisor



#### TESTS RESULTS LABORATORY 11/16/95

JOB NUMBER: 953325 CUSTOMER: ONSITE TECHNOLOGIES LIMITED

ATTN: DAVE COX

LABORATORY 1.D...: 953325-0001 DATE RECEIVED....: 11/06/95

TIME RECEIVED....: 10:30 REMARKS.....

CLIENT I.D.....: T1E1001 BLOOMFIELD REFINERY DATE SAMPLED.....: 11/02/95 TIME SAMPLED.....: 10:07 WORK DESCRIPTION...: 9051-3642 B15T1 STATION COMPOSITE

CLP Semivolatiles 1,4-Dichlorobenzene 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Nitrobenzene Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate) 2-Fluorobiphenyl (Surrogate) 2,4,6-Tribromophenol(Surrogate)	<50 <50 <50 <50 <50 <50 <50 <50 <50 <50	*5 50 50 50 50 50 50 50 50 50 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	EPA SW-846 8270 EPA SW-846 8270	11/10/95	GE F
2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <50 <50 <250 <50 <50 <50 <50 <50 <50 <50 <50 <50 <	50 50 50 50 250 50 50 50 50 50 50 50 50 50 50 50 50 5	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	EPA SW-846 8270 EPA SW-846 8270		
2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <50 <250 <50 <50 <50 <50 <50 <50 <71 92 82	50 50 50 250 50 50 50 50 50 50 50 0 0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <250 <50 <50 <50 <50 <50 <50 <71 92 82	50 50 250 50 50 50 50 50 50 0 0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
Hexachloroethane Nitrobenzene Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p.m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <250 <50 <50 <50 <50 <50 71 92 82	50 50 250 50 50 50 50 50 50 0 0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ¥ Recovery	EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
Nitrobenzene Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <250 <50 <50 <50 <50 <50 71 92 82	50 250 50 50 50 50 50 50 0 0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L % Recovery	EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<250 <50 <50 <50 <50 <50 71 92 82	250 50 50 50 50 50 50 0 0	ug/L ug/L ug/L ug/L ug/L ug/L % Recovery	EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <50 <50 <50 71 92 82	50 50 50 50 50 0 0	ug/L ug/L ug/L ug/L ug/L % Recovery	EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <50 <50 71 92 82	50 50 50 50 0 0	ug/L ug/L ug/L ug/L % Recovery	EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
2,4,6-Trichlorophenol Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-d6 (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 <50 71 92 82	50 50 50 0 0	ug/L ug/L ug/L % Recovery	EPA SW-846 8270 EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
Pyridine p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-dó (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 <50 71 92 82	50 50 0 0	ug/L ug/L % Recovery	EPA SW-846 8270 EPA SW-846 8270 21-83% QC LIMITS		
p,m-Cresol o-Cresol 2-Fluorophenol (Surrogate) Phenol-dó (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	<50 71 92 82	50 50 0 0	ug/L % Recovery	EPA SW-846 8270 21-83% QC LIMITS		
o-Cresol 2-Fluorophenol (Surrogate) Phenol-dó (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	71 92 82	0	ug/L % Recovery	21-83% QC LIMITS		
Phenol-dó (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	92 82	Ō				
Phenol-dó (Surrogate) Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	92 82	-		D/ D/W OD / 19470		
Nitrobenzene-d5 (Surrogate) 2-Fluorobiphenyl (Surrogate)	82			24-94% QC LIMITS		
2-Fluorobiphenyl (Surrogate)			% Recovery	35-102% QC LIMITS		
		0	% Recovery	43-103% OC LIMITS		
	69	Ő	% Recovery	28-111% QC LIMITS		
Terphenyl-d14 (Surrogate)	89	ō	% Recovery	43-117% QC LIMITS		
CLP Volatiles		*10		EPA SW-846 8260	11/11/95	QP
Benzene	<50	50	ug/L	EPA SW-846 8260		
Carbon tetrachloride	<50	50	ug/L	EPA SW-846 8260		
Chlorobenzene	<50	50	ug/L	EPA SW-846 8260		
Chloroform	<50	50	ug/L	EPA SW-846 8260		
Methyl ethyl ketone	<500	500	ug/L	EPA SW-846 8260		
Trichloroethene	<50	50	ug/L	EPA SW-846 8260		
Vinyl chloride	<40	40	ug/L	EPA SW-846 8260		
1,2-Dichloroethane	<50	50	ug/L	EPA SW-846 8260		
Tetrachloroethene	53	50	ug/L	EPA SW-846 8260		
1,1-Dichloroethene	<50	50	ug/L	EPA SW-846 8260		
Dibromofluoromethane(Surrogate)	109	0	% Recovery	86-115% QC LIMITS		
Toluene d-8 (Surrogate)	95	0	X Recovery	88-110% QC LIMITS		
4-Bromofluorobenzene(Surrogate)	87	Ō	X Recovery	86-115% QC LIMITS		
xtraction - TCLP Semivolatiles	Completed			EPA SW-846 3520	11/08/95	WE
lass Jar Extraction for Metals	Completed			EPA SW-846 1311	11/07/95	DGF
ilass Jar Extraction-Semivolatiles	Completed			EPA SW-846 1311	11/07/95	DGP
rsenic (As), extractable TCLP	<0.05	0.05	mg/L	EPA SW-846 6010A	11/14/95	GCC

1733 NORTH PADRE ISLAND DRIVE CORPUS CHRISTI, TX 78408 (512) 289-2673

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#### LABORATORY TESTS RESULTS 11/16/95

#### JOB NUMBER: 953325 CUSTOMER: ONSITE TECHNOLOGIES LIMITED

ATTN: DAVE COX

CLIENT I.D...... T1E1001 BLOOMFIELD REFINERY DATE SAMPLED.....: 11/02/95 TIME SAMPLED.....: 10:07 WORK DESCRIPTION...: 9051-3642 B15T1 STATION COMPOSITE

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#### LABORATORY I.D...: 953325-0001 DATE RECEIVED...: 11/06/95 TIME RECEIVED...: 10:30 REMARKS.....

Cadmium Chromium Lead (Pb Selenium Silver ( Flammabi Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea	Ba), extractable/TCLP	0.90		a second a second s			
Chromium Lead (Pb Selenium Silver ( Flammabi Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea		0.70	0.05	mg/L	EPA SW-846 6010A	11/14/95	GCC
Lead (Pb Selenium Silver ( Flammabi Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea	(Cd), extractable TCLP	<0.05	0.05	mg/L	EPA SW-846 6010A	11/14/95	GCC
Selenium Silver ( Flammabi Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea	(Cr), extractable TCLP	<0.05	0.05	mg/L	EPA SW-846 6010A	11/14/95	GCC
Silver ( Flammabi Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea	), extractable TCLP	0.07	0.05	mg/L	EPA SW-846 6010A	11/14/95	GCC
Flammabi Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea	(Se), extractable TCLP	<0.05	0.05	mg/L	EPA SW-846 6010A	11/14/95	GCC
Cyanide, Corrosiv Sulfide, Mercury Metals D Zero Hea	Ag), extractable TCLP	<0.05	0.05	mg/L	EPA SH-846 6010A	11/14/95	<b>000</b>
Corrosiv Sulfide, Mercury Metals D Zero Hea	lity Potential	Negative		+ or -	ASTM 04982-89	11/10/95	- 1 ¥
Sulfide, Mercury Metals D Zero Hea	Reactive	<5	5	mg/kg	EPA SW-846 7.3.3.2	11/07/95	DEH
Mercury Metals D Zero Hea	rity by pH	7.8	0.1	pH units	EPA SW-846 90450	11/10/95	DJ
Metals D Zero Hea	Reactive	<50	50	mg/kg	EPA SW-846 7.3.4.2	11/09/95	DJ
Zero Hea	(Hg), extractable, TCLP	<0.002	0.002	mg/L	EPA SW-846 7470	11/10/95	EBS
	igest on Extracted Sample	Completed		-	EPA SW-846 3010A	11/13/95	TFB
	dspace Extraction-Volatile	Completed			EPA SW-846 1311	11/07/95	400
				CORPUS	RTH PADRE ISLAND DRIV CHRISTI, TX 78408 89-2673	E	
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# CORE LABORATORIES

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IOB NUMBER:	953325	CUSTOME	R: OWSITE	TECHNOLOGIES	LIMITED		ATTN: DAVE	COX		
	ANA	LYSIS		DUPL	ICATES	REFERENC	E STANDARDS	T	MATRIX SPIKE	S
NALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or ( A-B )	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT
ARAMETER:C	yanide, Reac IMIT/DF:	tive UNITS:mg/k	a 		NALYZED:11/0 RENCE :EPA	7/95 13:00 sw-846 7.3.3	.2		QC BATCH )	UMBER:993 ECHNICIAN:
BLANK STANDARD SPIKE DUPLICATE	MB 110795 LCS2 PDS MD	Di H20 508.37.25 953325-1 953325-1	<5 1.88 2.18 <5	<5	0	1.92	98	<5	1.93	113
PARAMETER:S	ulfide, Reac INIT/DF: 50	tive UNITS:mg/k	9		NALYZED:11/0 RENCE :EPA	9/95 08:00 SW-846 7.3.4	.2	•	QC BATCH F	IUMBER:993 ECHNICIAN:
BLANK STANDARD SPIKE DUPLICATE	MB 110995 LCS MS MD	Di H20 508.36.22 953280-1 953280-1	<50 273 265 <50	<50	NC	300	91	<50	300	88
	Corrosivity b IMIT/DF: 0.1		nits		NALYZED:11/1 RENCE :EPA	0/95 10:00 sw-846 9045c			QC BATCH T	WHBER: 994 CHNICIAN:
STANDARD DUPLICATE	LCS MD	386.20.32 953326-1	7.03 7.96	8.01	1	7.00	100			
PARAMETER:F	lammability INIT/DF:	Potential UNITS:+ or			NALYZED:11/1 RENCE :ASTN		•	•	QC BATCH )	UMBER:994
BLANK DUPLICATE	MD MD	953326-1	Negative	Negative	0					
		extractable, 02 UWITS:mg/L		DATE/TIME A METHOD REFE	NALYZED:11/1 RENCE :EPA	0/95 08:00 SW-846 7470			QC BATCH ) Te	WHBER:994 CHNICIAN:
BLANK STANDARD SPIKE DUPLICATE	MB RS MS MD	DI H20 507.3.19 953267-1 953267-1	<0.002 0.022 0.045 <0.002	<0.002	NC	0.020	110	<0.002	0.050	90
		extractable 5 UNITS:mg/L			NALYZED:11/1 RENCE : SW-				QC BATCH }	UMBER: 994 CHNICIAN:
BLANK BLANK BLANK STANDARD STANDARD SPIKE DUPLICATE	MB MB MB ICV CCV MS MD	3005 3010 3051 41095 1013C 953326-002 953326-002	<0.05 <0.05 <0.05 0.99 5.11 1.00 <0.05	<0.05	NC	1.00 5.00	99 102	<0.05	1.00	100
	•						1733 NORTH CORPUS CHR (512) 289-		ND DRIVE 78408	

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# CORE LABORATORIES

	ANA	LYSIS		DUPL	CATES	REFEREN	E STANDARDS		MATRIX SPIK	ES
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or ( A-B )	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT
PARAMETER: E REPORTING	larium (Ba), IMIT/DF: 0.0	extractable T 5 UNITS:mg/L	CLP	DATE/TIME AN METHOD REFEN				•	QC BATCH	NUMBER:99
BLANK BLANK BLANK STANDARD STANDARD SPIKE DUPLICATE	MB MB ICV CCV MS MD	3005 3010 3051 1023C 1013C 953326-002 953326-002	<0.05 <0.05 <0.05 1.03 5.12 1.71 0.86	1.00	15	1.00 5.00	103 102	0.86	1.00	85
PARAMETER: ( REPORTING	Cadmium (Cd), IMIT/DF: 0.0	extractable 5 UNITS:mg/L	TCLP	DATE/TIME AN METHOD REFER					QC BATCH	NUMBER:994 ECHNICIAN
BLANK BLANK BLANK STANDARD STANDARD SPIKE DUPLICATE	MB MB ICV CCV MS MD	3005 3010 3051 91095 1013C 953326-002 953326-002	<0.05 <0.05 <0.05 .1.00 5.18 0.98 <0.05	<0.05	NC	1.00	100 104	<0.05	1.00	98
PARAMETER:	Chromium (Cr) IMIT/DF: 0.0	, extractable 5 UNITS:mg/L	TCLP	DATE/TIME AN METHOD REFER					QC BATCH	NUMBER: 99
BLANK BLANK BLANK STANDARD STANDARD SPIKE DUPLICATE	MB MB ICV CCV MS MD	3005 3010 3051 91095 1013C 953326-002 953326-002	<0.05 <0.05 <0.05 1.02 5.22 0.92 <0.05	<0.05	NC	1.00 5.00	102 104	0	1.00	92
PARAMETER: I REPORTING	ead (Pb), ex _IMIT/DF: 0.0	tractable TCL 5 UNITS:mg/L		DATE/TIME AN METHOD REFER			1	1	QC BATCH	NUMBER:99
BLANK BLANK BLANK STANDARD STANDARD SPIKE DUPLICATE	MB MB ICV CCV MS MD	3005 3010 3051 41095 1023C 953326-002 953326-002	<0.05 <0.05 <0.05 1.00 5.10 0.89 0.05	0	0.05	1.00 5.00	100 102	0.05	1.00	84
PARAMETER:	Selenium (Se) IMIT/DF: 0.0	, extractable 5 UNITS:mg/L	TCLP	DATE/TIME AN METHOD REFER				<b>1</b>	QC BATCH	HUMBER:994 ECHNICIAN
BLANK BLANK	MB MB	3005 3010	<0.05 <0.05	uniter, Catality (1997)						

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# CORE LABORATORIES

			QUA	LITY	ASSURA 11/16/95	NCE RI	EPORT	<u> </u>		******
JOB NUMBER:			R: ONSITE	TECHNOLOGIES		1	ATTN: DAV	1		
		.YSIS		<b>_</b>			E STANDARDS		MATRIX SPIK	PERCENT
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or ( A-B )	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	ADDED	RECOVERY
PARAMETER:SA REPORTING L	elenium (Se), MIT/DF: 0.05	extractable UNITS:mg/L	TCLP	DATE/TINE A METHOD REFE		14/95 15:51 -846 6010A				NUMBER: 994370 ECHNICIAN: GCC
BLANK STANDARD STANDARD SPIKE DUPLICATE	MB ICV CCV MS MD	3051 01095 1023C 953326-002 953326-002	<0.05 1.05 5.06 0.99 <0.05	<0.05	NC	1.00 5.00	105 101	<0.05	1.00	9 <u>9</u> .
PARAMETER:S	lver (Ag), e MIT/DF: 0.05	extractable T UNITS:mg/L	CLP	DATE/TIME A METHOD REFE		14/95 15:51 -846 6010A			tel	WHBER: 994371 ECHNICIAN: GCC
BLANK BLANK BLANK STANDARD STANDARD SPIKE DUPLICATE	MB MB ICV CCV MS MD	3005 3010 3051 1023C 1013C 953326-002 953326-002	<0.05 <0.05 <0.05 1.00 5.00 0.94 <0.05	<0.05	NC	1.00 5.00	100 100	<0.05	1.00	94
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							1733 NORTI CORPUS CHI (512) 289	H PADRE ISLA RISTI, TX -2673	ND DRIVE 78408	

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#### QUALITY ASSURANCE REPORT 11/16/95

JOB NUMBER: 953325 CUSTOMER: ONSITE TECHNOLOGIES LIMITED ATTN: DAVE COX

TCLP SEMIVOLATILES

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DATE ANALYZED: 11/10/95 TIME ANALYZED: 08:44 METHOD: EPA SW-846 8270 QC NUMBER:994204

EST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS 1.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASUR
,4-Dichlorobenzene ,4-Dinitrotoluene exachlorobenzene exachlorobutadiene exachloroethane itrobenzene entachlorophenol ,4,5-Trichlorophenol ,4,6-Trichlorophenol yridine resols (Total)	MB MB MB MB MB MB MB MB MB MB MB MB	110895 110895 110895 110895 110895 110895 110895 110895 110895 110895 110895	1 1 1 1 1 1 1 1 1 1 1 1	<10 <10 <10 <10 <10 <10 <50 <10 <10 <10 <30	10 10 10 10 10 10 50 10 10 10 10 30	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L
				1733 NORTH P CORPUS CHRIS (512) 289-26	ADRE ISLAND DRIV TI, TX 78408 73	Ε

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ATTN: DAVE COX

#### QUALITY ASSURANCE REPORT 11/16/95

CUSTOMER: ONSITE TECHNOLOGIES LIMITED

TCLP SEMIVOLATILES

JOB NUMBER: 953325

DATE ANALYZED: 11/10/95 TIME ANALYZED: 08:44 METHOD: EPA SW-846 8270 QC NUMBER:994204

SPIKES MATRIX SPIKE DETECTION UNITS OF DILUTION ANALYZED ORIGINAL PERCENT TEST ANALYSIS ANALYSIS RECOVERY LIMITS MEASURE VALUE ADDED DESCRIPTION SUB-TYPE I. D. FACTOR VALUE 250 10 ug/L **B**S 110895-00 90 0 36 1,4-Dichlorobenzene 1 2,4-Dinitrotoluene 250 88 10 110895-00 220 0 ug/L BS 1 110895-00 250 96 10 0 ug/L Hexachlorobenzene 240 BS 1 0 44 10 Hexachlorobutadiene 110895-00 110 250 ug/L BS 1 0 250 28 10 ug/L Hexachloroethane 85 110895-00 1 70 110895-00 250 10 ug/L Nitrobenzene 8S 340 0 136 1 Pentachlorophenol 110895-00 0 750 113 50 ug/L 850 BS 1 2,4,5-Trichlorophenol 0 96 10 ug/L 110895-00 720 750 BS 1 0 250 124 10 ug/L 2,4,6-Trichlorophenol 110895-00 310 BS 1 Pyridine BS 110895-00 440 0 500 88 10 ug/L 1 0 750 77 30 ug/L 110895-00 580 Cresols (Total) **8**S 1 1733 NORTH PADRE ISLAND DRIVE CORPUS CHRISTI, TX 78408 (512) 289-2673

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# **CORE LABORATORIES**

#### QUALITY ASSURANCE REPORT 11/16/95

JOB NUMBER: 953325 CUSTOMER: ONSITE TECHNOLOGIES LIMITED ATTN: DAVE COX

TCLP Volatiles

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DATE ANALYZED: 11/11/95 TIME ANALYZED: 13:36 METHOD: EPA SW-846 8260 QC NUMBER:994210

EST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASUR
/inyl chloride I,1-Dichloroethene Methyl ethyl ketone Chloroform Carbon tetrachloride I,2-Dichloroethane Menzene Irichloroethene Fetrachloroethene Chlorobenzene	MB MB MB MB MB MB MB MB MB MB MB MB	110795 110795 110795 110795 110795 110795 110795 110795 110795 110795	1 1 1 1 1 1 1 1 1 1 1 1	<5 <50 <5 <5 <5 <5 <5 <5 <5 <5 <5	5 50 5 5 5 5 5 5 5 5 5 5 5	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/L ug/L
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#### QUALITY ASSURANCE REPORT 11/16/95

JOB NUMBER: 953325

CUSTOMER: ONSITE TECHNOLOGIES LINITED ATTN: DAVE COX

## TCLP Volatiles

DATE ANALYZED: 11/11/95 TIME ANALYZED: 13:36 METHOD: EPA SW-846 8260

OC NUMBER:994210

EST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	TRUE VALUE	PERCENT RECOVERY	DETECTION	UNITS OF MEASURE
/inyl_chloride 1,1-Dichloroethene	CC CC	342.97.1	1	101 117	100 100	101 117	5	ug/L ug/L
ethyl ethyl ketone	CC	342.97.1	1	100	100	100	50	ug/L
hloroform	CC	342.97.1	l i	102	100	102	5	ug/L
arbon tetrachloride	CC	342.97.1	1	102	100	102	5	ug/L
,2-Dichloroethane	CC	342.97.1	1	100	100	100	5	ug/L
enzene	cc	342.97.1	1	104	100	104	5	ug/L
richloroethene	CC	342.97.1	1	106	100 100	106 103	5	ug/L ug/L
etrachloroethene hlorobenzene	CC CC	342.97.1 342.97.1	1	103 101	100	103	5	ug/L
hibromofluoromethane(Surrogate)	CC	342.97.1	1	47	50	94	5	ug/L
oluene d-8 (Surrogate)	CC	342.97.1	1	49	50	98	5	ug/L
-Bromofluorobenzene(Surrogate)	CC	342.97.1	1	47	50	94	5	ug/1
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#### QUALITY ASSURANCE REPORT 11/16/95

JOB NUMBER: 953325 CUSTOMER: ONSITE TECHNOLOGIES LIMITED

ATTN: DAVE COX

## TCLP Volatiles

DATE ANALYZED: 11/11/95 TIME ANALYZED: 13:36 METHOD: EPA SW-846 8260

QC NUMBER:994210

EST ESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION	ANALYZED VALUE	ORIGINAL VALUE	SP I KE ADDED	PERCENT	DETECTION	UNITS OF MEASURE
inyl chloride	MS	953268-1	1	1010	0	1000	101	5	ug/L
	MSD	953268-1	1	960	0	1000	96	5	ug/L
,1-Dichloroethene	MS	953268-1	1	1120	0	1000	112	5 5	ug/L
ethyl ethyl ketone	MSD MS	953268-1 953268-1	1	1090 710	0	1000	109 71	50	ug/L ug/L
ethyt ethyt ketone	MSD	953268-1	1	750	ŏ	1000	75	50	ug/L
hloroform	MS	953268-1	1	970	Ŏ	1000	97	5	ug/L
	MSD	953268-1	1	950	0	1000	95	5	ug/L
arbon tetrachloride	MS	953268-1	1	990	0	1000	99	5	ug/L
	MSD	953268-1	1	930	0	1000	93	5	ug/L
,2-Dichloroethane	MS	953268-1	1	960	0	1000	96	5	ug/L
	MSD	953268-1	1	900	0	1000	90	5	ua/L
enzene	HS	953268-1	1	1050	0	1000	105	5 5	1 1/L
rishi anasthana	MSD	953268-1	1	980	0	1000 1000	98 96	5	t/L ug/L
richloroethene	MS MSD	953268-1 953268-1	1	960 900	0	1000	90	5	ug/L
etrachloroethene	MS	953268-1	1	1280	0	1000	128	5	ug/L
	MSD	953268-1	1	980	Ö	1000	98	5	ug/L
lorobenzene	MS	953268-1	1	1040	0	1000	104	5	ug/L
	MSD	953268-1	1	980	Ō	1000	98	5	ug/L
ibromofluoromethane(Surrogate		110795-00	1	540	0	500	108	5	ug/L
ol <b>uene</b> d-8 (Surrogate)	MB	110795-00	1	460	0	500	92	5	ug/L
-Bromofluorobenzene(Surrogate	MB	110795-00	1	470	0 ·	500	94	5	ug/L
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			- <u></u>			1733 NOR	TH PADRE IS	LAND DRIVE	
						CORPUS C	HRISTI, TX	78408	
						(512) 28	9-2673		

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PDD= Post Digested Duplicate

#### FOOTER QUALITY ASSURANCE Cited Methods are obtained from the following documents : EPA 600/2-79-020, Nethods for the Analysis of Water and Wastes, March 1983. USEPA SW-846 3rd. Edition, November 1990 and July 1992 Update, Test Methods for Evaluating Solid Waste. EPA 600/2-78-054, Field and Laboratory Methods Applicable to Overburdens and Minesoils. Federal Register, July 1, 1992 (40 CFR Part 136). Standard Methods for the Examination of Water and Wastewater, 18th Ed. APHA, AWWA, WPCF. Methods of Soil Analysis, Agronomy No. 9, C.A. Black, 1965. Quality control acceptance criteria are method dependent. All data reported on sample "as received" unless noted. Sample IDs with a "-00" at the end indicate a blank spike or blank spike duplicate associated with the numbered sample. NC = Not Calculated due to value at or below detection limit. NOTE: Data in QA report may differ from final results due to digestion and/or dilution of sample into analytical range. The "TIME ANALYZED" in the GA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "DATE ANALYZED" is the actual date of analysis. The data in this report are within the limits of uncertainty specified in the referenced method unless otherwise indicated. SUBCONTRACTED LABORATORY LOCATIONS For analyses performed by a subcontract laboratory, an ### and the designated laboratory code is indicated in the "TECHN" column of the laboratory test results report. Core Laboratories : Anaheim \*AN \*LC Lake Charles Aurora \*AU \*L8 Long Beach Casper \*CA Other Laboratories \*XX Houston \*HP QUALITY ASSURANCE REPORT CODES BLANKS\* SPIKES AND DUPLICATES REFERENCE STANDARDS -----------MB = Method Blank MS = Matrix Spike, BS = Blank Spike RS = Reference Standard RB = Reagent Blank CC = Continuing Calib. SS = Surrogate Spike, MD = Matrix Dup. SB = Storage Blank LCS = Laboratory Control Std. PDS= Post Digested Spike ICB = Initial Calib. Blank MSD= Matrix Spike Duplicate ICV = Initial Calib. Verification

\*In the event that several different method blanks are analyzed, the blank type will be designated by the preparation method, i.e., ZHE, TCLP, 3010, 3050, etc.

	1733 NORTH PADRE ISLAND DRIVE
	CORPUS CHRISTI, TX 78408
[	(512) 289-2673

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CCB = Continuing Calib. Blank

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TECHNOLOGIES, LTD.

SEND INVOICE TO

957 W. Maple + P. O. Box 2666 + Farmington NAI 87499 LAB: (505) 325-5667 + FAX: (505) 325-6256

	Relinquished by:	Pelinquished by:	Relinguished by:		BISTI STAT		Sampler:	Read	Sampling Location:		SEND VOIC TO Address	Name	Purchase Order No.:
					ATION COMPOSITE & MINIS	MPLE IDENTIFICATION		BLOOMFIELD NEFINERY		TAKINAT	ON SITE	1.5	36-12 Job No.
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Special Instructions: PLEAJE FA	Date/Time	Date/Time	Date/Time		905					2	Pt8 SIL		Title

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OFF: (505) 325-8786

LAB: (505) 325-5667

TECHNOLOGIES, LTD.

## TOTAL PETROLEUM HYDROCARBONS

Company: 7 Address: F	Fodd Nobis Fierra Environmental P.O. Box 15250 Farmington, NM 87499		Date: COC No.: Sample No. Job No.	27-Nov-95 3560 9374 2-1000
Project Name Project Locati Sampled by: Analyzed by: Type of Samp	ion: <i>Pit #1 Composite #1</i> TN BV	Date: Date:	24-Nov-95 Time: 27-Nov-95	13:40

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Station	
9374-3560	Pit #1 Composite #1	2,181 <i>mg/kg</i>

#### Quality Assurance Report

Laboratory Identification	Analyzed Value	Acceptable Range	Units of Measure
Laboratory Fortified Blank Soil - QCBS1	35	22 - 46	mg/kg
Laboratory Fortified Spike Soil - QCSS1	887	828 - 1024	mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: Jak Date: 11/27-/95

ON SITE

OFF: (505) 325-8786

LAB: (505) 325-5667

# TECHNOLOGIES, LTD. 🥍

# TOTAL PETROLEUM HYDROCARBONS

Company: Tie Address: P.	dd Nobis erra Environmental O. Box 15250 rmington, NM 87499		Date: COC No.: Sample No. Job No.	27-Nov-95 3560 9375 2-1000
Project Name: Project Locatio Sampled by: Analyzed by: Type of Sampl	TN BV	<b>2</b> Date: Date:	24-Nov-95 Time: 27-Nov-95	13:45

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Station	
9375-3560	Pit #1 Composite #2	934 <i>mg/kg</i>

#### Quality Assurance Report

	Analyzed	Acceptable	Units of
Laboratory Identification	Value	Range	Measure
Laboratory Fortified Blank Soil - QCBS1	35	22 - 46	mg/kg
Laboratory Fortified Spike Soil - QCSS1	887	828 - 1024	mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)~5× 11/27/95 Approved by: . Date:



OFF: (505) 325-8786

LAB: (505) 325-5667

TECHNOLOGIES, LTD.

# TOTAL PETROLEUM HYDROCARBONS

Company: 7 Address: P	odd Nobis ierra Environmental .O. Box 15250 armington, NM 87499		Date: COC No.: Sample No. Job No.	27-Nov-95 3560 9376 2-1000
Project Name: Project Locati Sampled by: Analyzed by: Type of Samp	on: Backfill Composite TN BV	Date: Date:	24-Nov-95 Time: 27-Nov-95	13:50

#### Laboratory Analysis

Laboratory Identification	Sample Identification	Total Petroleum Hydrocarbons
	Bisti Station	
9376-3560	Backfill Composite	1,039 <i>mg/kg</i>

#### Quality Assurance Report

Laboratory Identification	Analyzed Value	Acceptable Range	Units of. Measure
Laboratory Fortified Blank Soil - QCBS1	35	22 - 46	mg/kg
Laboratory Fortified Spike Soil - QCSS1	887	828 - 1024	mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

1/27/15 Approved by: Date:

V RECORD	Page of of	Name Tritle Company ·		ANALYSIS REQUESTED	Container							Rush 24-48 Hours 10 Working Days Special Instructions:	
CHAIN OF CUSTODY RECORD	. Date:	.oh dol			Number of	SAMPLE DATE MATRIX PRES.						(jate 1 * 7 * 1	company Request)
	TECHNOLOGIES, LTD. 657	Purchase Order No.:	Company SEND Address City, State, Zip	Sampling Location:	Sampler:	SAMPLE IDENTIFICATION				reinquisited by: Relinquished by:	Relinquished by:	Method of Shipment: Authorized by	(Client Stonature Must Accompany Reduest)

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Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

OFF: (505) 325-8786



LAB: (505) 325-5667

TECHNOLOGIES, LTD.

## TOTAL PETROLEUM HYDROCARBONS

Company: Address:	Todd Nobis Tierra Environmental P.O. Box 15250 Farmington, NM 87499		Date: COC No.: Sample No. Job No.	30-Nov-95 3561 9433 2-1000
Project Nam Project Loca		n ( BRC ) Closure Composite		
Sampled by:	TN	Date:	28-Nov-95 Time:	10:00
Analyzed by	: HR	Date:	30-Nov-95	
Type of Sam	nple: Soil			

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Station ( BRC )	
9433-3561	Pit #2, #1 Closure Composite	2,970 mg/kg

## Quality Assurance Report

	Analyzed	Acceptable	Units of
Laboratory Identification Laboratory Fortified Blank Soil - QCBS1		<b>Range</b> 22 - 46	Measure mg/kg
Laboratory Fortified Spike Soil - QCSS1	850	828 - 1024	mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: Date: 1/30/45

OFF: (505) 325-8786

LAB: (505) 325-5667

# TECHNOLOGIES, LTD. 🕅

## TOTAL PETROLEUM HYDROCARBONS

Attn: Todd No Company: Tierra En Address: P.O. Box City, State: Farmingt	vironmental 15250		Date: COC No.: Sample No. Job No.	30-Nov-95 <i>3561</i> 9434 2-1000
Project Name: Project Location:	Bisti Station (	' BRC ) osure Composite		2,000
Sampled by: Analyzed by: Type of Sample:	TN HR <i>Soil</i>	Date: Date:	28-Nov-95 Time: 30-Nov-95	10:10

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Bisti Station ( BRC )	
9434-3561	Pit #2, #2 Closure Composite	2,157 mg/kg

#### Quality Assurance Report

Laboratory Identification	Anaiyzed Value	Acceptable Range	Units of · Measure
Laboratory Fortified Blank Soil - QCBS1	29	22 - 46	mg/kg
Laboratory Fortified Spike Soil - QCSS1	850	828 - 1024	mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: Date: 11/30/95

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	<b>ÒN SITE</b>				Date: //	2					Page		of /	
TECH	VOLOGIES, LTD.	657 W. Maple • P. O. Box 2606 • Farmington NM 87499 LAB: (505) 325-5667 • FAX: (505) 325-6256	• Farmingto FAX: (505) 329	n NM 8749 5-6256	6									
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Method	Method of Shipment:				Œ	Rush	24-	24-48 Hours	10 WG	10 Working Days	Special Ir	Special Instructions:		
Authorized by:			Date											
	(Client Signature <u>Must</u> Accompany Request)	ly Request)												

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- F. J

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Goldenrod - Client

Pink -- Sampler Yellow - LAB Distribution: White - On Site

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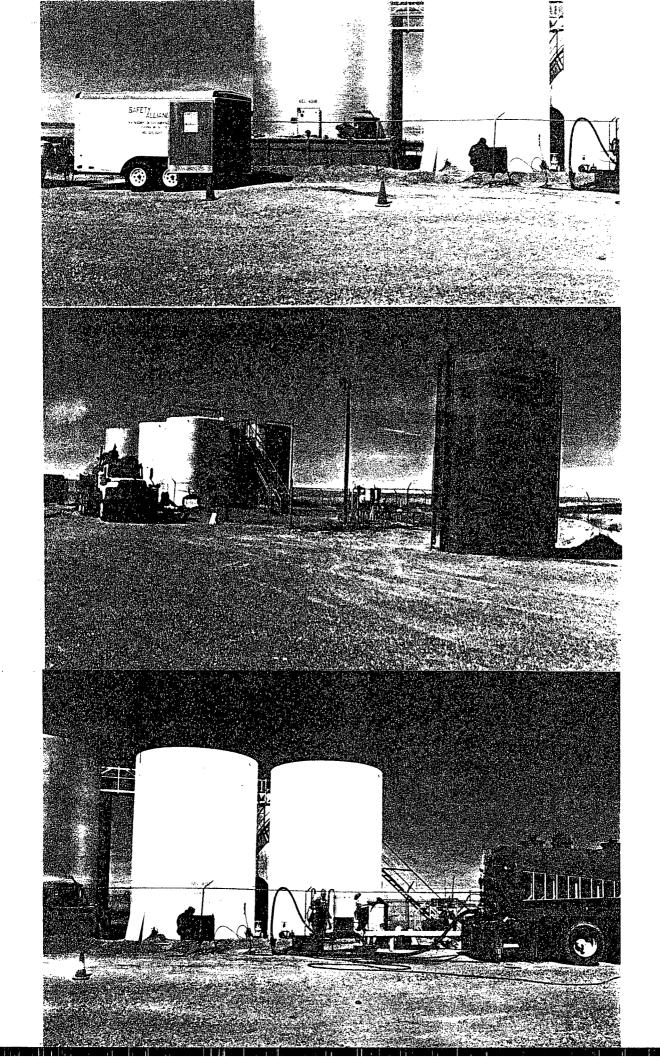
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## SITE PHOTOGRAPHS



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