3R - 84

REPORTS

DATE:

11/26/1997

ON SITE
TECHNOLOGIES, LTD.

Conoco, Inc., Midland Division
Exploration and Production, North America
10 Desta Drive, Suite 100W
Midland, Texas 79705-4500

November 26, 1997

Attn: Mr. Neal Goates, Senior Environmental Specialist

RE: Remediation Summary
Farmington B Com #1E
Unit O, Sec. 30, T29W, R11W, NMPM
San Juan County, New Mexico

Project No: 4-1374

The following correspondence has been prepared by ***On Site Technologies Limited Partnership*** for Conoco. This correspondence is to summarize the excavation efforts done at Farmington B Com #1E during September 24 - 26, 1997.

PROJECT BRIEF:

On March 14, 1997, ***On Site Technologies*** conducted a site assessment using a small John Deere D490 Trackhoe was used to advance four test holes. The test holes ranged in depth from 14 to 19 feet in depth. The soils were noncohesive consisting of well rounded gravel and cobbles with sand and Classified as Type C Soil per OSHA Trenching and Excavation Standards. Due to these soil types and existing surface improvements, deeper excavation was deemed unsafe (refer to On Site Technologies report dated April 16, 1997).

Two to three grab samples were collected from each test hole, from the Trackhoe bucket. Each sample was field tested for volatile hydrocarbons per NMOCD Field Heated Headspace Method. Selected split samples were collected in four ounce glass jars with Teflon® closures, labeled, and placed on ice for delivery to the laboratory. Lab samples were tested for Total Petroleum Hydrocarbons (TPH) per EPA Method 8015M and volatile hydrocarbons (BTEX) per EPA Method 8020 to verify the Headspace results

TPH and BTEX soil contamination was confirmed in two areas, north of the production storage tank and west of the separator/dehydrator pit. In both areas, soil contamination was found from approximately three to eighteen plus feet below the surface. The contamination appeared to be limited to former unlined pit areas, traveling straight down with little lateral migration, due to the porous and permeable subsurface soils.

It was recommended to excavate to the extent practical the impacted soils above NMOCD's standards for hydrocarbons, screen the larger rock and transport offsite the contaminated soils for proper disposal/remediation.

PO Box 2606
Farmington, NM
PHONE: 505-325-5667 FAX: 505-327-1496

SUMMARY OF REMEDIATION EFFORTS:

On September 24 - 26, 1997, ***On Site Technologies*** and Consolidated Contractors excavated the contaminated soils at Farmington B Com #1E. A total of 906 cubic yards of soil was excavated. Using a screening machine a total of 328 cubic yards of contaminated soil was transported off site. Screened material, totaling 578 cubic yards, was placed back into excavated sites. Mr. Denny Foust, NMOCD Deputy Oil & Gas Inspector, witnessed some of the project progress.

Excavation Site #1

Excavation site number one was the area west of the separator and pit. This area was suspected to be a former unlined pit, and a large amount of trash and metal debris was removed during the excavation. Due to limited space and safety concerns, the excavation was limited to area of 16 feet by 27 feet and to a depth of 21 feet. A total of 336 cubic yards of contaminated soil was removed. The soils removed from excavation were screened to remove the 3-inch plus gravels and cobbles.

With Mr. Foust's concurrence, the large gravels and cobbles were returned to the excavation. Additionally, at Mr. Foust's request and to enhance insitu degradation of residual hydrocarbons on the backfilled gravels and remaining contaminated soils, approximately 10 gallons of liquid fertilizer were applied by sprayer during backfilling. Clean backfill material was imported to balance the site and crown the excavation area.

To monitor the excavation progress, a total of three soil samples were taken and field tested for volatile hydrocarbons per the NMOCD Field Heated Headspace Method. Selected samples were split, placed in clean jars with Teflon® closure and put on ice for delivery to the laboratory.

Excavation Site #2

Excavation site number two was north of the production tank. The area of excavation was approximately 25 feet by 36 feet and extended to a depth of approximately 19 feet. A total of 570 cubic yards of contaminated soil was removed. Ground water was encountered between 19 and 20 feet. The soils were screened to remove the 3-inch plus gravels and cobbles.

With Mr. Foust's concurrence, the large gravels and cobbles were returned to the excavation. Additionally, at Mr. Foust's request and to enhance insitu degradation of residual hydrocarbons on the backfilled gravels and remaining contaminated soils, approximately 10 gallons of liquid fertilizer were applied by sprayer during backfilling. Clean backfill material was imported to balance the site and crown the excavation area.

To monitor the progress of the excavation, a total of five samples were taken from the excavation bottom and field tested for volatile hydrocarbons per the NMOCD Field Heated Headspace Method. Selected samples were split and placed in clean jars with Teflon® closure and put on ice for delivery to the laboratory. No ground water samples were taken due to the unstable condition of the excavation sidewalls.

Refer to the attached site sketch for the approximate extent of the excavations and soil sample locations.

Monitor Well Installations:

Due to the cobble and gravel soil conditions and to aid with the installation of monitoring wells, 20 foot sections of 8-inch Sch 40 PVC was place in both excavations during backfilling. This would act as a conductor for subsequent drilling and well construction. A third conductor was installed near the entrance gate for an additional up-gradient monitoring well.

SUMMARY OF SAMPLING EFFORTS:

All soil samples delivered to laboratory were analyzed for Total Petroleum Hydrocarbon (TPH) per EPA Method 8015M. Samples with a field headspace reading over 100 were also analyzed for BTEX per EPA Method 8020. Results of field screening and laboratory analysis for the selected samples are shown on following table.

	Sample Number	Date	Time	PID Units	TPH (ppm)	Benzene (ppm)	Total BTEX (ppm)
Excavation #1	#2	9/24/97	1346	566.0	3333.0	0.64	96.2
	#3		1405	435.0	2808.0	ND	69.6
Excavation #2	#1	9/25/97	0843	007.0	27.0		
	#2		1158	404.0	1501.0	ND	74.0
	#3		1310	20.9	92.4		
	#4		1336	273.0	1492	ND	56.1

ND, Non Detect
ppm, Parts Per Million

Copies of the laboratory reports, quality control/quality assurance (QC/QA) and chain-of-custody are attached.

RECOMMENDATION:

Based on the former assessment, visual observation and laboratory results associated with the excavation and remediation, the following is recommended:

1. Install, development and sampling of three monitoring wells. Ground water sampling to follow Conoco's proposed Comprehensive Ground Water Remediation and Long-Term Monitoring Plan, including analysis for BTEX per EPA Method 8020, major cations/anions, (API Method RP45), and total dissolved phase solids (TDS).
2. If no ground water impact is detected the monitoring wells will plugged and abandoned following NMOCD procedures. If ground water impact is detected, ground water monitoring should be performed on a periodic basis until four consecutive sample events measure hydrocarbon contamination below current WQCC standards.
3. No further excavation or soil treatment is needed at the present time, as the vast majority of soil contamination is believed to have been removed. If ground water monitoring indicates further deterioration of the water quality, additional measures may need to be taken to eliminate the source.

LIMITATION AND CLOSURE:

This summary documents visual observation of the site, subsurface conditions encountered during this reclamation project, and analysis of soil samples collected during the excavation. This summary does not reflect subsurface variations which may exist between sampling points or subsurface changes which may occur due to seasonal variation.

The scope of our services consisted of the performance of site reclamation by soil excavation, project management and sampling during soil excavation efforts, field and lab testing of soil for hydrocarbon contamination, and preparation of a summary. All work has been performed in accordance with generally accepted professional practices in geotechnical, petroleum and environmental engineering, and hydrogeology.

This document has been prepared by On Site Technologies Limited Partnership for the exclusive use of Conoco Inc. as it pertains to the referenced well location operated by Conoco. If there are any questions regarding this report, please contact either Larry Trujillo or Myke Lane at On Site Technologies, (505) 325-5667. Thank you for allowing On Site to assist you with this matter.

Respectfully Submitted by,

Lawrence Trujillo
Sr. Environmental Technician

Reviewed by,

Michael K. Lane
Sr. Engineer

On Site Technologies Limited Partnership

cc: Shirley Ebert, Conoco Farmington Office

Attachments:

Lab Results, QA/QC & Chain of Custody's
Bills of Lading
Site Sketch
Safety Forms

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6480*
Address:	*612 E. Murray Drive*	Sample No.:	*16321*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-1-2***				
Sampled by:	LT	Date:	24-Sep-97	Time:	13:50
Analyzed by:	DC/HR	GRO Date:	25-Sep-97		
Sample Matrix:	*Soil*	DRO Date:	2-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	1000	mg/kg	125	mg/kg
Diesel Range Organics (C10 - C28)	2333	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0537-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	2,068	13.8	15%
Diesel Range (C10 - C28)	ND	ppm	200	188	6.4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	105	106	(80-120)	2	20%
Diesel Range (C10-C28)	91	89	(75-125)	2	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by: JAS

Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco., Inc.*	COC No.:	*6480*
Address:	*612 E. Murray Drive*	Sample No.:	*16321*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-1-2***				
Sampled by:	LT	Date:	24-Sep-97	Time:	13:50
Analyzed by:	DC	Date:	3-Oct-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	638	ug/kg	500	ug/kg
Toluene	9803	ug/kg	500	ug/kg
Ethylbenzene	10038	ug/kg	500	ug/kg
m,p-Xylene	59515	ug/kg	500	ug/kg
o-Xylene	16156	ug/kg	500	ug/kg
TOTAL	96151	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6480*
Address:	*612 E. Murray Drive*	Sample No.:	*16322*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-1-3***				
Sampled by:	LT	Date:	24-Sep-97	Time:	14:08
Analyzed by:	DC/HR	GRO Date:	25-Sep-97		
Sample Matrix:	*Soil*	DRO Date:	2-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	592	mg/kg	50	mg/kg
Diesel Range Organics (C10 - C28)	2216	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0537-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	2,068	13.8	15%
Diesel Range (C10 - C28)	ND	ppm	200	188	6.4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	105	106	(80-120)	2	20%
Diesel Range (C10-C28)	91	89	(75-125)	2	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by: JAC

Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6480*
Address:	*612 E. Murray Drive*	Sample No.:	*16322*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-1-3***				
Sampled by:	LT	Date:	24-Sep-97	Time:	14:08
Analyzed by:	DC	Date:	2-Oct-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	500	ug/kg
Toluene	4564	ug/kg	500	ug/kg
Ethylbenzene	6650	ug/kg	500	ug/kg
m,p-Xylene	47225	ug/kg	500	ug/kg
o-Xylene	11175	ug/kg	500	ug/kg
TOTAL	69614	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 2-Oct-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	*Result*	*Units of Measure*
Average Amount of All Analytes In Blank	<LOQ	ppb

Calibration Check

Parameter	*Units of Measure*	*True Value*	*Analyzed Value*	*RPD*	*Limit*
Benzene	ppb	60.0	62.4	4	15%
Toluene	ppb	60.0	67.1	11	15%
Ethylbenzene	ppb	60.0	64.5	7	15%
m,p-Xylene	ppb	120.0	126.9	6	15%
o-Xylene	ppb	60.0	63.2	5	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*RPD Limit*
Benzene	92	87	(39-150)	5	20%
Toluene	102	97	(46-148)	4	20%
Ethylbenzene	92	92	(32-160)	0	20%
m,p-Xylene	91	91	(35-145)	0	20%
o-Xylene	98	107	(35-145)	7	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovery	(70-130)	
16322-6480	93	
	MR	(RE)
	10/8/97	10/6/97

S1: *Flourobenzene*

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 3-Oct-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Units of Measure
Average Amount of All Analytes In Blank	<LOQ	ppb

Calibration Check

Parameter	Units of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	60.0	62.2	4	15%
Toluene	ppb	60.0	67.4	12	15%
Ethylbenzene	ppb	60.0	64.6	7	15%
m,p-Xylene	ppb	120.0	126.4	5	15%
o-Xylene	ppb	60.0	63.5	6	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Benzene	103	101	(39-150)	2	20%
Toluene	82	83	(46-148)	1	20%
Ethylbenzene	83	84	(32-160)	1	20%
m,p-Xylene	86	86	(35-145)	1	20%
o-Xylene	102	101	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovery	(70-130)	
16321-6480	93	
	10/8/97	10/6/97

S1: Flourobenzene

ON SITE TECHNOLOGIES, LTD.

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

CHAIN OF CUSTODY RECORD

6480

Date: 1-1-97

Page 1 of 1

Purchase Order No.:	Job No. 4-1-71
SEND INVOICE TO — Name: Larry Trujillo	
Company: Conoco	Dept.
Address:	
City, State, Zip:	

REPORT RESULTS TO — Name: Larry Trujillo	Title
Company: Conoco	
Mailing Address:	
City, State, Zip:	
Telephone No.	Telefax No.

Sampling Location: FATIN R-Com-1E

Sampler:

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	TPH 8015	BTEX 8020								LAB ID
~~4-1-71 - EXC-1-1~~	[illegible]	[illegible]	Soil		1	✓	✓			do not run				Sat	10-2-1-97
4-1-71 - EXC-1-2	"	[illegible]	Soil		1	✓	✓								
4-1-74 - EXC-1-2	"	[illegible]	Soil		1	✓	✓								

Relinquished by: [signature]	Date/Time 10-3/1997	Received by: [signature]	Date/Time [illegible]
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | Special Instructions:

Authorized by: ____________ Date ______
(Client Signature Must Accompany Request)

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

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	7-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16400*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-2-1***				
Sampled by:	LT	Date:	25-Sep-97	Time:	9:43
Analyzed by:	DC/HR	GRO Date:	1-Oct-97		
Sample Matrix:	*Soil*	DRO Date:	2-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	ND	mg/kg	0.5	mg/kg
Diesel Range Organics (C10 - C28)	27	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,934	7.1	15%
Diesel Range (C10 - C28)	ND	ppm	200	188	6.4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	95	(80-120)	1	20%
Diesel Range (C10-C28)	91	89	(75-125)	2	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by: DaG

Date: 10/7/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	7-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16401*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-2-2***				
Sampled by:	LT	Date:	25-Sep-97	Time:	11:58
Analyzed by:	DC/HR	GRO Date:	1-Oct-97		
Sample Matrix:	*Soil*	DRO Date:	2-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	522	mg/kg	25	mg/kg
Diesel Range Organics (C10 - C28)	979	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,934	7.1	15%
Diesel Range (C10 - C28)	ND	ppm	200	188	6.4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	95	(80-120)	1	20%
Diesel Range (C10-C28)	91	89	(75-125)	2	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by: DC

Date: 10/7/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16401*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374; EXC-2-2***				
Sampled by:	LT	Date:	25-Sep-97	Time:	11:58
Analyzed by:	DC	Date:	2-Oct-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	500	ug/kg
Toluene	ND	ug/kg	500	ug/kg
Ethylbenzene	4961	ug/kg	500	ug/kg
m,p-Xylene	52203	ug/kg	500	ug/kg
o-Xylene	18841	ug/kg	500	ug/kg
TOTAL	76004	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	7-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16402*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-2-3***				
Sampled by:	LT	Date:	25-Sep-97	Time:	13:10
Analyzed by:	DC/HR	GRO Date:	1-Oct-97		
Sample Matrix:	*Soil*	DRO Date:	3-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	1.4	mg/kg	0.5	mg/kg
Diesel Range Organics (C10 - C28)	91	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,934	7.1	15%
Diesel Range (C10 - C28)	ND	ppm	200	212	6.0	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	95	(80-120)	1	20%
Diesel Range (C10-C28)	85	99	(75-125)	14	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by:

Date: 10/7/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	7-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16403*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-2-4***				
Sampled by:	LT	Date:	25-Sep-97	Time:	13:36
Analyzed by:	DC/HR	GRO Date:	1-Oct-97		
Sample Matrix:	*Soil*	DRO Date:	3-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	420	mg/kg	50	mg/kg
Diesel Range Organics (C10 - C28)	1002	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,934	7.1	15%
Diesel Range (C10 - C28)	ND	ppm	200	212	6.0	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	95	(80-120)	1	20%
Diesel Range (C10-C28)	85	99	(75-125)	14	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by: DaC

Date: 10/7/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16403*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374; EXC-2-4***				
Sampled by:	LT	Date:	25-Sep-97	Time:	13:36
Analyzed by:	DC	Date:	2-Oct-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	200	ug/kg
Toluene	236	ug/kg	200	ug/kg
Ethylbenzene	4362	ug/kg	200	ug/kg
m,p-Xylene	40995	ug/kg	200	ug/kg
o-Xylene	10503	ug/kg	200	ug/kg
TOTAL	56096	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by: JaC
Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	7-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16404*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374-EXC-2-5***				
Sampled by:	LT	Date:	25-Sep-97	Time:	13:37
Analyzed by:	DC/HR	GRO Date:	1-Oct-97		
Sample Matrix:	*Soil*	DRO Date:	3-Oct-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	438	mg/kg	100	mg/kg
Diesel Range Organics (C10 - C28)	1054	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,934	7.1	15%
Diesel Range (C10 - C28)	ND	ppm	200	212	6.0	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	95	(80-120)	1	20%
Diesel Range (C10-C28)	85	99	(75-125)	14	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by:

Date: 10/7/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Larry Trujillo*	Date:	6-Oct-97
Company:	*On Site Technologies, Ltd. c/o Conoco, Inc.*	COC No.:	*6502*
Address:	*612 E. Murray Drive*	Sample No.:	*16404*
City, State:	*Farmington, NM 87401*	Job No.:	*4-1374*

Project Name:	***Conoco, Inc. - Farmington B-Com-1E***				
Project Location:	***4-1374; EXC-2-5***				
Sampled by:	LT	Date:	25-Sep-97	Time:	13:37
Analyzed by:	DC	Date:	2-Oct-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	250	ug/kg
Toluene	686	ug/kg	250	ug/kg
Ethylbenzene	3543	ug/kg	250	ug/kg
m,p-Xylene	38776	ug/kg	250	ug/kg
o-Xylene	11440	ug/kg	250	ug/kg
TOTAL	54445	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 10/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 2-Oct-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	*Result*	*Units of Measure*
Average Amount of All Analytes In Blank	<LOQ	ppb

Calibration Check

Parameter	*Units of Measure*	*True Value*	*Analyzed Value*	*RPD*	*Limit*
Benzene	ppb	60.0	62.4	4	15%
Toluene	ppb	60.0	67.1	11	15%
Ethylbenzene	ppb	60.0	64.5	7	15%
m,p-Xylene	ppb	120.0	126.9	6	15%
o-Xylene	ppb	60.0	63.2	5	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*RPD Limit*
Benzene	92	87	(39-150)	5	20%
Toluene	102	97	(46-148)	4	20%
Ethylbenzene	92	92	(32-160)	0	20%
m,p-Xylene	91	91	(35-145)	0	20%
o-Xylene	98	107	(35-145)	7	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovery	(70-130)	
16401-6502	92	
16403-6502	89	
16404-6502	91	
	10/8/97	10/6/97

S1: *Flourobenzene*

CHAIN OF CUSTODY RECORD

6502

ON SITE TECHNOLOGIES, LTD.

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

Date: 9-25-97

Page 1 of 1

Purchase Order No.:		Job No. 4-1371	
SEND INVOICE TO	Name Larry Trujillo		
	Company Comco	Dept.	
	Address		
	City, State, Zip		
REPORT RESULTS TO	Name Larry Trujillo	Title	
	Company Comco		
	Mailing Address		
	City, State, Zip		
	Telephone No.	Telefax No.	

Sampling Location: FARM R-COM-1-E

Sampler: Larry Trujillo

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	TPH 418.1	BTEX 8020								LAB ID
4-1371 EAC-2-1	9-25-97	0943	Soil		1	✓	✓	1							16402-1502
4-1371 EAC-2-2	"	1153	Soil		1	✓	✓								16401-
4-1371 EAC-2-3	"	1311	Soil		1	✓									16402-
4-1371 EAC-2-4	"	1400	Soil		1	✓	✓								16403-
4-1371 EAC-2-5	"	1527	Soil		1	✓	✓								16404-

Relinquished by: Larry Trujillo	Date/Time 9-25-97/1627	Received by:	Date/Time	
Relinquished by:	Date/Time	Received by:	Date/Time	
Relinquished by:	Date/Time	Received by:	Date/Time	

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

CHAIN OF CUSTODY RECORD

6502

ON SITE TECHNOLOGIES, LTD.

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

Date: 9-25-97

Page 1 of 1

Purchase Order No.:		Job No. 4-1374	
SEND INVOICE TO	Name Larry Trujillo		
	Company Conoco	Dept.	
	Address		
	City, State, Zip		

REPORT RESULTS TO	Name Larry Trujillo	Title	
	Company Conoco		
	Mailing Address		
	City, State, Zip		
	Telephone No.	Telefax No.	

Sampling Location: FMTN B-COM -1E

Sampler: Larry Trujillo

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	TPH 8015 M	BTEX 8020							LAB ID
						ANALYSIS REQUESTED								
4-1374 EXC-2-1	9-25-97	0943	Soil		1	✓	✓	8021						16400-6502
4-1374 EXC-2-2	"	1158	Soil		1	✓	✓							16401-
4-1374 EXC-2-3	"	1310	Soil		1	✓								16402-
4-1374 EXC-2-4	"	1336	Soil		1	✓	✓							16403-
4-1374 EXC-2-5	"	1337	Soil		1	✓	✓							16404-

Relinquished by: Larry Trujillo	Date/Time 9-25-97/1627	Received by:	Date/Time 9/25/97 1627
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

5056321865 YOUNGENVIRONMENTAL 630 P06 OCT 09 '97 12:36

ENVIROTECH INC.

Bill of Lading

97070

10832

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 - 3014 • FARMINGTON, NEW MEXICO 87401

MONTH OF September 25, 1997

MANIFEST		COMPLETE DESCRIPTION OF SHIPMENT					TRANSPORTING COMPANY			
DATE	No.	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	COMPANY	TRK #	DRIVER SIGNATURE	
9-25	1	Conoco Farmington B Com #1E	Landfarm #2 Works	Superdav Pit (cont soil)	BB13	15	Consolidated Constructors	C-101	[signature]	
9/25/97	2	"	"	"	BB13	18	Herrera Trucking	49	[signature]	
9/25/97	3	"	"	"	BB13	15	Consolidated	C-101	[signature]	
9/25/97	4	"	"	"	BB13	18	Consolidated	24	[signature]	
9/25/97	5	"	"	"	BB13	15	Consolidated	C101	[signature]	1210
9/25/97	6	"	"	"	BB13	18	Herrera	49		1212
9/25/97	7	"	"	"	BB13	18	Consolidated	24		1217
9/25/97	8	"	"	"	BB13	15	Consolidated	C101	[signature]	141
9/25/97	9	"	"	"	BB13	18	Herrera	49	[signature]	141
9/25/97	10	"	"	"	BB13	15	Consolidated	24	[signature]	151
9/25	11	"	"	"	BB14	15	Consolidated	C101	[signature]	251
9/25	12	"	"	"	BB14	18	Herrera	49	[signature]	[illegible]
9/25	13	"	"	"	BB14	15	Consolidated	24	[signature]	3[illegible]
9/25	14	"	"	"	BB14	15	Consolidated	C101	[signature]	428
9/25	15	"	"	"	BB14	15	Consolidated	24	[signature]	453
9/25	16	"	"	"	BB14	18	Herrera	49	[signature]	457

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added."

261

NAME ______ COMPANY ______ SIGNATURE ______

DATE ______

ENVIROTECH INC.

97070

Bill of Lading

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 - 3014 • FARMINGTON, NEW MEXICO 87401

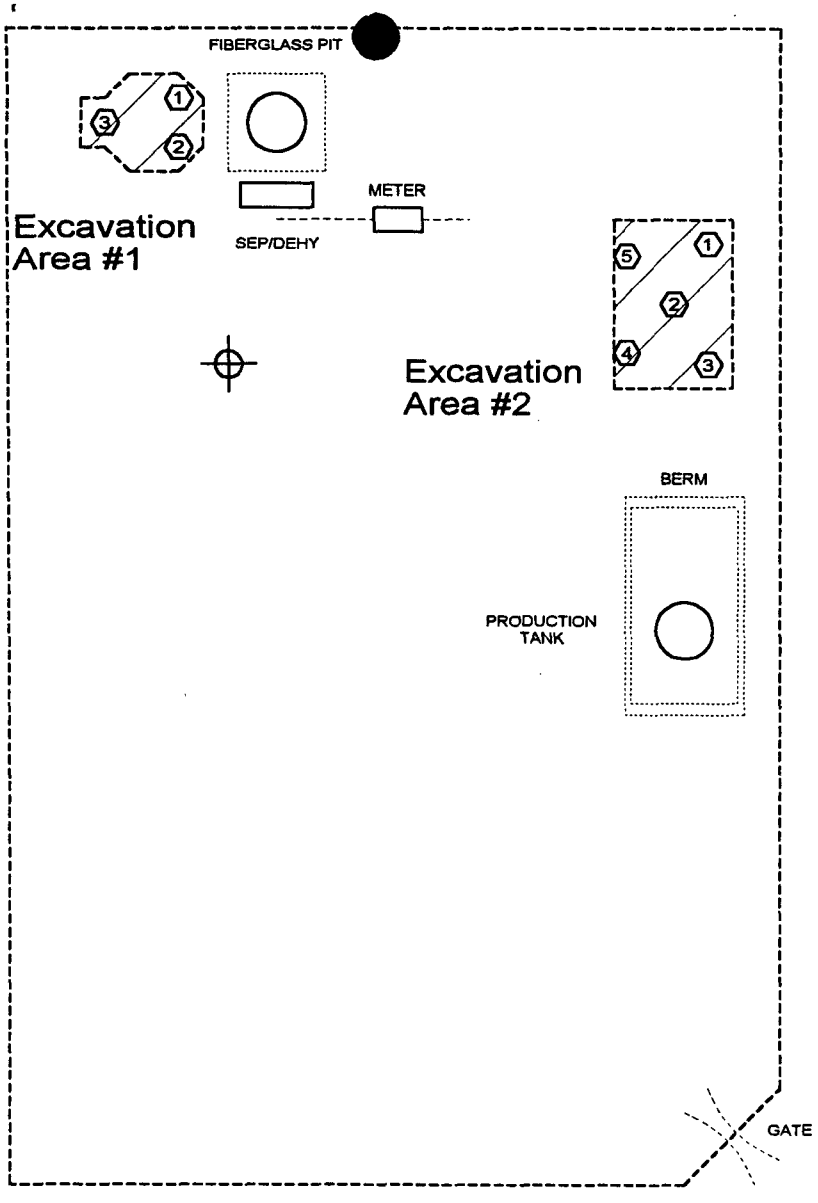
MONTH OF 9/26/97

MANIFEST		COMPLETE DESCRIPTION OF SHIPMENT				TRANSPORTING COMPANY			
DATE	No.	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	COMPANY	TRK #	DRIVER SIGNATURE
9/26/97	1	Conoco Farmington B Com #1	Landfarm 2 Unit 5	Separator Pit Sec. 1	BB14	20	Consolidated	24	
9/26/97	2	Conoco Farmington B Com #1	Landfarm 2 Unit 5	Separator Pit Sec. 1	BB14	20	Herrera	49	
9/26/97	3	Farmington B Com #1	Landfarm 2 Unit 5	Separator Pit Sec. 1	BB14	17	Consolidated	101	
9/26/97	4	Farmington B Com #1	5	"	BB14	10	Consolidated	101	
9/26/97	5								
9/26/97	6								
9/26/97	7								
9/26/97	8								
9/26/97	9								
				67 yd³ total					

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added."

NAME _____ COMPANY _____ SIGNATURE _____

DATE _____



N

Scale: 1" = 40'

LEGEND

Approximate extent of excavation

(#) Approximate location of soil samples taken Sept. 1997.

FARMINGTON "B" COM #1E Unit "O", S15, T29W, R13W SAN JUAN BASIN, NM		SITE SKETCH
		DRWN: 11-03-97
PROJECT NO: 4-1374		DRWN BY: MKL
FIGURE: A-1	FILE: 41374A1.CAD	PROJECT: SITE RECLAMATION

ON SITE TECHNOLOGIES, LTD.
P.O. BOX 2606, FARMINGTON, NM 87499
(505) 325-5667

On Site Technologies Safety Meeting Form

Job Site Safety Meeting Form

It is the express policy of ***On Site Technologies*** to conduct a safety meeting with all involved ***On Site Technologies*** employees and subcontracted employees prior to beginning work on any job site. Where applicable the ***On Site Technologies*** supervisor will conduct the meeting and prepare the following form. All safety meetings and topics will comply with State and Federal Regulations and any safety procedures issued by the client. *No work shall commence prior to the safety meeting.*

Location: FMTN B-Com-1E Client: Conoco

Date: 9-25-97 Time: 0800

On Site Technologies job number: 4-1374

Type of work to be performed: Excavation of former Pit

On Site Technologies Supervisor:

Larry Trujillo (Please Print) Larry Trujillo (Signature)

Other Personnel:

Your signature below indicates that you attended the above described safety meeting, fully understand the topic(s), and agree to perform your job duties in full compliance with all safety rules in effect.

Name *(Please Print)*	Company	Signature
Ken Cook		
Anthony Valencia		Anthony Valencia
Richard Hulbert	Consolidated Co.	Richard Hulbert

(Attach additional page(s) if needed)

Safety Meeting Topic / Discussion *(Briefly describe or outline all safety issues addressed in the meeting)*

hard hat / Safety Glasses w/Side Shields. Boots
underground utilities
Vehicle in Movement (dump truck, loader / track hoe
Slip-trip-Fall
No Smoking in the Site

(Attach additional page(s) as necessary)

On Site Technologies Safety Meeting Form

Job Site Safety Meeting Form

It is the express policy of ***On Site Technologies*** to conduct a safety meeting with all involved ***On Site Technologies*** employees and subcontracted employees prior to beginning work on any job site. Where applicable the ***On Site Technologies*** supervisor will conduct the meeting and prepare the following form. All safety meetings and topics will comply with State and Federal Regulations and any safety procedures issued by the client. *No work shall commence prior to the safety meeting.*

Location: Farm B-Com-1E Client: Conoco

Date: 9-24-97 Time: 0824

On Site Technologies job number: _____

Type of work to be performed: Excavation at Former Pit site

On Site Technologies Supervisor:

Larry Trujillo
(Please Print)

(Signature)

Other Personnel:

Your signature below indicates that you attended the above described safety meeting, fully understand the topic(s), and agree to perform your job duties in full compliance with all safety rules in effect.

Name *(Please Print)*	Company	Signature
Ken Cave		
Richard Ambrosio	Consolidated Coal	Richard Ambrosio

(Attach additional page(s) if needed)

Safety Meeting Topic / Discussion *(Briefly describe or outline all safety issues addressed in the meeting)*

hard hats
Boots / steel toe
Safety Glasses w/ side Shield
underground / over head wire
underground gas lines
Slip / Trip / Fall

(Attach additional page(s) as necessary)

PRE-JOB HAZARD EVALUATION MEETING.

COMPANY: onsite DATE: 9-25-97

LOCATION: Conoco Fearnley B-Com 1E

WORK BEING PERFORMED: EXCAVating of Contaminated Soils

HAZARDS IDENTIFIED: underground GAS & Power Line- over head Power liner, Cobbles strike personel from Screen Machine, Hand Arm hazard from Screening Machine Machine

ACTION TAKEN ON IDENTIFIED HAZARDS: Safety Mtg Disscusion., Site walk thrug.

WAS COMPANY EMPLOYEE ON LOCATION ? YES___ NO___
SHOULD A COMPANY EMPLOYEE BE ON LOCATION ? YES__ NO__
DO PJHEMs CONTRIBUTE TO A SAFER JOB ? YES__ NO__
IF YES WHY ?_____

HOW DO YOU THINK WE CAN IMPROVE PJHEMs ? _____