Final Report
Phase I RCRA Facility Investigation for Appendix I Sites
VOLUME III-D

SWMU-24/32, Industrial Wastewater Treatment Plant/ Sanitary Wastewater Treatment Plant

Department of the Air Force
Oklahoma City Air Logistics Center
Tinker Air Force Base, Oklahoma

September 1994

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFLC	Air Force Logistics Command
AFMC	Air Force Materiel Command
AFSC	Air Force Systems Command
AMC	Air Materiel Command
AOC	Area of concern
API	American Petroleum Institute
AQUIS	Air Quality Utility Information System
ASTM	American Society for Testing and Materials
AWAC	Airborne Warning and Control
BF	Bioconcentration factor
bgs	Below ground surface
BNA	Base/neutral/acid - extractable
BTEX	Benzene, toluene, ethylbenzene, xylenes
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfm	Cubic feet per minute
CFR	Code of Federal Regulations
cm/sec	Centimeters per second
CME	Central Mine Equipment Company
CMS	Corrective measures study
COD	Chemical oxygen demand
COE	US Army Corps of Engineers or USACE
CWA	Clean Water Act
DCA	Dichloroethane
DCE	Dichloroethene

DCQAP	Data Collection Quality Assurance Plan
DNPH	Dinitrophenylhydrazine
DOD	US Department of Defense
DQO	Data quality objective
EM	Environmental Management
EPA	Environmental Protection Agency
ES	Engineering-Science, Inc.
ESC	East Soldier Creek
FAA	Federal Aviation Administration
FID	Flame ionization detector
GC	Gas chromatograph
gpd	Gallons per day
gpm	Gallons per minute
H_2S	Hydrogen sulfide
ICP	Inductively coupled plasma atomic emission spectroscopy
ID	Identification
IRP	Installation Restoration Program
IRPIMS	Installation Restoration Program information management systems
IWTP	Industrial wastewater treatment plant
K_H	Henry's Law constant
K_{oc}	Organic carbon partition coefficient
L/min	Liters per minute
LDR	Land disposal restrictions
LEL	Lower explosive limit
m^3	Cubic meter
MDL	Method detection limit
MEK	2-Butanone (methyl ethyl ketone)
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
mgd	Million gallons per day
min	Minute
mL	Milliliter

mL/min	Milliliters per minute
mph	Miles per hour
MQA	Method quantitation limit
MS/MSD	Matrix spike/matrix spike duplicate
NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
ng/m^3	Nanograms per cubic meter
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OC-ALC	Oklahoma City Air Logistics Center
OCAMA	Oklahoma City Air Materiel Area
OSDH	Oklahoma State Department of Health
OSPC	Oklahoma State Planar Coordinates
OVA	Organic vapor analyzer
PAH	Polynuclear aromatic hydrocarbons
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PID	Photoionization detector
POTW	Publicly owned treatment works
ppb	Parts per billion
ppm	Parts per million
ppmv	Parts per million, volume per volume
PQL	Practical quantitation limit
PSI	Professional Service Industries, Inc.
PUF	Polyurethane foam filter
PVC	Polyvinyl chloride
QA	Quality assurance
QA/QC	Quality assurance/quality control
RAS	Return activated sludge
RCP	Recirculation pit
RCRA	Resource Conservation and Recovery Act

RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial investigation
RI/FS	Remedial investigation/feasibility study
SCC	Solids contact clarifier
SCFH	Standard cubic feet per hour
SGB	Bioenvironmental Engineering Office
SVOC	Semivolatile organic compound
SWD	Sidewall depth
SWMU	Solid waste management unit
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SWMU 32.4	Trickling Filters
SWMU 32.5	Final Clarifiers
SWMU 32.6	Former Chlorine Contact Chamber
SWMU 32.8	Drying Beds
SWTP	Sanitary wastewater treatment plant
TAC	Tactical Air Command

TCA	Trichloroethane
TCE	Trichloroethene
TCLP	Toxicity characterization leaching procedure
TPH	Total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
TSP	Total suspended particles
USAF	United States Air Force
USGS	United States Geological Survey
VLF	Very low frequency
VOA	Volatile organic analysis
VOC	Volatile organic compound
WWTF	Wastewater treatment facility
μg/kg	Micrograms per kilogram
μg/L	Micrograms per liter
°C	Degrees Celsius
°F	Degrees Fahrenheit
(')	Feet below ground surface

Appendix K

Soil, Sediment, and Wastewater Laboratory Data Sheets

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS
Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8503062750

SAMPLER(S): M. HARDER / R. NELSON
(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (8240)	SemiVOA (8270)	Metals (6010)	CN (9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/5/93	-	FIELDQC		TB1	WQ	NA	0	0	2	X				0	1	2	A	
	1630	FIELDQC		EB1	WQ	NA	0	0	6	X	X	X	X	0	1	2	A	
	1055	S32.3SB1		N1	SO	SS	4	6	3	X	X	X	X	0	1	2	A	
	↓	↓		FR1	SO	SS	4	6	3	X	X	X	X	0	1	2	A	
	1330			N1	SO	SS	9.5	10	3	X	X	X	X	0	1	2	A	
	1600	S32.4SB6		N1	SO	SS	4	5.5	3	X	X	X	X	0	1	2	A	
	1640			N1	SO	SS	8	8.5	3	X	X	X	X	0	1	2	A	

Relinquished by: (Signature)	Date	Time
	11/5/93	1815

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Relinquished by: (Signature)	Date	Time

Received by: (Signature)	Date	Time
Hollis	11/6/93	0830

White : laboratory returns with data; yellow : laboratory copy; pink : sampler copy.

chaino.dwg

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8503062750

SAMPLER(S): M. HARDER, R. NELSON
(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA(8240)	SemiVOA(8270)	Metals(6010)	CN(9010)	PRESERVATIVE	ANALYSIS REQUIRED	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/5/93	–	FIELDQC		TB2	WQ	NA	0	0	2	X						0	1	2	B	
	0850	S32.8SB6		N1	SO	H	11.5	13	3	X	X	X	X			0	1	2	B	
	0923	↓		N1	SO	H	17	18	3	X	X	X	X			0	1	2	B	
	1140	D24.2SB4		N1	SO	H	8.5	9.5	3	X	X	X	X			0	1	2	B	
	1420	S32.8SB16		N1	SO	H	4.5	6.5	3	X	X	X	X			0	1	2	B	
	↓	↓		FR1	SO	H	4.5	6.5	3	X	X	X	X			0	1	2	B	
	1530	S32.8SB16		N1	SO	H	12.5	14.5	3	X	X	X	X			0	1	2	B	
	↓	↓		MS1	SO	H	12.5	14.5	3	X	X	X	X			0	1	2	B	
				SD1	SO	H	12.5	14.5	3	X	X	X	X			0	1	2	B	
	1610	S32.8SB16		N1	SO	H	15.5	17	3	X	X	X	X			0	1	2	B	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time
	11/5/93	1815						

Received by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
							11/6/93	0830

White : laboratory returns with data; yellow : laboratory copy; pink : sampler copy.

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #

SAMPLER(S): M. HARDER, R NELSON
(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (8240)	SEMI VOA (8270)	METALS (6010)	CN (9010)									Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/6/93	–	FIELDQC		TB1	WQ	NA	0	0	2	X												0	0	1	A	
	0900	I24.19SB3		N1	SO	H	5.5	6.5	3	X	X	X	X									0	0	1	A	
	0945	↓		N1	SO	H	17.5	18	3	X	X	X	X									0	0	1	A	
	1140	I24.19SB4		N1	SO	H	8.5	9	3	X	X	X	X									0	0	1	A	
	1205	↓		N1	SO	H	16	17	3	X	X	X	X									0	0	1	A	
	1445	I24.19SB6		N1	SO	H	6.5	7.0	3	X	X	X	X									0	0	1	A	
	1515	↓		N1	SO	H	15.5	16.0	3	X	X	X	X									0	0	1	A	
	0907	S32.8SB7		N1	SO	H	8	9	3	X	X	X	X									0	0	1	A	
	1003	↓		N1	SO	H	13	14	3	X	X	X	X									0	0	1	A	
	↓	↓		FR1	SO	H	13	14	3	X	X	X	X									0	0	1	A	
	1121	S32.8SB8		N1	SO	H	2.5	3.5	3	X	X	X	X									0	0	1	A	
	1205	↓		N1	SO	H	14	15	3	X	X	X	X									0	0	1	A	

PRESERVATIVE

ANALYSIS REQUIRED

FIELD LOT CONTROL NUMBER

Relinquished by (Signature)	Date	Time	Relinquished by (Signature)	Date	Time	Relinquished by (Signature)	Date	Time
	11/8/93	1750						
Received by (Signature)	**Date**	**Time**	**Received by (Signature)**	**Date**	**Time**	**Received by (Signature)**	**Date**	**Time**
							11/9/93	0830

White : laboratory returns with data; yellow : laboratory copy; pink : sampler copy.

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40

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.01

DATE: 12/09/93

SWLO #: 16252.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB6
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.01

DATE: 12/09/93

SWLO #: 16252.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB6
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	54%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	54%	2,4,6-TRIBROMOPHENOL	(19-122)	161% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.01

DATE: 12/09/93

SWLO #: 16252.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.577	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

*RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.01

DATE: 12/09/93

SWLO #: 16252.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	6.11		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	66.3		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.346	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	9.46		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	6.69		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.115	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	4.04		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.692		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.115	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	6.23		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16252.16

DATE: 12/09/93

SWLO #: 16252.16 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	2.9	J
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	108%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	109%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.01

DATE: 12/09/93

SWLO #: 16279.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	59%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.17

DATE: 12/09/93

SWLO #: 16252.17 TB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114)	108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16279.01

DATE: 12/09/93

SWLO #: 16279.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	6		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	160		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
1,2-DICHLOROETHENE(TOTAL)	19		2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
2-BUTANONE	21		TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.3	J
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	95%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16279.01

DATE: 12/09/93

SWLO #: 16279.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	180	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.15

DATE: 12/09/93

SWLO #: 16252.15 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	10	U	ug/l	/ /	11/10/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.15

DATE: 12/09/93

SWLO #: 16252.15 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/09/93	11/10/93	SW846-6010
BARIUM	5	U	ug/l	11/09/93	11/11/93	SW846-6010
CADMIUM	3	U	ug/l	11/09/93	11/11/93	SW846-6010
CHROMIUM	5	U	ug/l	11/09/93	11/11/93	SW846-6010
LEAD	3	U	ug/l	11/09/93	11/10/93	SW846-6010
MERCURY	0.2	U	ug/l	11/10/93	11/10/93	SW846-7470
NICKEL	10	U	ug/l	11/09/93	11/11/93	SW846-6010
SELENIUM	5	U	ug/l	11/09/93	11/10/93	SW846-6010
SILVER	1	U	ug/l	11/09/93	11/27/93	SW846-7761
ZINC	17.8		ug/l	11/09/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.15

DATE: 12/09/93

SWLO #: 16252.15 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	43%	2-FLUOROBIPHENYL	(43-116)	34% *
TERPHENYL-D14	(33-141)	103%	PHENOL-D5	(10- 94)	38%
2-FLUOROPHENOL	(21-100)	35%	2,4,6-TRIBROMOPHENOL	(10-123)	30%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.15

DATE: 12/09/93

SWLO #: 16252.15 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
.,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.15

DATE: 12/09/93

SWLO #: 16252.15 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	48		BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	23		4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	3	J
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	88%	BROMOFLUOROBENZENE	(86-115)	89%
1,2-DICHLOROETHANE-D4	(76-114)	86%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.14

DATE: 12/09/93

SWLO #: 16252.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.555	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.14

DATE: 12/09/93

SWLO #: 16252.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.22		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	313		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.333	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	25.6		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	11.8		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.111	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	15.4		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.555	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.111	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	22.3		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.14

DATE: 12/09/93

SWLO #: 16252.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	31%	2-FLUOROBIPHENYL	(30-115)	39%
TERPHENYL-D14	(18-137)	41%	PHENOL-D5	(24-113)	36%
2-FLUOROPHENOL	(25-121)	26%	2,4,6-TRIBROMOPHENOL	(19-122)	38%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/09/93

SWLO #: 16252.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	79	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.14

DATE: 12/09/93

SWLO #: 16252.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	7.2		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	110		BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
1,2-DICHLOROETHENE(TOTAL)	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.13

DATE: 12/09/93

SWLO #: 16252.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 5.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.571	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.13

DATE: 12/09/93

SWLO #: 16252.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 5.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.74		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	236		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.342	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	18.6		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	3.77		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	10.3		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.571	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.114	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	13.9		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.13

DATE: 12/09/93

SWLO #: 16252.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 5.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	33%	2-FLUOROBIPHENYL	(30-115)	40%
TERPHENYL-D14	(18-137)	41%	PHENOL-D5	(24-113)	37%
2-FLUOROPHENOL	(25-121)	28%	2,4,6-TRIBROMOPHENOL	(19-122)	37%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.13

DATE: 12/09/93

SWLO #: 16252.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 5.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.13

DATE: 12/09/93

SWLO #: 16252.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB6
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 5.50
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.7	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.7	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.7	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
METHYLENE CHLORIDE	6		1,1,2-TRICHLOROETHANE	5.7	U
ACETONE	55		BENZENE	5.7	U
CARBON DISULFIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.7	U	BROMOFORM	5.7	U
1,2-DICHLOROETHENE(TOTAL)	5.7	U	2-HEXANONE	11	U
CHLOROFORM	5.7	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.7	U	TETRACHLOROETHENE	5.7	U
2-BUTANONE	11	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.12

DATE: 12/09/93

SWLO #: 16252.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 10.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.552	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16252.12

DATE: 12/09/93

SWLO #: 16252.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 10.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.98		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	87.2		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.331	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	29.9		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	6.96		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.11	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	17.8		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.552	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.11	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	24		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.12

DATE: 12/09/93

SWLO #: 16252.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 10.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	84%
2-FLUOROPHENOL	(25-121)	76%	2,4,6-TRIBROMOPHENOL	(19-122)	102%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.12

DATE: 12/09/93

SWLO #: 16252.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 10.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	46	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.12

DATE: 12/09/93

SWLO #: 16252.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 10.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.5	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.5	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.5	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
METHYLENE CHLORIDE	6.5		1,1,2-TRICHLOROETHANE	5.5	U
ACETONE	68		BENZENE	5.5	U
CARBON DISULFIDE	5.5	U	CIS-1,3-DICHLOROPROPENE	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.5	U	BROMOFORM	5.5	U
1,2-DICHLOROETHENE(TOTAL)	5.5	U	2-HEXANONE	11	U
CHLOROFORM	5.5	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.5	U	TETRACHLOROETHENE	5.5	U
2-BUTANONE	11	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.11

DATE: 12/09/93

SWLO #: 16252.11 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.558	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.11

DATE: 12/09/93

SWLO #: 16252.11 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	5.92		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	58.6		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.335	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	24.9		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	9.49		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	26.2		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.781		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.112	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	32.2		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.11

DATE: 12/09/93

SWLO #: 16252.11 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	69%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.11

DATE: 12/09/93

SWLO #: 16252.11 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.11

DATE: 12/09/93

SWLO #: 16252.11 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	4 .	J	1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	68		BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
1,2-DICHLOROETHENE(TOTAL)	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	102%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.10

DATE: 12/09/93

SWLO #: 16252.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.556	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.10

DATE: 12/09/93

SWLO #: 16252.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10.6		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	95.3		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.334	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	41.5		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	11.9		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.111	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	32.6		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.889		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.111	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	48.6		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.10

DATE: 12/09/93

SWLO #: 16252.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	96%	PHENOL-D5	(24-113)	83%
2-FLUOROPHENOL	(25-121)	80%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.10

DATE: 12/09/93

SWLO #: 16252.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	59	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.10

DATE: 12/09/93

SWLO #: 16252.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB1
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	13		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	35	B	BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
1,2-DICHLOROETHENE(TOTAL)	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
2-BUTANONE	11	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121)	106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.09

DATE: 12/09/93

SWLO #: 16252.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.577	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.09

DATE: 12/09/93

SWLO #: 16252.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.34		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	59.2		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.346	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	6.57		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	3.69		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.115	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	4.5		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.577		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.115	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	4.27		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16252.09

DATE: 12/09/93

SWLO #: 16252.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	94%	PHENOL-D5	(24-113)	77%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16252.09

DATE: 12/09/93

SWLO #: 16252.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	50	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.09

DATE: 12/09/93

SWLO #: 16252.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	13		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	34	B	BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
1,2-DICHLOROETHENE(TOTAL)	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
2-BUTANONE	12	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.08

DATE: 12/10/93

SWLO #: 16252.08 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.16	mg/kg	11/11/93	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16252.01

DATE: 12/09/93

SWLO #: 16252.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB6
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	15		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	33	B	BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
1,2-DICHLOROETHENE(TOTAL)	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
2-BUTANONE	12	U	TOLUENE	1.4	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.08

DATE: 12/09/93

SWLO #: 16252.08 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	216	mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	262	mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	5.4	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	35	mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	53.9	mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.528	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	63	mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	216	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	5.28	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	57.8	mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.08

DATE: 12/09/93

SWLO #: 16252.08 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	80%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.08

DATE: 12/09/93

SWLO #: 16252.08 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4400		ACENAPHTHENE	3500	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5300		4-NITROPHENOL	4200	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2600		2,4-DINITROTOLUENE	2600	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
.,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3700		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	5500	
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	3100		PYRENE	3800	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	5500		BIS(2-ETHYLHEXYL)PHTHALATE	110	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	38	J
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.08

DATE: 12/09/93

SWLO #: 16252.08 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	56	
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	14		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	30	B	BENZENE	59	
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	56		2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
1,2-DICHLOROETHENE(TOTAL)	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
2-BUTANONE	11	U	TOLUENE	60	
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	58	
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	105%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.07

DATE: 12/10/93

SWLO #: 16252.07 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.27	mg/kg	11/11/93	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.07

DATE: 12/09/93

SWLO #: 16252.07 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	219	mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	263	mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	5.4	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	32.7	mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	53.5	mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.54	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	62.4	mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	216	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	5.28	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	58	mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.07

DATE: 12/09/93

SWLO #: 16252.07 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	100%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	78%	2,4,6-TRIBROMOPHENOL	(19-122)	107%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	3700		ACENAPHTHENE	3000	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	4800		4-NITROPHENOL	5800	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2600		2,4-DINITROTOLUENE	2800	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3400		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	5800	
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	3300		PYRENE	3400	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4900		BIS(2-ETHYLHEXYL)PHTHALATE	39	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.07

DATE: 12/09/93

SWLO #: 16252.07 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	54	
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	14		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	27	B	BENZENE	58	
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	56		2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
1,2-DICHLOROETHENE(TOTAL)	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
2-BUTANONE	11	U	TOLUENE	59	
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	57	
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121)	108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.06

DATE: 12/10/93

SWLO #: 16252.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.562	U	mg/kg	11/11/93	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16252.06

DATE: 12/09/93

SWLO #: 16252.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	5.62		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	60.8		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.337	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	24.6		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	4.95		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	12.9		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.562	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.112	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	10.9		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.06

DATE: 12/09/93

SWLO #: 16252.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	100%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	175% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16252.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.06

DATE: 12/09/93

SWLO #: 16252.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	14		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	26	B	BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
1,2-DICHLOROETHENE(TOTAL)	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.05

DATE: 12/09/93

SWLO #: 16252.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.538 - U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.05

DATE: 12/09/93

SWLO #: 16252.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.3		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	152		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.322	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	19		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	5.91		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	13.6		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.538	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.108	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	18.3		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.05

DATE: 12/09/93

SWLO #: 16252.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	56%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	91%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	56%	2,4,6-TRIBROMOPHENOL	(19-122)	135% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.05

DATE: 12/09/93

SWLO #: 16252.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.05

DATE: 12/09/93

SWLO #: 16252.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	12		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	12	B	BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
1,2-DICHLOROETHENE(TOTAL)	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121)	104%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.04

DATE: 12/09/93

SWLO #: 16252.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.542	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.04

DATE: 12/09/93

SWLO #: 16252.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.01		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	267		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.325	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	18		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	5.32		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	11.3		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.542	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.108	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	14.9		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.04

DATE: 12/09/93

SWLO #: 16252.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	169% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.04

DATE: 12/09/93

SWLO #: 16252.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.04

DATE: 12/09/93

SWLO #: 16252.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB16
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	10		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	17	B	BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
1,2-DICHLOROETHENE(TOTAL)	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
2-BUTANONE	11	U	TOLUENE	1.1	J
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121) 103%
1,2-DICHLOROETHANE-D4	(70-121)	105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.03

DATE: 12/09/93

SWLO #: 16252.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB4
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.586	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252.03

DATE: 12/09/93

SWLO #: 16252.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB4
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.63		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	461		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.352	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	22.6		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	6.33		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.117	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	24.3		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.586		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.117		mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	23.3		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.03

DATE: 12/09/93

SWLO #: 16252.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB4
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	40	J
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	60%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	151% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16252.03

DATE: 12/09/93

SWLO #: 16252.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB4
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.50
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	39	J
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	100	J
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	69	J
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	52	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	40	J
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16252.03

DATE: 12/09/93

SWLO #: 16252.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB4
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.50
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.9	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.9	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.9	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
METHYLENE CHLORIDE	15		1,1,2-TRICHLOROETHANE	5.9	U
ACETONE	38	B	BENZENE	5.9	U
CARBON DISULFIDE	5.9	U	CIS-1,3-DICHLOROPROPENE	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.9	U	BROMOFORM	5.9	U
1,2-DICHLOROETHENE(TOTAL)	5.9	U	2-HEXANONE	12	U
CHLOROFORM	5.9	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.9	U	TETRACHLOROETHENE	2.7	J
2-BUTANONE	12	U	TOLUENE	1.4	J
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16252.02

DATE: 12/09/93

SWLO #: 16252.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB6
LOCATION:

DATE SAMPLED: 11/05/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.643	U	mg/kg	/ /	11/10/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.03

DATE: 12/09/93

SWLO #: 16279.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.29		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	365		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.344	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	12		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	6.99		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	10.1		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.573	U	mg/kg	11/10/93	11/10/93	SW846-6010
'ILVER	0.114	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	21.4		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.03

DATE: 12/09/93

SWLO #: 16279.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.573	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.04

DATE: 12/09/93

SWLO #: 16279.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00
DATE PREPARED : / /
DILUTION FACTOR: 5.94

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	59	U	1,2-DICHLOROPROPANE	30	U
BROMOMETHANE	59	U	TRANS-1,3-DICHLOROPROPENE	30	U
VINYL CHLORIDE	59	U	TRICHLOROETHENE	30	U
CHLOROETHANE	59	U	DIBROMOCHLOROMETHANE	30	U
METHYLENE CHLORIDE	30	U	1,1,2-TRICHLOROETHANE	30	U
ACETONE	540		BENZENE	30	U
CARBON DISULFIDE	30	U	CIS-1,3-DICHLOROPROPENE	30	U
1,1-DICHLOROETHENE	30	U	2-CHLOROETHYL VINYL ETHER	59	U
1,1-DICHLOROETHANE	30	U	BROMOFORM	30	U
1,2-DICHLOROETHENE(TOTAL)	30	U	2-HEXANONE	59	U
CHLOROFORM	30	U	4-METHYL-2-PENTANONE	59	U
1,2-DICHLOROETHANE	30	U	TETRACHLOROETHENE	30	U
2-BUTANONE	59	U	TOLUENE	30	U
1,1,1-TRICHLOROETHANE	30	U	CHLOROBENZENE	30	U
CARBON TETRACHLORIDE	30	U	ETHYLBENZENE	30	U
VINYL ACETATE	59	U	STYRENE	30	U
BROMODICHLOROMETHANE	30	U	XYLENE (TOTAL)	30	U
1,1,2,2-TETRACHLOROETHANE	30	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	112%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	81%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.04

DATE: 12/10/93

SWLO #: 16279.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	110	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.04

DATE: 12/10/93

SWLO #: 16279.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	89%	PHENOL-D5	(24-113)	68%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16279.04

DATE: 12/09/93

SWLO #: 16279.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.14		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	301		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.356	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	10.3		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	6.06		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.119	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	10.1		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.713		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.119	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	17.5		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.04

DATE: 12/09/93

SWLO #: 16279.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.594	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

*RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.05

DATE: 12/09/93

SWLO #: 16279.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.7	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.7	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.7	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
METHYLENE CHLORIDE	5.7	U	1,1,2-TRICHLOROETHANE	5.7	U
ACETONE	35		BENZENE	5.7	U
CARBON DISULFIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.7	U	BROMOFORM	5.7	U
1,2-DICHLOROETHENE(TOTAL)	5.7	U	2-HEXANONE	11	U
CHLOROFORM	5.7	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.7	U	TETRACHLOROETHENE	5.7	U
2-BUTANONE	11	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16279.05

DATE: 12/09/93

SWLO #: 16279.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	62	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.05

DATE: 12/09/93

SWLO #: 16279.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	100%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	78%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.05

DATE: 12/09/93

SWLO #: 16279.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.61		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	394		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.34	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	11.4		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	6.81		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	10.4		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.681		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.114	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	15.6		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.05

DATE: 12/09/93

SWLO #: 16279.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.568	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.06

DATE: 12/09/93

SWLO #: 16279.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	7.9		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	23		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
1,2-DICHLOROETHENE(TOTAL)	8.3		2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
2-BUTANONE	12	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	103%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.06

DATE: 12/09/93

SWLO #: 16279.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	110	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.06

DATE: 12/09/93

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	107%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	80%	2,4,6-TRIBROMOPHENOL	(19-122)	64%

*RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB6
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.98		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	458		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.349	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	8.04		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	4.89		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.116	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	8.5		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.582	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.116	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	11.8		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.19SB6
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.582	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.07

DATE: 12/09/93

SWLO #: 16279.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	11		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	47	B	BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
1,2-DICHLOROETHENE(TOTAL)	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
2-BUTANONE	12	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.07

DATE: 12/09/93

SWLO #: 16279.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	140	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/09/93

SWLO #: 16279.07 N1
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SAMPLE #: SB32.8SB7
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DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	110%	PHENOL-D5	(24-113)	74%
2-FLUOROPHENOL	(25-121)	85%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: SB32.8SB7
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.4		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	396		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.349	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	9.66		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	3.49		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.116	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	19.8		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.582		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.349		mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	18.6		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16279.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.582	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16279.08

DATE: 12/09/93

SWLO #: 16279.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	6	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	6	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	6	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
METHYLENE CHLORIDE	6	U	1,1,2-TRICHLOROETHANE	6	U
ACETONE	210		BENZENE	6	U
CARBON DISULFIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
1,1-DICHLOROETHENE	6	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	6	U	BROMOFORM	6	U
1,2-DICHLOROETHENE(TOTAL)	6	U	2-HEXANONE	12	U
CHLOROFORM	6	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	6	U	TETRACHLOROETHENE	6	U
2-BUTANONE	12	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	XYLENE (TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	87%	BROMOFLUOROBENZENE	(74-121)	90%
1,2-DICHLOROETHANE-D4	(70-121)	85%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/09/93

SWLO #: 16279.08 N1
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SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLAILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	120	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.08

DATE: 12/09/93

SWLO #: 16279.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
`-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	118%	PHENOL-D5	(24-113)	68%
2-FLUOROPHENOL	(25-121)	72%	2,4,6-TRIBROMOPHENOL	(19-122)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/09/93

SWLO #: 16279.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.2	U	mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	48.6		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.362	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	3.5		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	0.723		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.12	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	5.79		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.603	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.12	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	4.46		mg/kg	11/10/93	11/15/93	SW846-6010

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SAMPLE #: SB32.8SB7
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.603	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

*RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.09

DATE: 12/09/93

SWLO #: 16279.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.21

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	6	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	6	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	6	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
METHYLENE CHLORIDE	15		1,1,2-TRICHLOROETHANE	6	U
ACETONE	23	B	BENZENE	6	U
CARBON DISULFIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
1,1-DICHLOROETHENE	6	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	6	U	BROMOFORM	6	U
1,2-DICHLOROETHENE(TOTAL)	6	U	2-HEXANONE	12	U
CHLOROFORM	6	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	6	U	TETRACHLOROETHENE	6	U
2-BUTANONE	12	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	XYLENE (TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

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DATE: 12/09/93

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SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	72	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.09

DATE: 12/09/93

SWLO #: 16279.09 FR1
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SAMPLE #: SB32.8SB7
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	96%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	78%	2,4,6-TRIBROMOPHENOL	(19-122)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/09/93

SWLO #: 16279.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB7
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.21	U	mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	39.1		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.363	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	2.06		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	0.605		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.121	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	3.27		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.605		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.121	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	1.81	U	mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: SB32.8SB7
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.605	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16279.10

DATE: 12/09/93

SWLO #: 16279.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 2.50
DEPTH TO : 3.50
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	11		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	67	B	BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
1,2-DICHLOROETHENE(TOTAL)	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
2-BUTANONE	22		TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	12	
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16279.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 2.50
DEPTH TO : 3.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	130	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 2.50
DEPTH TO : 3.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	97%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	82%	2,4,6-TRIBROMOPHENOL	(19-122)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.10

DATE: 12/09/93

SWLO #: 16279.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 2.50
DEPTH TO : 3.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.53		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	780		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.345	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	17.2		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	5.41		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.115	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	13.1		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.576		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.46		mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	17.3		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.10

DATE: 12/09/93

SWLO #: 16279.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 2.50
DEPTH TO : 3.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.576	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.11

DATE: 12/09/93

SWLO #: 16279.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.19

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	6	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	6	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	6	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
METHYLENE CHLORIDE	12		1,1,2-TRICHLOROETHANE	6	U
ACETONE	41	B	BENZENE	6	U
CARBON DISULFIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
1,1-DICHLOROETHENE	6	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	6	U	BROMOFORM	6	U
1,2-DICHLOROETHENE(TOTAL)	6	U	2-HEXANONE	12	U
CHLOROFORM	6	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	6	U	TETRACHLOROETHENE	6	U
2-BUTANONE	12	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	XYLENE (TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121) 104%
1,2-DICHLOROETHANE-D4	(70-121)	89%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.11

DATE: 12/09/93

SWLO #: 16279.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 15.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
`,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	150	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.11

DATE: 12/09/93

SWLO #: 16279.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 15.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	113%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	59%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.11

DATE: 12/09/93

SWLO #: 16279.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.19	U	mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	43.8		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.357	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	5.12		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	2.38		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.119	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	6.19		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.595	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.119	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	4.88		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.11

DATE: 12/09/93

SWLO #: 16279.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: SB32.8SB8
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.595	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.12

DATE: 12/09/93

SWLO #: 16279.12 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114)	99%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931108A
INST. BATCH: 2655
REPORTED : 12/02/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931108A
LOCATION:

ANALYZED : 11/08/93 12:27
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	12	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
',2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
HLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	101%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
- UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931108A
INST. BATCH: 2655
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS1
SPIKE DUP SAMPLE: LCSD1

MATRIX : SOIL
ANALYZED : 11/08/93 12:55
ANALYZED : 11/08/93 13:22

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	50	100	48	97	2.58	16	60-141
TRICHLOROETHENE	50	48	97	47	95	2.34	21	71-134
BENZENE	50	48	96	48	97	1.25	13	79-128
TOLUENE	50	49	98	49	98	< 1	11	80-122
CHLOROBENZENE	50	49	98	48	98	< 1	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	105	105	81-117
BROMOFLUOROBENZENE	103	104	74-121
1,2-DICHLOROETHANE-D4	106	106	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931109A
INST. BATCH: 13873
REPORTED : 12/02/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931109A
LOCATION:

ANALYZED : 11/09/93 09:11
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
HLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931109A
INST. BATCH: 13873
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS1
SPIKE DUP SAMPLE: LCSD1

MATRIX : SOIL
ANALYZED : 11/09/93 09:39
ANALYZED : 11/09/93 10:01

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	49	99	48	98	1.74	16	60-141
TRICHLOROETHENE	50	49	99	52	104	5.47	21	71-134
BENZENE	50	44	89	44	90	< 1	13	79-128
TOLUENE	50	46	94	48	96	2.29	11	80-122
CHLOROBENZENE	50	48	97	50	100	3.33	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	98	100	81-117
BROMOFLUOROBENZENE	100	92	74-121
1,2-DICHLOROETHANE-D4	93	88	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931109A
INST. BATCH: 13879
REPORTED : 12/02/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931109A
LOCATION:

ANALYZED : 11/09/93 10:50
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
HLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	102%
1,2-DICHLOROETHANE-D4	(76-114)	101%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
- = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931109A
INST. BATCH: 13879
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/09/93 11:27
ANALYZED : 11/09/93 11:53

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	47	95	52	104	9.57	32	54-161
TRICHLOROETHENE	50	45	90	48	96	6.81	38	67-149
BENZENE	50	43	87	47	94	8.27	46	70-134
TOLUENE	50	44	88	48	96	8.39	15	75-140
CHLOROBENZENE	50	46	92	49	98	6.79	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	104	88-110
BROMOFLUOROBENZENE	106	105	86-115
1,2-DICHLOROETHANE-D4	106	106	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931110B
INST. BATCH: 13973
REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931110B
LOCATION:

ANALYZED : 11/10/93 20:36
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
ILOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	105%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
- = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931110B
INST. BATCH: 13973
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS1
SPIKE DUP SAMPLE: LCSD1

MATRIX : SOIL
ANALYZED : 11/10/93 21:13
ANALYZED : 11/10/93 21:38

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	49	98	46	93	5.22	16	60-141
TRICHLOROETHENE	50	65	130	64	128	1.5	21	71-134
BENZENE	50	51	102	47	95	7.18	13	79-128
TOLUENE	50	49	99	44	89	10.5	11	80-122
CHLOROBENZENE	50	52	105	53	106	< 1	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	93	95	81-117
BROMOFLUOROBENZENE	106	98	74-121
1,2-DICHLOROETHANE-D4	91	90	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931111A
INST. BATCH: 13983
REPORTED : 12/02/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931111A
LOCATION:

ANALYZED : 11/11/93 11:46
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
HLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	90%	BROMOFLUOROBENZENE	(86-115)	91%
1,2-DICHLOROETHANE-D4	(76-114)	93%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
` = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931111A
INST. BATCH: 13983
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/11/93 12:19
ANALYZED : 11/11/93 12:45

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	44	88	48	96	7.58	32	54-161
TRICHLOROETHENE	50	45	91	45	91	< 1	38	67-149
BENZENE	50	41	82	45	90	8.91	46	70-134
TOLUENE	50	41	82	42	84	2.81	15	75-140
CHLOROBENZENE	50	43	86	44	89	3.44	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	93	93	88-110
BROMOFLUOROBENZENE	90	90	86-115
1,2-DICHLOROETHANE-D4	94	93	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931111A
INST. BATCH: 13987
REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931111A
LOCATION:

ANALYZED : 11/11/93 09:35
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	13	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	86%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
- = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931111A
INST. BATCH: 13987
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS

MATRIX : SOIL
ANALYZED : 11/11/93 10:04

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	%Rec	LIMITS %Rec.
1,1-DICHLOROETHENE	50	50	100	60-141
TRICHLOROETHENE	50	52	104	71-134
BENZENE	50	49	99	79-128
TOLUENE	50	52	104	80-122
CHLOROBENZENE	50	51	103	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	Limits
TOLUENE-D8	104	81-117
BROMOFLUOROBENZENE	98	74-121
1,2-DICHLOROETHANE-D4	85	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931115A
INST. BATCH: 14124
REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931115A
LOCATION:

ANALYZED : 11/15/93 10:40
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
ILOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	95%
1,2-DICHLOROETHANE-D4	(70-121)	85%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931115A
INST. BATCH: 14124
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS3
SPIKE DUP SAMPLE: LCSD3

MATRIX : SOIL
ANALYZED : 11/15/93 11:12
ANALYZED : 11/15/93 11:35

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	51	102	43	86	17.2*	16	60-141
TRICHLOROETHENE	50	54	109	58	118	7.62	21	71-134
BENZENE	50	46	94	46	94	< 1	13	79-128
TOLUENE	50	44	89	48	96	7.99	11	80-122
CHLOROBENZENE	50	50	100	50	100	< 1	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	92	96	81-117
BROMOFLUOROBENZENE	100	98	74-121
1,2-DICHLOROETHANE-D4	99	82	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931116A
INST. BATCH: 14209
REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931116A
LOCATION:

ANALYZED : 11/16/93 10:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
',2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
HLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	103%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
- = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931116A
INST. BATCH: 14209
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/16/93 11:12
ANALYZED : 11/16/93 11:38

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	55	111	52	105	5.98	32	54-161
TRICHLOROETHENE	50	51	103	50	101	2.52	38	67-149
BENZENE	50	51	102	53	106	3.2	46	70-134
TOLUENE	50	51	103	50	101	2.18	15	75-140
CHLOROBENZENE	50	52	106	54	108	2.05	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	99	88-110
BROMOFLUOROBENZENE	106	102	86-115
1,2-DICHLOROETHANE-D4	102	104	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931116A
INST. BATCH: 14218
REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931116A
LOCATION:

ANALYZED : 11/16/93 09:54
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
ILOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
T = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931116A
INST. BATCH: 14218
REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/16/93 10:21
ANALYZED : 11/16/93 10:45

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	46	92	43	86	6.61	16	60-141
TRICHLOROETHENE	50	57	115	55	110	4.8	21	71-134
BENZENE	50	50	100	46	93	7.42	13	79-128
TOLUENE	50	56	112	52	104	8.07	11	80-122
CHLOROBENZENE	50	51	103	50	101	2.17	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	111	105	81-117
BROMOFLUOROBENZENE	102	87	74-121
1,2-DICHLOROETHANE-D4	89	82	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/10/93

PROJECT : TINKER AFB RFI
SDG: 16252

MATRIX : SOIL

SAMPLE	: 16252.06	QAQC: U931108A	ANALYZED : 11/08/93 21:35
SPIKE SAMPLE	: 16252.07	QAQC: U931108A	ANALYZED : 11/08/93 21:58
SPIKE DUP SAMPLE	: 16252.08	QAQC: U931108A	ANALYZED : 11/08/93 22:21

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	56		56	100	56	100	< 1	22	59-172
TRICHLOROETHENE	56		54	97	56	99	2.17	24	62-137
BENZENE	56		58	103	59	106	2.85	21	66-142
TOLUENE	56		59	106	60	107	1.28	21	59-139
CHLOROBENZENE	56		57	102	58	103	1.05	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	98	106	102	81-117
ᐧROMOFLUOROBENZENE	94	101	98	74-121
,2-DICHLOROETHANE-D4	101	108	105	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252

DATE: 12/10/93

SWLO QAQC#: 931108-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SVBLK LB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252

DATE: 12/10/93

SWLO QAQC#: 931108-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SVBLK LB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	81%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	84%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252

DATE: 12/10/93

SWLO QAQC#: 931108-002
PROJECT : TINKER AFB-RFI
SAMPLE #: SVBLK LB1
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252

DATE: 12/10/93

SWLO QAQC#: 931108-002
PROJECT : TINKER AFB-RFI
SAMPLE #: SVBLK LB1
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	54%	2-FLUOROBIPHENYL	(43-116)	46%
TERPHENYL-D14	(33-141)	91%	PHENOL-D5	(10- 94)	48%
2-FLUOROPHENOL	(21-100)	47%	2,4,6-TRIBROMOPHENOL	(10-123)	51%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16252Bb
QA/QC SEQ #931110-001
DATE: 12-06-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-08-93
DATE ANALYZED : 11-19-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6700	4500	68	26 - 90
2-CHLOROPHENOL	6700	5000	75	25 - 102
1,4-DICHLOROBENZENE	3300	2500	74	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2600	78	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2500	75	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4700	71	26 - 103
ACENAPHTHENE	3300	2900	87	31 - 137
4-NITROPHENOL	6700	4500	68	11 - 114
2,4-DINITROTOLUENE	3300	2300	69	28 - 89
PENTACHLOROPHENOL	6700	4200	64	17 - 109
PYRENE	3300	2800	84	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	6700	4400	2	66	26 - 90
2-CHLOROPHENOL	6700	4900	1	74	25 - 102
1,4-DICHLOROBENZENE	3300	2500	2	75	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2700	5	82	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2600	5	79	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4900	4	74	26 - 103
ACENAPHTHENE	3300	2900	1	87	31 - 137
4-NITROPHENOL	6700	4000	12	60	11 - 114
2,4-DINITROTOLUENE	3300	2200	2	67	28 - 89
PENTACHLOROPHENOL	6700	4500	5	67	17 - 109
PYRENE	3300	3100	10	93	35 - 142

QA/QC SURROGATE RECOVERIES

LCS								
NITROBENZENE-d5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	82%	TERPHENYL-d14	(18-137)	86%
PHENOL-d5	(24-113)	64%	2-FLUOROPHENOL	(25-121)	77%	2,4,6-TRIBROMOPHENOL	(19-122)	65%
LCSD								
NITROBENZENE-d5	(23-120)	84%	2-FLUOROBIPHENYL	(30-115)	87%	TERPHENYL-d14	(18-137)	97%
PHENOL-d5	(24-113)	69%	2-FLUOROPHENOL	(25-121)	79%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252

DATE: 12/10/93

SWLO QAQC#: 931110-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SVBLK LB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	47	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16252

DATE: 12/10/93

SWLO QAQC#: 931110-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SVBLK LB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	78%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	100%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16252Ba
QA/QC SEQ: 931108-002
DATE: 12-6-93

SAMPLE MATRIX: WATER
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-08-93
DATE ANALYZED: 11-20-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONC (ug/L)	LCS CONC (ug/L)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	0	118	59	28 - 104
2-CHLOROPHENOL	200	0	125	63	21 - 106
1,4-DICHLOROBENZENE	100	0	50	50	14 - 110
N-NITROSO-di-n-PROPYLAMINE	100	0	50	50	19 - 128
1,2,4-TRICHLOROBENZENE	100	0	51	51	17 - 109
4-CHLORO-3-METHYLPHENOL	200	0	123	62	23 - 115
ACENAPHTHENE	100	0	68	68	26 - 137
4-NITROPHENOL	200	0	112	56	20 - 135
2,4-DINITROTOLUENE	100	0	71	71	28 - 129
PENTACHLOROPHENOL	200	0	53	26	25 - 134
PYRENE	100	0	85	85	28 - 139

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONC (ug/L)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	120	60	2	35	28 - 104
2-CHLOROPHENOL	200	128	64	2	50	21 - 106
1,4-DICHLOROBENZENE	100	47	47	7	27	14 - 110
N-NITROSO-di-n-PROPYLAMINE	100	48	48	2	38	19 - 128
1,2,4-TRICHLOROBENZENE	100	51	51	1	23	17 - 109
4-CHLORO-3-METHYLPHENOL	200	131	65	6	33	23 - 115
ACENAPHTHENE	100	69	69	1	19	26 - 137
4-NITROPHENOL	200	131	65	15	50	20 - 135
2,4-DINITROTOLUENE	100	78	78	9	47	28 - 129
PENTACHLOROPHENOL	200	83	42	45	47	25 - 134
PYRENE	100	91	91	6	36	28 - 139

QA/QC SURROGATE RECOVERIES

LCS							
NITROBENZENE-d5	(35-114)	62%	2-FLUOROBIPHENYL	(43-116)	51%	TERPHENYL-d14	(33-141) 91%
PHENOL-d5	(10-94)	52%	2-FLUOROPHENOL	(21-100)	52%	2,4,6-TRIBROMOPHENOL	(10-123) 56%
LCSD							
NITROBENZENE-d5	(35-114)	70%	2-FLUOROBIPHENYL	(43-116)	53%	TERPHENYL-d14	(33-141) 100%
PHENOL-d5	(10-94)	53%	2-FLUOROPHENOL	(21-100)	55%	2,4,6-TRIBROMOPHENOL	(10-123) 64%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16252Bc
QA/QC SEQ #931108-001
DATE: 12-6-93

SAMPLE MATRIX: SOIL
SWLO # 16252.07 - 16252.08
METHOD REFERENCE: SW846-8270
DILUTION FACTOR: 1.1
PROJECT: TINKER AFB RFI

DATE SAMPLED: 11-05-93
DATE SUBMITTED: 11-06-93
DATE EXTRACTED: 11-08-93
DATE ANALYZED: 11-19-93
SAMPLE ID: S32.8SB16 12.5-14 (MS/MSD)

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	7500	0	3700	50	26 - 90
2-CHLOROPHENOL	7500	0	4800	64	25 - 102
1,4-DICHLOROBENZENE	3800	0	2600	70	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3800	0	3400	92	41 - 126
1,2,4-TRICHLOROBENZENE	3800	0	3300	89	38 - 107
4-CHLORO-3-METHYLPHENOL	7500	0	5000	66	26 - 103
ACENAPHTHENE	3800	0	3000	81	31 - 137
4-NITROPHENOL	7500	0	5800	78	11 - 114
2,4-DINITROTOLUENE	3800	0	2800	74	28 - 89
PENTACHLOROPHENOL	7500	0	5800	77	17 - 109
PYRENE	3800	0	3400	91	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	7500	4400	58	15	35	26 - 90
2-CHLOROPHENOL	7500	5300	71	10	50	25 - 102
1,4-DICHLOROBENZENE	3800	2600	70	0	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3800	3700	99	7	38	41 - 126
1,2,4-TRICHLOROBENZENE	3800	3100	83	7	23	38 - 107
4-CHLORO-3-METHYLPHENOL	7500	5500	73	10	33	26 - 103
ACENAPHTHENE	3800	3500	93	13	19	31 - 137
4-NITROPHENOL	7500	4200	56	33	50	11 - 114
2,4-DINITROTOLUENE	3800	2600	70	4	47	28 - 89
PENTACHLOROPHENOL	7500	5500	73	5	47	17 - 109
PYRENE	3800	3800	100	10	36	35 - 142

QA/QC SURROGATE RECOVERIES

			MS					
NITROBENZENE-d5	(23-120)	64%	2- LUOROBIPHENYL	(30-115)	82%	TERPHENYL-d14	(18-137)	100%
PHENOL-d5	(24-113)	56%	2-FLUOROPHENOL	(25-121)	78%	2,4,6-TRIBROMOPHENOL	(19-122)	107%
			MSD					
NITROBENZENE-d5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	82%	TERPHENYL-d14	(18-137)	99%
PHENOL-d5	(24-113)	62%	2-FLUOROPHENOL	(25-121)	80%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16252bd
REPORT DATE: 12-07-93

MATRIX: **WATER**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (ug/L)	SPIKED RESULTS (ug/L)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/10/93	2000	2123	106	80-120
LEAD	11/10/93	500	475	95	80-120
SELENIUM	11/10/93	2000	2326	116	80-120
BARIUM	11/11/93	2000	2120	106	80-120
CADMIUM	11/11/93	50.0	55.1	110	80-120
CHROMIUM	11/11/93	200	211	105	80-120
NICKEL	11/11/93	500	529	106	80-120
ZINC	11/11/93	500	519	104	80-120
MERCURY	11/10/93	4.90	5.16	105	80-120
SILVER	11/27/93	50.0	47.3	95	80-120
TOTAL CN	11/10/93	100	95.3	95	80-120

MATRIX: **SOIL**

		(mg/Kg)	(mg/Kg)		
ARSENIC	11/10/93	200	204.6	102	80-120
LEAD	11/10/93	50	47.9	96	80-120
SELENIUM	11/10/93	200	209.7	105	80-120
BARIUM	11/15/93	200	193	97	80-120
CADMIUM	11/15/93	5.0	4.8	96	80-120
CHROMIUM	11/15/93	20.0	18.8	94	80-120
NICKEL	11/15/93	50.0	48.3	97	80-120
ZINC	11/15/93	50.0	47.6	95	80-120
MERCURY	11/10/93	12.7	10.4	82	80-120
SILVER	11/27/93	5.00	4.82	96	80-120
TOTAL CN	11/10/93	5.00	4.96	99	80-120
TOTAL CN	11/12/93	5.00	4.855	97	80-120

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16252ad
REPORT DATE: 12-07-93

MATRIX: **WATER**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/10/93	110993I4	10.0	ug/L	< 10.0
LEAD	11/10/93	110993I4	3.0	ug/L	< 3.0
SELENIUM	11/10/93	110993I4	5.0	ug/L	< 5.0
BARIUM	11/11/93	110993I4	5.0	ug/L	< 5.0
CADMIUM	11/11/93	110993I4	3.0	ug/L	< 3.0
CHROMIUM	11/11/93	110993I4	5.0	ug/L	< 5.0
NICKEL	11/11/93	110993I4	10.0	ug/L	< 10.0
ZINC	11/11/93	110993I4	15.0	ug/L	< 15.0
MERCURY	11/10/93	111093HG04	0.2	ug/L	< 0.2
SILVER	11/27/93	110993F4	1.0	ug/L	< 1.0
TOTAL CN	11/10/93	110993CNW	10.0	ug/L	< 10.0

MATRIX: **SOIL**

ARSENIC	11/10/93	110993I1	1.0	mg/Kg	< 1.0
LEAD	11/10/93	110993I1	0.30	mg/Kg	< 0.30
SELENIUM	11/10/93	110993I1	0.50	mg/Kg	< 0.50
BARIUM	11/15/93	111093I1	0.50	mg/Kg	< 0.50
CADMIUM	11/15/93	111093I1	0.30	mg/Kg	< 0.30
CHROMIUM	11/15/93	111093I1	0.50	mg/Kg	< 0.50
NICKEL	11/15/93	111093I1	1.0	mg/Kg	< 1.0
ZINC	11/15/93	111093I1	1.5	mg/Kg	< 1.5
MERCURY	11/10/93	111093HG02	0.10	mg/Kg	< 0.10
SILVER	11/27/93	111093F1	0.10	mg/Kg	< 0.10
TOTAL CN	11/10/93	110993CNS	0.50	mg/Kg	< 0.50
TOTAL CN	11/12/93	111193CN	0.50	mg/Kg	< 0.50

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16252cd
REPORT DATE: 12-07-93

MATRIX: **SOIL**
SAMPLE ID: **S32.8SB16MS1125-145**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	11/10/93	5.62	225	219	95	75-125
LEAD	11/10/93	4.95	56.2	53.5	86	75-125
SELENIUM	11/10/93	< 0.562	225	216	96	75-125
BARIUM	11/15/93	60.8	225	263	90	75-125
CADMIUM	11/15/93	< 0.337	5.62	5.40	96	75-125
CHROMIUM	11/15/93	24.9	22.5	32.7	35*	75-125
NICKEL	11/15/93	12.9	56.2	62.4	88	75-125
ZINC	11/15/93	10.9	56.2	58.0	84	75-125
MERCURY	11/10/93	< 0.112	0.562	0.540	96	75-125
SILVER	11/27/93	< 0.112	5.62	5.28	94	75-125
TOTAL CN	11/12/93	< 0.562	5.62	5.27	94	75-125

* OUTSIDE CONTROL LIMITS

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16252dd
REPORT DATE: 12-07-93

MATRIX: SOIL
SAMPLE ID: S32.8SB16SD1125-145
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	219	216	1.4	20
LEAD	53.5	53.9	0.7	20
SELENIUM	216	216	0	20
BARIUM	263	262	0.4	20
CADMIUM	5.40	5.40	0	20
CHROMIUM	32.7	35.0	6.8	20
NICKEL	62.4	63.0	1.0	20
ZINC	58.0	57.8	0.4	20
MERCURY	0.540	0.528	2.3	20
SILVER	5.28	5.28	0	20
TOTAL CN	5.27	5.16	2.1	20

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.01

DATE: 12/09/93

SWLO #: 16279.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	419		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.346	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	14.9		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	7.97		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.115	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	22.7		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.577	U	mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.115	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	23		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.01

DATE: 12/09/93

SWLO #: 16279.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.577	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.02

DATE: 12/09/93

SWLO #: 16279.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.21

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	6	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	6	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	6	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
METHYLENE CHLORIDE	6	U	1,1,2-TRICHLOROETHANE	6	U
ACETONE	36		BENZENE	6	U
CARBON DISULFIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
1,1-DICHLOROETHENE	6	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	6	U	BROMOFORM	6	U
1,2-DICHLOROETHENE(TOTAL)	6	U	2-HEXANONE	12	U
CHLOROFORM	6	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	6	U	TETRACHLOROETHENE	6	U
2-BUTANONE	12	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	XYLENE (TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	100%
1,2-DICHLOROETHANE-D4	(70-121)	86%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.02

DATE: 12/09/93

SWLO #: 16279.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	200	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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DATE: 12/09/93

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DEPTH FROM : 17.50
DEPTH TO : 18.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	57%

*RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.02

DATE: 12/09/93

SWLO #: 16279.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.58		mg/kg	11/10/93	11/10/93	SW846-6010
BARIUM	46.2		mg/kg	11/10/93	11/15/93	SW846-6010
CADMIUM	0.364	U	mg/kg	11/10/93	11/15/93	SW846-6010
CHROMIUM	17.2		mg/kg	11/10/93	11/15/93	SW846-6010
LEAD	1.21		mg/kg	11/10/93	11/10/93	SW846-6010
MERCURY	0.121	U	mg/kg	11/10/93	11/10/93	SW846-7471
NICKEL	5.7		mg/kg	11/10/93	11/15/93	SW846-6010
SELENIUM	0.848		mg/kg	11/10/93	11/10/93	SW846-6010
SILVER	0.121	U	mg/kg	11/10/93	11/27/93	SW846-7761
ZINC	5.94		mg/kg	11/10/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16279.02

DATE: 12/09/93

SWLO #: 16279.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB3
LOCATION:

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.606	U	mg/kg	/ /	11/12/93	SM 412D/SW 9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16279.03

DATE: 12/09/93

SWLO #: 16279.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.7	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.7	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.7	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
METHYLENE CHLORIDE	5.7	U	1,1,2-TRICHLOROETHANE	5.7	U
ACETONE	28		BENZENE	5.7	U
CARBON DISULFIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.7	U	BROMOFORM	5.7	U
1,2-DICHLOROETHENE(TOTAL)	5.7	U	2-HEXANONE	11	U
CHLOROFORM	5.7	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.7	U	TETRACHLOROETHENE	5.7	U
2-BUTANONE	11	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

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REPORT: 16279.03

DATE: 12/09/93

SWLO #: 16279.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	150	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16279.03

DATE: 12/09/93

SWLO #: 16279.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.19SB4
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/06/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16250d
REPORT DATE: 12-09-93

MATRIX: **WATER**
SAMPLE ID: **IWTLS2 N1**

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (ug/L)	MSD CONC. (ug/L)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	2110	2090	1.0	20
LEAD	497	488	1.8	20
SELENIUM	2160	2150	0.5	20
BARIUM	2430	2390	1.7	20
CADMIUM	83.8	80.2	4.4	20
CHROMIUM	711	1170	49*	20
NICKEL	572	583	1.9	20
ZINC	536	545	1.7	20
MERCURY	0.857	0.846	1.3	20
SILVER	50.0	52.5	4.9	20

* OUTSIDE CONTROL LIMITS

QC/lb/dn

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8503062746

SAMPLER(S): M. HARDER R. NELSON

(Signature) [signature] [signature]

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (SW8240)	Semi VOA (8270)	Metals (6010)	CN (9010)								Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
7NOV93	–	FIELDQC		TB1	WQ	NA	0	0	2	X											0	1	1	B	
	1500	FIELDQC		EB1	WQ	NA	0	0	6	X	X	X	X								0	1	1	B	
	0820	I24.19SB5		N1	SO	H	7.5	8	3	X	X	X	X								0	1	1	B	
	0845	↓		N1	SO	H	15.5	16	3	X	X	X	X								0	1	1	B	
	1010	I24.19SB2		N1	SO	H	7.5	8.0	3	X	X	X	X								0	1	1	B	
	1050	↓		N1	SO	H	17	17.5	3	X	X	X	X								0	1	1	B	
	1210	I24.19SB7		N1	SO	H	6.5	7.5	3	X	X	X	X								0	1	1	B	
	1245	↓		N1	SO	H	17	18	3	X	X	X	X								0	1	1	B	
	1425	I24.19SB8		N1	SO	H	6	7	3	X	X	X	X								0	1	1	B	
	1450	↓		N1	SO	H	17	17.5	3	X	X	X	X								0	1	1	B	

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	11/8/93	1750	(Signature)			(Signature)		
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	**Received by:**	**Date**	**Time**
(Signature)			(Signature)			(Signature) [signature]	11/9/93	0830

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chaino.dwg

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☐ Federal Express ☐ UPS
Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8503062746

SAMPLER(S): M. HARDER R. NELSON
(Signature) [signature] [signature]

PRESERVATIVE

ANALYSIS REQUIRED

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (8240)	SemiVOA (8270)	Metals (6010)	CN (9010)	TPH (8015) mod							Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/8/93	–	FIELDQC		TB1	WQ	NA	0	0	2	X											1	0	1	C	
	1200	FIELDQC		AB1	WQ	NA	0	0	2	X											1	0	1	C	
	0921	I24.7SB2		N1	SO	SS	11	13	3	X	X	X	X								1	0	1	C	
	1300	I24.7SB1		N1	SO	SS	4	6	3	X	X	X	X								1	0	1	C	
	1330	↓		N1	SO	SS	8	10	3	X	X	X	X								1	0	1	C	
	1536	I24.11SB3		N1	SO	SS	4	6	3	X	X	X	X								1	0	1	C	
	1625	↓		N1	SO	SS	8	9	3	X	X	X	X								1	0	1	C	
	0920	I24.3SB1		N1	SO	H	5.5	6.5	4	X	X	X	X	X							1	0	1	C	
	1005	↓		N1	SO	H	13	14	4	X	X	X	X	X							1	0	1	C	
	1155	I24.3SB4		N1	SO	H	6	7	4	X	X	X	X	X							1	0	1	C	
	1345	↓		N1	SO	H	11	11.5	4	X	X	X	X	X							1	0	1	C	
	1520	I24.1SB1		N1	SO	H	5.5	6.0	3	X	X	X	X								1	0	1	C	
	1620	↓		N1	SO	H	16	16.5	3	X	X	X	X								1	0	1	C	

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	11/8/93	1750	(Signature)			(Signature)		
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	**Received by:**	**Date**	**Time**
(Signature)			(Signature)			(Signature) [signature]	11/9/93	0830

W[illegible] laboratory returns with data; **yellow**: laboratory copy; **pink**: sampler [illegible]y.

chaino.dwg

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.01

DATE: 12/10/93

SWLO #: 16280.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	53		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	90%	BROMOFLUOROBENZENE	(74-121)	79%
2-DICHLOROETHANE-D4	(70-121)	76%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.01

DATE: 12/10/93

SWLO #: 16280.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	248	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.01

DATE: 12/10/93

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SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	78%	2-FLUOROBIPHENYL	(30-115)	90%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.19SB5
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.97		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	7.66		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.686		mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	230		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.343	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	13.6		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	9.72		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.114	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	20.1		mg/kg	11/13/93	11/15/93	SW846-6010

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SAMPLE #: I24.19SB5
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.572	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.01

DATE: 12/10/93

SWLO #: 16280.01 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.572	mg/kg	11/14/93	11/14/93	SW846-7471
SILVER	5.49	mg/kg	11/13/93	11/27/93	SW846-7761
ARSENIC	238	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	515	mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	5.15	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	32.8	mg/kg	11/13/93	11/15/93	SW846-6010
LEAD	63	mg/kg	11/13/93	11/14/93	SW846-6010
NICKEL	62.6	mg/kg	11/13/93	11/15/93	SW846-6010
SELENIUM	240	mg/kg	11/13/93	11/14/93	SW846-6010
ZINC	70.8	mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.01

DATE: 12/10/93

SWLO #: 16280.01 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.5	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.01

DATE: 12/10/93

SWLO #: 16280.01 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.561	mg/kg	11/14/93	11/14/93	SW846-7471
SILVER	5.49	mg/kg	11/13/93	11/27/93	SW846-7761
ARSENIC	224	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	450	mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	4.92	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	30.9	mg/kg	11/13/93	11/15/93	SW846-6010
LEAD	58.6	mg/kg	11/13/93	11/14/93	SW846-6010
NICKEL	59.4	mg/kg	11/13/93	11/15/93	SW846-6010
SELENIUM	228	mg/kg	11/13/93	11/14/93	SW846-6010
ZINC	66.7	mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

SWLO #: 16280.01 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.59	ug/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.02

DATE: 12/10/93

SWLO #: 16280.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	8.3		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	220	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	21	
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	19	
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.02

DATE: 12/10/93

SWLO #: 16280.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB5
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	110	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	75%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	80%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.25		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	10.2		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.591	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	703		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.354	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	13.8		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.118	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	15.7		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.118	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	18.1		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.591	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.03

DATE: 12/10/93

SWLO #: 16280.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	14	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	160	
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

SWLO #: 16280.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	430	U	ACENAPHTHENE	430	U
BIS(2-CHLOROETHYL)ETHER	430	U	2,4-DINITROPHENOL	2100	U
2-CHLOROPHENOL	430	U	4-NITROPHENOL	2100	U
1,3-DICHLOROBENZENE	430	U	DIBENZOFURAN	430	U
1,4-DICHLOROBENZENE	430	U	2,4-DINITROTOLUENE	430	U
BENZYL ALCOHOL	430	U	2,6-DINITROTOLUENE	430	U
1,2-DICHLOROBENZENE	430	U	DIETHYLPHTHALATE	430	U
2-METHYLPHENOL(O-CRESOL)	430	U	4-CHLOROPHENYL-PHENYLETHER	430	U
BIS(2-CHLOROISOPROPYL)ETHER	430	U	FLUORENE	430	U
4-METHYLPHENOL(P-CRESOL)	430	U	4-NITROANILINE	2100	U
N-NITROSO-DI-N-PROPYLAMINE	430	U	4,6-DINITRO-2-METHYLPHENOL	2100	U
HEXACHLOROETHANE	430	U	N-NITROSODIPHENYLAMINE(1)	430	U
NITROBENZENE	430	U	4-BROMOPHENYL-PHENYLETHER	430	U
ISOPHORONE	430	U	HEXACHLOROBENZENE	430	U
2-NITROPHENOL	430	U	PENTACHLOROPHENOL	2100	U
2,4-DIMETHYLPHENOL	430	U	PHENANTHRENE	430	U
BENZOIC ACID	2100	U	ANTHRACENE	430	U
BIS(2-CHLOROETHOXY)METHANE	430	U	DI-N-BUTYL PHTHALATE	430	U
2,4-DICHLOROPHENOL	430	U	FLUORANTHENE	430	U
1,2,4-TRICHLOROBENZENE	430	U	PYRENE	430	U
NAPHTHALENE	430	U	BUTYL BENZYL PHTHALATE	430	U
4-CHLOROANILINE	430	U	3,3'-DICHLOROBENZIDINE	860	U
HEXACHLOROBUTADIENE	430	U	BENZO(A)ANTHRACENE	430	U
4-CHLORO-3-METHYLPHENOL	430	U	BIS(2-ETHYLHEXYL)PHTHALATE	160	J
2-METHYLNAPHTHALENE	430	U	CHRYSENE	430	U
HEXACHLOROCYCLOPENTADIENE	430	U	DI-N-OCTYL PHTHALATE	430	U
2,4,6-TRICHLOROPHENOL	430	U	BENZO(B)FLUORANTHENE	430	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.03

DATE: 12/10/93

SWLO #: 16280.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2100	U	BENZO(K)FLUORANTHENE	430	U
2-CHLORONAPHTHALENE	430	U	BENZO(A)PYRENE	430	U
2-NITROANILINE	2100	U	INDENO(1,2,3-CD)PYRENE	430	U
DIMETHYL PHTHALATE	430	U	DIBENZ(A,H)ANTHRACENE	430	U
ACENAPHTHYLENE	430	U	BENZO(G,H,I)PERYLENE	430	U
3-NITROANILINE	2100	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	79%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16280.03

DATE: 12/10/93

SWLO #: 16280.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.39		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	6.15		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.57	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	823		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.342	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	15.3		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	12.1		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.114	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	17.4		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/10/93

SWLO #: 16280.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.57	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.04

DATE: 12/10/93

SWLO #: 16280.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.27

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	13	U	TRICHLOROETHENE	6.4	U
BROMOMETHANE	13	U	DIBROMOCHLOROMETHANE	6.4	U
VINYL CHLORIDE	13	U	1,1,2-TRICHLOROETHANE	6.4	U
CHLOROETHANE	13	U	BENZENE	6.4	U
METHYLENE CHLORIDE	6.4	U	CIS-1,3-DICHLOROPROPENE	6.4	U
ACETONE	20		2-CHLOROETHYL VINYL ETHER	13	U
CARBON DISULFIDE	6.4	U	BROMOFORM	6.4	U
1,1-DICHLOROETHENE	6.4	U	2-HEXANONE	13	U
1,1-DICHLOROETHANE	6.4	U	4-METHYL-2-PENTANONE	13	U
CHLOROFORM	6.4	U	TETRACHLOROETHENE	6.4	U
1,2-DICHLOROETHANE	6.4	U	TOLUENE	6.4	U
1,1,1-TRICHLOROETHANE	6.4	U	CHLOROBENZENE	6.4	U
CARBON TETRACHLORIDE	6.4	U	ETHYLBENZENE	6.4	U
VINYL ACETATE	13	U	STYRENE	6.4	U
BROMODICHLOROMETHANE	6.4	U	1,2-DICHLOROETHENE(TOTAL)	6.4	U
1,1,2,2-TETRACHLOROETHANE	6.4	U	XYLENE (TOTAL)	6.4	U
1,2-DICHLOROPROPANE	6.4	U	2-BUTANONE	13	U
TRANS-1,3-DICHLOROPROPENE	6.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	83%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	72%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

SWLO #: 16280.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	116	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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7800 SHOAL CREEK BLVD.
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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.04

DATE: 12/10/93

SWLO #: 16280.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB2
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	90%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	72%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16280.04 N1
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SAMPLE #: I24.19SB2
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.65		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	2.03		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.635	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	72.9		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.381	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	5.97		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.127	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	3.18		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.127	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	4.45		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.19SB2
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.635	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.05

DATE: 12/10/93

SWLO #: 16280.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB7
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.50
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	50	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	68	
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	47	
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	81%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.05

DATE: 12/10/93

SWLO #: 16280.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB7
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	82.8	J
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	71	J	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	72.3	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

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DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	72%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	88%

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SAMPLE #: I24.19SB7
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DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.5		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	6.69		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.567	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	430		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.34	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	13.5		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.113	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	9.98		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.113	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	14.6		mg/kg	11/13/93	11/15/93	SW846-6010

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SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 7.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.567	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.06

DATE: 12/10/93

SWLO #: 16280.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB7
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.04

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	5.2	U	CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	17		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.2	U	TETRACHLOROETHENE	5.2	U
1,2-DICHLOROETHANE	5.2	U	TOLUENE	5.2	U
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE(TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	86%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	84.7	J
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	52	J	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	102	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	75%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

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SAMPLE #: I24.19SB7
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.04	U	mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	0.415		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.519	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	58		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.311	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	0.778		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.104	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	1.04	U	mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.104	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	1.56	U	mg/kg	11/13/93	11/15/93	SW846-6010

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DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.519	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.07

DATE: 12/10/93

SWLO #: 16280.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	91%	BROMOFLUOROBENZENE	(74-121)	82%
1,2-DICHLOROETHANE-D4	(70-121)	71%			

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	86.7	J
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	144	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.07

DATE: 12/10/93

SWLO #: 16280.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	78%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16280.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.03		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	6.33		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.565	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	204		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.339	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	7.57		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.113	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	6.89		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.113	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	11.6		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.565	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16280.08

DATE: 12/10/93

SWLO #: 16280.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	16		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	6.2	
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	12	
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	88%	BROMOFLUOROBENZENE	(74-121)	85%
1,2-DICHLOROETHANE-D4	(70-121)	72%			

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SWLO #: 16280.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	51.2	J	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	97.1	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.08

DATE: 12/10/93

SWLO #: 16280.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	77%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

SWLO #: 16280.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.32		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	5.11		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.58	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	482		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	10.1		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.116	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	11		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.116	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	14		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

SWLO #: 16280.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB8
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.58	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.09

DATE: 12/10/93

SWLO #: 16280.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB2
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 13.00
DATE PREPARED : / /
DILUTION FACTOR: 2.25

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	22	U	TRICHLOROETHENE	11	U
BROMOMETHANE	22	U	DIBROMOCHLOROMETHANE	11	U
VINYL CHLORIDE	22	U	1,1,2-TRICHLOROETHANE	11	U
CHLOROETHANE	22	U	BENZENE	11	U
METHYLENE CHLORIDE	11	U	CIS-1,3-DICHLOROPROPENE	11	U
ACETONE	270		2-CHLOROETHYL VINYL ETHER	22	U
CARBON DISULFIDE	11	U	BROMOFORM	11	U
1,1-DICHLOROETHENE	11	U	2-HEXANONE	22	U
1,1-DICHLOROETHANE	11	U	4-METHYL-2-PENTANONE	22	U
CHLOROFORM	11	U	TETRACHLOROETHENE	11	U
1,2-DICHLOROETHANE	11	U	TOLUENE	11	U
1,1,1-TRICHLOROETHANE	11	U	CHLOROBENZENE	11	U
CARBON TETRACHLORIDE	11	U	ETHYLBENZENE	11	U
VINYL ACETATE	22	U	STYRENE	11	U
BROMODICHLOROMETHANE	11	U	1,2-DICHLOROETHENE(TOTAL)	11	U
1,1,2,2-TETRACHLOROETHANE	11	U	XYLENE (TOTAL)	11	U
1,2-DICHLOROPROPANE	11	U	2-BUTANONE	22	U
TRANS-1,3-DICHLOROPROPENE	11	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	114%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.7SB2
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 13.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	115	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 11.00
DEPTH TO : 13.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	74%	PHENOL-D5	(24-113)	68%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/10/93

SWLO #: 16280.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB2
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 13.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.12		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	7.87		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.562	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	270		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.337	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	6.41		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	2.14		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.112	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	5.06		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.09

DATE: 12/10/93

SWLO #: 16280.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB2
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 13.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.562	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	86%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	78%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	25%	2-FLUOROBIPHENYL	(30-115)	32%
TERPHENYL-D14	(18-137)	26%	PHENOL-D5	(24-113)	24% *
2-FLUOROPHENOL	(25-121)	22% *	2,4,6-TRIBROMOPHENOL	(19-122)	22%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N9
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/23/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	65.6	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N9
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/23/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	73%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.16		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	2.7		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.54	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	344		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.324	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	6.15		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	4.64		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.108	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	6.26		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16280.10

DATE: 12/10/93

SWLO #: 16280.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.54	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.11

DATE: 12/10/93

SWLO #: 16280.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 10.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	62	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	112%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16280.11

DATE: 12/10/93

SWLO #: 16280.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 10.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	166	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.11

DATE: 12/10/93

SWLO #: 16280.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 10.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	90%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
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Attn: KEVIN TYNES

REPORT: 16280.11

DATE: 12/10/93

SWLO #: 16280.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.7SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 10.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.68		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	5.94		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.583	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	247		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.35	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	36.5		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.116	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	6.41		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.116	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	14.1		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.7SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 10.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.583	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.12

DATE: 12/10/93

SWLO #: 16280.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	21		CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	62	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

SWLO #: 16280.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	72.2	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
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Attn: KEVIN TYNES

REPORT: 16280.12

DATE: 12/10/93

SWLO #: 16280.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	67%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.12

DATE: 12/10/93

SWLO #: 16280.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.52		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	3.04		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.542	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	93.4		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.325	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	6.72		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	5.42		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.108	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	6.18		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.11SB3
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.542	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16280.13

DATE: 12/10/93

SWLO #: 16280.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	36		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	5.3	U
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.13

DATE: 12/10/93

SWLO #: 16280.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	230	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH TO : 9.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

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SAMPLE #: I24.11SB3
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	0.955		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	2.12		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.53	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	56.5		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.318	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	3.29		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.106	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	2.65		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.106	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	3.5		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.13

DATE: 12/10/93

SWLO #: 16280.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB3
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.53	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.14

DATE: 12/10/93

SWLO #: 16280.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	110%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	78%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.14

DATE: 12/10/93

SWLO #: 16280.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	111	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.14

DATE: 12/10/93

SWLO #: 16280.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.14

DATE: 12/10/93

SWLO #: 16280.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	0.976		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	1.41		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.542	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	41.1		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.325	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	4.45		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	2.49		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.108	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	4.23		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.14

DATE: 12/10/93

SWLO #: 16280.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.542	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16280d
REPORT DATE: 12-09-93

MATRIX: **SOIL**
SAMPLE ID: **I24.19SB5 N1 7.5-8**
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	238	224	6.1	20
LEAD	63.0	58.6	7.2	20
SELENIUM	240	228	5.1	20
BARIUM	515	450	13.5	20
CADMIUM	5.15	4.92	4.6	20
CHROMIUM	32.8	30.9	6.0	20
NICKEL	62.6	59.4	5.3	20
ZINC	70.8	66.7	6.0	20
MERCURY	0.572	0.561	1.9	20
SILVER	5.49	5.49	0	20
TOTAL CN	5.50	5.59	1.6	20

QC/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16280c
REPORT DATE: 12-09-93

MATRIX: **SOIL**
SAMPLE ID: **I24.19SB5 N1 7.5-8**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	11/14/93	2.97	229	238	103	75-125
LEAD	11/14/93	7.66	57.2	63.0	97	75-125
SELENIUM	11/14/93	0.686	229	240	105	75-125
BARIUM	11/15/93	230	229	515	125	75-125
CADMIUM	11/15/93	< 0.343	5.72	5.15	90	75-125
CHROMIUM	11/15/93	13.6	22.9	32.8	84	75-125
NICKEL	11/15/93	9.72	57.2	62.6	92	75-125
ZINC	11/15/93	20.1	57.2	70.8	89	75-125
MERCURY	11/14/93	< 0.114	0.572	0.572	100	75-125
SILVER	11/27/93	< 0.114	5.72	5.49	96	75-125
TOTAL CN	11/12/93	< 0.572	5.72	5.50	96	75-125

QC/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16280b
REPORT DATE: 12-09-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/14/93	200	207	104	80-120
LEAD	11/14/93	50	48.2	96	80-120
SELENIUM	11/14/93	200	216	108	80-120
BARIUM	11/15/93	200	195	98	80-120
CADMIUM	11/15/93	5.0	4.6	92	80-120
CHROMIUM	11/15/93	20.0	19.6	98	80-120
NICKEL	11/15/93	50.0	48.0	96	80-120
ZINC	11/15/93	50.0	47.7	95	80-120
MERCURY	11/14/93	2.4	2.6	108	80-120
SILVER	11/27/93	5.00	5.13	103	80-120
TOTAL CN	11/12/93	5.0	4.855	97	80-120

MATRIX: **WATER**

		(ug/L)	(ug/L)		
ARSENIC	11/14/93	2000	2164	108	80-120
LEAD	11/14/93	500	497.9	100	80-120
SELENIUM	11/14/93	2000	2348	117	80-120
BARIUM	11/15/93	2000	2060	103	80-120
CADMIUM	11/15/93	50.0	51.9	104	80-120
CHROMIUM	11/15/93	200	201	100	80-120
NICKEL	11/15/93	500	513	103	80-120
ZINC	11/15/93	500	510	102	80-120
MERCURY	11/10/93	4.90	5.16	105	80-120
SILVER	11/27/93	50.0	50.6	101	80-120
TOTAL CN	11/15/93	94.0	82.2	87	80-120

QC/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16280a
REPORT DATE: 12-09-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/14/93	111393I2	1.0	mg/Kg	< 1.0
LEAD	11/14/93	111393I2	0.3	mg/Kg	< 0.3
SELENIUM	11/14/93	111393I2	0.5	mg/Kg	< 0.5
BARIUM	11/15/93	111393I2	0.5	mg/Kg	< 0.5
CADMIUM	11/15/93	111393I2	0.3	mg/Kg	< 0.3
CHROMIUM	11/15/93	111393I2	0.5	mg/Kg	< 0.5
NICKEL	11/15/93	111393I2	1.0	mg/Kg	< 1.0
ZINC	11/15/93	111393I2	1.5	mg/Kg	< 1.5
MERCURY	11/14/93	111393HG03	0.1	mg/Kg	< 0.1
SILVER	11/27/93	111393F2	0.1	mg/Kg	< 0.1
TOTAL CN	11/12/93	111193CN	0.5	mg/Kg	< 0.5

MATRIX: **WATER**

ARSENIC	11/14/93	111393I4	10.0	ug/L	< 10.0
LEAD	11/14/93	111393I4	3.0	ug/L	< 3.0
SELENIUM	11/14/93	111393I4	5.0	ug/L	< 5.0
BARIUM	11/15/93	111393I4	5.0	ug/L	< 5.0
CADMIUM	11/15/93	111393I4	3.0	ug/L	< 3.0
CHROMIUM	11/15/93	111393I4	5.0	ug/L	< 5.0
NICKEL	11/15/93	111393I4	10.0	ug/L	< 10.0
ZINC	11/15/93	111393I4	15.0	ug/L	< 15.0
SILVER	11/27/93	111393F4	1.0	ug/L	< 1.0
TOTAL CN	11/15/93	111293CN	10.0	ug/L	< 10.0
MERCURY	11/10/93	111093HG04	0.2	ug/L	< 0.2

QC/lb/dn

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280

DATE: 12/10/93

SWLO QAQC#: 931123-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION: LABQC
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	70%	PHENOL-D5	(24-113)	74%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280

DATE: 12/10/93

SWLO QAQC#: 931123-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION: LABQC
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16280Bb

DATE: 12-10-93

SAMPLE MATRIX: WATER
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-10-93
DATE ANALYZED : 11-18-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	AMOUNT RECOVERED (ug/L)	PERCENT RECOVERED (ug/L)	QC LIMITS RECOVERY
PHENOL	200.0	130.47	65.24	12 - 110
2-CHLOROPHENOL	200.0	140.51	70.26	27 - 123
1,4-DICHLOROBENZENE	100.0	60.47	60.47	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100.0	71.28	71.29	41 - 116
1,2,4-TRICHLOROBENZENE	100.0	59.14	59.15	39 - 98
4-CHLORO-3-METHYLPHENOL	200.0	153.19	76.60	23 - 97
ACENAPHTHENE	100.0	102.26	102.26	46 - 118
4-NITROPHENOL	200.0	146.87	73.44	10 - 80
2,4-DINITROTOLUENE	100.0	82.26	82.26	24 - 96
PENTACHLOROPHENOL	200.0	129.99	65.00	9 - 103
PYRENE	100.0	114.13	114.13	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	AMOUNT RECOVERED (ug/L)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	200.0	137.96	6	68.98	12 - 110
2-CHLOROPHENOL	200.0	144.30	3	72.15	27 - 123
1,4-DICHLOROBENZENE	100.0	66.04	9	66.05	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100.0	72.67	2	72.68	41 - 116
1,2,4-TRICHLOROBENZENE	100.0	58.84	1	58.85	39 - 98
4-CHLORO-3-METHYLPHENOL	200.0	148.18	3	74.09	23 - 97
ACENAPHTHENE	100.0	92.63	10	92.64	46 - 118
4-NITROPHENOL	200.0	163.90	11	81.95*	10 - 80
2,4-DINITROTOLUENE	100.0	86.38	5	86.38	24 - 96
PENTACHLOROPHENOL	200.0	133.54	3	66.77	9 - 103
PYRENE	100.0	115.36	1	115.36	26 - 127

QA/QC SURROGATE RECOVERIES

LCS							
NITROBENZENE-d5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	91%	TERPHENYL-d14	(18-137) 120%
PHENOL-d5	(24-113)	66%	2-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122) 91%
LCSD							
NITROBENZENE-d5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	97%	TERPHENYL-d14	(18-137) 116%
PHENOL-d5	(24-113)	64%	2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122) 93%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280

DATE: 12/10/93

SWLO QAQC#: 931110-002
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	62%	2-FLUOROBIPHENYL	(43-116)	70%
TERPHENYL-D14	(33-141)	105%	PHENOL-D5	(10- 94)	53%
2-FLUOROPHENOL	(21-100)	52%	2,4,6-TRIBROMOPHENOL	(10-123)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280

DATE: 12/10/93

SWLO QAQC#: 931110-002
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16280Ba

DATE: 12-10-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-10-93
DATE ANALYZED : 11-20-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6666.66	3970.26	59.55	26 - 90
2-CHLOROPHENOL	6666.66	6478.97	97.18	25 - 102
1,4-DICHLOROBENZENE	3333.33	2523.66	75.71	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	3304.99	99.15	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	2392.91	71.79	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	3978.27	59.67	26 - 103
ACENAPHTHENE	3333.33	2511.82	75.35	31 - 137
4-NITROPHENOL	6666.66	4918.81	73.78	11 - 114
2,4-DINITROTOLUENE	3333.33	2315.38	69.46	28 - 89
PENTACHLOROPHENOL	6666.66	4742.78	71.14	17 - 109
PYRENE	3333.33	2700.35	81.01	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	6666.66	3518.50	1	52.78	26 - 90
2-CHLOROPHENOL	6666.66	4491.44	36	67.37	25 - 102
1,4-DICHLOROBENZENE	3333.33	1776.85	35	53.31	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2757.20	18	82.72	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	2433.26	2	73.00	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	3810.61	4	57.16	26 - 103
ACENAPHTHENE	3333.33	2681.65	6	80.45	31 - 137
4-NITROPHENOL	6666.66	4944.33	0	74.16	11 - 114
2,4-DINITROTOLUENE	3333.33	2358.72	2	70.76	28 - 89
PENTACHLOROPHENOL	6666.66	5098.74	7	76.48	17 - 109
PYRENE	3333.33	2656.08	1	79.68	35 - 142

QA/QC SURROGATE RECOVERIES

LCS								
NITROBENZENE-d5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	87%	TERPHENYL-d14	(18-137)	78%
PHENOL-d5	(24-113)	51%	2-FLUOROPHENOL	(25-121)	114%	2,4,6-TRIBROMOPHENOL	(19-122)	83%
LCSD								
NITROBENZENE-d5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	74%	TERPHENYL-d14	(18-137)	74%
PHENOL-d5	(24-113)	59%	2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	105%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280

DATE: 12/10/93

SWLO QAQC#: 931110-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION: LABQC
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	79%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	77%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280

DATE: 12/10/93

SWLO QAQC#: 931110-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION: LABQC
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931117A
INST. BATCH: 14301
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/17/93 11:08
ANALYZED : 11/17/93 11:34

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	74	150	73	147	1.84	28	32-161
BROMOMETHANE	50	51	102	56	112	9.01	23	50-191
VINYL CHLORIDE	50	54	108	54	109	< 1	25	65-167
CHLOROETHANE	50	56	112	61	123	9.75	28	32-212
METHYLENE CHLORIDE	50	51	102	50	100	1.93	43	52-168
ACETONE	50	35	71	46	92	26.9	50	53-146
CARBON DISULFIDE	50	53	107	52	105	1.72	31	50-162
1,1-DICHLOROETHENE	50	53	107	52	104	3.25	32	54-161
1,1-DICHLOROETHANE	50	54	109	53	106	2.6	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	110	112	110	108	3.78	35	74-162
CHLOROFORM	50	53	106	52	105	1.06	19	57-152
1,2-DICHLOROETHANE	50	55	110	56	112	1.39	26	59-151
2-BUTANONE	50	44	89	48	96	7.43	29	42-173
1,1,1-TRICHLOROETHANE	50	49	98	50	101	3.02	51	38-179
CARBON TETRACHLORIDE	50	50	100	52	106	5.91	49	37-182
VINYL ACETATE	50	96	193*	76	152*	24	60	22-122
BROMODICHLOROMETHANE	50	50	101	53	107	6.2	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	43	86	53	107	21.2	95	14-157
1,2-DICHLOROPROPANE	50	49	99	52	106	6.57	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	50	100	52	104	4.2	42	10-164
TRICHLOROETHENE	50	50	101	49	98	2.51	38	67-149
DIBROMOCHLOROMETHANE	50	47	94	51	103	8.29	21	43-157
1,1,2-TRICHLOROETHANE	50	47	94	50	100	6.16	31	40-179
BENZENE	50	49	99	51	103	4.4	46	70-134
CIS-1,3-DICHLOROPROPENE	50	50	101	60	121	18.6	33	34-199
2-CHLOROETHYL VINYL ETHE	50	47	95	60	122	24.8	61	73-156
BROMOFORM	50	45	91	53	106	15.3	52	34-151
2-HEXANONE	50	45	91	53	107	16.3	97	27-176
4-METHYL-2-PENTANONE	50	45	91	58	116	24.1	62	23-208
TETRACHLOROETHENE	50	53	107	53	106	< 1	24	61-141
TOLUENE	50	51	102	52	104	1.56	15	75-140
CHLOROBENZENE	50	52	104	52	104	< 1	14	72-135
ETHYLBENZENE	50	51	103	51	103	< 1	17	55-147
STYRENE	50	53	107	52	105	2.03	27	64-147
XYLENE (TOTAL)	150	150	102	150	101	1.49	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	105	88-110
BROMOFLUOROBENZENE	101	102	86-115
1,2-DICHLOROETHANE-D4	104	108	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931117A
INST. BATCH: 14301
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931117A
LOCATION:

ANALYZED : 11/17/93 10:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	105%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	108%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931116A
INST. BATCH: 14209
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/16/93 11:12
ANALYZED : 11/16/93 11:38

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	64	128	63	127	< 1	28	32-161
BROMOMETHANE	50	49	98	51	102	3.49	23	50-191
VINYL CHLORIDE	50	51	103	49	99	4.24	25	65-167
CHLOROETHANE	50	50	101	50	100	1.26	28	32-212
METHYLENE CHLORIDE	50	52	105	52	104	< 1	43	52-168
ACETONE	50	29	59	37	74	24.0	50	53-146
CARBON DISULFIDE	50	52	104	50	100	3.44	31	50-162
1,1-DICHLOROETHENE	50	55	111	52	105	5.98	32	54-161
1,1-DICHLOROETHANE	50	57	115	55	111	3.86	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	120	119	110	111	6.45	35	74-162
CHLOROFORM	50	56	114	55	110	3.32	19	57-152
1,2-DICHLOROETHANE	50	54	108	57	114	5.39	26	59-151
2-BUTANONE	50	42	85	50	101	17.7	29	42-173
1,1,1-TRICHLOROETHANE	50	54	108	54	109	1.03	51	38-179
CARBON TETRACHLORIDE	50	54	109	55	110	< 1	49	37-182
VINYL ACETATE	50	100	208*	82	165*	23.1	60	22-122
BROMODICHLOROMETHANE	50	47	95	54	109	13.2	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	47	94	63	127	29.3	95	14-157
1,2-DICHLOROPROPANE	50	51	103	55	111	6.97	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	48	96	53	107	10.9	42	10-164
TRICHLOROETHENE	50	51	103	50	101	2.52	38	67-149
DIBROMOCHLOROMETHANE	50	47	95	55	111	16.1	21	43-157
1,1,2-TRICHLOROETHANE	50	45	91	52	104	13.0	31	40-179
BENZENE	50	51	102	53	106	3.2	46	70-134
CIS-1,3-DICHLOROPROPENE	50	48	98	54	108	9.82	33	34-199
2-CHLOROETHYL VINYL ETHE	50	43	87	55	110	23.3	61	73-156
BROMOFORM	50	46	92	60	120	25.9	52	34-151
2-HEXANONE	50	40	82	55	111	31.0	97	27-176
4-METHYL-2-PENTANONE	50	44	89	58	118	28.0	62	23-208
TETRACHLOROETHENE	50	54	109	53	106	2.92	24	61-141
TOLUENE	50	51	103	50	101	2.18	15	75-140
CHLOROBENZENE	50	52	106	54	108	2.05	14	72-135
ETHYLBENZENE	50	53	107	53	107	< 1	17	55-147
STYRENE	50	54	109	55	110	< 1	27	64-147
XYLENE (TOTAL)	150	160	108	160	107	< 1	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	99	88-110
BROMOFLUOROBENZENE	106	102	86-115
1,2-DICHLOROETHANE-D4	102	104	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931116A
INST. BATCH: 14209
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931116A
LOCATION:

ANALYZED : 11/16/93 10:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	103%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931116A
INST. BATCH: 14218
REPORTED : 12/07/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/16/93 10:21
ANALYZED : 11/16/93 10:45

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	46	92	43	86	6.61	16	60-141
1,2-DICHLOROETHENE(TOTAL	100	87	88	89	89	1.81	21	72-133
TRICHLOROETHENE	50	57	115	55	110	4.8	21	71-134
BENZENE	50	50	100	46	93	7.42	13	79-128
TOLUENE	50	56	112	52	104	8.07	11	80-122
CHLOROBENZENE	50	51	103	50	101	2.17	10	80-125
XYLENE (TOTAL)	150	160	104	140	95	9.74	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	111	105	81-117
BROMOFLUOROBENZENE	102	87	74-121
1,2-DICHLOROETHANE-D4	89	82	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931116A
INST. BATCH: 14218
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931116A
LOCATION:

ANALYZED : 11/16/93 09:54
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
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I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931115A
INST. BATCH: 14124
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/15/93 11:12
ANALYZED : 11/15/93 11:35

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	43	87	30	60	37.7*	18	21-170
BROMOMETHANE	50	49	98	34	68	37.2*	36	46-161
VINYL CHLORIDE	50	36	73	26	52	34.1*	26	31-168
CHLOROETHANE	50	44	89	26	53	50.6	54	44-154
METHYLENE CHLORIDE	50	49	99	42	84	15.7	21	77-141
ACETONE	50	27	54	28	56	4.44	59	30-160
CARBON DISULFIDE	50	46	93	36	74	23.2	29	52-129
1,1-DICHLOROETHENE	50	51	102	43	86	17.2*	16	60-141
1,1-DICHLOROETHANE	50	48	97	38	77	22.4*	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	94	95	84	85	11.2	21	72-133
CHLOROFORM	50	50	101	44	89	13.0	17	79-129
1,2-DICHLOROETHANE	50	48	96	41	83	15.5	19	81-132
2-BUTANONE	50	40	81	57	114	33.5	91	16-130
1,1,1-TRICHLOROETHANE	50	49	98	47	94	4.53	45	66-140
CARBON TETRACHLORIDE	50	52	104	51	102	1.72	21	65-140
VINYL ACETATE	50	22	45	21	42	5.76	72	17-153
BROMODICHLOROMETHANE	50	48	96	50	100	4.27	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	38	77	50	101	27.4	78	49-127
1,2-DICHLOROPROPANE	50	43	87	45	91	4.37	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	40	80	40	80	< 1	41	48-141
TRICHLOROETHENE	50	54	109	58	118	7.62	21	71-134
DIBROMOCHLOROMETHANE	50	52	106	54	110	3.7	25	68-120
1,1,2-TRICHLOROETHANE	50	48	96	52	105	8.46	28	68-120
BENZENE	50	46	94	46	94	< 1	13	79-128
CIS-1,3-DICHLOROPROPENE	50	44	89	44	90	< 1	29	63-123
2-CHLOROETHYL VINYL ETHE	50	110	217*	120	242*	11.1	45	0-146
BROMOFORM	50	49	99	58	117	16.4	37	58-119
2-HEXANONE	50	39	79	60	121	41.9	60	20-181
4-METHYL-2-PENTANONE	50	37	75	61	122	48.4	54	33-163
TETRACHLOROETHENE	50	49	98	50	100	2.73	21	80-125
TOLUENE	50	44	89	48	96	7.99	11	80-122
CHLOROBENZENE	50	50	100	50	100	< 1	10	80-125
ETHYLBENZENE	50	49	98	48	96	1.37	19	82-123
STYRENE	50	48	96	51	102	5.95	13	71-129
XYLENE (TOTAL)	150	150	98	150	100	2.32	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	92	96	81-117
BROMOFLUOROBENZENE	100	98	74-121
1,2-DICHLOROETHANE-D4	99	82	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931115A
INST. BATCH: 14124
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931115A
LOCATION:

ANALYZED : 11/15/93 10:40
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	95%
1,2-DICHLOROETHANE-D4	(70-121)	85%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931111A
INST. BATCH: 13987
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS

MATRIX : SOIL
ANALYZED : 11/11/93 10:04

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE LIMITS CONC.	%Rec	%Rec.
CHLOROMETHANE	50	43	86	21-170
BROMOMETHANE	50	61	123	46-161
VINYL CHLORIDE	50	36	73	31-168
CHLOROETHANE	50	43	87	44-154
METHYLENE CHLORIDE	50	47	94	77-141
ACETONE	50	29	58	30-160
CARBON DISULFIDE	50	46	92	52-129
1,1-DICHLOROETHENE	50	50	100	60-141
1,1-DICHLOROETHANE	50	44	89	75-129
1,2-DICHLOROETHENE(TOTAL	100	94	94	72-133
CHLOROFORM	50	50	101	79-129
1,2-DICHLOROETHANE	50	43	87	81-132
2-BUTANONE	50	40	80	16-130
1,1,1-TRICHLOROETHANE	50	51	102	66-140
CARBON TETRACHLORIDE	50	54	108	65-140
VINYL ACETATE	50	54	108	17-153
BROMODICHLOROMETHANE	50	46	92	71-124
1,1,2,2-TETRACHLOROETHAN	50	38	76	49-127
1,2-DICHLOROPROPANE	50	44	89	81-122
TRANS-1,3-DICHLOROPROPEN	50	39	79	48-141
TRICHLOROETHENE	50	52	104	71-134
DIBROMOCHLOROMETHANE	50	46	93	68-120
1,1,2-TRICHLOROETHANE	50	44	89	68-120
BENZENE	50	49	99	79-128
CIS-1,3-DICHLOROPROPENE	50	43	86	63-123
2-CHLOROETHYL VINYL ETHE	50	76	154*	0-146
BROMOFORM	50	40	82	58-119
2-HEXANONE	50	34	70	20-181
4-METHYL-2-PENTANONE	50	42	84	33-163
TETRACHLOROETHENE	50	56	112	80-125
TOLUENE	50	52	104	80-122
CHLOROBENZENE	50	51	103	80-125
ETHYLBENZENE	50	52	104	82-123
STYRENE	50	50	100	71-129
XYLENE (TOTAL)	150	150	98	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	Limits
TOLUENE-D8	104	81-117
BROMOFLUOROBENZENE	98	74-121
,2-DICHLOROETHANE-D4	85	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931111A
INST. BATCH: 13987
REPORTED : 12/06/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931111A
LOCATION:

ANALYZED : 11/11/93 09:35
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	13	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	86%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.23

DATE: 12/10/93

SWLO #: 16280.23 AB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	108%
1,2-DICHLOROETHANE-D4	(76-114)	108%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.22

DATE: 12/10/93

SWLO #: 16280.22 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	39		TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	106%
1,2-DICHLOROETHANE-D4	(76-114)	104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.21

DATE: 12/10/93

SWLO #: 16280.21 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	10	
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	106%
1,2-DICHLOROETHANE-D4	(76-114)	103%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.567	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.36		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	1.13		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.567	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	34.8		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.34	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	5.79		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.113	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	10.3		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.113	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	8.51		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/13/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.13	U	NAPHTHA C6-C12	1.13	U
KEROSENE C9-C18	1.13	U	#6 FUEL OIL C12-C24	1.13	U
JP-4 C6-C14	1.13	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	11.3	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 91%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	90%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	77%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	87.4	J	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	74.9	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.20

DATE: 12/10/93

SWLO #: 16280.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	35		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	110%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.19

DATE: 12/10/93

SWLO #: 16280.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.528	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.19

DATE: 12/10/93

SWLO #: 16280.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.06	U	mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	1.69		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.528	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	67.9		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.317	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	7.81		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.106	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	1.8		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.106	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	4.54		mg/kg	11/13/93	11/15/93	SW846-6010

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DATE: 12/10/93

SWLO #: 16280.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/13/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.06	U	NAPHTHA C6-C12	1.06	U
KEROSENE C9-C18	1.06	U	#6 FUEL OIL C12-C24	1.06	U
JP-4 C6-C14	1.06	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	96%

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DATE: 12/10/93

SWLO #: 16280.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10.6	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 101%

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REPORT: 16280.19

DATE: 12/10/93

SWLO #: 16280.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	89%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	75%
2-FLUOROPHENOL	(25-121)	52%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

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SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	95.1	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
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REPORT: 16280.19

DATE: 12/10/93

SWLO #: 16280.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB4
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	10	U	BENZENE	5.3	U
METHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	5.3	U
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	10	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	87%	BROMOFLUOROBENZENE	(74-121)	86%
1,2-DICHLOROETHANE-D4	(70-121)	78%			

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REPORT: 16280.18

DATE: 12/10/93

SWLO #: 16280.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.631	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.3SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.01		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	0.758		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.631	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	138		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.379	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	3.41		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.126	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	3.66		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.126	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	3.66		mg/kg	11/13/93	11/15/93	SW846-6010

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DATE: 12/10/93

SWLO #: 16280.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/13/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.3	U	NAPHTHA C6-C12	1.3	U
KEROSENE C9-C18	1.3	U	#6 FUEL OIL C12-C24	1.3	U
JP-4 C6-C14	1.3	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE (21-166) 104%

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LOCATION:
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METHOD REFERENCE: MODIFIED 8015

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SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	12.6	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 89%

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DATE: 12/10/93

SWLO #: 16280.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2100	U	BENZO(K)FLUORANTHENE	430	U
2-CHLORONAPHTHALENE	430	U	BENZO(A)PYRENE	430	U
2-NITROANILINE	2100	U	INDENO(1,2,3-CD)PYRENE	430	U
DIMETHYL PHTHALATE	430	U	DIBENZ(A,H)ANTHRACENE	430	U
ACENAPHTHYLENE	430	U	BENZO(G,H,I)PERYLENE	430	U
3-NITROANILINE	2100	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	71%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

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METHOD REFERENCE: SW846-8270

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SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	430	U	ACENAPHTHENE	430	U
BIS(2-CHLOROETHYL)ETHER	430	U	2,4-DINITROPHENOL	2100	U
2-CHLOROPHENOL	430	U	4-NITROPHENOL	2100	U
1,3-DICHLOROBENZENE	430	U	DIBENZOFURAN	430	U
1,4-DICHLOROBENZENE	430	U	2,4-DINITROTOLUENE	430	U
BENZYL ALCOHOL	430	U	2,6-DINITROTOLUENE	430	U
1,2-DICHLOROBENZENE	430	U	DIETHYLPHTHALATE	430	U
2-METHYLPHENOL(O-CRESOL)	430	U	4-CHLOROPHENYL-PHENYLETHER	430	U
BIS(2-CHLOROISOPROPYL)ETHER	430	U	FLUORENE	430	U
4-METHYLPHENOL(P-CRESOL)	430	U	4-NITROANILINE	2100	U
N-NITROSO-DI-N-PROPYLAMINE	430	U	4,6-DINITRO-2-METHYLPHENOL	2100	U
HEXACHLOROETHANE	430	U	N-NITROSODIPHENYLAMINE(1)	430	U
NITROBENZENE	430	U	4-BROMOPHENYL-PHENYLETHER	430	U
ISOPHORONE	430	U	HEXACHLOROBENZENE	430	U
2-NITROPHENOL	430	U	PENTACHLOROPHENOL	2100	U
2,4-DIMETHYLPHENOL	430	U	PHENANTHRENE	430	U
BENZOIC ACID	107	J	ANTHRACENE	430	U
BIS(2-CHLOROETHOXY)METHANE	430	U	DI-N-BUTYL PHTHALATE	430	U
2,4-DICHLOROPHENOL	430	U	FLUORANTHENE	430	U
1,2,4-TRICHLOROBENZENE	430	U	PYRENE	430	U
NAPHTHALENE	430	U	BUTYL BENZYL PHTHALATE	430	U
4-CHLOROANILINE	430	U	3,3'-DICHLOROBENZIDINE	860	U
HEXACHLOROBUTADIENE	430	U	BENZO(A)ANTHRACENE	430	U
4-CHLORO-3-METHYLPHENOL	430	U	BIS(2-ETHYLHEXYL)PHTHALATE	167	J
2-METHYLNAPHTHALENE	430	U	CHRYSENE	430	U
HEXACHLOROCYCLOPENTADIENE	430	U	DI-N-OCTYL PHTHALATE	430	U
2,4,6-TRICHLOROPHENOL	430	U	BENZO(B)FLUORANTHENE	430	U

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REPORT: 16280.18

DATE: 12/10/93

SWLO #: 16280.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.26

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	13	U	TRICHLOROETHENE	6.3	U
BROMOMETHANE	13	U	DIBROMOCHLOROMETHANE	6.3	U
VINYL CHLORIDE	13	U	1,1,2-TRICHLOROETHANE	6.3	U
CHLOROETHANE	13	U	BENZENE	6.3	U
METHYLENE CHLORIDE	6.3	U	CIS-1,3-DICHLOROPROPENE	6.3	U
ACETONE	13	U	2-CHLOROETHYL VINYL ETHER	13	U
CARBON DISULFIDE	6.3	U	BROMOFORM	6.3	U
1,1-DICHLOROETHENE	6.3	U	2-HEXANONE	13	U
1,1-DICHLOROETHANE	6.3	U	4-METHYL-2-PENTANONE	13	U
CHLOROFORM	6.3	U	TETRACHLOROETHENE	6.3	U
1,2-DICHLOROETHANE	6.3	U	TOLUENE	6.3	U
1,1,1-TRICHLOROETHANE	6.3	U	CHLOROBENZENE	6.3	U
CARBON TETRACHLORIDE	6.3	U	ETHYLBENZENE	6.3	U
VINYL ACETATE	13	U	STYRENE	6.3	U
BROMODICHLOROMETHANE	6.3	U	1,2-DICHLOROETHENE(TOTAL)	6.3	U
1,1,2,2-TETRACHLOROETHANE	6.3	U	XYLENE (TOTAL)	6.3	U
1,2-DICHLOROPROPANE	6.3	U	2-BUTANONE	13	U
TRANS-1,3-DICHLOROPROPENE	6.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	86%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
DIESEL C10-C22	205		

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	114%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	478		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 86%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
DIESEL C10-C22	192		

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	518		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 88%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.564	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	0.789		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	1.92		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.564	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	58.7		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.338	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	5.41		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.113	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	2.59		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.113	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	37.1		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

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SAMPLE #: I24.3SB1
LOCATION:
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METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.13	U	NAPHTHA C6-C12	1.13	U
KEROSENE C9-C18	1.13	U	#6 FUEL OIL C12-C24	1.13	U
JP-4 C6-C14	1.13	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	90%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	11.3	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 80%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	89%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	86.7	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.17

DATE: 12/10/93

SWLO #: 16280.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	86%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	84%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.16

DATE: 12/10/93

SWLO #: 16280.16 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	10	U	ug/l	/ /	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16280.16

DATE: 12/10/93

SWLO #: 16280.16 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/13/93	11/14/93	SW846-6010
LEAD	3	U	ug/l	11/13/93	11/14/93	SW846-6010
SELENIUM	5	U	ug/l	11/13/93	11/14/93	SW846-6010
BARIUM	14.9		ug/l	11/13/93	11/15/93	SW846-6010
CADMIUM	3	U	ug/l	11/13/93	11/15/93	SW846-6010
CHROMIUM	5	U	ug/l	11/13/93	11/15/93	SW846-6010
MERCURY	0.2	U	ug/l	11/10/93	11/10/93	SW846-7470
NICKEL	10	U	ug/l	11/13/93	11/15/93	SW846-6010
SILVER	1	U	ug/l	11/13/93	11/27/93	SW846-7761
ZINC	15	U	ug/l	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16280.16

DATE: 12/10/93

SWLO #: 16280.16 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	75%	2-FLUOROBIPHENYL	(43-116)	62%
TERPHENYL-D14	(33-141)	131%	PHENOL-D5	(10- 94)	61%
2-FLUOROPHENOL	(21-100)	63%	2,4,6-TRIBROMOPHENOL	(10-123)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/10/93

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SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.16

DATE: 12/10/93

SWLO #: 16280.16 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/07/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	25		TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	1.4	J
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	105%
1,2-DICHLOROETHANE-D4	(76-114)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.15

DATE: 12/10/93

SWLO #: 16280.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 16.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.578	U	mg/kg	/ /	11/12/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.15

DATE: 12/10/93

SWLO #: 16280.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 16.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.43		mg/kg	11/13/93	11/14/93	SW846-6010
LEAD	0.809		mg/kg	11/13/93	11/14/93	SW846-6010
SELENIUM	0.578	U	mg/kg	11/13/93	11/14/93	SW846-6010
BARIUM	4710		mg/kg	11/13/93	11/15/93	SW846-6010
CADMIUM	0.347	U	mg/kg	11/13/93	11/15/93	SW846-6010
CHROMIUM	4.16		mg/kg	11/13/93	11/15/93	SW846-6010
MERCURY	0.116	U	mg/kg	11/13/93	11/14/93	SW846-7471
NICKEL	5.08		mg/kg	11/13/93	11/15/93	SW846-6010
SILVER	0.116	U	mg/kg	11/13/93	11/27/93	SW846-7761
ZINC	7.16		mg/kg	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.15

DATE: 12/10/93

SWLO #: 16280.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 16.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16280.15

DATE: 12/10/93

SWLO #: 16280.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 16.50
DATE PREPARED : 11/10/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	90.1	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16280.15

DATE: 12/10/93

SWLO #: 16280.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.1SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/08/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 16.50
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	12	U	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	72%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other _____

PROJECT NUMBER: AU 401.08

AIRBILL OR CARRIER ID #: 8503062724

SAMPLER(S): M. HARDER R. NELSON
(Signature) [signature] [signature]

PRESERVATIVE

ANALYSIS REQUIRED

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA 8240	SVOA 8270	Metals 6010	CN 9010	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11-9-93	–	Field QC		TB1	WQ	NA	0	0	2	X				0	0	1	A	
	1105	I24.2SB5		N1	SO	H	5.0	6.0	3	X	X	X	X	0	0	1	A	
	1205	I24.2SB5		N1	SO	H	13.0	13.5	3	X	X	X	X	0	0	1	A	
	1510	I24.2SB6		N1	SO	H	5.5	6.5	3	X	X	X	X	0	0	1	A	
	1605	I24.2SB6		N1	SO	H	17.0	18.0	3	X	X	X	X	0	0	1	A	
	1645	I24.8SB4		N1	SO	SS	4.0	5.5	3	X	X	X	X	0	0	1	A	
	1710	I24.8SB4		N1	SO	SS	8.0	9.5	3	X	X	X	X	0	0	1	A	
	~~1053~~	~~I24.8~~ RN																
	1053	I24.12SB5		N1	SO	SS	6.0	7.5	3	X	X	X	X	0	0	1	A	

FIELD LOT CONTROL NUMBER

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	11-9-93	1750	(Signature)			(Signature)		
Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time
(Signature)			(Signature)			(Signature) [signature]	11/10/93	0845

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chaino.dwg

35

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8503062713

SAMPLER(S): M. HARDER R. NELSON
(Signature) [signature] [signature]

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	Number of Containers	VOA (8240)	SemiVOA (8270)	Metals (6010)	CN (9010)	TPH (8015)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	Remarks
11/10/93	–	FIELDQC		TB1	WQ	NA	0	0	2	X					1	1	1	A	
	1315	FIELDQC		AB1	WQ	NA	0	0	2	X					1	1	1	A	
	1327	FIELDQC		EB1	WQ	NA	0	0	8	X	X	X	X	X	1	1	1	A	
	0900	I24.2SB7		N1	SO	H	5.5	7	3	X	X	X	X		1	1	1	A	
	~~1010~~ 0900			FR1	SO	H	5.5	7	3	X	X	X	X		1	1	1	A	
	1010			N1	SO	H	13.5	14.5	3	X	X	X	X		1	1	1	A	
	↓	↓		MS1	SO	H	13.5	14.5	3	X	X	X	X		1	1	1	A	
	↓	↓		SD1	SO	H	13.5	14.5	3	X	X	X	X		1	1	1	A	
	1230	I24.2SB8		N1	SO	H	5	6	3	X	X	X	X		1	1	1	A	
	↓	↓		FR1	SO	H	5	6	3	X	X	X	X		1	1	1	A	
	1335	↓		N1	SO	H	15.5	16	3	X	X	X	X		1	1	1	A	

Relinquished by:	Date	Time
(Signature) [signature]	11/10/93	1830
(Signature)		
(Signature)		

Received by:	Date	Time
(Signature)		
(Signature)		
(Signature) [signature]	11/11/93	0900

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.01

DATE: 12/14/93

SWLO #: 16298.01 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	97%	BROMOFLUOROBENZENE	(86-115)	106%
1,2-DICHLOROETHANE-D4	(76-114)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.02

DATE: 12/14/93

SWLO #: 16298.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB5
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	7.7		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	160		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	2.9	J
1,2-DICHLOROETHANE	5.8	U	TOLUENE	4.1	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.02

DATE: 12/14/93

SWLO #: 16298.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB5
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	460	B	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	406	B	4-NITROPHENOL	415	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	472	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	115	J
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	102	J
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	488	B	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	94%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	91%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB5
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.17	U	mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	1.87		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.584	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	107		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	2.69		mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	31		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.117	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	6.43		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.117	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	4.32		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.2SB5
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.608	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.03

DATE: 12/14/93

SWLO #: 16298.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB5
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.00
DEPTH TO : 13.50
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	4.2	J	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	7.7	J	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	1.9	J
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

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SAMPLE #: I24.2SB5
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.00
DEPTH TO : 13.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	340	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	304	JB	4-NITROPHENOL	208	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	144	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	290	JB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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DATE: 12/14/93

SWLO #: 16298.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB5
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.00
DEPTH TO : 13.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	87%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/14/93

SWLO #: 16298.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB5
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.00
DEPTH TO : 13.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.26		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	12.9		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.765		mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	165		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.328	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	12.6		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.109	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	23.7		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.109	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	26.1		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.2SB5
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.00
DEPTH TO : 13.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.546	U	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16298.04

DATE: 12/14/93

SWLO #: 16298.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 141.79

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1400	U	TRICHLOROETHENE	710	U
BROMOMETHANE	1400	U	DIBROMOCHLOROMETHANE	710	U
VINYL CHLORIDE	1400	U	1,1,2-TRICHLOROETHANE	710	U
CHLOROETHANE	1400	U	BENZENE	710	U
METHYLENE CHLORIDE	710	U	CIS-1,3-DICHLOROPROPENE	710	U
ACETONE	2900		2-CHLOROETHYL VINYL ETHER	1400	U
CARBON DISULFIDE	710	U	BROMOFORM	710	U
1,1-DICHLOROETHENE	710	U	2-HEXANONE	1400	U
1,1-DICHLOROETHANE	710	U	4-METHYL-2-PENTANONE	1400	U
CHLOROFORM	710	U	TETRACHLOROETHENE	710	U
1,2-DICHLOROETHANE	710	U	TOLUENE	810	B
1,1,1-TRICHLOROETHANE	710	U	CHLOROBENZENE	710	U
CARBON TETRACHLORIDE	710	U	ETHYLBENZENE	710	U
VINYL ACETATE	1400	U	STYRENE	710	U
BROMODICHLOROMETHANE	710	U	1,2-DICHLOROETHENE(TOTAL)	710	U
1,1,2,2-TETRACHLOROETHANE	710	U	XYLENE (TOTAL)	710	U
1,2-DICHLOROPROPANE	710	U	2-BUTANONE	3400	
TRANS-1,3-DICHLOROPROPENE	710	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121)	113%
1,2-DICHLOROETHANE-D4	(70-121)	113%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/14/93

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SAMPLE #: I24.2SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.15

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	384	B	ACENAPHTHENE	380	U
BIS(2-CHLOROETHYL)ETHER	380	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	310	JB	4-NITROPHENOL	245	JB
1,3-DICHLOROBENZENE	380	U	DIBENZOFURAN	380	U
1,4-DICHLOROBENZENE	380	U	2,4-DINITROTOLUENE	380	U
BENZYL ALCOHOL	380	U	2,6-DINITROTOLUENE	380	U
1,2-DICHLOROBENZENE	380	U	DIETHYLPHTHALATE	380	U
2-METHYLPHENOL(O-CRESOL)	380	U	4-CHLOROPHENYL-PHENYLETHER	380	U
BIS(2-CHLOROISOPROPYL)ETHER	380	U	FLUORENE	380	U
4-METHYLPHENOL(P-CRESOL)	375	J	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	380	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	380	U	N-NITROSODIPHENYLAMINE(1)	380	U
NITROBENZENE	380	U	4-BROMOPHENYL-PHENYLETHER	380	U
ISOPHORONE	380	U	HEXACHLOROBENZENE	380	U
2-NITROPHENOL	380	U	PENTACHLOROPHENOL	268	JB
2,4-DIMETHYLPHENOL	380	U	PHENANTHRENE	380	U
BENZOIC ACID	1800	U	ANTHRACENE	380	U
BIS(2-CHLOROETHOXY)METHANE	380	U	DI-N-BUTYL PHTHALATE	380	U
2,4-DICHLOROPHENOL	380	U	FLUORANTHENE	380	U
1,2,4-TRICHLOROBENZENE	380	U	PYRENE	380	U
NAPHTHALENE	380	U	BUTYL BENZYL PHTHALATE	380	U
4-CHLOROANILINE	380	U	3,3'-DICHLOROBENZIDINE	760	U
HEXACHLOROBUTADIENE	380	U	BENZO(A)ANTHRACENE	380	U
4-CHLORO-3-METHYLPHENOL	352	JB	BIS(2-ETHYLHEXYL)PHTHALATE	380	U
2-METHYLNAPHTHALENE	380	U	CHRYSENE	380	U
HEXACHLOROCYCLOPENTADIENE	380	U	DI-N-OCTYL PHTHALATE	380	U
2,4,6-TRICHLOROPHENOL	380	U	BENZO(B)FLUORANTHENE	380	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.04

DATE: 12/14/93

SWLO #: 16298.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 6.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.15

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	380	U
2-CHLORONAPHTHALENE	380	U	BENZO(A)PYRENE	380	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	380	U
DIMETHYL PHTHALATE	380	U	DIBENZ(A,H)ANTHRACENE	380	U
ACENAPHTHYLENE	380	U	BENZO(G,H,I)PERYLENE	380	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.04

DATE: 12/14/93

SWLO #: 16298.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 6.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.7		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	0.907		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.567	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	65.8		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.34	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	35.4		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.113	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	3.74		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.113	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	3.29		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.04

DATE: 12/20/93

SWLO #: 16298.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 6.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	2.16	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.05

DATE: 12/14/93

SWLO #: 16298.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
HLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	2.9	J	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	26		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

OLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	98%
,2-DICHLOROETHANE-D4	(70-121)	100%			

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DATE: 12/14/93

SWLO #: 16298.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	375	B	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	301	JB	4-NITROPHENOL	226	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	151	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	302	JB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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REPORT: 16298.05

DATE: 12/14/93

SWLO #: 16298.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	86%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	75%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.05

DATE: 12/14/93

SWLO #: 16298.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.17		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	9.56		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.659		mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	92.8		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.33	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	12.5		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.11	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	21.4		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.11	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	25.2		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/20/93

SWLO #: 16298.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB6
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.549	U	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16298.06

DATE: 12/14/93

SWLO #: 16298.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 5.50
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	23		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	5.3	U
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	90%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.06

DATE: 12/14/93

SWLO #: 16298.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 5.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	342	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	290	JB	4-NITROPHENOL	199	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	129	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	291	JB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 5.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	71%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.06

DATE: 12/14/93

SWLO #: 16298.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 5.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.86		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	4.77		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.53	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	215		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.318	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	13.5		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.106	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	8.8		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.106	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	13.2		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.06

DATE: 12/20/93

SWLO #: 16298.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 5.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.53	U	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.07

DATE: 12/14/93

SWLO #: 16298.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 8.00
DEPTH TO : 9.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	7		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	21		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	2.3	J
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	90%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

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REPORT: 16298.07

DATE: 12/14/93

SWLO #: 16298.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 8.00
DEPTH TO : 9.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	356	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	313	JB	4-NITROPHENOL	196	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	216	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	286	JB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298.07

DATE: 12/14/93

SWLO #: 16298.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB4
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 8.00
DEPTH TO : 9.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

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SAMPLE #: I24.8SB4
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 8.00
DEPTH TO : 9.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	5.28		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	2.81		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.561	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	323		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.337	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	10.7		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	9.66		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.112	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	12		mg/kg	11/15/93	11/16/93	SW846-6010

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SAMPLE #: I24.8SB4
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 8.00
DEPTH TO : 9.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.561	U	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16298.08

DATE: 12/14/93

SWLO #: 16298.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB5
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	6.1		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	35		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	1.6	J
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	100%			

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Attn: KEVIN TYNES

REPORT: 16298.08

DATE: 12/14/93

SWLO #: 16298.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB5
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	348	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	320	JB	4-NITROPHENOL	233	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	216	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	297	JB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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REPORT: 16298.08

DATE: 12/14/93

SWLO #: 16298.08 N1
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LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	68%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

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SAMPLE #: I24.12SB5
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.35		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	3.14		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.561	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	534		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.336	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	78.8		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/15/93	11/15/93	SW846-7471
ICKEL	79.8		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.112	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	10.8		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16298.08

DATE: 12/20/93

SWLO #: 16298.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB5
LOCATION:

DATE SAMPLED: 11/09/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.561	U	mg/kg	11/12/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.01

DATE: 12/14/93

SWLO #: 16326.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
ETHYLENE CHLORIDE	3.3	J	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	70		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	1.8	J
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	93%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	93%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.01

DATE: 12/14/93

SWLO #: 16326.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.15

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	369	JB	ACENAPHTHENE	380	U
BIS(2-CHLOROETHYL)ETHER	380	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	319	JB	4-NITROPHENOL	251	JB
1,3-DICHLOROBENZENE	380	U	DIBENZOFURAN	380	U
1,4-DICHLOROBENZENE	380	U	2,4-DINITROTOLUENE	380	U
BENZYL ALCOHOL	380	U	2,6-DINITROTOLUENE	380	U
1,2-DICHLOROBENZENE	380	U	DIETHYLPHTHALATE	380	U
2-METHYLPHENOL(O-CRESOL)	380	U	4-CHLOROPHENYL-PHENYLETHER	380	U
BIS(2-CHLOROISOPROPYL)ETHER	380	U	FLUORENE	380	U
4-METHYLPHENOL(P-CRESOL)	380	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	380	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	380	U	N-NITROSODIPHENYLAMINE(1)	380	U
NITROBENZENE	380	U	4-BROMOPHENYL-PHENYLETHER	380	U
ISOPHORONE	380	U	HEXACHLOROBENZENE	380	U
2-NITROPHENOL	380	U	PENTACHLOROPHENOL	185	JB
2,4-DIMETHYLPHENOL	380	U	PHENANTHRENE	380	U
BENZOIC ACID	1800	U	ANTHRACENE	380	U
BIS(2-CHLOROETHOXY)METHANE	380	U	DI-N-BUTYL PHTHALATE	380	U
2,4-DICHLOROPHENOL	380	U	FLUORANTHENE	380	U
1,2,4-TRICHLOROBENZENE	380	U	PYRENE	380	U
NAPHTHALENE	380	U	BUTYL BENZYL PHTHALATE	380	U
4-CHLOROANILINE	380	U	3,3'-DICHLOROBENZIDINE	760	U
HEXACHLOROBUTADIENE	380	U	BENZO(A)ANTHRACENE	380	U
4-CHLORO-3-METHYLPHENOL	281	JB	BIS(2-ETHYLHEXYL)PHTHALATE	42	JB
2-METHYLNAPHTHALENE	380	U	CHRYSENE	380	U
HEXACHLOROCYCLOPENTADIENE	380	U	DI-N-OCTYL PHTHALATE	380	U
2,4,6-TRICHLOROPHENOL	380	U	BENZO(B)FLUORANTHENE	380	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.01

DATE: 12/14/93

SWLO #: 16326.01 N1
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SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.15

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	380	U
2-CHLORONAPHTHALENE	380	U	BENZO(A)PYRENE	380	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	380	U
DIMETHYL PHTHALATE	380	U	DIBENZ(A,H)ANTHRACENE	380	U
ACENAPHTHYLENE	380	U	BENZO(G,H,I)PERYLENE	380	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.01

DATE: 12/14/93

SWLO #: 16326.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.6		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	3.78		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.573	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	299		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.344	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	10.8		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	9.28		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.114	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	11		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/20/93

SWLO #: 16326.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.573	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.02

DATE: 12/14/93

SWLO #: 16326.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	4.5	J	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	75		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	2.7	J
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.07

DATE: 12/14/93

SWLO #: 16326.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	6.39		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	7.84		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.844		mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	893		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.362	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	29.3		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.12	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	23.6		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.12	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	21.7		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.07

DATE: 12/20/93

SWLO #: 16326.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.603	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
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Attn: KEVIN TYNES

REPORT: 16326.08

DATE: 12/14/93

SWLO #: 16326.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
ETHYLENE CHLORIDE	3.2	J	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	150		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	1.6	J
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	3.3	J
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.08

DATE: 12/14/93

SWLO #: 16326.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	334	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	299	JB	4-NITROPHENOL	205	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	159	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	207	JB	BIS(2-ETHYLHEXYL)PHTHALATE	36	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.08

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SWLO #: 16326.08 N1
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DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 15.50
DEPTH TO : 16.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	48%	2,4,6-TRIBROMOPHENOL	(19-122)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/14/93

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SAMPLE #: I24.2SB8
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 15.50
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.22		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	11.6		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.57	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	127		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.342	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	14.9		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	18.6		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.114	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	25.9		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.08

DATE: 12/20/93

SWLO #: 16326.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 15.50
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.57	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.09

DATE: 12/14/93

SWLO #: 16326.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	6.2		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	130		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	6.1	
1,2-DICHLOROETHANE	5.8	U	TOLUENE	4.4	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.09

DATE: 12/14/93

SWLO #: 16326.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	326	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	293	JB	4-NITROPHENOL	239	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	171	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	273	JB	BIS(2-ETHYLHEXYL)PHTHALATE	46	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.09

DATE: 12/14/93

SWLO #: 16326.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	56%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.09

DATE: 12/14/93

SWLO #: 16326.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.03		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	5.98		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.575	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	240		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.345	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	15.6		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.115	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	14.7		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.115	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	17.4		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.09

DATE: 12/20/93

SWLO #: 16326.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.575	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.10

DATE: 12/14/93

SWLO #: 16326.10 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	6.3		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	56		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	1.3	J
1,2-DICHLOROETHANE	5.8	U	TOLUENE	3.4	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.10

DATE: 12/14/93

SWLO #: 16326.10 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	340	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	309	JB	4-NITROPHENOL	226	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	151	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	232	JB	BIS(2-ETHYLHEXYL)PHTHALATE	41	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.10

DATE: 12/14/93

SWLO #: 16326.10 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	63%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	51%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.10

DATE: 12/14/93

SWLO #: 16326.10 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.98		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	5.56		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.579	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	285		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.347	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	17.4		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.123		mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	14.2		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.116	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	17.1		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.10

DATE: 12/20/93

SWLO #: 16326.10 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.579	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.11

DATE: 12/14/93

SWLO #: 16326.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50
DATE PREPARED : / /
DILUTION FACTOR: 1.24

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6.2	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6.2	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6.2	U
CHLOROETHANE	12	U	BENZENE	6.2	U
METHYLENE CHLORIDE	5	J	CIS-1,3-DICHLOROPROPENE	6.2	U
ACETONE	120		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6.2	U	BROMOFORM	6.2	U
1,1-DICHLOROETHENE	6.2	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6.2	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6.2	U	TETRACHLOROETHENE	1.4	J
1,2-DICHLOROETHANE	6.2	U	TOLUENE	2.1	J
1,1,1-TRICHLOROETHANE	6.2	U	CHLOROBENZENE	6.2	U
CARBON TETRACHLORIDE	6.2	U	ETHYLBENZENE	6.2	U
VINYL ACETATE	12	U	STYRENE	6.2	U
BROMODICHLOROMETHANE	6.2	U	1,2-DICHLOROETHENE(TOTAL)	6.2	U
1,1,2,2-TETRACHLOROETHANE	6.2	U	XYLENE (TOTAL)	6.2	U
1,2-DICHLOROPROPANE	6.2	U	2-BUTANONE	2	J
TRANS-1,3-DICHLOROPROPENE	6.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	95%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.11

DATE: 12/14/93

SWLO #: 16326.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	168	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	339	JB	4-NITROPHENOL	188	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	102	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	191	JB	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.11

DATE: 12/14/93

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METHOD REFERENCE: SW846-8270

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SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	57%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

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SAMPLE #: S32.5SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.61		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	2.35		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.868		mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	38.2		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.372	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	6.44		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.124	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	4.96		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.124	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	6.44		mg/kg	11/15/93	11/16/93	SW846-6010

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.02

DATE: 12/20/93

SWLO #: 16326.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	372	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	337	JB	4-NITROPHENOL	239	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	169	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	305	JB	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.02

DATE: 12/20/93

SWLO #: 16326.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	91%	PHENOL-D5	(24-113)	68%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.02

DATE: 12/14/93

SWLO #: 16326.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.41		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	3.75		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.586	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	125		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.352	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	14.5		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.117	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	11.7		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.117	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	14.4		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/20/93

SWLO #: 16326.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.50
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.586	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.03

DATE: 12/14/93

SWLO #: 16326.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	1.5	J	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	14		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	94%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.03

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SWLO #: 16326.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	347	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	302	JB	4-NITROPHENOL	256	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	178	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	288	JB	BIS(2-ETHYLHEXYL)PHTHALATE	45	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.03

DATE: 12/20/93

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DEPTH FROM : 5.00
DEPTH TO : 14.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.03

DATE: 12/14/93

SWLO #: 16326.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	9.98		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	9.87		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.561	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	676		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.336	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	19.8		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	26.2		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.112	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	39.5		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.03

DATE: 12/20/93

SWLO #: 16326.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.561	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.04

DATE: 12/14/93

SWLO #: 16326.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	50	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	54	
METHYLENE CHLORIDE	1.7	J	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	22		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	49		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	54	
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	53	
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	90%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.04

DATE: 12/14/93

SWLO #: 16326.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5490	B	ACENAPHTHENE	3110	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	4600	B	4-NITROPHENOL	9400	EB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2040		2,4-DINITROTOLUENE	4270	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3070		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4040	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2290		PYRENE	2650	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4500		BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.04

DATE: 12/14/93

SWLO #: 16326.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	67%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	79%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	115%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	202	mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	55.9	mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	177	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	728	mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	4.35	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	28	mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.759	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	67.8	mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	5.13	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	71.8	mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/20/93

SWLO #: 16326.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.58	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.05

DATE: 12/14/93

SWLO #: 16326.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.50
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	52	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	56	
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	12		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	51		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	55	
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	55	
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.05

DATE: 12/20/93

SWLO #: 16326.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.50
DEPTH TO : 14.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4830	B	ACENAPHTHENE	2970	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	4930	B	4-NITROPHENOL	6500	EB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2240		2,4-DINITROTOLUENE	2910	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	2970		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4690	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2420		PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	41	JB
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	5290	B	BIS(2-ETHYLHEXYL)PHTHALATE	60	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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DATE: 12/20/93

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LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.50
DEPTH TO : 14.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.50
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	217	mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	59.4	mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	201	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	876	mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	4.57	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	34.7	mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.491	mg/kg	11/15/93	11/15/93	SW846-7471
ICKEL	72.8	mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	5.02	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	83.4	mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/20/93

SWLO #: 16326.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB7
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 13.50
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.58	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.06

DATE: 12/14/93

SWLO #: 16326.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	1.2	J	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	90		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	1.3	J
1,2-DICHLOROETHANE	6	U	TOLUENE	2.9	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121)	95%
1,2-DICHLOROETHANE-D4	(70-121)	101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16326.06

DATE: 12/14/93

SWLO #: 16326.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	292	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	255	JB	4-NITROPHENOL	188	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	174	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	61	JB
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	254	JB	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.06

DATE: 12/14/93

SWLO #: 16326.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
.CENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	41%	2-FLUOROBIPHENYL	(30-115)	46%
TERPHENYL-D14	(18-137)	65%	PHENOL-D5	(24-113)	43%
.-FLUOROPHENOL	(25-121)	38%	2,4,6-TRIBROMOPHENOL	(19-122)	50%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.06

DATE: 12/14/93

SWLO #: 16326.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	5.17		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	6.62		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.602	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	310		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.361	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	23.5		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.12	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	12.2		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.12	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	17		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.06

DATE: 12/20/93

SWLO #: 16326.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.602	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.07

DATE: 12/14/93

SWLO #: 16326.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	4	J	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	70		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	1.4	J
1,2-DICHLOROETHANE	6	U	TOLUENE	5.5	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16326.07

DATE: 12/14/93

SWLO #: 16326.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	207	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	188	JB	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	153	JB	BIS(2-ETHYLHEXYL)PHTHALATE	47	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.07

DATE: 12/14/93

SWLO #: 16326.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB8
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	36%	2-FLUOROBIPHENYL	(30-115)	42%
TERPHENYL-D14	(18-137)	44%	PHENOL-D5	(24-113)	37%
2-FLUOROPHENOL	(25-121)	35%	2,4,6-TRIBROMOPHENOL	(19-122)	39%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.12

DATE: 12/14/93

SWLO #: 16326.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	1.2	J	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	16		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	10	
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.8	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.12

DATE: 12/14/93

SWLO #: 16326.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	302	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	285	JB	4-NITROPHENOL	206	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	245	JB	BIS(2-ETHYLHEXYL)PHTHALATE	46	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.12

DATE: 12/14/93

SWLO #: 16326.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	57%	2,4,6-TRIBROMOPHENOL	(19-122)	89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/20/93

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	7.71		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.535		mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	397		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.321	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	26.6		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.107	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	13.9		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.214		mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	17.9		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.9SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.535	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.13

DATE: 12/14/93

SWLO #: 16326.13 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	51	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	57	
METHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	78		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	54		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	12	
1,2-DICHLOROETHANE	5.3	U	TOLUENE	85	
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	54	
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	2.2	J
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	13	
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 120% *	BROMOFLUOROBENZENE	(74-121) 104%
1,2-DICHLOROETHANE-D4	(70-121) 107%		

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SAMPLE #: I24.9SB2
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5160	B	ACENAPHTHENE	2880	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5310	B	4-NITROPHENOL	5670	EB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
,4-DICHLOROBENZENE	2200		2,4-DINITROTOLUENE	2970	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3130		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4240	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	58	J
1,2,4-TRICHLOROBENZENE	2460		PYRENE	2640	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	55	JB
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4780	B	BIS(2-ETHYLHEXYL)PHTHALATE	45	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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REPORT: 16326.13

DATE: 12/14/93

SWLO #: 16326.13 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	58%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	206	mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	56.6	mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	201	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	617	mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	5.14	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	43.1	mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.489	mg/kg	11/15/93	11/15/93	SW846-7471
ICKEL	61.5	mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	5.24	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	63.7	mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.9SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.03	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/14/93

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	53	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	58	
ETHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	60		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	52		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	22	
1,2-DICHLOROETHANE	5.3	U	TOLUENE	78	
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	56	
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	2	J
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	12	
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	110%	BROMOFLUOROBENZENE	(74-121)	99%
,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4580	B	ACENAPHTHENE	2780	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	4670	B	4-NITROPHENOL	5940	EB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2130		2,4-DINITROTOLUENE	3070	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	2770		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	3590	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2400		PYRENE	2690	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	52	JB
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4760	B	BIS(2-ETHYLHEXYL)PHTHALATE	43	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	204	mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	55.8	mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	199	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	542	mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	4.78	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	41.1	mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.496	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	59.3	mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	5.2	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	61.4	mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.14

DATE: 12/20/93

SWLO #: 16326.14 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.9SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 2.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.1	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.15

DATE: 12/14/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 6.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	61	U	TRICHLOROETHENE	31	U
BROMOMETHANE	61	U	DIBROMOCHLOROMETHANE	31	U
VINYL CHLORIDE	61	U	1,1,2-TRICHLOROETHANE	31	U
CHLOROETHANE	61	U	BENZENE	32	
METHYLENE CHLORIDE	31	U	CIS-1,3-DICHLOROPROPENE	31	U
ACETONE	530		2-CHLOROETHYL VINYL ETHER	61	U
CARBON DISULFIDE	31	U	BROMOFORM	31	U
1,1-DICHLOROETHENE	31	U	2-HEXANONE	61	U
1,1-DICHLOROETHANE	31	U	4-METHYL-2-PENTANONE	61	U
CHLOROFORM	31	U	TETRACHLOROETHENE	31	U
1,2-DICHLOROETHANE	31	U	TOLUENE	55	
1,1,1-TRICHLOROETHANE	31	U	CHLOROBENZENE	420	
CARBON TETRACHLORIDE	31	U	ETHYLBENZENE	130	
VINYL ACETATE	61	U	STYRENE	31	U
BROMODICHLOROMETHANE	31	U	1,2-DICHLOROETHENE(TOTAL)	31	U
1,1,2,2-TETRACHLOROETHANE	31	U	XYLENE (TOTAL)	400	
1,2-DICHLOROPROPANE	31	U	2-BUTANONE	61	U
TRANS-1,3-DICHLOROPROPENE	31	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	115%	BROMOFLUOROBENZENE	(74-121)	106%
1,2-DICHLOROETHANE-D4	(70-121)	108%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.15

DATE: 12/14/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 6.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	397	JB	ACENAPHTHENE	2000	U
BIS(2-CHLOROETHYL)ETHER	2000	U	2,4-DINITROPHENOL	9600	U
2-CHLOROPHENOL	305	JB	4-NITROPHENOL	9600	U
1,3-DICHLOROBENZENE	2000	U	DIBENZOFURAN	2000	U
,4-DICHLOROBENZENE	2000	U	2,4-DINITROTOLUENE	2000	U
BENZYL ALCOHOL	2000	U	2,6-DINITROTOLUENE	2000	U
1,2-DICHLOROBENZENE	2000	U	DIETHYLPHTHALATE	2000	U
2-METHYLPHENOL(O-CRESOL)	2000	U	4-CHLOROPHENYL-PHENYLETHER	2000	U
BIS(2-CHLOROISOPROPYL)ETHER	2000	U	FLUORENE	2000	U
4-METHYLPHENOL(P-CRESOL)	2000	U	4-NITROANILINE	9600	U
N-NITROSO-DI-N-PROPYLAMINE	2000	U	4,6-DINITRO-2-METHYLPHENOL	9600	U
HEXACHLOROETHANE	2000	U	N-NITROSODIPHENYLAMINE(1)	2000	U
NITROBENZENE	2000	U	4-BROMOPHENYL-PHENYLETHER	2000	U
ISOPHORONE	2000	U	HEXACHLOROBENZENE	2000	U
2-NITROPHENOL	2000	U	PENTACHLOROPHENOL	9600	U
2,4-DIMETHYLPHENOL	2000	U	PHENANTHRENE	2000	U
BENZOIC ACID	9600	U	ANTHRACENE	2000	U
BIS(2-CHLOROETHOXY)METHANE	2000	U	DI-N-BUTYL PHTHALATE	2000	U
2,4-DICHLOROPHENOL	2000	U	FLUORANTHENE	2000	U
1,2,4-TRICHLOROBENZENE	2000	U	PYRENE	2000	U
NAPHTHALENE	2000	U	BUTYL BENZYL PHTHALATE	2000	U
4-CHLOROANILINE	2000	U	3,3'-DICHLOROBENZIDINE	4000	U
HEXACHLOROBUTADIENE	2000	U	BENZO(A)ANTHRACENE	2000	U
4-CHLORO-3-METHYLPHENOL	359	JB	BIS(2-ETHYLHEXYL)PHTHALATE	581	JB
2-METHYLNAPHTHALENE	612	J	CHRYSENE	2000	U
HEXACHLOROCYCLOPENTADIENE	2000	U	DI-N-OCTYL PHTHALATE	2000	U
2,4,6-TRICHLOROPHENOL	2000	U	BENZO(B)FLUORANTHENE	2000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.15

DATE: 12/14/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 6.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	9600	U	BENZO(K)FLUORANTHENE	2000	U
2-CHLORONAPHTHALENE	2000	U	BENZO(A)PYRENE	2000	U
2-NITROANILINE	9600	U	INDENO(1,2,3-CD)PYRENE	2000	U
DIMETHYL PHTHALATE	2000	U	DIBENZ(A,H)ANTHRACENE	2000	U
ACENAPHTHYLENE	2000	U	BENZO(G,H,I)PERYLENE	2000	U
3-NITROANILINE	9600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	74%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16326.15

DATE: 12/14/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	50.6		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 94%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/20/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.23	U	NAPHTHA C6-C12	1.23	U
KEROSENE C9-C18	1.23	U	#6 FUEL OIL C12-C24	1.23	U
JP-4 C6-C14	1.23	U	MISCELLANEOUS C8-C20	22	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	88%

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REPORT: 16326.15

DATE: 12/14/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.31		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	8.71		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.736		mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	632		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.368	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	21.8		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.123	U	mg/kg	11/15/93	11/15/93	SW846-7471
ICKEL	13.1		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.123	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	18		mg/kg	11/15/93	11/16/93	SW846-6010

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REPORT: 16326.15

DATE: 12/20/93

SWLO #: 16326.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.614	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.16

DATE: 12/14/93

SWLO #: 16326.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
ETHYLENE CHLORIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	150		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	14	
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	107%	BROMOFLUOROBENZENE	(74-121) 106%
,2-DICHLOROETHANE-D4	(70-121)	106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.16

DATE: 12/14/93

SWLO #: 16326.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	320	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	350	JB	4-NITROPHENOL	354	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	95	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	244	JB	BIS(2-ETHYLHEXYL)PHTHALATE	67	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.16

DATE: 12/14/93

SWLO #: 16326.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	49%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.16

DATE: 12/14/93

SWLO #: 16326.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	9.5	J		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/20/93

SWLO #: 16326.16 N1
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SAMPLE #: RCP1SB2
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.16	U	NAPHTHA C6-C12	1.16	U
KEROSENE C9-C18	1.16	U	#6 FUEL OIL C12-C24	1.16	U
JP-4 C6-C14	1.16	U	MISCELLANEOUS C9-C16	4.17	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	90%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.16

DATE: 12/14/93

SWLO #: 16326.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.01		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	10.2		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.579	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	349		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	0.347	U	mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	53.6		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.116	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	21		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.116	U	mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	23.4		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.16

DATE: 12/20/93

SWLO #: 16326.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.579	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/14/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50
DATE PREPARED : / /
DILUTION FACTOR: 144.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1400	U	TRICHLOROETHENE	720	U
BROMOMETHANE	1400	U	DIBROMOCHLOROMETHANE	720	U
VINYL CHLORIDE	1400	U	1,1,2-TRICHLOROETHANE	720	U
CHLOROETHANE	1400	U	BENZENE	720	U
METHYLENE CHLORIDE	190	J	CIS-1,3-DICHLOROPROPENE	720	U
ACETONE	6600		2-CHLOROETHYL VINYL ETHER	1400	U
CARBON DISULFIDE	720	U	BROMOFORM	720	U
1,1-DICHLOROETHENE	720	U	2-HEXANONE	1400	U
1,1-DICHLOROETHANE	720	U	4-METHYL-2-PENTANONE	2400	
CHLOROFORM	720	U	TETRACHLOROETHENE	720	U
1,2-DICHLOROETHANE	720	U	TOLUENE	24000	B
1,1,1-TRICHLOROETHANE	720	U	CHLOROBENZENE	280	J
CARBON TETRACHLORIDE	720	U	ETHYLBENZENE	2100	
VINYL ACETATE	1400	U	STYRENE	720	U
BROMODICHLOROMETHANE	720	U	1,2-DICHLOROETHENE(TOTAL)	720	U
1,1,2,2-TETRACHLOROETHANE	720	U	XYLENE (TOTAL)	13000	
1,2-DICHLOROPROPANE	720	U	2-BUTANONE	4500	
TRANS-1,3-DICHLOROPROPENE	720	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	114%
1,2-DICHLOROETHANE-D4	(70-121)	105%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/14/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 5.70

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	1900	U	ACENAPHTHENE	1900	U
BIS(2-CHLOROETHYL)ETHER	1900	U	2,4-DINITROPHENOL	9100	U
2-CHLOROPHENOL	1900	U	4-NITROPHENOL	9100	U
1,3-DICHLOROBENZENE	1900	U	DIBENZOFURAN	1900	U
,4-DICHLOROBENZENE	1900	U	2,4-DINITROTOLUENE	1900	U
BENZYL ALCOHOL	1900	U	2,6-DINITROTOLUENE	1900	U
1,2-DICHLOROBENZENE	625	J	DIETHYLPHTHALATE	1900	U
2-METHYLPHENOL(O-CRESOL)	1170	J	4-CHLOROPHENYL-PHENYLETHER	1900	U
BIS(2-CHLOROISOPROPYL)ETHER	1900	U	FLUORENE	1900	U
4-METHYLPHENOL(P-CRESOL)	1900	U	4-NITROANILINE	9100	U
N-NITROSO-DI-N-PROPYLAMINE	1900	U	4,6-DINITRO-2-METHYLPHENOL	9100	U
HEXACHLOROETHANE	1900	U	N-NITROSODIPHENYLAMINE(1)	1900	U
NITROBENZENE	1900	U	4-BROMOPHENYL-PHENYLETHER	1900	U
ISOPHORONE	1900	U	HEXACHLOROBENZENE	1900	U
2-NITROPHENOL	1900	U	PENTACHLOROPHENOL	9100	U
2,4-DIMETHYLPHENOL	1900	U	PHENANTHRENE	1900	U
BENZOIC ACID	9100	U	ANTHRACENE	1900	U
BIS(2-CHLOROETHOXY)METHANE	1900	U	DI-N-BUTYL PHTHALATE	1900	U
2,4-DICHLOROPHENOL	1900	U	FLUORANTHENE	1900	U
1,2,4-TRICHLOROBENZENE	1900	U	PYRENE	1900	U
NAPHTHALENE	1450	J	BUTYL BENZYL PHTHALATE	1900	U
4-CHLOROANILINE	1900	U	3,3'-DICHLOROBENZIDINE	3800	U
HEXACHLOROBUTADIENE	1900	U	BENZO(A)ANTHRACENE	1900	U
4-CHLORO-3-METHYLPHENOL	1900	U	BIS(2-ETHYLHEXYL)PHTHALATE	2470	B
2-METHYLNAPHTHALENE	3910		CHRYSENE	1900	U
HEXACHLOROCYCLOPENTADIENE	1900	U	DI-N-OCTYL PHTHALATE	1900	U
2,4,6-TRICHLOROPHENOL	1900	U	BENZO(B)FLUORANTHENE	1900	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/14/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50
DATE PREPARED : 11/12/93
DILUTION FACTOR: 5.70

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	9100	U	BENZO(K)FLUORANTHENE	1900	U
2-CHLORONAPHTHALENE	1900	U	BENZO(A)PYRENE	1900	U
2-NITROANILINE	9100	U	INDENO(1,2,3-CD)PYRENE	1900	U
DIMETHYL PHTHALATE	1900	U	DIBENZ(A,H)ANTHRACENE	1900	U
ACENAPHTHYLENE	1900	U	BENZO(G,H,I)PERYLENE	1900	U
3-NITROANILINE	9100	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	42%
TERPHENYL-D14	(18-137)	39%	PHENOL-D5	(24-113)	34%
2-FLUOROPHENOL	(25-121)	25% *	2,4,6-TRIBROMOPHENOL	(19-122)	39%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/14/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/25/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50
DATE PREPARED : / /
DILUTION FACTOR: 125.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	26300		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 101%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.11

DATE: 12/20/93

SWLO #: 16326.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 6.00
DEPTH TO : 7.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.62	U	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/14/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.31		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	40.6		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.576	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	334		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	11.1		mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	74.9		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.159		mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	39.9		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	1.5		mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	22.1		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/20/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50
DATE PREPARED : 11/18/93
DILUTION FACTOR: 10.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	11.5	U	NAPHTHA C6-C12	11.5	U
KEROSENE C9-C18	994		#6 FUEL OIL C12-C24	11.5	U
JP-4 C6-C14	11.5	U			

QA/QC SURROGATE RECOVERIES
NAPHTHALENE (21-166) I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/14/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	220		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	1.5	J
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	23	
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	14	
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	108%	BROMOFLUOROBENZENE	(74-121)	106%
1,2-DICHLOROETHANE-D4	(70-121)	103%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.17

DATE: 12/20/93

SWLO #: 16326.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 1.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.968	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/14/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	30%	2-FLUOROBIPHENYL	(30-115)	33%
TERPHENYL-D14	(18-137)	34%	PHENOL-D5	(24-113)	28%
2-FLUOROPHENOL	(25-121)	24% *	2,4,6-TRIBROMOPHENOL	(19-122)	38%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/14/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	165	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	130	JB	4-NITROPHENOL	77	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	120	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	44	J
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	59	J	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	127	JB	BIS(2-ETHYLHEXYL)PHTHALATE	185	JB
2-METHYLNAPHTHALENE	225	J	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/14/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	2640		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 102%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16326.18

DATE: 12/20/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.2	U	NAPHTHA C6-C12	1.2	U
KEROSENE C9-C18	1.2	U	#6 FUEL OIL C12-C24	1.2	U
JP-4 C6-C14	1.2	U	MISCELLANEOUS C7-C20	10.8	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/20/93

SWLO #: 16326.18 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	343		NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	87%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/20/93

SWLO #: 16326.18 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	343		NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	110%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16326.18

DATE: 12/20/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.909	mg/kg	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.18

DATE: 12/14/93

SWLO #: 16326.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : SQ
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	1.68		mg/kg	11/15/93	11/18/93	SW846-6010
LEAD	8.62		mg/kg	11/15/93	11/18/93	SW846-6010
SELENIUM	0.598	U	mg/kg	11/15/93	11/18/93	SW846-6010
BARIUM	594		mg/kg	11/15/93	11/16/93	SW846-6010
CADMIUM	2.15		mg/kg	11/15/93	11/16/93	SW846-6010
CHROMIUM	76.9		mg/kg	11/15/93	11/16/93	SW846-6010
MERCURY	0.12	U	mg/kg	11/15/93	11/15/93	SW846-7471
NICKEL	23.6		mg/kg	11/15/93	11/16/93	SW846-6010
SILVER	0.838		mg/kg	11/15/93	11/27/93	SW846-7761
ZINC	16.4		mg/kg	11/15/93	11/16/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.19

DATE: 12/14/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	17	B	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	17	B	4-NITROPHENOL	13	JB
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	8.8	JB
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	18	B	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.19

DATE: 12/14/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	1.9	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	42		TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	106%	BROMOFLUOROBENZENE	(86-115)	101%
1,2-DICHLOROETHANE-D4	(76-114)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.19

DATE: 12/14/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 101%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16326.19

DATE: 12/14/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	77%	2-FLUOROBIPHENYL	(43-116)	75%
TERPHENYL-D14	(33-141)	97%	PHENOL-D5	(10- 94)	58%
2-FLUOROPHENOL	(21-100)	61%	2,4,6-TRIBROMOPHENOL	(10-123)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.19

DATE: 12/14/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/13/93	11/14/93	SW846-6010
LEAD	3	U	ug/l	11/13/93	11/14/93	SW846-6010
SELENIUM	5	U	ug/l	11/13/93	11/14/93	SW846-6010
BARIUM	5	U	ug/l	11/13/93	11/15/93	SW846-6010
CADMIUM	3	U	ug/l	11/13/93	11/15/93	SW846-6010
CHROMIUM	5	U	ug/l	11/13/93	11/15/93	SW846-6010
MERCURY	0.2	U	ug/l	11/12/93	11/12/93	SW846-7470
NICKEL	10	U	ug/l	11/13/93	11/15/93	SW846-6010
SILVER	1	U	ug/l	11/13/93	11/27/93	SW846-7761
ZINC	15	U	ug/l	11/13/93	11/15/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.19

DATE: 12/14/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.20

DATE: 12/14/93

SWLO #: 16326.20 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16326.19

DATE: 12/20/93

SWLO #: 16326.19 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	10	U	ug/l	11/14/93	11/15/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16326.22

DATE: 12/14/93

SWLO #: 16326.22 TB2
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC TB2
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115) 101%
1,2-DICHLOROETHANE-D4	(76-114)	97%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16326.21

DATE: 12/14/93

SWLO #: 16326.21 AB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	2	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	44		TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	1	J	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931115C
INST. BATCH: 3274
REPORTED : 12/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931115C
LOCATION:

ANALYZED : 11/15/93 23:35
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

NOT DETECTED ABOVE QUANTITATION LIMIT
ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
thodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Vb
QASEQ: U931115C
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO # LCS 1
DATE ANALYZED: 12-15-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCS 1

VOLATILE LABORATORY CONTROL SPIKE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	52	104	60 - 141
TRICHLOROETHENE	50	47	95	71 - 134
BENZENE	50	47	95	79 - 128
TOLUENE	50	50	99	82 - 123
CHLOROBENZENE	50	48	96	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	101%
BROMOFLUOROBENZENE(74-121)	97%
1,2-DICHLOROETHANE-d4(70-121)	96%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Vc
QASEQ: U931115C
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO # LCSD 1
DATE ANALYZED: 12-15-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCSD 1

VOLATILE LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	57	114	60 - 141
TRICHLOROETHENE	50	49	97	71 - 134
BENZENE	50	49	99	79 - 128
TOLUENE	50	52	103	82 - 123
CHLOROBENZENE	50	50	99	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	106%
BROMOFLUOROBENZENE(74-121)	103%
1,2-DICHLOROETHANE-d4(70-121)	103%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931116A
INST. BATCH: 14209
REPORTED : 12/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931116A
LOCATION:

ANALYZED : 11/16/93 10:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	103%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931116A
INST. BATCH: 14209
REPORTED : 12/15/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/16/93 11:12
ANALYZED : 11/16/93 11:38

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	55	110	52	104	5.98	32	54-161
TRICHLOROETHENE	50	51	103	50	100	2.52	38	67-149
BENZENE	50	51	102	53	105	3.2	46	70-134
TOLUENE	50	51	103	50	100	2.18	15	75-140
CHLOROBENZENE	50	52	105	54	107	2.05	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	99	88-110
BROMOFLUOROBENZENE	106	102	86-115
1,2-DICHLOROETHANE-D4	102	104	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931116A
INST. BATCH: 3304
REPORTED : 12/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931116A
LOCATION:

ANALYZED : 11/16/93 10:08
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
[= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931116A
INST. BATCH: 3304
REPORTED : 12/15/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/16/93 10:39
ANALYZED : 11/16/93 11:03

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	51	102	50	100	2.21	32	54-161
TRICHLOROETHENE	50	51	102	51	103	1.13	38	67-149
BENZENE	50	50	99	50	100	< 1	46	70-134
TOLUENE	50	50	101	50	100	1.12	15	75-140
CHLOROBENZENE	50	50	101	50	99	1.38	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	101	88-110
BROMOFLUOROBENZENE	100	101	86-115
1,2-DICHLOROETHANE-D4	99	103	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : I931117C
INST. BATCH: 3629
REPORTED : 12/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : I931117C
LOCATION:

ANALYZED : 11/17/93 23:55
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	108%	BROMOFLUOROBENZENE	(74-121)	105%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Vd
QA SEQ: I931117C
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO # LCS 4
DATE ANALYZED: 12-15-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCS 4

VOLATILE LABORATORY CONTROL SPIKE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	53	106	60 - 141
TRICHLOROETHENE	50	50	100	71 - 134
BENZENE	50	51	103	79 - 128
TOLUENE	50	50	100	82 - 123
CHLOROBENZENE	50	51	102	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	105%
BROMOFLUOROBENZENE(74-121)	104%
1,2-DICHLOROETHANE-d4(70-121)	104%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Ve
QA SEQ: I931117C
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO # LCSD 4
DATE ANALYZED: 12-15-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCSD 4

VOLATILE LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	54	108	60 - 141
TRICHLOROETHENE	50	50	99	71 - 134
BENZENE	50	51	102	79 - 128
TOLUENE	50	51	102	82 - 123
CHLOROBENZENE	50	51	102	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	105%
BROMOFLUOROBENZENE(74-121)	105%
1,2-DICHLOROETHANE-d4(70-121)	109%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Vf
QA SEQ: N931118B
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO # METHOD BLANK
DATE ANALYZED : 11-18-93
METHOD REFERENCE: SW846-8240, EPA METHODOLOGY
DILUTION FACTOR: 1
PROJECT: TINKER AFB RFI
SAMPLE ID: VBLK5

RESULTS REPORTED IN ug/Kg or Parts Per Billion (PPB)

VOLATILES	QUANT. LIMIT	RESULTS	VOLATILES	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
ROMOMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
VINYL CHLORIDE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
CHLOROETHANE	10	ND	TRICHLOROETHENE	5	ND
METHYLENE CHLORIDE	5	ND	DIBROMOCHLOROMETHANE	5	ND
ACETONE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	BENZENE	5	ND
1,1-DICHLOROETHENE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHANE	5	ND	2-CHLOROETHYLVINYLETHER	10	ND
TOTAL-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
CHLOROFORM	5	ND	2-HEXANONE	10	ND
1,2-DICHLOROETHANE	5	ND	4-METHYL-2-PENTANONE	10	ND
2-BUTANONE	10	ND	TETRACHLOROETHENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TOLUENE	5	2.2 J
CARBON TETRACHLORIDE	5	ND	CHLOROBENZENE	5	ND
VINYL ACETATE	10	ND	ETHYLBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	STYRENE	5	ND
			TOTAL XYLENES	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 96% BROMOFLUOROBENZENE(74-121) 110% 1,2-DICHLOROETHANE-d4(70-121) 79%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= SURROGATE RECOVERY OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931118B
INST. BATCH: 3727
REPORTED : 12/15/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/18/93 09:31
ANALYZED : 11/18/93 09:55

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	58	117	50	100	15.4	32	54-161
TRICHLOROETHENE	50	50	101	50	101	< 1	38	67-149
BENZENE	50	53	106	48	96	9.45	46	70-134
TOLUENE	50	40	79	43	85	7.65	15	75-140
CHLOROBENZENE	50	48	97	50	101	3.68	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	95	98	81-117
BROMOFLUOROBENZENE	105	99	74-121
1,2-DICHLOROETHANE-D4	86	108	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/15/93

PROJECT : TINKER AFB RFI
SDG: 16298

MATRIX : SOIL

SAMPLE	: 16326.03	QAQC: U931115C	ANALYZED : 11/16/93 07:12
SPIKE SAMPLE	: 16326.04	QAQC: U931115C	ANALYZED : 11/16/93 07:35
SPIKE DUP SAMPLE	: 16326.05	QAQC: U931115C	ANALYZED : 11/16/93 07:58

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	56		49	88	51	91	3.95	22	59-172
TRICHLOROETHENE	56		50	90	52	94	4.06	24	62-137
BENZENE	56		54	98	56	101	3.03	21	66-142
TOLUENE	56		54	96	55	98	2.05	21	59-139
CHLOROBENZENE	56		53	95	55	99	4.54	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	94	96	96	81-117
ROMOFLUOROBENZENE	91	90	91	74-121
1,2-DICHLOROETHANE-D4	95	96	96	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/15/93

PROJECT : TINKER AFB RFI
SDG: 16298

MATRIX : SOIL

SAMPLE	: 16326.12	QAQC: U931115C	ANALYZED : 11/16/93 10:41
SPIKE SAMPLE	: 16326.13	QAQC: I931117C	ANALYZED : 11/18/93 01:24
SPIKE DUP SAMPLE	: 16326.14	QAQC: I931117C	ANALYZED : 11/18/93 01:53

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	53		54	102	52	97	4.68	22	59-172
TRICHLOROETHENE	53		51	95	53	99	3.79	24	62-137
BENZENE	53		57	106	58	108	1.58	21	66-142
TOLUENE	53	5.8	85	148*	78	136	8.04	21	59-139
CHLOROBENZENE	53		54	100	56	104	3.79	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	105	120	110	81-1
BROMOFLUOROBENZENE	94	104	99	74-1.
1,2-DICHLOROETHANE-D4	99	107	99	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931112-001
PROJECT : TINKER AFB RFI
SAMPLE #: 931112 BNABLK1 LB1
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	15.8		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	15.8		4-NITROPHENOL	11	J
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	8.4	J
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	17.7		BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931112-001
PROJECT : TINKER AFB RFI
SAMPLE #: 931112 BNABLK1 LB1
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	71%	2-FLUOROBIPHENYL	(43-116)	66%
TERPHENYL-D14	(33-141)	103%	PHENOL-D5	(10- 94)	55%
2-FLUOROPHENOL	(21-100)	57%	2,4,6-TRIBROMOPHENOL	(10-123)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Bb
QA SEQ: 931112-001
DATE: 12-15-93

SAMPLE MATRIX: WATER
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-12-93
DATE ANALYZED: 11-19-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	0	139	70	12 - 89
2-CHLOROPHENOL	200	0	161	80	27 - 123
1,4-DICHLOROBENZENE	100	0	68	68	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	0	63	63	41 - 116
1,2,4-TRICHLOROBENZENE	100	0	68	68	39 - 98
4-CHLORO-3-METHYLPHENOL	200	0	158	79	23 - 97
ACENAPHTHENE	100	0	87	87	46 - 118
4-NITROPHENOL	200	0	154	777	10 - 80
2,4-DINITROTOLUENE	100	0	75	75	24 - 96
PENTACHLOROPHENOL	200	0	158	79	9 - 103
PYRENE	100	0	99	99	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	146	73	5	35	12 - 89
2-CHLOROPHENOL	200	173	86	7	50	27 - 123
1,4-DICHLOROBENZENE	100	70	70	3	27	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	69	69	8	38	41 - 116
1,2,4-TRICHLOROBENZENE	100	158	68	1	23	39 - 98
4-CHLORO-3-METHYLPHENOL	200	700	79	0	33	23 - 97
ACENAPHTHENE	100	154	70	21	19	46 - 118
4-NITROPHENOL	200	154	77	0	50	10 - 80
2,4-DINITROTOLUENE	100	72	72	4	47	24 - 96
PENTACHLOROPHENOL	200	170	85	7	47	9 - 103
PYRENE	100	99	99	0	36	26 - 127

QA/QC SURROGATE RECOVERIES

LCS								
NITROBENZENE-d5	(35-114)	84%	2-FLUOROBIPHENYL	(43-116)	81%	TERPHENYL-d14	(33-141)	96%
PHENOL-d5	(10-94)	57%	2-FLUOROPHENOL	(21-100)	63%	2,4,6-TRIBROMOPHENOL	(10-123)	66%
LCSD								
NITROBENZENE-d5	(35-114)	82%	2-FLUOROBIPHENYL	(43-116)	81%	TERPHENYL-d14	(33-141)	93%
PHENOL-d5	(10-94)	61%	2-FLUOROPHENOL	(21-100)	65%	2,4,6-TRIBROMOPHENOL	(10-123)	57%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931111-001
PROJECT : TINKER AFB RFI
SAMPLE #: 931111 BNABLK2 LB1
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	273	J	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	264	J	4-NITROPHENOL	181	J
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	192	J
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	265	J	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931111-001
PROJECT : TINKER AFB RFI
SAMPLE #: 931111 BNABLK2 LB1
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/11/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	63%
-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	88%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Bc
QA SEQ: 931111-001
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-11-93
DATE ANALYZED : 11-22-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	6700	0	4100	61	26 - 90
2-CHLOROPHENOL	6700	0	4500	68	25 - 102
1,4-DICHLOROBENZENE	3300	0	2500	75	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	0	2700	80	41 - 126
1,2,4-TRICHLOROBENZENE	3300	0	2900	88	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	0	5000	75	26 - 103
ACENAPHTHENE	3300	0	3000	88	31 - 137
4-NITROPHENOL	6700	0	5300	79	11 - 114
2,4-DINITROTOLUENE	3300	0	2600	77	28 - 89
PENTACHLOROPHENOL	6700	0	5300	80	17 - 109
PYRENE	3300	0	2500	75	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	6700	4000	60	2	35	26 - 90
2-CHLOROPHENOL	6700	4500	67	1	50	25 - 102
1,4-DICHLOROBENZENE	3300	1250	74	1	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2700	82	2	38	41 - 126
1,2,4-TRICHLOROBENZENE	3300	3000	90	2	23	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	5400	81	8	33	26 - 103
ACENAPHTHENE	3300	3000	92	4	19	31 - 137
4-NITROPHENOL	6700	5200	78	2	50	11 - 114
2,4-DINITROTOLUENE	3300	3500	104	30*	47	28 - 89
PENTACHLOROPHENOL	6700	5600	84	5	47	17 - 109
PYRENE	3300	2500	76	1	36	35 - 142

QA/QC SURROGATE RECOVERIES

LCS								
NITROBENZENE-d5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	92%	TERPHENYL-d14	(18-137)	92%
PHENOL-d5	(24-113)	60%	2-FLUOROPHENOL	(25-121)	71%	2,4,6-TRIBROMOPHENOL	(19-122)	96
LCSD								
NITROBENZENE-d5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	90%	TERPHENYL-d14	(18-137)	92%
PHENOL-d5	(24-113)	59%	2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	103%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931112-002
PROJECT : TINKER AFB RFI
SAMPLE #: 931112 BNABLK3 LB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	329	J	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	304	J	4-NITROPHENOL	268	J
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	39	J
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	169	J
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	39	J
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	50	J
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	278	J	BIS(2-ETHYLHEXYL)PHTHALATE	36	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931112-002
PROJECT : TINKER AFB RFI
SAMPLE #: 931112 BNABLK3 LB2
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/12/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Be
QA SEQ: 931121-001
DATE: 12-20-93

SAMPLE MATRIX: SOIL
SWLO # 16326.03 (MS/MSD)
METHOD REFERENCE: SW846-8270
SAMPLE ID: MATRIX SPIKE/MATRIX SPIKE DUPLICATE

DATE EXTRACTED: 11-21-93
DATE ANALYZED : 11-21-93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	7300	0	5500	70	26 - 90
2-CHLOROPHENOL	7300	0	4600	59	25 - 102
1,4-DICHLOROBENZENE	3700	0	2000	58	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3700	0	3100	845	41 - 126
1,2,4-TRICHLOROBENZENE	3700	0	2300	63	38 - 107
4-CHLORO-3-METHYLPHENOL	7300	0	4500	58	26 - 103
ACENAPHTHENE	3700	0	3100	85	31 - 137
4-NITROPHENOL	7300	0	9400	125*	11 - 114
2,4-DINITROTOLUENE	3700	0	4300	116*	28 - 89
PENTACHLOROPHENOL	7300	0	4000	53	17 - 109
PYRENE	3700	0	2600	72	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	7300	4800	61	13	35	26 - 90
2-CHLOROPHENOL	7300	4900	63	6	50	25 - 102
1,4-DICHLOROBENZENE	3700	2250	61	8	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3700	3000	81	4	38	41 - 126
1,2,4-TRICHLOROBENZENE	3700	2400	66	5	23	38 - 107
4-CHLORO-3-METHYLPHENOL	7300	5300	68	16	33	26 - 103
ACENAPHTHENE	3700	2700	81	5	19	31 - 137
4-NITROPHENOL	7300	6500	85	37	50	11 - 114
2,4-DINITROTOLUENE	3700	2900	79	39	47	28 - 89
PENTACHLOROPHENOL	7300	4700	61	15	47	17 - 109
PYRENE	3700	2800	78	8	36	35 - 142

QA/QC SURROGATE RECOVERIES

			MS					
NITROBENZENE-d5	(23-120)	67%	2-FLUOROBIPHENYL	(30-115)	78%	TERPHENYL-d14	(18-137)	79%
PHENOL-d5	(24-113)	56%	2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	115
			MSD					
NITROBENZENE-d5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	76%	TERPHENYL-d14	(18-137)	80%
PHENOL-d5	(24-113)	55%	2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Bf
QA SEQ: 931121-001
DATE: 12-21-93

SAMPLE MATRIX: SOIL
SWLO # 16326.12 (MS/MSD)
METHOD REFERENCE: SW846-8270
SAMPLE ID: MATRIX SPIKE/MATRIX SPIKE DUPLICATE

DATE EXTRACTED: 11-21-93
DATE ANALYZED : 11-21-93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	7300	0	5200	69	26 - 90
2-CHLOROPHENOL	7300	0	5300	72	25 - 102
1,4-DICHLOROBENZENE	3700	0	2200	62	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3700	0	3100	89	41 - 126
1,2,4-TRICHLOROBENZENE	3700	0	2500	70	38 - 107
4-CHLORO-3-METHYLPHENOL	7300	0	4800	65	26 - 103
ACENAPHTHENE	3700	0	2900	82	31 - 137
4-NITROPHENOL	7300	0	5700	78	11 - 114
2,4-DINITROTOLUENE	3700	0	3000	84	28 - 89
PENTACHLOROPHENOL	7300	0	4200	60	17 - 109
PYRENE	3700	0	2600	75	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	7300	4600	61	12	35	26 - 90
2-CHLOROPHENOL	7300	4700	62	14	50	25 - 102
1,4-DICHLOROBENZENE	3700	2150	61	3	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3700	2800	79	12	38	41 - 126
1,2,4-TRICHLOROBENZENE	3700	2400	68	3	23	38 - 107
4-CHLORO-3-METHYLPHENOL	7300	5480	64	0	33	26 - 103
ACENAPHTHENE	3700	2800	79	2	19	31 - 137
4-NITROPHENOL	7300	5900	82	5	50	11 - 114
2,4-DINITROTOLUENE	3700	3100	87	3	47	28 - 89
PENTACHLOROPHENOL	7300	3600	51	16	47	17 - 109
PYRENE	3700	2691	77	3	36	35 - 142

QA/QC SURROGATE RECOVERIES

			MS					
NITROBENZENE-d5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	80%	TERPHENYL-d14	(18-137)	80%
PHENOL-d5	(24-113)	58%	2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	68
			MSD					
NITROBENZENE-d5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	77%	TERPHENYL-d14	(18-137)	80%
PHENOL-d5	(24-113)	54%	2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/20/93

SWLO QAQC#: 931117-001
PROJECT : TINKER AFB RFI
SAMPLE #: LABBLK LB1
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 84%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298TCc
QASEQ: 931117-001
DATE: 12-15-93

SAMPLE MATRIX: WATER
SWLO #: LCS
DATE ANALYZED: 11-17-93
METHOD REFERENCE: MODIFIED 8015 (CALIFORNIA)
SAMPLE ID: LABORATORY CONTROL SPIKE

LABORATORY CONTROL SPIKE RECOVERY DATA

	SPIKE CONC. (ug/l)	SAMPLE CONC. (ug/l) *	LCS CONC. (ug/l) *	LCS PERCENT RECOVERY
GASOLINE	500.0	0	487.4	97.5%

QA/QC SURROGATE RECOVERIES

LCS

4-BROMOFLUOROBENZENE (65-135) 103%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/20/93

SWLO QAQC#: 931118-003
PROJECT : TINKER AFB RFI
SAMPLE #: LABBLK LB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298TCa
QASEQ: 931118-001
DATE: 12-15-93

SAMPLE MATRIX: WATER
SWLO #: LCS
DATE ANALYZED: 11-18-93
METHOD REFERENCE: MODIFIED 8015 (CALIFORNIA)
SAMPLE ID: LABORATORY CONTROL SPIKE

LABORATORY CONTROL SPIKE RECOVERY DATA

	SPIKE CONC. (ug/kg)	SAMPLE CONC. (ug/kg)*	LCS CONC. (ug/kg)*	LCS PERCENT RECOVERY
GASOLINE	500.0	0	459.3	91.9%

QA/QC SURROGATE RECOVERIES

	LCS	
4-BROMOFLUOROBENZENE	(65-135)	88%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/20/93

SWLO QAQC#: 931124-001
PROJECT : TINKER AFB RFI
SAMPLE #: LABBLK LB1
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298TCb
QASEQ: 931124-001
DATE: 12-15-93

SAMPLE MATRIX: WATER
SWLO #: LCS
DATE ANALYZED: 11-24-93
METHOD REFERENCE: MODIFIED 8015 (CALIFORNIA)
SAMPLE ID: LABORATORY CONTROL SPIKE

LABORATORY CONTROL SPIKE RECOVERY DATA

	SPIKE CONC. (ug/kg)	SAMPLE CONC. (ug/kg)*	LCS CONC. (ug/kg)*	LCS PERCENT RECOVERY
GASOLINE	500.0	0	548.0	109.6%

QA/QC SURROGATE RECOVERIES

	LCS	
4-BROMOFLUOROBENZENE	(65-135)	101%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/14/93

SWLO QAQC#: 931118-001
PROJECT : TINKER AFB RFI
SAMPLE #: TPH EXT W BLK LB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Ta
QASEQ: 931118-001
DATE: 12-15-93

SAMPLE MATRIX: WATER
SWLO #: LCS/LCSD 1
DATE EXTRACTED: 11-18-93
DATE ANALYZED: 11-18-93
METHOD REFERENCE: MODIFIED 8015 (CALIFORNIA)
SAMPLE ID: LCS/LCSD

LABORATORY CONTROL SPIKE / CONTROL SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/l)	SAMPLE CONC. (ug/l) *	LCS CONC. (ug/l) *	LCS PERCENT RECOVERY
DIESEL	5000	0	4430	88.6%

	LCSD CONC. (ug/l) *	LCSD PERCENT RECOVERY	RECOVERY PERCENT DIFFERENCE
DIESEL	4570	91.4%	3%

QA/QC SURROGATE RECOVERY

LCS
NAPHTHALENE(46-121) 86%
LCSD
NAPHTHALENE(46-121) 87%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16298

DATE: 12/20/93

SWLO QAQC#: 931118-002
PROJECT : TINKER AFB RFI
SAMPLE #: TPH EXT S BLK LB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1	U	NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	84%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Tb
QASEQ: 931118-001
DATE: 12-15-93

SAMPLE MATRIX: SOIL
SWLO #: MS/MSD 2
DATE EXTRACTED: 11-18-93
DATE ANALYZED: 11-19-93
METHOD REFERENCE: MODIFIED 8015 (CALIFORNIA)
SAMPLE ID: MS/MSD 2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (mg/kg)	SAMPLE CONC. (mg/kg)*	MS CONC. (mg/kg)*	MS PERCENT RECOVERY
DIESEL	300	11	343	111%

	MSD CONC. (mg/kg)*	MSD PERCENT RECOVERY	RECOVERY PERCENT DIFFERENCE
DIESEL	343	111%	0%

QA/QC SURROGATE RECOVERY

MS
NAPHTHALENE(21-166) 110%
MSD
NAPHTHALENE(21-166) 111%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16298ad
REPORT DATE: 12-10-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/18/93	111593I3	1.0	mg/Kg	< 1.0
LEAD	11/18/93	111593I3	0.3	mg/Kg	< 0.3
SELENIUM	11/18/93	111593I3	0.5	mg/Kg	< 0.5
BARIUM	11/16/93	111593I3	0.5	mg/Kg	< 0.5
CADMIUM	11/16/93	111593I3	0.3	mg/Kg	< 0.3
CHROMIUM	11/16/93	111593I3	0.5	mg/Kg	< 0.5
NICKEL	11/16/93	111593I3	1.0	mg/Kg	< 1.0
ZINC	11/16/93	111593I3	1.5	mg/Kg	< 1.5
MERCURY	11/15/93	111593HG02	0.1	mg/Kg	< 0.1
SILVER	11/27/93	111593F3	0.1	mg/Kg	< 0.1
TOTAL CN	11/15/93	111493CN	0.5	mg/Kg	< 0.5

MATRIX: **WATER**

ARSENIC	11/14/93	111393I4	10.0	ug/L	< 10.0
LEAD	11/14/93	111393I4	3.0	ug/L	< 3.0
SELENIUM	11/14/93	111393I4	5.0	ug/L	< 5.0
BARIUM	11/15/93	111393I4	5.0	ug/L	< 5.0
CADMIUM	11/15/93	111393I4	3.0	ug/L	< 3.0
CHROMIUM	11/15/93	111393I4	5.0	ug/L	< 5.0
NICKEL	11/15/93	111393I4	10.0	ug/L	< 10.0
ZINC	11/15/93	111393I4	15.0	ug/L	< 15.0
SILVER	11/27/93	111393F4	1.0	ug/L	< 1.0
MERCURY	11/12/93	111293HG05	0.2	ug/L	< 0.2
TOTAL CN	11/15/93	111293CN	10.0	ug/L	< 10.0

:/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16298bd
REPORT DATE: 12-10-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/18/93	200	205.6	103	80-120
LEAD	11/18/93	50	49.3	99	80-120
SELENIUM	11/18/93	200	210	105	80-120
BARIUM	11/16/93	200	192	96	80-120
CADMIUM	11/16/93	5.0	4.5	90	80-120
CHROMIUM	11/16/93	20.0	18.8	94	80-120
NICKEL	11/16/93	50.0	46.8	84	80-120
ZINC	11/16/93	50.0	46.4	93	80-120
MERCURY	11/15/93	2.45	2.57	105	80-120
SILVER	11/27/93	5.00	4.62	92	80-120
TOTAL CN	11/15/93	5.0	4.97	99	80-120

MATRIX: **WATER**

		(ug/L)	(ug/L)		
ARSENIC	11/14/93	2000	2164	108	80-120
LEAD	11/14/93	500	497.9	100	80-120
SELENIUM	11/14/93	2000	2348	117	80-120
BARIUM	11/15/93	2000	2060	103	80-120
CADMIUM	11/15/93	50.0	51.9	104	80-120
CHROMIUM	11/15/93	200	201	100	80-120
NICKEL	11/15/93	500	513	103	80-120
ZINC	11/15/93	500	510	102	80-120
MERCURY	11/12/93	4.90	5.46	111	80-120
SILVER	11/27/93	50.0	50.6	101	80-120
TOTAL CN	11/15/93	94.0	82.2	87	80-120

QC/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16298cd
REPORT DATE: 12-10-93

MATRIX: **SOIL**
SAMPLE ID: **I24.2SB7MS113.5-14.5**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	11/18/93	9.98	223	202	86	75-125
LEAD	11/18/93	9.87	55.8	55.9	83	75-125
SELENIUM	11/18/93	< 0.561	223	177	79	75-125
BARIUM	11/16/93	676	223	728	23*	75-125
CADMIUM	11/16/93	< 0.336	5.58	4.35	78	75-125
CHROMIUM	11/16/93	19.8	22.3	28.0	37*	75-125
NICKEL	11/16/93	26.2	55.8	67.8	75	75-125
ZINC	11/16/93	39.5	55.8	71.8	58*	75-125
MERCURY	11/15/93	< 0.112	0.558	0.759	136*	75-125
SILVER	11/27/93	< 0.112	5.58	5.13	92	75-125
TOTAL CN	11/15/93	< 0.561	5.58	5.58	100	75-125

SAMPLE ID: **I24.9SB2 MS1 2-4**

ARSENIC	11/18/93	3.00	214	206	95	75-125
LEAD	11/18/93	7.71	53.5	56.6	91	75-125
SELENIUM	11/18/93	0.535	214	201	94	75-125
BARIUM	11/16/96	397	214	617	103	75-125
CADMIUM	11/16/93	< 0.321	5.35	5.14	96	75-125
CHROMIUM	11/16/93	26.6	21.4	43.1	77	75-125
NICKEL	11/16/93	13.9	53.5	61.5	89	75-125
ZINC	11/16/93	17.9	53.5	63.7	86	75-125
MERCURY	11/15/93	< 0.107	0.535	0.489	91	75-125
SILVER	11/27/93	< 0.214	5.35	5.24	94	75-125
TOTAL CN	11/15/93	< 0.535	5.35	5.03	94	75-125

* OUTSIDE CONTROL LIMITS

C/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES,INC.

SDG: 16298dd
REPORT DATE: 12-10-93

MATRIX: **SOIL**
SAMPLE ID: **I24.2SB7SD113.5-14.5**
REPORTED ON DRY WEIGHT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	202	217	7.2	20
LEAD	55.9	59.4	6.1	20
SELENIUM	177	201	13	20
BARIUM	728	876	18.0	20
CADMIUM	4.35	4.57	5.0	20
CHROMIUM	28.0	34.7	21*	20
NICKEL	67.8	72.8	7.1	20
ZINC	71.8	83.4	15.0	20
MERCURY	0.759	0.491	43*	20
SILVER	5.13	5.02	2.2	20
TOTAL CN	5.58	5.58	0	20

MATRIX SPIKE: **I24.9SB2 SD1 2-4**

ARSENIC	206	204	1.0	20
LEAD	56.6	55.8	1.4	20
SELENIUM	201	199	1.0	20
BARIUM	617	542	13	20
CADMIUM	5.14	4.78	7.3	20
CHROMIUM	43.1	41.1	4.8	20
NICKEL	61.5	59.3	3.6	20
ZINC	63.7	61.4	3.7	20
MERCURY	0.489	0.496	1.4	20
SILVER	5.24	5.20	0.8	20
TOTAL CN	5.03	5.10	1.4	20

* OUTSIDE CONTROL LIMITS

C/lb/dn

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other _____

PROJECT NUMBER: AU401.~~08~~ ~~07~~ 05 CS

AIRBILL OR CARRIER ID #: 8503062680

SAMPLER(S): M. HARDER R. NELSON
(Signature) [signature] [signature]

PRESERVATIVE: ICE, ICE, ICE, ICE

ANALYSIS REQUIRED: VOA (SW8240), SV (SW8270), Metals (SW6010), CN (SW9010)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (SW8240)	SV (SW8270)	Metals (SW6010)	CN (SW9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/11/93	–	FIELDQC		TB1	WQ	NA	0	0	2	X				0	1	2	A	
	1530	ESC1SE1		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	1500	ESC1SE2		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	1200	ESC1SE3		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	1130	ESC1SE4E		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	1140	ESC1SE4W		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	1015	ESC1SE5		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	↓	↓		SD1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
				MS1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	–	–		FR1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	
	0904	ESC1SE6		N1	SE	DS	0	0	2	X	X	X	X	0	1	2	A	

FIELD LOT CONTROL NUMBERS FOR 10 NOV 93 SHOULD BE ~~01~~ CS 112A & 112B instead of 111A & 111B

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	11/12/93	1800	(Signature)			(Signature)		
Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time
(Signature)			(Signature)			(Signature) [signature]	11/12/93	0830

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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CHAIN OF CUSTODY RECORD

ENGINEERING—SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other

PROJECT NUMBER: AU 401.08

AIRBILL OR CARRIER ID #: 8503062680

SAMPLER(S): M. HARDER R. NELSON
(Signature) [signature] [signature]

PRESERVATIVE

ANALYSIS REQUIRED

FIELD LOT CONTROL NUMBER

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA 8240	SVOA SW8270	Metals 6010	CN 9010	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11-11-93	–	Field QC		TB2	WQ	NA	0	0	2	X				0	1	2	B	
	1430	Field QC		EB1	WQ	NA	0	0	6	X	X	X	X	0	1	2	B	
	800	I24.19SB1		N1	SO	H	5	6	3	X	X	X	X	0	1	2	B	
	800	I24.19SB1 ~~FR1~~		FR1	SO	H	5	6	3	X	X	X	X	0	1	2	B	
	910	I24.19SB1		N1	SO	H	16	17	3	X	X	X	X	0	1	2	B	
	1315	I24.19SB9		N1	SO	H	7.5	8	3	X	X	X	X	0	1	2	B	
	1340	I24.19SB9		N1	SO	H	17	18	3	X	X	X	X	0	1	2	B	
	1020	I24.19SB10		N1	SO	H	5	6	3	X	X	X	X	0	1	2	B	
	1100	I24.19SB10		N1	SO	H	17	18	3	X	X	X	X	0	1	2	B	

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	11/11/93	1800	(Signature)			(Signature)		
Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time
(Signature)			(Signature)			(Signature) [signature]	11/12/93	0830

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS

Other: 850306 1836

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8503061836

SAMPLER(S): M. HARDER, R. NELSON

(Signature): M.W. Harder, R. Nelson

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	SW8240 (VOA)	SW8270 (SVOA)	SW6010 (Metals)	SW9010 (CN)	SW8015mod (TPH)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/12/93	—	FIELDQC		TB1	WQ	NA	0	0	2	X					0	0	1	A	
	0855	RCD1SB1		N1	SO	SS	6	8	4	X	X	X	X	X	0	0	1	A	
	0900	I24.2SB2		N1	SO	H	8	8.5	3	X	X	X	X		0	0	1	A	
	1000	I24.2SB2		N1	SO	H	17	18	3	X	X	X	X						

PRESERVATIVE

ANALYSIS REQUIRED

FIELD LOT CONTROL NUMBER

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
R. Nelson	11-12-93	1200			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			R. Nelson	11/13/93	1400

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.01

DATE: 12/30/93

SWLO # : 16354.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	89		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	100%
1,2-DICHLOROETHANE-D4	(70-121)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-259

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.01

DATE: 12/30/93

SWLO # : 16354.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	295	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	270	JB	4-NITROPHENOL	370	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	283	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	311	JB	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.01

DATE: 12/30/93

SWLO # : 16354.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	73%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	100%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-259.

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.01

DATE: 12/30/93

SWLO # : 16354.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.117		mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	2.69		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	609		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.351	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	553		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	7.95		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	13.3		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.584		mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	19.3		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.01

DATE: 12/30/93

SWLO # : 16354.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.584	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.02

DATE: 12/30/93

SWLO # : 16354.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	140		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121)	107%
1,2-DICHLOROETHANE-D4	(70-121)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.02

DATE: 12/30/93

SWLO # : 16354.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	304	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	268	JB	4-NITROPHENOL	385	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	277	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	319	JB	BIS(2-ETHYLHEXYL)PHTHALATE	56.3	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.02

DATE: 12/30/93

SWLO # : 16354.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.02

DATE: 12/30/93

SWLO # : 16354.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.118		mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	2.83		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	616		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.354	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	60.5		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	7.07		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	13.9		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.589		mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	19.4		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.02

DATE: 12/30/93

SWLO # : 16354.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.589	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.03

DATE: 12/30/93

SWLO # : 16354.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	78%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.03

DATE: 12/30/93

SWLO # : 16354.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	120		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	106%
1,2-DICHLOROETHANE-D4	(70-121)	107%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16354.03

DATE: 12/30/93

SWLO # : 16354.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	355	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	306	JB	4-NITROPHENOL	348	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	226	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	321	JB	BIS(2-ETHYLHEXYL)PHTHALATE	44.9	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.19SB1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.116	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	1.85		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	67.1		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	10.4		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	5.1		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	5.68		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.58		mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	4.64		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/30/93

SWLO # : 16354.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 17.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.58	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-259

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.04

DATE: 12/30/93

SWLO # : 16354.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 5.74

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	57	U	TRICHLOROETHENE	29	U
BROMOMETHANE	57	U	DIBROMOCHLOROMETHANE	29	U
VINYL CHLORIDE	57	U	1,1,2-TRICHLOROETHANE	29	U
CHLOROETHANE	57	U	BENZENE	29	U
METHYLENE CHLORIDE	29	U	CIS-1,3-DICHLOROPROPENE	29	U
ACETONE	77		2-CHLOROETHYL VINYL ETHER	57	U
CARBON DISULFIDE	29	U	BROMOFORM	29	U
1,1-DICHLOROETHENE	29	U	2-HEXANONE	57	U
1,1-DICHLOROETHANE	51		4-METHYL-2-PENTANONE	57	U
CHLOROFORM	29	U	TETRACHLOROETHENE	29	U
1,2-DICHLOROETHANE	29	U	TOLUENE	29	U
1,1,1-TRICHLOROETHANE	29	U	CHLOROBENZENE	29	U
CARBON TETRACHLORIDE	29	U	ETHYLBENZENE	29	U
VINYL ACETATE	57	U	STYRENE	29	U
BROMODICHLOROMETHANE	29	U	1,2-DICHLOROETHENE(TOTAL)	1200	E
1,1,2,2-TETRACHLOROETHANE	29	U	XYLENE (TOTAL)	29	U
1,2-DICHLOROPROPANE	32		2-BUTANONE	57	U
TRANS-1,3-DICHLOROPROPENE	29	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	100%
1,2-DICHLOROETHANE-D4	(70-121)	110%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.04

DATE: 12/30/93

SWLO # : 16354.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	375	B	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	307	JB	4-NITROPHENOL	334	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	222	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	320	JB	BIS(2-ETHYLHEXYL)PHTHALATE	39.1	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.04

DATE: 12/30/93

SWLO # : 16354.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	91%	PHENOL-D5	(24-113)	76%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.04

DATE: 12/30/93

SWLO # : 16354.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.115	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.115	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	3.1		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	234		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.344	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	10.2		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	9.87		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	7.8		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.574	U	mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	14.1		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.04

DATE: 12/30/93

SWLO # : 16354.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.574	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.05

DATE: 12/30/93

SWLO # : 16354.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	5.9	U	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	100		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	7.7	
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121)	101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.05

DATE: 12/30/93

SWLO # : 16354.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	345	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	300	JB	4-NITROPHENOL	317	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	233	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	332	JB	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.05

DATE: 12/30/93

SWLO # : 16354.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	73%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	68%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16354.05

DATE: 12/30/93

SWLO # : 16354.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.117	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	3.4		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	558		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.352	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	15.6		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	7.75		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	12.8		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.587	U	mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	17.5		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.05

DATE: 12/30/93

SWLO # : 16354.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB9
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.587	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16354.06

DATE: 12/30/93

SWLO # : 16354.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	69		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	7.4	
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	106%
1,2-DICHLOROETHANE-D4	(70-121)	108%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.06

DATE: 12/30/93

SWLO # : 16354.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:
DATE ANALYZED : 11/30/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	359	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	310	JB	4-NITROPHENOL	309	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	204	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	317	JB	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16354.06

DATE: 12/30/93

SWLO # : 16354.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:
DATE ANALYZED : 11/30/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	85%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.06

DATE: 12/30/93

SWLO # : 16354.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.117	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	2.93		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	275		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.352	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	14.9		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	7.62		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	10.2		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.586		mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	17.2		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.06

DATE: 12/30/93

SWLO # : 16354.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.586	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.07

DATE: 12/30/93

SWLO # : 16354.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	9.2		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	98		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121) 107%
1,2-DICHLOROETHANE-D4	(70-121)	107%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.07

DATE: 12/30/93

SWLO # : 16354.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	344	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	298	JB	4-NITROPHENOL	280	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	176	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	317	JB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.07

DATE: 12/30/93

SWLO # : 16354.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	90%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.07

DATE: 12/30/93

SWLO # : 16354.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.113	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	1.13	U	mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	93.5		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.339	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	3.39		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	0.904		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	3.84		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.565	U	mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	2.83		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.07

DATE: 12/30/93

SWLO # : 16354.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SB10
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.565	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.08

DATE: 12/30/93

SWLO # : 16354.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.48

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	7.4	U
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.4	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.4	U
CHLOROETHANE	15	U	BENZENE	7.4	U
METHYLENE CHLORIDE	13		CIS-1,3-DICHLOROPROPENE	7.4	U
ACETONE	210		2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.4	U	BROMOFORM	7.4	U
1,1-DICHLOROETHENE	7.4	U	2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.4	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.4	U	TETRACHLOROETHENE	7.4	U
1,2-DICHLOROETHANE	7.4	U	TOLUENE	7.4	U
1,1,1-TRICHLOROETHANE	7.4	U	CHLOROBENZENE	30	
CARBON TETRACHLORIDE	7.4	U	ETHYLBENZENE	7.4	U
VINYL ACETATE	15	U	STYRENE	7.4	U
BROMODICHLOROMETHANE	7.4	U	1,2-DICHLOROETHENE(TOTAL)	7.4	U
1,1,2,2-TETRACHLOROETHANE	7.4	U	XYLENE (TOTAL)	7.4	U
1,2-DICHLOROPROPANE	7.4	U	2-BUTANONE	25	
TRANS-1,3-DICHLOROPROPENE	7.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	112%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	113%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.08

DATE: 12/30/93

SWLO # : 16354.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.50

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	470	JB	ACENAPHTHENE	891	
BIS(2-CHLOROETHYL)ETHER	500	U	2,4-DINITROPHENOL	2400	U
2-CHLOROPHENOL	378	JB	4-NITROPHENOL	390	JB
1,3-DICHLOROBENZENE	500	U	DIBENZOFURAN	412	J
1,4-DICHLOROBENZENE	500	U	2,4-DINITROTOLUENE	500	U
BENZYL ALCOHOL	500	U	2,6-DINITROTOLUENE	500	U
1,2-DICHLOROBENZENE	500	U	DIETHYLPHTHALATE	500	U
2-METHYLPHENOL(O-CRESOL)	500	U	4-CHLOROPHENYL-PHENYLETHER	500	U
BIS(2-CHLOROISOPROPYL)ETHER	500	U	FLUORENE	901	
4-METHYLPHENOL(P-CRESOL)	500	U	4-NITROANILINE	2400	U
N-NITROSO-DI-N-PROPYLAMINE	500	U	4,6-DINITRO-2-METHYLPHENOL	2400	U
HEXACHLOROETHANE	500	U	N-NITROSODIPHENYLAMINE(1)	500	U
NITROBENZENE	500	U	4-BROMOPHENYL-PHENYLETHER	500	U
ISOPHORONE	500	U	HEXACHLOROBENZENE	500	U
2-NITROPHENOL	500	U	PENTACHLOROPHENOL	333	JB
2,4-DIMETHYLPHENOL	500	U	PHENANTHRENE	12000	D
BENZOIC ACID	2400	U	ANTHRACENE	2180	
BIS(2-CHLOROETHOXY)METHANE	500	U	DI-N-BUTYL PHTHALATE	55.4	J
2,4-DICHLOROPHENOL	500	U	FLUORANTHENE	18100	D
1,2,4-TRICHLOROBENZENE	500	U	PYRENE	14500	D
NAPHTHALENE	521		BUTYL BENZYL PHTHALATE	500	U
4-CHLOROANILINE	500	U	3,3'-DICHLOROBENZIDINE	990	U
HEXACHLOROBUTADIENE	500	U	BENZO(A)ANTHRACENE	5480	
4-CHLORO-3-METHYLPHENOL	364	JB	BIS(2-ETHYLHEXYL)PHTHALATE	500	U
2-METHYLNAPHTHALENE	85.6	J	CHRYSENE	6970	
HEXACHLOROCYCLOPENTADIENE	500	U	DI-N-OCTYL PHTHALATE	273	J
2,4,6-TRICHLOROPHENOL	500	U	BENZO(B)FLUORANTHENE	6900	

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.08

DATE: 12/30/93

SWLO # : 16354.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.50

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
2,4,5-TRICHLOROPHENOL	2400	U	BENZO(K)FLUORANTHENE	5150
2-CHLORONAPHTHALENE	500	U	BENZO(A)PYRENE	5390
2-NITROANILINE	2400	U	INDENO(1,2,3-CD)PYRENE	3250
DIMETHYL PHTHALATE	500	U	DIBENZ(A,H)ANTHRACENE	1530
ACENAPHTHYLENE	500	U	BENZO(G,H,I)PERYLENE	3620
3-NITROANILINE	2400	U		

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	156% *	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16354.08

DATE: 12/30/93

SWLO # : 16354.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.269	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	5.17	mg/kg	11/22/93	11/29/93	SW846-7761
ARSENIC	3.7	mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	440	mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	8.13	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	161	mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	81.3	mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	58.7	mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	2.07	mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	197	mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.08

DATE: 12/30/93

SWLO # : 16354.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.739	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.09

DATE: 12/30/93

SWLO # : 16354.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 2.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	21	U	TRICHLOROETHENE	10	U
BROMOMETHANE	21	U	DIBROMOCHLOROMETHANE	10	U
VINYL CHLORIDE	21	U	1,1,2-TRICHLOROETHANE	10	U
CHLOROETHANE	21	U	BENZENE	10	U
METHYLENE CHLORIDE	18		CIS-1,3-DICHLOROPROPENE	10	U
ACETONE	160		2-CHLOROETHYL VINYL ETHER	21	U
CARBON DISULFIDE	10	U	BROMOFORM	10	U
1,1-DICHLOROETHENE	10	U	2-HEXANONE	21	U
1,1-DICHLOROETHANE	10	U	4-METHYL-2-PENTANONE	21	U
CHLOROFORM	10	U	TETRACHLOROETHENE	10	U
1,2-DICHLOROETHANE	10	U	TOLUENE	10	U
1,1,1-TRICHLOROETHANE	10	U	CHLOROBENZENE	110	
CARBON TETRACHLORIDE	10	U	ETHYLBENZENE	10	U
VINYL ACETATE	21	U	STYRENE	10	U
BROMODICHLOROMETHANE	10	U	1,2-DICHLOROETHENE(TOTAL)	10	U
1,1,2,2-TETRACHLOROETHANE	10	U	XYLENE (TOTAL)	10	U
1,2-DICHLOROPROPANE	10	U	2-BUTANONE	27	
TRANS-1,3-DICHLOROPROPENE	10	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	115%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	118%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2595

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.09

DATE: 12/30/93

SWLO # : 16354.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	642	JB	ACENAPHTHENE	359	J
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	528	JB	4-NITROPHENOL	625	JB
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	188	J
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	387	J
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	484	JB
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	4930	
BENZOIC ACID	3400	U	ANTHRACENE	881	
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	89.9	J
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	4160	
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	7620	D
NAPHTHALENE	216	J	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	3020	
4-CHLORO-3-METHYLPHENOL	552	JB	BIS(2-ETHYLHEXYL)PHTHALATE	6020	
2-METHYLNAPHTHALENE	690	U	CHRYSENE	4540	
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	4990	

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.09

DATE: 12/30/93

SWLO # : 16354.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	4240
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	3250
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	2120
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	1220
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	1940
3-NITROANILINE	3400	U		

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	73%
TERPHENYL-D14	(18-137)	167% *	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	73%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-259

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.09

DATE: 12/30/93

SWLO # : 16354.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.42		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	5		mg/kg	11/22/93	11/29/93	SW846-7761
ARSENIC	5.41		mg/kg	11/22/93	11/22/93	SW846-6010
BARIUM	610		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	33.7		mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	214		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	106		mg/kg	11/22/93	11/22/93	SW846-6010
NICKEL	78.9		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	1.04	U	mg/kg	11/22/93	11/22/93	SW846-6010
ZINC	298		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.09

DATE: 12/30/93

SWLO # : 16354.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	1.04	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.10

DATE: 12/30/93

SWLO # : 16354.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 180.69

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1800	U	TRICHLOROETHENE	900	U
BROMOMETHANE	1800	U	DIBROMOCHLOROMETHANE	900	U
VINYL CHLORIDE	1800	U	1,1,2-TRICHLOROETHANE	900	U
CHLOROETHANE	1800	U	BENZENE	900	U
METHYLENE CHLORIDE	900	U	CIS-1,3-DICHLOROPROPENE	900	U
ACETONE	3000		2-CHLOROETHYL VINYL ETHER	1800	U
CARBON DISULFIDE	900	U	BROMOFORM	900	U
1,1-DICHLOROETHENE	900	U	2-HEXANONE	1800	U
1,1-DICHLOROETHANE	900	U	4-METHYL-2-PENTANONE	1800	U
CHLOROFORM	190	J	TETRACHLOROETHENE	900	U
1,2-DICHLOROETHANE	900	U	TOLUENE	11000	
1,1,1-TRICHLOROETHANE	900	U	CHLOROBENZENE	1600	
CARBON TETRACHLORIDE	900	U	ETHYLBENZENE	1300	
VINYL ACETATE	1800	U	STYRENE	900	U
BROMODICHLOROMETHANE	900	U	1,2-DICHLOROETHENE(TOTAL)	900	U
1,1,2,2-TETRACHLOROETHANE	900	U	XYLENE (TOTAL)	5400	
1,2-DICHLOROPROPANE	900	U	2-BUTANONE	1800	U
TRANS-1,3-DICHLOROPROPENE	900	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.10

DATE: 12/30/93

SWLO # : 16354.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	551	B	ACENAPHTHENE	460	U
BIS(2-CHLOROETHYL)ETHER	460	U	2,4-DINITROPHENOL	2200	U
2-CHLOROPHENOL	425	JB	4-NITROPHENOL	626	JB
1,3-DICHLOROBENZENE	460	U	DIBENZOFURAN	460	U
1,4-DICHLOROBENZENE	61.4	J	2,4-DINITROTOLUENE	460	U
BENZYL ALCOHOL	460	U	2,6-DINITROTOLUENE	460	U
1,2-DICHLOROBENZENE	460	U	DIETHYLPHTHALATE	460	U
2-METHYLPHENOL(O-CRESOL)	460	U	4-CHLOROPHENYL-PHENYLETHER	460	U
BIS(2-CHLOROISOPROPYL)ETHER	460	U	FLUORENE	460	U
4-METHYLPHENOL(P-CRESOL)	460	U	4-NITROANILINE	2200	U
N-NITROSO-DI-N-PROPYLAMINE	460	U	4,6-DINITRO-2-METHYLPHENOL	2200	U
HEXACHLOROETHANE	460	U	N-NITROSODIPHENYLAMINE(1)	460	U
NITROBENZENE	460	U	4-BROMOPHENYL-PHENYLETHER	460	U
ISOPHORONE	460	U	HEXACHLOROBENZENE	460	U
2-NITROPHENOL	460	U	PENTACHLOROPHENOL	327	JB
2,4-DIMETHYLPHENOL	460	U	PHENANTHRENE	134	J
BENZOIC ACID	2200	U	ANTHRACENE	460	U
BIS(2-CHLOROETHOXY)METHANE	460	U	DI-N-BUTYL PHTHALATE	460	U
2,4-DICHLOROPHENOL	460	U	FLUORANTHENE	529	
1,2,4-TRICHLOROBENZENE	460	U	PYRENE	619	
NAPHTHALENE	460	U	BUTYL BENZYL PHTHALATE	460	U
4-CHLOROANILINE	460	U	3,3'-DICHLOROBENZIDINE	920	U
HEXACHLOROBUTADIENE	460	U	BENZO(A)ANTHRACENE	176	J
4-CHLORO-3-METHYLPHENOL	385	JB	BIS(2-ETHYLHEXYL)PHTHALATE	7530	D
2-METHYLNAPHTHALENE	460	U	CHRYSENE	298	J
HEXACHLOROCYCLOPENTADIENE	460	U	DI-N-OCTYL PHTHALATE	607	
2,4,6-TRICHLOROPHENOL	460	U	BENZO(B)FLUORANTHENE	240	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.10

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PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2200	U	BENZO(K)FLUORANTHENE	181	J
2-CHLORONAPHTHALENE	460	U	BENZO(A)PYRENE	156	J
2-NITROANILINE	2200	U	INDENO(1,2,3-CD)PYRENE	118	J
DIMETHYL PHTHALATE	460	U	DIBENZ(A,H)ANTHRACENE	460	U
ACENAPHTHYLENE	460	U	BENZO(G,H,I)PERYLENE	127	J
3-NITROANILINE	2200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	101%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	121%	PHENOL-D5	(24-113)	82%
2-FLUOROPHENOL	(25-121)	90%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16354.10

DATE: 12/30/93

SWLO # : 16354.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.214	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	4.48	mg/kg	11/22/93	11/29/93	SW846-7761
ARSENIC	1.44	mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	293	mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	18.2	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	464	mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	53.2	mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	90	mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	1.59	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	106	mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-259

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.10

DATE: 12/30/93

SWLO # : 16354.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	1.39	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.11

DATE: 12/30/93

SWLO # : 16354.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 171.73

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1700	U	TRICHLOROETHENE	860	U
BROMOMETHANE	1700	U	DIBROMOCHLOROMETHANE	860	U
VINYL CHLORIDE	1700	U	1,1,2-TRICHLOROETHANE	860	U
CHLOROETHANE	1700	U	BENZENE	860	U
METHYLENE CHLORIDE	860	U	CIS-1,3-DICHLOROPROPENE	860	U
ACETONE	1100	J	2-CHLOROETHYL VINYL ETHER	1700	U
CARBON DISULFIDE	860	U	BROMOFORM	860	U
1,1-DICHLOROETHENE	860	U	2-HEXANONE	1700	U
1,1-DICHLOROETHANE	860	U	4-METHYL-2-PENTANONE	1700	U
CHLOROFORM	860	U	TETRACHLOROETHENE	860	U
1,2-DICHLOROETHANE	860	U	TOLUENE	410	JB
1,1,1-TRICHLOROETHANE	860	U	CHLOROBENZENE	6700	
CARBON TETRACHLORIDE	860	U	ETHYLBENZENE	860	U
VINYL ACETATE	1700	U	STYRENE	860	U
BROMODICHLOROMETHANE	860	U	1,2-DICHLOROETHENE(TOTAL)	860	U
1,1,2,2-TETRACHLOROETHANE	860	U	XYLENE (TOTAL)	860	U
1,2-DICHLOROPROPANE	860	U	2-BUTANONE	2100	
TRANS-1,3-DICHLOROPROPENE	860	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	108%	BROMOFLUOROBENZENE	(74-121) 105%
1,2-DICHLOROETHANE-D4	(70-121)	107%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.11

DATE: 12/30/93

SWLO # : 16354.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	454	BJ	ACENAPHTHENE	460	U
BIS(2-CHLOROETHYL)ETHER	460	U	2,4-DINITROPHENOL	2200	U
2-CHLOROPHENOL	357	JB	4-NITROPHENOL	2200	U
1,3-DICHLOROBENZENE	460	U	DIBENZOFURAN	460	U
1,4-DICHLOROBENZENE	2390		2,4-DINITROTOLUENE	460	U
BENZYL ALCOHOL	460	U	2,6-DINITROTOLUENE	460	U
1,2-DICHLOROBENZENE	287	J	DIETHYLPHTHALATE	460	U
2-METHYLPHENOL(O-CRESOL)	460	U	4-CHLOROPHENYL-PHENYLETHER	460	U
BIS(2-CHLOROISOPROPYL)ETHER	460	U	FLUORENE	460	U
4-METHYLPHENOL(P-CRESOL)	460	U	4-NITROANILINE	2200	U
N-NITROSO-DI-N-PROPYLAMINE	460	U	4,6-DINITRO-2-METHYLPHENOL	2200	U
HEXACHLOROETHANE	460	U	N-NITROSODIPHENYLAMINE(1)	460	U
NITROBENZENE	460	U	4-BROMOPHENYL-PHENYLETHER	460	U
ISOPHORONE	460	U	HEXACHLOROBENZENE	460	U
2-NITROPHENOL	460	U	PENTACHLOROPHENOL	2200	U
2,4-DIMETHYLPHENOL	460	U	PHENANTHRENE	489	
BENZOIC ACID	2200	U	ANTHRACENE	460	U
BIS(2-CHLOROETHOXY)METHANE	460	U	DI-N-BUTYL PHTHALATE	460	U
2,4-DICHLOROPHENOL	460	U	FLUORANTHENE	1900	
1,2,4-TRICHLOROBENZENE	460	U	PYRENE	269	J
NAPHTHALENE	94.1	J	BUTYL BENZYL PHTHALATE	310	J
4-CHLOROANILINE	460	U	3,3'-DICHLOROBENZIDINE	920	U
HEXACHLOROBUTADIENE	460	U	BENZO(A)ANTHRACENE	79.1	J
4-CHLORO-3-METHYLPHENOL	460	U	BIS(2-ETHYLHEXYL)PHTHALATE	103000	D
2-METHYLNAPHTHALENE	460	U	CHRYSENE	145	J
HEXACHLOROCYCLOPENTADIENE	460	U	DI-N-OCTYL PHTHALATE	12100	D
2,4,6-TRICHLOROPHENOL	460	U	BENZO(B)FLUORANTHENE	72	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.11

DATE: 12/30/93

SWLO # : 16354.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2200	U	BENZO(K)FLUORANTHENE	77.9	J
2-CHLORONAPHTHALENE	460	U	BENZO(A)PYRENE	48.1	J
2-NITROANILINE	2200	U	INDENO(1,2,3-CD)PYRENE	460	U
DIMETHYL PHTHALATE	460	U	DIBENZ(A,H)ANTHRACENE	460	U
ACENAPHTHYLENE	460	U	BENZO(G,H,I)PERYLENE	51.8	J
3-NITROANILINE	2200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	128% *	2-FLUOROBIPHENYL	(30-115)	72%
TERPHENYL-D14	(18-137)	95%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.11

DATE: 12/30/93

SWLO # : 16354.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.602		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	3.57		mg/kg	11/22/93	11/29/93	SW846-7761
ARSENIC	1.37	U	mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	611		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	8.38		mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	371		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	25.3		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	69		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.687	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	35.6		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.11

DATE: 12/30/93

SWLO # : 16354.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	4.12	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.12

DATE: 12/30/93

SWLO # : 16354.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.41

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	14	U	1,2-DICHLOROPROPANE	7	U
BROMOMETHANE	14	U	TRANS-1,3-DICHLOROPROPENE	7	U
VINYL CHLORIDE	14	U	TRICHLOROETHENE	7	U
CHLOROETHANE	14	U	DIBROMOCHLOROMETHANE	7	U
METHYLENE CHLORIDE	7	U	1,1,2-TRICHLOROETHANE	7	U
ACETONE	59		BENZENE	7	U
CARBON DISULFIDE	7	U	CIS-1,3-DICHLOROPROPENE	7	U
1,1-DICHLOROETHENE	7	U	2-CHLOROETHYL VINYL ETHER	14	U
1,1-DICHLOROETHANE	7	U	BROMOFORM	7	U
TOTAL 1,2-DICHLOROETHENE	7	U	2-HEXANONE	14	U
CHLOROFORM	7	U	4-METHYL-2-PENTANONE	14	U
1,2-DICHLOROETHANE	7	U	TETRACHLOROETHENE	7	U
METHYL ETHYL KETONE(2-BUTANONE	14	U	TOLUENE	7	U
1,1,1-TRICHLOROETHANE	7	U	CHLOROBENZENE	7	U
CARBON TETRACHLORIDE	7	U	ETHYLBENZENE	7	U
VINYL ACETATE	14	U	STYRENE	7	U
BROMODICHLOROMETHANE	7	U	XYLENE (TOTAL)	7	U
1,1,2,2-TETRACHLOROETHANE	7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	104%
1,2-DICHLOROETHANE-D4	(70-121)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.12

DATE: 12/30/93

SWLO # : 16354.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	419	JB	ACENAPHTHENE	460	U
BIS(2-CHLOROETHYL)ETHER	460	U	2,4-DINITROPHENOL	2200	U
2-CHLOROPHENOL	509	JB	4-NITROPHENOL	266	JB
1,3-DICHLOROBENZENE	460	U	DIBENZOFURAN	460	U
1,4-DICHLOROBENZENE	460	U	2,4-DINITROTOLUENE	460	U
BENZYL ALCOHOL	460	U	2,6-DINITROTOLUENE	460	U
1,2-DICHLOROBENZENE	460	U	DIETHYLPHTHALATE	460	U
2-METHYLPHENOL(O-CRESOL)	460	U	4-CHLOROPHENYL-PHENYLETHER	460	U
BIS(2-CHLOROISOPROPYL)ETHER	460	U	FLUORENE	460	U
4-METHYLPHENOL(P-CRESOL)	460	U	4-NITROANILINE	2200	U
N-NITROSO-DI-N-PROPYLAMINE	460	U	4,6-DINITRO-2-METHYLPHENOL	2200	U
HEXACHLOROETHANE	460	U	N-NITROSODIPHENYLAMINE(1)	460	U
NITROBENZENE	460	U	4-BROMOPHENYL-PHENYLETHER	460	U
ISOPHORONE	460	U	HEXACHLOROBENZENE	460	U
2-NITROPHENOL	460	U	PENTACHLOROPHENOL	319	JB
2,4-DIMETHYLPHENOL	460	U	PHENANTHRENE	460	U
BENZOIC ACID	2200	U	ANTHRACENE	460	U
BIS(2-CHLOROETHOXY)METHANE	460	U	DI-N-BUTYL PHTHALATE	460	U
2,4-DICHLOROPHENOL	460	U	FLUORANTHENE	178	J
1,2,4-TRICHLOROBENZENE	460	U	PYRENE	142	J
NAPHTHALENE	460	U	BUTYL BENZYL PHTHALATE	460	U
4-CHLOROANILINE	460	U	3,3'-DICHLOROBENZIDINE	920	U
HEXACHLOROBUTADIENE	460	U	BENZO(A)ANTHRACENE	72.2	J
4-CHLORO-3-METHYLPHENOL	290	JB	BIS(2-ETHYLHEXYL)PHTHALATE	100	J
2-METHYLNAPHTHALENE	460	U	CHRYSENE	88.5	J
HEXACHLOROCYCLOPENTADIENE	460	U	DI-N-OCTYL PHTHALATE	460	U
2,4,6-TRICHLOROPHENOL	460	U	BENZO(B)FLUORANTHENE	70	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.12

DATE: 12/30/93

SWLO # : 16354.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2200	U	BENZO(K)FLUORANTHENE	73.3	J
2-CHLORONAPHTHALENE	460	U	BENZO(A)PYRENE	71.6	J
2-NITROANILINE	2200	U	INDENO(1,2,3-CD)PYRENE	460	U
DIMETHYL PHTHALATE	460	U	DIBENZ(A,H)ANTHRACENE	460	U
ACENAPHTHYLENE	460	U	BENZO(G,H,I)PERYLENE	460	U
3-NITROANILINE	2200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	67%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	48%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.12

DATE: 12/30/93

SWLO # : 16354.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.453		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.424		mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	3.54		mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	560		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	2.83		mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	42.9		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	11.9		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	15.1		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.707	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	37.8		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.12

DATE: 12/30/93

SWLO # : 16354.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.707	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.13

DATE: 12/30/93

SWLO # : 16354.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.51

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	1,2-DICHLOROPROPANE	7.6	U
BROMOMETHANE	15	U	TRANS-1,3-DICHLOROPROPENE	7.6	U
VINYL CHLORIDE	15	U	TRICHLOROETHENE	7.6	U
CHLOROETHANE	15	U	DIBROMOCHLOROMETHANE	7.6	U
METHYLENE CHLORIDE	7.6	U	1,1,2-TRICHLOROETHANE	7.6	U
ACETONE	93		BENZENE	7.6	U
CARBON DISULFIDE	7.6	U	CIS-1,3-DICHLOROPROPENE	7.6	U
1,1-DICHLOROETHENE	7.6	U	2-CHLOROETHYL VINYL ETHER	15	U
1,1-DICHLOROETHANE	7.6	U	BROMOFORM	7.6	U
TOTAL 1,2-DICHLOROETHENE	7.6	U	2-HEXANONE	15	U
CHLOROFORM	7.6	U	4-METHYL-2-PENTANONE	15	U
1,2-DICHLOROETHANE	7.6	U	TETRACHLOROETHENE	62	
METHYL ETHYL KETONE(2-BUTANONE	15	U	TOLUENE	48	
1,1,1-TRICHLOROETHANE	7.6	U	CHLOROBENZENE	7.6	U
CARBON TETRACHLORIDE	7.6	U	ETHYLBENZENE	7.6	U
VINYL ACETATE	15	U	STYRENE	31	
BROMODICHLOROMETHANE	7.6	U	XYLENE (TOTAL)	7.6	U
1,1,2,2-TETRACHLOROETHANE	7.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121) 116%
1,2-DICHLOROETHANE-D4	(70-121)	175% *		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.13

DATE: 12/30/93

SWLO # : 16354.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.51

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	742	B	ACENAPHTHENE	500	U
BIS(2-CHLOROETHYL)ETHER	500	U	2,4-DINITROPHENOL	2400	U
2-CHLOROPHENOL	428	JB	4-NITROPHENOL	329	JB
1,3-DICHLOROBENZENE	500	U	DIBENZOFURAN	500	U
1,4-DICHLOROBENZENE	500	U	2,4-DINITROTOLUENE	500	U
BENZYL ALCOHOL	500	U	2,6-DINITROTOLUENE	500	U
1,2-DICHLOROBENZENE	500	U	DIETHYLPHTHALATE	500	U
2-METHYLPHENOL(O-CRESOL)	500	U	4-CHLOROPHENYL-PHENYLETHER	500	U
BIS(2-CHLOROISOPROPYL)ETHER	500	U	FLUORENE	500	U
4-METHYLPHENOL(P-CRESOL)	217	J	4-NITROANILINE	2400	U
N-NITROSO-DI-N-PROPYLAMINE	500	U	4,6-DINITRO-2-METHYLPHENOL	2400	U
HEXACHLOROETHANE	500	U	N-NITROSODIPHENYLAMINE(1)	500	U
NITROBENZENE	500	U	4-BROMOPHENYL-PHENYLETHER	500	U
ISOPHORONE	500	U	HEXACHLOROBENZENE	500	U
2-NITROPHENOL	500	U	PENTACHLOROPHENOL	394	JB
2,4-DIMETHYLPHENOL	500	U	PHENANTHRENE	349	J
BENZOIC ACID	2400		ANTHRACENE	500	U
BIS(2-CHLOROETHOXY)METHANE	500	U	DI-N-BUTYL PHTHALATE	500	U
2,4-DICHLOROPHENOL	500	U	FLUORANTHENE	1110	
1,2,4-TRICHLOROBENZENE	500	U	PYRENE	544	
NAPHTHALENE	500	U	BUTYL BENZYL PHTHALATE	500	U
4-CHLOROANILINE	500	U	3,3'-DICHLOROBENZIDINE	1000	U
HEXACHLOROBUTADIENE	500	U	BENZO(A)ANTHRACENE	204	J
4-CHLORO-3-METHYLPHENOL	385	JB	BIS(2-ETHYLHEXYL)PHTHALATE	3500	
2-METHYLNAPHTHALENE	500	U	CHRYSENE	328	J
HEXACHLOROCYCLOPENTADIENE	500	U	DI-N-OCTYL PHTHALATE	841	
2,4,6-TRICHLOROPHENOL	500	U	BENZO(B)FLUORANTHENE	276	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.13

DATE: 12/30/93

SWLO # : 16354.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.51

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2400	U	BENZO(K)FLUORANTHENE	269	J
2-CHLORONAPHTHALENE	500	U	BENZO(A)PYRENE	238	J
2-NITROANILINE	2400	U	INDENO(1,2,3-CD)PYRENE	155	J
DIMETHYL PHTHALATE	500	U	DIBENZ(A,H)ANTHRACENE	77.6	J
ACENAPHTHYLENE	500	U	BENZO(G,H,I)PERYLENE	174	J
3-NITROANILINE	2400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	102%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	89%	PHENOL-D5	(24-113)	86%
2-FLUOROPHENOL	(25-121)	80%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2595

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.13

DATE: 12/30/93

SWLO # : 16354.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.227		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	3.93		mg/kg	12/23/93	12/28/93	SW846-7761
ARSENIC	1.51	U	mg/kg	12/23/93	12/28/93	SW846-6010
BARIUM	390		mg/kg	12/23/93	12/28/93	SW846-6010
CADMIUM	26.9		mg/kg	12/23/93	12/28/93	SW846-6010
CHROMIUM	289		mg/kg	12/23/93	12/28/93	SW846-6010
LEAD	36.9		mg/kg	12/23/93	12/28/93	SW846-6010
NICKEL	51.1		mg/kg	12/23/93	12/28/93	SW846-6010
SELENIUM	0.756	U	mg/kg	12/23/93	12/28/93	SW846-6010
ZINC	66.2		mg/kg	12/23/93	12/28/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/30/93

SWLO # : 16354.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	1.5	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.14

DATE: 12/30/93

SWLO # : 16354.14 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.47

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	62	
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.3	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.3	U
CHLOROETHANE	15	U	BENZENE	65	
METHYLENE CHLORIDE	24		CIS-1,3-DICHLOROPROPENE	7.3	U
ACETONE	31		2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.3	U	BROMOFORM	7.3	U
1,1-DICHLOROETHENE	69		2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.3	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.3	U	TETRACHLOROETHENE	52	
1,2-DICHLOROETHANE	7.3	U	TOLUENE	89	
1,1,1-TRICHLOROETHANE	7.3	U	CHLOROBENZENE	80	
CARBON TETRACHLORIDE	7.3	U	ETHYLBENZENE	7.3	U
VINYL ACETATE	15	U	STYRENE	1.3	J
BROMODICHLOROMETHANE	7.3	U	1,2-DICHLOROETHENE(TOTAL)	7.3	U
1,1,2,2-TETRACHLOROETHANE	7.3	U	XYLENE (TOTAL)	7.3	U
1,2-DICHLOROPROPANE	7.3	U	2-BUTANONE	15	U
TRANS-1,3-DICHLOROPROPENE	7.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	109%
1,2-DICHLOROETHANE-D4	(70-121)	113%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/30/93

SWLO # : 16354.14 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.80

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	11400	EB	ACENAPHTHENE	4680	
BIS(2-CHLOROETHYL)ETHER	590	U	2,4-DINITROPHENOL	2900	U
2-CHLOROPHENOL	9360	B	4-NITROPHENOL	9430	B
1,3-DICHLOROBENZENE	590	U	DIBENZOFURAN	590	U
1,4-DICHLOROBENZENE	4170		2,4-DINITROTOLUENE	3740	
BENZYL ALCOHOL	590	U	2,6-DINITROTOLUENE	590	U
1,2-DICHLOROBENZENE	590	U	DIETHYLPHTHALATE	590	U
2-METHYLPHENOL(O-CRESOL)	590	U	4-CHLOROPHENYL-PHENYLETHER	590	U
BIS(2-CHLOROISOPROPYL)ETHER	590	U	FLUORENE	590	U
4-METHYLPHENOL(P-CRESOL)	228	J	4-NITROANILINE	2900	U
N-NITROSO-DI-N-PROPYLAMINE	5680		4,6-DINITRO-2-METHYLPHENOL	2900	U
HEXACHLOROETHANE	590	U	N-NITROSODIPHENYLAMINE(1)	590	U
NITROBENZENE	590	U	4-BROMOPHENYL-PHENYLETHER	590	U
ISOPHORONE	590	U	HEXACHLOROBENZENE	590	U
2-NITROPHENOL	590	U	PENTACHLOROPHENOL	7140	B
2,4-DIMETHYLPHENOL	590	U	PHENANTHRENE	377	J
BENZOIC ACID	2900	U	ANTHRACENE	590	U
BIS(2-CHLOROETHOXY)METHANE	590	U	DI-N-BUTYL PHTHALATE	590	U
2,4-DICHLOROPHENOL	590	U	FLUORANTHENE	1220	
1,2,4-TRICHLOROBENZENE	3470		PYRENE	5670	
NAPHTHALENE	590	U	BUTYL BENZYL PHTHALATE	590	U
4-CHLOROANILINE	590	U	3,3'-DICHLOROBENZIDINE	1200	U
HEXACHLOROBUTADIENE	590	U	BENZO(A)ANTHRACENE	213	J
4-CHLORO-3-METHYLPHENOL	7570	B	BIS(2-ETHYLHEXYL)PHTHALATE	58400	E
2-METHYLNAPHTHALENE	590	U	CHRYSENE	394	J
HEXACHLOROCYCLOPENTADIENE	590	U	DI-N-OCTYL PHTHALATE	7360	
2,4,6-TRICHLOROPHENOL	590	U	BENZO(B)FLUORANTHENE	370	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.14

DATE: 12/30/93

SWLO # : 16354.14 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.80

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2900	U	BENZO(K)FLUORANTHENE	381	J
2-CHLORONAPHTHALENE	590	U	BENZO(A)PYRENE	261	J
2-NITROANILINE	2900	U	INDENO(1,2,3-CD)PYRENE	590	U
DIMETHYL PHTHALATE	590	U	DIBENZ(A,H)ANTHRACENE	590	U
ACENAPHTHYLENE	590	U	BENZO(G,H,I)PERYLENE	108	J
3-NITROANILINE	2900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	102%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	97%	PHENOL-D5	(24-113)	78%
2-FLUOROPHENOL	(25-121)	81%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16354.14

DATE: 12/30/93

SWLO # : 16354.14 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
SILVER	10.2	mg/kg	12/23/93	12/28/93	SW846-7761
ARSENIC	326	mg/kg	12/23/93	12/28/93	SW846-6010
BARIUM	669	mg/kg	12/23/93	12/28/93	SW846-6010
CADMIUM	37.8	mg/kg	12/23/93	12/28/93	SW846-6010
CHROMIUM	264	mg/kg	12/23/93	12/28/93	SW846-6010
LEAD	112	mg/kg	12/23/93	12/28/93	SW846-6010
NICKEL	123	mg/kg	12/23/93	12/28/93	SW846-6010
SELENIUM	317	mg/kg	12/23/93	12/28/93	SW846-6010
ZINC	141	mg/kg	12/23/93	12/28/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.14

DATE: 12/30/93

SWLO # : 16354.14 LR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.151	mg/kg	11/19/93	11/19/93	SW846-7471

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.14

DATE: 12/30/93

SWLO # : 16354.14 LR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	2.05	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.15

DATE: 12/30/93

SWLO # : 16354.15 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.50

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	85	
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.5	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.5	U
CHLOROETHANE	15	U	BENZENE	88	
METHYLENE CHLORIDE	29		CIS-1,3-DICHLOROPROPENE	7.5	U
ACETONE	67		2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.5	U	BROMOFORM	7.5	U
1,1-DICHLOROETHENE	92		2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.5	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.5	U	TETRACHLOROETHENE	71	
1,2-DICHLOROETHANE	7.5	U	TOLUENE	180	
1,1,1-TRICHLOROETHANE	7.5	U	CHLOROBENZENE	120	
CARBON TETRACHLORIDE	7.5	U	ETHYLBENZENE	7.5	U
VINYL ACETATE	15	U	STYRENE	39	
BROMODICHLOROMETHANE	7.5	U	1,2-DICHLOROETHENE(TOTAL)	7.5	U
1,1,2,2-TETRACHLOROETHANE	7.5	U	XYLENE (TOTAL)	7.5	U
1,2-DICHLOROPROPANE	7.5	U	2-BUTANONE	15	U
TRANS-1,3-DICHLOROPROPENE	7.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	116%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	124% *		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.15

DATE: 12/30/93

SWLO # : 16354.15 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.80

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	13800	EB	ACENAPHTHENE	4960	
BIS(2-CHLOROETHYL)ETHER	590	U	2,4-DINITROPHENOL	2900	U
2-CHLOROPHENOL	10800	EB	4-NITROPHENOL	10600	EB
1,3-DICHLOROBENZENE	590	U	DIBENZOFURAN	590	U
1,4-DICHLOROBENZENE	4550		2,4-DINITROTOLUENE	4040	
BENZYL ALCOHOL	590	U	2,6-DINITROTOLUENE	590	U
1,2-DICHLOROBENZENE	590	U	DIETHYLPHTHALATE	590	U
2-METHYLPHENOL(O-CRESOL)	590	U	4-CHLOROPHENYL-PHENYLETHER	590	U
BIS(2-CHLOROISOPROPYL)ETHER	590	U	FLUORENE	590	U
4-METHYLPHENOL(P-CRESOL)	390	J	4-NITROANILINE	2900	U
N-NITROSO-DI-N-PROPYLAMINE	11700	E	4,6-DINITRO-2-METHYLPHENOL	2900	U
HEXACHLOROETHANE	590	U	N-NITROSODIPHENYLAMINE(1)	590	U
NITROBENZENE	590	U	4-BROMOPHENYL-PHENYLETHER	590	U
ISOPHORONE	590	U	HEXACHLOROBENZENE	590	U
2-NITROPHENOL	590	U	PENTACHLOROPHENOL	8500	B
2,4-DIMETHYLPHENOL	590	U	PHENANTHRENE	309	J
BENZOIC ACID	2900	U	ANTHRACENE	590	U
BIS(2-CHLOROETHOXY)METHANE	590	U	DI-N-BUTYL PHTHALATE	590	U
2,4-DICHLOROPHENOL	590	U	FLUORANTHENE	1190	
1,2,4-TRICHLOROBENZENE	3760		PYRENE	5840	
NAPHTHALENE	590	U	BUTYL BENZYL PHTHALATE	590	U
4-CHLOROANILINE	590	U	3,3'-DICHLOROBENZIDINE	1200	U
HEXACHLOROBUTADIENE	590	U	BENZO(A)ANTHRACENE	184	J
4-CHLORO-3-METHYLPHENOL	8650	B	BIS(2-ETHYLHEXYL)PHTHALATE	28200	E
2-METHYLNAPHTHALENE	590	U	CHRYSENE	321	J
HEXACHLOROCYCLOPENTADIENE	590	U	DI-N-OCTYL PHTHALATE	3690	
2,4,6-TRICHLOROPHENOL	590	U	BENZO(B)FLUORANTHENE	497	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.15

DATE: 12/30/93

SWLO # : 16354.15 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.80

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2900	U	BENZO(K)FLUORANTHENE	590	U
2-CHLORONAPHTHALENE	590	U	BENZO(A)PYRENE	277	J
2-NITROANILINE	2900	U	INDENO(1,2,3-CD)PYRENE	124	J
DIMETHYL PHTHALATE	590	U	DIBENZ(A,H)ANTHRACENE	71.8	J
ACENAPHTHYLENE	590	U	BENZO(G,H,I)PERYLENE	145	J
3-NITROANILINE	2900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	114%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	106%	PHENOL-D5	(24-113)	93%
2-FLUOROPHENOL	(25-121)	91%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.15

DATE: 12/30/93

SWLO # : 16354.15 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
SILVER	10.3	mg/kg	12/23/93	12/28/93	SW846-7761
ARSENIC	348	mg/kg	12/23/93	12/28/93	SW846-6010
BARIUM	766	mg/kg	12/23/93	12/28/93	SW846-6010
CADMIUM	37.8	mg/kg	12/23/93	12/28/93	SW846-6010
CHROMIUM	266	mg/kg	12/23/93	12/28/93	SW846-6010
LEAD	122	mg/kg	12/23/93	12/28/93	SW846-6010
NICKEL	137	mg/kg	12/23/93	12/28/93	SW846-6010
SELENIUM	339	mg/kg	12/23/93	12/28/93	SW846-6010
ZINC	153	mg/kg	12/23/93	12/28/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2595

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.15

DATE: 12/30/93

SWLO # : 16354.15 LR2
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.183	mg/kg	11/19/93	11/19/93	SW846-7471

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.15

DATE: 12/30/93

SWLO # : 16354.15 LR2
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	2.1	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.16

DATE: 12/30/93

SWLO # : 16354.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.51

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	7.6	U
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.6	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.6	U
CHLOROETHANE	15	U	BENZENE	7.6	U
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	7.6	U
ACETONE	64		2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.6	U	BROMOFORM	7.6	U
1,1-DICHLOROETHENE	7.6	U	2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.6	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.6	U	TETRACHLOROETHENE	42	
1,2-DICHLOROETHANE	7.6	U	TOLUENE	25	
1,1,1-TRICHLOROETHANE	7.6	U	CHLOROBENZENE	7.6	U
CARBON TETRACHLORIDE	7.6	U	ETHYLBENZENE	7.6	U
VINYL ACETATE	15	U	STYRENE	7.6	U
BROMODICHLOROMETHANE	7.6	U	1,2-DICHLOROETHENE(TOTAL)	7.6	U
1,1,2,2-TETRACHLOROETHANE	7.6	U	XYLENE (TOTAL)	7.6	U
1,2-DICHLOROPROPANE	7.6	U	2-BUTANONE	15	U
TRANS-1,3-DICHLOROPROPENE	7.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	107%	BROMOFLUOROBENZENE	(74-121)	113%
1,2-DICHLOROETHANE-D4	(70-121)	117%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.16

DATE: 12/30/93

SWLO # : 16354.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.50

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	875	B	ACENAPHTHENE	500	U
BIS(2-CHLOROETHYL)ETHER	500	U	2,4-DINITROPHENOL	2400	U
2-CHLOROPHENOL	407	JB	4-NITROPHENOL	407	JB
1,3-DICHLOROBENZENE	500	U	DIBENZOFURAN	500	U
1,4-DICHLOROBENZENE	500	U	2,4-DINITROTOLUENE	500	U
BENZYL ALCOHOL	500	U	2,6-DINITROTOLUENE	500	U
1,2-DICHLOROBENZENE	500	U	DIETHYLPHTHALATE	500	U
2-METHYLPHENOL(O-CRESOL)	500	U	4-CHLOROPHENYL-PHENYLETHER	500	U
BIS(2-CHLOROISOPROPYL)ETHER	500	U	FLUORENE	500	U
4-METHYLPHENOL(P-CRESOL)	409	J	4-NITROANILINE	2400	U
N-NITROSO-DI-N-PROPYLAMINE	500	U	4,6-DINITRO-2-METHYLPHENOL	2400	U
HEXACHLOROETHANE	500	U	N-NITROSODIPHENYLAMINE(1)	500	U
NITROBENZENE	500	U	4-BROMOPHENYL-PHENYLETHER	500	U
ISOPHORONE	500	U	HEXACHLOROBENZENE	500	U
2-NITROPHENOL	500	U	PENTACHLOROPHENOL	363	JB
2,4-DIMETHYLPHENOL	500	U	PHENANTHRENE	206	J
BENZOIC ACID	2400	U	ANTHRACENE	500	U
BIS(2-CHLOROETHOXY)METHANE	500	U	DI-N-BUTYL PHTHALATE	500	U
2,4-DICHLOROPHENOL	500	U	FLUORANTHENE	1060	
1,2,4-TRICHLOROBENZENE	500	U	PYRENE	671	
NAPHTHALENE	500	U	BUTYL BENZYL PHTHALATE	500	U
4-CHLOROANILINE	500	U	3,3'-DICHLOROBENZIDINE	990	U
HEXACHLOROBUTADIENE	500	U	BENZO(A)ANTHRACENE	477	J
4-CHLORO-3-METHYLPHENOL	293	JB	BIS(2-ETHYLHEXYL)PHTHALATE	6300	
2-METHYLNAPHTHALENE	500	U	CHRYSENE	818	
HEXACHLOROCYCLOPENTADIENE	500	U	DI-N-OCTYL PHTHALATE	1010	
2,4,6-TRICHLOROPHENOL	500	U	BENZO(B)FLUORANTHENE	1030	

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2595

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.16

DATE: 12/30/93

SWLO # : 16354.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.50

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2400	U	BENZO(K)FLUORANTHENE	1170	
2-CHLORONAPHTHALENE	500	U	BENZO(A)PYRENE	639	
2-NITROANILINE	2400	U	INDENO(1,2,3-CD)PYRENE	312	J
DIMETHYL PHTHALATE	500	U	DIBENZ(A,H)ANTHRACENE	171	J
ACENAPHTHYLENE	500	U	BENZO(G,H,I)PERYLENE	292	J
3-NITROANILINE	2400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	97%	2-FLUOROBIPHENYL	(30-115)	73%
TERPHENYL-D14	(18-137)	95%	PHENOL-D5	(24-113)	86%
2-FLUOROPHENOL	(25-121)	80%	2,4,6-TRIBROMOPHENOL	(19-122)	59%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.16

DATE: 12/30/93

SWLO # : 16354.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.169		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	3.63		mg/kg	11/22/93	11/29/93	SW846-7761
ARSENIC	1.51	U	mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	368		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	22.7		mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	225		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	34.6		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	46.4		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.756	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	104		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16354.16

DATE: 12/30/93

SWLO # : 16354.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	1.66	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.17

DATE: 12/30/93

SWLO # : 16354.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	15		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	6.8	
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	102%
1,2-DICHLOROETHANE-D4	(70-121)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-259

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.17

DATE: 12/30/93

SWLO # : 16354.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	531	B	ACENAPHTHENE	39.1	J
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	334	JB	4-NITROPHENOL	384	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	219	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	180	J
BENZOIC ACID	1900	U	ANTHRACENE	51.4	J
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	754	
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	848	
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	438	
4-CHLORO-3-METHYLPHENOL	315	JB	BIS(2-ETHYLHEXYL)PHTHALATE	1090	
2-METHYLNAPHTHALENE	400	U	CHRYSENE	587	
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	89.4	J
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	705	

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.17

DATE: 12/30/93

SWLO # : 16354.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	536	
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	577	
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	395	J
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	232	J
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	457	
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	100%	2-FLUOROBIPHENYL	(30-115)	97%
TERPHENYL-D14	(18-137)	120%	PHENOL-D5	(24-113)	94%
2-FLUOROPHENOL	(25-121)	86%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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Attn: KEVIN TYNES

REPORT: 16354.17

DATE: 12/30/93

SWLO # : 16354.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.696		mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	1.51		mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	161		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	3.83		mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	40.5		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	32.2		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	14.3		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.58	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	15.4		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/30/93

SWLO # : 16354.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : SE
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.649	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.18

DATE: 12/30/93

SWLO # : 16354.18 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	1.8	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	35		TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	104%	BROMOFLUOROBENZENE	(86-115)	101%
1,2-DICHLOROETHANE-D4	(76-114)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/30/93

SWLO # : 16354.18 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	12.7	B	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	16	B	4-NITROPHENOL	6.89	JB
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	9.48	JB
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	12.6	B	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16354.18

DATE: 12/30/93

SWLO # : 16354.18 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	64%	2-FLUOROBIPHENYL	(43-116)	65%
TERPHENYL-D14	(33-141)	64%	PHENOL-D5	(10- 94)	51%
2-FLUOROPHENOL	(21-100)	50%	2,4,6-TRIBROMOPHENOL	(10-123)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.18

DATE: 12/30/93

SWLO # : 16354.18 EB9
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/24/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

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Attn: KEVIN TYNES

REPORT: 16354.18

DATE: 12/30/93

SWLO # : 16354.18 EB9
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/24/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	60%	2-FLUOROBIPHENYL	(43-116)	57%
TERPHENYL-D14	(33-141)	73%	PHENOL-D5	(10- 94)	51%
2-FLUOROPHENOL	(21-100)	53%	2,4,6-TRIBROMOPHENOL	(10-123)	50%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.18

DATE: 12/30/93

SWLO # : 16354.18 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/16/93	11/16/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/18/93	SW846-6010
BARIUM	5	U	ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	5	U	ug/l	11/18/93	11/24/93	SW846-6010
LEAD	3	U	ug/l	11/18/93	11/18/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/18/93	SW846-6010
ZINC	15	U	ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.18

DATE: 12/30/93

SWLO # : 16354.18 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	10	U	ug/l	11/18/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16354.19

DATE: 12/30/93

SWLO # : 16354.19 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	104%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114)	101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354.20

DATE: 12/30/93

SWLO # : 16354.20 TB2
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 12/30/93

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 145.28

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1400	U	TRICHLOROETHENE	730	U
BROMOMETHANE	1400	U	DIBROMOCHLOROMETHANE	730	U
VINYL CHLORIDE	1400	U	1,1,2-TRICHLOROETHANE	730	U
CHLOROETHANE	1400	U	BENZENE	730	U
METHYLENE CHLORIDE	730	U	CIS-1,3-DICHLOROPROPENE	730	U
ACETONE	670	J	2-CHLOROETHYL VINYL ETHER	1400	U
CARBON DISULFIDE	730	U	BROMOFORM	730	U
1,1-DICHLOROETHENE	730	U	2-HEXANONE	1400	U
1,1-DICHLOROETHANE	730	U	4-METHYL-2-PENTANONE	1400	U
CHLOROFORM	160	J	TETRACHLOROETHENE	730	U
1,2-DICHLOROETHANE	730	U	TOLUENE	1200	
1,1,1-TRICHLOROETHANE	260	J	CHLOROBENZENE	6700	
CARBON TETRACHLORIDE	730	U	ETHYLBENZENE	7400	
VINYL ACETATE	1400	U	STYRENE	730	U
BROMODICHLOROMETHANE	730	U	1,2-DICHLOROETHENE(TOTAL)	730	U
1,1,2,2-TETRACHLOROETHANE	730	U	XYLENE (TOTAL)	8200	
1,2-DICHLOROPROPANE	730	U	2-BUTANONE	1400	U
TRANS-1,3-DICHLOROPROPENE	730	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 146% *		BROMOFLUOROBENZENE	(74-121) 161% *
1,2-DICHLOROETHANE-D4	(70-121) 101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 12/30/93

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 23.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	912	JB	ACENAPHTHENE	7600	U
BIS(2-CHLOROETHYL)ETHER	7600	U	2,4-DINITROPHENOL	37000	U
2-CHLOROPHENOL	7600	U	4-NITROPHENOL	37000	U
1,3-DICHLOROBENZENE	7600	U	DIBENZOFURAN	1030	J
1,4-DICHLOROBENZENE	7600	U	2,4-DINITROTOLUENE	7600	U
BENZYL ALCOHOL	7600	U	2,6-DINITROTOLUENE	7600	U
1,2-DICHLOROBENZENE	7600	U	DIETHYLPHTHALATE	7600	U
2-METHYLPHENOL(O-CRESOL)	7600	U	4-CHLOROPHENYL-PHENYLETHER	7600	U
BIS(2-CHLOROISOPROPYL)ETHER	7600	U	FLUORENE	7600	U
4-METHYLPHENOL(P-CRESOL)	7600	U	4-NITROANILINE	37000	U
N-NITROSO-DI-N-PROPYLAMINE	7600	U	4,6-DINITRO-2-METHYLPHENOL	37000	U
HEXACHLOROETHANE	7600	U	N-NITROSODIPHENYLAMINE(1)	7600	U
NITROBENZENE	7600	U	4-BROMOPHENYL-PHENYLETHER	7600	U
ISOPHORONE	7600	U	HEXACHLOROBENZENE	7600	U
2-NITROPHENOL	7600	U	PENTACHLOROPHENOL	37000	U
2,4-DIMETHYLPHENOL	7600	U	PHENANTHRENE	7600	U
BENZOIC ACID	37000	U	ANTHRACENE	7600	U
BIS(2-CHLOROETHOXY)METHANE	7600	U	DI-N-BUTYL PHTHALATE	7600	U
2,4-DICHLOROPHENOL	7600	U	FLUORANTHENE	7600	U
1,2,4-TRICHLOROBENZENE	7600	U	PYRENE	7600	U
NAPHTHALENE	19000		BUTYL BENZYL PHTHALATE	7600	U
4-CHLOROANILINE	7600	U	3,3'-DICHLOROBENZIDINE	15000	U
HEXACHLOROBUTADIENE	7600	U	BENZO(A)ANTHRACENE	7600	U
4-CHLORO-3-METHYLPHENOL	7600	U	BIS(2-ETHYLHEXYL)PHTHALATE	2130	J
2-METHYLNAPHTHALENE	24500		CHRYSENE	7600	U
HEXACHLOROCYCLOPENTADIENE	7600	U	DI-N-OCTYL PHTHALATE	7600	U
2,4,6-TRICHLOROPHENOL	7600	U	BENZO(B)FLUORANTHENE	7600	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 12/30/93

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 23.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	37000	U	BENZO(K)FLUORANTHENE	7600	U
2-CHLORONAPHTHALENE	7600	U	BENZO(A)PYRENE	7600	U
2-NITROANILINE	37000	U	INDENO(1,2,3-CD)PYRENE	7600	U
DIMETHYL PHTHALATE	7600	U	DIBENZ(A,H)ANTHRACENE	7600	U
ACENAPHTHYLENE	7600	U	BENZO(G,H,I)PERYLENE	7600	U
3-NITROANILINE	37000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	446% *	2-FLUOROBIPHENYL	(30-115)	91%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	58%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	42%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 12/30/93

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1250.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	171000		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 12/30/93

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 25.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	25	U	NAPHTHA C6-C12	25	U
KEROSENE C9-C18	2880		#6 FUEL OIL C12-C24	25	U
JP-4 C6-C14	25	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE (21-166) I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 01/03/94

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.191		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	2.21		mg/kg	11/22/93	11/29/93	SW846-7761
ARSENIC	2.09		mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	334		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	13.8		mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	343		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	19.8		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	172		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.581	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	39.2		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.01

DATE: 01/03/94

SWLO # : 16374.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SB1
LOCATION:

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.593	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.02

DATE: 12/30/93

SWLO # : 16374.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : / /
DILUTION FACTOR: 5.64

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	56	U	TRICHLOROETHENE	28	U
BROMOMETHANE	56	U	DIBROMOCHLOROMETHANE	28	U
VINYL CHLORIDE	56	U	1,1,2-TRICHLOROETHANE	28	U
CHLOROETHANE	56	U	BENZENE	28	U
METHYLENE CHLORIDE	80		CIS-1,3-DICHLOROPROPENE	28	U
ACETONE	1100	E	2-CHLOROETHYL VINYL ETHER	56	U
CARBON DISULFIDE	28	U	BROMOFORM	28	U
1,1-DICHLOROETHENE	28	U	2-HEXANONE	56	U
1,1-DICHLOROETHANE	28	U	4-METHYL-2-PENTANONE	56	U
CHLOROFORM	28	U	TETRACHLOROETHENE	28	U
1,2-DICHLOROETHANE	28	U	TOLUENE	28	U
1,1,1-TRICHLOROETHANE	28	U	CHLOROBENZENE	28	U
CARBON TETRACHLORIDE	28	U	ETHYLBENZENE	28	U
VINYL ACETATE	56	U	STYRENE	28	U
BROMODICHLOROMETHANE	28	U	1,2-DICHLOROETHENE(TOTAL)	28	U
1,1,2,2-TETRACHLOROETHANE	28	U	XYLENE (TOTAL)	28	U
1,2-DICHLOROPROPANE	28	U	2-BUTANONE	56	U
TRANS-1,3-DICHLOROPROPENE	28	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	109%
1,2-DICHLOROETHANE-D4	(70-121)	100%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16374.02

DATE: 12/30/93

SWLO # : 16374.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4210	B	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	185	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	1350		4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	1670		4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	153	JB
2,4-DIMETHYLPHENOL	128	J	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	407	B	BIS(2-ETHYLHEXYL)PHTHALATE	43.3	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16374.02

DATE: 12/30/93

SWLO # : 16374.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	61%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/30/93

SWLO # : 16374.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113	U	mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.113	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	4.29		mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	421		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.338	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	24		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	3.5		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	23.8		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.564	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	20.6		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16374.02

DATE: 12/30/93

SWLO # : 16374.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	2.37	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.03

DATE: 12/30/93

SWLO # : 16374.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	5.5	U	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	60		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.03

DATE: 12/30/93

SWLO # : 16374.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	366	B	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	248	JB	4-NITROPHENOL	158	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	77.3	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	225	JB	BIS(2-ETHYLHEXYL)PHTHALATE	40.6	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.03

DATE: 12/30/93

SWLO # : 16374.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	63%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16374.03

DATE: 12/30/93

SWLO # : 16374.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114		mg/kg	11/19/93	11/19/93	SW846-7471
SILVER	0.11	U	mg/kg	11/22/93	11/28/93	SW846-7761
ARSENIC	4.64		mg/kg	11/22/93	11/23/93	SW846-6010
BARIUM	1270		mg/kg	11/22/93	11/26/93	SW846-6010
CADMIUM	0.332	U	mg/kg	11/22/93	11/26/93	SW846-6010
CHROMIUM	22		mg/kg	11/22/93	11/26/93	SW846-6010
LEAD	4.53		mg/kg	11/22/93	11/23/93	SW846-6010
NICKEL	21.2		mg/kg	11/22/93	11/26/93	SW846-6010
SELENIUM	0.553	U	mg/kg	11/22/93	11/23/93	SW846-6010
ZINC	24.5		mg/kg	11/22/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.03

DATE: 12/30/93

SWLO # : 16374.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SB2
LOCATION:

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.553	U	mg/kg	11/15/93	11/16/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16374.04

DATE: 12/30/93

SWLO # : 16374.04 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED : 11/12/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	101%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Vc
QA SEQ: N931119B
DATE: 12-30-93

SAMPLE MATRIX: SOIL
SWLO # METHOD BLANK
DATE ANALYZED : 11-19-93
METHOD REFERENCE: SW846-8240, EPA METHODOLOGY
DILUTION FACTOR: 1
SAMPLE ID: N931119B

RESULTS REPORTED IN ug/Kg or Parts Per Billion (PPB)

VOLATILES	QUANT. LIMIT	RESULTS	VOLATILES	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
BROMOMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
VINYL CHLORIDE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
CHLOROETHANE	10	ND	TRICHLOROETHENE	5	ND
METHYLENE CHLORIDE	5	ND	DIBROMOCHLOROMETHANE	5	ND
ACETONE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	BENZENE	5	ND
1,1-DICHLOROETHENE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHANE	5	ND	2-CHLOROETHYLVINYLETHER	10	ND
TOTAL-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
CHLOROFORM	5	ND	2-HEXANONE	10	ND
1,2-DICHLOROETHANE	5	ND	4-METHYL-2-PENTANONE	10	ND
2-BUTANONE	10	ND	TETRACHLOROETHENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TOLUENE	5	ND
CARBON TETRACHLORIDE	5	ND	CHLOROBENZENE	5	ND
VINYL ACETATE	10	ND	ETHYLBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	STYRENE	5	ND
			TOTAL XYLENES	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 115% BROMOFLUOROBENZENE(74-121) 106% 1,2-DICHLOROETHANE-d4(70-121) 118%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931119B
INST. BATCH: 3896
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/19/93 19:10
ANALYZED : 11/19/93 19:34

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	66	132	50	100	27.5	32	54-161
TRICHLOROETHENE	50	60	120	57	113	5.8	38	67-149
BENZENE	50	67	134	55	110	19.5	46	70-134
TOLUENE	50	53	106	54	107	< 1	15	75-140
CHLOROBENZENE	50	57	114	54	108	4.72	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	104	81-117
BROMOFLUOROBENZENE	114	101	74-121
1,2-DICHLOROETHANE-D4	102	107	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Vb
QA SEQ: I931119A
DATE: 12-28-93

SAMPLE MATRIX: SOIL
SWLO # METHOD BLANK
DATE ANALYZED : 11-19-93
METHOD REFERENCE: SW846-8240, EPA METHODOLOGY
DILUTION FACTOR: 1
SAMPLE ID: VBLK6

RESULTS REPORTED IN ug/Kg or Parts Per Billion (PPB)

VOLATILES	QUANT. LIMIT	RESULTS	VOLATILES	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
BROMOMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
VINYL CHLORIDE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
CHLOROETHANE	10	ND	TRICHLOROETHENE	5	ND
METHYLENE CHLORIDE	5	ND	DIBROMOCHLOROMETHANE	5	ND
ACETONE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	BENZENE	5	ND
1,1-DICHLOROETHENE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHANE	5	ND	2-CHLOROETHYLVINYLETHER	10	ND
TOTAL-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
CHLOROFORM	5	ND	2-HEXANONE	10	ND
1,2-DICHLOROETHANE	5	ND	4-METHYL-2-PENTANONE	10	ND
2-BUTANONE	10	ND	TETRACHLOROETHENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TOLUENE	5	ND
CARBON TETRACHLORIDE	5	ND	CHLOROBENZENE	5	ND
VINYL ACETATE	10	ND	ETHYLBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	STYRENE	5	ND
			TOTAL XYLENES	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 97% BROMOFLUOROBENZENE(74-121) 100% 1,2-DICHLOROETHANE-d4(70-121) 96%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Vc
QASEQ: I931119A
DATE: 12-28-93

SAMPLE MATRIX: SOIL
SWLO # LCS
DATE ANALYZED: 11-19-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCS 6

VOLATILE LABORATORY CONTROL SPIKE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	55	111	60 - 141
TRICHLOROETHENE	50	51	103	71 - 134
BENZENE	50	54	108	79 - 128
TOLUENE	50	50	99	82 - 123
CHLOROBENZENE	50	51	51	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	96%
BROMOFLUOROBENZENE(74-121)	98%
1,2-DICHLOROETHANE-d4(70-121)	109%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Vd
QASEQ: I931119A
DATE: 12-28-93

SAMPLE MATRIX: SOIL
SWLO # LCSD
DATE ANALYZED: 11-19-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCSD6

VOLATILE LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	65	130	60 - 141
TRICHLOROETHENE	50	60	121	71 - 134
BENZENE	50	64	129	79 - 128
TOLUENE	50	58	117	82 - 123
CHLOROBENZENE	50	61	121	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	95%
BROMOFLUOROBENZENE(74-121)	101%
1,2-DICHLOROETHANE-d4(70-121)	106%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Va
QA SEQ: N931118B
DATE: 12-28-93

SAMPLE MATRIX: SOIL
SWLO # METHOD BLANK
DATE ANALYZED : 11-18-93
METHOD REFERENCE: SW846-8240, EPA METHODOLOGY
DILUTION FACTOR: 1
SAMPLE ID: VBLK2

RESULTS REPORTED IN ug/Kg or Parts Per Billion (PPB)

VOLATILES	QUANT. LIMIT	RESULTS	VOLATILES	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
BROMOMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
VINYL CHLORIDE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
CHLOROETHANE	10	ND	TRICHLOROETHENE	5	ND
METHYLENE CHLORIDE	5	ND	DIBROMOCHLOROMETHANE	5	ND
ACETONE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	BENZENE	5	ND
1,1-DICHLOROETHENE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHANE	5	ND	2-CHLOROETHYLVINYLETHER	10	ND
TOTAL-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
CHLOROFORM	5	ND	2-HEXANONE	10	ND
1,2-DICHLOROETHANE	5	ND	4-METHYL-2-PENTANONE	10	ND
2-BUTANONE	10	ND	TETRACHLOROETHENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TOLUENE	5	2.2 J
CARBON TETRACHLORIDE	5	ND	CHLOROBENZENE	5	ND
VINYL ACETATE	10	ND	ETHYLBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	STYRENE	5	ND
			TOTAL XYLENES	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 95% BROMOFLUOROBENZENE(74-121) 110% 1,2-DICHLOROETHANE-d4(70-121) 79%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931118B
INST. BATCH: 3727
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/18/93 09:31
ANALYZED : 11/18/93 09:55

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	58	117	50	100	15.4	32	54-161
TRICHLOROETHENE	50	50	101	50	101	< 1	38	67-149
BENZENE	50	53	106	48	96	9.45	46	70-134
TOLUENE	50	40	79	43	85	7.65	15	75-140
CHLOROBENZENE	50	48	97	50	101	3.68	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	95	98	81-117
BROMOFLUOROBENZENE	105	99	74-121
1,2-DICHLOROETHANE-D4	86	108	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931116A
INST. BATCH: 3304
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931116A
LOCATION:

ANALYZED : 11/16/93 10:08
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931116A
INST. BATCH: 3304
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/16/93 10:39
ANALYZED : 11/16/93 11:03

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	51	102	50	100	2.21	32	54-161
TRICHLOROETHENE	50	51	102	51	103	1.13	38	67-149
BENZENE	50	50	99	50	100	< 1	46	70-134
TOLUENE	50	50	101	50	100	1.12	15	75-140
CHLOROBENZENE	50	50	101	50	99	1.38	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	101	88-110
BROMOFLUOROBENZENE	100	101	86-115
1,2-DICHLOROETHANE-D4	99	103	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931118A
INST. BATCH: 14413
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931118A
LOCATION:

ANALYZED : 11/18/93 10:32
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	116%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931118A
INST. BATCH: 14413
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/18/93 11:08
ANALYZED : 11/18/93 11:36

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	56	113	56	111	1.55	16	60-141
TRICHLOROETHENE	50	54	108	59	119	9.31	21	71-134
BENZENE	50	49	98	50	101	2.25	13	79-128
TOLUENE	50	47	94	48	96	1.38	11	80-122
CHLOROBENZENE	50	50	100	51	101	1.89	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	96	96	81-117
BROMOFLUOROBENZENE	103	108	74-121
1,2-DICHLOROETHANE-D4	106	102	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : I931118A
INST. BATCH: 3711
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : I931118A
LOCATION:

ANALYZED : 11/18/93 12:13
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121) 106%
1,2-DICHLOROETHANE-D4	(70-121)	100%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : I931118A
INST. BATCH: 3711
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/18/93 12:42
ANALYZED : 11/18/93 13:22

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	49	99	61	123	21.9*	16	60-141
TRICHLOROETHENE	50	50	100	57	114	13.0	21	71-134
BENZENE	50	52	103	58	117	12.5	13	79-128
TOLUENE	50	49	98	56	112	13.6*	11	80-122
CHLOROBENZENE	50	51	101	59	118	15.6*	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	102	81-117
BROMOFLUOROBENZENE	102	104	74-121
1,2-DICHLOROETHANE-D4	106	107	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931119A
INST. BATCH: 14493
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931119A
LOCATION:

ANALYZED : 11/19/93 10:45
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	90%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931119A
INST. BATCH: 14493
REPORTED : 12/16/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/19/93 11:30
ANALYZED : 11/19/93 11:52

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	55	111	54	108	2.82	16	60-141
TRICHLOROETHENE	50	56	112	61	122	8.45	21	71-134
BENZENE	50	49	99	50	100	1.75	13	79-128
TOLUENE	50	44	89	43	86	2.53	11	80-122
CHLOROBENZENE	50	50	99	50	101	1.8	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	92	91	81-117
BROMOFLUOROBENZENE	89	92	74-121
1,2-DICHLOROETHANE-D4	104	102	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/30/93

PROJECT : TINKER AFB RFI
SDG: 16354

MATRIX : SOIL

SAMPLE	: 16354.13	QAQC: I931119A	ANALYZED : 11/19/93 15:12
SPIKE SAMPLE	: 16354.14	QAQC: I931118A	ANALYZED : 11/18/93 14:34
SPIKE DUP SAMPLE	: 16354.15	QAQC: I931118A	ANALYZED : 11/18/93 15:03

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	73		69	94	92	125	28.2*	22	59-172
TRICHLOROETHENE	73		62	84	85	116	31.6*	24	62-137
BENZENE	73		65	88	88	120	30.1*	21	66-142
TOLUENE	73	48	89	55*	180	180*	67.9*	21	59-139
CHLOROBENZENE	73		80	108	120	166*	42.1*	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	95	108	116	81-117
BROMOFLUOROBENZENE	116	109	100	74-[illegible]
1,2-DICHLOROETHANE-D4	176	113	124	70-1[illegible]

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/16/93

SWLO QAQC#: 931115-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	13.5		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	17.6		4-NITROPHENOL	9.16	J
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	11.9	J
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	14.3		BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/16/93

SWLO QAQC#: 931115-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	69%	2-FLUOROBIPHENYL	(43-116)	60%
TERPHENYL-D14	(33-141)	71%	PHENOL-D5	(10- 94)	55%
2-FLUOROPHENOL	(21-100)	46%	2,4,6-TRIBROMOPHENOL	(10-123)	59%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Bb

DATE: 12-16-93

SAMPLE MATRIX: WATER
SWLO # LCS
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE

DATE EXTRACTED: 11-15-93
DATE ANALYZED: 11-24-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	AMOUNT RECOVERED (ug/L)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	110.05	55.02	12 - 110
2-CHLOROPHENOL	200	143.23	71.62	27 - 123
1,4-DICHLOROBENZENE	100	60.45	60.45	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	74.16	74.16	41 - 116
1,2,4-TRICHLOROBENZENE	100	61.31	61.31	39 - 98
4-CHLORO-3-METHYLPHENOL	200	152.36	76.18	23 - 97
ACENAPHTHENE	100	69.17	69.17	46 - 118
4-NITROPHENOL	200	154.60	77.30	10 - 80
2,4-DINITROTOLUENE	100	65.71	65.71	24 - 96
PENTACHLOROPHENOL	200	152.76	76.38	9 - 103
PYRENE	100	71.91	71.91	26 - 127

QA/QC SURROGATE RECOVERIES

		LCS					
NITROBENZENE-d5	(35-114)	68%	2-FLUOROBIPHENYL	(43-116)	62%	TERPHENYL-d14	(33-141)	76%
PHENOL-d5	(10-94)	55%	2-FLUOROPHENOL	(21-100)	47%	2,4,6-TRIBROMOPHENOL	(10-123)	62%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/16/93

SWLO QAQC#: 931116-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	290	J	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	267	J	4-NITROPHENOL	278	J
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	229	J
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	291	J	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/16/93

SWLO QAQC#: 931116-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/16/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	104%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16374Ba

DATE: 12-16-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-16-93
DATE ANALYZED : 12-01-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6666.66	5820.81	87.31	26 - 90
2-CHLOROPHENOL	6666.66	4722.41	70.84	25 - 102
1,4-DICHLOROBENZENE	3333.33	1996.09	59.88	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2592.51	77.78	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	1696.26	50.89	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	4715.60	70.73	26 - 103
ACENAPHTHENE	3333.33	2245.57	67.37	31 - 137
4-NITROPHENOL	6666.66	4918.85	73.78	11 - 114
2,4-DINITROTOLUENE	3333.33	2026.79	60.80	28 - 89
PENTACHLOROPHENOL	6666.66	3983.97	59.76	17 - 109
PYRENE	3333.33	2323.31	69.70	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERY	PERCENT RPD	QC LIMITS RECOVERY
PHENOL	6666.66	5113.23	76.70	12	26 - 90
2-CHLOROPHENOL	6666.66	4380.19	65.70	7	25 - 102
1,4-DICHLOROBENZENE	3333.33	1910.81	57.32	5	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2301.85	69.06	12	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	1623.79	48.71	4	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	4429.84	66.45	7	26 - 103
ACENAPHTHENE	3333.33	2150.83	64.53	4	31 - 137
4-NITROPHENOL	6666.66	4786.86	71.80	3	11 - 114
2,4-DINITROTOLUENE	3333.33	1709.58	51.29	18	28 - 89
PENTACHLOROPHENOL	6666.66	3526.49	52.90	12	17 - 109
PYRENE	3333.33	2240.07	67.20	4	35 - 142

QA/QC SURROGATE RECOVERIES

LCS								
NITROBENZENE-d5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	68%	TERPHENYL-d14	(18-137)	86%
PHENOL-d5	(24-113)	69%	2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	66%
LCSD								
NITROBENZENE-d5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	65%	TERPHENYL-d14	(18-137)	83%
PHENOL-d5	(24-113)	63%	2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/30/93

QAQC#: 931124-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 11/30/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/24/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	3.05	J
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/30/93

QAQC#: 931124-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 11/30/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED : / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/24/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	70%	2-FLUOROBIPHENYL	(43-116)	65%
TERPHENYL-D14	(33-141)	71%	PHENOL-D5	(10- 94)	62%
2-FLUOROPHENOL	(21-100)	56%	2,4,6-TRIBROMOPHENOL	(10-123)	46%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16354Ba

DATE: 12-16-93

SAMPLE MATRIX: SOIL
SWLO # 16354.15/16354.14
METHOD REFERENCE: SW846-8270
SAMPLE ID: ESC1SE5 (MS/MSD)

DATE EXTRACTED: 11-16-93
DATE ANALYZED : 12-01-93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	ORIGINAL SAMPLE	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	11904.7	742	13804.5	109	26 - 90
2-CHLOROPHENOL	11904.7	428	10788.7	86	25 - 102
1,4-DICHLOROBENZENE	5952.38		4554.73	76.52	28 - 104
N-NITROSO-di-n-PROPYLAMINE	5952.38		11657.4	195.84*	41 - 126
1,2,4-TRICHLOROBENZENE	5952.38		3759.71	63.16	38 - 107
4-CHLORO-3-METHYLPHENOL	11904.7	385	8650.33	69	26 - 103
ACENAPHTHENE	5952.38		4962.76	83.37	31 - 137
4-NITROPHENOL	11904.7	329	10640.8	86	11 - 114
4-DINITROTOLUENE	5952.38		4037.55	67.83	28 - 89
PENTACHLOROPHENOL	11904.7	394	8499.75	67	17 - 109
PYRENE	5952.38	544	5837.34	87	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	ORIGINAL SAMPLE	AMOUNT RECOVERED (ug/Kg)	RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	11904.7	742	11352.5	20	88	26 - 90
2-CHLOROPHENOL	11904.7	428	9356.90	14	74	25 - 102
1,4-DICHLOROBENZENE	5952.38		4173.83	8	70.12	28 - 104
N-NITROSO-di-n-PROPYLAMINE	5952.38		5682.25	68	95.46	41 - 126
1,2,4-TRICHLOROBENZENE	5952.38		3472.44	8	58.34	38 - 107
4-CHLORO-3-METHYLPHENOL	11904.7	385	7565.18	13	60	26 - 103
ACENAPHTHENE	5952.38		4680.76	5	78.64	31 - 137
4-NITROPHENOL	11904.7	329	9430.74	12	76	11 - 114
2,4-DINITROTOLUENE	5952.38		3741.66	8	62.86	28 - 89
PENTACHLOROPHENOL	11904.7	394	7140.77	17	56	17 - 109
PYRENE	5952.38	544	5668.62	3	84	35 - 142

QA/QC SURROGATE RECOVERIES

				MS				
NITROBENZENE-d5	(23-120)	114%	2-FLUOROBIPHENYL	(30-115)	86%	TERPHENYL-d14	(18-137)	106%
PHENOL-d5	(24-113)	93%	2-FLUOROPHENOL	(25-121)	91%	2,4,6-TRIBROMOPHENOL	(19-122)	68%
				MSD				
NITROBENZENE-d5	(23-120)	101%	2-FLUOROBIPHENYL	(30-115)	80%	TERPHENYL-d14	(18-137)	98%
PHENOL-d5	(24-113)	79%	2-FLUOROPHENOL	(25-121)	81%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

= VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/16/93

SWLO QAQC#: 931118-001
PROJECT : TINKER AFB RFI
SAMPLE #: GASOLINE BLANK LB1
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: CALIF. MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16354

DATE: 12/16/93

SWLO QAQC#: 931118-002
PROJECT : TINKER AFB RFI
SAMPLE #: TPH BLANK LB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: CALIF. MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1	U	NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	84%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16354aa
REPORT DATE: 12-29-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/22/93	112293I1	1.0	mg/Kg	< 1.0
LEAD	11/22/93	112293I1	0.30	mg/Kg	< 0.30
SELENIUM	11/22/93	112293I1	0.50	mg/Kg	< 0.50
BARIUM	11/26/93	112293I1	0.50	mg/Kg	< 0.50
CADMIUM	11/26/93	112293I1	0.30	mg/Kg	< 0.30
CHROMIUM	11/26/93	112293I1	0.50	mg/Kg	< 0.50
NICKEL	11/26/93	112293I1	1.0	mg/Kg	< 1.0
ZINC	11/26/93	112293I1	1.5	mg/Kg	< 1.5
MERCURY	11/19/93	111993HG02	0.10	mg/Kg	< 0.10
SILVER	11/28/93	112293F1	0.10	mg/Kg	< 0.10
TOTAL CN	11/16/93	111593CN	0.50	mg/Kg	< 0.50
ARSENIC	12/28/93	122393I5	2.0	mg/Kg	< 2.0
LEAD	12/28/93	122393I5	0.60	mg/Kg	< 0.60
SELENIUM	12/28/93	122393I5	1.0	mg/Kg	< 1.0
BARIUM	12/28/93	122393I5	1.0	mg/Kg	< 1.0
CADMIUM	12/28/93	122393I5	0.60	mg/Kg	< 0.60
CHROMIUM	12/28/93	122393I5	1.0	mg/Kg	< 1.0
NICKEL	12/28/93	122393I5	2.0	mg/Kg	< 2.0
ZINC	12/28/93	122393I5	3.0	mg/Kg	< 3.0
SILVER	12/28/93	122393F5	0.10	mg/Kg	< 0.10

MATRIX: **WATER**

ARSENIC	11/18/93	111993I4	10.0	ug/L	< 10.0
LEAD	11/18/93	111993I4	3.0	ug/L	< 3.0
SELENIUM	11/18/93	111993I4	5.0	ug/L	< 5.0
BARIUM	11/24/93	111993I4	5.0	ug/L	< 5.0
CADMIUM	11/24/93	111993I4	3.0	ug/L	< 3.0
CHROMIUM	11/24/93	111993I4	5.0	ug/L	< 5.0
NICKEL	11/24/93	111993I4	10.0	ug/L	< 10.0
ZINC	11/24/93	111993I4	15.0	ug/L	< 15.0
MERCURY	11/16/93	111693HG03	0.20	ug/L	< 0.20
SILVER	11/27/93	111993F4	1.0	ug/L	< 1.0
TOTAL CN	11/20/93	111893CN	10.0	ug/L	< 10.0

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16354bb
REPORT DATE: 12-29-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/22/93	200	224	112	80-120
LEAD	11/22/93	50	53.4	107	80-120
SELENIUM	11/22/93	200	218	109	80-120
BARIUM	11/26/93	200	193	97	80-120
CADMIUM	11/26/93	5.0	4.2	84	80-120
CHROMIUM	11/26/93	20.0	19.0	95	80-120
NICKEL	11/26/93	50.0	47.5	95	80-120
ZINC	11/26/93	50.0	44.5	89	80-120
MERCURY	11/19/93	2.45	2.65	108	80-120
SILVER	11/28/93	5.0	5.3	106	80-120
TOTAL CN	11/16/93	0.5	0.555	111	80-120
ARSENIC	12/28/93	200	232	116	80-120
LEAD	12/28/93	50	56	112	80-120
SELENIUM	12/28/93	200	228	114	80-120
BARIUM	12/28/93	200	218	109	80-120
CADMIUM	12/28/93	5.0	5.4	108	80-120
CHROMIUM	12/28/93	20.0	22.6	113	80-120
NICKEL	12/28/93	50.0	54.4	109	80-120
ZINC	12/28/93	50.0	52.6	104	80-120
SILVER	12/28/93	5.0	4.94	98	80-120
MATRIX: **WATER**					
		(ug/L)	(ug/L)		
ARSENIC	11/18/93	2000	1946	97	80-120
LEAD	11/18/93	500	467	93	80-120
SELENIUM	11/18/93	2000	1905	95	80-120
BARIUM	11/24/93	2000	1918	96	80-120
CADMIUM	11/24/93	50.0	44.6	89	80-120
CHROMIUM	11/24/93	200	190	95	80-120
NICKEL	11/24/93	500	475	95	80-120
ZINC	11/24/93	500	466	93	80-120
MERCURY	11/16/93	4.90	4.09	83	80-120
SILVER	11/27/93	50.0	45.8	92	80-120
TOTAL CN	11/20/93	100	108.3	108	80-120

)C/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16354cc
REPORT DATE: 12-29-93

MATRIX: **SOIL**
SAMPLE ID: **ESC1SE5**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	12/28/93	< 1.51	302	348	115	75-125
LEAD	12/28/93	36.9	75.6	122	113	75-125
SELENIUM	12/28/93	< 0.756	302	339	112	75-125
BARIUM	12/28/93	390	302	766	124	75-125
CADMIUM	12/28/93	26.9	7.56	37.8	144*	75-125
CHROMIUM	12/28/93	289	30.2	266	0*	75-125
NICKEL	12/28/93	51.1	75.6	137	114	75-125
ZINC	12/28/93	66.2	75.6	153	115	75-125
SILVER	12/28/93	3.93	7.56	10.3	84	75-125

QC/dn

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1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16354dd
REPORT DATE: 12-29-93

MATRIX: **SOIL**
SAMPLE ID: **ESC1SE5**
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	348	326	6.5	20
LEAD	122	112	8.6	20
SELENIUM	339	317	6.7	20
BARIUM	766	669	13.5	20
CADMIUM	37.8	37.8	0	20
CHROMIUM	266	264	0.8	20
NICKEL	137	123	10.8	20
ZINC	153	141	8.2	20
SILVER	10.3	10.2	1.0	20

C/dn

CHAIN OF CUSTODY RECORD

ENGINEERING—SCIENCE
AUSTIN, TEXAS

ES

1 OF 1

PROJECT NAME/LOCATION: TINKER AFB RFI

CARRIER: [X] Federal Express [ ] UPS

Other _____

PROJECT NUMBER: AV401.11

AIRBILL OR CARRIER ID #: 8503061840

SAMPLER(S): ERIC DAWSON, Andrew Gwynne

(Signature) Eric J Dawson, Andrew Gwynne

PRESERVATIVE: HCl, HCl + HNO3

ANALYSIS REQUIRED: 8240, 8270, 8015 CALMOD, 6010

FIELD LOT CONTROL NUMBER

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	8240	8270	8015 CALMOD	6010	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/10/93	1110	IWTLS2		N1	WW	B			8	X	X	X	X	0	2	2	A	DOASIN A
	1110	IWTLS2		FR2	WW	B			8	X	X	X	X	0	2	2	A	
	1300	IWTLS3		N1	WW	B			8	X	X	X	X	0	2	2	B	
	1350	~~IWT~~ FIELDQC		EB2	WQ	B			7	X	X	X	X	0	2	2	B	
	—	FIELDQC		TB3	WQ	—			2	X				0	—	—	A	
11/11/93	0825	IWTBG3001		N1	WW	B			8	X	X	X	X	0	2	2	A	
	0935	IWTLS10		N	WW	B			8	X	X	X	X	0	2	2	B	
	1045	~~IWTB2127~~ GTD IWTBG2127		N	WW	B			8	X	X	X	X	0	2	2	C	
	1130	IWTBG2211		N	WW	B			8	X	X	X	X	0	2	2	C	
	1315	IWTLS6OLD		N	WW	B			8	X	X	X	X	0	2	2	D	
	1330	IWTLS6NEW		N	WW	B			8	X	X	X	X	0	2	2	D	
	1500	IWTBG2280		N	WW	B			8	X	X	X	X	0	2	2	D	
	1545	IWTBG3221		N	WW	B			8	X	X	X	X	0	2	2	C	

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) Eric J Dawson	11/12/93	1000	(Signature)			(Signature)		
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	**Received by:**	**Date**	**Time**
(Signature)			(Signature)			(Signature) [signature]	11/13/93	0900

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chaino.dwg

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/20/93

SWLO #: 16375.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 100.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1000	U	TRICHLOROETHENE	290	J
BROMOMETHANE	1000	U	DIBROMOCHLOROMETHANE	500	U
VINYL CHLORIDE	1000	U	1,1,2-TRICHLOROETHANE	500	U
CHLOROETHANE	1000	U	BENZENE	500	U
METHYLENE CHLORIDE	500	U	CIS-1,3-DICHLOROPROPENE	500	U
ACETONE	1000		2-CHLOROETHYL VINYL ETHER	1000	U
CARBON DISULFIDE	500	U	BROMOFORM	500	U
1,1-DICHLOROETHENE	500	U	2-HEXANONE	1000	U
1,1-DICHLOROETHANE	500	U	4-METHYL-2-PENTANONE	1000	U
CHLOROFORM	110	J	TETRACHLOROETHENE	7200	
1,2-DICHLOROETHANE	500	U	TOLUENE	1200	
1,1,1-TRICHLOROETHANE	500	U	CHLOROBENZENE	500	U
CARBON TETRACHLORIDE	500	U	ETHYLBENZENE	500	U
VINYL ACETATE	1000	U	STYRENE	500	U
BROMODICHLOROMETHANE	500	U	XYLENE (TOTAL)	140	J
1,1,2,2-TETRACHLOROETHANE	500	U	1,2-DICHLOROETHENE(TOTAL)	1500	
1,2-DICHLOROPROPANE	500	U	2-BUTANONE	1000	U
TRANS-1,3-DICHLOROPROPENE	500	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	106%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114)	112%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/20/93

SWLO #: 16375.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	230	B	ACENAPHTHENE	50	U
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	50	U	4-NITROPHENOL	250	U
1,3-DICHLOROBENZENE	49	J	DIBENZOFURAN	50	U
1,4-DICHLOROBENZENE	92		2,4-DINITROTOLUENE	50	U
BENZYL ALCOHOL	50	U	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	200		DIETHYLPHTHALATE	50	U
2-METHYLPHENOL(O-CRESOL)	110		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	50	U
4-METHYLPHENOL(P-CRESOL)	81		4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	50	U	4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	11	J	PENTACHLOROPHENOL	12	JB
2,4-DIMETHYLPHENOL	50	U	PHENANTHRENE	15	J
BENZOIC ACID	120	J	ANTHRACENE	50	U
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	17	J
1,2,4-TRICHLOROBENZENE	50	U	PYRENE	11	J
NAPHTHALENE	21	J	BUTYL BENZYL PHTHALATE	50	U
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	50	U
4-CHLORO-3-METHYLPHENOL	14	JB	BIS(2-ETHYLHEXYL)PHTHALATE	20	J
2-METHYLNAPHTHALENE	120		CHRYSENE	50	U
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	14	J
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	50	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/23/93

SWLO #: 16375.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	250	U	BENZO(K)FLUORANTHENE	50	U
2-CHLORONAPHTHALENE	50	U	BENZO(A)PYRENE	50	U
2-NITROANILINE	250	U	INDENO(1,2,3-CD)PYRENE	50	U
DIMETHYL PHTHALATE	50	U	DIBENZ(A,H)ANTHRACENE	50	U
ACENAPHTHYLENE	50	U	BENZO(G,H,I)PERYLENE	50	U
3-NITROANILINE	250	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	104%	2-FLUOROBIPHENYL	(43-116)	58%
TERPHENYL-D14	(33-141)	77%	PHENOL-D5	(10- 94)	48%
2-FLUOROPHENOL	(21-100)	32%	2,4,6-TRIBROMOPHENOL	(10-123)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/20/93

SWLO #: 16375.01 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	110		ACENAPHTHENE	50	U
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	50	U	4-NITROPHENOL	250	U
1,3-DICHLOROBENZENE	33	J	DIBENZOFURAN	50	U
1,4-DICHLOROBENZENE	46	J	2,4-DINITROTOLUENE	50	U
BENZYL ALCOHOL	46	J	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	98		DIETHYLPHTHALATE	5	J
2-METHYLPHENOL(O-CRESOL)	57		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	50	U
4-METHYLPHENOL(P-CRESOL)	42	J	4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	50	U	4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	50	U	PENTACHLOROPHENOL	250	U
2,4-DIMETHYLPHENOL	33	J	PHENANTHRENE	9.1	J
BENZOIC ACID	89	JB	ANTHRACENE	50	U
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	13	J
1,2,4-TRICHLOROBENZENE	50	U	PYRENE	6.8	J
NAPHTHALENE	16	J	BUTYL BENZYL PHTHALATE	50	U
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	50	U
4-CHLORO-3-METHYLPHENOL	50	U	BIS(2-ETHYLHEXYL)PHTHALATE	16	J
2-METHYLNAPHTHALENE	76		CHRYSENE	50	U
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	12	J
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	50	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/23/93

SWLO #: 16375.01 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	250	U	BENZO(K)FLUORANTHENE	50	U
2-CHLORONAPHTHALENE	50	U	BENZO(A)PYRENE	50	U
2-NITROANILINE	250	U	INDENO(1,2,3-CD)PYRENE	50	U
DIMETHYL PHTHALATE	50	U	DIBENZ(A,H)ANTHRACENE	50	U
ACENAPHTHYLENE	50	U	BENZO(G,H,I)PERYLENE	50	U
3-NITROANILINE	250	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	70%	2-FLUOROBIPHENYL	(43-116)	36% *
TERPHENYL-D14	(33-141)	54%	PHENOL-D5	(10- 94)	28%
2-FLUOROPHENOL	(21-100)	41%	2,4,6-TRIBROMOPHENOL	(10-123)	24%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/23/93

SWLO #: 16375.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 5.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	25	U	NAPHTHA C6-C12	25	U
KEROSENE C9-C18	9480		#6 FUEL OIL C12-C24	25	U
JP-4 C6-C14	25	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/23/93

SWLO #: 16375.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	35.6	J		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 97%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.01

DATE: 12/20/93

SWLO #: 16375.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	2.82		ug/l	11/19/93	11/19/93	SW846-7470
SILVER	3.3		ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/18/93	SW846-6010
BARIUM	821		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	76.4		ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	2430		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	2690		ug/l	11/18/93	11/18/93	SW846-6010
NICKEL	1810		ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	10.3		ug/l	11/18/93	11/18/93	SW846-6010
ZINC	866		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/20/93

SWLO #: 16375.02 FR2
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	50	U	TRICHLOROETHENE	16	J
BROMOMETHANE	50	U	DIBROMOCHLOROMETHANE	25	U
VINYL CHLORIDE	50	U	1,1,2-TRICHLOROETHANE	25	U
CHLOROETHANE	50	U	BENZENE	25	U
METHYLENE CHLORIDE	110		CIS-1,3-DICHLOROPROPENE	25	U
ACETONE	340	B	2-CHLOROETHYL VINYL ETHER	50	U
CARBON DISULFIDE	25	U	BROMOFORM	25	U
1,1-DICHLOROETHENE	9.2	J	2-HEXANONE	50	U
1,1-DICHLOROETHANE	25	U	4-METHYL-2-PENTANONE	50	U
CHLOROFORM	25	U	TETRACHLOROETHENE	640	
1,2-DICHLOROETHANE	25	U	TOLUENE	38	
1,1,1-TRICHLOROETHANE	25	U	CHLOROBENZENE	25	U
CARBON TETRACHLORIDE	25	U	ETHYLBENZENE	1.5	J
VINYL ACETATE	50	U	STYRENE	25	U
BROMODICHLOROMETHANE	25	U	XYLENE (TOTAL)	8.7	J
1,1,2,2-TETRACHLOROETHANE	25	U	1,2-DICHLOROETHENE(TOTAL)	48	
1,2-DICHLOROPROPANE	25	U	2-BUTANONE	140	
TRANS-1,3-DICHLOROPROPENE	25	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114)	101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/23/93

SWLO #: 16375.02 FR2
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	B	ACENAPHTHENE	50	U
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	16	JB	4-NITROPHENOL	27	JB
1,3-DICHLOROBENZENE	110		DIBENZOFURAN	5.4	J
1,4-DICHLOROBENZENE	180		2,4-DINITROTOLUENE	50	U
BENZYL ALCOHOL	8	J	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	340		DIETHYLPHTHALATE	50	U
2-METHYLPHENOL(O-CRESOL)	94		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	8.6	J
4-METHYLPHENOL(P-CRESOL)	87		4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	50	U	4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	50	U	PENTACHLOROPHENOL	11	JB
2,4-DIMETHYLPHENOL	70		PHENANTHRENE	49	J
BENZOIC ACID	87	J	ANTHRACENE	6.8	J
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	49	J
1,2,4-TRICHLOROBENZENE	50	U	PYRENE	38	J
NAPHTHALENE	17	J	BUTYL BENZYL PHTHALATE	8.8	J
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	10	J
4-CHLORO-3-METHYLPHENOL	13	JB	BIS(2-ETHYLHEXYL)PHTHALATE	200	
2-METHYLNAPHTHALENE	31	J	CHRYSENE	15	J
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	43	J
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	8.1	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/23/93

SWLO #: 16375.02 FR2
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	250	U	BENZO(K)FLUORANTHENE	9.8	J
2-CHLORONAPHTHALENE	50	U	BENZO(A)PYRENE	7.2	J
2-NITROANILINE	250	U	INDENO(1,2,3-CD)PYRENE	50	U
DIMETHYL PHTHALATE	50	U	BENZO(G,H,I)PERYLENE	50	U
ACENAPHTHYLENE	50	U	DIBENZ(A,H)ANTHRACENE	50	U
3-NITROANILINE	250	U			

QA/QC SURROGATE RECOVERIES

2-FLUOROBIPHENYL	(43-116)	70%	NITROBENZENE-D5	(35-114)	100%
TERPHENYL-D14	(33-141)	72%	PHENOL-D5	(10- 94)	58%
-FLUOROPHENOL	(21-100)	52%	2,4,6-TRIBROMOPHENOL	(10-123)	46%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/20/93

SWLO #: 16375.02 FR9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4.3	J	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	1	J	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	1.3	J	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	4.5	J	DIETHYLPHTHALATE	1.2	J
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	7.2	J	PHENANTHRENE	10	U
BENZOIC ACID	8.3	JB	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	3	J
2-METHYLNAPHTHALENE	3.8	J	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	1.5	J
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/23/93

SWLO #: 16375.02 FR9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	44%	2-FLUOROBIPHENYL	(43-116)	48%
TERPHENYL-D14	(33-141)	55%	PHENOL-D5	(10- 94)	28%
2-FLUOROPHENOL	(21-100)	34%	2,4,6-TRIBROMOPHENOL	(10-123)	45%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/23/93

SWLO #: 16375.02 FR2
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 4.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	20	U	NAPHTHA C6-C12	20	U
KEROSENE C9-C18	4210		#6 FUEL OIL C12-C24	20	U
JP-4 C6-C14	20	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.02

DATE: 12/23/93

SWLO #: 16375.02 FR2
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	50	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16375.02

DATE: 12/20/93

SWLO #: 16375.02 FR2
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	3.1		ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/18/93	SW846-6010
BARIUM	352		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	25.4		ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	1470		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	12.2		ug/l	11/18/93	11/18/93	SW846-6010
NICKEL	694		ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/18/93	SW846-6010
ZINC	51.9		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.03

DATE: 12/20/93

SWLO #: 16375.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	50	U	TRICHLOROETHENE	25	U
BROMOMETHANE	50	U	DIBROMOCHLOROMETHANE	25	U
VINYL CHLORIDE	50	U	1,1,2-TRICHLOROETHANE	25	U
CHLOROETHANE	50	U	BENZENE	25	U
METHYLENE CHLORIDE	660		CIS-1,3-DICHLOROPROPENE	25	U
ACETONE	260		2-CHLOROETHYL VINYL ETHER	50	U
CARBON DISULFIDE	25	U	BROMOFORM	25	U
1,1-DICHLOROETHENE	25	U	2-HEXANONE	50	U
1,1-DICHLOROETHANE	25	U	4-METHYL-2-PENTANONE	50	U
CHLOROFORM	25	U	TETRACHLOROETHENE	46	
1,2-DICHLOROETHANE	25	U	TOLUENE	25	U
1,1,1-TRICHLOROETHANE	57		CHLOROBENZENE	25	U
CARBON TETRACHLORIDE	25	U	ETHYLBENZENE	25	U
VINYL ACETATE	50	U	STYRENE	25	U
BROMODICHLOROMETHANE	25	U	XYLENE (TOTAL)	11	J
1,1,2,2-TETRACHLOROETHANE	25	U	1,2-DICHLOROETHENE(TOTAL)	25	U
1,2-DICHLOROPROPANE	25	U	2-BUTANONE	50	U
TRANS-1,3-DICHLOROPROPENE	25	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.03

DATE: 12/20/93

SWLO #: 16375.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	82	B	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	17	B	4-NITROPHENOL	17	JB
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	1.9	J	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	2.5	J	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	5.6	J	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	15	JB
2,4-DIMETHYLPHENOL	8.3	J	PHENANTHRENE	10	U
BENZOIC ACID	76		ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	1.4	J	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	15	B	BIS(2-ETHYLHEXYL)PHTHALATE	24	
2-METHYLNAPHTHALENE	4.6	J	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	2.6	J
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.03

DATE: 12/23/93

SWLO #: 16375.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	86%	2-FLUOROBIPHENYL	(43-116)	72%
TERPHENYL-D14	(33-141)	100%	PHENOL-D5	(10- 94)	61%
2-FLUOROPHENOL	(21-100)	63%	2,4,6-TRIBROMOPHENOL	(10-123)	62%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.03

DATE: 12/20/93

SWLO #: 16375.03 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	9.3	J	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	1.3	J	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	1.8	J
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	3	J	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	5.2	J	PHENANTHRENE	10	U
BENZOIC ACID	64	B	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	17	
2-METHYLNAPHTHALENE	3	J	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	7.1	J
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.03

DATE: 12/23/93

SWLO #: 16375.03 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	43%	2-FLUOROBIPHENYL	(43-116)	46%
TERPHENYL-D14	(33-141)	64%	PHENOL-D5	(10- 94)	32%
2-FLUOROPHENOL	(21-100)	36%	2,4,6-TRIBROMOPHENOL	(10-123)	56%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.03

DATE: 12/23/93

SWLO #: 16375.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C7-C24	3160	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.03

DATE: 12/23/93

SWLO #: 16375.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	135		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 93%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.03

DATE: 12/20/93

SWLO #: 16375.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	438		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	27.9		ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	36.9		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	49.1		ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	11.9		ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	60.4		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.04

DATE: 12/20/93

SWLO #: 16375.04 EB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	1.9	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	17		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	42		TETRACHLOROETHENE	16	
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	106%	BROMOFLUOROBENZENE	(86-115)	110%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.04

DATE: 12/20/93

SWLO #: 16375.04 EB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	15	B	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	15	B	4-NITROPHENOL	12	JB
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	12	JB
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	16	B	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.04

DATE: 12/23/93

SWLO #: 16375.04 EB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	71%	2-FLUOROBIPHENYL	(43-116)	66%
TERPHENYL-D14	(33-141)	94%	PHENOL-D5	(10- 94)	53%
2-FLUOROPHENOL	(21-100)	55%	2,4,6-TRIBROMOPHENOL	(10-123)	50%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.04

DATE: 12/20/93

SWLO #: 16375.04 EB9
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	13		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	1.7	J	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	1.3	J
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	1.5	J
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.04

DATE: 12/23/93

SWLO #: 16375.04 EB9
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	66%	2-FLUOROBIPHENYL	(43-116)	48%
TERPHENYL-D14	(33-141)	103%	PHENOL-D5	(10- 94)	52%
2-FLUOROPHENOL	(21-100)	54%	2,4,6-TRIBROMOPHENOL	(10-123)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.04

DATE: 12/23/93

SWLO #: 16375.04 EB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C12-C24	91	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.04

DATE: 12/23/93

SWLO #: 16375.04 EB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 98%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.04

DATE: 12/20/93

SWLO #: 16375.04 EB2
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/10/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	5	U	ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	5	U	ug/l	11/18/93	11/24/93	SW846-6010
LEAD	3	U	ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	15	U	ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.05

DATE: 12/20/93

SWLO #: 16375.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.1	
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	16		1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	4.1	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	16		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	1.1	J	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	21		4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	10	
1,2-DICHLOROETHANE	5	U	TOLUENE	5.3	
1,1,1-TRICHLOROETHANE	19		CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	2.4	J
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	34	
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	89	
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	7.4	J
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	105%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.05

DATE: 12/20/93

SWLO #: 16375.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 50.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	500	U	ACENAPHTHENE	500	U
BIS(2-CHLOROETHYL)ETHER	500	U	2,4-DINITROPHENOL	2500	U
2-CHLOROPHENOL	500	U	4-NITROPHENOL	2500	U
1,3-DICHLOROBENZENE	500	U	DIBENZOFURAN	130	J
1,4-DICHLOROBENZENE	500	U	2,4-DINITROTOLUENE	500	U
BENZYL ALCOHOL	500	U	2,6-DINITROTOLUENE	500	U
1,2-DICHLOROBENZENE	500	U	DIETHYLPHTHALATE	500	U
2-METHYLPHENOL(O-CRESOL)	500	U	4-CHLOROPHENYL-PHENYLETHER	500	U
BIS(2-CHLOROISOPROPYL)ETHER	500	U	FLUORENE	500	U
4-METHYLPHENOL(P-CRESOL)	500	U	4-NITROANILINE	2500	U
N-NITROSO-DI-N-PROPYLAMINE	500	U	4,6-DINITRO-2-METHYLPHENOL	2500	U
HEXACHLOROETHANE	500	U	N-NITROSODIPHENYLAMINE(1)	500	U
NITROBENZENE	500	U	4-BROMOPHENYL-PHENYLETHER	500	U
ISOPHORONE	500	U	HEXACHLOROBENZENE	500	U
2-NITROPHENOL	500	U	PENTACHLOROPHENOL	2500	U
2,4-DIMETHYLPHENOL	500	U	PHENANTHRENE	500	U
BENZOIC ACID	2500	U	ANTHRACENE	500	U
BIS(2-CHLOROETHOXY)METHANE	500	U	DI-N-BUTYL PHTHALATE	500	U
2,4-DICHLOROPHENOL	500	U	FLUORANTHENE	500	U
1,2,4-TRICHLOROBENZENE	500	U	PYRENE	500	U
NAPHTHALENE	2400		BUTYL BENZYL PHTHALATE	500	U
4-CHLOROANILINE	500	U	3,3'-DICHLOROBENZIDINE	1000	U
HEXACHLOROBUTADIENE	500	U	BENZO(A)ANTHRACENE	500	U
4-CHLORO-3-METHYLPHENOL	500	U	BIS(2-ETHYLHEXYL)PHTHALATE	500	U
2-METHYLNAPHTHALENE	2800		CHRYSENE	500	U
HEXACHLOROCYCLOPENTADIENE	500	U	DI-N-OCTYL PHTHALATE	500	U
2,4,6-TRICHLOROPHENOL	500	U	BENZO(B)FLUORANTHENE	500	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.05

DATE: 12/23/93

SWLO #: 16375.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 50.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2500	U	BENZO(K)FLUORANTHENE	500	U
2-CHLORONAPHTHALENE	500	U	BENZO(A)PYRENE	500	U
2-NITROANILINE	2500	U	INDENO(1,2,3-CD)PYRENE	500	U
DIMETHYL PHTHALATE	500	U	DIBENZ(A,H)ANTHRACENE	500	U
ACENAPHTHYLENE	500	U	BENZO(G,H,I)PERYLENE	500	U
3-NITROANILINE	2500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	920% *	2-FLUOROBIPHENYL	(43-116)	73%
TERPHENYL-D14	(33-141)	82%	PHENOL-D5	(10- 94)	116% *
2-FLUOROPHENOL	(21-100)	45%	2,4,6-TRIBROMOPHENOL	(10-123)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.05

DATE: 12/20/93

SWLO #: 16375.05 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 25.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	250	U	ACENAPHTHENE	250	U
BIS(2-CHLOROETHYL)ETHER	250	U	2,4-DINITROPHENOL	1200	U
2-CHLOROPHENOL	250	U	4-NITROPHENOL	1200	U
1,3-DICHLOROBENZENE	250	U	DIBENZOFURAN	95	J
1,4-DICHLOROBENZENE	250	U	2,4-DINITROTOLUENE	250	U
BENZYL ALCOHOL	250	U	2,6-DINITROTOLUENE	250	U
1,2-DICHLOROBENZENE	250	U	DIETHYLPHTHALATE	250	U
2-METHYLPHENOL(O-CRESOL)	250	U	4-CHLOROPHENYL-PHENYLETHER	250	U
BIS(2-CHLOROISOPROPYL)ETHER	250	U	FLUORENE	34	J
4-METHYLPHENOL(P-CRESOL)	250	U	4-NITROANILINE	1200	U
N-NITROSO-DI-N-PROPYLAMINE	250	U	4,6-DINITRO-2-METHYLPHENOL	1200	U
HEXACHLOROETHANE	250	U	N-NITROSODIPHENYLAMINE(1)	250	U
NITROBENZENE	250	U	4-BROMOPHENYL-PHENYLETHER	250	U
ISOPHORONE	250	U	HEXACHLOROBENZENE	250	U
2-NITROPHENOL	250	U	PENTACHLOROPHENOL	1200	U
2,4-DIMETHYLPHENOL	250	U	PHENANTHRENE	28	J
BENZOIC ACID	1200	U	ANTHRACENE	250	U
BIS(2-CHLOROETHOXY)METHANE	250	U	DI-N-BUTYL PHTHALATE	250	U
2,4-DICHLOROPHENOL	250	U	FLUORANTHENE	250	U
1,2,4-TRICHLOROBENZENE	250	U	PYRENE	250	U
NAPHTHALENE	1300		BUTYL BENZYL PHTHALATE	250	U
4-CHLOROANILINE	250	U	3,3'-DICHLOROBENZIDINE	500	U
HEXACHLOROBUTADIENE	250	U	BENZO(A)ANTHRACENE	250	U
4-CHLORO-3-METHYLPHENOL	250	U	BIS(2-ETHYLHEXYL)PHTHALATE	250	U
2-METHYLNAPHTHALENE	2700		CHRYSENE	250	U
HEXACHLOROCYCLOPENTADIENE	250	U	DI-N-OCTYL PHTHALATE	250	U
2,4,6-TRICHLOROPHENOL	250	U	BENZO(B)FLUORANTHENE	250	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.05

DATE: 12/23/93

SWLO #: 16375.05 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 25.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1200	U	BENZO(K)FLUORANTHENE	250	U
2-CHLORONAPHTHALENE	250	U	BENZO(A)PYRENE	250	U
2-NITROANILINE	1200	U	INDENO(1,2,3-CD)PYRENE	250	U
DIMETHYL PHTHALATE	250	U	DIBENZ(A,H)ANTHRACENE	250	U
ACENAPHTHYLENE	250	U	BENZO(G,H,I)PERYLENE	250	U
3-NITROANILINE	1200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	570% *	2-FLUOROBIPHENYL	(43-116)	59%
TERPHENYL-D14	(33-141)	72%	PHENOL-D5	(10- 94)	96% *
2-FLUOROPHENOL	(21-100)	63%	2,4,6-TRIBROMOPHENOL	(10-123)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.05

DATE: 12/23/93

SWLO #: 16375.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 250.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1250	U	NAPHTHA C6-C12	1250	U
KEROSENE C9-C18	1120000		#6 FUEL OIL C12-C24	1250	U
JP-4 C6-C14	1250	U			

QA/QC SURROGATE RECOVERIES
NAPHTHALENE (46-121) D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.05

DATE: 12/23/93

SWLO #: 16375.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	176		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 93%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16375.05

DATE: 12/20/93

SWLO #: 16375.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	434		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	19.6		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	3	U	ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	19.2		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/20/93

SWLO #: 16375.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	47	
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	14		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	2.3	J	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	11		4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	24	
1,2-DICHLOROETHANE	5	U	TOLUENE	160	
1,1,1-TRICHLOROETHANE	67		CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	48	
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	400	E
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	108%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/20/93

SWLO #: 16375.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 10.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	100	U	ACENAPHTHENE	100	U
BIS(2-CHLOROETHYL)ETHER	100	U	2,4-DINITROPHENOL	500	U
2-CHLOROPHENOL	14	JB	4-NITROPHENOL	500	U
1,3-DICHLOROBENZENE	100	U	DIBENZOFURAN	25	J
1,4-DICHLOROBENZENE	100	U	2,4-DINITROTOLUENE	100	U
BENZYL ALCOHOL	100	U	2,6-DINITROTOLUENE	100	U
1,2-DICHLOROBENZENE	100	U	DIETHYLPHTHALATE	100	U
2-METHYLPHENOL(O-CRESOL)	100	U	4-CHLOROPHENYL-PHENYLETHER	100	U
BIS(2-CHLOROISOPROPYL)ETHER	100	U	FLUORENE	100	U
4-METHYLPHENOL(P-CRESOL)	58	J	4-NITROANILINE	500	U
N-NITROSO-DI-N-PROPYLAMINE	100	U	4,6-DINITRO-2-METHYLPHENOL	500	U
HEXACHLOROETHANE	100	U	N-NITROSODIPHENYLAMINE(1)	100	U
NITROBENZENE	100	U	4-BROMOPHENYL-PHENYLETHER	100	U
ISOPHORONE	100	U	HEXACHLOROBENZENE	100	U
2-NITROPHENOL	100	U	PENTACHLOROPHENOL	17	J
2,4-DIMETHYLPHENOL	100	U	PHENANTHRENE	100	U
BENZOIC ACID	500	U	ANTHRACENE	100	U
BIS(2-CHLOROETHOXY)METHANE	100	U	DI-N-BUTYL PHTHALATE	100	U
2,4-DICHLOROPHENOL	100	U	FLUORANTHENE	100	U
1,2,4-TRICHLOROBENZENE	100	U	PYRENE	100	U
NAPHTHALENE	880		BUTYL BENZYL PHTHALATE	100	U
4-CHLOROANILINE	100	U	3,3'-DICHLOROBENZIDINE	200	U
HEXACHLOROBUTADIENE	100	U	BENZO(A)ANTHRACENE	100	U
4-CHLORO-3-METHYLPHENOL	100	U	BIS(2-ETHYLHEXYL)PHTHALATE	100	U
2-METHYLNAPHTHALENE	650		CHRYSENE	100	U
HEXACHLOROCYCLOPENTADIENE	100	U	DI-N-OCTYL PHTHALATE	100	U
2,4,6-TRICHLOROPHENOL	100	U	BENZO(B)FLUORANTHENE	100	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/23/93

SWLO #: 16375.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 10.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	500	U	BENZO(K)FLUORANTHENE	100	U
2-CHLORONAPHTHALENE	100	U	BENZO(A)PYRENE	100	U
2-NITROANILINE	500	U	INDENO(1,2,3-CD)PYRENE	100	U
DIMETHYL PHTHALATE	100	U	DIBENZ(A,H)ANTHRACENE	100	U
ACENAPHTHYLENE	100	U	BENZO(G,H,I)PERYLENE	100	U
3-NITROANILINE	500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	373% *	2-FLUOROBIPHENYL	(43-116)	74%
TERPHENYL-D14	(33-141)	92%	PHENOL-D5	(10- 94)	26%
2-FLUOROPHENOL	(21-100)	58%	2,4,6-TRIBROMOPHENOL	(10-123)	98%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/20/93

SWLO #: 16375.06 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 10.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	100	U	ACENAPHTHENE	100	U
BIS(2-CHLOROETHYL)ETHER	100	U	2,4-DINITROPHENOL	500	U
2-CHLOROPHENOL	100	U	4-NITROPHENOL	500	U
1,3-DICHLOROBENZENE	100	U	DIBENZOFURAN	30	J
1,4-DICHLOROBENZENE	100	U	2,4-DINITROTOLUENE	100	U
BENZYL ALCOHOL	100	U	2,6-DINITROTOLUENE	100	U
1,2-DICHLOROBENZENE	100	U	DIETHYLPHTHALATE	100	U
2-METHYLPHENOL(O-CRESOL)	100	U	4-CHLOROPHENYL-PHENYLETHER	100	U
BIS(2-CHLOROISOPROPYL)ETHER	100	U	FLUORENE	100	U
4-METHYLPHENOL(P-CRESOL)	110		4-NITROANILINE	500	U
N-NITROSO-DI-N-PROPYLAMINE	100	U	4,6-DINITRO-2-METHYLPHENOL	500	U
HEXACHLOROETHANE	100	U	N-NITROSODIPHENYLAMINE(1)	100	U
NITROBENZENE	100	U	4-BROMOPHENYL-PHENYLETHER	100	U
ISOPHORONE	100	U	HEXACHLOROBENZENE	100	U
2-NITROPHENOL	100	U	PENTACHLOROPHENOL	500	U
2,4-DIMETHYLPHENOL	100	U	PHENANTHRENE	100	U
BENZOIC ACID	500	U	ANTHRACENE	100	U
BIS(2-CHLOROETHOXY)METHANE	100	U	DI-N-BUTYL PHTHALATE	100	U
2,4-DICHLOROPHENOL	100	U	FLUORANTHENE	100	U
1,2,4-TRICHLOROBENZENE	100	U	PYRENE	100	U
NAPHTHALENE	750		BUTYL BENZYL PHTHALATE	100	U
4-CHLOROANILINE	100	U	3,3'-DICHLOROBENZIDINE	200	U
HEXACHLOROBUTADIENE	100	U	BENZO(A)ANTHRACENE	100	U
4-CHLORO-3-METHYLPHENOL	100	U	BIS(2-ETHYLHEXYL)PHTHALATE	100	U
2-METHYLNAPHTHALENE	970		CHRYSENE	100	U
HEXACHLOROCYCLOPENTADIENE	100	U	DI-N-OCTYL PHTHALATE	100	U
2,4,6-TRICHLOROPHENOL	100	U	BENZO(B)FLUORANTHENE	100	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/23/93

SWLO #: 16375.06 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 10.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	500	U	BENZO(K)FLUORANTHENE	100	U
2-CHLORONAPHTHALENE	100	U	BENZO(A)PYRENE	100	U
2-NITROANILINE	500	U	INDENO(1,2,3-CD)PYRENE	100	U
DIMETHYL PHTHALATE	100	U	DIBENZ(A,H)ANTHRACENE	100	U
ACENAPHTHYLENE	100	U	BENZO(G,H,I)PERYLENE	100	U
3-NITROANILINE	500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	448% *	2-FLUOROBIPHENYL	(43-116)	68%
TERPHENYL-D14	(33-141)	75%	PHENOL-D5	(10- 94)	43%
2-FLUOROPHENOL	(21-100)	69%	2,4,6-TRIBROMOPHENOL	(10-123)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/23/93

SWLO #: 16375.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 250.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1250	U	NAPHTHA C6-C12	1250	U
KEROSENE C9-C18	994000		#6 FUEL OIL C12-C24	1250	U
JP-4 C6-C14	1250	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE (46-121) D

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/23/93

SWLO #: 16375.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 25.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	3460		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	96%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.06

DATE: 12/20/93

SWLO #: 16375.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	617		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	15		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	3	U	ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	90.6		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/20/93

SWLO #: 16375.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100	U	TRICHLOROETHENE	50	U
BROMOMETHANE	100	U	DIBROMOCHLOROMETHANE	50	U
VINYL CHLORIDE	100	U	1,1,2-TRICHLOROETHANE	50	U
CHLOROETHANE	100	U	BENZENE	50	U
METHYLENE CHLORIDE	1300		CIS-1,3-DICHLOROPROPENE	50	U
ACETONE	340		2-CHLOROETHYL VINYL ETHER	100	U
CARBON DISULFIDE	50	U	BROMOFORM	50	U
1,1-DICHLOROETHENE	50	U	2-HEXANONE	100	U
1,1-DICHLOROETHANE	50	U	4-METHYL-2-PENTANONE	100	U
CHLOROFORM	50	U	TETRACHLOROETHENE	50	U
1,2-DICHLOROETHANE	50	U	TOLUENE	16	J
1,1,1-TRICHLOROETHANE	50	U	CHLOROBENZENE	50	U
CARBON TETRACHLORIDE	50	U	ETHYLBENZENE	50	U
VINYL ACETATE	100	U	STYRENE	50	U
BROMODICHLOROMETHANE	50	U	XYLENE (TOTAL)	50	U
1,1,2,2-TETRACHLOROETHANE	50	U	1,2-DICHLOROETHENE(TOTAL)	50	U
1,2-DICHLOROPROPANE	50	U	2-BUTANONE	230	
TRANS-1,3-DICHLOROPROPENE	50	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/23/93

SWLO #: 16375.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	6900	B	ACENAPHTHENE	1000	U
BIS(2-CHLOROETHYL)ETHER	1000	U	2,4-DINITROPHENOL	5000	U
2-CHLOROPHENOL	1000	U	4-NITROPHENOL	5000	U
1,3-DICHLOROBENZENE	1000	U	DIBENZOFURAN	1000	U
1,4-DICHLOROBENZENE	1000	U	2,4-DINITROTOLUENE	1000	U
BENZYL ALCOHOL	1000	U	2,6-DINITROTOLUENE	1000	U
1,2-DICHLOROBENZENE	1000	U	DIETHYLPHTHALATE	1000	U
2-METHYLPHENOL(O-CRESOL)	1000	U	4-CHLOROPHENYL-PHENYLETHER	1000	U
BIS(2-CHLOROISOPROPYL)ETHER	1000	U	FLUORENE	1000	U
4-METHYLPHENOL(P-CRESOL)	1000	U	4-NITROANILINE	5000	U
N-NITROSO-DI-N-PROPYLAMINE	1000	U	4,6-DINITRO-2-METHYLPHENOL	5000	U
HEXACHLOROETHANE	1000	U	N-NITROSODIPHENYLAMINE(1)	1000	U
NITROBENZENE	1000	U	4-BROMOPHENYL-PHENYLETHER	1000	U
ISOPHORONE	1000	U	HEXACHLOROBENZENE	1000	U
2-NITROPHENOL	1000	U	PENTACHLOROPHENOL	5000	U
2,4-DIMETHYLPHENOL	1000	U	PHENANTHRENE	1000	U
BENZOIC ACID	5000	U	ANTHRACENE	1000	U
BIS(2-CHLOROETHOXY)METHANE	1000	U	DI-N-BUTYL PHTHALATE	1000	U
2,4-DICHLOROPHENOL	1000	U	FLUORANTHENE	1000	U
1,2,4-TRICHLOROBENZENE	1000	U	PYRENE	1000	U
NAPHTHALENE	1000	U	BUTYL BENZYL PHTHALATE	1000	U
4-CHLOROANILINE	1000	U	3,3'-DICHLOROBENZIDINE	2000	U
HEXACHLOROBUTADIENE	1000	U	BENZO(A)ANTHRACENE	1000	U
4-CHLORO-3-METHYLPHENOL	1000	U	BIS(2-ETHYLHEXYL)PHTHALATE	1000	U
2-METHYLNAPHTHALENE	1000	U	CHRYSENE	1000	U
HEXACHLOROCYCLOPENTADIENE	1000	U	DI-N-OCTYL PHTHALATE	1000	U
2,4,6-TRICHLOROPHENOL	1000	U	BENZO(B)FLUORANTHENE	1000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/23/93

SWLO #: 16375.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	5000	U	BENZO(K)FLUORANTHENE	1000	U
2-CHLORONAPHTHALENE	1000	U	BENZO(A)PYRENE	1000	U
2-NITROANILINE	5000	U	INDENO(1,2,3-CD)PYRENE	1000	U
DIMETHYL PHTHALATE	1000	U	BENZO(G,H,I)PERYLENE	1000	U
ACENAPHTHYLENE	1000	U	DIBENZ(A,H)ANTHRACENE	1000	U
3-NITROANILINE	5000	U			

QA/QC SURROGATE RECOVERIES

2-FLUOROBIPHENYL	(43-116) D		NITROBENZENE-D5	(35-114) D
TERPHENYL-D14	(33-141) D		PHENOL-D5	(10- 94) D
2-FLUOROPHENOL	(21-100) D		2,4,6-TRIBROMOPHENOL	(10-123) D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/20/93

SWLO #: 16375.07 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 50.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4500		ACENAPHTHENE	500	U
BIS(2-CHLOROETHYL)ETHER	500	U	2,4-DINITROPHENOL	2500	U
2-CHLOROPHENOL	500	U	4-NITROPHENOL	2500	U
1,3-DICHLOROBENZENE	500	U	DIBENZOFURAN	500	U
1,4-DICHLOROBENZENE	500	U	2,4-DINITROTOLUENE	500	U
BENZYL ALCOHOL	500	U	2,6-DINITROTOLUENE	500	U
1,2-DICHLOROBENZENE	500	U	DIETHYLPHTHALATE	500	U
2-METHYLPHENOL(O-CRESOL)	500	U	4-CHLOROPHENYL-PHENYLETHER	500	U
BIS(2-CHLOROISOPROPYL)ETHER	500	U	FLUORENE	500	U
4-METHYLPHENOL(P-CRESOL)	500	U	4-NITROANILINE	2500	U
N-NITROSO-DI-N-PROPYLAMINE	500	U	4,6-DINITRO-2-METHYLPHENOL	2500	U
HEXACHLOROETHANE	500	U	N-NITROSODIPHENYLAMINE(1)	500	U
NITROBENZENE	500	U	4-BROMOPHENYL-PHENYLETHER	500	U
ISOPHORONE	500	U	HEXACHLOROBENZENE	500	U
2-NITROPHENOL	500	U	PENTACHLOROPHENOL	2500	U
2,4-DIMETHYLPHENOL	500	U	PHENANTHRENE	500	U
BENZOIC ACID	2500	U	ANTHRACENE	500	U
BIS(2-CHLOROETHOXY)METHANE	500	U	DI-N-BUTYL PHTHALATE	500	U
2,4-DICHLOROPHENOL	500	U	FLUORANTHENE	500	U
1,2,4-TRICHLOROBENZENE	500	U	PYRENE	500	U
NAPHTHALENE	500	U	BUTYL BENZYL PHTHALATE	500	U
4-CHLOROANILINE	500	U	3,3'-DICHLOROBENZIDINE	1000	U
HEXACHLOROBUTADIENE	500	U	BENZO(A)ANTHRACENE	500	U
4-CHLORO-3-METHYLPHENOL	500	U	BIS(2-ETHYLHEXYL)PHTHALATE	500	U
2-METHYLNAPHTHALENE	500	U	CHRYSENE	500	U
HEXACHLOROCYCLOPENTADIENE	500	U	DI-N-OCTYL PHTHALATE	500	U
2,4,6-TRICHLOROPHENOL	500	U	BENZO(B)FLUORANTHENE	500	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/23/93

SWLO #: 16375.07 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 50.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2500	U	BENZO(K)FLUORANTHENE	500	U
2-CHLORONAPHTHALENE	500	U	BENZO(A)PYRENE	500	U
2-NITROANILINE	2500	U	INDENO(1,2,3-CD)PYRENE	500	U
DIMETHYL PHTHALATE	500	U	DIBENZ(A,H)ANTHRACENE	500	U
ACENAPHTHYLENE	500	U	BENZO(G,H,I)PERYLENE	500	U
3-NITROANILINE	2500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	42%	2-FLUOROBIPHENYL	(43-116)	51%
TERPHENYL-D14	(33-141)	97%	PHENOL-D5	(10- 94)	43%
2-FLUOROPHENOL	(21-100)	42%	2,4,6-TRIBROMOPHENOL	(10-123)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/23/93

SWLO #: 16375.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 5.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	25	U	NAPHTHA C6-C12	25	U
KEROSENE C9-C18	25	U	#6 FUEL OIL C12-C24	25	U
JP-4 C6-C14	25	U	MISCELLANEOUS C7-C24	5430	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	96%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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.NEERING SCIENCE, INC.
) SHOAL CREEK BLVD.
TE 222W
TIN, TX 78757
n: KEVIN TYNES

REPORT: 16375.07

DATE: 12/23/93

) #: 16375.07 M1
JECT : TINKER AFB-RFI
PLE #: IWTBG2127
ATION:
E ANALYZED : 11/20/93
HOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

AL PURGEABLE HYDROCARBONS
ULTS REPORT IN ug/l

AMETER	RESULTS**	PARAMETER	RESULTS**
OLINE	99.5		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 94%

ESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.07

DATE: 12/20/93

SWLO #: 16375.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	61.3		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	334		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	5.4		ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	94.8		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, IN
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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/20/93

SWLO #: 16375.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	1.4	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	16		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	3.4	J
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	106%	BROMOFLUOROBENZENE	(86-115)	107%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/20/93

SWLO #: 16375.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	20	B	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	16	B	4-NITROPHENOL	13	JB
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	1	J	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	16	JB
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	7.4	J	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	18	B	BIS(2-ETHYLHEXYL)PHTHALATE	1.9	J
2-METHYLNAPHTHALENE	11		CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/23/93

SWLO #: 16375.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	72%	2-FLUOROBIPHENYL	(43-116)	69%
TERPHENYL-D14	(33-141)	75%	PHENOL-D5	(10- 94)	57%
2-FLUOROPHENOL	(21-100)	61%	2,4,6-TRIBROMOPHENOL	(10-123)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/20/93

SWLO #: 16375.08 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	27		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	48		2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	2.8	JB	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	2.1	JB
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	3.3	J
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/23/93

SWLO #: 16375.08 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	51%	2-FLUOROBIPHENYL	(43-116)	39% *
TERPHENYL-D14	(33-141)	77%	PHENOL-D5	(10- 94)	46%
2-FLUOROPHENOL	(21-100)	46%	2,4,6-TRIBROMOPHENOL	(10-123)	52%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/23/93

SWLO #: 16375.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C14-C24	4890	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/23/93

SWLO #: 16375.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.08

DATE: 12/20/93

SWLO #: 16375.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	363		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	67.5		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	3	U	ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	279		ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	29.8		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/20/93

SWLO #: 16375.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100	U	TRICHLOROETHENE	50	U
BROMOMETHANE	100	U	DIBROMOCHLOROMETHANE	50	U
VINYL CHLORIDE	100	U	1,1,2-TRICHLOROETHANE	50	U
CHLOROETHANE	100	U	BENZENE	50	U
METHYLENE CHLORIDE	600		CIS-1,3-DICHLOROPROPENE	50	U
ACETONE	550	B	2-CHLOROETHYL VINYL ETHER	100	U
CARBON DISULFIDE	50	U	BROMOFORM	50	U
1,1-DICHLOROETHENE	50	U	2-HEXANONE	100	U
1,1-DICHLOROETHANE	50	U	4-METHYL-2-PENTANONE	100	U
CHLOROFORM	10	J	TETRACHLOROETHENE	19	J
1,2-DICHLOROETHANE	50	U	TOLUENE	130	
1,1,1-TRICHLOROETHANE	50	U	CHLOROBENZENE	50	U
CARBON TETRACHLORIDE	50	U	ETHYLBENZENE	50	U
VINYL ACETATE	100	U	STYRENE	50	U
BROMODICHLOROMETHANE	50	U	XYLENE (TOTAL)	34	J
1,1,2,2-TETRACHLOROETHANE	50	U	1,2-DICHLOROETHENE(TOTAL)	50	U
1,2-DICHLOROPROPANE	50	U	2-BUTANONE	2200	E
TRANS-1,3-DICHLOROPROPENE	50	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/20/93

SWLO #: 16375.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 50.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	3200	B	ACENAPHTHENE	500	U
BIS(2-CHLOROETHYL)ETHER	500	U	2,4-DINITROPHENOL	2500	U
2-CHLOROPHENOL	500	U	4-NITROPHENOL	2500	U
1,3-DICHLOROBENZENE	500	U	DIBENZOFURAN	500	U
1,4-DICHLOROBENZENE	500	U	2,4-DINITROTOLUENE	500	U
BENZYL ALCOHOL	500	U	2,6-DINITROTOLUENE	500	U
1,2-DICHLOROBENZENE	500	U	DIETHYLPHTHALATE	500	U
2-METHYLPHENOL(O-CRESOL)	500	U	4-CHLOROPHENYL-PHENYLETHER	500	U
BIS(2-CHLOROISOPROPYL)ETHER	500	U	FLUORENE	500	U
4-METHYLPHENOL(P-CRESOL)	500	U	4-NITROANILINE	2500	U
N-NITROSO-DI-N-PROPYLAMINE	500	U	4,6-DINITRO-2-METHYLPHENOL	2500	U
HEXACHLOROETHANE	500	U	N-NITROSODIPHENYLAMINE(1)	500	U
NITROBENZENE	500	U	4-BROMOPHENYL-PHENYLETHER	500	U
ISOPHORONE	500	U	HEXACHLOROBENZENE	500	U
2-NITROPHENOL	500	U	PENTACHLOROPHENOL	2500	U
2,4-DIMETHYLPHENOL	500	U	PHENANTHRENE	500	U
BENZOIC ACID	2500	U	ANTHRACENE	500	U
BIS(2-CHLOROETHOXY)METHANE	500	U	DI-N-BUTYL PHTHALATE	500	U
2,4-DICHLOROPHENOL	500	U	FLUORANTHENE	500	U
1,2,4-TRICHLOROBENZENE	500	U	PYRENE	500	U
NAPHTHALENE	500	U	BUTYL BENZYL PHTHALATE	500	U
4-CHLOROANILINE	500	U	3,3'-DICHLOROBENZIDINE	1000	U
HEXACHLOROBUTADIENE	500	U	BENZO(A)ANTHRACENE	500	U
4-CHLORO-3-METHYLPHENOL	500	U	BIS(2-ETHYLHEXYL)PHTHALATE	500	U
2-METHYLNAPHTHALENE	500	U	CHRYSENE	500	U
HEXACHLOROCYCLOPENTADIENE	500	U	DI-N-OCTYL PHTHALATE	500	U
2,4,6-TRICHLOROPHENOL	500	U	BENZO(B)FLUORANTHENE	500	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/23/93

SWLO #: 16375.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 50.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2500	U	BENZO(K)FLUORANTHENE	500	U
2-CHLORONAPHTHALENE	500	U	BENZO(A)PYRENE	500	U
2-NITROANILINE	2500	U	INDENO(1,2,3-CD)PYRENE	500	U
DIMETHYL PHTHALATE	500	U	DIBENZ(A,H)ANTHRACENE	500	U
ACENAPHTHYLENE	500	U	BENZO(G,H,I)PERYLENE	500	U
3-NITROANILINE	2500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	71%	2-FLUOROBIPHENYL	(43-116)	79%
TERPHENYL-D14	(33-141)	95%	PHENOL-D5	(10- 94)	56%
2-FLUOROPHENOL	(21-100)	59%	2,4,6-TRIBROMOPHENOL	(10-123)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/20/93

SWLO #: 16375.09 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS60LD
LOCATION:
DATE ANALYZED : 12/09/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 25.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	3400		ACENAPHTHENE	250	U
BIS(2-CHLOROETHYL)ETHER	250	U	2,4-DINITROPHENOL	1200	U
2-CHLOROPHENOL	250	U	4-NITROPHENOL	1200	U
1,3-DICHLOROBENZENE	250	U	DIBENZOFURAN	250	U
1,4-DICHLOROBENZENE	250	U	2,4-DINITROTOLUENE	250	U
BENZYL ALCOHOL	250	U	2,6-DINITROTOLUENE	250	U
1,2-DICHLOROBENZENE	250	U	DIETHYLPHTHALATE	250	U
2-METHYLPHENOL(O-CRESOL)	250	U	4-CHLOROPHENYL-PHENYLETHER	250	U
BIS(2-CHLOROISOPROPYL)ETHER	250	U	FLUORENE	250	U
4-METHYLPHENOL(P-CRESOL)	250	U	4-NITROANILINE	1200	U
N-NITROSO-DI-N-PROPYLAMINE	250	U	4,6-DINITRO-2-METHYLPHENOL	1200	U
HEXACHLOROETHANE	250	U	N-NITROSODIPHENYLAMINE(1)	250	U
NITROBENZENE	250	U	4-BROMOPHENYL-PHENYLETHER	250	U
ISOPHORONE	250	U	HEXACHLOROBENZENE	250	U
2-NITROPHENOL	250	U	PENTACHLOROPHENOL	1200	U
2,4-DIMETHYLPHENOL	250	U	PHENANTHRENE	250	U
BENZOIC ACID	1200	U	ANTHRACENE	250	U
BIS(2-CHLOROETHOXY)METHANE	250	U	DI-N-BUTYL PHTHALATE	250	U
2,4-DICHLOROPHENOL	250	U	FLUORANTHENE	250	U
1,2,4-TRICHLOROBENZENE	250	U	PYRENE	250	U
NAPHTHALENE	250	U	BUTYL BENZYL PHTHALATE	250	U
4-CHLOROANILINE	250	U	3,3'-DICHLOROBENZIDINE	500	U
HEXACHLOROBUTADIENE	250	U	BENZO(A)ANTHRACENE	250	U
4-CHLORO-3-METHYLPHENOL	250	U	BIS(2-ETHYLHEXYL)PHTHALATE	29	J
2-METHYLNAPHTHALENE	250	U	CHRYSENE	250	U
HEXACHLOROCYCLOPENTADIENE	250	U	DI-N-OCTYL PHTHALATE	250	U
2,4,6-TRICHLOROPHENOL	39	J	BENZO(B)FLUORANTHENE	250	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/23/93

SWLO #: 16375.09 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 12/09/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 25.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1200	U	BENZO(K)FLUORANTHENE	250	U
2-CHLORONAPHTHALENE	250	U	BENZO(A)PYRENE	250	U
2-NITROANILINE	1200	U	INDENO(1,2,3-CD)PYRENE	250	U
DIMETHYL PHTHALATE	250	U	DIBENZ(A,H)ANTHRACENE	250	U
ACENAPHTHYLENE	250	U	BENZO(G,H,I)PERYLENE	250	U
3-NITROANILINE	1200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	81%	2-FLUOROBIPHENYL	(43-116)	84%
TERPHENYL-D14	(33-141)	115%	PHENOL-D5	(10- 94)	64%
2-FLUOROPHENOL	(21-100)	59%	2,4,6-TRIBROMOPHENOL	(10-123)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/23/93

SWLO #: 16375.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 10.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	50	U	NAPHTHA C6-C12	50	U
KEROSENE C9-C18	50	U	#6 FUEL OIL C12-C24	50	U
JP-4 C6-C14	50	U	MISCELLANEOUS C8-C24	10100	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	91%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/23/93

SWLO #: 16375.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 20.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	1080		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 94%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.09

DATE: 12/20/93

SWLO #: 16375.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	1640		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	21.4		ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	1700		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	50		ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	67.9		ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	1150		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/20/93

SWLO #: 16375.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 500.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	5000	U	TRICHLOROETHENE	2500	U
BROMOMETHANE	5000	U	DIBROMOCHLOROMETHANE	2500	U
VINYL CHLORIDE	5000	U	1,1,2-TRICHLOROETHANE	2500	U
CHLOROETHANE	5000	U	BENZENE	2500	U
METHYLENE CHLORIDE	88000		CIS-1,3-DICHLOROPROPENE	2500	U
ACETONE	5000	U	2-CHLOROETHYL VINYL ETHER	5000	U
CARBON DISULFIDE	2500	U	BROMOFORM	2500	U
1,1-DICHLOROETHENE	2500	U	2-HEXANONE	5000	U
1,1-DICHLOROETHANE	2500	U	4-METHYL-2-PENTANONE	5000	U
CHLOROFORM	2500	U	TETRACHLOROETHENE	8500	
1,2-DICHLOROETHANE	2500	U	TOLUENE	1700	J
1,1,1-TRICHLOROETHANE	6300		CHLOROBENZENE	2500	U
CARBON TETRACHLORIDE	2500	U	ETHYLBENZENE	2500	U
VINYL ACETATE	5000	U	STYRENE	2500	U
BROMODICHLOROMETHANE	2500	U	XYLENE (TOTAL)	2500	U
1,1,2,2-TETRACHLOROETHANE	2500	U	1,2-DICHLOROETHENE(TOTAL)	2500	U
1,2-DICHLOROPROPANE	2500	U	2-BUTANONE	6600	
TRANS-1,3-DICHLOROPROPENE	2500	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/20/93

SWLO #: 16375.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 2500.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	260000	B	ACENAPHTHENE	25000	U
BIS(2-CHLOROETHYL)ETHER	25000	U	2,4-DINITROPHENOL	120000	U
2-CHLOROPHENOL	25000	U	4-NITROPHENOL	120000	U
1,3-DICHLOROBENZENE	25000	U	DIBENZOFURAN	25000	U
1,4-DICHLOROBENZENE	25000	U	2,4-DINITROTOLUENE	25000	U
BENZYL ALCOHOL	540000		2,6-DINITROTOLUENE	25000	U
1,2-DICHLOROBENZENE	25000	U	DIETHYLPHTHALATE	25000	U
2-METHYLPHENOL(O-CRESOL)	25000	U	4-CHLOROPHENYL-PHENYLETHER	25000	U
BIS(2-CHLOROISOPROPYL)ETHER	25000	U	FLUORENE	25000	U
4-METHYLPHENOL(P-CRESOL)	25000	U	4-NITROANILINE	120000	U
N-NITROSO-DI-N-PROPYLAMINE	25000	U	4,6-DINITRO-2-METHYLPHENOL	120000	U
HEXACHLOROETHANE	25000	U	N-NITROSODIPHENYLAMINE(1)	25000	U
NITROBENZENE	25000	U	4-BROMOPHENYL-PHENYLETHER	25000	U
ISOPHORONE	25000	U	HEXACHLOROBENZENE	25000	U
2-NITROPHENOL	25000	U	PENTACHLOROPHENOL	120000	U
2,4-DIMETHYLPHENOL	25000	U	PHENANTHRENE	25000	U
BENZOIC ACID	9400	J	ANTHRACENE	25000	U
BIS(2-CHLOROETHOXY)METHANE	25000	U	DI-N-BUTYL PHTHALATE	25000	U
2,4-DICHLOROPHENOL	25000	U	FLUORANTHENE	25000	U
1,2,4-TRICHLOROBENZENE	25000	U	PYRENE	25000	U
NAPHTHALENE	25000	U	BUTYL BENZYL PHTHALATE	25000	U
4-CHLOROANILINE	25000	U	3,3'-DICHLOROBENZIDINE	50000	U
HEXACHLOROBUTADIENE	25000	U	BENZO(A)ANTHRACENE	25000	U
4-CHLORO-3-METHYLPHENOL	25000	U	BIS(2-ETHYLHEXYL)PHTHALATE	25000	U
2-METHYLNAPHTHALENE	25000	U	CHRYSENE	25000	U
HEXACHLOROCYCLOPENTADIENE	25000	U	DI-N-OCTYL PHTHALATE	25000	U
2,4,6-TRICHLOROPHENOL	25000	U	BENZO(B)FLUORANTHENE	25000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/23/93

SWLO #: 16375.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 2500.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	120000	U	BENZO(K)FLUORANTHENE	25000	U
2-CHLORONAPHTHALENE	25000	U	BENZO(A)PYRENE	25000	U
2-NITROANILINE	120000	U	INDENO(1,2,3-CD)PYRENE	25000	U
DIMETHYL PHTHALATE	25000	U	DIBENZ(A,H)ANTHRACENE	25000	U
ACENAPHTHYLENE	25000	U	BENZO(G,H,I)PERYLENE	25000	U
3-NITROANILINE	120000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	D	2-FLUOROBIPHENYL	(43-116) D
TERPHENYL-D14	(33-141)	D	PHENOL-D5	(10- 94) D
2-FLUOROPHENOL	(21-100)	D	2,4,6-TRIBROMOPHENOL	(10-123) D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/20/93

SWLO #: 16375.10 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 10000.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	480000		ACENAPHTHENE	100000	U
BIS(2-CHLOROETHYL)ETHER	100000	U	2,4-DINITROPHENOL	500000	U
2-CHLOROPHENOL	100000	U	4-NITROPHENOL	500000	U
1,3-DICHLOROBENZENE	100000	U	DIBENZOFURAN	100000	U
1,4-DICHLOROBENZENE	100000	U	2,4-DINITROTOLUENE	100000	U
BENZYL ALCOHOL	1100000		2,6-DINITROTOLUENE	100000	U
1,2-DICHLOROBENZENE	100000	U	DIETHYLPHTHALATE	100000	U
2-METHYLPHENOL(O-CRESOL)	100000	U	4-CHLOROPHENYL-PHENYLETHER	100000	U
BIS(2-CHLOROISOPROPYL)ETHER	100000	U	FLUORENE	100000	U
4-METHYLPHENOL(P-CRESOL)	100000	U	4-NITROANILINE	500000	U
N-NITROSO-DI-N-PROPYLAMINE	100000	U	4,6-DINITRO-2-METHYLPHENOL	500000	U
HEXACHLOROETHANE	100000	U	N-NITROSODIPHENYLAMINE(1)	100000	U
NITROBENZENE	100000	U	4-BROMOPHENYL-PHENYLETHER	100000	U
ISOPHORONE	100000	U	HEXACHLOROBENZENE	100000	U
2-NITROPHENOL	100000	U	PENTACHLOROPHENOL	500000	U
2,4-DIMETHYLPHENOL	100000	U	PHENANTHRENE	100000	U
BENZOIC ACID	500000	U	ANTHRACENE	100000	U
BIS(2-CHLOROETHOXY)METHANE	100000	U	DI-N-BUTYL PHTHALATE	100000	U
2,4-DICHLOROPHENOL	100000	U	FLUORANTHENE	100000	U
1,2,4-TRICHLOROBENZENE	100000	U	PYRENE	100000	U
NAPHTHALENE	100000	U	BUTYL BENZYL PHTHALATE	100000	U
4-CHLOROANILINE	100000	U	3,3'-DICHLOROBENZIDINE	200000	U
HEXACHLOROBUTADIENE	100000	U	BENZO(A)ANTHRACENE	100000	U
4-CHLORO-3-METHYLPHENOL	100000	U	BIS(2-ETHYLHEXYL)PHTHALATE	100000	U
2-METHYLNAPHTHALENE	100000	U	CHRYSENE	100000	U
HEXACHLOROCYCLOPENTADIENE	100000	U	DI-N-OCTYL PHTHALATE	100000	U
2,4,6-TRICHLOROPHENOL	100000	U	BENZO(B)FLUORANTHENE	100000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/23/93

SWLO #: 16375.10 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 10000.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	500000	U	BENZO(K)FLUORANTHENE	100000	U
2-CHLORONAPHTHALENE	100000	U	BENZO(A)PYRENE	100000	U
2-NITROANILINE	500000	U	INDENO(1,2,3-CD)PYRENE	100000	U
DIMETHYL PHTHALATE	100000	U	DIBENZ(A,H)ANTHRACENE	100000	U
ACENAPHTHYLENE	100000	U	BENZO(G,H,I)PERYLENE	100000	U
3-NITROANILINE	500000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	D	2-FLUOROBIPHENYL	(43-116)	D
TERPHENYL-D14	(33-141)	D	PHENOL-D5	(10- 94)	D
2-FLUOROPHENOL	(21-100)	D	2,4,6-TRIBROMOPHENOL	(10-123)	D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/23/93

SWLO #: 16375.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 400.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	2000	U	NAPHTHA C6-C12	2000	U
KEROSENE C9-C18	2000	U	#6 FUEL OIL C12-C24	2000	U
JP-4 C6-C14	2000	U	MISCELLANEOUS C7-C24	675000	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/23/93

SWLO #: 16375.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 50.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	5880		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 91%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.10

DATE: 12/20/93

SWLO #: 16375.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	560		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	19.3		ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	8440		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	10.7		ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	6.3		ug/l	11/18/93	11/22/93	SW846-6010
ZINC	119		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/20/93

SWLO #: 16375.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 200.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	2000	U	TRICHLOROETHENE	1000	U
BROMOMETHANE	2000	U	DIBROMOCHLOROMETHANE	1000	U
VINYL CHLORIDE	2000	U	1,1,2-TRICHLOROETHANE	1000	U
CHLOROETHANE	2000	U	BENZENE	1000	U
METHYLENE CHLORIDE	5800		CIS-1,3-DICHLOROPROPENE	1000	U
ACETONE	2000	U	2-CHLOROETHYL VINYL ETHER	2000	U
CARBON DISULFIDE	1000	U	BROMOFORM	1000	U
1,1-DICHLOROETHENE	1000	U	2-HEXANONE	2000	U
1,1-DICHLOROETHANE	1000	U	4-METHYL-2-PENTANONE	2000	U
CHLOROFORM	1000	U	TETRACHLOROETHENE	1000	U
1,2-DICHLOROETHANE	1000	U	TOLUENE	1200	
1,1,1-TRICHLOROETHANE	1000	U	CHLOROBENZENE	1000	U
CARBON TETRACHLORIDE	1000	U	ETHYLBENZENE	1000	U
VINYL ACETATE	2000	U	STYRENE	1000	U
BROMODICHLOROMETHANE	1000	U	XYLENE (TOTAL)	350	J
1,1,2,2-TETRACHLOROETHANE	1000	U	1,2-DICHLOROETHENE(TOTAL)	1000	U
1,2-DICHLOROPROPANE	1000	U	2-BUTANONE	12000	
TRANS-1,3-DICHLOROPROPENE	1000	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/20/93

SWLO #: 16375.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 250.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	23000	B	ACENAPHTHENE	2500	U
BIS(2-CHLOROETHYL)ETHER	2500	U	2,4-DINITROPHENOL	12000	U
2-CHLOROPHENOL	2500	U	4-NITROPHENOL	12000	U
1,3-DICHLOROBENZENE	2500	U	DIBENZOFURAN	2500	U
1,4-DICHLOROBENZENE	2500	U	2,4-DINITROTOLUENE	2500	U
BENZYL ALCOHOL	2500	U	2,6-DINITROTOLUENE	2500	U
1,2-DICHLOROBENZENE	2500	U	DIETHYLPHTHALATE	2500	U
2-METHYLPHENOL(O-CRESOL)	2500	U	4-CHLOROPHENYL-PHENYLETHER	2500	U
BIS(2-CHLOROISOPROPYL)ETHER	2500	U	FLUORENE	2500	U
4-METHYLPHENOL(P-CRESOL)	2500	U	4-NITROANILINE	12000	U
N-NITROSO-DI-N-PROPYLAMINE	2500	U	4,6-DINITRO-2-METHYLPHENOL	12000	U
HEXACHLOROETHANE	2500	U	N-NITROSODIPHENYLAMINE(1)	2500	U
NITROBENZENE	2500	U	4-BROMOPHENYL-PHENYLETHER	2500	U
ISOPHORONE	2500	U	HEXACHLOROBENZENE	2500	U
2-NITROPHENOL	2500	U	PENTACHLOROPHENOL	12000	U
2,4-DIMETHYLPHENOL	2500	U	PHENANTHRENE	2500	U
BENZOIC ACID	12000	U	ANTHRACENE	2500	U
BIS(2-CHLOROETHOXY)METHANE	2500	U	DI-N-BUTYL PHTHALATE	2500	U
2,4-DICHLOROPHENOL	2500	U	FLUORANTHENE	2500	U
1,2,4-TRICHLOROBENZENE	2500	U	PYRENE	2500	U
NAPHTHALENE	2500	U	BUTYL BENZYL PHTHALATE	2500	U
4-CHLOROANILINE	2500	U	3,3'-DICHLOROBENZIDINE	5000	U
HEXACHLOROBUTADIENE	2500	U	BENZO(A)ANTHRACENE	2500	U
4-CHLORO-3-METHYLPHENOL	2500	U	BIS(2-ETHYLHEXYL)PHTHALATE	2500	U
2-METHYLNAPHTHALENE	2500	U	CHRYSENE	2500	U
HEXACHLOROCYCLOPENTADIENE	2500	U	DI-N-OCTYL PHTHALATE	2500	U
2,4,6-TRICHLOROPHENOL	280	J	BENZO(B)FLUORANTHENE	2500	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/23/93

SWLO #: 16375.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 250.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	12000	U	BENZO(K)FLUORANTHENE	2500	U
2-CHLORONAPHTHALENE	2500	U	BENZO(A)PYRENE	2500	U
2-NITROANILINE	12000	U	INDENO(1,2,3-CD)PYRENE	2500	U
DIMETHYL PHTHALATE	2500	U	DIBENZ(A,H)ANTHRACENE	2500	U
ACENAPHTHYLENE	2500	U	BENZO(G,H,I)PERYLENE	2500	U
3-NITROANILINE	12000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114) D	2-FLUOROBIPHENYL	(43-116) D
TERPHENYL-D14	(33-141) D	PHENOL-D5	(10- 94) D
2-FLUOROPHENOL	(21-100) D	2,4,6-TRIBROMOPHENOL	(10-123) D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/20/93

SWLO #: 16375.11 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 250.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	30000		ACENAPHTHENE	2500	U
BIS(2-CHLOROETHYL)ETHER	2500	U	2,4-DINITROPHENOL	12000	U
2-CHLOROPHENOL	2500	U	4-NITROPHENOL	12000	U
1,3-DICHLOROBENZENE	2500	U	DIBENZOFURAN	2500	U
1,4-DICHLOROBENZENE	2500	U	2,4-DINITROTOLUENE	2500	U
BENZYL ALCOHOL	340	J	2,6-DINITROTOLUENE	2500	U
1,2-DICHLOROBENZENE	2500	U	DIETHYLPHTHALATE	2500	U
2-METHYLPHENOL(O-CRESOL)	2500	U	4-CHLOROPHENYL-PHENYLETHER	2500	U
BIS(2-CHLOROISOPROPYL)ETHER	2500	U	FLUORENE	2500	U
4-METHYLPHENOL(P-CRESOL)	2500	U	4-NITROANILINE	12000	U
N-NITROSO-DI-N-PROPYLAMINE	2500	U	4,6-DINITRO-2-METHYLPHENOL	12000	U
HEXACHLOROETHANE	2500	U	N-NITROSODIPHENYLAMINE(1)	2500	U
NITROBENZENE	2500	U	4-BROMOPHENYL-PHENYLETHER	2500	U
ISOPHORONE	2500	U	HEXACHLOROBENZENE	2500	U
2-NITROPHENOL	2500	U	PENTACHLOROPHENOL	12000	U
2,4-DIMETHYLPHENOL	2500	U	PHENANTHRENE	2500	U
BENZOIC ACID	12000	U	ANTHRACENE	2500	U
BIS(2-CHLOROETHOXY)METHANE	2500	U	DI-N-BUTYL PHTHALATE	2500	U
2,4-DICHLOROPHENOL	2500	U	FLUORANTHENE	2500	U
1,2,4-TRICHLOROBENZENE	2500	U	PYRENE	2500	U
NAPHTHALENE	2500	U	BUTYL BENZYL PHTHALATE	2500	U
4-CHLOROANILINE	2500	U	3,3'-DICHLOROBENZIDINE	5000	U
HEXACHLOROBUTADIENE	2500	U	BENZO(A)ANTHRACENE	2500	U
4-CHLORO-3-METHYLPHENOL	2500	U	BIS(2-ETHYLHEXYL)PHTHALATE	2500	U
2-METHYLNAPHTHALENE	2500	U	CHRYSENE	2500	U
HEXACHLOROCYCLOPENTADIENE	2500	U	DI-N-OCTYL PHTHALATE	2500	U
2,4,6-TRICHLOROPHENOL	410	J	BENZO(B)FLUORANTHENE	2500	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.11

DATE: 12/23/93

SWLO #: 16375.11 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 250.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	12000	U	BENZO(K)FLUORANTHENE	2500	U
2-CHLORONAPHTHALENE	2500	U	BENZO(A)PYRENE	2500	U
2-NITROANILINE	12000	U	INDENO(1,2,3-CD)PYRENE	2500	U
DIMETHYL PHTHALATE	2500	U	DIBENZ(A,H)ANTHRACENE	2500	U
ACENAPHTHYLENE	2500	U	BENZO(G,H,I)PERYLENE	2500	U
3-NITROANILINE	12000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	D	2-FLUOROBIPHENYL	(43-116)	D
TERPHENYL-D14	(33-141)	D	PHENOL-D5	(10- 94)	D
2-FLUOROPHENOL	(21-100)	D	2,4,6-TRIBROMOPHENOL	(10-123)	D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/23/93

SWLO #: 16375.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 20.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	100	U	#6 FUEL OIL C12-C24	100	U
KEROSENE C9-C18	100	U	NAPHTHA C6-C12	100	U
JP-4 C6-C14	100	U	MISCELLANEOUS C7-C24	54200	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE (46-121) 126% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/23/93

SWLO #: 16375.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/21/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 50.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	9960		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	98%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16375.11

DATE: 12/20/93

SWLO #: 16375.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	9090		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	124		ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	8800		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	25.7		ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10.8		ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	6520		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.12

DATE: 12/20/93

SWLO #: 16375.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	16		CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	33	B	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	4	J
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	36	
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	107%	BROMOFLUOROBENZENE	(86-115)	114%
1,2-DICHLOROETHANE-D4	(76-114)	108%			

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REPORT: 16375.12

DATE: 12/20/93

SWLO #: 16375.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	16	B	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	16	B	4-NITROPHENOL	6.3	JB
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	14	JB
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	12	B	BIS(2-ETHYLHEXYL)PHTHALATE	1.2	J
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

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REPORT: 16375.12

DATE: 12/23/93

SWLO #: 16375.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	77%	2-FLUOROBIPHENYL	(43-116)	68%
TERPHENYL-D14	(33-141)	78%	PHENOL-D5	(10- 94)	55%
2-FLUOROPHENOL	(21-100)	21%	2,4,6-TRIBROMOPHENOL	(10-123)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16375.12

DATE: 12/20/93

SWLO #: 16375.12 N9
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	21		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	34		2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	1.2	JB	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	1	J
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:
DATE ANALYZED : 12/05/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	44%	2-FLUOROBIPHENYL	(43-116)	32% *
TERPHENYL-D14	(33-141)	74%	PHENOL-D5	(10- 94)	34%
2-FLUOROPHENOL	(21-100)	14% *	2,4,6-TRIBROMOPHENOL	(10-123)	36%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16375.12

DATE: 12/23/93

SWLO #: 16375.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C9-C24	660	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.12

DATE: 12/23/93

SWLO #: 16375.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/20/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.12

DATE: 12/20/93

SWLO #: 16375.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/19/93	11/19/93	SW846-7470
SILVER	1	U	ug/l	11/18/93	11/27/93	SW846-7761
ARSENIC	10	U	ug/l	11/18/93	11/22/93	SW846-6010
BARIUM	417		ug/l	11/18/93	11/24/93	SW846-6010
CADMIUM	3	U	ug/l	11/18/93	11/24/93	SW846-6010
CHROMIUM	484		ug/l	11/18/93	11/24/93	SW846-6010
LEAD	3	U	ug/l	11/18/93	11/22/93	SW846-6010
NICKEL	10	U	ug/l	11/18/93	11/24/93	SW846-6010
SELENIUM	5	U	ug/l	11/18/93	11/22/93	SW846-6010
ZINC	15.3		ug/l	11/18/93	11/24/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375.13

DATE: 12/20/93

SWLO #: 16375.13 TB3
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/11/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	1.6	J	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931116A
INST. BATCH: 3304
REPORTED : 12/13/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931116A
LOCATION:

ANALYZED : 11/16/93 10:08
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	97%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

D = NOT DETECTED ABOVE QUANTITATION LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931116A
INST. BATCH: 3304
REPORTED : 12/23/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/16/93 10:39
ANALYZED : 11/16/93 11:03

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	51	102	50	100	2.21	32	54-161
TRICHLOROETHENE	50	51	102	51	103	1.13	38	67-149
BENZENE	50	50	99	50	100	< 1	46	70-134
TOLUENE	50	50	101	50	100	1.12	15	75-140
CHLOROBENZENE	50	50	101	50	99	1.38	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	101	88-110
BROMOFLUOROBENZENE	100	101	86-115
1,2-DICHLOROETHANE-D4	99	103	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931117A
INST. BATCH: 3528
REPORTED : 12/13/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931117A
LOCATION:

ANALYZED : 11/17/93 11:45
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	101%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931117A
INST. BATCH: 3528
REPORTED : 12/23/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/17/93 12:36
ANALYZED : 11/17/93 13:00

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	53	107	54	107	< 1	32	54-161
TRICHLOROETHENE	50	54	108	56	112	4.27	38	67-149
BENZENE	50	52	104	53	107	3.23	46	70-134
TOLUENE	50	51	102	51	103	1.27	15	75-140
CHLOROBENZENE	50	52	103	53	106	2.03	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	97	88-110
BROMOFLUOROBENZENE	103	98	86-115
1,2-DICHLOROETHANE-D4	103	101	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931118B
INST. BATCH: 3727
REPORTED : 12/13/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : N931118A
LOCATION:

ANALYZED : 11/18/93 08:16
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND		1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	5.1	J	BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	108%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931118B
INST. BATCH: 3727
REPORTED : 12/23/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/18/93 09:31
ANALYZED : 11/18/93 09:55

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	58	117	50	100	15.4	32	54-161
TRICHLOROETHENE	50	50	101	50	101	< 1	38	67-149
BENZENE	50	53	106	48	96	9.45	46	70-134
TOLUENE	50	40	79	43	85	7.65	15	75-140
CHLOROBENZENE	50	48	97	50	101	3.68	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	95	98	88-110
BROMOFLUOROBENZENE	105	99	86-115
1,2-DICHLOROETHANE-D4	86	108	76-114

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931119B
INST. BATCH: 3896
REPORTED : 12/13/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : N931119B
LOCATION:

ANALYZED : 11/19/93 18:28
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	92%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931119B
INST. BATCH: 3896
REPORTED : 12/23/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/19/93 19:10
ANALYZED : 11/19/93 19:34

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	66	132	50	100	27.5	32	54-161
TRICHLOROETHENE	50	60	120	57	113	5.8	38	67-149
BENZENE	50	67	134	55	110	19.5	46	70-134
TOLUENE	50	53	106	54	107	< 1	15	75-140
CHLOROBENZENE	50	57	114	54	108	4.72	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	104	88-110
BROMOFLUOROBENZENE	114	101	86-115
1,2-DICHLOROETHANE-D4	102	107	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375

DATE: 12/23/93

SWLO QAQC#: BL111505W
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	13		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	14		4-NITROPHENOL	11	J
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	14	J
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	16		BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375

DATE: 12/23/93

SWLO QAQC#: BL111505W
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	68%	2-FLUOROBIPHENYL	(43-116)	61%
TERPHENYL-D14	(33-141)	84%	PHENOL-D5	(10- 94)	52%
2-FLUOROPHENOL	(21-100)	54%	2,4,6-TRIBROMOPHENOL	(10-123)	50%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375Bb

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO #: LABORATORY CONTROL SPIKE
DATE EXTRACTED: 11-15-93
DATE ANALYZED : 12-01-93
METHOD REFERENCE: SW846-8270
SAMPLE ID: LCS 16375

SEMIVOLATILE LABORATORY CONTROL SPIKE

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	0	150	75	12 - 89
2-CHLOROPHENOL	200	0	160	78	27 - 123
1,4-DICHLOROBENZENE	100	0	67	67	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	0	68	68	41 - 116
1,2,4-TRICHLOROBENZENE	100	0	63	63	39 - 98
4-CHLORO-3-METHYLPHENOL	200	0	170	83	23 - 97
ACENAPHTHENE	100	0	85	85	46 - 118
4-NITROPHENOL	200	0	210	104*	10 - 80
2,4-DINITROTOLUENE	100	0	86	86	24 - 96
PENTACHLOROPHENOL	200	0	150	76	9 - 103
PYRENE	100	0	110	109	26 - 127

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5	(35-114)	77%	2-FLUOROBIPHENYL	(43-116)	88%	TERPHENYL-d14	(33-141)	100%
PHENOL-d5	(10- 94)	55%	2-FLUOROPHENOL	(21-100)	59%	2,4,6-TRIBROMOPHENOL	(10-123)	62%

* VALUES OUTSIDE OF QC LIMITS

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375

DATE: 12/23/93

SWLO QAQC#: BL120203W
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	2	J	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	1.1	J
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16375

DATE: 12/23/93

SWLO QAQC#: BL120203W
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 12/08/93
METHOD REFERENCE: SW846-8270
MS Re-Analyses

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	68%	2-FLUOROBIPHENYL	(43-116)	60%
TERPHENYL-D14	(33-141)	91%	PHENOL-D5	(10- 94)	61%
2-FLUOROPHENOL	(21-100)	64%	2,4,6-TRIBROMOPHENOL	(10-123)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375Bd

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 12-02-93
DATE ANALYZED: 12-05-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	0	120	59	12 - 89
2-CHLOROPHENOL	200	0	120	58	27 - 123
1,4-DICHLOROBENZENE	100	0	52	52	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	0	57	57	41 - 116
1,2,4-TRICHLOROBENZENE	100	0	55	55	39 - 98
4-CHLORO-3-METHYLPHENOL	200	0	120	61	23 - 97
ACENAPHTHENE	100	0	61	61	46 - 118
4-NITROPHENOL	200	0	120	58	10 - 80
2,4-DINITROTOLUENE	100	0	66	66	24 - 96
PENTACHLOROPHENOL	200	0	110	56	9 - 103
PYRENE	100	0	72	72	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	120	58	1	35	12 - 89
2-CHLOROPHENOL	200	120	61	4	50	27 - 123
1,4-DICHLOROBENZENE	100	56	56	7	27	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	58	58	3	38	41 - 116
1,2,4-TRICHLOROBENZENE	100	58	58	5	23	39 - 98
4-CHLORO-3-METHYLPHENOL	200	120	60	1	33	23 - 97
ACENAPHTHENE	100	62	62	3	19	46 - 118
4-NITROPHENOL	200	130	670	14	50	10 - 80
2,4-DINITROTOLUENE	100	73	73	10	47	24 - 96
PENTACHLOROPHENOL	200	110	55	1	47	9 - 103
PYRENE	100	88	88	20	36	26 - 127

QA/QC SURROGATE RECOVERIES

			LCS					
NITROBENZENE-d5	(35-114)	63%	2-FLUOROBIPHENYL	(43-116)	49%	TERPHENYL-d14	(33-141)	85%
PHENOL-d5	(10-94)	49%	2-FLUOROPHENOL	(21-100)	53%	2,4,6-TRIBROMOPHENOL	(10-123)	59%
			LCSD					
NITROBENZENE-d5	(35-114)	66%	2-FLUOROBIPHENYL	(43-116)	53%	TERPHENYL-d14	(33-141)	8
PHENOL-d5	(10-94)	50%	2-FLUOROPHENOL	(21-100)	56%	2,4,6-TRIBROMOPHENOL	(10-123)	6

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375THa

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DATE EXTRACTED: 11-18-93
DATE ANALYZED: 11-22-93
PROJECT: TINKER AFB-RFI
SAMPLE ID: LABORATORY BLANK

PARAMETER	DET. LIMIT	UNIT	RESULTS
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS			
GASOLINE C6-C10	5.0	ug/L	ND
DIESEL C10-C22	5.0	ug/L	ND
KEROSENE C9-C18	5.0	ug/L	ND
JP-4 C6-C14	5.0	ug/L	ND
NAPTHA C6-C12	5.0	ug/L	ND
#6 FUEL OIL C12-C24	5.0	ug/L	ND

QA/QC SURROGATE RECOVERY

NAPHTHALENE(21-166) 83%

(1) = ANALYSIS SHOWS MISCELLANEOUS PEAKS WHICH CANNOT BE IDENTIFIED AS ANY SPECIFIC PATTERN. THE RESPONSE FACTOR FOR THE NEAREST ELUTING HYDROCARBON STANDARD WAS USED TO CALCULATE THE CONCENTRATION OF THE MISCELLANEOUS PEAKS. NUMBERS INDICATE THE APPROXIMATE CARBON CHAIN LENGTH.
(2) = PATTERN IS SIMILAR TO, BUT NOT IDENTICAL TO STANDARD
(3) = MAY BE A WEATHERED GASOLINE
ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375THb

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO #: 16375 (LCS/LCSD)
DATE EXTRACTED: 11-18-93
DATE ANALYZED: 11-22-93
METHOD REFERENCE: MOD. 8015 (CALIF.) EXTRACTABLE
SAMPLE ID: LCS/LCSD

LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)*	LCS CONC. (ug/L)*	LCS % RECOVERY
DIESEL	5000	0	4690	93.7%

	LCSD CONC. (ug/L)*	LCS % RECOVERY	RELATIVE PERCENT DIFFERENCE
DIESEL	4810	96.3%	2.53%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375Ta

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
DATE ANALYZED: 11-18-93
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DILUTION FACTOR: 1
PROJECT: TINKER AFB-RFI
SAMPLE ID: BLANK

PARAMETER	QUANT. LIMIT	UNIT	RESULTS
TOTAL PURGEABLE PETROLEUM HYDROCARBONS			
GASOLINE	10.0	ug/L	ND

QA/QC SURROGATE RECOVERY

4-BROMOFLUOROBENZENE(65-135) 89%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER, 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: [illegible]
DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO #: LCS
DATE ANALYZED: 11-18-93
METHOD REFERENCE: MODIFIED 8015 PURGE AND TRAP
SAMPLE ID: LABORATORY CONTROL SPIKE

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)*	LCS CONC. (ug/L)*	LCS PERCENT RECOVERY
GASOLINE	500.0	0	511	102%

	LCSD CONC. (ug/L)*	LCSD PERCENT RECOVERY	RELATIVE PERCENT DIFFERENCE
GASOLINE	483	96.6%	5.6%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375Tc

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
DATE ANALYZED: 11-20-93
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DILUTION FACTOR: 1
PROJECT: TINKER AFB-RFI
SAMPLE ID: BLANK

PARAMETER	QUANT. LIMIT	UNIT	RESULTS
TOTAL PURGEABLE PETROLEUM HYDROCARBONS			
GASOLINE	10.0	ug/L	ND

QA/QC SURROGATE RECOVERY

4-BROMOFLUOROBENZENE(65-135) 96%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER, 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16375Te

DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
DATE ANALYZED: 11-21-93
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DILUTION FACTOR: 1
PROJECT: TINKER AFB-RFI
SAMPLE ID: BLANK

PARAMETER	QUANT. LIMIT	UNIT	RESULTS
TOTAL PURGEABLE PETROLEUM HYDROCARBONS			
GASOLINE	10.0	ug/L	ND

QA/QC SURROGATE RECOVERY

4-BROMOFLUOROBENZENE(65-135) 94%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER, 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16375aa
REPORT DATE: 12-23-93

MATRIX: **WATER**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/18/93	111993I4	10.0	ug/L	< 10.0
LEAD	11/18/93	111993I4	3.0	ug/L	< 3.0
SELENIUM	11/18/93	111993I4	5.0	ug/L	< 5.0
BARIUM	11/24/93	111993I4	5.0	ug/L	< 5.0
CADMIUM	11/24/93	111993I4	3.0	ug/L	< 3.0
CHROMIUM	11/24/93	111993I4	5.0	ug/L	< 5.0
NICKEL	11/24/93	111993I4	10.0	ug/L	< 10.0
ZINC	11/24/93	111993I4	15.0	ug/L	< 15.0
MERCURY	11/19/93	111993HG03	0.20	ug/L	< 0.20
SILVER	11/27/93	111993F4	1.0	ug/L	< 1.0

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16375bb
REPORT DATE: 12-23-93

MATRIX: **WATER**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/L)	SPIKED RESULTS (mg/L)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/18/93	2000	1946	97	80-120
LEAD	11/18/93	500	467	93	80-120
SELENIUM	11/18/93	2000	1905	95	80-120
BARIUM	11/24/93	2000	1918	96	80-120
CADMIUM	11/24/93	50.0	44.6	89	80-120
CHROMIUM	11/24/93	200	190	95	80-120
NICKEL	11/24/93	500	475	95	80-120
ZINC	11/24/93	500	466	93	80-120
MERCURY	11/19/93	4.90	5.67	116	80-120
SILVER	11/27/93	50.0	45.8	92	80-120

QC/dn

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

PROJECT NUMBER: AU401.08

CARRIER: [X] Federal Express [ ] UPS

Other

AIRBILL OR CARRIER ID #: 8503061895

SAMPLER(S): MARC HARDER

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	Number of Containers	VOA (8240)	SVOA (8270)	Metals (6010)	CN (9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	Remarks
11/16/93	—	Field QC		TB1	WQ	NA	0	0	2	X				0	0	1	A	
11/16/93	1000	S32.55B2		N1	SO	HA	3.5	4.0	3	X	X	X	X	0	0	1	A	
11/16/93	1130	S32.55B2		N1	SO	HA	5.5	6.0	3	X	X	X	X	0	0	1	A	
11/16/93	1515	S32.55B1		N1	SO	HA	2.0	3.0	3	X	X	X	X	0	0	1	A	
11/16/93	1540	S32.55B1		N1	SO	HA	5.0	6.0	3	X	X	X	X	0	0	1	A	
11/16/93	0920	S32.65B1		N1	SO	HA	2.0	3.0	3	X	X	X	X	0	0	1	A	
11/16/93	1410	I24.115B4		N1	SO	HA	3.0	4.0	3	X	X	X	X	0	0	1	A	
11/16/93	1410	I24.115B4		FR1	SO	HA	3.0	4.0	3	X	X	X	X	0	0	1	A	
11/16/93	1440	I24.115B4		N1	SO	HA	8.0	9.0	3	X	X	X	X	0	0	1	A	

Field Lot Control Number

Relinquished by: (Signature) MH Date ~~11/16/93~~ Time 1700

Received by: (Signature) Date 11/17/93 Time

Relinquished by: (Signature) Date Time

Received by: (Signature) Date Time

Relinquished by: (Signature) Date Time

Received by: (Signature) Date 11/5/93 Time

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chainc.dwg

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.01

DATE: 12/23/93

SWLO #: 16443.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.50
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.05

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	28	B	CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	55	B	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.2	U	TETRACHLOROETHENE	5.2	U
1,2-DICHLOROETHANE	5.2	U	TOLUENE	5.2	U
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE(TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121)	103%
1,2-DICHLOROETHANE-D4	(70-121)	105%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.01

DATE: 12/23/93

SWLO #: 16443.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.50
DEPTH TO : 4.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	270	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	280	JB	4-NITROPHENOL	190	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	150	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	270	J	BIS(2-ETHYLHEXYL)PHTHALATE	90	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.01

DATE: 12/23/93

SWLO #: 16443.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.50
DEPTH TO : 4.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

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REPORT: 16443.01

DATE: 12/23/93

SWLO #: 16443.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.50
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.52		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	7.68		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.526	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	222		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	1.79		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	10.6		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.105	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	7.88		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.105	U	mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	9.67		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.01

DATE: 12/23/93

SWLO #: 16443.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.50
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.526	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.02

DATE: 12/23/93

SWLO #: 16443.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.50
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	108%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.02

DATE: 12/23/93

SWLO #: 16443.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.50
DEPTH TO : 6.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	280	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	280	JB	4-NITROPHENOL	200	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	140	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	41	J
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	290	JB	BIS(2-ETHYLHEXYL)PHTHALATE	99	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.02

DATE: 12/23/93

SWLO #: 16443.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.50
DEPTH TO : 6.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	58%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.12

DATE: 12/23/93

SWLO #: 16443.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.12		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	8.14		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.543	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	296		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	2.17		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	25.1		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	12		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.217		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	20.2		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.12

DATE: 12/23/93

SWLO #: 16443.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.543	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.13

DATE: 12/23/93

SWLO #: 16443.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	19	B	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	17	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	110%	BROMOFLUOROBENZENE	(74-121)	101%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.13

DATE: 12/23/93

SWLO #: 16443.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	300	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	300	JB	4-NITROPHENOL	240	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	190	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	300	JB	BIS(2-ETHYLHEXYL)PHTHALATE	68	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.13

DATE: 12/23/93

SWLO #: 16443.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.13

DATE: 12/23/93

SWLO #: 16443.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	12.3		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	8.27		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.551	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	390		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	2.54		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	16.9		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.11	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	11.8		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.11	U	mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	17.6		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16443.13

DATE: 12/23/93

SWLO #: 16443.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.551	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.14

DATE: 12/23/93

SWLO #: 16443.14 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.2	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	93%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16443.15

DATE: 12/23/93

SWLO #: 16443.15 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/17/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.2	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	103%
1,2-DICHLOROETHANE-D4	(76-114)	103%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.16

DATE: 12/23/93

SWLO #: 16443.16 MB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/17/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	8.4	J	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	111%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.17

DATE: 12/23/93

SWLO #: 16443.17 MB2
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/17/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	8.8	J	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	114%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.02

DATE: 12/23/93

SWLO #: 16443.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.50
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.16		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	4.8		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.546	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	70		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	1.09		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	14		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.109	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	8.19		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.109		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	9.06		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.02

DATE: 12/23/93

SWLO #: 16443.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB2
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.50
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.546	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.03

DATE: 12/23/93

SWLO #: 16443.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.03

DATE: 12/23/93

SWLO #: 16443.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	260	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	260	JB	4-NITROPHENOL	210	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	210	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	280	JB	BIS(2-ETHYLHEXYL)PHTHALATE	66	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.03

DATE: 12/23/93

SWLO #: 16443.03 N1
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LOCATION:
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

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DATE: 12/23/93

SWLO #: 16443.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.44		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	3.78		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.556		mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	134		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	0.989		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	12.3		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.111	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	7.89		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.556		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	12.8		mg/kg	11/23/93	11/26/93	SW846-6010

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PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.556	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.04

DATE: 12/23/93

SWLO #: 16443.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB1
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.21

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	12	U	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/23/93

SWLO #: 16443.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.5SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	260	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	260	JB	4-NITROPHENOL	240	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
.,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	250	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	290	JB	BIS(2-ETHYLHEXYL)PHTHALATE	85	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.00
DEPTH TO : 6.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	72%
TERPHENYL-D14	(18-137)	97%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	54%	2,4,6-TRIBROMOPHENOL	(19-122)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.5SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.51		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	8.58		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.604	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	357		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	1.69		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	21.6		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.331	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	16.8		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	1.33		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	23.3		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 5.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.604	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.05

DATE: 12/23/93

SWLO #: 16443.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.6SB1
LOCATION:
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METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	93%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.05

DATE: 12/23/93

SWLO #: 16443.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.6SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.14

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	410	B	ACENAPHTHENE	380	U
BIS(2-CHLOROETHYL)ETHER	380	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	310	JB	4-NITROPHENOL	210	JB
1,3-DICHLOROBENZENE	380	U	DIBENZOFURAN	380	U
1,4-DICHLOROBENZENE	380	U	2,4-DINITROTOLUENE	380	U
BENZYL ALCOHOL	380	U	2,6-DINITROTOLUENE	380	U
1,2-DICHLOROBENZENE	380	U	DIETHYLPHTHALATE	380	U
2-METHYLPHENOL(O-CRESOL)	79	J	4-CHLOROPHENYL-PHENYLETHER	380	U
BIS(2-CHLOROISOPROPYL)ETHER	380	U	FLUORENE	380	U
4-METHYLPHENOL(P-CRESOL)	41	J	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	380	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	380	U	N-NITROSODIPHENYLAMINE(1)	380	U
NITROBENZENE	380	U	4-BROMOPHENYL-PHENYLETHER	380	U
ISOPHORONE	380	U	HEXACHLOROBENZENE	380	U
2-NITROPHENOL	380	U	PENTACHLOROPHENOL	200	JB
2,4-DIMETHYLPHENOL	380	U	PHENANTHRENE	380	U
BENZOIC ACID	1800	U	ANTHRACENE	380	U
BIS(2-CHLOROETHOXY)METHANE	380	U	DI-N-BUTYL PHTHALATE	380	U
2,4-DICHLOROPHENOL	380	U	FLUORANTHENE	380	U
1,2,4-TRICHLOROBENZENE	380	U	PYRENE	380	U
NAPHTHALENE	380	U	BUTYL BENZYL PHTHALATE	380	U
4-CHLOROANILINE	380	U	3,3'-DICHLOROBENZIDINE	750	U
HEXACHLOROBUTADIENE	380	U	BENZO(A)ANTHRACENE	380	U
4-CHLORO-3-METHYLPHENOL	360	JB	BIS(2-ETHYLHEXYL)PHTHALATE	114	JB
2-METHYLNAPHTHALENE	380	U	CHRYSENE	380	U
HEXACHLOROCYCLOPENTADIENE	380	U	DI-N-OCTYL PHTHALATE	380	U
2,4,6-TRICHLOROPHENOL	380	U	BENZO(B)FLUORANTHENE	380	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.05

DATE: 12/23/93

SWLO #: 16443.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.6SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.14

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	380	U
2-CHLORONAPHTHALENE	380	U	BENZO(A)PYRENE	380	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	380	U
DIMETHYL PHTHALATE	380	U	DIBENZ(A,H)ANTHRACENE	380	U
ACENAPHTHYLENE	380	U	BENZO(G,H,I)PERYLENE	380	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	112%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.05

DATE: 12/23/93

SWLO #: 16443.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.6SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2.47		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	32.2		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.562	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	258		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	4.83		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	118		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	24.6		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	2.14		mg/kg	11/23/93	11/29/93	SW846-7761
ZINC	33.1		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.05

DATE: 12/23/93

SWLO #: 16443.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.6SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 2.00
DEPTH TO : 3.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.562	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.06

DATE: 12/23/93

SWLO #: 16443.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	11	B	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	24	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

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REPORT: 16443.06

DATE: 12/23/93

SWLO #: 16443.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	280	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	300	JB	4-NITROPHENOL	280	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
.,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	240	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	320	JB	BIS(2-ETHYLHEXYL)PHTHALATE	79	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/23/93

SWLO #: 16443.06 N1
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SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	105%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.06

DATE: 12/23/93

SWLO #: 16443.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	4.45		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	13.1		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.57	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	314		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	3.31		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	38.4		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.114	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	16.1		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.684		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	29.1		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.06

DATE: 12/23/93

SWLO #: 16443.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.57	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.07

DATE: 12/23/93

SWLO #: 16443.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	9.6	B	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	25	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.07

DATE: 12/23/93

SWLO #: 16443.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	280	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	300	JB	4-NITROPHENOL	250	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	240	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	380	
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	310	JB	BIS(2-ETHYLHEXYL)PHTHALATE	85	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.07

DATE: 12/23/93

SWLO #: 16443.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	108%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.07

DATE: 12/23/93

SWLO #: 16443.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.93		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	13.4		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.562	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	221		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	3.04		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	41.8		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.112	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	16.1		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.787		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	30		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.07

DATE: 12/23/93

SWLO #: 16443.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 3.00
DEPTH TO : 4.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.562	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.08

DATE: 12/23/93

SWLO #: 16443.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.25

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6.2	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6.2	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6.2	U
CHLOROETHANE	12	U	BENZENE	6.2	U
METHYLENE CHLORIDE	23	B	CIS-1,3-DICHLOROPROPENE	6.2	U
ACETONE	42	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6.2	U	BROMOFORM	6.2	U
1,1-DICHLOROETHENE	6.2	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6.2	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6.2	U	TETRACHLOROETHENE	6.2	U
1,2-DICHLOROETHANE	6.2	U	TOLUENE	6.2	U
1,1,1-TRICHLOROETHANE	6.2	U	CHLOROBENZENE	6.2	U
CARBON TETRACHLORIDE	6.2	U	ETHYLBENZENE	6.2	U
VINYL ACETATE	12	U	STYRENE	6.2	U
BROMODICHLOROMETHANE	6.2	U	1,2-DICHLOROETHENE(TOTAL)	6.2	U
1,1,2,2-TETRACHLOROETHANE	6.2	U	XYLENE (TOTAL)	6.2	U
1,2-DICHLOROPROPANE	6.2	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	111%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.08

DATE: 12/23/93

SWLO #: 16443.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	310	JB	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	340	JB	4-NITROPHENOL	300	JB
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	310	JB
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	65	J
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	360	JB	BIS(2-ETHYLHEXYL)PHTHALATE	81	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.08

DATE: 12/23/93

SWLO #: 16443.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	107%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/23/93

SWLO #: 16443.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.49		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	3.24		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.623	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	196		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	1.07		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	10.3		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.125	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	8.85		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.125	U	mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	10.7		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.08

DATE: 12/23/93

SWLO #: 16443.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB4
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.623	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.09

DATE: 12/23/93

SWLO #: 16443.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	13	B	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	91%	BROMOFLUOROBENZENE	(74-121)	102%
1,2-DICHLOROETHANE-D4	(70-121)	80%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.09

DATE: 12/23/93

SWLO #: 16443.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	260	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	280	JB	4-NITROPHENOL	210	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	140	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	310	JB	BIS(2-ETHYLHEXYL)PHTHALATE	70	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/23/93

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SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
CENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	108%	PHENOL-D5	(24-113)	56%
-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.09

DATE: 12/23/93

SWLO #: 16443.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	3.46		mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	6.05		mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	0.54	U	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	258		mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	1.62		mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	17.7		mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.108	U	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	10		mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	0.108		mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	15.7		mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.09

DATE: 12/23/93

SWLO #: 16443.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.54	U	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.10

DATE: 12/23/93

SWLO #: 16443.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	54	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	59	
METHYLENE CHLORIDE	7.5	B	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	130	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	50		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	62	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	60	
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	107%	BROMOFLUOROBENZENE	(74-121)	86%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.10

DATE: 12/23/93

SWLO #: 16443.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4900	B	ACENAPHTHENE	2710	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5300	B	4-NITROPHENOL	5250	B
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	1900		2,4-DINITROTOLUENE	2770	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	4100		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4620	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2820		PYRENE	3400	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	5330	B	BIS(2-ETHYLHEXYL)PHTHALATE	84	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.10

DATE: 12/23/93

SWLO #: 16443.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	111%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	71%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.10

DATE: 12/23/93

SWLO #: 16443.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	213	mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	56	mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	200	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	513	mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	6.59	mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	35.7	mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.531	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	62.6	mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	6.05	mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	68.6	mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16443.10

DATE: 12/23/93

SWLO #: 16443.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.49	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.11

DATE: 12/23/93

SWLO #: 16443.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 11/22/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	50	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	55	
ETHYLENE CHLORIDE	6.5	B	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	16	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	45		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	58	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	55	
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	108%	BROMOFLUOROBENZENE	(74-121)	92%
',2-DICHLOROETHANE-D4	(70-121)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.11

DATE: 12/23/93

SWLO #: 16443.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4890	B	ACENAPHTHENE	2690	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5400	B	4-NITROPHENOL	5060	B
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	1950		2,4-DINITROTOLUENE	2730	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	4140		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4380	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2940		PYRENE	3460	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	5350	B	BIS(2-ETHYLHEXYL)PHTHALATE	78	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.11

DATE: 12/23/93

SWLO #: 16443.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	108%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	72%	2,4,6-TRIBROMOPHENOL	(19-122)	80%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/23/93

SWLO #: 16443.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	231	mg/kg	11/23/93	11/24/93	SW846-6010
LEAD	62.2	mg/kg	11/23/93	11/24/93	SW846-6010
SELENIUM	219	mg/kg	11/23/93	11/24/93	SW846-6010
BARIUM	502	mg/kg	11/23/93	11/26/93	SW846-6010
CADMIUM	7.67	mg/kg	11/23/93	11/26/93	SW846-6010
CHROMIUM	41.5	mg/kg	11/23/93	11/26/93	SW846-6010
MERCURY	0.518	mg/kg	11/23/93	11/23/93	SW846-7471
NICKEL	68.4	mg/kg	11/23/93	11/26/93	SW846-6010
SILVER	5.73	mg/kg	11/23/93	11/28/93	SW846-7761
ZINC	74.8	mg/kg	11/23/93	11/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/23/93

SWLO #: 16443.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	6.06	mg/kg	11/19/93	11/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16443.12

DATE: 12/23/93

SWLO #: 16443.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	13	B	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	79%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.12

DATE: 12/23/93

SWLO #: 16443.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	300	JB	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	300	JB	4-NITROPHENOL	230	JB
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	160	JB
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	310	JB	BIS(2-ETHYLHEXYL)PHTHALATE	59	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443.12

DATE: 12/23/93

SWLO #: 16443.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.11SB1
LOCATION:
DATE ANALYZED : 12/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/16/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 4.00
DEPTH TO : 5.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	102%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931119A
INST. BATCH: 14493
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931119A
LOCATION:

ANALYZED : 11/19/93 10:45
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	90%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
' = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
.. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931119A
INST. BATCH: 14493
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/19/93 11:30
ANALYZED : 11/19/93 11:52

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	55	111	54	108	2.82	16	60-141
TRICHLOROETHENE	50	56	112	61	122	8.45	21	71-134
BENZENE	50	49	99	50	100	1.75	13	79-128
TOLUENE	50	44	89	43	86	2.53	11	80-122
CHLOROBENZENE	50	50	99	50	101	1.8	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	92	91	81-117
BROMOFLUOROBENZENE	89	92	74-121
1,2-DICHLOROETHANE-D4	104	102	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931122A
INST. BATCH: 14661
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931122A
LOCATION:

ANALYZED : 11/22/93 11:20
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	5	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	23	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
.. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931122A
INST. BATCH: 14661
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/22/93 11:47
ANALYZED : 11/22/93 12:13

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	55	111	49	98	12.6	16	60-141
TRICHLOROETHENE	50	56	112	62	123	9.33	21	71-134
BENZENE	50	51	102	51	101	< 1	13	79-128
TOLUENE	50	50	100	48	96	3.94	11	80-122
CHLOROBENZENE	50	53	105	53	107	1.43	10	80-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	98	96	81-117
BROMOFLUOROBENZENE	93	109	74-121
1,2-DICHLOROETHANE-D4	101	88	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931123B
INST. BATCH: 14795
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931123B
LOCATION:

ANALYZED : 11/23/93 10:07
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	8.6	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	18	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
A = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Va
QASEQ: K931123B
DATE: 12-23-93

SAMPLE MATRIX: SOIL
SWLO # LCS 3
DATE ANALYZED: 12-23-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCS 3

VOLATILE LABORATORY CONTROL SPIKE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	43	85	60 - 14_
TRICHLOROETHENE	50	46	92	71 - 134
BENZENE	50	49	99	79 - 128
TOLUENE	50	47	94	82 - 123
CHLOROBENZENE	50	50	100	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	95%
BROMOFLUOROBENZENE(74-121)	100%
1,2-DICHLOROETHANE-d4(70-121)	85%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Vb
QASEQ: K931123B
DATE: 12-23-93

SAMPLE MATRIX: SOIL
SWLO # LCSD 3
DATE ANALYZED: 12-23-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCSD 3

VOLATILE LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/kg)	SPIKE CONCENTRATION (ug/kg)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	39	78	60 - 141
TRICHLOROETHENE	50	49	98	71 - 134
BENZENE	50	47	95	79 - 128
TOLUENE	50	50	101	82 - 123
CHLOROBENZENE	50	51	102	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117)	101%
BROMOFLUOROBENZENE(74-121)	109%
1,2-DICHLOROETHANE-d4(70-121)	82%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : N931123A
INST. BATCH: 4104
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : N931123A
LOCATION:

ANALYZED : 11/23/93 10:09
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND		1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	1.2	J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	107%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Ve
QASEQ: N931123A
DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # LCS 4
DATE ANALYZED: 12-23-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCS 4

VOLATILE LABORATORY CONTROL SPIKE RECOVERY

COMPOUND	SPIKE ADDED (ug/l)	SPIKE CONCENTRATION (ug/l)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	52	104	60 - 141
TRICHLOROETHENE	50	49	97	71 - 134
BENZENE	50	46	93	79 - 128
TOLUENE	50	51	102	82 - 123
CHLOROBENZENE	50	52	104	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(88-110)	96%
BROMOFLUOROBENZENE(86-115)	94%
1,2-DICHLOROETHANE-d4(76-114)	110%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Vf
QASEQ: N931123A
DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # LCSD 4
DATE ANALYZED: 12-23-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCSD 4

VOLATILE LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/l)	SPIKE CONCENTRATION (ug/l)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	50	101	60 - 14[illegible]
TRICHLOROETHENE	50	51	102	71 - 134
BENZENE	50	49	97	79 - 128
TOLUENE	50	52	104	82 - 123
CHLOROBENZENE	50	53	106	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(88-110)	94%
BROMOFLUOROBENZENE(86-115)	92%
1,2-DICHLOROETHANE-d4(76-114)	108%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16298Vg
QASEQ: N931124A
DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8240, EPA METHODOLOGY
DILUTION FACTOR: 1
PROJECT: TINKER AFB RFI
SAMPLE ID: VBLK5

RESULTS REPORTED IN ug/L or Parts Per Billion (PPB)

VOLATILES	QUANT. LIMIT	RESULTS	VOLATILES	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
BROMOMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
VINYL CHLORIDE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
CHLOROETHANE	10	ND	TRICHLOROETHENE	5	ND
METHYLENE CHLORIDE	5	ND	DIBROMOCHLOROMETHANE	5	ND
ACETONE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	BENZENE	5	ND
1,1-DICHLOROETHENE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHANE	5	ND	2-CHLOROETHYLVINYLETHER	10	ND
TOTAL-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
CHLOROFORM	5	ND	2-HEXANONE	10	ND
1,2-DICHLOROETHANE	5	ND	4-METHYL-2-PENTANONE	10	ND
2-BUTANONE	10	ND	TETRACHLOROETHENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TOLUENE	5	ND
CARBON TETRACHLORIDE	5	ND	CHLOROBENZENE	5	ND
VINYL ACETATE	10	ND	ETHYLBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	STYRENE	5	ND
			TOTAL XYLENES	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(88-110) 94% BROMOFLUOROBENZENE(86-115) 102% 1,2-DICHLOROETHANE-d4(76-114) 94%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
* = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Vc
QASEQ: N931124A
DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # LCS 5
DATE ANALYZED: 12-24-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCS 5

VOLATILE LABORATORY CONTROL SPIKE RECOVERY

COMPOUND	SPIKE ADDED (ug/l)	SPIKE CONCENTRATION (ug/l)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	58	116	60 - 141
TRICHLOROETHENE	50	65	130	71 - 134
BENZENE	50	57	114	79 - 128
TOLUENE	50	52	104	82 - 123
CHLOROBENZENE	50	52	104	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(88-110)	100%
BROMOFLUOROBENZENE(86-115)	105%
1,2-DICHLOROETHANE-d4(76-114)	100%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Vd
QASEQ: N931124A
DATE: 12-23-93

SAMPLE MATRIX: WATER
SWLO # LCSD 5
DATE ANALYZED: 12-24-93
METHOD REFERENCE: SW846-8240
SAMPLE ID: LCSD 5

VOLATILE LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/l)	SPIKE CONCENTRATION (ug/l)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	54	108	60 - 141
TRICHLOROETHENE	50	52	104	71 - 134
BENZENE	50	52	105	79 - 128
TOLUENE	50	52	103	82 - 123
CHLOROBENZENE	50	51	102	80 - 125

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(88-110)	100%
BROMOFLUOROBENZENE(86-115)	100%
1,2-DICHLOROETHANE-d4(76-114)	108%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/23/93

PROJECT : TINKER AFB RFI
SDG: 16443

MATRIX : SOIL

SAMPLE	: 16443.09	QAQC: K931123B	ANALYZED : 11/23/93 11:24
SPIKE SAMPLE	: 16443.10	QAQC: K931122A	ANALYZED : 11/22/93 19:40
SPIKE DUP SAMPLE	: 16443.11	QAQC: K931122A	ANALYZED : 11/22/93 20:03

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	54		50	92	45	84	8.63	22	59-172
TRICHLOROETHENE	54		54	99	50	92	7.37	24	62-137
BENZENE	54		59	109	55	101	7.3	21	66-142
TOLUENE	54		62	116	58	108	6.32	21	59-139
CHLOROBENZENE	54		60	111	55	102	8.85	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	91	107	108	81-117
BROMOFLUOROBENZENE	102	86	92	74-1
1,2-DICHLOROETHANE-D4	80	99	88	70-1.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443

DATE: 12/23/93

SWLO QAQC#: 931118-001
PROJECT : TINKER AFB RFI
SAMPLE #: 931118 SBLK1 LB1
LOCATION: LABQC
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	260	J	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	260	J	4-NITROPHENOL	150	J
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	200	J
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	240	J	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16443

DATE: 12/23/93

SWLO QAQC#: 931118-001
PROJECT : TINKER AFB RFI
SAMPLE #: 931118 SBLK1 LB1
LOCATION: LABQC
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/18/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16443Ba
QASEQ: 931118-001
DATE: 12-23-93

SAMPLE MATRIX: SOIL
SWLO # 16443.10-16443.11 (MS/MSD)
METHOD REFERENCE: SW846-8270
DILUTION FACTOR: 1.1
PROJECT: TINKER AFB

DATE SAMPLED: 11-16-93
DATE SUBMITTED: 11-18-93
DATE EXTRACTED: 11-18-93
DATE ANALYZED: 12-01-93
SAMPLE ID: I24.11SB1 (MS/MSD)

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	7200	0	3600	46	26 - 90
2-CHLOROPHENOL	7200	0	5000	66	25 - 102
1,4-DICHLOROBENZENE	3600	0	2100	58	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3600	0	2500	70	41 - 126
1,2,4-TRICHLOROBENZENE	3600	0	2800	78	38 - 107
4-CHLORO-3-METHYLPHENOL	7200	0	4500	60	26 - 103
ACENAPHTHENE	3600	0	2600	71	31 - 137
4-NITROPHENOL	7200	0	6600	90	11 - 114
2,4-DINITROTOLUENE	3600	0	3200	88	28 - 89
PENTACHLOROPHENOL	7200	0	5400	73	17 - 109
PYRENE	3600	0	3400	94	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	7200	3500	46	0	35	26 - 90
2-CHLOROPHENOL	7200	5100	67	1	50	25 - 102
1,4-DICHLOROBENZENE	3600	2100	60	2	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3600	2600	71	2	38	41 - 126
1,2,4-TRICHLOROBENZENE	3600	2900	82	4	23	38 - 107
4-CHLORO-3-METHYLPHENOL	7200	4600	60	0	33	26 - 103
ACENAPHTHENE	3600	2500	71	1	19	31 - 137
4-NITROPHENOL	7200	6400	86	4	50	11 - 114
2,4-DINITROTOLUENE	3600	3100	87	1	47	28 - 89
PENTACHLOROPHENOL	7200	5100	70	5	47	17 - 109
PYRENE	3600	3400	96	2	36	35 - 142

QA/QC SURROGATE RECOVERIES

MS								
NITROBENZENE-d5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	84%	TERPHENYL-d14	(18-137)	111%
PHENOL-d5	(24-113)	55%	2-FLUOROPHENOL	(25-121)	72%	2,4,6-TRIBROMOPHENOL	(19-122)	850%
MSD								
NITROBENZENE-d5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	83%	TERPHENYL-d14	(18-137)	108%
PHENOL-d5	(24-113)	54%	2-FLUOROPHENOL	(25-121)	72%	2,4,6-TRIBROMOPHENOL	(19-122)	80%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16443aa
REPORT DATE: 12-23-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/24/93	112393I1	1.0	mg/Kg	< 1.0
LEAD	11/24/93	112393I1	0.30	mg/Kg	< 0.30
SELENIUM	11/24/43	112393I1	0.50	mg/Kg	< 0.50
BARIUM	11/26/93	112393I1	0.50	mg/Kg	< 0.50
CADMIUM	11/26/93	112393I1	0.30	mg/Kg	< 0.30
CHROMIUM	11/26/93	112393I1	0.50	mg/Kg	< 0.50
NICKEL	11/26/93	112393I1	1.0	mg/Kg	< 1.0
ZINC	11/26/93	112393I1	1.5	mg/Kg	< 1.5
MERCURY	11/23/93	112393HG03	0.10	mg/Kg	< 0.10
SILVER	11/28/93	112393F1	0.10	mg/Kg	< 0.10
TOTAL CN	11/20/93	111993CN	0.50	mg/Kg	< 0.50

qc/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16443bb
REPORT DATE: 12-23-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/24/93	200	204	102	80-120
LEAD	11/24/93	50	48	96	80-120
SELENIUM	11/24/93	200	197	99	80-120
BARIUM	11/26/93	200	203	102	80-120
CADMIUM	11/26/93	5.0	4.9	98	80-120
CHROMIUM	11/26/93	20.0	20.7	104	80-120
NICKEL	11/26/93	50.0	51.0	102	80-120
ZINC	11/26/93	50.0	48.4	97	80-120
MERCURY	11/23/93	2.45	2.59	105	80-120
SILVER	11/28/93	5.0	4.85	97	80-120
TOTAL CN	11/20/93	0.5	0.545	111	80-120

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16443cc
REPORT DATE: 12-23-93

MATRIX: **SOIL**
SAMPLE ID: **I24.11SB1 4-5 MS1**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	11/24/93	3.46	216	213	97	75-125
LEAD	11/24/93	6.05	54.0	56.0	93	75-125
SELENIUM	11/24/93	< 0.540	216	200	93	75-125
BARIUM	11/26/93	258	216	513	118	75-125
CADMIUM	11/26/93	1.62	5.40	6.59	92	75-125
CHROMIUM	11/26/93	17.7	21.6	35.7	83	75-125
NICKEL	11/26/93	10.0	54.0	62.6	97	75-125
ZINC	11/26/93	15.7	54.0	68.6	98	75-125
MERCURY	11/23/93	< 0.108	0.540	0.531	98	75-125
SILVER	11/28/93	0.108	5.40	6.05	110	75-125
CYANIDE	11/20/93	< 0.540	5.40	5.49	102	75-125

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16443dd
REPORT DATE: 12-23-93

MATRIX: **SOIL**
SAMPLE ID: **I24.11SB1 4-5 SD1**
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	213	213	8.1	20
LEAD	56.0	62.2	10.4	20
SELENIUM	200	219	9.1	20
BARIUM	513	502	2.2	20
CADMIUM	6.59	7.67	15.1	20
CHROMIUM	35.7	41.5	15.1	20
NICKEL	62.6	68.4	8.9	20
ZINC	68.6	74.8	8.7	20
MERCURY	0.531	0.518	2.5	20
SILVER	6.05	5.73	5.4	20
TOTAL CN	5.49	6.06	9.9	20

C/dn

Engineering-Science Inc

Austin, Texas

CHAIN OF CUSTODY RECORD FED EX AIRBILL # 8503061932

PROJECT NO.	PROJECT NAME/LOCATION
AU401.08	TINKER AFB RFI WWTP

SAMPLERS (Signatures) RICK NELSON [signature]

SAMPLE NO.	DATE	TIME	MATRIX	SAMPLE DESCRIPTION	NO. OF CONTAINERS	TCLP VOLATILES	TCLP METALS										REMARKS
~~I24.81~~	11/18/93		SOIL	24.8 (DRUM COMP)	2	X	X										
2	11/18/93		SOIL	32.8 A (DRUM COMP A)	2	X	X										
3	11/18/93		"	32.8 B (DRUM COMP B)	2	X	X										
4	11/18/93		"	32.8 C (DRUM COMP C)	2	X	X										
5	11/18/93		"	24.12 (DRUM COMP)	2	X	X										
6	11/18/93		"	24.19 (DRUM COMP A)	2	X	X										
7	11/18/93		"	24.19 (DRUM COMP B)	2	X	X										
8	11/18/93		"	24.2 (DRUM COMP)	2	X	X										
9	11/18/93		"	24.10 (DRUM COMP)	2	X	X										
10	11/18/93		"	24.11 (DRUM COMP)	2	X	X										
11	11/18/93		"	24.1 (DRUM COMP)	2	X	X										
12	11/18/93		"	24.9 (DRUM COMP)	2	X	X										

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	11-19-93	1200	Fed Ex Shipment				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
					11/20/93	0900	[signature]

"Relinquished by" and **"Received by"** boxes must be completed for all transfers.

White: laboratory returns with data, **yellow**: laboratory copy, **pink**: sampler copy

Blue

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.01

DATE: 12/22/93

SWLO #: 16495.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.8
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0075	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	97%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	103%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.01

DATE: 12/22/93

SWLO #: 16495.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.8
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	1.8		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.003	U	mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.008		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.136		mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.003		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.02

DATE: 12/22/93

SWLO #: 16495.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.8A
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.016	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	102%
1,2-DICHLOROETHANE-D4	(76-114)	100%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.02

DATE: 12/22/93

SWLO #: 16495.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.8A
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.157	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	2.24	mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.009	mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.129	mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.098	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.059	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.313	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.003	mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.03

DATE: 12/22/93

SWLO #: 16495.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.8B
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0051	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	95%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.03

DATE: 12/22/93

SWLO #: 16495.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.8B
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	1.3		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.004		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.021		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.04

DATE: 12/22/93

SWLO #: 16495.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.8C
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.015	J
CHLOROFORM	0.0087	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	101%
1,2-DICHLOROETHANE-D4	(76-114)	104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16495.04

DATE: 12/22/93

SWLO #: 16495.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.8C
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	1.5		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.007		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.013		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.002		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.05

DATE: 12/22/93

SWLO #: 16495.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.12
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0062	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.05

DATE: 12/22/93

SWLO #: 16495.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.12
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	2		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.031		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.007		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.06

DATE: 12/22/93

SWLO #: 16495.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.19A
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.006	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0073	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.06

DATE: 12/22/93

SWLO #: 16495.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.19A
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	3.1		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.045		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.009		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.138		mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.023		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.07

DATE: 12/22/93

SWLO #: 16495.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.19B
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.018	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0073	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16495.07

DATE: 12/22/93

SWLO #: 16495.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.19B
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	3.1		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.003	U	mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.005	U	mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.103		mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.156		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.08

DATE: 12/22/93

SWLO #: 16495.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.2
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.045	
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0082	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	105%	BROMOFLUOROBENZENE	(86-115)	101%
1,2-DICHLOROETHANE-D4	(76-114)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.08

DATE: 12/22/93

SWLO #: 16495.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.2
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	3.7		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.027		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.005	U	mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	1.67		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.09

DATE: 12/22/93

SWLO #: 16495.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.10
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.0051	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115) 100%
1,2-DICHLOROETHANE-D4	(76-114)	101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.09

DATE: 12/22/93

SWLO #: 16495.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.10
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	1.8		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.027		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.006		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.01		mg/l	/ /	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.10

DATE: 12/22/93

SWLO #: 16495.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.11
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.032	
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0052	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.10

DATE: 12/22/93

SWLO #: 16495.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.11
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	1.3		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.004		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.009		mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.11

DATE: 12/22/93

SWLO #: 16495.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.1
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.026	
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0052	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	104%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114)	104%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.11

DATE: 12/22/93

SWLO #: 16495.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.1
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
BARIUM TOXICITY	3.7		mg/l	11/22/93	12/02/93	SW6010
CADMIUM TOXICITY	0.003		mg/l	11/22/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.005	U	mg/l	11/22/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/22/93	12/02/93	SW6010
SILVER TOXICITY	0.011		mg/l	11/22/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/22/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/22/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.12

DATE: 12/22/93

SWLO #: 16495.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.9
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.12

DATE: 12/22/93

SWLO #: 16495.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.9
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.25	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	2.9		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.015	U	mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.025	U	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.25	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.5	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.13

DATE: 12/22/93

SWLO #: 16495.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.7
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.1	
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.008	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	105%
1,2-DICHLOROETHANE-D4	(76-114)	109%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.13

DATE: 12/22/93

SWLO #: 16495.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.7
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	0.289		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.006		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.015		mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.011		mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.002	U	mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.14

DATE: 12/22/93

SWLO #: 16495.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.4
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	1.5		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.003	U	mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.015		mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.002		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16495.14

DATE: 12/22/93

SWLO #: 16495.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.4
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.018	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0086	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	104%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	109%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.15

DATE: 12/22/93

SWLO #: 16495.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.3
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/30/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.0082	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115) 106%
1,2-DICHLOROETHANE-D4	(76-114)	105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.15

DATE: 12/22/93

SWLO #: 16495.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.3
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	3.7		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.009		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.005	U	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.002		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.16

DATE: 12/22/93

SWLO #: 16495.16 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.3
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	108%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.16

DATE: 12/22/93

SWLO #: 16495.16 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.3
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.071		mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	1.3		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.003	U	mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.005	U	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.003		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.17

DATE: 12/22/93

SWLO #: 16495.17 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.2
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.0082	J
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	102%
1,2-DICHLOROETHANE-D4	(76-114)	104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.17

DATE: 12/22/93

SWLO #: 16495.17 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.2
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	2.7		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.015		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.006		mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.005		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.18

DATE: 12/22/93

SWLO #: 16495.18 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.1
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.04	
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	103%
1,2-DICHLOROETHANE-D4	(76-114)	104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.18

DATE: 12/22/93

SWLO #: 16495.18 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.1
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	3.1		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.02		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.015		mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.19

DATE: 12/22/93

SWLO #: 16495.19 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.5
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0069	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	109%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.19

DATE: 12/22/93

SWLO #: 16495.19 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 32.5
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.25	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	2.3		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.015	U	mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.025	U	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.25	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.5	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.002		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.20

DATE: 12/22/93

SWLO #: 16495.20 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.5
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	93%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	106%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.20

DATE: 12/22/93

SWLO #: 16495.20 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.5
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	2.5		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.008		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.058		mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.005		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.21

DATE: 12/22/93

SWLO #: 16495.21 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.6
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.035	
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.0078	JB	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115) 107%
1,2-DICHLOROETHANE-D4	(76-114)	109%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.21

DATE: 12/22/93

SWLO #: 16495.21 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.6
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.179	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	2.1	mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.012	mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.025	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.126	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.077	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.303	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.003	mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.22

DATE: 12/22/93

SWLO #: 16495.22 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.4
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.22

DATE: 12/22/93

SWLO #: 16495.22 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: 24.4
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	4.4		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.028		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.005	U	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	0.1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.004		mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.23

DATE: 12/22/93

SWLO #: 16495.23 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: RCP1
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/01/93
DILUTION FACTOR: 5.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.025	U	1,1-DICHLOROETHENE	0.025	U
CARBON TETRACHLORIDE	0.025	U	TETRACHLOROETHENE	0.025	U
CHLOROBENZENE	0.025	U	TRICHLOROETHENE	0.025	U
CHLOROFORM	0.025	U	VINYL CHLORIDE	0.05	U
1,2-DICHLOROETHANE	0.025	U	2-BUTANONE	0.05	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115) 101%
1,2-DICHLOROETHANE-D4	(76-114)	101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495.23

DATE: 12/22/93

SWLO #: 16495.23 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: RCP1
LOCATION:

DATE SAMPLED: 11/18/93
SAMPLE MATRIX : SG
DEPTH FROM : 0.00
DEPTH TO : 0.00

TCLP METALS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
BARIUM TOXICITY	5.2		mg/l	11/23/93	12/02/93	SW6010
CADMIUM TOXICITY	0.194		mg/l	11/23/93	12/02/93	SW6010
CHROMIUM TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
LEAD TOXICITY	0.05	U	mg/l	11/23/93	12/02/93	SW6010
SILVER TOXICITY	0.01	U	mg/l	11/23/93	12/02/93	SW6010
SELENIUM TOXICITY	1	U	mg/l	11/23/93	12/02/93	SW6010
HG TOXICITY	0.002	U	mg/l	11/23/93	12/06/93	SW 7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495

DATE: 12/20/93

SWLO QAQC#: C931203A
PROJECT : TINKER AFB-RFI
SAMPLE #: C931203A LB1
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.005	U	1,1-DICHLOROETHENE	0.005	U
CARBON TETRACHLORIDE	0.0019	J	TETRACHLOROETHENE	0.005	U
CHLOROBENZENE	0.005	U	TRICHLOROETHENE	0.005	U
CHLOROFORM	0.005	U	VINYL CHLORIDE	0.01	U
1,2-DICHLOROETHANE	0.005	U	2-BUTANONE	0.01	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	103%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495

DATE: 12/20/93

SWLO QAQC#: C931203A
PROJECT : TINKER AFB-RFI
SAMPLE #: TC120193A1 LB2
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.005	U	1,1-DICHLOROETHENE	0.005	U
CARBON TETRACHLORIDE	0.005	U	TETRACHLOROETHENE	0.042	
CHLOROBENZENE	0.005	U	TRICHLOROETHENE	0.005	U
CHLOROFORM	0.005	U	VINYL CHLORIDE	0.01	U
1,2-DICHLOROETHANE	0.005	U	2-BUTANONE	0.01	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495

DATE: 12/20/93

SWLO QAQC#: C931203A
PROJECT : TINKER AFB-RFI
SAMPLE #: ZH113093A1 LB3
LOCATION:
DATE ANALYZED : 12/03/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.005	U	1,1-DICHLOROETHENE	0.005	U
CARBON TETRACHLORIDE	0.005	U	TETRACHLOROETHENE	0.0042	J
CHLOROBENZENE	0.005	U	TRICHLOROETHENE	0.005	U
CHLOROFORM	0.005	U	VINYL CHLORIDE	0.01	U
1,2-DICHLOROETHANE	0.005	U	2-BUTANONE	0.01	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495

DATE: 12/20/93

SWLO QAQC#: C931206A
PROJECT : TINKER AFB-RFI
SAMPLE #: C931206A LB1
LOCATION:
DATE ANALYZED : 12/06/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.005	U	1,1-DICHLOROETHENE	0.005	U
CARBON TETRACHLORIDE	0.005	U	TETRACHLOROETHENE	0.005	U
CHLOROBENZENE	0.005	U	TRICHLOROETHENE	0.005	U
CHLOROFORM	0.0017	J	VINYL CHLORIDE	0.01	U
1,2-DICHLOROETHANE	0.005	U	2-BUTANONE	0.01	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	96%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16495Vb

DATE: 12-22-93

SAMPLE MATRIX: WATER
SWLO # 16495 LCS/LCSD
METHOD REFERENCE: SWD846-8240
DATE ANALYZED: 12-03-93

VOLATILE LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	LCS SPIKE CONCENTRATION (ug/L)	SPIKE PERCENT RECOVERY	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	51	103	54 - 161
TRICHLOROETHENE	50	51	102	73 - 150
BENZENE	50	50	99	74 - 158
TOLUENE	50	50	101	75 - 140
CHLOROBENZENE	50	51	102	72 - 135

COMPOUND	SPIKE ADDED (ug/L)	LCSD SPIKE CONCENTRATION (ug/L)	SPIKE PERCENT RECOVERY	RPD %	QC LIMITS RECOVERY
1,1-DICHLOROETHENE	50	50	99	2.0	54 - 161
TRICHLOROETHENE	50	50	101	2.0	73 - 150
BENZENE	50	49	98	2.0	74 - 158
TOLUENE	50	49	98	2.0	75 - 140
CHLOROBENZENE	50	50	101	2.0	72 - 135

QA/QC SURROGATE RECOVERIES

LCS		LCSD	
TOLUENE-d8(88-110)	100%	TOLUENE-d8(88-110)	98%
BROMOFLUOROBENZENE(86-115)	101%	BROMOFLUOROBENZENE(86-115)	101%
1,2-DICHLOROETHANE-d4(76-114)	102%	1,2-DICHLOROETHANE-d4(76-114)	105%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931206A
INST. BATCH: 15346
REPORTED : 12/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 12/06/93 11:07
ANALYZED : 12/06/93 11:33

VOLATILE ORGANICS /TCLP EXTRACTION
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	52	104	51	102	1.82	32	54-161
BENZENE	50	51	103	52	104	1.12	46	70-134
TRICHLOROETHENE	50	52	103	57	114	9.7	38	67-149
TOLUENE	50	50	101	51	102	< 1	15	75-140
CHLOROBENZENE	50	50	100	51	102	2.32	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	101	88-110
BROMOFLUOROBENZENE	103	101	86-115
1,2-DICHLOROETHANE-D4	104	108	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16495

DATE: 12/20/93

SWLO QAQC#: C931207A
PROJECT : TINKER AFB-RFI
SAMPLE #: C931207A LB1
LOCATION:
DATE ANALYZED : 12/07/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TCLP VOLATILES
RESULTS REPORT IN mg/L

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
BENZENE	0.005	U	1,1-DICHLOROETHENE	0.005	U
CARBON TETRACHLORIDE	0.005	U	TETRACHLOROETHENE	0.005	U
CHLOROBENZENE	0.005	U	TRICHLOROETHENE	0.005	U
CHLOROFORM	0.005	U	VINYL CHLORIDE	0.01	U
1,2-DICHLOROETHANE	0.005	U	2-BUTANONE	0.01	U

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931207A
INST. BATCH: 200062
REPORTED : 12/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 12/07/93 12:24
ANALYZED : 12/07/93 12:50

VOLATILE ORGANICS /TCLP EXTRACTION
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	57	113	51	102	10.1	32	54-161
BENZENE	50	52	105	51	103	2	46	70-134
TRICHLOROETHENE	50	51	102	52	105	2.46	38	67-149
TOLUENE	50	51	102	51	101	< 1	15	75-140
CHLOROBENZENE	50	50	100	51	102	2.24	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	101	88-110
BROMOFLUOROBENZENE	97	104	86-115
1,2-DICHLOROETHANE-D4	98	103	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

REPORT: 16495a
REPORT DATE: 12-08-93

MATRIX: **TCLP**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCHID	DET LIMIT	UNIT	RESULTS
BARIUM	12/02/93	120193I6	0.005	mg/L	< 0.005
CADMIUM	12/02/93	120193I6	0.003	mg/L	< 0.003
CHROMIUM	12/02/93	120193I6	0.005	mg/L	< 0.005
SILVER	12/02/93	120193I6	0.010	mg/L	< 0.010
ARSENIC	12/02/93	120193I6	0.050	mg/L	< 0.050
LEAD	12/02/93	120193I6	0.050	mg/L	< 0.050
SELENIUM	12/02/93	120193I6	0.100	mg/L	< 0.100
MERCURY	12/06/93	120193HG03	0.002	mg/L	< 0.002
BARIUM	12/02/93	120193I5	0.005	mg/L	< 0.005
CADMIUM	12/02/93	120193I5	0.003	mg/L	< 0.003
CHROMIUM	12/02/93	120193I5	0.005	mg/L	< 0.005
SILVER	12/02/93	120193I5	0.010	mg/L	< 0.010
ARSENIC	12/02/93	120193I5	0.050	mg/L	< 0.050
LEAD	12/02/93	120193I5	0.050	mg/L	< 0.050
SELENIUM	12/02/93	120193I5	0.100	mg/L	< 0.100

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

REPORT: 16495b
REPORT DATE: 12-08-93

MATRIX: **TCLP**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/L)	SPIKED RESULTS (mg/L)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
BARIUM	12/02/93	2.0	2.1	105	80-120
CADMIUM	12/02/93	0.050	0.053	106	80-120
CHROMIUM	12/02/93	0.200	0.215	108	80-120
SILVER	12/02/93	0.050	0.058	116	80-120
ARSENIC	12/02/93	2.0	2.1	105	80-120
LEAD	12/02/93	0.500	0.573	114	80-120
SELENIUM	12/02/93	2.0	2.0	100	80-120
MERCURY	12/06/93	0.0049	0.0052	105	80-120
BARIUM	12/02/93	2.0	2.2	110	80-120
CADMIUM	12/02/93	0.050	0.053	106	80-120
CHROMIUM	12/02/93	0.200	0.218	109	80-120
SILVER	12/02/93	0.050	0.050	100	80-120
ARSENIC	12/02/93	2.0	2.1	105	80-120
LEAD	12/02/93	0.500	0.580	118	80-120
SELENIUM	12/02/93	2.0	2.1	105	80-120

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

January 7th, 1993

Mr. Kevin Tynes
ENGINEERING-SCIENCE, INC.
7800 Shoal Creek Blvd, Suite 222W
Austin, TX 78757

Subject: Tinker AFB RFI
SDG#: 16642A
SWLO #: 16642.01 - 16642.20

Dear Mr. Tynes:

Enclosed we are submitting the hardcopy report and diskette deliverable for your samples received in our laboratory on December 2, 1993 for the above-captioned project.

All samples, blanks and spikes were extracted and analyzed according to SW-846 8080 METHOD. A five-point Arochlor calibration was run for each Arochlor of interest, and a medium-level Arochlor standard was analyzed every 10 samples. Channel 3A and channel 3B were both used for quantification and confirmation. However, some samples had surrogate recoveries out of the range of advisory limits. These samples were re-extracted (out of holding time) and re-analyzed. None of the re-extracts showed any significant increase in surrogate recovery. Therefore, the original results were reported. The surrogates were not used for reporting purpose on confirmation runs.

If in your review you have any questions or require additional information, please call.

Sincerely,

Daryl Alstatt
Project Officer

DA/jc

Enclosures

1700 West Albany • Broken Arrow, OK 74012-1421 • (918) 251-2858 • Fax (918) 251-2599

Engineering-Science Inc

Austin, Texas

CARRIER: FEDERAL EXPRESS
AIRBILL #: 8503062665

CHAIN OF CUSTODY RECORD

PROJECT NO. AU401.07

PROJECT NAME/LOCATION TINKER AFB RFI

SAMPLERS (Signatures) JOHN OSWEILER, CHRIS VAIL

John C. Osweiler, Christie Scully Vail

SAMPLE ~~NO.~~ Type	DATE	TIME	MATRIX Method		~~SAMPLE DESCRIPTION~~ LocID	Depth Begin	Depth End	NO. OF CONTAINERS	PCB	SW8080 ICE	Ambient Conditions Blank	Equipment Blank	Trip Blank	Cooler Letter
N1	11/30/93	0845	SO	G	I24.2SS1	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0919	SO	G	I24.2SS2	0.2	0.5	1	✓		0	0	0	A
FR1	11/30/93	0919	SO	G	I24.2SS2	0.2	0.5	1	✓		0	0	0	A
MS1	11/30/93	0919	SO	G	I24.2SS2	0.2	0.5	1	✓		0	0	0	A
SD1	11/30/93	0919	SO	G	I24.2SS2	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0920	SO	G	I24.2SS3	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0930	SO	G	I24.2SS4	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0900	SO	G	I24.3SS1	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0850	SO	G	I24.3SS2	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0850	SO	G	I24.3SS3	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0950	SO	G	I24.5SS1	0.2	0.5	1	✓		0	0	0	A
N1	11/30/93	0938	SO	G	I24.5SS2	0.2	0.5	1	✓		0	0	0	A

Analysis Required / Preservative

Field Lot Control Number

REMARKS

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
John C. Osweiler	12/1/93	1600					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
					12/2/93	0845	K Collis

38 F

"Relinquished by" and **"Received by"** boxes must be completed for all transfers.

White: laboratory returns with data, **yellow**: laboratory copy, **pink**: sampler copy

Engineering-Science Inc

Austin, Texas

CARRIER: FEDERAL EXPRESS
AIRBILL #: 8503062665

CHAIN OF CUSTODY RECORD

PROJECT NO.: AU401.07

PROJECT NAME/LOCATION: TINKER AFB RFI

SAMPLERS (Signatures): JOHN OSWEILER, John C. Osweiler; CHRIS VAIL, Christine Sally Vail

SAMPLE ~~NO.~~ TYPE	DATE	TIME	MATRIX	METHOD	~~SAMPLE DESCRIPTION~~ LOC. ID	DEPTH BEGIN	DEPTH END	NO. OF CONTAINERS	PCB SW8080/ICE	AMBIENT CONDITION BLANK	EQUIPMENT BLANK	TRIP BLANK	COOLER LETTER	~~REMARKS~~ FIELD LOT CONTROL #
N1	11/30/93	1057	SO	G	I24.19SS1	0.1	0.3	1	✓	0	0	0	A	
N1	11/30/93	1055	SO	G	I24.19SS2	0.1	0.3	1	✓	0	0	0	A	
N1	11/30/93	1045	SO	G	I24.19SS3	0.1	0.3	1	✓	0	0	0	A	
N1	11/30/93	1043	SO	G	I24.19SS4	0.1	0.3	1	✓	0	0	0	A	
N1	11/30/93	0945	SO	G	S32.3SS1	0.2	0.5	1	✓	0	0	0	A	
N1	11/30/93	1027	SO	G	S32.1SS1	0.2	0.5	1	✓	0	0	0	A	
N1	11/30/93	1025	SO	G	RCP1SS1	0.2	0.5	1	✓	0	0	0	A	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
John C. Osweiler	12/1/93	1600					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
					12/2/93	0845	[signature]

"Relinquished by" and "Received by" boxes must be completed for all transfers.

White: laboratory returns with data, yellow: laboratory copy, pink: sampler copy

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.01

DATE: 12/30/93

SWLO # : 16642.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	41	U	AROCLOR-1248	41	U
AROCLOR-1221	41	U	AROCLOR-1254	41	U
AROCLOR-1232	41	U	AROCLOR-1260	41	U
AROCLOR-1242	41	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	51%	DECACHLOROBIPHENYL	(40-145)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.02

DATE: 12/30/93

SWLO # : 16642.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	34	U	AROCLOR-1248	34	U
AROCLOR-1221	34	U	AROCLOR-1254	34	U
AROCLOR-1232	34	U	AROCLOR-1260	34	U
AROCLOR-1242	34	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	27% *	DECACHLOROBIPHENYL	(40-145)	25% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.03

DATE: 12/30/93

SWLO # : 16642.03 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	165		AROCLOR-1248	34	U
AROCLOR-1221	34	U	AROCLOR-1254	34	U
AROCLOR-1232	34	U	AROCLOR-1260	462	
AROCLOR-1242	34	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	42%	DECACHLOROBIPHENYL	(40-145)	28% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.04

DATE: 12/30/93

SWLO # : 16642.04 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	216		AROCLOR-1248	34	U
AROCLOR-1221	34	U	AROCLOR-1254	34	U
AROCLOR-1232	34	U	AROCLOR-1260	523	
AROCLOR-1242	34	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	60%	DECACHLOROBIPHENYL	(40-145)	42%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.05

DATE: 12/30/93

SWLO # : 16642.05 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	35	U	AROCLOR-1248	35	U
AROCLOR-1221	35	U	AROCLOR-1254	35	U
AROCLOR-1232	35	U	AROCLOR-1260	35	U
AROCLOR-1242	35	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	78%	DECACHLOROBIPHENYL	(40-145) I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.06

DATE: 12/30/93

SWLO # : 16642.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS3
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	34	U	AROCLOR-1248	34	U
AROCLOR-1221	34	U	AROCLOR-1254	34	U
AROCLOR-1232	34	U	AROCLOR-1260	34	U
AROCLOR-1242	34	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	63%	DECACHLOROBIPHENYL	(40-145) I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.07

DATE: 12/30/93

SWLO # : 16642.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS4
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	31	U
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	52%	DECACHLOROBIPHENYL	(40-145)	48%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.08

DATE: 12/30/93

SWLO # : 16642.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	197	
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	80%	DECACHLOROBIPHENYL	(40-145)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.08

DATE: 01/07/94

SWLO # : 16642.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	228	
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.09

DATE: 12/30/93

SWLO # : 16642.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	32	U
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	74%	DECACHLOROBIPHENYL	(40-145)	I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.10

DATE: 12/30/93

SWLO # : 16642.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	54	
AROCLOR-1232	31	U	AROCLOR-1260	31	U
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	72%	DECACHLOROBIPHENYL	(40-145)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.10

DATE: 01/07/94

SWLO # : 16642.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	54	
AROCLOR-1232	31	U	AROCLOR-1260	31	U
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	72%	DECACHLOROBIPHENYL	(40-145)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.10

DATE: 01/07/94

SWLO # : 16642.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	64	
AROCLOR-1232	31	U	AROCLOR-1260	31	U
AROCLOR-1242	31	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.11

DATE: 12/30/93

SWLO # : 16642.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	32	U
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	69%	DECACHLOROBIPHENYL	(40-145)	59%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.12

DATE: 12/30/93

SWLO # : 16642.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS2
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	33	U	AROCLOR-1248	33	U
AROCLOR-1221	33	U	AROCLOR-1254	33	U
AROCLOR-1232	33	U	AROCLOR-1260	33	U
AROCLOR-1242	33	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	31%	DECACHLOROBIPHENYL	(40-145)	30% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.13

DATE: 12/30/93

SWLO # : 16642.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	197	
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	53%	DECACHLOROBIPHENYL	(40-145)	40%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.13

DATE: 01/07/94

SWLO # : 16642.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	269	
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.14

DATE: 12/30/93

SWLO # : 16642.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	124	
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	70%	DECACHLOROBIPHENYL	(40-145)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.14

DATE: 01/07/94

SWLO # : 16642.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	120	
AROCLOR-1242	31	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.15

DATE: 01/07/94

SWLO # : 16642.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS3
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	41	*
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	30%	DECACHLOROBIPHENYL	(40-145)	26% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.15

DATE: 01/07/94

SWLO # : 16642.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS3
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	61	
AROCLOR-1242	31	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.16

DATE: 12/30/93

SWLO # : 16642.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	467	
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	66%	DECACHLOROBIPHENYL	(40-145)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.16

DATE: 01/07/94

SWLO # : 16642.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.10
DEPTH TO : 0.30
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	521	
AROCLOR-1242	31	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.17

DATE: 01/07/94

SWLO # : 16642.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SS1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	36	U	AROCLOR-1248	36	U
AROCLOR-1221	36	U	AROCLOR-1254	17	
AROCLOR-1232	36	U	AROCLOR-1260	36	U
AROCLOR-1242	36	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	82%	DECACHLOROBIPHENYL	(40-145)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.17

DATE: 01/07/94

SWLO # : 16642.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SS1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	36	U	AROCLOR-1248	36	U
AROCLOR-1221	36	U	AROCLOR-1254	19	J
AROCLOR-1232	36	U	AROCLOR-1260	36	U
AROCLOR-1242	36	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.18

DATE: 12/30/93

SWLO # : 16642.18 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SS1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	35	U	AROCLOR-1248	35	U
AROCLOR-1221	35	U	AROCLOR-1254	35	U
AROCLOR-1232	35	U	AROCLOR-1260	35	U
AROCLOR-1242	35	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	64%	DECACHLOROBIPHENYL	(40-145)	54%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.19

DATE: 12/30/93

SWLO # : 16642.19 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	37	U	AROCLOR-1248	37	U
AROCLOR-1221	37	U	AROCLOR-1254	37	U
AROCLOR-1232	37	U	AROCLOR-1260	37	U
AROCLOR-1242	37	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	76%	DECACHLOROBIPHENYL	(40-145)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.20

DATE: 12/30/93

SWLO # : 16642.20 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	37	U	AROCLOR-1248	37	U
AROCLOR-1221	37	U	AROCLOR-1254	37	U
AROCLOR-1232	37	U	AROCLOR-1260	37	U
AROCLOR-1242	37	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	55%	DECACHLOROBIPHENYL	(40-145) I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16642APb
QASEQ: 931204-001
DATE: 12-30-93

SAMPLE MATRIX: SOIL
SWLO # 16642.03/16642.04
DATE EXTRACTED: 12-04-93
DATE ANALYZED: 12-11-93
METHOD REFERENCE: SW846-8080, EPA METHODOLOGY
SAMPLE ID: I24.2SS2 (MS/MSD)

PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES

	SPIKE ADDED (ug/kg)	AMT FOUND SAMPLE (ug/kg)	MS AMT. FOUND (ug/kg)	MS PERCENT RECOVERY
AR1016	447	0	165	37
AR1260	894	0	462	52

	SPIKE ADDED (ug/kg)	MSD AMT. FOUND (ug/kg)	MSD PERCENT RECOVERY	RPD
AR1016	447	216	48	27
AR1260	894	523	59	12

QA/QC SURROGATE RECOVERIES

MS	
TETRACHLOROMETAXYLENE	42%
DECACHLOROBIPHENYL	28%*
MSD	
TETRACHLOROMETAXYLENE	60%
DECACHLOROBIPHENYL	42%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642A

DATE: 01/07/94

QAQC#: 931204-001
PROJECT : TINKER AFB RFI
SAMPLE #: PCB BLK LB1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	30	U	AROCLOR-1248	30	U
AROCLOR-1221	30	U	AROCLOR-1254	30	U
AROCLOR-1232	30	U	AROCLOR-1260	30	U
AROCLOR-1242	30	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	32%	DECACHLOROBIPHENYL	(40-145)	42%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

January 7th, 1993

Mr. Kevin Tynes
ENGINEERING-SCIENCE, INC.
7800 Shoal Creek Blvd, Suite 222W
Austin, TX 78757

Subject: Tinker AFB RFI
SDG#: 16642B
SWLO #: 16642.21 - 16642.34

Dear Mr. Tynes:

Enclosed we are submitting the hardcopy report and diskette deliverable for your samples received in our laboratory on December 2, 1993 for the above-captioned project.

All samples, blanks and spikes were extracted and analyzed according to SW-846 8080 METHOD. A five-point Arochlor calibration was run for each Arochlor of interest, and a medium-level Arochlor standard was analyzed every 10 samples. Channel 3A and channel 3B were both used for quantification and confirmation. However, some samples had surrogate recoveries out of the range of advisory limits. These samples were re-extracted (out of holding time) and re-analyzed. None of the re-extracts showed any significant increase in surrogate recovery. Therefore, the original results were reported. The surrogates were not used for reporting purpose on confirmation run.

If in your review you have any questions or require additional information, please call.

Sincerely,

Daryl Alstatt
Project Officer

DA/jc

Enclosures

1700 West Albany • Broken Arrow, OK 74012-1421 • (918) 251-2858 • Fax (918) 251-2599

Engineering-Science Inc

Austin, Texas

Carrier: Federal Express
Airbill #: 8503062676

CHAIN OF CUSTODY RECORD

PROJECT NO.: AU401.05

PROJECT NAME/LOCATION: TINKER AFB RFI

SAMPLERS (Signatures): JOHN OSWEILER, CHRIS VAIL

John C. Osweiler, Christine Scully Vail

SAMPLE ~~NO.~~ TYPE	DATE	TIME	MATRIX/ Method		~~SAMPLE DESCRIPTION~~ Location ID	Depth Begin	Depth End	NO. OF CONTAINERS	PCB SW8080 / ICE	Ambient Cond Blank	Equipment Blank	Trip Blank	Cooler Letter
N1	12/1/93	0755	SE	DS	ESC1SE6	0	0	1	✓	0	0	0	B
N1	12/1/93	0830	SE	DS	ESC1SE5	0	0	1	✓	0	0	0	B
FR1	12/1/93	0830	SE	DS	ESC1SE5	0	0	1	✓	0	0	0	B
MS1	12/1/93	0830	SE	DS	ESC1SE5	0	0	1	✓	0	0	0	B
SD1	12/1/93	0830	SE	DS	ESC1SE5	0	0	1	✓	0	0	0	B
N1	12/1/93	0847	SE	DS	ESC1SE4E	0	0	1	✓	0	0	0	B
N1	12/1/93	0851	SE	DS	ESC1SE4W	0	0	1	✓	0	0	0	B
N1	12/1/93	~~0859~~ 0903 CSU	SE	DS	ESC1SE3	0	0	1	✓	0	0	0	B

Analysis Required / Preservation

REMARKS

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
John C. Osweiler	12/1/93	1600					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
					12/2/93	0845	[signature]

"Relinquished by" and "Received by" boxes must be completed for all transfers.

White: laboratory returns with data, yellow: laboratory copy, pink: sampler copy

STT

Engineering-Science Inc

Austin, Texas

Carrier: Federal Express
Airbill # 8503062676

CHAIN OF CUSTODY RECORD

PROJECT NO. AU401.05 & AU401.07

PROJECT NAME/LOCATION: TINKER AFB RFI

SAMPLERS (Signatures): JOHN OSWEILER, CHRIS VAIL

SAMPLE ~~NO.~~ TYPE	DATE	TIME	MATRIX/METHOD		~~SAMPLE DESCRIPTION~~ LOCATION ID	DEPTH BEGIN	DEPTH END	NO. OF CONTAINERS	PCB SW8080/1A											AMBIENT BLANK	EQUIPMENT BLANK	TRIP BLANK		FIELD LOT CONTROL NUMBER ~~REMARKS~~
N1	11/30/93	1107	SO	G	S32.8551	0.2	0.5	1	✓											0	0	0	B	
N1	11/30/93	1105	SO	G	S32.8552	0.2	0.5	1	✓											0	0	0	B	
FR1	11/30/93	1105	SO	G	S32.8552	0.2	0.5	1	✓											0	0	0	B	
N1	11/30/93	1115	SO	G	S32.8553	0.2	0.5	1	✓											0	0	0	B	
N1	11/30/93	1125	SO	G	S32.8554	0.2	0.5	1	✓											0	0	0	B	
N1	11/30/93	1623	SE	DS	ESC1SE1	0	0	1	✓											0	0	0	B	
N1	11/30/93	1640	SE	DS	ESC1SE2	0	0	1	✓											0	0	0	B	

NOTE: IRPIMS DATA DISK FOR THESE SAMPLES CAN BE FOUND IN COOLER A.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
John C. Osweiler	12/1/93	1600					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date 12/2/93	Time 0845	Received by: (Signature) K Collis

37°F

"Relinquished by" and **"Received by"** boxes must be completed for all transfers.

White: laboratory returns with data, **yellow:** laboratory copy, **pink:** sampler copy

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.21

DATE: 12/30/93

SWLO # : 16642.21 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	43	U	AROCLOR-1248	43	U
AROCLOR-1221	43	U	AROCLOR-1254	43	U
AROCLOR-1232	43	U	AROCLOR-1260	43	U
ROCLOR-1242	43	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	32%	DECACHLOROBIPHENYL	(40-145)	26% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.22

DATE: 12/30/93

SWLO # : 16642.22 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	487		AROCLOR-1248	43	U
AROCLOR-1221	43	U	AROCLOR-1254	43	U
AROCLOR-1232	43	U	AROCLOR-1260	1050	
AROCLOR-1242	43	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	91%	DECACHLOROBIPHENYL	(40-145)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.23

DATE: 12/30/93

SWLO # : 16642.23 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	470		AROCLOR-1248	43	U
AROCLOR-1221	43	U	AROCLOR-1254	43	U
AROCLOR-1232	43	U	AROCLOR-1260	1020	
AROCLOR-1242	43	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	87%	DECACHLOROBIPHENYL	(40-145)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.24

DATE: 12/30/93

SWLO # : 16642.24 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	42	U	AROCLOR-1248	42	U
AROCLOR-1221	42	U	AROCLOR-1254	42	U
AROCLOR-1232	42	U	AROCLOR-1260	42	U
AROCLOR-1242	42	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	92%	DECACHLOROBIPHENYL	(40-145)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.25

DATE: 12/30/93

SWLO # : 16642.25 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	34	U	AROCLOR-1248	34	U
AROCLOR-1221	34	U	AROCLOR-1254	34	U
AROCLOR-1232	34	U	AROCLOR-1260	34	U
ROCLOR-1242	34	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	37%	DECACHLOROBIPHENYL	(40-145)	24% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.26

DATE: 12/30/93

SWLO # : 16642.26 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	44	U	AROCLOR-1248	44	U
AROCLOR-1221	44	U	AROCLOR-1254	44	U
AROCLOR-1232	44	U	AROCLOR-1260	44	U
AROCLOR-1242	44	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	35%	DECACHLOROBIPHENYL	(40-145)	42%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.27

DATE: 01/07/94

SWLO # : 16642.27 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	38	U	AROCLOR-1248	38	U
AROCLOR-1221	38	U	AROCLOR-1254	41	
AROCLOR-1232	38	U	AROCLOR-1260	38	U
ROCLOR-1242	38	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	67%	DECACHLOROBIPHENYL	(40-145)	37% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.27

DATE: 01/07/94

SWLO # : 16642.27 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 12/01/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	38	U	AROCLOR-1248	38	U
AROCLOR-1221	38	U	AROCLOR-1254	44	
AROCLOR-1232	38	U	AROCLOR-1260	38	
AROCLOR-1242	38	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.28

DATE: 12/30/93

SWLO # : 16642.28 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	31	U
ROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	57%	DECACHLOROBIPHENYL	(40-145)	43%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.29

DATE: 12/30/93

SWLO # : 16642.29 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	31	U
AROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	32%	DECACHLOROBIPHENYL	(40-145)	24% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.30

DATE: 12/30/93

SWLO # : 16642.30 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	31	U	AROCLOR-1248	31	U
AROCLOR-1221	31	U	AROCLOR-1254	31	U
AROCLOR-1232	31	U	AROCLOR-1260	31	U
ROCLOR-1242	31	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	49%	DECACHLOROBIPHENYL	(40-145)	46%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.31

DATE: 12/30/93

SWLO # : 16642.31 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS3
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	32	U
AROCLOR-1232	32	U	AROCLOR-1260	32	U
AROCLOR-1242	32	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE (30-143) 39% DECACHLOROBIPHENYL (40-145) 33% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.32

DATE: 12/30/93

SWLO # : 16642.32 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS4
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.20
DEPTH TO : 0.50
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	32	U	AROCLOR-1248	32	U
AROCLOR-1221	32	U	AROCLOR-1254	32	U
AROCLOR-1232	32	U	AROCLOR-1260	32	U
ROCLOR-1242	32	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	12% *	DECACHLOROBIPHENYL	(40-145)	11% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.33

DATE: 12/30/93

SWLO # : 16642.33 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	46	U	AROCLOR-1248	46	U
AROCLOR-1221	46	U	AROCLOR-1254	464	
AROCLOR-1232	46	U	AROCLOR-1260	46	U
AROCLOR-1242	46	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	40%	DECACHLOROBIPHENYL	(40-145)	49%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.33

DATE: 12/30/93

SWLO # : 16642.33 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080
GC First Column

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	46	U	AROCLOR-1248	46	U
AROCLOR-1221	46	U	AROCLOR-1254	631	
AROCLOR-1232	46	U	AROCLOR-1260	46	U
ROCLOR-1242	46	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642.34

DATE: 12/30/93

SWLO # : 16642.34 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 12/12/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : 11/30/93
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	99	U	AROCLOR-1248	99	U
AROCLOR-1221	99	U	AROCLOR-1254	99	U
AROCLOR-1232	99	U	AROCLOR-1260	99	U
AROCLOR-1242	99	U			

QA/QC SURROGATE RECOVERIES

TETRACHLOROMETAXYLENE	(30-143)	58%	DECACHLOROBIPHENYL	(40-145)	I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16642B

DATE: 12/30/93

QAQC#: 931204-001
PROJECT : TINKER AFB RFI
SAMPLE #: PEST BLK LB1
LOCATION:
DATE ANALYZED : 12/11/93
METHOD REFERENCE: SW846-8080

DATE SAMPLED : / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 12/04/93
DILUTION FACTOR: 1.00

PCBS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
AROCLOR-1016	30	U	AROCLOR-1248	30	U
AROCLOR-1221	30	U	AROCLOR-1254	30	U
AROCLOR-1232	30	U	AROCLOR-1260	30	U
AROCLOR-1242	30	U			

QA/QC SURROGATE RECOVERIES

DECACHLOROBIPHENYL	(40-145)	72%	TETRACHLOROMETAXYLENE	(30-143)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16642BPb
QASEQ: 931204-001
DATE: 12-30-93

SAMPLE MATRIX: SOIL
SWLO # 16642.22/16642.23
DATE EXTRACTED: 12-04-93
DATE ANALYZED: 12-12-93
METHOD REFERENCE: SW846-8080, EPA METHODOLOGY
SAMPLE ID: ESC1SE5 (MS/MSD)

PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES

	SPIKE ADDED (ug/kg)	AMT FOUND SAMPLE (ug/kg)	MS AMT. FOUND (ug/kg)	MS PERCENT RECOVERY
AR1016	569	0	487	86
AR1260	1139	0	1048	92

	SPIKE ADDED (ug/kg)	MSD AMT. FOUND (ug/kg)	MSD PERCENT RECOVERY	RPD
AR1016	569	470	83	15
AR1260	1139	1020	90	20

QA/QC SURROGATE RECOVERIES

	MS
TETRACHLOROMETAXYLENE	91%
DECACHLOROBIPHENYL	61%
	MSD
TETRACHLOROMETAXYLENE	87%
DECACHLOROBIPHENYL	67%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986