

APPENDIX B
SOIL VAPOR SURVEY



October 3, 1994

Mr. John Carter
SAIC
1710 Goodridge Drive
McLean, VA 22102

**SUBJECT: DATA REPORT - SOIL VAPOR SURVEY - TOOELE ARMY
DEPOT-SOUTH AREA**

TEG Project #940919CM

Mr. Carter:

Please find enclosed a data report for the soil vapor survey conducted by TEG at the above referenced site for SAIC. Soil vapor was collected by TEG and analyzed on-site in TEG's DOHS certified mobile laboratory (CERT #1667). TEG personnel analyzed soil vapor from 178 points for:

- volatile aromatic hydrocarbons (BTEX) by EPA 8020
- total petroleum hydrocarbons (TPH) by DOHS Modified EPA Method 8015
- volatile halogenated hydrocarbons by EPA Method 8010

The results of the analyses are summarized in the attached tables. Also enclosed are brief descriptions of TEG's soil vapor procedure and standard chromatograms of the analyses performed on the samples.

TEG appreciates the opportunity to provide analytical services to SAIC for this project. If you have any questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Dr. Blayne Hartman



SAIC
Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	190105	190110	190115	190120	190125	190130	190135	190140
DATE ANALYZED	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94
TIME ANALYZED	11:42	12:17	12:38	13:02	13:08	13:26	13:46	14:45	15:01
DEPTH (feet)	--	5	10	15	20	25	30	35	40
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	7.3	7.4	14.9	19.9	nd	nd
1,1,1 TriCHLORO ETHANE	nd	14.8	29.9	>134.9	>77.8	>165.0	>86.5	nd	11.5
1,1,2 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON Tetrachloride	nd	15.1	30.6	>132.2	>91.1	>177.2	>123.7	nd	14.4
CHLOROFORM	nd	nd	nd	nd	1.5	nd	1.7	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
TriCHLORO ETHENE	nd	6.0	5.9	14.5	14.3	20.3	23.9	nd	1.8
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-7-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	190205	190210	190215	190220	190225	190230	190235	190240
DATE ANALYZED	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94	09/19/94
TIME ANALYZED	15:32	15:51	16:11	16:24	16:38	16:50	17:09	17:23
DEPTH (feet)	5	10	15	20	25	30	35	40
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	13.3	17.6	8.8
1,1,1 TriCHLORO ETHANE	7.2	11.4	18.1	nd	2.9	>157.42	>88.71	>123.0
1,1,2 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetraCHLORIDE	10.1	16.0	19.3	2.9	4.8	>159.59	>108.7	>116.8
CHLOROFORM	nd	nd	nd	nd	nd	2.7	4.2	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd
TriCHLORO ETHENE	nd	nd	nd	nd	nd	3.5	2.4	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-7-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	190305	190305 dup	190310	190315	190320	190320 dup	190325	190330	190335	190345
DATE ANALYZED	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94
TIME ANALYZED	08:04	08:29	09:09	09:41	10:15	10:40	11:04	11:46	12:10	12:23	13:00
DEPTH (feet)	--	5	5	10	15	20	20	25	30	35	45
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Eth	nd	22.0	2.4	7.5	nd	nd	nd	80.0	206.0	117.7	62.4
1,1,2 Trichloro Eth	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Et	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propan	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Meth	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachlorid	nd	25.9	30.0	26.4	9.9	3.3	3.3	120.0	264.0	184.8	109.1
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propen	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraChloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraChloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Prop	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	12.8	9.9	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	190350	190405	190410	190415	190420	190420 dup	190425	190430	190440	190445	190450
DATE ANALYZED	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94	09/20/94
TIME ANALYZED	13:16	13:47	13:54	14:10	14:20	14:33	15:08	15:16	15:41	15:57	16:11
DEPTH (feet)	50	5	10	15	20	20	25	30	40	45	50
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	33.9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TrichLORO ETH	285.1	nd	3.1	53.2	7.7	5.3	55.7	87.5	3.0	6.5	3.4
1,1,2 TrichLORO ETH	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ET	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPAN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METH	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetrachLORID	427.8	1.3	20.7	103.3	25.4	20.4	114.7	166.3	22.7	23.2	17.6
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPEN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetrachLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetrachLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROP	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TrichLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV) nd nd nd nd nd nd nd nd nd nd nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

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10-6-94



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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	190505	190510	190515	190520	190525	190525 dup	190605	190610	190615	190620	190625
DATE ANALYZED	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94
TIME ANALYZED	07:01	07:27	07:37	07:49	08:07	08:17	08:29	09:21	09:30	09:45	09:54	10:06
DEPTH (feet)	--	5	10	15	20	25	25	5	10	15	20	25
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TrichLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	2.5	22.3	31.3
1,1,2 TrichLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHEN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetrachLORIDE	nd	nd	nd	nd	nd	nd	nd	2.4	14.8	12.0	46.0	75.4
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetrachLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetrachLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TrichLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	190630	190635	190640	190705	190710	190715	190715 dup	190720	190725	190730	190740	190805
DATE ANALYZED	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94
TIME ANALYZED	10:20	10:42	11:01	11:27	11:35	11:51	11:58	12:17	12:31	12:42	13:08	13:38
DEPTH (feet)	30	35	40	5	10	15	15	20	25	30	40	5
1,1 DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TRICHLORO ETHANE	38.6	nd	4.1	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DICHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DICHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON Tetrachloride	81.2	nd	19.1	nd	8.5	4.2	6.9	2.9	nd	nd	nd	4.6
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DICHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DICHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	41.3
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	190810	190815	190820	190825	190830	190830 dup	190835	190905	190910	190915	190920	190925
DATE ANALYZED	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94	09/21/94
TIME ANALYZED	13:48	14:02	14:16	14:23	14:40	14:49	15:13	15:58	16:19	16:27	16:42	16:50
DEPTH (feet)	10	15	20	25	30	30	35	5	10	15	20	25
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	5.3	4.9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	14.8	17.8	9.4	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	31.1	49.6	22.4	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	7.1	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MR. PAUL MOSHER
DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



SAIC
Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	191005	191010	191015	191015 dup	191020	191025	191030	191035	191040	191105	191110
DATE ANALYZED	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94
TIME ANALYZED	06:58	07:28	07:38	07:51	08:07	08:14	08:27	08:39	08:53	09:07	09:43	10:05
DEPTH (feet)	--	5	10	15	15	20	25	30	35	40	5	10
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	17.2	nd	nd	nd
1,1,1 Trichloro Ethane	nd	1.6	19.7	nd	nd	4.1	56.0	114.0	89.3	145.7	nd	11.8
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	5.9	27.6	3.5	3.1	16.8	89.3	162.2	132.8	208.2	3.1	29.0
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraChloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraChloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	8.5	8.2	nd	nd	4.0	21.5	36.7	41.5	70.0	nd	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	191115	191120	191125	191130	191205	191205 dup	191210	191215	191220	191225	191230
DATE ANALYZED	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94
TIME ANALYZED	10:11	10:25	10:37	10:55	11:30	11:36	11:55	12:08	12:19	12:32	12:44
DEPTH (feet)	15	20	25	30	5	5	10	15	20	25	30
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TrichLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	6.4	10.8	nd
1,1,2 TrichLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetraCHLORIDE	nd	nd	nd	nd	nd	nd	nd	4.6	37.1	36.1	2.8
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TrichLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MR. PAUL MOSHER
DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	191235	191240	191305	191305 dup	191310	192005	192010	192105	192110	192205	192210
DATE ANALYZED	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94	09/22/94
TIME ANALYZED	12:59	13:14	14:24	14:27	14:48	15:48	16:03	16:31	16:43	16:59	17:09
DEPTH (feet)	35	40	5	5	10	5	10	5	10	5	10
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	22.2	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetrACHLORIDE	2.6	nd	nd	3.8	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TriCHLORO ETHENE	nd	nd	nd	nd	4.1	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV) nd nd nd nd nd nd nd nd nd nd nd nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	192305	192405	192410	192505	192510	191405	191405 dup	191410	191415
DATE ANALYZED	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94
TIME ANALYZED	07:10	08:19	08:45	08:54	09:33	09:41	10:29	10:30	10:50	10:58
DEPTH (feet)	--	5	5	10	5	10	5	5	10	15
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	6.4	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	nd	nd	nd	nd	nd	24.8	4.2	21.3	nd
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	nd	nd	nd	nd	nd	14.3	nd	10.6	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	191420	191425	191430	191435	191440	191505	191505 dup	191510	191515	191520
DATE ANALYZED	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94
TIME ANALYZED	11:11	11:19	11:33	11:47	11:57	12:24	12:26	12:53	13:02	13:14
DEPTH (feet)	20	25	30	35	40	5	5	10	15	20
1,1 DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro ETHANE	38.8	60.5	43.1	nd	55.9	nd	nd	nd	nd	nd
1,1,2 Trichloro ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DICHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DICHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON Tetrachloride	84.6	150.5	104.7	31.0	141.3	5.8	nd	17.2	19.4	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DICHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DICHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro ETHENE	17.5	42.3	31.8	14.3	70.7	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV) nd nd nd nd nd nd nd nd nd nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	191525	191530	191535	191540	191605	191610	191615	191620	191625	191625 dup
DATE ANALYZED	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94	09/23/94
TIME ANALYZED	13:31	13:42	13:57	14:08	14:57	15:05	15:19	15:33	15:44	15:59
DEPTH (feet)	25	30	35	40	5	10	15	20	25	25
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethen	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	3.8	22.3	4.4	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	nd	7.8	nd	nd	nd	nd	nd	nd	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MR. PAUL MOSHER
DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



SAIC
Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	330110	330210	330310	330410	330510	330610	330610 dup	330710	330810
DATE ANALYZED	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94
TIME ANALYZED	07:19	07:41	09:00	08:14	08:27	08:43	08:58	09:05	09:21	09:32
DEPTH (feet)	--	10	10	10	10	10	10	10	10	10
1,1 DiChloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MR. PAUL MOSHER
DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	330910	331010	331107	331210	331220	331307	331410	331510	331610	331610 dup
DATE ANALYZED	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94
TIME ANALYZED	09:49	10:03	10:24	10:40	10:49	11:06	11:23	11:36	11:47	11:56
DEPTH (feet)	10	10	10	10	10	10	10	10	10	10
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHEN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetraCHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TriCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	331710	331810	331910	332010	191705	191710	191715	191720	191725	191725 dup
DATE ANALYZED	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94
TIME ANALYZED	12:09	12:21	12:34	12:46	13:51	13:54	14:18	14:26	14:43	14:53
DEPTH (feet)	10	10	10	10	5	10	15	20	25	25
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	nd	nd	nd	33.2	82.9	5.7	30.3	337.8	425.5
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	4.8	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	13.81	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	191729	191805	191810	191815	191820	191825	191830	191835	191840
DATE ANALYZED	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94	09/24/94
TIME ANALYZED	15:10	16:01	16:10	16:22	16:35	16:50	17:02	17:18	17:27
DEPTH (feet)	29	5	10	15	20	25	30	35	40
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	nd	nd	9.1	1.9	nd	2.0	nd	7.8
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	356.0	nd	nd	nd	nd	nd	nd	nd	40.8
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	191729	191805	191810	191815	191820	191825	191830	191835	191840
	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	191905	191905 dup	191910	191915	191920	191925	191930	191935	191940	192605	192610
DATE ANALYZED	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94
TIME ANALYZED	07:54	08:25	08:27	08:51	09:09	09:22	09:34	09:56	10:11	10:28	10:56	11:02
DEPTH (feet)	--	5	5	10	15	20	25	30	35	40	5	10
1,1 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	3.3	nd	3.1	nd	nd
1,1,2 Trichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloro Propane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans Dichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromo Dichloro Methane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	nd	nd	nd	nd	nd	nd	17.8	23.6	2.1	23.4	nd	nd
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Freon 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethane	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans Dichloro Propene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloro Ethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MR. PAUL MOSHER
DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	192615	192615 dup	192620	192625	192705	192710	192715	192720	192725	330120	330520	331620
DATE ANALYZED	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94	09/25/94
TIME ANALYZED	11:23	11:27	11:48	11:57	12:30	12:37	12:55	13:07	13:19	14:12	14:38	15:32
DEPTH (feet)	15	15	20	25	5	10	15	20	25	20	20	20
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON TetraCHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TriCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MR. PAUL MOSHER
DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94



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Tooele Army Depot-South Area

TEG Project #940919CM

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020), AND TPH (EPA Method 8015) ANALYSES OF VAPORS

	BLANK	192805	192805 dup	192810	192815	192820	192825	192830	192835	192840
DATE ANALYZED	09/26/94	09/26/94	09/26/94	09/26/94	09/26/94	09/26/94	09/26/94	09/26/94	09/26/94	09/26/94
TIME ANALYZED	08:27	08:50	08:52	09:15	09:24	09:38	09:48	10:00	10:12	10:23
DEPTH (feet)	--	5	5	10	15	20	25	30	35	40
1,1 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1 DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 TriCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Cis DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 DiCHLORO PROPANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Trans DiCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BROMO DiCHLORO METHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CARBON Tetrachloride	nd	nd	nd	nd	3.07	9.37	7.55	6.95	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cis DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
FREON 113	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
METHYLENE CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TetraCHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trans DiCHLORO PROPENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TriCHLORO ETHENE	nd	nd	nd	nd	7.27	13.75	21.19	12.85	3.33	20.62
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOTAL XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 UG/L FOR EACH COMPOUND

TPH (PPMV)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
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ND INDICATES NOT DETECTED AT DETECTION LIMIT OF 1.0 PPMV

ANALYSES PERFORMED ON-SITE IN TEG'S CA DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)

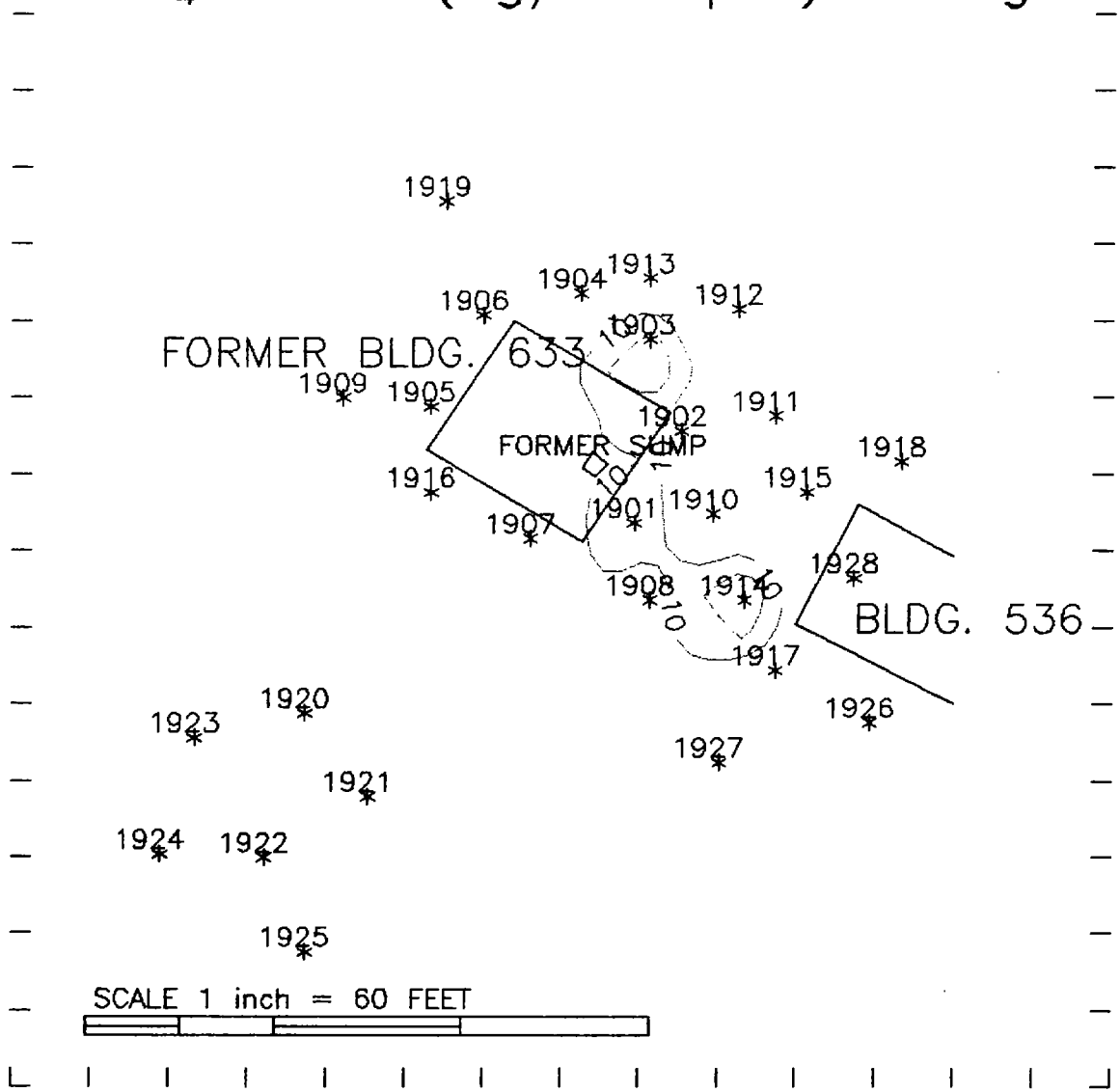
ANALYSES PERFORMED BY: MR. PAUL MOSHER

DATA REVIEWED BY: DR. BLAYNE HARTMAN

Blayne Hartman
10-6-94

TEAD SOUTH AREA, SWMU 19

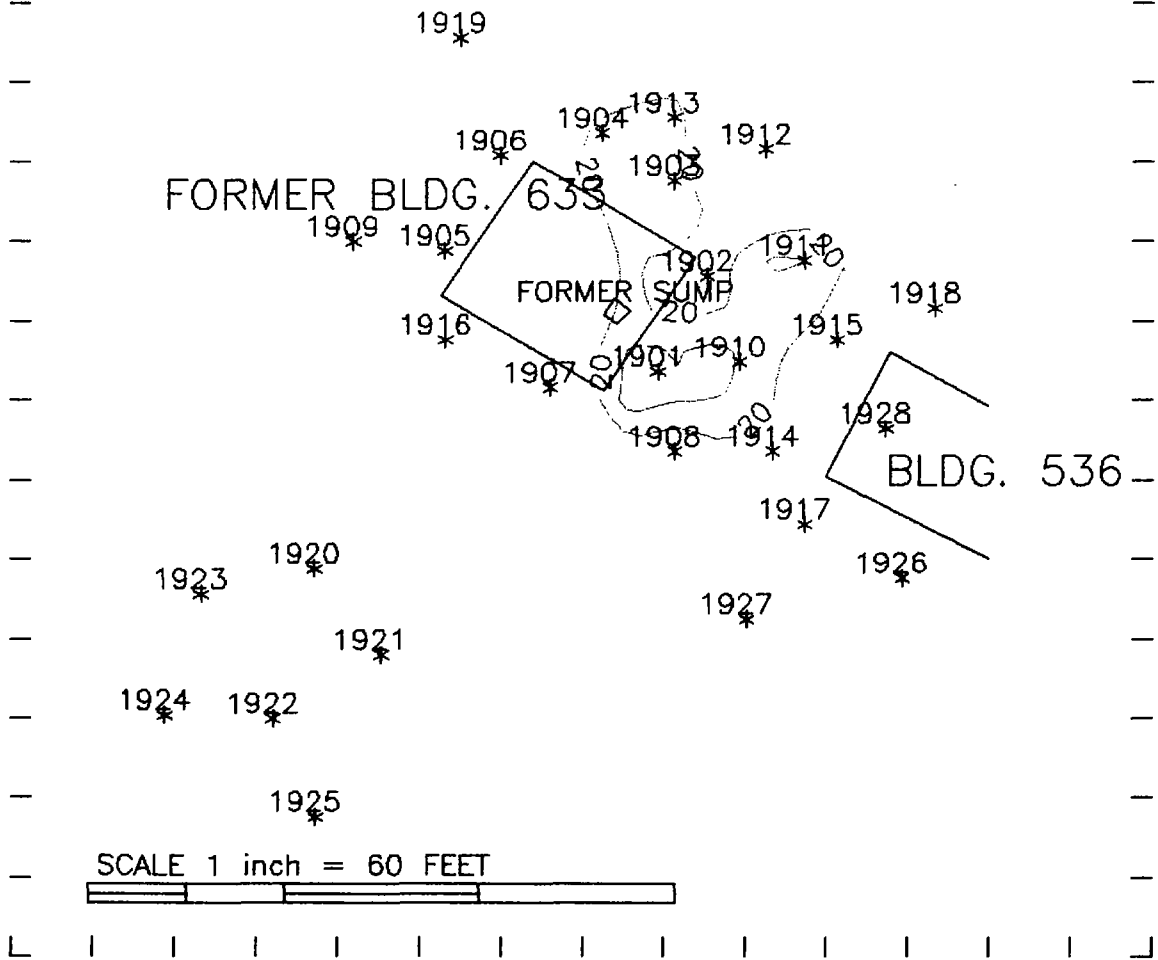
CCl₄ Conc. (ug/L vapor) 5 fbgs



TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

TEAD SOUTH AREA, SWMU 19

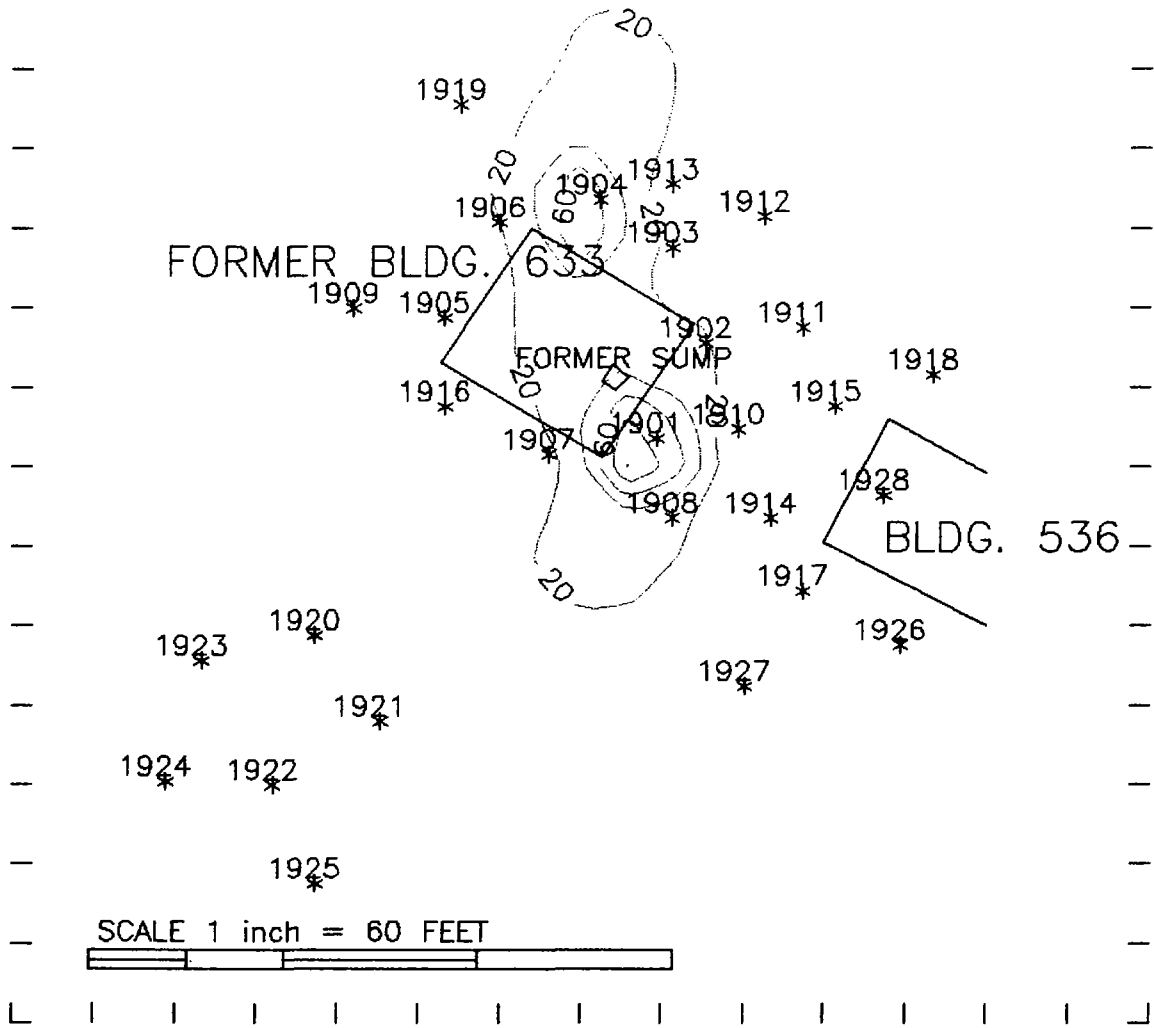
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TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

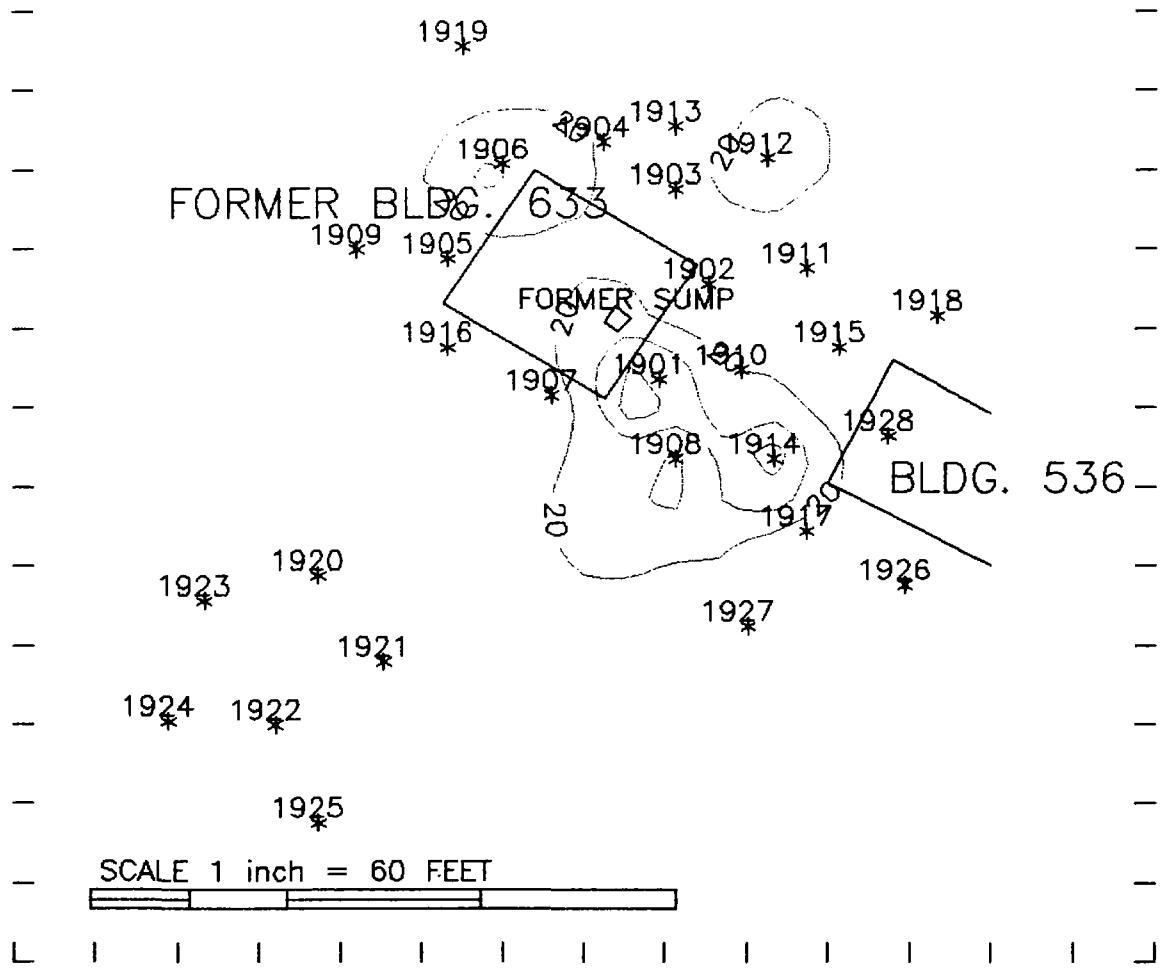
TEAD SOUTH AREA, SWMU 19

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TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

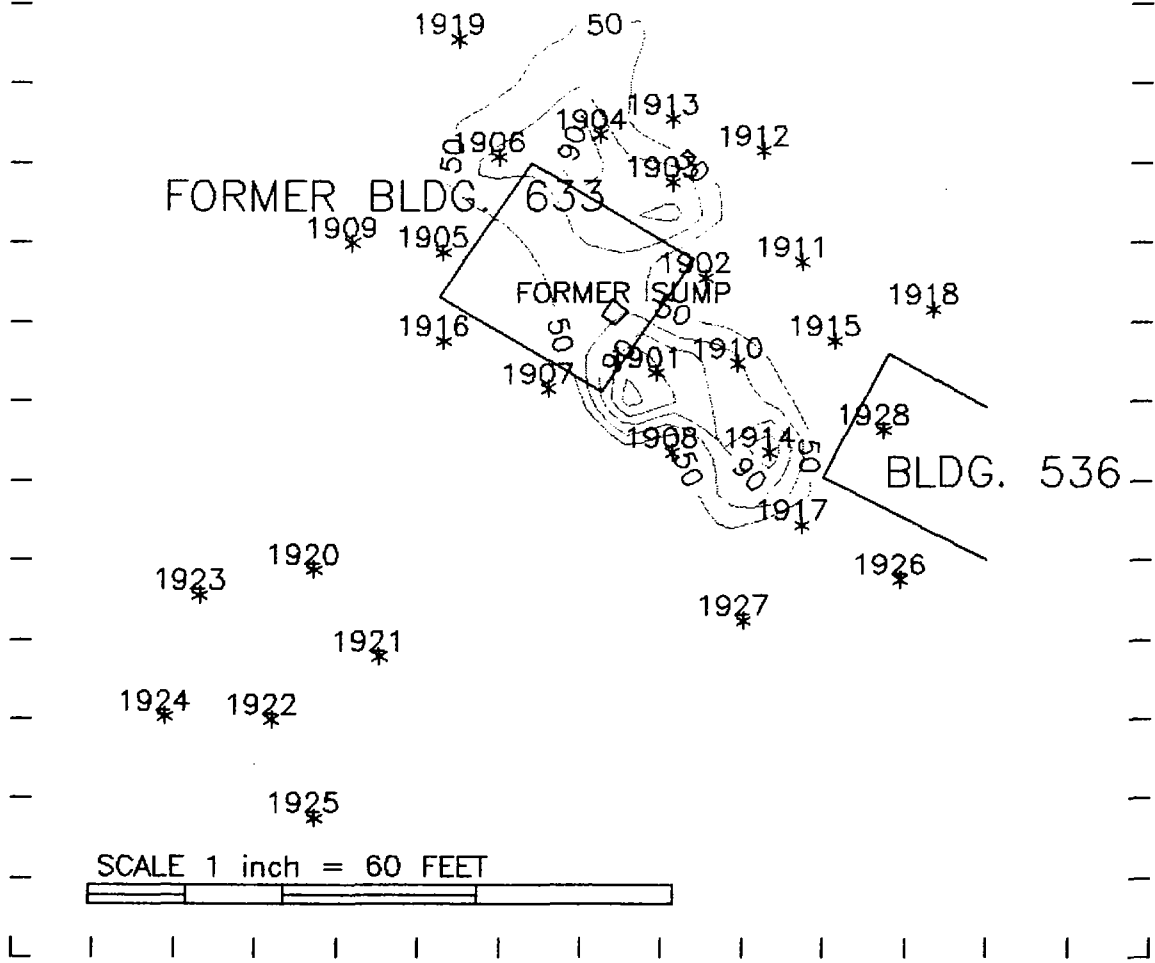
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TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

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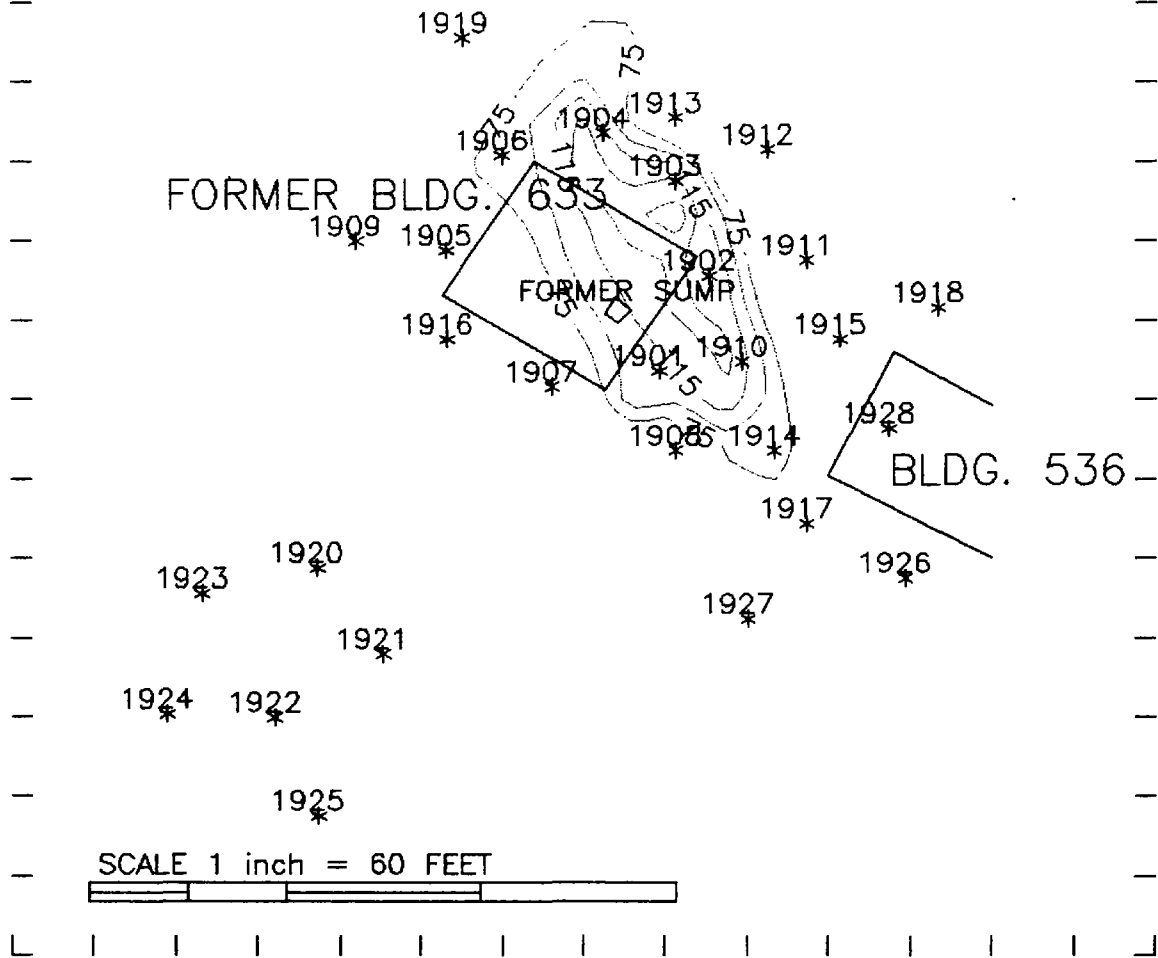
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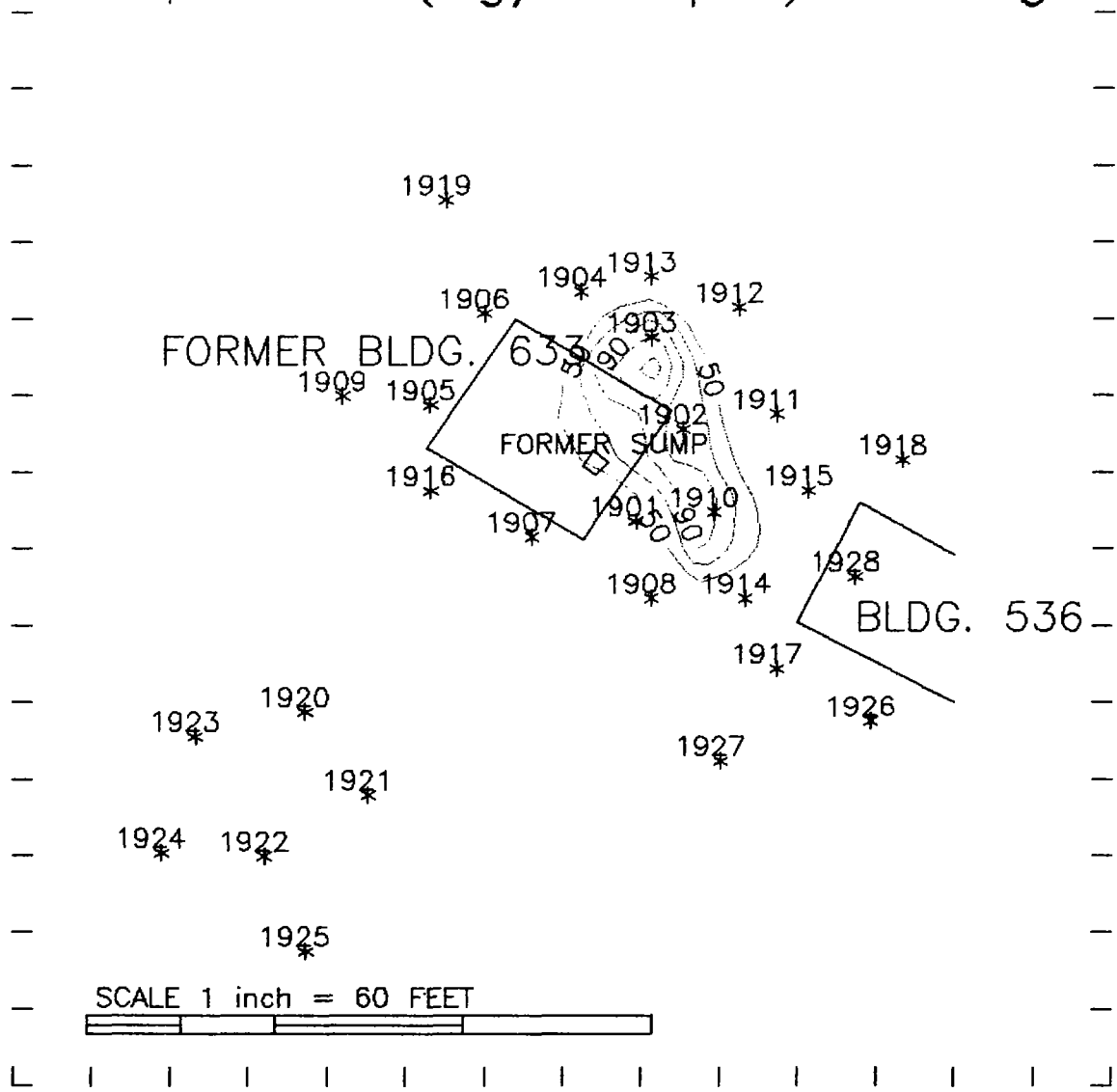
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TEAD SOUTH AREA, SWMU 19

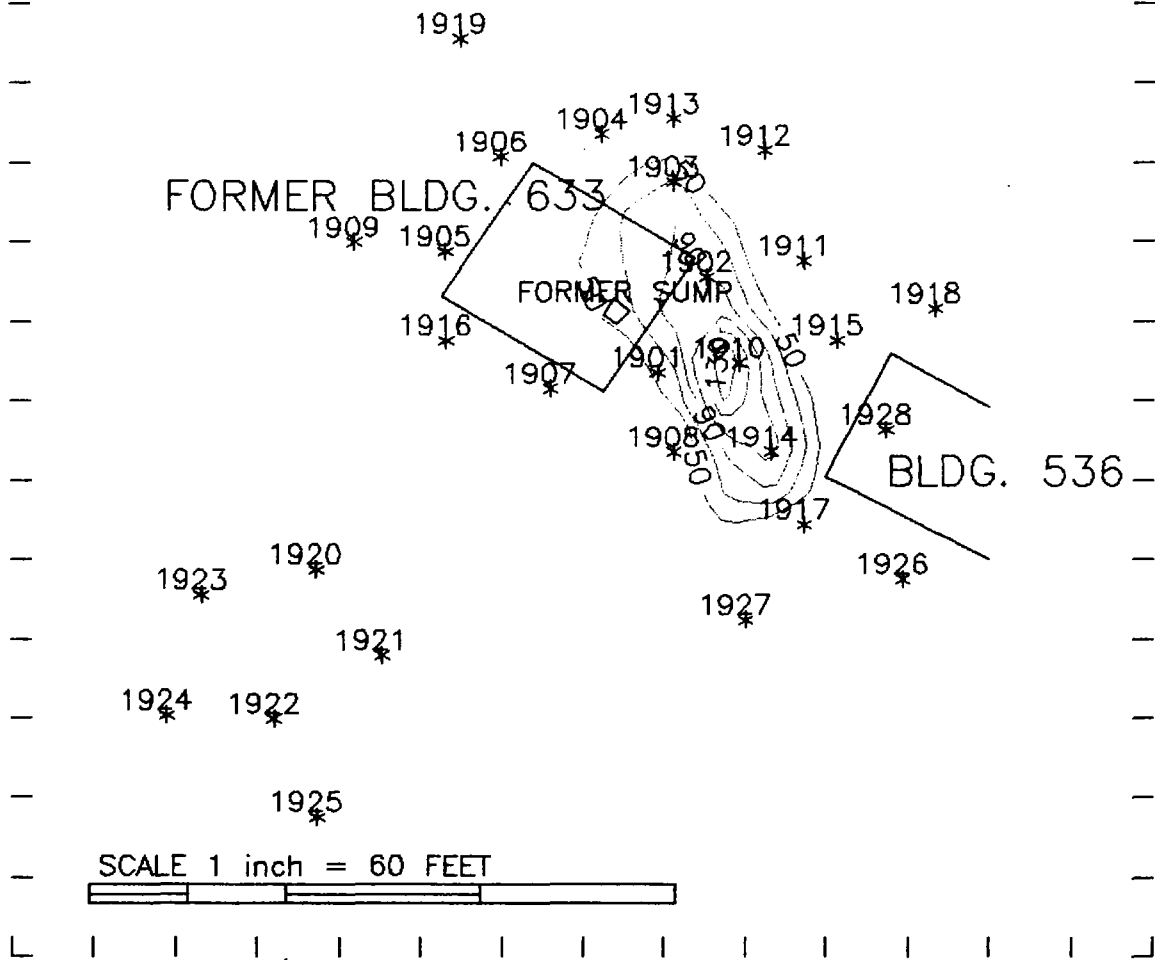
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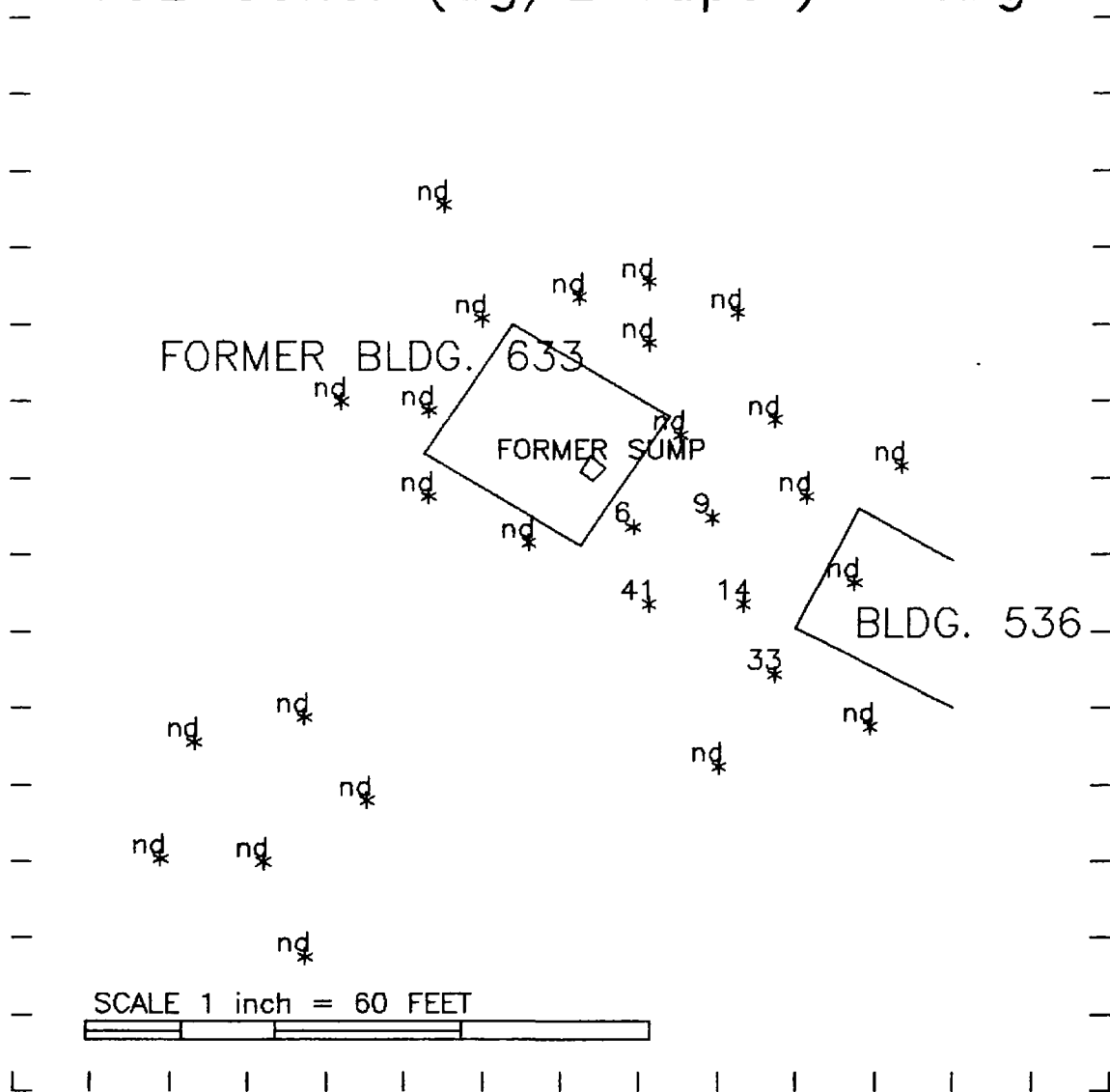
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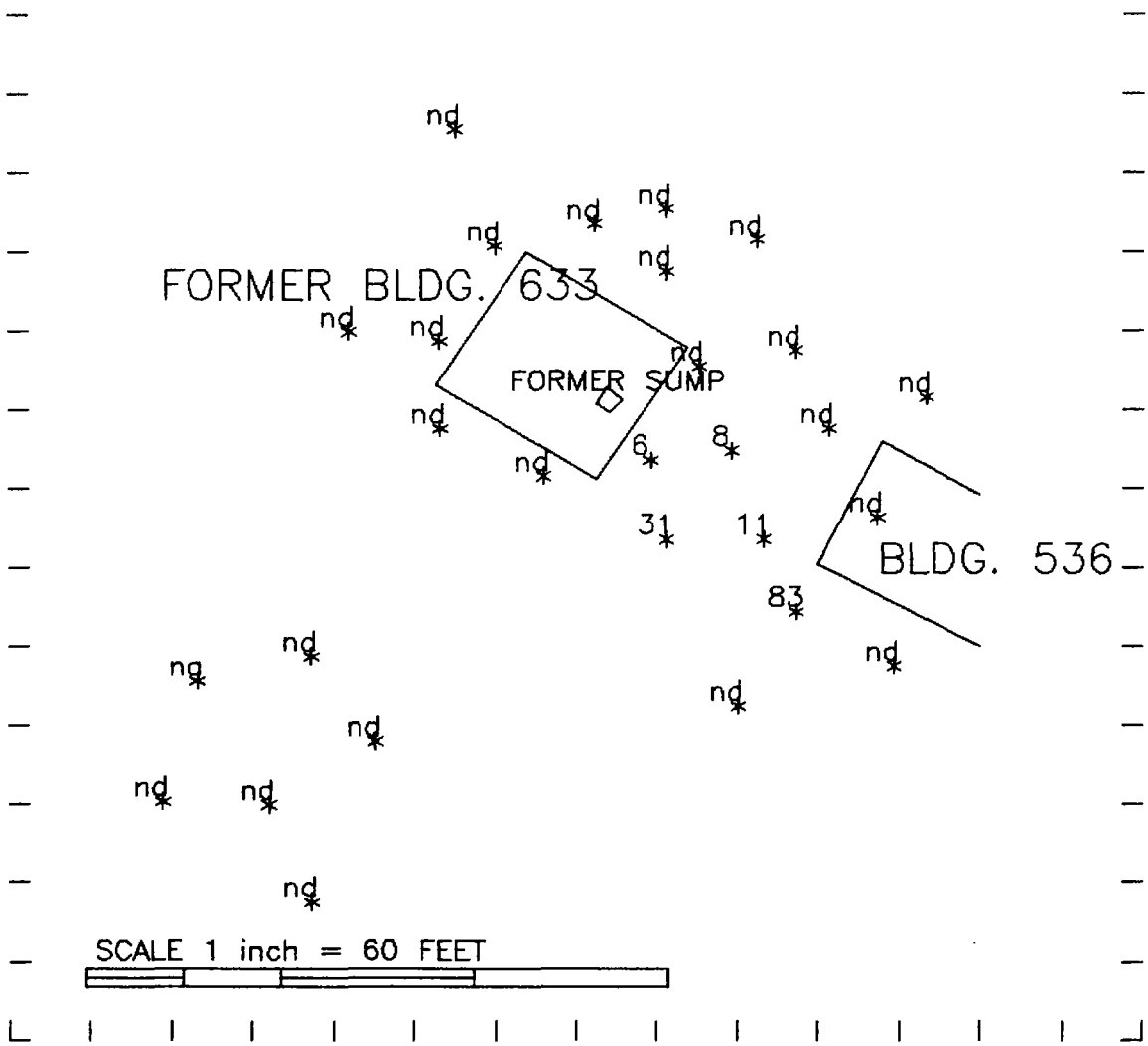
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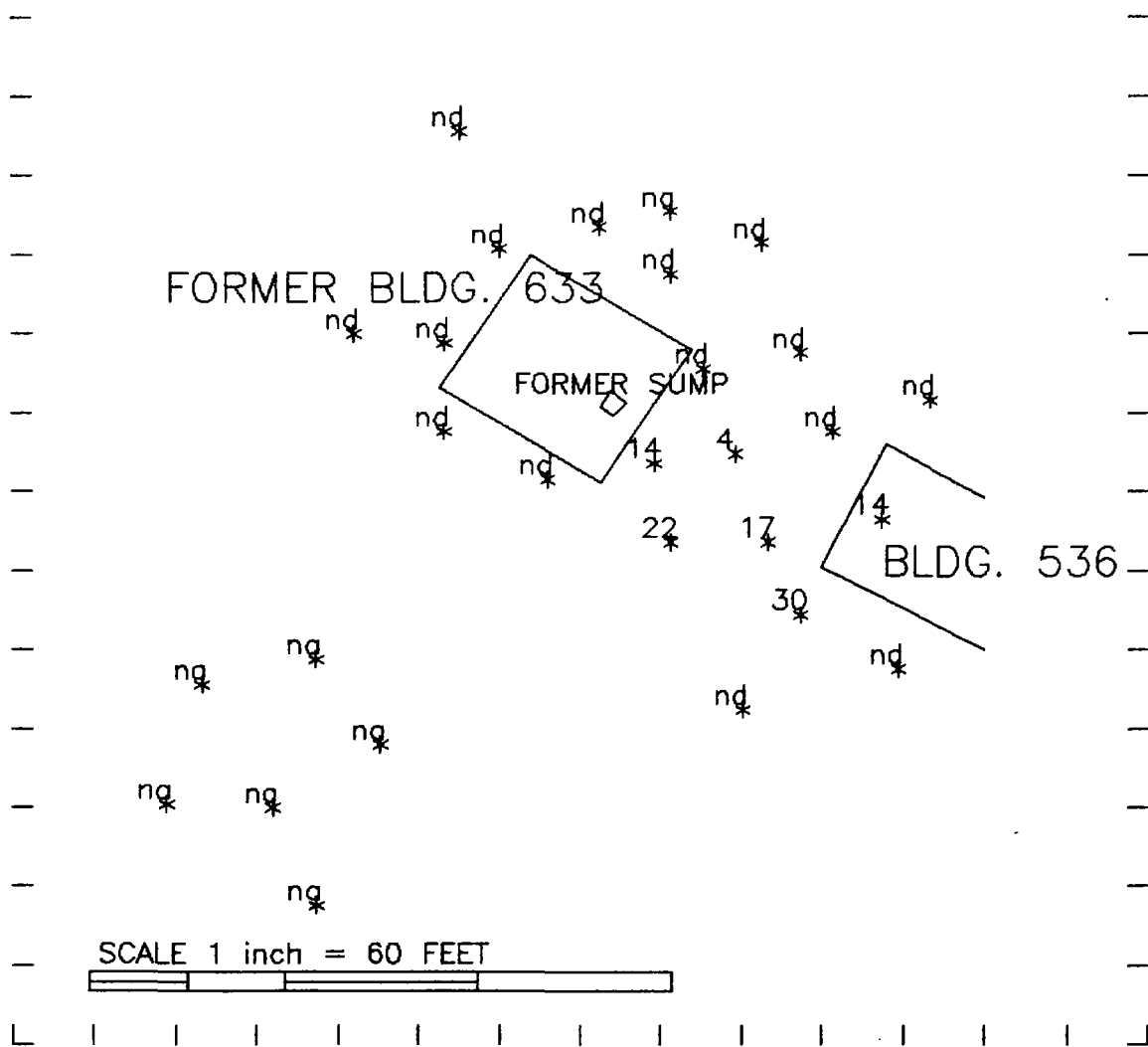
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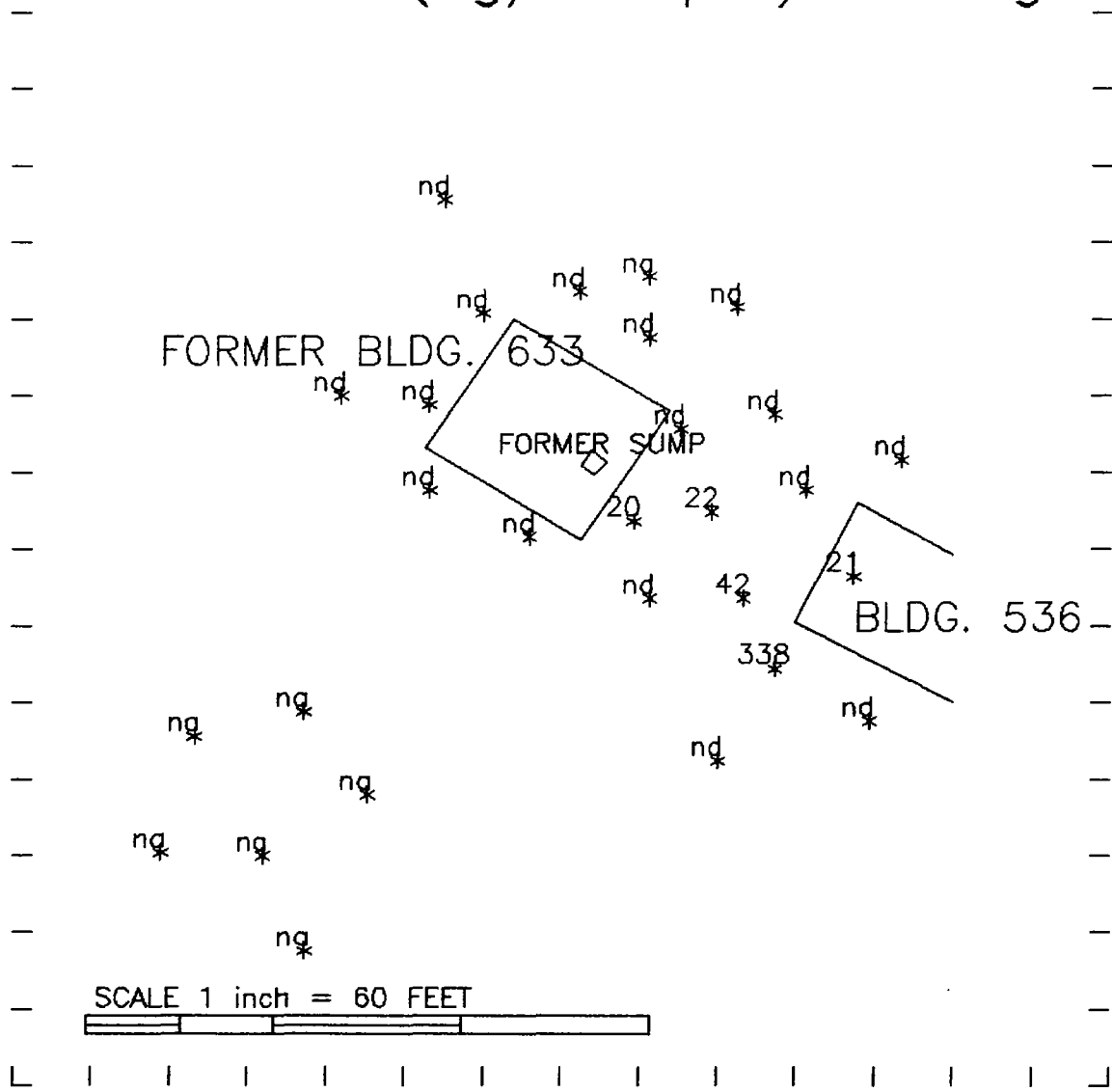
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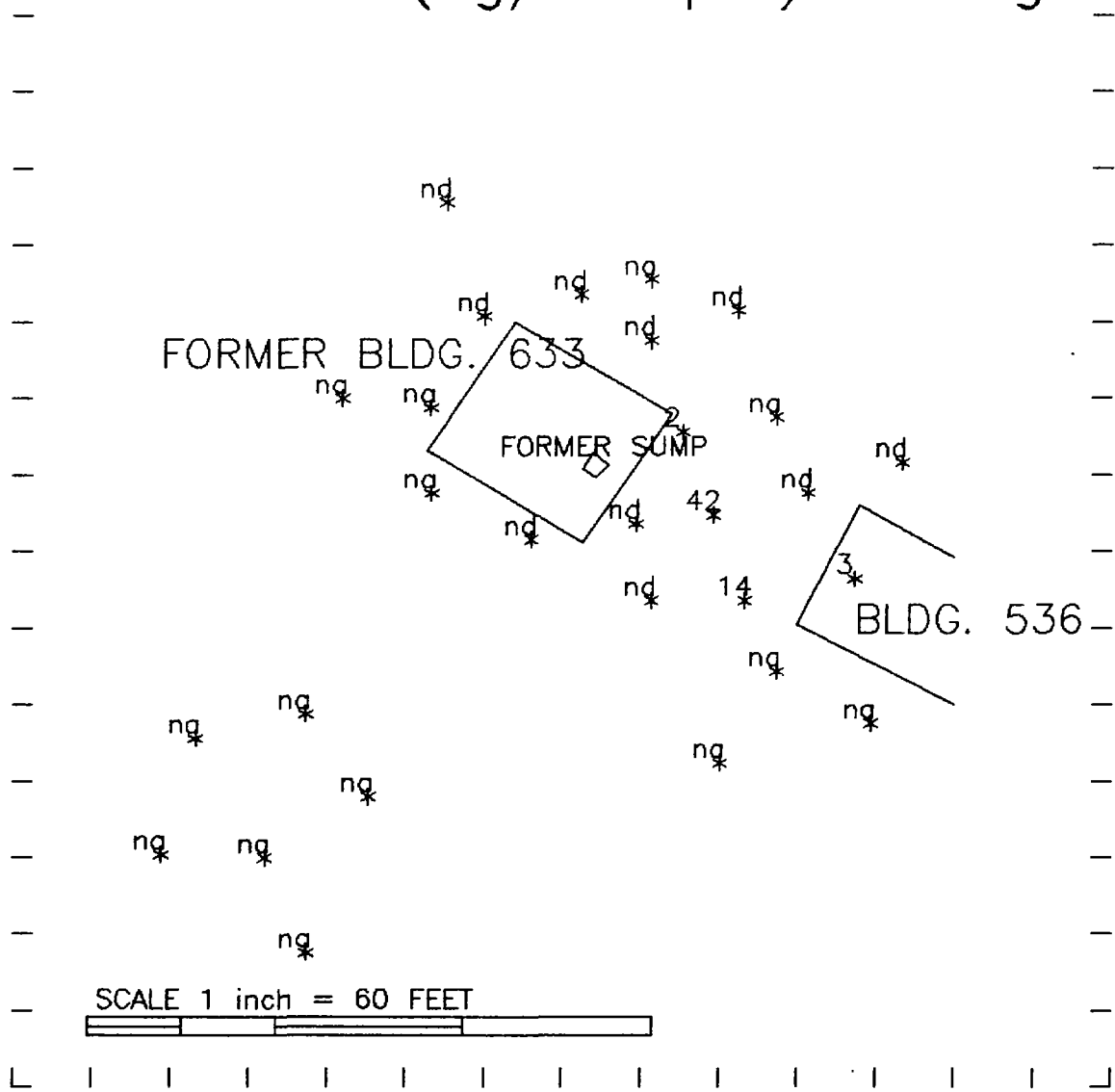
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TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

TEAD SOUTH AREA, SWMU 19

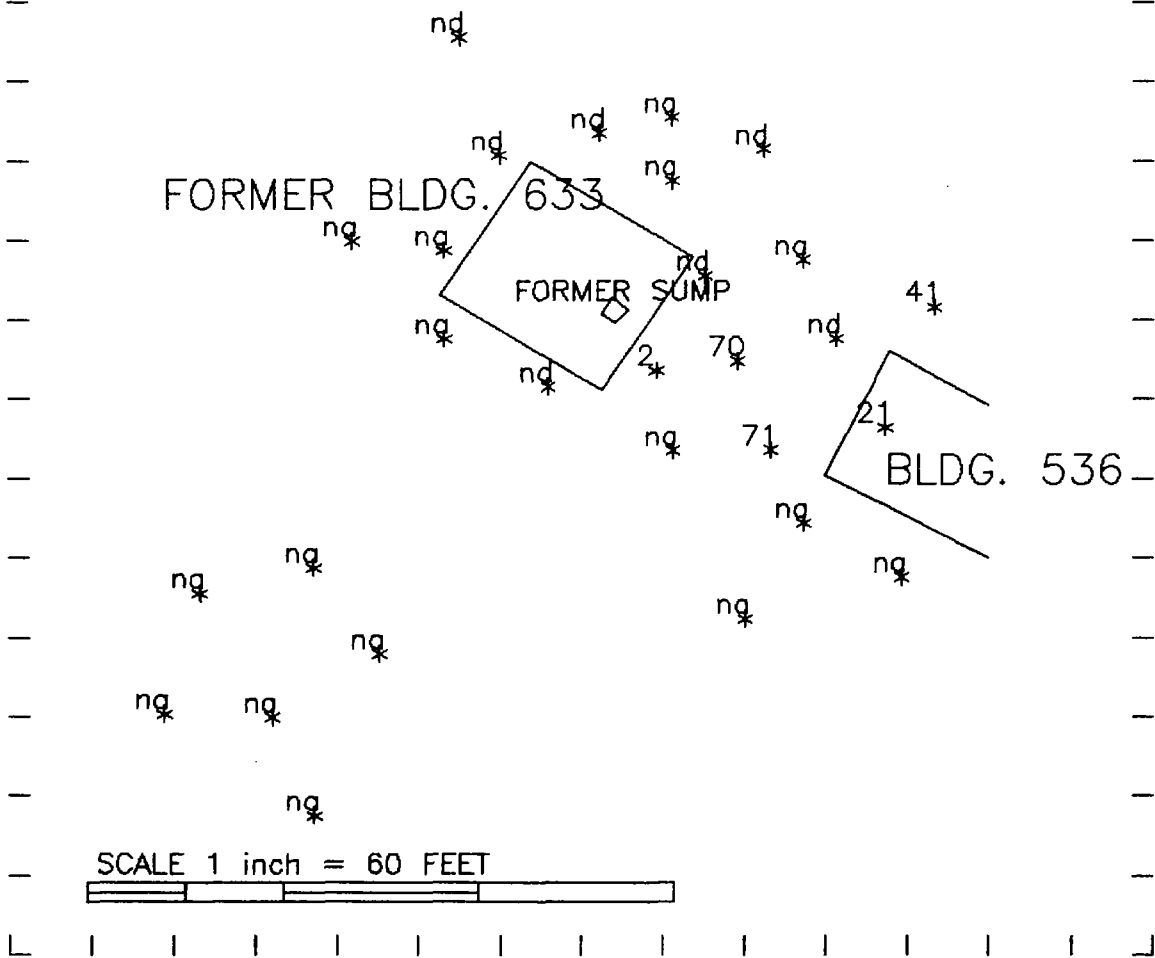
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TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

TEAD SOUTH AREA, SWMU 19

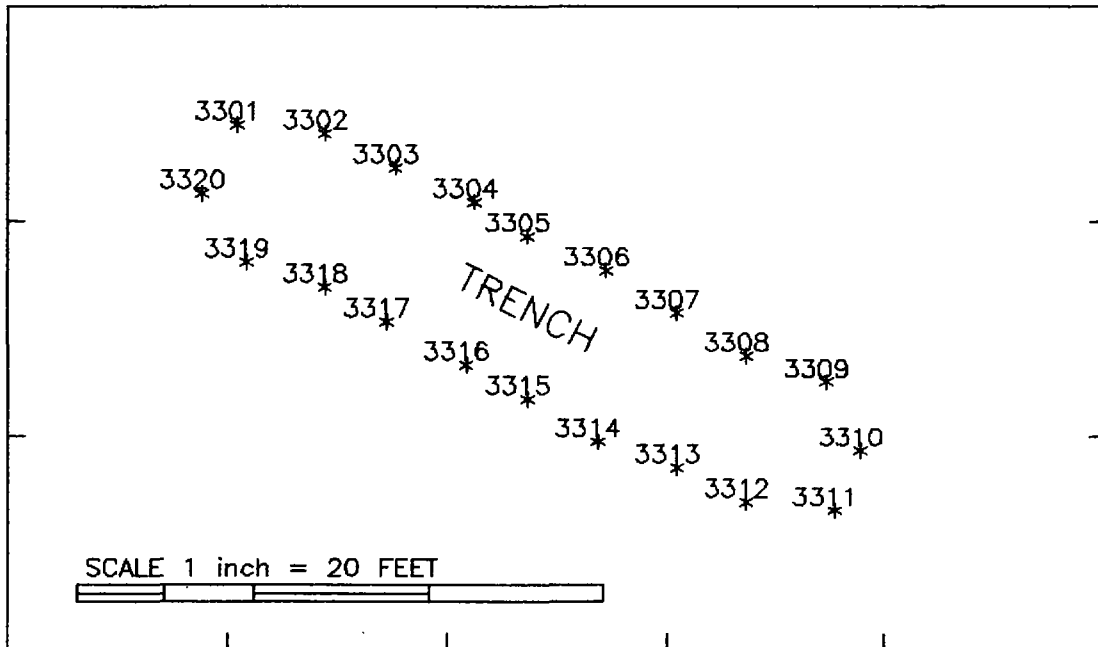
TCE Conc. (ug/L vapor) 40 fbgs



TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

TEAD SOUTH AREA, SWMU 33

SOIL VAPOR POINT LOCATION MAP



TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/19/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL MEASURED		%DIFF	ACTUAL MEASURED		%DIFF
	CONC.	CONC.		CONC.	CONC.	
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	10.1	1.0%	10.0	8.7	13.3%
DICHLORO ETHENE (12 TRANS)	10.0	10.9	8.6%	10.0	8.5	14.6%
TetraCHLORO ETHENE	10.0	10.7	6.7%	10.0	9.2	8.0%
TriCHLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TriCHLORO ETHENE	10.0	10.4	3.9%	10.0	9.1	8.9%
BENZENE	10.0	10.5	4.8%	10.0	9.1	8.9%
CHLOROBENZENE	10.0	10.6	5.7%	10.0	8.9	11.1%
ETHYLBENZENE	10.0	10.6	5.5%	10.0	9.0	9.6%
TOLUENE	10.0	10.3	3.3%	10.0	8.9	10.8%
XYLENES	30.0	31.7	5.7%	30.0	27.4	8.7%
TPH	47.8	47.8	0.0%	47.8	46.6	2.6%



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/20/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL MEASURED			%DIFF	ACTUAL MEASURED		
	CONC.	CONC.			CONC.	CONC.	%DIFF
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%	
DICHLORO ETHENE (12 CIS)	10.0	10.4	4.1%	10.0	10.0	0.2%	
DICHLORO ETHENE (12 TRANS)	10.0	10.0	0.4%	10.0	9.2	8.3%	
TetraCHLORO ETHENE	10.0	10.8	8.2%	10.0	9.9	1.5%	
TRICHLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%	
TRICHLORO ETHENE	10.0	10.4	3.9%	10.0	10.0	0.3%	
BENZENE	10.0	10.1	0.6%	10.0	9.8	1.9%	
CHLOROBENZENE	10.0	10.8	7.7%	10.0	10.0	0.3%	
ETHYLBENZENE	10.0	10.4	4.2%	10.0	10.1	1.2%	
TOLUENE	10.0	10.3	3.2%	10.0	10.0	0.1%	
XYLENES	30.0	31.2	3.9%	30.0	29.8	0.6%	
TPH	47.8	--	--	47.8	33.7	29.6%	



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/21/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL MEASURED		%DIFF	ACTUAL MEASURED		%DIFF
	CONC.	CONC.		CONC.	CONC.	
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	9.8	2.5%	10.0	9.4	6.3%
DICHLORO ETHENE (12 TRANS)	10.0	9.3	7.5%	10.0	8.5	15.5%
TetraCHLORO ETHENE	10.0	10.0	0.1%	10.0	9.2	8.4%
TriCHLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TriCHLORO ETHENE	10.0	9.4	5.6%	10.0	9.0	9.8%
BENZENE	10.0	9.9	0.9%	10.0	9.1	8.6%
CHLOROBENZENE	10.0	8.7	13.1%	10.0	9.4	6.3%
ETHYLBENZENE	10.0	9.8	1.6%	10.0	9.3	6.9%
TOLUENE	10.0	9.5	5.3%	10.0	9.2	8.5%
XYLENES	30.0	30.4	1.3%	30.0	28.4	5.2%
TPH	47.8	--	--	47.8	42.2	11.7%



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/22/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL CONC.	MEASURED CONC.	%DIFF	ACTUAL CONC.	MEASURED CONC.	%DIFF
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	9.7	3.1%	10.0	10.2	2.1%
DICHLORO ETHENE (12 TRANS)	10.0	8.3	16.7%	10.0	9.2	8.2%
TetraCHLORO ETHENE	10.0	9.4	6.3%	10.0	10.1	0.9%
TrichLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TrichLORO ETHENE	10.0	8.5	14.9%	10.0	9.7	2.8%
BENZENE	10.0	8.8	12.5%	10.0	10.6	6.4%
CHLOROBENZENE	10.0	9.1	8.9%	10.0	9.8	1.9%
ETHYLBENZENE	10.0	8.8	12.5%	10.0	10.1	0.8%
TOLUENE	10.0	9.3	7.3%	10.0	10.0	0.2%
XYLENES	30.0	27.4	8.6%	30.0	29.8	0.7%
TPH	47.8	--	--	47.8	50.5	5.6%

SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

=====						
DATE: 09/23/94						
SUPPLY SOURCE: TEG RWQCB MIX						
INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT			CRUISEMASTER SHIMADZU GC14A-RIGHT			

COMPOUND	ACTUAL MEASURED		%DIFF	ACTUAL MEASURED		%DIFF
	CONC.	CONC.		CONC.	CONC.	

CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	9.9	0.8%	10.0	8.4	15.6%
DICHLORO ETHENE (12 TRANS)	10.0	10.5	4.7%	10.0	8.8	12.0%
TetraCHLORO ETHENE	10.0	10.5	5.2%	10.0	8.7	13.2%
TriCHLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TriCHLORO ETHENE	10.0	10.3	3.0%	10.0	8.8	12.3%

BENZENE	10.0	10.4	4.3%	10.0	9.0	10.5%
CHLOROBENZENE	10.0	10.8	7.9%	10.0	8.7	13.4%
ETHYLBENZENE	10.0	10.5	4.6%	10.0	8.8	11.7%
TOLUENE	10.0	10.3	2.5%	10.0	8.9	11.1%
XYLENES	30.0	32.6	8.5%	30.0	26.4	11.9%

TPH	47.8	49.5	3.6%	47.8	47.4	0.8%
=====						



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/24/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL CONC.	MEASURED CONC.	%DIFF	ACTUAL CONC.	MEASURED CONC.	%DIFF
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	12.2	21.5%	10.0	9.0	10.1%
DICHLORO ETHENE (12 TRANS)	10.0	12.0	20.4%	10.0	9.1	9.4%
TetraCHLORO ETHENE	10.0	12.4	24.1%	10.0	9.2	8.4%
TrichLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TrichLORO ETHENE	10.0	11.9	18.6%	10.0	9.1	8.9%
BENZENE	10.0	12.0	19.7%	10.0	9.4	5.9%
CHLOROBENZENE	10.0	12.1	21.3%	10.0	9.1	8.6%
ETHYLBENZENE	10.0	12.0	19.6%	10.0	9.4	6.4%
TOLUENE	10.0	11.9	19.3%	10.0	9.2	8.0%
XYLENES	30.0	36.7	22.2%	30.0	27.8	7.2%
TPH	47.8	47.8	0.0%	47.8	47.8	0.0%



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/25/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL MEASURED		%DIFF	ACTUAL MEASURED		%DIFF
	CONC.	CONC.		CONC.	CONC.	
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	11.2	11.6%	10.0	8.6	14.0%
DICHLORO ETHENE (12 TRANS)	10.0	10.9	9.4%	10.0	8.1	19.2%
TetraCHLORO ETHENE	10.0	11.1	11.2%	10.0	8.5	15.4%
TriCHLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TriCHLORO ETHENE	10.0	10.7	6.7%	10.0	8.3	17.1%
BENZENE	10.0	10.9	8.8%	10.0	8.4	15.8%
CHLOROBENZENE	10.0	10.8	7.5%	10.0	8.1	19.2%
ETHYLBENZENE	10.0	10.8	7.9%	10.0	10.9	9.2%
TOLUENE	10.0	10.7	6.7%	10.0	8.3	17.5%
XYLENES	30.0	32.1	7.0%	30.0	29.1	3.0%
TPH	47.8	40.0	16.4%	47.8	50.7	6.1%



SOIL GAS DAILY CONTINUING CALIBRATION STANDARD REPORT

DATE: 09/26/94

SUPPLY SOURCE: TEG RWQCB MIX

INSTRUMENT: CRUISEMASTER SHIMADZU GC14A-LEFT

CRUISEMASTER SHIMADZU GC14A-RIGHT

COMPOUND	ACTUAL CONC.	MEASURED CONC.	%DIFF	ACTUAL CONC.	MEASURED CONC.	%DIFF
CARBON TETRACHLORIDE	10.0	10.0	0.0%	10.0	10.0	0.0%
DICHLORO ETHENE (12 CIS)	10.0	11.3	13.0%	10.0	9.1	9.0%
DICHLORO ETHENE (12 TRANS)	10.0	10.4	4.2%	10.0	8.7	12.8%
TetraCHLORO ETHENE	10.0	10.8	8.4%	10.0	8.9	10.8%
TrichLORO ETHANE (111)	10.0	10.0	0.0%	10.0	10.0	0.0%
TrichLORO ETHENE	10.0	10.5	4.6%	10.0	8.7	12.7%
BENZENE	10.0	10.5	4.5%	10.0	9.0	9.8%
CHLOROBENZENE	10.0	11.0	9.6%	10.0	8.9	11.3%
ETHYLBENZENE	10.0	10.7	6.9%	10.0	8.9	10.7%
TOLUENE	10.0	10.6	5.8%	10.0	8.9	10.7%
XYLENES	30.0	32.6	8.6%	30.0	26.6	11.3%
TPH	47.8	47.8	0.0%	47.8	51.4	7.5%



Soil Gas Sampling Procedures

Probe Construction and Insertion

Manual-Driven Probes

TEG's manually driven soil vapor probes are constructed of 0.625 inch outside diameter steel and equipped with a hardened steel tip. The probes are nominally 5 feet long and threaded together to reach multiple depths. An inert 1/8 inch nylaflo tube is threaded down the center of the probe and connected to a sampling port just above the tip. This internal sample tubing design eliminates any contact between the sample port and the gas sample.

The probe is driven into the ground by an electric rotary hammer. Once inserted to the desired depth, the probe is rotated approximately 3 turns to open the tip and exposes the vapor sampling ports. This design prevents clogging of the sampling ports and cross-contamination from soils during insertion.

Hydraulically-Driven Probes

TEG's hydraulically-driven soil vapor probes are constructed of either 1.0 or 1.5 inch outside diameter steel and equipped with a hardened drop-off steel tip. The probes are nominally 4 feet long and threaded together to reach multiple depths. The probe is driven into the subsurface with TEG's *STRATAPROBE™* system. Once inserted to the desired depth, the probe is retracted slightly to expose the vapor sampling port. A small diameter inert tubing is then inserted through the center of the rod and threaded into a gas tight fitting just above the tip. After a sample is obtained the tubing is removed, the probe advanced to the next depth or removed. This design prevents clogging of the sampling port and cross-contamination from soils during insertion.

Soil Gas Sampling

Soil vapor is withdrawn from the inert nylaflo tubing using a 20 cubic centimeter (cc) syringe connected via an on-off valve. The first 3 dead volumes of gas are drawn and discarded at a minimum to flush the probe and fill it with in-situ soil vapor. The next 20 cc of gas are withdrawn in the syringe, plugged, and immediately transferred to the mobile lab for analysis within minutes of collection. The use of small calibrated syringes allowed for careful monitoring of purge and sample volumes. This procedure ensures adequate sample flow is obtained without excessive pumping of air or introduction of surface air into the sample.

Samples are stored in gas-tight vials for off-site analysis or directly injected from the collection syringe for on-site analyses.



Field Records

The field technician maintains a logsheet summarizing:

- Sample identification
- Probe location
- Date and time of sample collection
- Sampling depth
- Identity of samplers
- Weather conditions
- Sampling methods and devices
- Soil gas purge volumes
- Volume of soil gas extracted
- Observation of soil or subsurface characteristics (any condition that affects sample representativeness)
- Apparent moisture content (dry, moist or saturated etc.) of the sampling zone
- Chain of custody protocols and records used to track samples from sampling point to analysis.



Analytical Methodology

Operating Conditions and Instrumentation

Halogenated, TPH, & Aromatic Hydrocarbons by EPA 8010/8015/8020

Instrument: Shimadzu GC-14 Gas Chromatograph

Column: 75 meter DB-624, megabore capillary.

Carrier flow: Helium at 15 ml/min.

Detectors: Photoionization/Hall (EICD) or ECD detectors in series.

Detectors: Flame ionization detector on separate column.

Column oven: 45°C for 2 min, 45°C to 175°C at 5°C/min.

Fixed and Biogenic Gases (O₂, CO₂, and Methane)

Instrument: SRI 8610 or Carle AGC 311 Gas Chromatograph

Column: 6 foot CTR

Carrier flow: Helium at 15 ml/min.

Detectors: Thermoconductivity (TCD) detectors.

Standard Preparation

Primary (stock) standards (100 mg/l of each component in methanol) are purchased from certified suppliers.

Secondary (Working) Standards (10 ug/ml) are made within 30 days by diluting primary standard 10 times (400 ul primary to 4 ml solvent).

Laboratory Check Samples are prepared at the midpoint concentration from a standard purchased from a source different than the primary standards.

Lot numbers and preparations of all standards are recorded on a log sheet kept in the mobile laboratory.

Initial Multi-Point Calibration Curve

An initial calibration curve of a minimum of 3 points is performed:

- When the GC column type is changed
- When the GC operating conditions have changed
- When the daily mid-point calibration check cannot meet the requirements as specified below.

Calibration curves for each target component are prepared by analyzing low, mid, and high calibration standards covering the expected concentration range. The lowest standard concentration will not exceed 5 times the detection limit for each compound.

A linearity check of the calibration curve for each compound is performed by computing a correlation coefficient and an average response factor. If a correlation coefficient of 0.99 or a percent relative standard deviation (%RSD) of $\pm 25\%$ is obtained, an average response factor is used over the entire calibration range. If the linearity criteria are not obtained, quantitation for that analyte is performed using a calibration curve.



After each initial multi-point calibration, the validity of the curve is further verified with a laboratory control standards (LCS) prepared at the mid-point of the calibration range. The LCS includes all target compounds and the response factor (RF) must fall within $\pm 25\%$ of the factor from the initial calibration curve.

Analyses by EPA Methods 8010 and 8015 were quantified using single point calibration curves. The continuing calibration standard result was used to calculate a new response factor on a daily basis. This procedure was approved by TetraTech field staff during the course of the field work.

Continuing Calibration (Daily Mid-point Calibration Check)

Continuing calibration standards prepared from a traceable source are analyzed at the beginning and end of each day. Acceptable continuing calibration agreement is set at $\pm 20\%$ to the average response factor from the calibration curve, except for freon, chloroethane, and vinyl chloride when a 25% agreement is required. When calibration checks fall outside this acceptable range for analytes detected on the site, corrective action is initiated by the on-site chemist.

The continuing calibration includes all compounds expected or detected at the site in addition to any specific compounds designated in the project workplan.

Detection Limits

Detection limits have been previously determined by the EPA method and are no more than 5 times lower than the lowest concentration standard of the calibration curve. For this program, the detection limits are.

Compound	Detector	MDL
Aromatic Hydrocarbons (BTEX):	PID	1 ug/l-vapor
Halogenated Hydrocarbons (Solvents)	EICD or ECD	.05-1 ug/l-vapor
Fuel Hydrocarbons	FID	1ppm vapor
Methane	FID	1 ppm vapor

Injection of Soil Gas Samples

Vapor samples are withdrawn from the probe sampling syringe with a 1 cc syringe and injected directly into a sampling port on the gas chromatograph. The injection syringe is flushed 2 times with the sample prior to injection. Injection syringes are flushed several times with clean air or discarded between injections.

Compound Identification and Quantification

All compounds detected in the soil gas samples are identified by chromatographic retention time. Quantification of the compounds is achieved by comparing the detector response for the sample with the average response factor from the active calibration curve.

All EPA 8010/8020 analyses are performed with multiple detectors on megabore capillary columns following EPA Method 8000 protocols. This configuration provides the required separation as well as dual-detector confirmation of the compounds. In addition, a second analysis is performed on all samples using a second column with an FID detector.

Laboratory Data Logs



The field chemist maintains analytical records including date and time of analysis, sampler's name, chemist's name, sample identification number, concentrations of compounds detected, calibration data, and any unusual conditions.



Quality Control Procedures

Compliance With Standards

Sampling and analytical procedures used by TEG complied with the American Society for Testing and Materials' *Standard Guide for Soil Gas Monitoring in the Vadose Zone* (ASTM D5314-93).

Staff Responsibilities

Staff responsibilities regarding operating and quality assurance procedures are assigned as follows:

Field Supervisor/Chemist:

- daily maintenance, startup and calibration of analytical equipment
- daily performance of quality control protocol
- sample and QA/QC sample analysis
- preparation of standards for linearity checks
- sample collection
- Chain-of-Custody Report completion
- documentation of analyses, problems, QA, maintenance of project files
- preparation of preliminary analytical report

Laboratory Director Responsibility:

- preparation of SOPs and QA/QC protocol
- implementation of QA program and technical training of personnel
- document control, security and confidentiality
- technical application and development
- verification of project data completeness
- verification of QA/QC compliance
- verification of client requirements
- preparation of QA report to include: technical difficulties, QA/QC results and conclusions

Sampling Quality Control

Method Blanks

Prior to sampling each day, all components of the sampling system are checked for contamination by drawing ambient air from above ground through the sampling equipment, and injecting a sample into a gas chromatograph. The analysis results are compared to that of the ambient air and recorded in the data tables as blanks.



Sample Quality Control

Each sample is given a unique identification number specifying location and depth. Purge and sample volumes are monitored closely using small calibrated syringes to assure a proper flow of soil gas. This ensures a representative sample is obtained from the sample zone without excessive pumping, which could result in sampling of surface air.

Decontamination Procedures

To minimize the potential for cross-contamination between sites, all external soil vapor probe parts are wiped or washed cleaned of excess dirt and moisture with solvents or de-ionized water as appropriate. The probe's internal nylaflow tubing is purged with clean air between sampling locations or replaced as necessary. Sampling syringes are flushed with clean air after each use or replaced.

Corrective Action

Corrective action is taken when unexpected contaminant levels are detected. First duplicate samples are taken to verify the initial detection of petroleum hydrocarbons. If contamination is suspected, then the sample probes are disassembled, wiped cleaned of excess dirt and moisture, rinsed with deionized water, washed with Alconox and water, and rinsed again with deionized water. The sample tubing in the probe is replaced. Contaminated sampling syringes are discarded.



Analytical Quality Control

Method Blanks

Method blanks are performed at the start of each day by drawing clean air through the sampling equipment and analyzing. These blanks verify all components of the sampling and analytical system are free of contamination. Additional blanks are performed more often as appropriate depending upon the measured concentrations. The results of all blank analyses are recorded in the data tables. If a blank shows a measurable amount of any target compound, the on-site chemist will investigate and determine the source, and resolve the contamination problem prior to analyzing any samples.

Duplicate Samples

Duplicate samples are analyzed when inconsistent data are observed or as requested by the client or regulatory agency. Because soil vapor duplicates can vary widely, nominal relative percent difference (RPD) acceptance criteria is +/- a factor of 2.

Continuing Calibration (Daily Mid-point Calibration Check)

Continuing calibration standards prepared from a traceable source are analyzed at the beginning and end of each day. Acceptable continuing calibration agreement is set at +/- 20% to the average response factor from the calibration curve, except for freon, chloroethane, and vinyl chloride when a 25% agreement is required. When calibration checks fall outside this acceptable range for analytes detected on the site, corrective action is initiated by the on-site chemist. The continuing calibration includes all compounds expected or detected at the site in addition to any specific compounds designated in the project workplan.



TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY

CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAIC	DATE: 9/19/94	PAGE: 1	OF: 1
ADDRESS:	TEG PROJECT #: 940919 CM		
PHONE:	FAX:	LOCATION: TEAD S. Area	
CLIENT PROJECT #:	PROJECT MANAGER:	COLLECTOR: Jason Ferber	DATE OF COLLECTION: 9/19/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													Volume Withdrawn FIELD NOTES	Total Number Of Containers	Laboratory Note Number		
					VOA 601/8010	VOA 822/8020	VOA 624/8240	Semi Vol 625/8270	TPH 4/18 1	TPH 8015	TPH 8015 (dip sum)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PB				ASBESTOS	
Blank		1040	vapor	syringe	X	X														1 cc		
190105	5	1115			X	X														100 cc		
190110	10	1138			X	X														100 cc		
190115	15	1300			X	X														200 cc		
190120	20	1306			X	X														200 cc		
190125	25	1327			X	X														200 cc		
190130	30	1345			X	X														200 cc		
190135	35	1443			X	X														240 cc		
190140	40	1501			X	X														240 cc		
190205	5	1531			X	X														60 cc		
190210	10	1550			X	X														60 cc		
190215	15	1611			X	X														200 cc		
190220	20	1622			X	X														200 cc		
190225	25	1638			X	X														200 cc		
190230	30	1648			X	X														260 cc		
190235	35	1705			X	X														260 cc		
190240	40	1722			X	X														260 cc		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	17:30 SAMPLE RECEIPT	LABORATORY NOTES:	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME			TOTAL NUMBER OF CONTAINERS
SAMPLE DISPOSAL INSTRUCTIONS						CHAIN OF CUSTODY SEALS Y/N/A
						SEALS INTACT? Y/N/A
<input type="checkbox"/> TEG DISPOSAL @ \$200 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup				RECEIVED GOOD COND./COLD		
				NOTES:		



CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAIC
 ADDRESS: _____
 PHONE: _____ FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____
 DATE: 9/20/94 PAGE 1 OF 2
 TEG PROJECT #: 940919CM
 LOCATION: TEAD, South Area
 COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/20/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES												Volume Withdrawn	Total Number Of Containers	Laboratory Note Number																																																																																																																																																																																																																																																																																																																																																				
					VOA 801/8010	VOA 802/8020	VOA 824/8240	Semi Vol 825/8210	TPH 418.1	TPH 8015	TPH 8015 (total)	PNA 810/8100	PEST/PCB& 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD				PH	ASBESTOS	FIELD NOTES																																																																																																																																																																																																																																																																																																																																																	
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RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	SAMPLE RECEIPT TOTAL NUMBER OF CONTAINERS CHAIN OF CUSTODY SEALS Y/N/NA SEALS INTACT? Y/N/NA RECEIVED GOOD COND./COLD NOTES:	LABORATORY NOTES:
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME		
SAMPLE DISPOSAL INSTRUCTIONS <input type="checkbox"/> TEG DISPOSAL @ \$2.00 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup					



CHAIN-OF-CUSTODY RECORD

P.O. #:

CLIENT: SAIC
ADDRESS:
PHONE: FAX:
CLIENT PROJECT #: PROJECT MANAGER:

DATE: 9/20/94 PAGE 2 OF 2
TEG PROJECT #: 940919CM
LOCATION: TEAD, South Area
COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/20/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													Volume Withdrawn FIELD NOTES	Total Number Of Containers	Laboratory Note Number					
					VOA 601/8010	VOA 802/8020	VOA 624/8240	Semi Vol 625/8270	TPH 4 18 1	TPH 8015	TPH 8015 (diesel)	TPH 8015 (g & o)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD				PH	ASBESTOS			
190430	30	1515	vapor	syringe	X	X				X												260 cc			
190440	40	1539			X	X				X													260 cc		
190445	45	1557			X	X				X													320 cc		
190450	50	1612			X	X				X													320 cc		

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME
RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS
 TEG DISPOSAL @ \$2.00 each Return Pickup

16:30 **SAMPLE RECEIPT**

TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/A	
SEALS INTACT? Y/N/A	
RECEIVED GOOD COND./COLD	

NOTES:

LABORATORY NOTES:



CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAIC DATE: 9/21/94 PAGE 1 OF 2
 ADDRESS: _____ TEG PROJECT #: 940919 CM
 PHONE: _____ FAX: _____ LOCATION: TEAD, S. Area
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____ COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/21/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													Volume withdrawn	Total Number Of Containers	Laboratory Note Number						
					VOA 801/8010	VOA 802/8020	VOA 824/8240	Sem. Vol 825/8270	TPH 418 1	TPH 801.5	TPH 801.5 (merch)	PNA 810/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PB				ASBESTOS	FIELD NOTES				
Blank			vapor	syringe	X	X			X															1 cc		
190505	5	0726			X	X			X															100 cc		
190510	10	0735			X	X			X															100 cc		
190515	15	0747			X	X			X															200 cc		
190520	20	0805			X	X			X															200 cc		
190525	25	0818			X	X			X															200 cc		
190525D	25	0827			X	X			X															200 cc		
190605	5	0922			X	X			X															100 cc		
190610	10	0928			X	X			X															160 cc		
190615	15	0942			X	X			X															200 cc		
190620	20	0954			X	X			X															200 cc		
190625	25	1006			X	X			X															200 cc		
190630	30	1018			X	X			X															260 cc		
190635	35	1042			X	X			X															260 cc		
190640	40	1100			X	X			X															260 cc		
190705	5	1127			X	X			X															100 cc		
190710	10	1132			X	X			X															100 cc		
190715	15	1148			X	X			X															200 cc		

RELINQUISHED BY (Signature) _____ DATE/TIME _____	RECEIVED BY (Signature) <u>Paul Mosher</u> DATE/TIME <u>9/21/94 1655</u>	SAMPLE RECEIPT TOTAL NUMBER OF CONTAINERS _____ CHAIN OF CUSTODY SEALS Y/N/A _____ SEALS INTACT? Y/N/A _____ RECEIVED GOOD COND./COLD _____ NOTES: _____	LABORATORY NOTES: _____
RELINQUISHED BY (Signature) _____ DATE/TIME _____	RECEIVED BY (Signature) _____ DATE/TIME _____		
SAMPLE DISPOSAL INSTRUCTIONS			
<input type="checkbox"/> TEG DISPOSAL @ \$2.00 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup			



TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY.

CHAIN-OF-CUSTODY RECORD
P.O. #: _____

CLIENT: SAIC
ADDRESS: _____
PHONE: _____ FAX: _____
CLIENT PROJECT #: _____ PROJECT MANAGER: _____

DATE: 9/21/94 PAGE 7 OF 2
TEG PROJECT #: 940919 CM
LOCATION: TEAD, S. Area
COLLECTOR: Paul Mosler DATE OF COLLECTION: 9/21/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													Volume withdrawn FIELD NOTES	Total Number Of Containers	Laboratory Note Number				
					VOA 801/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418 1	TPH 8015	TPH 8015 (res-sol)	PVA 8015 (9 & 10)	PEST/PCBs 100	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PB				ASBESTOS			
190715D	15	1155	vapor	syringe	X	X			X												200 cc			
190720	20	1218			X	X			X													200 cc		
190725	25	1229			X	X			X													200 cc		
190730	30	1242			X	X			X													260 cc		
190740	40	1306			X	X			X													260 cc		
190805	5	1339			X	X			X													100 cc		
190810	10	1347			X	X			X													100 cc		
190815	15	1403			X	X			X													200 cc		
190820	20	1415			X	X			X													200 cc		
190825	25	1422			X	X			X													200 cc		
190830	30	1439			X	X			X													260 cc		
* 190835	35	1511			X	X			X													260 cc		
190905	5	1558			X	X			X													100 cc		
190910	10	1618			X	X			X													100 cc		
190915	15	1627			X	X			X													200 cc		
190920	20	1639			X	X			X													200 cc		
190925	25	1647			X	X			X													200 cc		
* 190830D	30	1447			X	X			X													260 cc		

RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) Paul Mosler DATE/TIME 9/21/94
RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____ DATE/TIME _____

16:55 **SAMPLE RECEIPT**
TOTAL NUMBER OF CONTAINERS _____
CHAIN OF CUSTODY SEALS Y/N/NA _____
SEALS INTACT? Y/N/NA _____
RECEIVED GOOD COND./COLD _____
NOTES: _____

LABORATORY NOTES: _____

SAMPLE DISPOSAL INSTRUCTIONS
 TEG DISPOSAL @ \$2.00 each Return Pickup



CLIENT: SALC
 ADDRESS: _____
 PHONE: _____ FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____

DATE: 9/22/94 PAGE 1 OF 2
 TEG PROJECT #: 940919CM
 LOCATION: TEAD, S. Areg
 COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/22/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														Volume withdrawn FIELD NOTES	Total Number of Containers	Laboratory Note Number		
					VOA 801/8010	VOA 802/8020	VOA 824/8240	Semi Vol 825/8270	TPH 418.1	TPH 8015	TPH 8015 (total)	PNA 8015 (g & ai)	PEST/PCB 100	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PB	ASBESTOS					
Blank			vapor	syringe	X	X															1 cc		
191005	5	0728	"	"	X	X															100 cc		
191010	10	0736	"	"	X	X															100 cc		
191015	15	0751	"	"	X	X															200 cc		
191015D	15	0805	"	"	X	X															200 cc		
191020	20	0814	"	"	X	X															200 cc		
191025	25	0825	"	"	X	X															260 cc		
191030	30	0840	"	"	X	X															260 cc		
191035	35	0850	"	"	X	X															260 cc		
191040	40		"	"	X	X															260 cc		
191105	5	0946	"	"	X	X															100 cc		
191110	10	1004	"	"	X	X															100 cc		
191115	15	1013	"	"	X	X															200 cc		
191120	20	1022	"	"	X	X															200 cc		
191125	25	1039	"	"	X	X															200 cc		
191130	30	1055	"	"	X	X															200 cc		
191205	5	1131	"	"	X	X															100 cc		
191205D	5	1135	"	"	X	X															100 cc		

RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) Paul Mosher DATE/TIME 9/22/94 17:15
 RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____ DATE/TIME _____

SAMPLE DISPOSAL INSTRUCTIONS

TEG DISPOSAL @ \$2.00 each Return Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS _____
 CHAIN OF CUSTODY SEALS Y/N/A _____
 SEALS INTACT? Y/N/A _____
 RECEIVED GOOD COND./COLD _____
 NOTES: _____

LABORATORY NOTES:



TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY.

CHAIN-OF-CUSTODY RECORD

P.O. #: _____

CLIENT: SAIC
 ADDRESS: _____
 PHONE: _____ FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____

DATE: 9/22/04 PAGE 2 OF 2
 TEG PROJECT #: 940919CM
 LOCATION: TEAD S. Area
 COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/22/04

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													VOL. WITHDRAWN	FIELD NOTES	Total Number Of Containers	Laboratory Note Number				
					VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi-Vol 625/8270	TPH 4 18.1	TPH 801's (Total)	TPH 801's (diesel)	PNA 610/100	PEST/PCB 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PB					ASBESTOS			
191210	10	1055	VAPOR	SYRINGE	X	X			X													100 cc			
191215	15	1207	"	"	X	X			X														200 cc		
191220	20	1221	"	"	X	X			X														200 cc		
191225	25	1231	"	"	X	X			X														200 cc		
191230	30	1246	"	"	X	X			X														260 cc		
191235	35	1258	"	"	X	X			X														260 cc		
191240	40	1315	"	"	X	X			X														260 cc		
191305	5	1426	"	"	X	X			X														100 cc		
191305D	5	1427	"	"	X	X			X														100 cc		
191310	10	1447	"	"	X	X			X														100 cc		
192005	5	1550	"	"	X	X			X														100 cc		
192010	10	1603	"	"	X	X			X														100 cc		
192105	5	1630	"	"	X	X			X														100 cc		
192110	10	1638	"	"	X	X			X														100 cc		
192205	5	1657	"	"	X	X			X														100 cc		
192210	10	1707	"	"	X	X			X														100 cc		

RELINQUISHED BY (Signature) _____ DATE/TIME _____
 RECEIVED BY (Signature) Paul Mosher DATE/TIME 9/22/04

RELINQUISHED BY (Signature) _____ DATE/TIME _____
 RECEIVED BY (Signature) _____ DATE/TIME _____

17:15 SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS _____
 CHAIN OF CUSTODY SEALS Y/N/A _____
 SEALS INTACT? Y/N/A _____
 RECEIVED GOOD COND./COLD _____
 NOTES: _____

LABORATORY NOTES: _____

SAMPLE DISPOSAL INSTRUCTIONS

TEG DISPOSAL @ \$2.00 each Return Pickup



CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAIC
ADDRESS:
PHONE: FAX:
CLIENT PROJECT #: PROJECT MANAGER:

DATE: 9/23/04 PAGE 1 OF 2
TEG PROJECT #: 940919CM
LOCATION: TEAD S. Area
COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/23/04

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														VOL. WITHDRAWN FIELD NOTES	Total Number Of Containers	Laboratory Note Number
					VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015	TPH 8015 (re-test)	PNA 610/8100	REST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PH	ASBESTOS			
192305	5	0819	VAPOR	SYRINGE	X	X			X										100 cc		
192405	5	0844	"	"	X	X			X										100 cc		
192410	10	0853	"	"	X	X			X										100 cc		
192505	5	0933	"	"	X	X			X										100 cc		
192510	10	0938	"	"	X	X			X										100 cc		
191405	5	1028	"	"	X	X			X										100 cc		
191405D	5	1028	"	"	X	X			X										100 cc		
191410	10	1040	"	"	X	X			X										100 cc		
191415	15	1058	"	"	X	X			X										200 cc		
191420	20	1106	"	"	X	X			X										200 cc		
191425	25	1118	"	"	X	X			X										200 cc		
191430	30	1133	"	"	X	X			X										260 cc		
191435	35	1146	"	"	X	X			X										260 cc		
191440	40	1157	"	"	X	X			X										260 cc		
191505	5	1224	"	"	X	X			X										100 cc		
191505D	5	1224	"	"	X	X			X										100 cc		
191510	10	1253	"	"	X	X			X										100 cc		
191515	15	1302	"	"	X	X			X										200 cc		

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME
RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

16:30 SAMPLE RECEIPT
TOTAL NUMBER OF CONTAINERS
CHAIN OF CUSTODY SEALS Y/N/NA
SEALS INTACT? Y/N/NA
RECEIVED GOOD COND./COLD
NOTES:

LABORATORY NOTES:

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ \$2.00 each. ☐ Return ☐ Pickup



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GEOCHEMISTRY.

CHAIN-OF-CUSTODY RECORD

P.O. #:

CLIENT: SALC DATE: 9/23/04 PAGE 2 OF 2
 ADDRESS: _____
 PHONE: _____ FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____
 LOCATION: TEAD S. Area
 COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/23/04

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES											Vol. WITHDRAWN	FIELD NOTES	Total Number Of Containers	Laboratory Note Number			
					VOA 601/8010	VOA 602/8020	VOA 604/8240	Semi-Vol 625/8270	TPH 4 18 1	TPH 8015	TPH 8015 (overall)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD					TOTAL LEAD	PB	ASBESTOS
191520	20	1314	VAMP	Syringe	X	X			X											200 cc		
191525	25	1331	"	"	X	X			X											200 cc		
191530	30	1342	"	"	X	X			X											260 cc		
191535	35	1357	"	"	X	X			X											260 cc		
191540	40	1407	"	"	X	X			X											260 cc		
191605	5	1457	"	"	X	X			X											100 cc		
191610	10	1505	"	"	X	X			X											100 cc		
191615	15	1519	"	"	X	X			X											200 cc		
191620	20	1533	"	"	X	X			X											200 cc		
191625	25	1543	"	"	X	X			X											200 cc		
191625D	25	1559	"	"	X	X			X											200 cc		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	16:30 SAMPLE RECEIPT TOTAL NUMBER OF CONTAINERS CHAIN OF CUSTODY SEALS Y/N/NA SEALS INTACT? Y/N/NA RECEIVED GOOD COND./COLD NOTES:	LABORATORY NOTES:
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME		
SAMPLE DISPOSAL INSTRUCTIONS <input type="checkbox"/> TEG DISPOSAL @ \$2.00 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup					



CHAIN-OF-CUSTODY RECORD
P.O. #: _____

CLIENT: SAC DATE: 9/24/94 PAGE 1 OF 3
 ADDRESS: _____ TEG PROJECT #: 940919CM
 PHONE: _____ FAX: _____ LOCATION: TEAD, S. Area
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____ COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/24/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES															VOL. WITHDRAWN	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
					VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8250	TPH 418.1	TPH 8015 (Semi-Vol)	TPH 8015 (Metal)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PB	ASBESTOS					
330110	10	0741	WABR	SYRINGE	X	X			X												100cc		
330210	10	0758	"	"	X	X			X												100cc		
330310	10	0813	"	"	X	X			X												100cc		
330410	10	0827	"	"	X	X			X												100cc		
330510	10	0840	"	"	X	X			X												100cc		
330610	10	0849	"	"	X	X			X												100cc		
330610D	10	0900	"	"	X	X			X												100cc		
330710	11	0920	"	"	X	X			X												100cc		
330810	10	0934	"	"	X	X			X												100cc		
330910	10	0948	"	"	X	X			X												100cc		
331010	10	1003	"	"	X	X			X												100cc		
3311007 #0	10	1024	"	"	X	X			X												100cc		
331210	10	1040	"	"	X	X			X												100cc		
331220	20	1049	"	"	X	X			X												200cc		
331307	7	1105	"	"	X	X			X												100cc		
331400	10	1123	"	"	X	X			X												100cc		
331510	10	1136	"	"	X	X			X												100cc		
331610	10	1146	"	"	X	X			X												100cc		

RELINQUISHED BY (Signature) _____ DATE/TIME _____	RECEIVED BY (Signature) <u>Paul Mosher</u> DATE/TIME <u>9/24/94 17:30</u>	SAMPLE RECEIPT TOTAL NUMBER OF CONTAINERS _____ CHAIN OF CUSTODY SEALS Y/N/NA _____ SEALS INTACT? Y/N/NA _____ RECEIVED GOOD COND./COLD _____ NOTES: _____	LABORATORY NOTES: _____
RELINQUISHED BY (Signature) _____ DATE/TIME _____	RECEIVED BY (Signature) _____ DATE/TIME _____		
SAMPLE DISPOSAL INSTRUCTIONS			
<input type="checkbox"/> TEG DISPOSAL @ \$2.00 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup			



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ENVIRONMENTAL
GEOCHEMISTRY

CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAIC
ADDRESS:
PHONE: FAX:
CLIENT PROJECT #: PROJECT MANAGER:

DATE: 9/24/94 PAGE 2 OF 3
TEG PROJECT #: 940919 CM
LOCATION: TEAD S. Area
COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/24/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES											FIELD NOTES	Total Number Of Containers	Laboratory Note Number			
					VOA 801/8010	VOA 602/8020	VOA 624/8240	Sem. Vol 625/8250	TPH 418 1	TPH 801 1	TPH 801 5 (over-sell)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD				PH	ASBESTOS	
331610D	10	1150	Vapor	syringe	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
331710	10	1207	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
331810	10	1220	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
331910	10	1234	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
332010	10	1245	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191705	5	1350	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191710	10	1356	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191715	15	1417	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191720	20	1424	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191725	25	1440	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
191725D	25	1452	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
191729	29	1508	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
191805	05	1600	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191810	10	1609	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191815	15	1621	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191820	20	1633	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191825	25	1650	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
191830	30	1703	"	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME
 RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

SAMPLE RECEIPT
 TOTAL NUMBER OF CONTAINERS
 CHAIN OF CUSTODY SEALS Y/N/A
 SEALS INTACT? Y/N/A
 RECEIVED GOOD COND./COLD
 NOTES:

LABORATORY NOTES:

SAMPLE DISPOSAL INSTRUCTIONS
 TEG DISPOSAL @ \$2.00 each Return Pickup



CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAC
 ADDRESS: _____
 PHONE: _____ FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____

DATE: 9/24/94 PAGE 3 OF 3
 TEG PROJECT #: 940913CM
 LOCATION: ROAD S. Area
 COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/24/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES												Volume Withdrawn FIELD NOTES	Total Number Of Containers	Laboratory Note Number									
					VOA 601/8010	VOA 802/8020	VOA 624/8240	Semi Vol 625/8250	TPH 418 1	TPH 8015	TPH 8015 (dip & m)	PNA 610/8100	PESTICIDES 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD				PH	ASBESTOS							
191835	35	1717	vapor	Syringe	X					X															260 cc			
191840	40	1725	"	"	X					X																260 cc		
[The remainder of the table is crossed out with a large diagonal line.]																												

RELINQUISHED BY (Signature) _____ DATE/TIME _____
 RECEIVED BY (Signature) Paul Mosher DATE/TIME 9/24/94 1730
 RELINQUISHED BY (Signature) _____ DATE/TIME _____
 RECEIVED BY (Signature) _____ DATE/TIME _____

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/A	
SEALS INTACT? Y/N/A	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

SAMPLE DISPOSAL INSTRUCTIONS

TEG DISPOSAL @ \$2.00 each Return Pickup



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CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SALC DATE: 9/25/94 PAGE 1 OF 2
 ADDRESS: _____ TEQ PROJECT #: 9#0919CM
 PHONE: _____ FAX: _____ LOCATION: TEAD S Area
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____ COLLECTOR: Paul Mosher DATE OF COLLECTION: 9/25/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													Volume withdrawn FIELD NOTES	Total Number Of Containers	Laboratory Note Number	
					VOA 801/8010	VOA 802/8020	VOA 824/8240	Semi Vol 825/8270	TPH 4 1B.1	TPH 8015	TPH 8015 (diesel)	TPH 8015 (gas)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	TOTAL LEAD	PB				ASBESTOS
191905	5	0822	Vapor	Syringe	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191905 D	5	0822			X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191910	10	0851			X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
191915	15	0902			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191920	20	0910			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191925	25	0935			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
191930	30	0957			X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
191935	35	1011			X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
191940	40	1020			X	X	X	X	X	X	X	X	X	X	X	X	X	X	260 cc		
192605	5	1055			X	X	X	X	X	X	X	X	X	X	X	X	X	X	180 cc		
192610	10	1103			X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
192615	15	1123			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
* 192620	20	1147			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
* 192705	5	1229			X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
192710	10	1238			X	X	X	X	X	X	X	X	X	X	X	X	X	X	100 cc		
192715	15	1256			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
* 192615 D	15	1125			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		
192619 192720	20	1308			X	X	X	X	X	X	X	X	X	X	X	X	X	X	200 cc		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	SAMPLE RECEIPT TOTAL NUMBER OF CONTAINERS CHAIN OF CUSTODY SEALS Y/N/NA SEALS INTACT? Y/N/NA RECEIVED GOOD COND./COLD NOTES:	LABORATORY NOTES:
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME		
SAMPLE DISPOSAL INSTRUCTIONS					
<input type="checkbox"/> TEG DISPOSAL @ \$2.00 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup					



CHAIN-OF-CUSTODY RECORD
P.O. #:

CLIENT: SAIC DATE: 9/25/94 PAGE 2 OF 2
 ADDRESS: _____ TEG PROJECT #: 940919CM
 PHONE: _____ FAX: _____ LOCATION: TEAD 5 AREA
 CLIENT PROJECT #: _____ PROJECT MANAGER: _____ COLLECTOR: Aul Mosher DATE OF COLLECTION: 9/25/94

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														Vol. WITHDRAWN	FIELD NOTES	Total Number Of Containers	Laboratory Note Number		
					VOA 801/8010	VOA 802/8020	VOA 824/8240	Semi Vol 825/8270	TPH 418.1	TPH 8015	TPH 8015 (diesel)	PNA 8015 (total)	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PH	ASBESTOS						
192725	25	1320	VAMP	SYRINGES	X					X											260 cc			
* 192625	25	1155	11	11	X					X												260 cc		
330120	20	1412	11	11	X					X												200 cc		
330520	20	1438	11	11	X					X												200 cc		
331620	20	1532	11	11	X					X												200 cc		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	SAMPLE RECEIPT TOTAL NUMBER OF CONTAINERS CHAIN OF CUSTODY SEALS Y/N/A SEALS INTACT? Y/N/A RECEIVED GOOD COND./COLD NOTES:	LABORATORY NOTES:
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME		
SAMPLE DISPOSAL INSTRUCTIONS <input type="checkbox"/> TEG DISPOSAL @ \$2.00 each <input type="checkbox"/> Return <input type="checkbox"/> Pickup					



TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY.

CHAIN-OF-CUSTODY RECORD
P.O. #: _____

CLIENT: <u>SACC</u>	DATE: <u>9/20/04</u> PAGE <u>1</u> OF <u>1</u>
ADDRESS: _____	TEG PROJECT #: <u>940919CM</u>
PHONE: _____ FAX: _____	LOCATION: <u>TEAD S. Area</u>
CLIENT PROJECT #: _____ PROJECT MANAGER: _____	COLLECTOR: <u>P. Mosher</u> DATE OF COLLECTION: <u>9/20/04</u>

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														Volume withdrawn	FIELD NOTES	Total Number Of Containers	Laboratory Note Number			
					VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015	TPH 8015 (diesel)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PH	ASBESTOS							
192805	5	0847	vapor	syringe	X	X				X	X												100cc		
192805D	5	0852	"	"	X	X				X	X												100cc		
192810	10	0916	"	"	X	X				X	X												100cc		
192815	15	0925	"	"	X	X				X	X												200cc		
192820	20	0937	"	"	X	X				X	X												200cc		
192825	25	0947	"	"	X	X				X	X												200cc		
192830	30	1000	"	"	X	X				X	X												260cc		
192835	35	1010	"	"	X	X				X	X												260cc		
192840	40	1022	"	"	X	X				X	X												260cc		

RELINQUISHED BY (Signature) _____ DATE/TIME _____	RECEIVED BY (Signature) <u>P Mosher</u> DATE/TIME <u>9-26-04 11:08</u>
RELINQUISHED BY (Signature) _____ DATE/TIME _____	RECEIVED BY (Signature) _____ DATE/TIME _____

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	_____
CHAIN OF CUSTODY SEALS Y/N/A	_____
SEALS INTACT? Y/N/A	_____
RECEIVED GOOD COND./COLD	_____
NOTES:	_____

LABORATORY NOTES:

SAMPLE DISPOSAL INSTRUCTIONS
 TEG DISPOSAL @ \$2.00 each Return Pickup

Daily Log

Date: 9/17/04

Job Name or Number: 940919 SP8 (CM)

Time

0740 ARRIVAL AT MAIN GATE - CLIENT NOT PRESENT.
 0750 FOUND JOHN (SAIC) PENNINGTON
 0940 BADGES - MAIN GATE & ~~WALK~~ ~~FT~~ ~~TEST~~ ~~PROP~~ ~~USE~~ ~~2.0~~
 1020 RESP. TEST - DRIVE TO ANOTHER BLDG
 1030 MACK TEST - " " " "
 1040 SITE ORIENTATION - ON SITE
 1110 START DRIVING
 1120-1145 DISCUSS WILLAM SOIL, WIS ETC. W/ BLAIR. I WAIT FOR BLAIRS
 1340 DROP MAST - LIGHTNING NEARBY - THUNDER HEADS
 DIRECTLY ABOVE
 1430 START SAMPLING AGAIN!
 1755 ROAD READY - WAIT FOR LAB
 1830 OFF SITE

16 samples taken

JASON FERBER
Completed By (print)

9/17/04
Date

070
130

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN P.; JOE Weather: SUN / WARM → THUNDERSTORM

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-01-05	5	1219	?	6000	N	Y	50 cc	
19-01-10	10	1227	?	6000	—		50	HARD AT 9' - BUMPER!
19-01-15	15	1300	?	6000	—		200	
19-01-20	20	1308	?	6000	—		200	SOFT AT 16'
19-01-25	25	1328	?	6000	—	Y	200	HARD AT 23'
19-01-30	30	1346	?	6000	—	Y	260	
19-01-35	35	1345	?	WITH FLIGHT	—	Y	260	
19-01-40	40	1302	?	6000	—	Y	260	
19-02-05	5	1533	?	6000	—	Y	50	
19-02-10	10	1541	?	6000	—	Y	50	HARD AT 7' REF. AT 10' REF.

not sure what + ref
TOEL 15'

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JUC Weather: THUNDER, 5-6 MS / -20' 0.1-0.2

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-02 15	10	1555	?	?	N	/	/	NEW HOLE REF. AT 10' N/S
19-02 15	15	1613	?	Good	N	Y	100 200	NEW HOLE - GOT THROUGH THIS TIME
19-02 20	20	1624	?	Good	N	Y	200	
19-02 25	25	1638	?	Good	N	Y	200	
19-02 30	30	1653	?	Good	N	N	260	
19-02 35	35	1710	?	Good	N	N Y	260	
19-02 40	40	1719	?	Good	N	Y	260	

Daily Log

Date: 9/20/14

Job Name or Number: 940919 S.28

Time

0650 ARRIVE SITE
0700 READY TO SAMPLE - WAITING FOR IAH
0825 FOOT 1 - SAMPLE - ONLY SEE GC WARNING = SLOW
1640 READY FOR NEXT HOLE - DECIDE TO PICK UP ETC
- WOULD TAKE 20 MIN
1730 LEAVE SITE

19:00 SAMPLES
2 DUPLICATES
1 NO DRAW

JASON FERRER
Completed By (print)

9/20/14
Date

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN = JOR Weather: cool, overcast

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-03 05	5	0829	?	Good	N	Y	180cc	
19-03 05D	5	0851	?	Good	N	Y	100	
19-03 10	10	0941	?	Good	N	Y	100	
19-03 15	15	1004	?	Good	N	Y	200	
19-03 20	20	1035	?	Good	N	N	200	
19-03 20D	20	1100	?	Good	N	N	200	
19-03 25	25	1143	?	Good	N	N	200	GLITCHED EPIT - pull out + GO BACK IN TO 25' - NEW FILE
19-03 30	30	1210	?	Good	N	Y	260	
19-03 35	35	1225	?	216 ¹¹	N	Y	260	
19-03 40	40	1245	?	D	N	Y	260	NO SAMPLE 200 T/S 41

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JOE Weather: COOL

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-03 45	45	1300	?	GOOD	N	Y	320	
19-03 50	50	1317	?	SLOW	N	Y	320	
19-04 05	5	1348	?	GOOD	N	N	100	
19-04 10	10	1351	?	GOOD	N	N	100	
19-04 15	15	1412	?	GOOD	N	Y	200	
19-04 20	20	1419	?	GOOD	N	N	200	
19-04 20	20	1436	?	GOOD	N	N	200	
19-04 25	25	1505	?	GOOD	N	Y	200	RESAMPLE DR - ATTN TAKEN
19-04 30	30	1518	?	GOOD	N	Y	350	
19-04 35	35	1521	?	GOOD	N	Y	260	RESAMPLE DR - ATTN TAKEN

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN TOR Weather: COOL

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-04 40	40	1539	?	good	N	Y	260	
19-04 45	45	1557	?	good	N	Y	520	
19-04 50	50	1612	?	good	N	Y	320	

Daily Log

Date: 2/21/94

Job Name or Number: 940914 SP8

Time

0650	STARTED ON SITE
0700	LEFT SITE IN FULL TO TAKE
1720	OFF SITE 32 SAMPLES
	1 NO DRAW
	1 NOT ANALYZED
	<u>34</u>
	3 DUPLICATES

ASON TERPAC
Completed By (print)

2/21/94
Date

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP3

Field Reps: JOHN JUE Weather: ...

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-05 05	5	0729	?	Good	N	Y	100	
19-05 10	10	0735	?	Good	N	N	100	
19-05 15	-	0751	?	Good	N	Y	200	
19-05 20	20	0807	?	Good	N	N	200	
19-05 25	25	0819	?	Good	N	N	200	
19-05 30	30	0828	?	Good	N	N	200	STOPPED AT 30 INGS 150
19-06 05	5	0823	?	Good	N	N	100	
19-06 10	10	0827	?	Good	N	N	100	
19-06 15	15	0831	?	Good	N	N	100	
19-06 20	20	0835	?	Good	N	N	100	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JC Weather: 30-40-2004

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
14-06 25	25	1006	?	Good	N	N	200	
14-06 30	30	1019	?	Good	N	N	320	
14-06 35	35	1044	?	TIGHT	N	Y	320	
12-06 40	40	1101	?	TIGHT	N	Y	320	
19-07 05	5	1128	?	Good	N	N	100	
19-07 10	10	1136	?	Good	N	N	100	
19-07 15	15	1142	?	Good	N	N	200	
19-07 20	20	1151	?	Good	N	N	200	
19-07 25	25	1158	?	Good	N	N	200	
19-07 30	30	1164	?	Good	N	N	200	
19-07 35	35	1170	?	Good	N	N	200	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: Tom JAC Weather: SUN. WINDY

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-07 30	30	1243	?	TIGHT	N	N	320	
19-07 35	35	1300	?	NO DRAW	N	Y	✓	CANT GET SAMPLE
19-07 40	40		?	GOOD	N	N	320	
19-08 05	05	1341	?	GOOD	N	N	100	
19-08 10	10	1347	?	GOOD	N	N	100	
19-08 15	15	1405	?	GOOD	N	N	200	
19-08 20	20	1414	?	GOOD	N	N	200	
19-08 25	25	1422	?	GOOD	N	N	200	
19-08 30	30	1441	?	TIGHT	N	N	320	
19-08 35	35	1447	?	TIGHT	N	N	320	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOE DOC Weather: WINDY

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-08 35	35	1512	?	7.6 L/min	N	N	320	
19-08 40	40	1524	?	7.6 L/min	N	N	320	DIG NOT REACHED AS PER CLIENT REQUEST
19-09 05	5	1600	?	6.0 L/min	N	N	100	
19-09 10	10	1618	?	6.0 L/min	N	Y	100	EMERGENCY - NOISE WINDY AS WELL
19-09 15	15	1629	?	6.0 L/min	N	N	200	WINDY DURING PROBE SETUP AND DRAWING
19-09 20	20	1640	?	6.0 L/min	N	Y	200	
19-09 25	24.5	1650	?	6.0 L/min	N	N	200	REF. AT 24.5' WINDY TAKE SAMPLE HERE

Daily Log

Date: 9/22/94

Job Name or Number: 540919 SP8

Time

0650
1730

ARRIVE ON SITE

LEFT SITE

30 SAMPLES TAKEN

3 DUPLICATES

SEE NOTES FOR INFO ON REFSAL

LOTS of Refusal TODAY.

JASON FEEBEN
Completed By (print)

9/22/94
Date

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JOE Weather: cool at 1 dark

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-10 05	5	0730	?	Good	N	N	100	
19-10 10	10	0739	?	Good	N	N	100	
19-10 15	15	0753	?	Good	N	N	200	
19-10 15D	15	0807	?	Good	N	N	200	
19-10 20	20	0817	?	Good	N	N	200	
19-10 25	25	0827	?	Good	N	Y	200	WHITE POWDER IN LINE -
19-10 30	30	0841	?	Good	N	Y	200 260	powder
19-10 35	35	0851	?	Good	N	Y	200 260	powder
19-10 40	40	0905	?	Good	N	Y	200 260	
19-11 05	5	0940	?	Good	N	N	100	POST. AT 5' NO. 1 ... + ...

Strataprobe
Soil Gas Sampling Field Log

svfldiog.xls

Date: 2/20

Page 2 of

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JOE Weather: SUN, 16MM

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-11 10	10	1004	?	good	N	N	100	2ND ATTEMPT WENT STRAIGHT TO 10'
19-11 15	15	1013	?	good	N	Y	200	
19-11 20	20	1022	?	good	N	N	200	
19-11 25	25	1039	?	TIGHT	N	Y	200	
19-11 30	30	1055	?	VERY TIGHT	N	Y	200	
19-12 05	5	1131	?	GOOD	N	N	100	
19-12 05D	5	1135	?	GOOD	N	N	100	
19-12 10	10	1155	?	TIGHT	N	Y	100	
19-12 15	15	1207	?	GOOD	N	N	100	
19-12 20	20	1221	?	GOOD	N	N	200	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: Jason / [unclear] Weather: Sunny 14/10

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-12 25	25	1231	?	GOOD	N	N	200	
19-12 30	30	1246	?	GOOD	N	N	260	
19-12 35	35	1258	?	GOOD	N	N	260	
19-12 40	40	1315	?	GOOD	N	N	260	
19-13 05	5	1426	?	GOOD	N	N	100	
19-13 05D	5	1427	?	GOOD	N	N	100	
19-13 10	10	1447	?	GOOD	N	N	100	
19-13 15	—	1500						REF. AT 11 11:00 AM + 11:45 AM
19-13 15	—	1511						REF. AT 11 11:00 AM + 11:45 AM
19-13 15	—	1511						REF. AT 11 11:00 AM + 11:45 AM

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: Jason JOR Weather: WINDY, WINDY

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-20 05	5'	1549	?	GOOD	N	Y	100	ACROSS ST. (59°C YANK)
19-20 10	10	1602	?	GOOD	N	Y	100	WHITE POWDER COMING UP LINE
19-20 15		1615						REF. AT 11 1/2'
19-21 05	5'	1634	?	GOOD	N	Y	100	WHITE POWDER IN LINE
19-21 10	10	1642	?	GOOD	N	Y	100	POWDER IN LINE
19-21 15		1648						REF. AT 11'
19-22 05	5'	1701	?	GOOD	N	Y	100	
19-22 10	10	1708	?	GOOD	N	Y	100	
19-22 15		1716						REF. AT 11'

Daily Log

Date: 9/23/94

Job Name or Number: 940919SP8

Time

0700 ARRIVE

0705 READY TO SAMPLE

0815 CLIENT ARRIVED + SHOWED ME WHAT HE WANTED

0815-0900 SOIL GAS SAMPLE

0900-0930 SOIL SAMPLE TO SEE WHAT WE ARE GETTING + REUSE!

0950 DONE w/ POINTS client has showed us - waiting
FOR SAC TO GO OVER DATA

1015 START WORK AGAIN

1600 DONE - WAIT FOR CLIENT

1630 CLIENT DECIDES WE SHOULD PICK UP KIMMORAW

1700 OFF SITE

John Finner
Completed By (print)

9/23/94
Date

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: SMH Weather: Cloudy

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-23 05	5	0819	?	good	N	Y	100	
19-23 10	10	0823						REF. AT 7' NOW TURN AGAIN
19-23 10		0824						REF. AT 7'
19-24 05	5	0845	?	good	N	N	100	
19-24 10	10	0856	?	good	N	N	100	Powder in the line
19-25 05	5	0934	?	good	N	N	100	
19-25 10	10	0942	?	good	N	N	100	BLWT PIPE (0.1-4" S-1100) REF. AT 10'
19-14 05	5	0830	?	good	N	N	100	
19-14 05	5	0831	?	good	N	N	100	
19-14 10	10	0832	?	good	N	N	100	

700P
Soil Sample
TO SEE
WHAT IS
HAPPENING

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN, JOC Weather: 40-24 10

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-14 15	15	1057	?	Very High	N	Y	200	
19-14 20	20	1106	?	Good	N	N	200	
19-14 25	25	1118	?	Good	N	Y	200	
19-14 30	30	1133	?	Good	N	Y	260	
19-14 35	35	1148	?	High	N	Y	260	
19-14 40	40	1159	?	Good	N		300	
19-14 5	5	1225	?	Good	N	N	100	
19-14 10	10	1230	?	Good	N	N	100	
19-14 15	15	1250	?	?	N	N	100	
19-14 20	20	1300	?	Good	N	Y	200	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JOE Weather: WS

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-15 20	20	1314	?	good	N	N	200	
19-15 25	25	1332	?	TIGHT	N	Y	200	
19-15 30	30	1342	?	TIGHT	N	Y	260	
19-15 35	35	1358	?	TIGHT	N	Y	260	
19-15 40	40	1410	?	TIGHT	N	Y	260	
19-16 05	5	1400	?	GOOD	N	N	100	
19-16 10	10	1509	?	TIGHT	N	N	100	
19-16 15	15	1520	?	TIGHT	N	Y	200	powder
15-16 20	20	1435	?	LOW TIGHT	N	Y	200	
15-16 25	25	1450	?	TIGHT	N	Y	200	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN DOE Weather: 32/55

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
15-16 250	25	1600	?	good	N	Y	200	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: JOHN JEC Weather: cloudy

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
33-01 10	10	0741	?	good	N	Y	100	
33-02 10	10	0802	?	good	N	Y	100	
33-03 10	10	0815	?	good	N	N	100	
33-04 10	10	0829	?	good	N	N	100	
33-05 10	10	0845	?	good	N	N	100	
33-06 10	10	0859	?	good	N	N	100	
33-06 10	10	0900	?	good	N	N	100	
33-07 0	10	0912	?	good	N	N	100	
33-08 0	10	0933	?	good	N	N	100	
33-09 0	10	0948	?	good	N	N	100	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: _____ Weather: Cloudy

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
33-10 10	10	1004	?	good	N	N	100	
33-11 10	10	1020						REF AT 7' MORNING AGAIN
33-11 07	7	1024	?	good	N	N	100	REF AT 7'
33-12 10	10	1040	?	good	N	N	100	
33-12 20	20	1051	?	good	N	N	200	
33-13 07	7	1105	?	good	N	N	100	
33-14 10	10	1124	?	good	N	N	100	
33-15 10	10	1137	?	good	N	N	100	
33-16 10	10	1150	?	good	N	N	100	
33-17 10	10	1200	?	good	N	N	100	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: Jason Weather: Cloudy

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
37-17 10	10	1208	?	good	N	N	100	
37-18 10	10	1223	?	good	N	N	100	
37-19 10	10	1235	?	good	N	N	100	
37-20 10	10	1248	?	good	N	N	100	
17-17 05	5	1351	?	good	N	N	100	
17-17 10	10	1355	?	good	N	N	100	
17-17 15	15	1418	?	good	N	N	200	
17-17 20	20	1427	?	good	N	N	200	
17-17 25	25	1438	?	good	N	Y	200	
17-17 30	30	1448	?	good	N	N	200	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP3

Field Reps: _____ Weather: _____

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-17 30	29	1508	?	good	N	Y	200	REF. AT 29' WILL TAKE 30' SAMPLE HERE + - BY TO GO DEEPER IN ... hole
19-17 30		1550						NEW ... REF AT 29' TIME ...
19-18 05	5	1602	?	good	N	N	100	
19-18 10	10	1611	?	good	N	N	100	
19-18 15	15	1623	?	good	N	Y	200	
19-18 20	20	1637	?	good	N	N	200	
19-18 25	25	1651	?	light	N	N	200	
19-18 30	30	1704	?	good	N	Y	260	
19-18 35	35	1714	?	good	N	N	260	
19-18 40	40	1724	?	good	N	N	260	

Daily Log

Date: 9/25/94

Job Name or Number: 9409195PS

Time

0800 ARRIVE

1700 DEPART

MUST WAIT UNTIL MONDAY FOR

FURTHER SAMPLE LOCATIONS BECAUSE

ARMY/DEPT HAS ACCESS
KEY #

LEON FERBER
Completed By (print)

9/25/94
Date

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S., UTAH Operators: JASON

Client: SAIC Strataprobe #: SP8

Field Reps: TRIN JOE Weather: cool sun

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-19 05	5	0822	?	9000	N	N	100	
19-19 05D	5	0822	?	9000	N	N	100	
19-19 10	10	0851	?	9000	N	✓	100	
19-19 15	15	0902	?	7160	N	✓	200	
19-19 20	20	0910	?	6000	N	N	200	
19-19 25	25	0935	?	9000	N	N	200	power on line
19-19 30	30	0957	?	5000	N	N	260	
19-19 35	35	1011	?	7160	N	✓	260	power on line
19-19 40	40	1021	?	9000	N	✓	260	
19-26 05	5	1157	?	9000	N	✓	260	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP3

Field Reps: Jason Weather: S.W

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-26 10	10	1103	?	5000	N	N	100	
19-26 15	15	1120	?	5000	N	N	100	
19-26 15D	15	1130	?	5000	N	N	100	
19-26 20	20	1149	?	5000	N	N	200	
19-26 25	25	1159	?	5000	N	Y	200	
19-27 05	5	1230	?	5000	N	N	100	
19-27 10	10	1238	?	5000	N	N	100	
19-27 15	15	1256	?	5000	N	N	200	
19-27 20	20	1307	?	5000	N	N	200	
19-27 25	25	1312	?	5000	N	N	100	

Site Name: TOELLE SOUTH AREA TEG Project #: 940919CM

Site Location: TOELLE S, UTAH Operators: JASON

Client: SAIC Strataprobe #: SP3

Field Reps: JOAN Weather: Sunny

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
33-01 70	20	14:14	?	good	N	N	200	
33-05 70	20	14:38	?	good	N	N	200	
33-16 70	20	15:38	?	good	N	N	200	

Site Name: Tooele TEG Project #: 1000-01

Site Location: Tooele Operators: Frank

Client: SAIC Strataprobe #: 5

Field Reps: Tom Weather: cool

Sample ID	Depth	Time	Soil Type	Soil gas flow/draw	Odor	New tubing	SG Volume purged	Remarks
19-28 05	5	0851	?	good	N	N	100	
19-28 05D	5	0900	?	good	N	N	100	
19-28 10	10	0915	?	good	N	N	100	
19-28 15	15	0925	?	good	N	N	200	
19-28 20	20	0936	?	good	N	N	200	
19-28 25	25	0949	?	good	N	N	200	
19-28 30	30	1001	?	good	N	N	260	
19-28 35	35	1014	?	good	N	N	260	
19-28 40	40	1028	?	good	N	N	260	