received after 8/13/93

Environmental
Science &
Engineering, Inc.

TO: Alameda County Health Care Services Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 350
Oakland, CA 94621

DATE: August 10, 1993

ATTN: Mr. Scott O. Seery

JOB NUMBER: 6-93-5077

SUBJECT: Old Graystone Fueling Area, Santa Rita Correctional Facility, Dublin, California

WE ARE TRANSMITTING THE FOLLOWING:

- One copy of the workplan for soil stockpile sampling at the subject site; June 28
- One copy of an addendum to the workplan for soil stockpile sampling at the subject site; and, July 19
- One original report presenting the results of soil stockpile sampling at the subject site to date. Aug 9

These documents have been forwarded to your attention pursuant to the request of Mr. Peter Kinney of the Alameda County General Services Agency (GSA).

DIST:
LB
FILE
ORIGINATOR

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

BY _____
Bart S. Miller
Senior Staff Geologist

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

Environmental
Science &
Engineering, Inc.

June 28, 1993

Project No. 6-93-5077

Mr. Scott O. Seery
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
80 Swan, Room 350
Oakland, California 94621

SUBJECT: Old Graystone Fueling Area, Santa Rita Correctional Facility, Dublin, Alameda County, California

Dear Mr. Seery,

Environmental Science & Engineering, Inc. (ESE) presents the following workplan on behalf of the Alameda County General Services Agency (GSA). The workplan is for sampling stockpiled soil impacted with gasoline that is being remediated. The GSA has reported to ESE that impacted soil has and is being aerated at the site in accordance with Bay Area Air Quality Management District (BAAQMD) regulations. This site work will provide the data required to determine whether aeration has been effective in remediating the soil of gasoline constituents or whether more aeration is required.

Background

In February, 1993, ESE directed the excavation of approximately 6,500 cubic yards of soil from the former vehicle fueling facility in the Old Graystone area of the Santa Rita Correctional Facility (ESE Corrective Action Report - April 27, 1993). ESE estimated that approximately 5,000 cubic yards of this soil was impacted with gasoline and stockpiled on site. Based on visual and olfactory observations made during excavation and removal of this soil, approximately 1,500 cubic yards of non-impacted soil was stockpiled separately.

During April, 1993, ESE measured, mapped, and sampled the stockpiled soil at the subject site for the purpose of characterization (ESE Letter Report - June 7, 1993). A total of 100 soil samples were collected by ESE from stockpiles having a cumulative estimated volume of approximately 4,235 cubic yards and analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G) and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX). Reported analytical results indicated an average TPH-G concentration of 209 parts per million (ppm) with associated detectable concentrations of BTEX constituents. ESE recommended that the GSA perform controlled aeration of the impacted soil following guidelines indicated in BAAQMD Regulation 8, Rule 40.

GSA directed the spreading of approximately 1,350 cubic yards of stockpiled soil at the site. The soil is spread over an area of approximately 115 feet by 320 feet by an approximate depth of one foot. The soil was initially spread on June 15, 1993. To determine whether gasoline constituents have been effectively aerated and remediation of the soil can be considered complete, verification sampling must be completed. ESE presents the following workplan consisting of verification sampling and analyses. The following tasks are proposed:

Task 1 - Verification Soil Sampling

Soil sampling will be conducted in accordance with BAAQMD regulations (Regulation 8 Rule 40, Aeration of Contaminated Soil) which require one discrete soil sample be analyzed per 50 cubic yards of soil. Since 1,350 cubic yards of soil are stockpiled at the property, ESE will collect a total of 27 verification samples. Upon diagramatically dividing the stockpile into a total of 92 square sectors (20 foot by 20 foot by 1 foot) and numbering each sector, ESE selected the 27 sample sectors using a random number generating computer program. One stockpile sample will be collected within each sector.

Prior to work start, all onsite personnel will attend a brief health and safety tailgate meeting. The purpose of the meeting is to summarize the health and safety plan and describe the potential hazards and mitigation measures. It is assumed that work will be performed in a level D personal protective gear, however, if necessary respirators will be worn. A photoionization detector (PID) will be used to periodically measure the total concentration of volatile organic compounds (VOCs) in the breathing zone of the workers and act as a preliminary screening tool during soil sampling.

Soil stockpile sample locations will be marked on the pile using stakes or other temporary marking methods as shown on Figure 1 - Soil Stockpile Sample Locations. Each location will delineate 50 cubic yards of soil.

One soil sample will be collected at each location at a depth of approximately six inches below the stockpile surface. Sampling will be performed by digging to the specified depth at each location within the stockpile with a clean stainless steel trowel and inserting a pre-cleaned, six-inch brass liner into the soil. Shredded plastic, concrete fragments, and other inert debris will not be included in the sample. Upon retrieval, the sample will be immediately capped with teflon-lined plastic caps, sealed with duct tape, labeled and documented on a chain of custody form. The sample will then be placed under ice in a cooler. Upon completion of the sampling, the samples will be transported under chain of custody documentation to Mc Campbell Analytical, a California certified laboratory. All sample locations will be noted in field notes prepared at the site. All sampling equipment will be cleaned between use using soap and water with a clean water rinse.

Task 2 - Sample Analyses

Each of the 27 samples collected will be analyzed for the following:

- TPH-G using EPA Method 5030/8015 (modified per CA LUFT), and
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) using EPA Method 5030/8020.

Task 3 - Report Preparation

Upon receipt of the laboratory analytical results for the stockpile samples, ESE will evaluate the data and prepare a brief report of the work. This report will describe sampling methodology and locations and present the analytical results in tabular form. Based on findings, ESE will present recommendations regarding continued soil treatment or onsite/offsite disposal.

The work is described herein is scheduled for July 1, 1993. Please contact Bart Miller or Pat Galvin at (510) 685-4053 with any questions or comments regarding this work.

Sincerely,

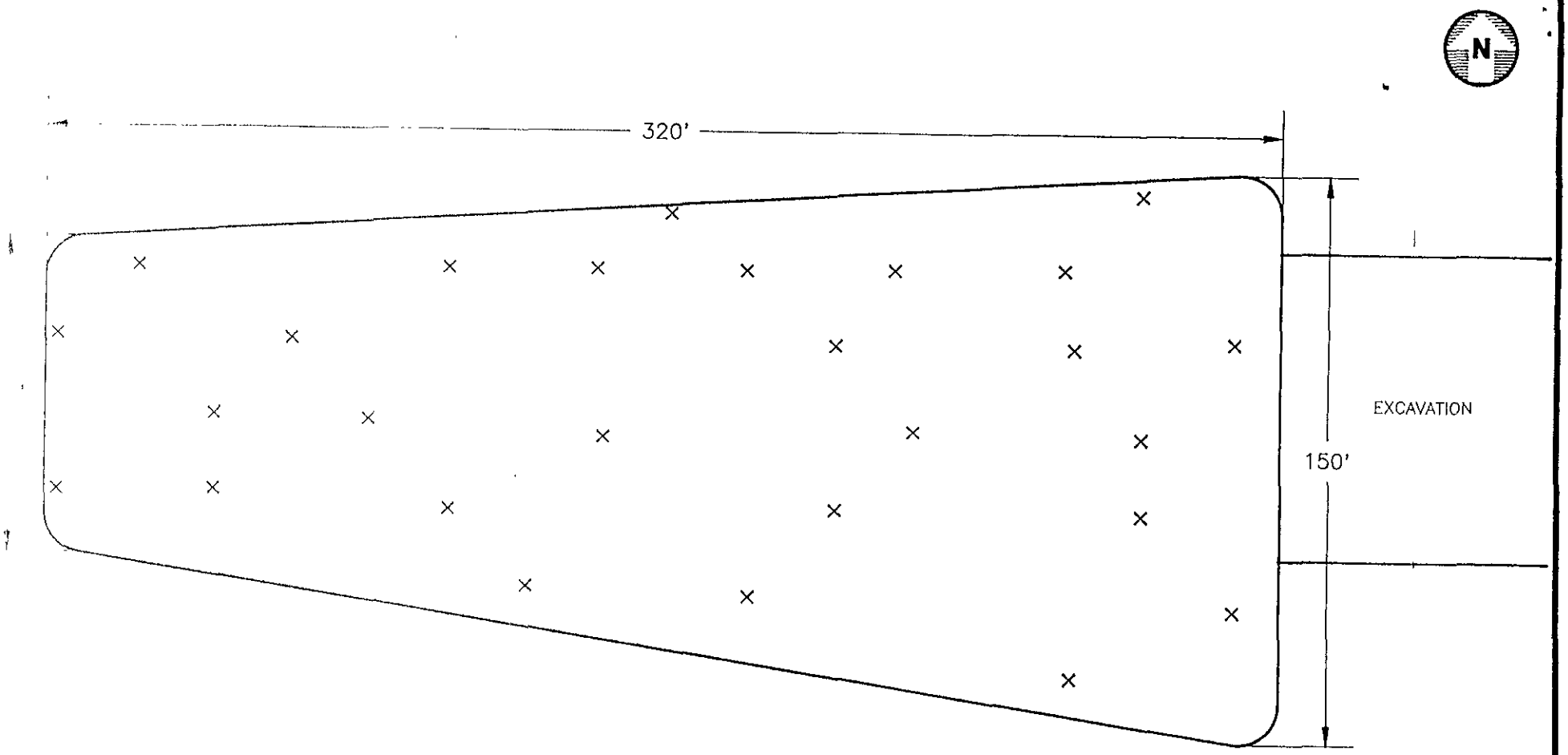
ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Bart S. Miller
Senior Staff Geologist

Susan S. Wickham, RG 3851
Senior Geologist

F:\Projects\5077\062893.wkp

Attachment - Figure 1



SCALE
0 40 FEET

LEGEND
× PROPOSED SOIL SAMPLE LOCATIONS

NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

ESE A CILCORP Company **Environmental Science & Engineering, Inc.**	DATE 6/93	PROJ. NO. 6-93-5077	OLD GRAYSTONE FUELING AREA SANTA RITA CORRECTIONAL FACILITY DUBLIN, CALIFORNIA
	DRAWN BY CVS	CAD FILE 50771001	
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	APPROVED BY	REVISED	FIGURE 1 SOIL STOCKPILE SAMPLE LOCATIONS

Environmental
Science &
Engineering, Inc.

July 19, 1993

Mr. Scott O. Seery
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
80 Swan Way, Room 350
Oakland, California 94621

SUBJECT: ADDENDUM TO WORKPLAN FOR STOCKPILED SOIL REMEDIATION AND SAMPLING
OLD GRAYSTONE FUELING AREA
SANTA RITA CORRECTIONAL FACILITY
DUBLIN, CALIFORNIA
ESE PROJECT #6-93-5077

Dear Mr. Seery:

Environmental Science & Engineering, Inc. (ESE) presents the following addendum to a workplan prepared by ESE on June 28, 1993 for the Alameda County General Services Agency (GSA). The workplan prepared by ESE proposed three tasks which included:

- Verification sampling of gasoline-impacted soil stockpiled at the subject site;
- Analytical testing of stockpile soil samples; and,
- Preparation of a report for the Alameda County Health Care Services Agency (HCSA) documenting the results of analytical testing of the verification samples.

This addendum to the workplan documents the analytical findings of preliminary stockpile soil samples collected by ESE at the subject site and introduces the additional task of soil tilling to facilitate the effective aeration of the impacted soil.

BACKGROUND

PREVIOUS WORK

In February, 1993, ESE directed the excavation of approximately 6,500 cubic yards of soil from the former vehicle fueling facility in the Old Graystone area of the Santa Rita Correctional Facility (ESE Corrective Action Report - April 27, 1993). ESE estimated that approximately 5,000 cubic yards of this soil was impacted with gasoline and stockpiled on site. Based on visual and olfactory observations made during excavation and removal of this soil, approximately 1,500 cubic yards of soil were presumed to be non-impacted and was stockpiled at separate locations.

During April, 1993, ESE measured, mapped, and sampled the stockpiled soil at the subject site for the purpose of characterization and re-estimated the volume of impacted soil to be 4,235 cubic yards (ESE Letter Report - June 7, 1993). A total of 100 soil samples were collected by ESE from the stockpiles of impacted soil and analyzed for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The 1,500 cubic yards of stockpiled soil presumed to be non-impacted were not sampled and analyzed for verification.

Reported analytical results indicated an average TPH-g concentration of 209 milligrams per kilogram (mg/kg) with associated detectable concentrations of BTEX constituents. Detectable concentrations of TPH-g greater than 1 mg/kg were reported in soil samples representing 1,350 cubic yards of the stockpiled soil. ESE recommended that the GSA perform controlled aeration of the 1,350 cubic yards of soil following guidelines set forth by the Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 40. The GSA has advised ESE that the remaining 2,885 cubic yards of soil has been spread on the ground surface at another location on the property.

The GSA directed the spreading of the 1,350 cubic yards of impacted soil at the site. The soil is spread over an area of approximately 115 feet by 320 feet by an approximate depth of one foot. The soil was initially spread on June 15, 1993.

CURRENT ACTIVITY

PRELIMINARY SOIL SAMPLE RESULTS

To determine whether gasoline constituents had been effectively aerated and remediation of the soil could be considered complete, ESE performed preliminary verification sampling of the stockpile on July 1, 1993. A total of 27 soil samples were collected by ESE and submitted to McCampbell Analytical, Inc. (a State-certified laboratory) for TPH-g and BTEX analysis using analytical methods EPA 8015 (modified per CA LUFT) and EPA 8020, respectively. Soil samples were collected at the locations shown on Figure 1- Soil Stockpile Sample Locations.

A total of 18 of the 27 soil samples were reported to contain detectable concentrations of TPH-g and BTEX (Attachment 1 - Analytical Results and Chain of Custody Documentation). Stockpile soil sample TPH-g analytical results are shown in Figure 2 - Soil Sample Analytical Results.

TILLING OF STOCKPILED SOIL

Based on the analytical findings for soil samples collected from the stockpile at the subject site, ESE recommended to the GSA that the additional task of tilling the stockpiled soil be performed to facilitate the aeration of the volatile gasoline constituents. Upon receipt of approval from the GSA, ESE proceeded to till the stockpiled soil on both July 9 and July 16, 1993.

ESE will collect verification soil samples from the stockpile locations where preliminary sampling indicated TPH-g concentrations in excess of 1.5 milligrams per kilogram (mg/kg). A total of 14 soil samples were reported to have a TPH-g concentration greater than 1.5 mg/kg (Figure 2). It is ESE's understanding that the GSA will backfill and compact the upper approximate six feet of the site excavation using the aerated soil having an average TPH-g concentration of less than 1 mg/kg.

Soil sample collection is scheduled for July 21, 1993. Please contact Bart Miller or Patrick Galvin at (510) 685-4053 with any questions regarding this work.

Sincerely,
ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

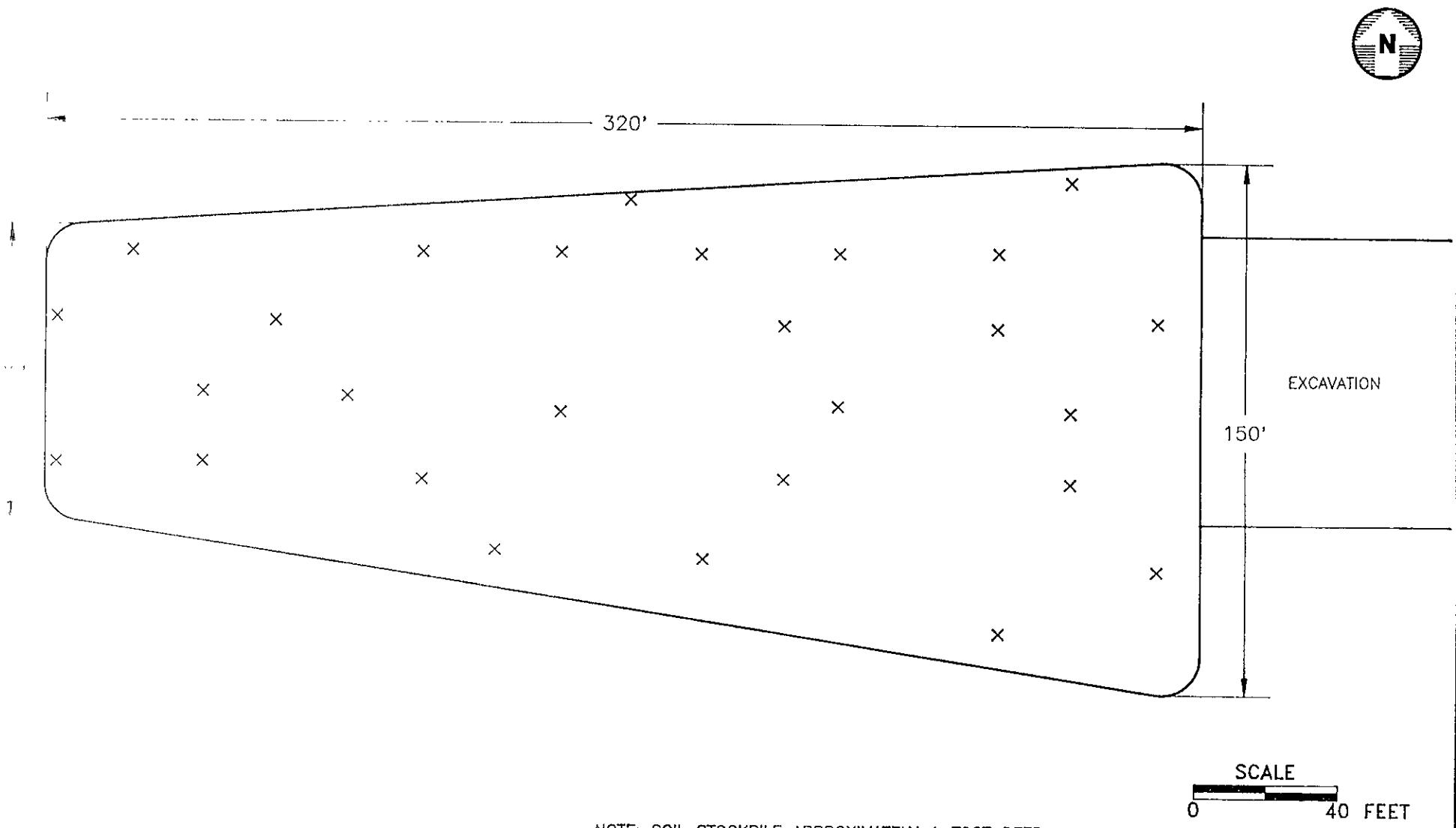
Bart S. Miller
Senior Staff Geologist

Patrick E. Galvin
Senior Engineer

Figures
Attachment

F:\Projects\5077\071993.WKP

FIGURES



LEGEND

× SOIL SAMPLE LOCATIONS

NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

ESE A CILCORP Company — Environmental Science & Engineering, Inc.	DATE 6/93	PROJ. NO. 6-93-5077	OLD GRAYSTONE FUELING AREA SANTA RITA CORRECTIONAL FACILITY DUBLIN, CALIFORNIA
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DRAWN BY CVS	CAD FILE 50774001	FIGURE 1 SOIL STOCKPILE SAMPLE LOCATIONS
	APPROVED BY	REVISED 7/93 BSM	

ATTACHMENT 1

Analytical Results and Chain of Custody Documentation

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng. 4090 Nelson Avenue, Suite J Concord, CA 94520	Client Project ID: # 6-93-5077 Santa Rita Corr. Fac, Dublin, CA	Date Sampled: 07/01/93
		Date Received: 07/01/93
	Client Contact: Bart Miller	Date Extracted: 07/02/93
	Client P.O:	Date Analyzed: 07/04-07/06/93

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
31124	SP-1	S	1.6,b	ND	0.008	ND	0.038	94
31125	SP-2	S	2.1,b	ND	ND	ND	0.021	98
31126	SP-3	S	2.1,b	ND	0.006	ND	0.029	103
31127	SP-4	S	1.4,b	ND	0.007	0.007	0.036	104
31128	SP-5	S	5.6,b	ND	ND	0.005	0.029	103
31129	SP-6	S	ND	ND	ND	ND	ND	107
31130	SP-7	S	ND	ND	ND	ND	0.008	107
31131	SP-8	S	2.1,b,d	ND	ND	ND	0.006	108
31132	SP-9	S	1.0,b	ND	ND	ND	0.010	106
31133	SP-10	S	ND	ND	ND	ND	ND	108
31134	SP-11	S	1.1,d	ND	ND	ND	ND	102
31135	SP-12	S	46,d	ND	0.11	0.080	0.51	100
31136	SP-13	S	1.8,d	ND	ND	ND	ND	96
31137	SP-14	S	31,d	ND	0.073	0.084	0.17	99
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng.	Client Project ID: # 6-93-5077 Santa Rita Corr. Fac, Dublin, CA	Date Sampled: 07/01/93
4090 Nelson Avenue, Suite J		Date Received: 07/01/93
Concord, CA 94520	Client Contact: Bart Miller	Date Extracted: 07/02/93
	Client P.O:	Date Analyzed: 07/04-07/06/93

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
31138	SP-15	S	ND	ND	ND	ND	ND	103
31139	SP-16	S	ND	ND	ND	ND	ND	108
31140	SP-17	S	1.3,d	ND	ND	ND	0.008	107
31141	SP-18	S	76,b,d	ND< 0.05	0.094	0.11	0.79	94
31142	SP-19	S	ND	ND	ND	ND	ND	106
31143	SP-20	S	ND	ND	ND	ND	ND	108
31144	SP-21	S	ND	ND	ND	ND	ND	120
31145	SP-22	S	61,b,d	ND	0.18	ND	ND	99
31146	SP-23	S	210,b,d	ND< 0.1	1.3	1.7	18	122#
31147	SP-24	S	67,b,d	ND	0.17	0.10	0.44	95
31148	SP-25	S	ND	ND	ND	ND	0.009	107
31149	SP-26	S	5.6,d	ND	0.010	0.011	0.006	101
31150	SP-27	S	22,b,d	ND	0.056	0.025	0.011	96
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/02-07/04/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.474	1.619	2.03	73	80	9.4
Benzene	0.000	0.162	0.168	0.2	81	84	3.6
Toluene	0.000	0.160	0.168	0.2	80	84	4.9
Ethyl Benzene	0.000	0.156	0.164	0.2	78	82	5.0
Xylenes	0.000	0.458	0.484	0.6	76	81	5.5
TPH (diesel)	60	401	408	300	113	116	1.8
TRPH (oil & grease)	0.0	21.1	20.7	20.8	101	100	1.9

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/05/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.700	1.694	2.03	84	83	0.3
Benzene	0.000	0.188	0.188	0.2	94	94	0.0
Toluene	0.000	0.190	0.190	0.2	95	95	0.0
Ethyl Benzene	0.000	0.186	0.184	0.2	93	92	1.1
Xylenes	0.000	0.550	0.542	0.6	92	90	1.5
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

AESE # 11

CHAIN OF CUSTODY RECORD

DATE July 1, 1993 PAGE 1 OF 3

PROJECT NAME Santa Rita Corr. Fac.

ADDRESS Dublin, CA

PROJECT NO. 6-93-5077

SAMPLED BY [signature] Bart Miller

LAB NAME McCampbell

ESE Environmental Science & Engineering, Inc.
4080 Nelson Avenue Suite J Concord, CA 94520
(415) 685-4053

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: TPH-G (8015m)	ANALYSES TO BE PERFORMED: BTEX (8020)	LAB #	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
							MATRIX		
SP-1	7/01/93	7:10	AER. STKP.	X	X	31124	Soil	1	2" diam. brass sleeve
SP-2	"	7:15	"	X	X	31125	"	1	"
SP-3	"	7:21	"	X	X	31126	"	1	"
SP-4	"	7:28	"	X	X	31127	"	1	"
SP-5	"	7:39	"	X	X	31128	"	1	"
SP-6	"	7:40	"	X	X	31129	"	1	"
SP-7	"	7:44	"	X	X	31130	"	1	"
SP-8	"	7:57	"	X	X	31131	"	1	"
SP-9	"	8:05	"	X	X	31132	"	1	"
SP-10	"	8:10	"	X	X	31133	"	1	"
SP-11	"	8:20	"	X	X	31134	"	1	"
SP-12	"	8:25	"	X	X	31135	"	1	"

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	7-1-93	15:10
2.			
3.			
4.			
5.			

12 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Bart Miller, ESE; Peter Kinney, GSA

SPECIAL SHIPMENT/ REQUIREMENTS: Cold Transport

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.): Normal TAT. Refer to GSA for invoicing, storage, etc.

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓

GOOD CONDITION ✓ APPROPRIATE ✓

PRESERVATIVE ____ HEAD SPACE ABSENT ____ CONTAINERS ✓

ATE July 1, 1993 PAGE 2 OF 3

CHAIN OF CUSTODY RECORD

PROJECT NAME SANTA RITA CORR FAC.

ADDRESS DUBLIN, CA

PROJECT NO. 6-93-5077

SAMPLED BY [signature] BART MILLER

LAB NAME McCAMPBELL

ESE Environmental Science & Engineering, Inc.

4090 Nelson Avenue
Suite J
Concord, CA 94520

(415) 685-4053

Fax (415) 685-5323

SAMPLE #	DATE	TIME	LOCATION	TPH-G (8015m)	BTEX (8020)									MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
SP-13	7/01/93	8 35	AER. STKP.	X	X			31137						SOIL	1	2" diam. brass sleeve
SP-14	"	8 40	"	X	X			31138						"	1	"
SP-15	"	8:45	"	X	X			31139						"	1	"
SP-16	"	8 50	"	X	X			31140						"	1	"
SP-17	"	8:55	"	X	X			31141						"	1	"
SP-18	"	9:05	"	X	X			31142						"	1	"
SP-19	"	9:15	"	X	X			31143						"	1	"
SP-20	"	9:20	"	X	X			31144						"	1	"
SP-21	"	9 40	"	X	X			31145						"	1	"
SP-22	"	9:46	"	X	X									"	1	"
SP-23	"	9 55	"	X	X									"	1	"
SP-24	"	10:00	"	X	X									"	1	"

31136

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	7-1-93	1510
2.			
3.			
4.			
5.			

31146

31147

12 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: BART MILLER, ESE; PETER KINNEY, GSA

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

SAMPLE RECEIPT	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

Normal TAT. Refer to GSA for invoicing, storage, etc

ICE/T° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATIVE APPROPRIATE CONTAINERS ✓

ESE 12

CHAIN OF CUSTODY RECORD

DATE July 1, 1993 PAGE 3 OF 3

PROJECT NAME SANTA RITA CORR FAC.

ADDRESS DUBLIN, CA

PROJECT NO. 6-93-5077

SAMPLED BY [signature] BART MILLER

LAB NAME CALSCIENCE

ANALYSES TO BE PERFORMED

SAMPLE #	DATE	TIME	LOCATION	TPH-G (8015m)	BTEX (8020)	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
SP-25	7/01/93	10 10	AER. STRP.	X	X	SOIL	1	2" diam brass sleeve
SP-26	"	10 20	"	X	X	"	1	"
SP-27	"	10 30	"	X	X	"	1	"

31148
31149
31150

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	7-1-93	15:10
2.			
3.			
4.			
5.			

3 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: BART MILLER, ESE; PETER KINNEY, GSA

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
Normal TAT. Refer to GSA for invoicing. ICE/Storage etc.

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓
GOOD CONDITION	✓
HEAD SPACE ABSENT	✓
PRESERVATIVE APPROPRIATE CONTAINERS	✓

Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-5323

Environmental
Science &
Engineering, Inc.

August 9, 1993

Mr. Scott O. Seery
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
80 Swan Way, Room 350
Oakland, CA 94621

SUBJECT: REPORT OF STOCKPILED SOIL CONFIRMATION SAMPLING
OLD GRAYSTONE FUELING AREA
SANTA RITA CORRECTIONAL FACILITY
DUBLIN, CALIFORNIA
ESE PROJECT #6-93-5077

Dear Mr. Seery:

Environmental Science & Engineering, Inc. (ESE) presents the following results for the confirmation sampling of stockpiled soil impacted with gasoline located at the subject property. ESE has been contracted by the Alameda County General Services Agency (GSA) to perform this characterization of stockpiled soil. To date, the gasoline-impacted soil has been subject to remediation by aeration in accordance with Bay Area Air Quality Management District (BAAQMD) guidelines. The objectives of the soil sampling of the stockpiled soil was to assess the concentrations of petroleum hydrocarbons in the soil following approximately one month of uncontrolled aeration and to identify stockpiled soil having no detectable concentrations of petroleum hydrocarbons for use as excavation backfill.

BACKGROUND

PREVIOUS WORK

In February, 1993, ESE directed the excavation of approximately 6,500 cubic yards of soil from the former vehicle fueling facility at the Old Graystone Area of the Santa Rita Correctional Facility (ESE Corrective Action Report - April 27, 1993). ESE estimated that approximately 5,000 cubic yards of this soil were impacted with gasoline and 1,500 cubic yards were not impacted. Impacted and nonimpacted soil were stockpiled on site at separate locations.

During April, 1993, ESE measured, mapped, and sampled the stockpiled soil at the subject site for the purpose of characterization (ESE Letter Report - June 7, 1993). A total of 100 soil samples were collected by ESE from stockpiles having a cumulative estimated volume of approximately 4,235 cubic yards and analyzed for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Reported analytical results indicated an average TPH-g concentration of 209 parts per million (ppm) with associated detectable concentrations of BTEX constituents. ESE recommended that the GSA perform controlled aeration of the impacted soil following guidelines indicated in BAAQMD Regulation 8, Rule 40.

GSA directed the spreading of approximately 1,350 cubic yards of stockpiled soil at the site. The soil is spread over an area of approximately 115 feet by 320 feet by an approximate depth of one foot. The soil was initially spread on June 15, 1993.

CURRENT ACTIVITIES

SOIL SAMPLE RESULTS

To determine whether gasoline constituents had been effectively aerated and remediation of the soil could be considered complete, ESE performed preliminary verification sampling of the stockpile on July 1, 1993. A workplan proposing this fieldwork and detailing ESE stockpile soil sampling techniques was submitted to the Alameda County Health Care Services Agency (HCSA) on June 28, 1993. A total of 27 soil samples were collected by ESE and submitted to McCampbell Analytical, Inc. (a State-certified laboratory) for TPH-g and BTEX analysis using analytical methods EPA 8015 (modified per CA LUFT) and EPA 8020, respectively. Soil samples were collected at the locations shown on Figure 1 - Soil Stockpile Sample Locations (July 1, 1993). Analytical results for TPH-g in the stockpile soil samples collected are shown on Figure 2 - Soil Sample TPH-G Analytical Results (July 1, 1993). Copies of analytical reports and chain-of-custody documentation are provided in Attachment A. Of the 27 samples collected, 20 samples were reported to contain detectable concentrations of TPH-g and/or BTEX.

To expedite the aeration process, ESE recommended that the stockpiled soil be tilled on a weekly basis for a one month period. An addendum was prepared by ESE to the workplan described above and submitted to the HCSA on July 19, 1993. The stockpiled soil was then tilled on July 9 and July 16, 1993 using a Kubota tractor equipped with a rototiller. Inspection of the stockpile on July 21, 1993 by ESE indicated that the effective penetration of the rototiller into the stockpile was approximately six to eight inches. On July 26, 1993, the soil stockpile was tilled to the bottom (i.e. approximately 10-14 inches) using a bulldozer equipped with scarifiers and, subsequently, was tilled by ESE on July 27 using the Kubota tractor with rototiller described above.

Under GSA supervision, a total of 14 stockpile soil samples were collected by ESE on July 28, 1993 at locations where the previous July 1 stockpile soil samples were reported to contain TPH-g concentrations greater than 1.5 ppm as shown in Figure 3 - Soil Stockpile Sample Locations (July 28, 1993). Analytical results for TPH-g in the 14 stockpile soil samples collected are shown on Figure 4 - Soil Sample TPH-G Analytical Results (July 28, 1993). Copies of analytical reports and chain-of-custody documentation are provided in Attachment A. Of the 14 samples collected, 7 samples were reported to contain detectable concentrations of TPH-g and/or BTEX.

MANAGEMENT OF STOCKPILED SOIL

It is ESE's understanding that the GSA will backfill and compact the upper six feet of the excavation located at the site using the stockpiled soil reported to contain no detectable concentrations of TPH-g and/or BTEX. The GSA will proceed to separate the "clean" stockpiled soil from that containing detectable concentrations of gasoline constituents according to the limits defined on Figure 5 - Proposed Backfill Material. All stockpiled soil reported to contain detectable concentrations of petroleum hydrocarbons will continue to be tilled and aerated for an approximate period of one month. At that time soil samples will be collected from the remaining stockpile and analyzed for TPH-g and BTEX to ensure that aeration can be considered complete. Backfilling activities will commence upon receipt of the written approval of the HCSA.

o o O o o

Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report. If you have any comments or questions regarding the contents of this report, please contact Bart Miller at (510) 685-4053.

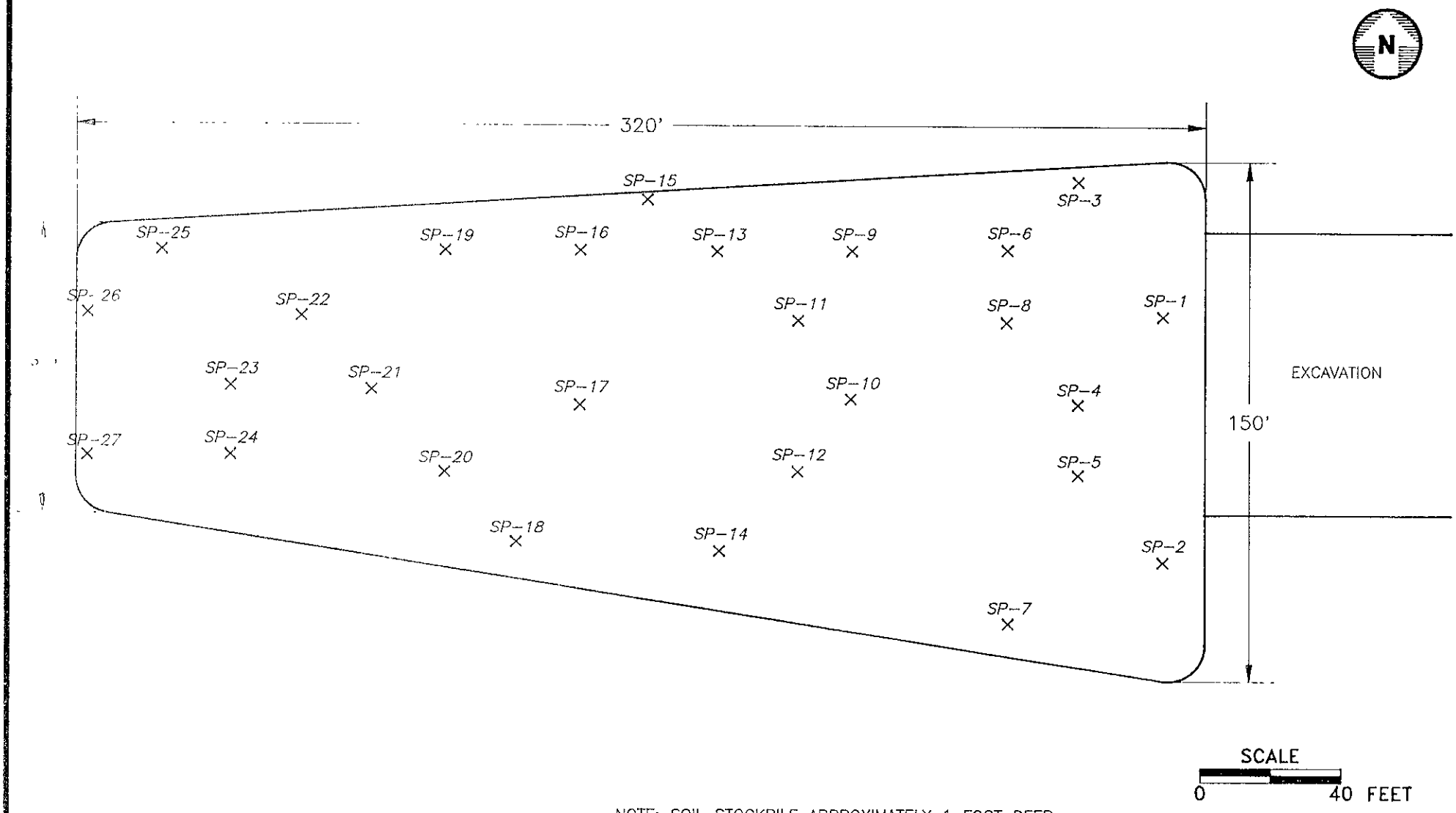
Sincerely,
ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Bart S. Miller
Senior Staff Geologist

Patrick E. Galvin
Senior Engineer

Figures
Attachment

F:\5077\080993.rpt

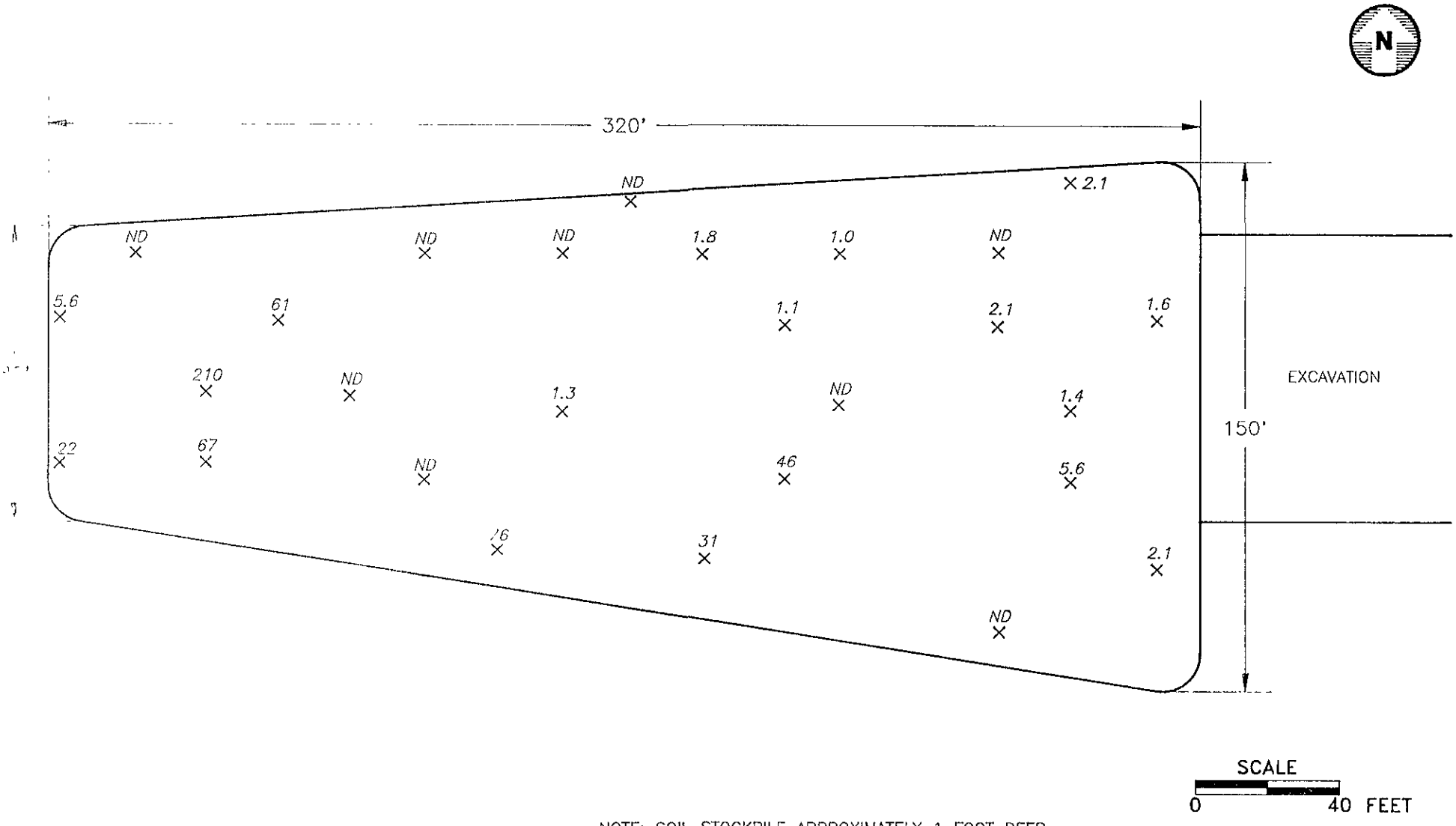


LEGEND

× SOIL SAMPLE LOCATIONS

NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

ESE A CILCORP Company **Environmental Science & Engineering, Inc.**	DATE 8/93	SOIL STOCKPILE SAMPLE LOCATIONS JULY 1, 1993	FIGURE NO. 1
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	REVISED	OLD GRAYSTONE FUELING AREA SANTA RITA CORRECTIONAL FACILITY DUBLIN, CALIFORNIA	PROJ. NO. 6-93-5077
	CAD FILE 50774004		



SCALE

0 40 FEET

NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

LEGEND

× SOIL SAMPLE LOCATIONS

1.8 TPH- G CONCENTRATION (mg/kg)

ND NOT DETECTED USING METHOD 8015 (modified per CA LUFT)

ESE A CILCORP Company
Environmental Science & Engineering, Inc.
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE 7/93

REVISED 8/93 BSM

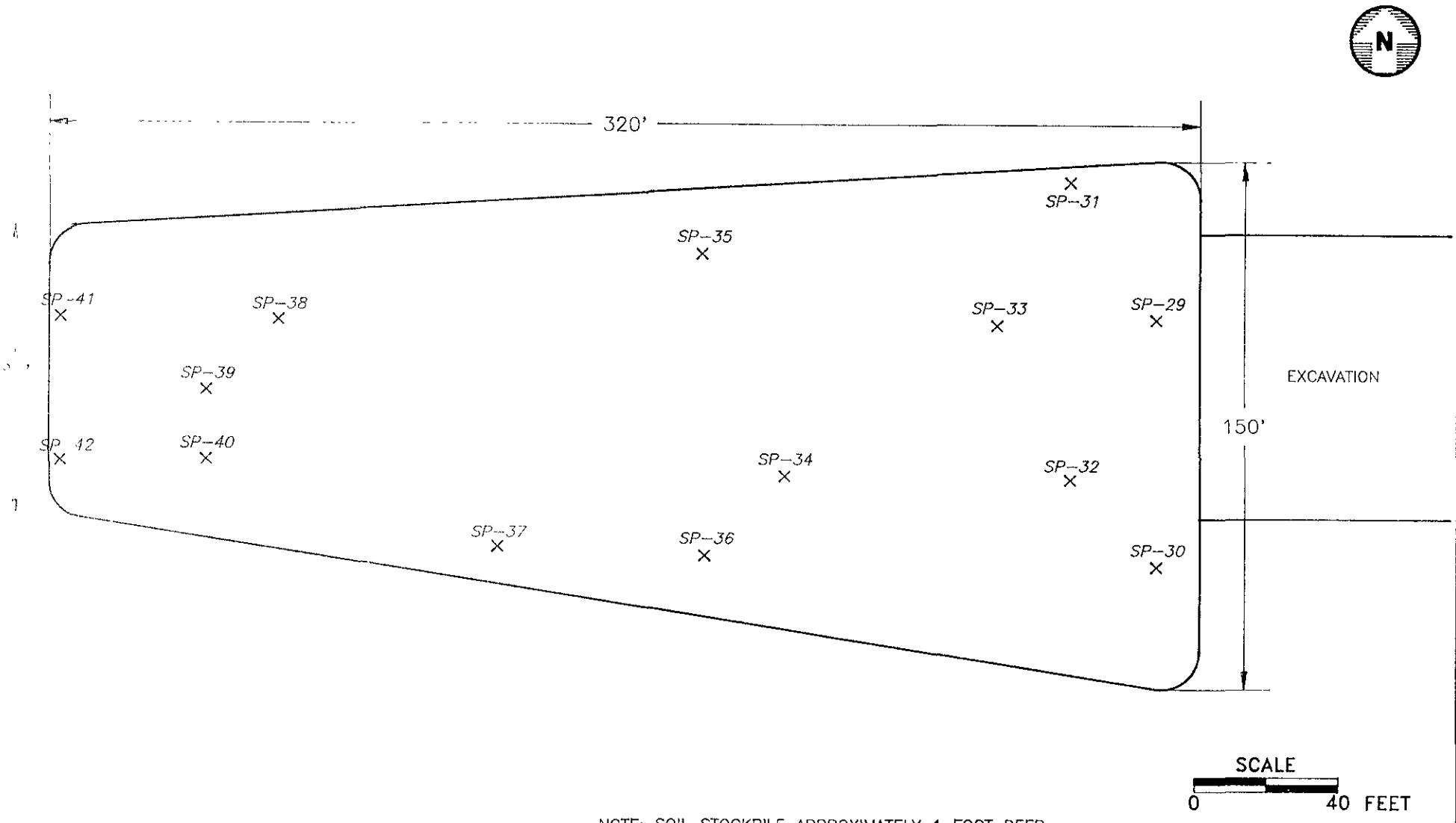
CAD FILE 50774002

SOIL SAMPLE TPH-G ANALYTICAL RESULTS JULY 1, 1993

OLD GRAYSTONE FUELING AREA
SANTA RITA CORRECTIONAL FACILITY
DUBLIN, CALIFORNIA

FIGURE NO 2

PROJ NO 6-93-5077

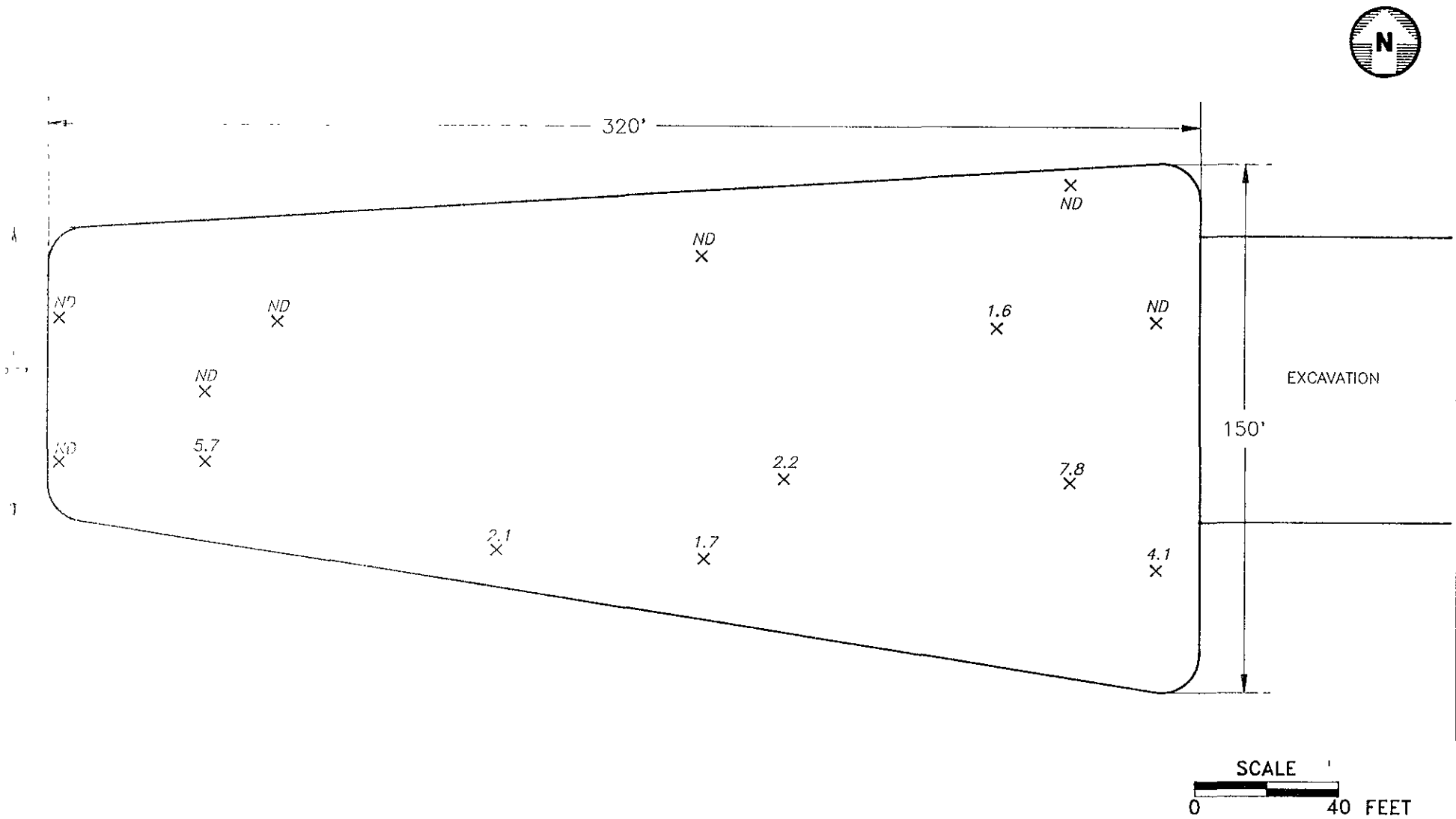


NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

LEGEND

× SOIL SAMPLE LOCATIONS

ESE A CILCORP Company **Environmental Science & Engineering, Inc.**	DATE 8/93	SOIL STOCKPILE SAMPLE LOCATIONS JULY 28, 1993	FIGURE NO. 3
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	REVISED	OLD GRAYSTONE FUELING AREA SANTA RITA CORRECTIONAL FACILITY DUBLIN, CALIFORNIA	PROJ. NO. 6-93-5077
	CAD FILE 50774005		



NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

LEGEND

× SOIL SAMPLE LOCATIONS

1.6 TPH-G CONCENTRATION (mg/kg)

ND NOT DETECTED USING METHOD 8015 (modified per CA LUFT)

ESE A CILCORP Company
Environmental Science & Engineering, Inc.
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE 8/93

REVISED

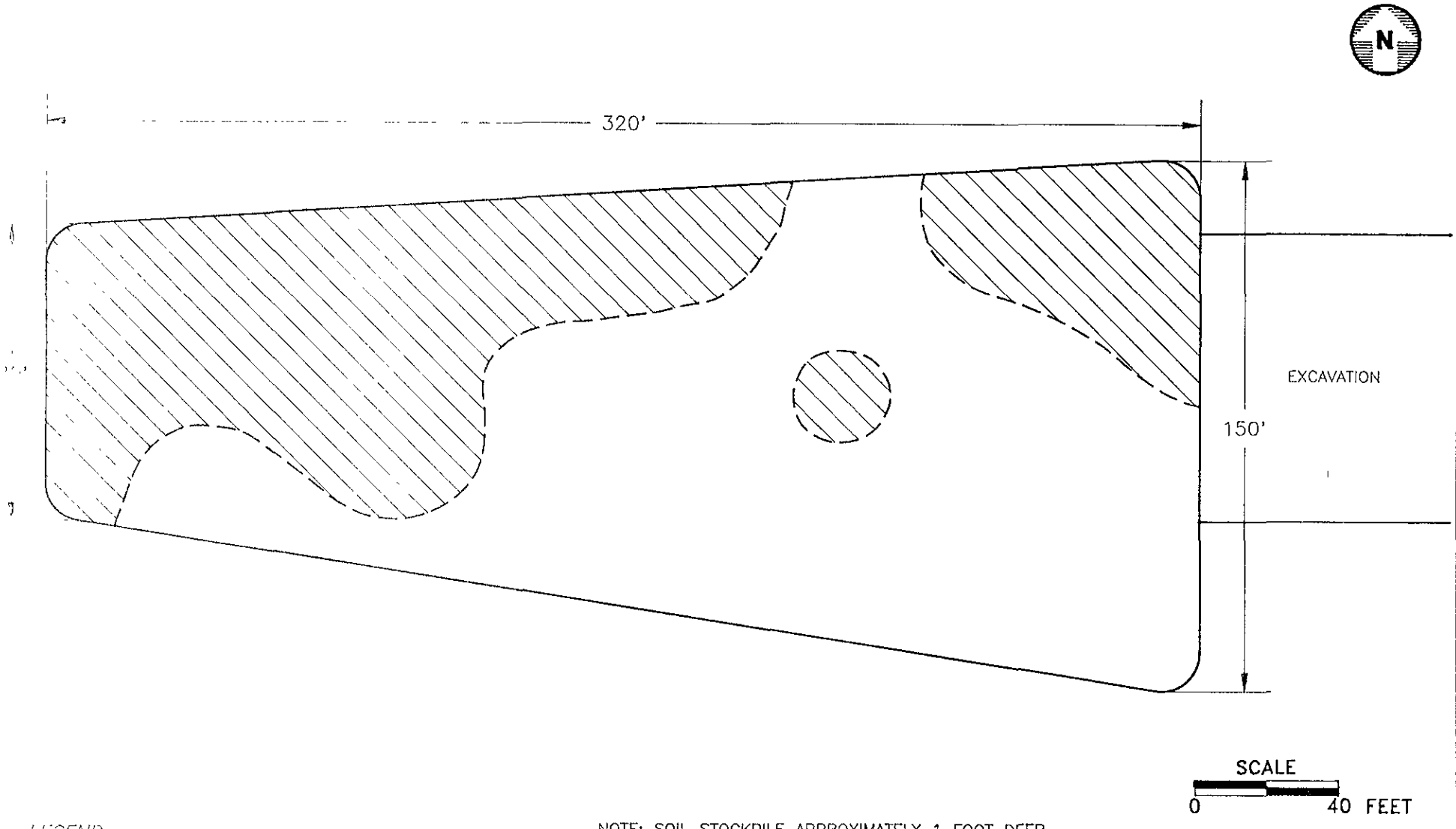
CAD FILE 50774006

SOIL SAMPLE TPH-G ANALYTICAL RESULTS JULY 28, 1993

OLD GRAYSTONE FUELING AREA
SANTA RITA CORRECTIONAL FACILITY
DUBLIN, CALIFORNIA

FIGURE NO **4**

PROJ. NO. 6-93-5077



NOTE: SOIL STOCKPILE APPROXIMATELY 1 FOOT DEEP

LEGEND

- PROPOSED BACKFILL MATERIAL (NO REPORTED DETECTABLE CONCENTRATIONS OF TPH-G AND BTEX USING EPA METHODS 8015m AND 8020, RESPECTIVELY)
- NON-BACKFILL MATERIAL (SUBJECT TO FURTHER AERATION)

ESE A CILCORP Company
Environmental Science & Engineering, Inc.
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE 8/93
REVISED
CAD FILE 50774007

BACKFILL MATERIAL

OLD GRAYSTONE FUELING AREA
SANTA RITA CORRECTIONAL FACILITY
DUBLIN, CALIFORNIA

FIGURE NO. **5**
PROJ. NO. 6-93-5077

ATTACHMENT A

ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng.	Client Project ID: # 6-93-5077 Santa Rita Corr. Fac, Dublin, CA	Date Sampled: 07/01/93
4090 Nelson Avenue, Suite J		Date Received: 07/01/93
Concord, CA 94520	Client Contact: Bart Miller	Date Extracted: 07/02/93
	Client P.O:	Date Analyzed: 07/04-07/06/93

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
31124	SP-1	S	1.6,b	ND	0.008	ND	0.038	94
31125	SP-2	S	2.1,b	ND	ND	ND	0.021	98
31126	SP-3	S	2.1,b	ND	0.006	ND	0.029	103
31127	SP-4	S	1.4,b	ND	0.007	0.007	0.036	104
31128	SP-5	S	5.6,b	ND	ND	0.005	0.029	103
31129	SP-6	S	ND	ND	ND	ND	ND	107
31130	SP-7	S	ND	ND	ND	ND	0.008	107
31131	SP-8	S	2.1,b,d	ND	ND	ND	0.006	108
31132	SP-9	S	1.0,b	ND	ND	ND	0.010	106
31133	SP-10	S	ND	ND	ND	ND	ND	108
31134	SP-11	S	1.1,d	ND	ND	ND	ND	102
31135	SP-12	S	46,d	ND	0.11	0.080	0.51	100
31136	SP-13	S	1.8,d	ND	ND	ND	ND	96
31137	SP-14	S	31,d	ND	0 073	0.084	0.17	99
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0 005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng.	Client Project ID: # 6-93-5077 Santa Rita Corr. Fac, Dublin, CA	Date Sampled: 07/01/93
4090 Nelson Avenue, Suite J		Date Received: 07/01/93
Concord, CA 94520	Client Contact: Bart Miller	Date Extracted: 07/02/93
	Client P.O:	Date Analyzed: 07/04-07/06/93

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
31138	SP-15	S	ND	ND	ND	ND	ND	103
31139	SP-16	S	ND	ND	ND	ND	ND	108
31140	SP-17	S	1.3,d	ND	ND	ND	0.008	107
31141	SP-18	S	76,b,d	ND< 0.05	0.094	0.11	0.79	94
31142	SP-19	S	ND	ND	ND	ND	ND	106
31143	SP-20	S	ND	ND	ND	ND	ND	108
31144	SP-21	S	ND	ND	ND	ND	ND	120
31145	SP-22	S	61,b,d	ND	0.18	ND	ND	99
31146	SP-23	S	210,b,d	ND< 0.1	1.3	1.7	18	122#
31147	SP-24	S	67,b,d	ND	0.17	0.10	0.44	95
31148	SP-25	S	ND	ND	ND	ND	0.009	107
31149	SP-26	S	5.6,d	ND	0.010	0.011	0.006	101
31150	SP-27	S	22,b,d	ND	0.056	0.025	0.011	96
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0 005	0 005	0 005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/02-07/04/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.474	1.619	2.03	73	80	9.4
Benzene	0.000	0.162	0.168	0.2	81	84	3.6
Toluene	0.000	0.160	0.168	0.2	80	84	4.9
Ethyl Benzene	0.000	0.156	0.164	0.2	78	82	5.0
Xylenes	0.000	0.458	0.484	0.6	76	81	5.5
TPH (diesel)	60	401	408	300	113	116	1.8
TRPH (oil & grease)	0.0	21.1	20.7	20.8	101	100	1.9

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/05/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.700	1.694	2.03	84	83	0.3
Benzene	0.000	0.188	0.188	0.2	94	94	0.0
Toluene	0.000	0.190	0.190	0.2	95	95	0.0
Ethyl Benzene	0.000	0.186	0.184	0.2	93	92	1.1
Xylenes	0.000	0.550	0.542	0.6	92	90	1.5
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

AESE #11

CHAIN OF CUSTODY RECORD

1993 PAGE 1 OF 3

ECT NAME SANTA RITA CORR. FAC.

ADDRESS Dublin, CA

ECT NO. 6-93-5077

LED BY [signature] BART MILLER

NAME [illegible]

ESE Environmental Science & Engineering, Inc.

4080 Nelson Avenue
Suite J
Concord, CA 94520

(415) 685-4053

PLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: TPH-G (8015m)	ANALYSES TO BE PERFORMED: BTEX (8020)				MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
								31124	MATRIX		
1	7/01/93	7 10	AER STR.	X	X			31125	SOIL	1	2" diam. brass sleeve
2	"	7 5	"	X	X			31126	"	1	"
3	"	7:21	"	X	X				"	1	"
4	"	7:28	"	X	X			31127	"	1	"
5	"	7 39	"	X	X			31128	"	1	"
6	"	7 40	"	X	X			31129	"	1	"
7	"	7.44	"	X	X				"	1	"
8	"	7 57	"	X	X			31130	"	1	"
9	"	8 05	"	X	X			31131	"	1	"
10	"	8 10	"	X	X				"	1	"
11	"	8 20	"	X	X			31132	"	1	"
12	"	8 25	"	X	X			31133	"	1	"

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
[signature]	[signature]	7-1-93	15:10
			31134
			31135

12 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO:
BART MILLER, ESE
PETER KNWEY, GSA

SPECIAL SHIPMENT REQUIREMENTS
Cold Transport

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
TAT Refer to GSA for invoicing, storage, etc.

PRESERVATIVE ___ APPROPRIATE ✓
GOOD CONDITION ✓ CONTAINERS ✓

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓

HESS ??

CHAIN OF CUSTODY RECORD

... 1993 PAGE 2 OF 3

ESE Environmental Science & Engineering, Inc.

4090 Nelson Avenue
Suite J
Concord, CA 94520

(415) 685-4053

Fax (415) 685-5323

...ECT NAME Santa Rita Core Fac.

ADDRESS Dublin, CA

...JECT NO. 6-93-5077

...MPLED BY [signature] BART Miller

... NAME McCampbell

SAMPLE #	DATE	TIME	LOCATION	TPH-G (8015m)	BTEX (8020)								MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
...13	7/01/93	8 35	AER STKP	X	X			31137					SOIL	1	2" diam. brass sleeve
...14	"	8 40	"	X	X			31138					"	1	"
...15	"	8 45	"	X	X			31139					"	1	"
...16	"	8 50	"	X	X			31140					"	1	"
...17	"	8 55	"	X	X			31141					"	1	"
...18	"	9 05	"	X	X			31142					"	1	"
...19	"	9 15	"	X	X			31143					"	1	"
...20	"	9 20	"	X	X			31144					"	1	"
...21	"	9 40	"	X	X			31145					"	1	"
...22	"	9 46	"	X	X								"	1	"
23	"	9 55	"	X	X								"	1	"
...24	"	10 00	"	X	X								"	1	"

(Lab stamp numbers in the analysis columns: 31136, 31137, 31138, 31139, 31140, 31141, 31142, 31143, 31144, 31145)

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time	12	TOTAL NUMBER OF CONTAINERS
[signature]	[signature]	7-1-93	15:10		

31146

31147

REPORT RESULTS TO: Bart Miller, ESE; Peter Kinney, GSA

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

SAMPLE RECEIPT	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓

...STRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

1 TAT Refer to GSA for invoicing/storage, etc

GOOD CONDITION ✓ PRESERVATIVE | VOAS | O&G | METALS | OTHER

HEAD SPACE ABSENT ✓ APPROPRIATE CONTAINERS ✓

AESE13

CHAIN OF CUSTODY RECORD

ESE Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-5323

E[illegible] July 1, 1993 PAGE 3 OF 3

J[illegible]CT NAME Santa Rita Corr Fac

ADDRESS Dublin, CA

J[illegible]CT NO. 6-93-5077

[illegible]PLED BY [signature] Bart Miller

[illegible] NAME [illegible]

[illegible]MPLE #	DATE	TIME	LOCATION	TPH-G (8015m)	BTEX (8020)	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
-25	7/01/93	10 10	AER STRP.	X	X	SOIL	1	2" diam. brass sleeve
-26	"	10 20	"	X	X	"	1	"
-27	"	10 30	"	X	X	"	1	"

31148
31149
31150

[illegible]INQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
[signature]	[signature]	7-1-93	15:10

TOTAL NUMBER OF CONTAINERS: 3 [illegible]

REPORT RESULTS TO: Bart Miller, ESE; Peter Kinney, GSA

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓

[illegible]STRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
[illegible] TAT. Refer to GSA for invoicing, etc.

ICE/T° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATIVE ___ APPROPRIATE CONTAINERS ✓ VOAS | O&G | METALS | OTHER

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng.	Client Project ID: 6-93-5077; Alameda County GSA	Date Sampled: 07/28/93
4090 Nelson Avenue, Suite J		Date Received: 07/28/93
Concord, CA 94520	Client Contact: Bart Miller	Date Extracted: 07/30/93
	Client P.O: Alameda County 6-93-5036	Date Analyzed: 08/01-08/03/93

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
31492	SP-29	S	ND	ND	ND	ND	ND	92
31493	SP-30	S	4.1,d	ND	0.015	0.008	0.038	89
31494	SP-31	S	ND	ND	ND	ND	ND	94
31495	SP-32	S	7.8,b	ND	0.007	0.007	0.031	90
31496	SP-33	S	1.6,g	ND	ND	ND	ND	90
31497	SP-34	S	2.2,b	ND	ND	ND	ND	91
31498	SP-35	S	ND	ND	ND	ND	ND	91
31499	SP-36	S	1.7,d	ND	0.006	0.006	0.024	89
31500	SP-37	S	2.1,b	ND	ND	ND	ND	90
31501	SP-38	S	ND	ND	ND	ND	ND	95
31502	SP-39	S	ND	ND	ND	ND	ND	90
31503	SP-40	S	5.7,b	ND	ND	ND	ND	90
31504	SP-41	S	ND	ND	ND	ND	ND	90
31505	SP-42	S	ND	ND	ND	ND	ND	88
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 08/01-02/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	2.244	1.987	2.03	111	98	12.1
Benzene	0.000	0.156	0.154	0.2	78	77	1.3
Toluene	0.000	0.164	0.164	0.2	82	82	0.0
Ethyl Benzene	0.000	0.158	0.160	0.2	79	80	1.3
Xylenes	0.000	0.494	0.496	0.6	82	83	0.4
TPH (diesel)	0	346	347	300	115	116	0.3
TRPH (oil & grease)	0.0	21.4	21.6	20.8	103	104	0.9

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

AESE 20

CHAIN OF CUSTODY RECORD

DATE July 28 1993 PAGE 1 OF 2

PROJECT NAME Alameda County GSA

ADDRESS Old Graystone Fueling Area
Santa Rita Correctional Facility
Dublin, California

PROJECT NO. 6-93-5077

SAMPLED BY [signature] Bart Miller

LAB NAME McCampbell Analytical

ESE Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) [illegible]-5323

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: 8015m (TPH-g)	ANALYSES TO BE PERFORMED: 8020 (BTEX)	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
SP-29	7/28/93	7:15	Stockpile	X	X	Soil	1	2" diameter brass sleeves
SP-30	"	7:25	"	X	X	"	1	
SP-31	"	7:32	"	X	X	"	1	
SP-32	"	7:40	"	X	X	"	1	
SP-33	"	7:50	"	X	X	"	1	
SP-34	"	7:56	"	X	X	"	1	
SP-35	"	8:00	"	X	X	"	1	
SP-36	"	8:10	"	X	X	"	1	
SP 37	"	8:22	"	X	X	"	1	
SP 38	"	8:30	"	X	X	"	1	
SP 39	"	8:38	"	X	X	"	1	
SP 40	"	8:45	"	X	X	"	1	

31492	31498			
31493	31499			
31494	31500			
31495	31501			
31496	31502			
31497	31503			

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	7-28	10:52
2.			
3.			
4.			
5.			

12 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO:
Bart Miller ESE
Peter Kinney Alameda Co GSA

SPECIAL SHIPMENT REQUIREMENTS
Cold Transport
S.W.I. & Alameda Co

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	
CONFORMS TO RECORD	

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
Normal T.A.T.

CHAIN OF CUSTODY RECORD

DATE July 28, 1993 PAGE 2 OF 2

PROJECT NAME Alameda County GSA

ADDRESS Old Graystone Fueling Area
Santa Rita Correctional Facility
Dublin, California

PROJECT NO. 6-93-5077

SAMPLED BY [signature] Bart Miller

LAB NAME McCampbell Analytical

SAMPLE #	DATE	TIME	LOCATION	8015m (TPH-g)	8020 (BTEX)											MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
				ANALYSES TO BE PERFORMED												MATRIX	CONTAINERS	
SP-41	7/28/93	8.50	Stockpile	X	X											Soil	1	2" diameter brass sleeves
SP-42	"	8.55	"	X	X											"	1	

31504

31505

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	7-28	10:52
2.			
3.			
4.			
5.			

2 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO:
Bart Miller
CC
Peter Kinney
Alameda Co. GSA

SPECIAL SHIPMENT REQUIREMENTS
Cold Transport
5:11 to Alameda 6

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	
CONFORMS TO RECORD	

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
Normal TAT

ESE Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-3323