

FINAL REPORT
SUMP AND TANK FARM INVESTIGATION
ALISO CANYON SITE
Los Angeles County, California

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TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 BACKGROUND INFORMATION	2
2.1 Site Description	2
2.2 Site History	2
2.3 Previous Environmental Studies	2
2.4 Geologic and Hydrogeologic Setting	3
3.0 SUMMARY OF RESEARCH EFFORTS	5
3.1 Overview	5
3.2 Aerial Photograph Review	5
3.3 Geologic Mapping	6
4.0 FIELD INVESTIGATION METHODOLOGIES	7
4.1 Overview	7
4.2 Geophysical Survey Methods	8
4.2.1 Electromagnetic Conductivity	8
4.2.1.1 Narrative	8
4.2.1.2 Field Procedures	8
4.2.1.3 Data Processing	8
4.2.2 Ground Penetrating Radar	9
4.2.2.1 Narrative	9
4.2.2.2 Field Procedures	9
4.2.2.3 Data Processing	10
4.3 Subsurface Investigation Methods	10
4.3.1 Exploratory Trenching	10
4.3.2 Pothole Trenching	11
4.3.4 Hand Auger Drilling	11
4.3.5 Mechanized Drilling	11
4.4 Analytical Testing Rationale	12
4.5 Analytical Data Evaluation Criteria	13



TABLE OF CONTENTS
(Continued)

5.0 INVESTIGATIVE FINDINGS	16
5.1 Introduction	16
5.2 Sump 1 Findings	16
5.2.1 Sump 1 Physical Conditions	16
5.2.2 Sump 1 Geophysical Interpretation	16
5.2.3 Sump 1 Analytical Results	17
5.3 Sump 2 Findings	17
5.3.1 Sump 2 Physical Conditions	17
5.3.2 Sump 2 Geophysical Interpretation	18
5.3.3 Sump 2 Analytical Results	19
5.4 Sump 3 Findings	20
5.4.1 Sump 3 Physical Conditions	20
5.4.2 Sump 3 Geophysical Interpretation	21
5.4.3 Sump 3 Analytical Results	21
5.5 Sump 4 Findings	22
5.5.1 Sump 4 Physical Conditions	22
5.5.2 Sump 4 Geophysical Interpretation	22
5.5.3 Sump 4 Analytical Results	23
5.6 Sump 5 Findings	23
5.6.1 Sump 5 Physical Conditions	23
5.6.2 Sump 5 Geophysical Interpretation	24
5.6.3 Sump 5 Analytical Results	24
5.7 Sump 6 Findings	24
5.7.1 Sump 6 Physical Conditions	24
5.7.2 Sump 6 Geophysical Interpretation	25
5.7.3 Sump 6 Analytical Results	25
5.8 Sump 7 Findings	25
5.8.1 Sump 7 Physical Conditions	25
5.8.2 Sump 7 Geophysical Interpretation	26
5.8.3 Sump 7 Analytical Results	26
5.9 Sump 8 Findings	26
5.9.1 Sump 8 Physical Conditions	26
5.9.2 Sump 8 Geophysical Interpretation	27



TABLE OF CONTENTS
(Continued)

5

5.9.3	Sump 8 Analytical Results	27
5.10	Sump 9 Findings	27
5.10.1	Sump 9 Physical Conditions	27
5.10.2	Sump 9 Geophysical Interpretation	28
5.10.3	Sump 9 Analytical Results	28
5.11	Sump 10 Findings	28
5.11.1	Sump 10 Physical Conditions	28
5.11.2	Sump 10 Geophysical Interpretation	28
5.11.3	Sump 10 Analytical Results	29
5.12	Sump 11 Findings	29
5.12.1	Sump 11 Physical Conditions	29
5.12.2	Sump 11 Geophysical Interpretation	30
5.12.3	Sump 11 Analytical Results	30
5.13	Sump 12 Findings	31
5.13.1	Sump 12 Physical Conditions	31
5.13.2	Sump 12 Geophysical Interpretation	31
5.13.3	Sump 12 Analytical Results	32
5.14	Sump 13 Findings	32
5.14.1	Sump 13 Physical Conditions	32
5.14.2	Sump 13 Geophysical Interpretation	32
5.14.3	Sump 13 Analytical Results	33
5.15	Fernando Fee Tank Farm Findings	33
5.15.1	Fernando Fee Tank Farm Physical Conditions	33
5.15.2	Fernando Fee Tank Farm Geophysical Interpretation	34
5.15.3	Fernando Fee Tank Farm Analytical Results	34
6.0	CONCLUSIONS	35
7.0	LIMITATIONS	37
8.0	REFERENCES CITED	38



TABLE OF CONTENTS
(Continued)

LIST OF TABLES

Table 1	Summary of Sump Investigative Tools
Table 2	Summary of Sample Analyses
Table 3a	Summary of Hydrocarbon Chain and BTEX Analytical Results
Table 3b	Summary of Detected Metals, Anions and Cations Analytical Results
Table 3c	Summary of Detected Polycyclic Aromatic Hydrocarbon Analytical Results

LIST OF FIGURES

Figure 1	General Location Map
Figure 2	Index Map
Figure 3	Sump 1 Sample Locations
Figure 4a	Sump 2 Sample Locations
Figure 4b	EM-31 Survey, Sump 2
Figure 4c	EM-31 Survey and Ground Penetrating Radar Profiles, Sump 2
Figure 5a	Sump 3 Boring Locations
Figure 5b	EM-31 Survey, Sump 3
Figure 5c	EM-31 Survey with Ground Penetrating Radar Profiles, Sump 3
Figure 6a	Sump 4 Sample Locations
Figure 6b	EM-31 Survey, Sump 4
Figure 6c	EM-31 Survey with Ground Penetrating Radar Profiles, Sump 4
Figure 7a	EM-31 Survey, Sump 5
Figure 7b	EM-31 Survey Graphs, Sump 5
Figure 8	Sump 6 Sample Locations
Figure 9	Sump 7 Pothole Trench Locations
Figure 10	Sump 8 Sample Locations
Figure 11	Sump 9 Sample Locations
Figure 12a	Sump 10 Sample Locations
Figure 12b	EM-31 Survey, Sump 10
Figure 12c	EM-31 Survey With Ground Penetrating Radar Profiles, Sump 10
Figure 13a	Sump 11 Sample Locations

TABLE OF CONTENTS
(Continued)

Figure 13b	EM-31 Survey, Sump 11
Figure 13c	EM-31 Survey With Ground Penetrating Radar Profiles, Sump 11 (2 sheets)
Figure 14	Sump 12 Exploratory Boring Locations
Figure 15a	Sump 13 Sample Locations
Figure 15b	EM-31 Survey, Sump 13
Figure 15c	EM-31 Survey With Ground Penetrating Radar Profiles, Sump 13 (2 sheets)
Figure 16	Fernando Fee Tank Farm Sampling Locations

LIST OF EXHIBITS

Exhibit A	CRWQCB Table 4-1 for TPH/BTEX
Exhibit B	USEPA PRG Table
Exhibit C	Chemical Analyses

1.0 INTRODUCTION

The Aliso Canyon facility is located in the northwestern portion of Los Angeles County, in the hills north of the community of Northridge. The facility is presently owned and operated by the Southern California Gas Company (The Gas Company) as a natural gas storage field with ancillary facilities (Figure 1 - General Location Map, Aliso Canyon Site). Prior to The Gas Company's acquisition, the Aliso Canyon facility was operated for many years as an oil production facility with attendant sumps, tank farms, and underground tanks. Some production of oil still occurs at the facility.

The sumps at the site were constructed to collect runoff, drilling mud, and cuttings from drilling operations, as well as other attendant materials that might have been generated during well installations and rehabilitations. The sump locations currently are concealed beneath surficial fill soils and are not readily apparent. The tank farms were used to store crude oil. Both of these features (i.e., sumps and tank farms) represent a potential environmental issue, since they were generally constructed prior to 1960 with little or no regard for environmental impact or protection.

ENV America Incorporated (ENV America) was retained by The Gas Company to investigate the known and suspected locations of 13 identified sumps and 2 aboveground tank farms. The sumps investigated as part of this study were arbitrarily numbered by others previously. The same numbering system (i.e., Sumps 1 through 13) was utilized in this report. The 2 tank farms are known as the "Fernando Fee" and the "Mission Adrian" tank farms. Figure 2 - Index Map, shows the investigation areas for the sumps and tank farms. This phase of the ongoing project had a threefold purpose:

- To confirm the existence of the 13 identified sumps and 2 tank farms;
- To evaluate the subsurface material at those locations for the existence of hydrocarbon, metals and major anion and cation contamination; and,
- If contaminated material was found, to estimate the amount of that material present.

In order to achieve these goals, the following scope of services was performed: a detailed review of previous environmental-related site documents; a review of published geologic literature on the site area; photogrammetric research of historical aerial photographs; surficial geologic reconnaissance mapping; geophysical field surveys; limited subsurface exploration; and, preparation of this report.

2.0 BACKGROUND INFORMATION

2.1 Site Description

The project site is located within the Santa Susana Mountains, and includes roughly 2 square miles of relatively natural hillside terrain with mild to steep access roads, various drill pads, and associated graded features. The area is characterized by steep-sided hills and valleys. Surficial drainage is generally to the south within Limekiln Canyon and Aliso Canyon, with associated tributary canyons and side slopes. The steep slopes were apparently created by natural erosional and mass wasting (i.e., landslide) processes, and by earthwork grading for drill pads and associated access roads.

Several arterial roads and smaller interior and connector roads are present, with access to the site being from the south via Tampa Avenue. Land usage has been primarily oil production for the past several decades, followed by natural gas storage. Oil production wells and related facilities are present at the site.

2.2 Site History

The oil field at Aliso Canyon was operated for many years by Texaco Inc., as an oil production facility with attendant wells, sumps, tank farms, and underground and aboveground tanks. As indicated earlier, The Gas Company purchased the facility from Texaco and currently uses the field for underground storage of natural gas. There are a variety of aboveground facilities and pipelines attendant to that operation. Previous operations at the site resulted in intermittent construction, as well as use and subsequent abandonment of a variety of facilities. Some of these abandoned facilities include sumps, tank farms, drilling pads, and storage and transfer facilities.

2.3 Previous Environmental Studies

In 1991, Camp Dresser & McKee Inc. (CDM), conducted a phase I environmental assessment of the site for the previous owner, Texaco Exploration and Production (Texaco). The CDM study indicated that several environmental investigations have been conducted at the facility, mainly dealing with underground storage tanks (USTs). CDM identified the 13 known or suspected sump locations, based in large part on review of historical aerial photographs (CDM, 1991).

As reported by Dames & Moore (1986 and 1987), 3 USTs were removed from the site in 1985. The USTs were used to store gasoline and diesel, and were located at an area known as the "Porter 69" site. Dames & Moore installed groundwater monitoring wells to investigate associated groundwater impact.

In 1996, ENV America subsequently performed groundwater monitoring efforts at the Porter 69 site. The results indicated non-detectable concentrations of petroleum hydrocarbons, and ENV America recommended no further action as related to groundwater impact at the Porter 69 UST area (ENV America, August 9, 1996).

2.4 Geologic and Hydrogeologic Setting

The site is positioned in the west-central portion of the Transverse Ranges Geomorphic Province, along the southerly-descending flanks of the Santa Susana Mountains. The Santa Susana Mountains separate the San Fernando Valley on the south from the Santa Clara River Valley of the Ventura Basin to the north, and the Santa Clarita Basin to the northeast. The Santa Susana Mountains primarily consist of clastic marine sediments of Cretaceous to Pleistocene age. The Santa Susana Mountains have been elevated on their southern flank along the Santa Susana thrust zone. The marine clastic sediments have been folded and faulted as early as one-million years ago (Saul, 1986).

The principal bedrock units of the site area are, from oldest to youngest, the Topanga Formation, the Monterey Shale or Modelo Formation, the Sisquoc Shale (included in the Modelo Formation), the Towsley Formation, and the Pico Formation. The oldest exposed unit is the Topanga Formation which is subdivided into upper and lower sandstone units and basaltic flows or diabasic sills. The Monterey Shale conformably and unconformably overlies the Topanga Formation at the site, and predominantly consists of thinly bedded siliceous and cherty shale. The Sisquoc Shale consists of clayey shale and conformably overlies the Monterey Shale and outcrops north of the site. The Towsley Formation conformably overlies the Sisquoc Shale, and unconformably is overlain by the Monterey Shale in the southern portion of the site. The Towsley Formation consists of medium grained sandstone and pebbly sandstone. The Pico Formation is unconformably overlain by the lower sandstone unit of the Topanga Formation and the upper and lower units of the Monterey Shale in the central portion of the site (Dibblee, 1992).

Within the site area, these bedrock formations are partially mantled by thin colluvial cover. Small- and large-scale landslides are common throughout the project area. The canyons and ravines bisecting the hillside terrain are floored by Recent-age alluvium.



Based on reconnaissance mapping and review of available documents, groundwater within the site area is predominantly perched within landslide complexes and alluvial drainage courses. Some groundwater undoubtedly migrates through bedrock via joint fractures, faults, and coarse-grained beds. The depth to groundwater at the site varies widely, based on complex geologic structure. The direction of perched groundwater flow appears to be largely controlled by site topography, and is estimated to essentially mirror the surficial drainage patterns which vary across the site.



3.0 SUMMARY OF RESEARCH EFFORTS

3.1 Overview

The initial phase of project work consisted of a review of previous environmental-related site documents; a review of published geologic literature on the site area; photogrammetric research of historical aerial photographs; and, surficial geologic reconnaissance mapping. The results of document and publication research were summarized in Section 2 of this report. The nature of photogrammetric research and surficial geologic reconnaissance mapping was outlined in ENV America's "Draft Phase III Workplan," dated July 24, 1996, and is summarized below.

3.2 Aerial Photograph Review

In an effort to confirm possible sump locations, ENV America studied aerial photographs obtained from Continental Aerial Photo, Inc. (Continental), and from the Fairchild Aerial Photography Collection (Fairchild Collection) at the Whittier College Department of Geology.

The most recent available aerial photograph of the Aliso Canyon oil field was obtained from Continental. This photograph, at a scale of 1 inch = 200 feet and dated 1995, covers the entire site and shows, in great detail, existing surface features. Albeit no sumps remained visible in 1995, this photograph was useful in identifying possible sump locations by comparing conspicuous features that are visible in this photograph to features that are visible in earlier photographs where sumps are noticeable.

Available sequential stereographic pairs of aerial photographs of the Fairchild Collection were reviewed to evaluate site conditions from 1928 through 1955. This research identified 8 former sumps. Several of these photographs were enlarged to scales ranging from 170 feet to 280 feet per inch.

The results of photogrammetric research are discussed on a sump-by-sump basis, along with other sump-specific information, later in this report. A listing of the aerial photographs reviewed to determine potential sump locations is presented in the table below.

LISTING OF AERIAL PHOTOGRAPHS REVIEWED				
Flight Date	Type	Flight No.	Photograph No.	Collection
1928	B&W	C-300	157-159, 182-185, 224-226	Fairchild
1929	B&W	C-688	157-159, 183-185, 224-226	Fairchild
1930	B&W	C-1001	137-142, 178-179, 201-206, 236-243	Fairchild
November 12, 1943	B&W	C-8624	1-3, 20-22	Fairchild
January 1945	B&W	C-9220	3:162-168, 4:17-22, 72-77	Fairchild
October 24, 1945	B&W	C-9800	5:418-425, 448	Fairchild
July 8, 1948	B&W	C-12720	1: 63-66, 80-83	Fairchild
June 2, 1949	B&W	C-13775	B: 17-20, C: 18-21	Fairchild
October 1950	B&W	C-15695	2:4-7, 31-34	Fairchild
November 27, 1950	B&W	C-15905	1:3-6, 31, 39-40	Fairchild
May 1952	B&W	C-17727	1:38-42, 12:10-14	Fairchild
August 15, 1952	B&W	C-17979	3:52-55, 6:83-88	Fairchild
October 1954	B&W	C-20941	6:6-10	Fairchild
June 12, 1995	B&W	C-112-19	88	Continental

3.3 Geologic Mapping

Based on the results of earlier work by CDM (1991), combined with the results of photogrammetric research of historical aerial photographs, each of the 13 sump locations was reconnoitered by engineering geologists of ENV America. Each location was inspected for evidence of a sump, and exposed physiographic and geologic features were mapped.

The primary goals of the mapping effort were to attempt to determine if a buried sump could actually exist at the suspected sump locations, and to gather sufficient sump-specific information such that the most appropriate exploration techniques could later be employed. In this process, an attempt was made to establish the following information at each sump location: the distribution of bedrock, soil and manmade fills; the identification of subtle topographic or vegetative features that may be indicative of former sumps; the potential presence of staining, accumulated sludge or seepage; the nature and induration of materials that would later be excavated or drilled; and, accessibility for drill rigs or backhoes. The results of the mapping efforts are discussed on a sump-by-sump basis, along with other sump-specific information, later in this report.

4.0 FIELD INVESTIGATION METHODOLOGIES

4.1 Overview

Based on the results of research efforts, a field investigation was planned to achieve project goals. Field investigations included electromagnetic conductivity (EC) and ground penetrating radar (GPR) geophysical surveys, exploratory trenching, pothole trenching, hand augering, and mechanized drilling.

The geophysical surveys were conducted on Sumps 2, 3, 4, 5, 10, 11, and 13. These locations were selected because attendant physical features were conducive to geophysical techniques, and that there was some question as to the locations or extent of the sumps. Geophysical surveys of Sumps 1, 6, 7, 8-east and 8-west, 9, and 12 were not performed, since they were better defined and excavation techniques would be feasible.

The geophysical surveys were conducted on Sumps 2, 10, 11, and 13 between October 29 and November 1, 1996, and on Sumps 3, 4, and 5 between March 31 and April 2, 1997. The subsurface trenching and drilling were performed on Sumps 2, 10, 11, and 13 on November 13 and December 17, 1996. The subsurface trenching and drilling were performed on Sumps 1, 3, 4, 5, 6, 7, 8, and 9, as well as the Fernando Fee Tank Farm, between April 9 and 11, 1997. Investigation of the Mission Adrian Tank Farm could not be implemented, because washed-out roads precluded access.

The nature of investigative approaches employed at each location is outlined in Table 1 - Summary of Investigative Tools. The nature of these investigations is summarized below, and the results are presented in Section 5 of this report.

4.2 Geophysical Survey Methods

4.2.1 Electromagnetic Conductivity

4.2.1.1 *Narrative*

Electromagnetic conductivity measurements rely upon the induction of electrical currents into the earth by a coil that uses audio frequencies. The earth's response as in-phase and quadrature components is measured using another coil. The quadrature (90 degree out-of-phase) response is proportional to the conductivity of the earth below and between the instrument's coils. Negative numbers are indicative of very conductive (oftentimes metallic) materials at depth. Similarly, relatively low or negative in-phase response is also indicative of very conductive or metallic materials.

The coil separation and orientation define the relative depth and volume of investigation of the electromagnetic system, with investigation depths/volumes increasing with coil separation. The vertical dipole orientation of the coils gives the deepest depth of investigation, given a constant coil separation.

4.2.1.2 *Field Procedures*

ENV America used a Geonics EM-31 instrument to directly measure earth conductivities in milliSiemens per meter (mS/M) and in-phase response in parts per thousand (ppt) of the primary field, for both vertical and horizontal dipole orientations. The EM-31's coil separation is fixed at 4 meters, which gives nominal investigation depth intervals of 0 to 3 meters and 0 to 6 meters for the horizontal and vertical dipoles, respectively.

EM-31 stations were laid out using a tape and a hand-bearing compass. Station locations were located 1 meter apart, were marked with flagging, and EM-31 measurements were made and recorded at each station. The electromagnetic data were recorded digitally on an Omnicorder instrument, and transferred to a computer in the office for display and interpretation.

4.2.1.3 *Data Processing*

Electromagnetic data displays were created using the **GRAPHER™** and **SURFER™** software packages. **GRAPHER™** was used to plot profiles of conductivity and in-phase response. **SURFER™** was used to prepare contour maps of the same data.

Electromagnetic data was interpreted on the basis of anomalous changes from average or background levels. Negative conductivity values, coupled with relatively low in-phase response, were used to identify areas underlain by metallic or other very conductive objects.

Metallic objects often cause relatively high electromagnetic response adjacent to the areas directly over the bodies themselves, which can be confused with the effects of other bodies. For example, relatively high electromagnetic response can also result from relatively fine-grained earth materials, and/or from groundwater containing elevated total dissolved solids (TDS) concentrations.

The relative electromagnetic conductivity values from two depth intervals can be used to infer changes in the combined thickness and conductivity of the near-surface layer, or the conductivity of the lower layer if the near-surface layer is assumed constant in thickness-conductivity product.

4.2.2 Ground Penetrating Radar

4.2.2.1 Narrative

GPR relies on the transmission and reflection of radar waves from layers or objects in the earth. The distance that a radar wave travels in the subsurface is generally a function of the earth's conductivity (specifically, its permittivity) and the frequency of the radar wave. Finer-grained, more-conductive soils and rocks tend to adsorb the radar wave energy more than coarser-grained, less-conductive soils and rocks. Earth materials more easily adsorb higher-frequency radar waves. Reflection of the radar wave relies on a difference in conductivity/permittivity across an interface, for example at a change from a sandy soil to a silty soil, or at the surface of a metal pipe buried in the ground.

4.2.2.2 Field Procedures

GPR survey measurements were made along the same survey lines as the EM-31 survey, allowing correlation of the data from both efforts. ENV America used a Mala Geosciences RAMAC™ instrument and Husky field computer to obtain and record the GPR data at each location. A 100-MHZ antenna was used as a signal source. The antenna was located 1 meter from the receiving instrument to obtain both near-surface resolution and penetration into the earth. The signal enhancement capability of the RAMAC™ was used to obtain good signal-to-noise ratios and enhance the received data. During signal enhancement, 128 radar pulses were summed and averaged to obtain a single trace.

GPR traces were recorded at 0.2-meter intervals along each survey line, with along-line distances directly fed to the instrument by means of a calibrated wheel. Data from the control unit were automatically transmitted to and recorded by the field computer. These data were subsequently downloaded to an office computer for display, processing and analysis.

The RADPRO computer program provided with the GPR instrument was used for data display and analysis. The traces were gathered into a record section and displayed on the computer's screen by the program. The software was also used to process the recorded sections. Processing allows the removal of "noise" and the further enhancement of reflections in the recorded section.

4.2.2.3 Data Processing

The raw data from the RAMAC™ system were saved onto the hard drive in the system's field computer. These data were then downloaded to an office computer for subsequent processing and display using the RADPRO program. As the last step in RADPRO processing, profiles are sent to either the workstation screen or to image files in GIF format. The GIF images were then imported into CORELDRAW for interpretation and preparation of final drawings.

4.3 Subsurface Investigation Methods

4.3.1 Exploratory Trenching

Trenches were excavated at Sumps 1, 2, and 9 for the evaluation of subsurface conditions, primarily the depth of fill, and for collection of soil samples for chemical analyses. The trenches were elongate features which were excavated with a backhoe. In trenches less than 4 feet deep, and where it was safe to do so, the field geologist used a trowel to collect samples from the sidewalls of the trenches. In deeper trenches, which involved most of the trenching, the samples were collected from within the backhoe or excavator bucket.

Sample locations and depths were selected on the basis of visual inspection and/or organic vapor meter readings. Generally, sampling locations were selected on the shady side of the trench, and a clean, decontaminated trowel was used to collect material from the bucket and place it directly into a laboratory-supplied glass sample container. Where multiple trowels of material were needed to fill the sample containers, materials were collected from the same general area in the bucket. Duplicate soil samples were collected by alternately filling the sample container and the duplicate container with material from the same location.

4.3.2 Pothole Trenching

Pothole trenching was also conducted with a backhoe, and consisted of localized trenching versus the elongate trenches discussed above. Pothole trenching was performed at Sumps 4, 6, 8, 10, 11, 13, and at the Fernando Fee Tank Farm. Pothole sampling procedures followed the same protocol as the exploratory trenching procedures.

4.3.4 Hand Auger Drilling

Hand augering was performed at Sumps 3 and 12 to collect subsurface soil samples for subsequent analyses of selected constituents. Hand-auger boreholes were advanced by means of a manually-rotated, hand-auger set equipped with a stainless steel bit.

During advancement, composite samples were collected from the auger cuttings at approximate 5-foot intervals for head space analysis with an organic vapor meter (OVM). When the required sample depth was reached, soil samples were collected with an 8.5-inch long, 2.25-inch diameter, solid-spoon sampler. The sampler was lined with two 3-inch-long, 2-inch diameter brass sample sleeves. The sampler was manually driven into subsurface soils with a slide hammer.

The sample sleeves were removed from the sampler, and the ends were covered with Teflon® sheets, sealed with plastic end caps and secured with silicon tape. The sample sleeves were labeled with indelible ink and placed in a resealable plastic bag. Sample sleeves were then submitted to the laboratory for selected chemical analyses.

All equipment, including the sampler and sample sleeves, was decontaminated between sampling events by washing in a non-phosphate detergent solution (Liqui-Nox), and double rinsed in de-ionized water.

4.3.5 Mechanized Drilling

Limited-access drill rigs, provided by Pacific Drilling of San Diego, California, were used to investigate subsurface conditions at Sumps 3, 4, and 6. At Sumps 3 and 6, a gasoline-powered, tripod-mounted, solid-stem auger drill rig was used. At Sump 4, a boring was drilled by means of a track-mounted, limited-access drill rig equipped with 8-inch diameter hollow-stem augers.

At each sampling depth, a California-modified split-spoon sampler was lowered into the borehole with standard AW rods. A 140-pound hammer, buoyed by a hydraulic cathead, was used to drive the sampler. Earth materials were removed from the sampler, and then transferred into laboratory-supplied glass sample containers. The sampler and sample sleeves were decontaminated between sampling events by washing in a Liqui-Nox solution and double rinsing in de-ionized water.

4.4 Analytical Testing Rationale

Soil samples were collected from the potential and identified sump locations and from the Fernando Fee Tank Farm and were submitted for chemical analyses. Chemical analyses were necessary to identify potentially both organic and non-organic contaminants at the sump locations. As noted earlier, the sumps were probably used to collect materials and runoff associated with drilling, exploration and well rehabilitation activities during the oil production era at the site. Some of the sumps, notably Sumps 4 and 8, appear to have also served as retention points for discharge from product and/or crude storage areas.

Since it was economically impractical to analyze each collected sample for all suspected contaminants, a screening program was developed. Every collected soil sample was to be analyzed for certain constituents. Based on the results of those analyses, additional analyses were conducted on selected samples from each sump.

Each soil sample was field screened for organic content using a flame ionization detector (FID) in the field. Based on FID readings, color, odor and location, a set of screening samples was submitted for analysis of a reconnaissance group of chemicals. Screening samples were analyzed for pH and total petroleum hydrocarbons (TPH) within the carbon chain ranges of C₄ to C₁₂, C₁₃ to C₂₅, and C₊₂₅. The TPH analyses were performed on a 5-day turnaround basis to facilitate decisions on whether to have additional analyses performed, such as other organic compounds, including chlorinated and halogenated organic compounds, semivolatile organic compounds and polychlorinated biphenyls (PCBs). Because of the short holding and extraction time (7 days) for VOCs in soil, at least one sample from each location was selected for immediate analysis of VOCs, based on visual and/or FID readings. This single sample was used in conjunction with the TPH results, either to eliminate VOCs as an analyte or to select additional samples for VOCs analyses. In addition, at least one sample from each sump was submitted for metal analyses.

The hydrocarbon range data provided information on carbon chain constituents. High concentrations of C₁₂ and higher chains triggered evaluations of semivolatile and/or PCBs analyses. High concentrations of low-end hydrocarbon chains in some cases triggered analyses for VOCs including ketones. The pH evaluation provided an estimate of the potential for the soil to contain metals, which normally precipitate at elevated pH values, and salts, which can cause pH values to be erratically high or low, depending on the original chemical constituent.

A full analysis for selected samples included volatile organic constituents, including chlorinated organic compounds and ketones (USEPA Method 8240); semivolatile organic compounds, including polycyclic aromatic hydrocarbons (USEPA Method 8310); arsenic (USEPA Method 7400 series); metals including lead, cadmium, antimony, barium, beryllium, chromium, cobalt, molybdenum, nickel, silver, thallium, vanadium, copper and zinc (USEPA Method 6010); and, selected anions and cations including sodium, potassium, nitrate, sulfate, sulfide, nitrite, and ammonia. Four samples that exhibited the highest concentrations of high-end hydrocarbon range material were selected for PCBs analysis (EPA Method 8080). A listing of the analytical methods used at each location is presented in Table 2 - Summary of Sample Analysis.

4.5 Analytical Data Evaluation Criteria

In order to present the relative degree of impacted soil, the results of soil sample analyses are compared to regulatory criteria established by the California Regional Water Quality Control Board, Region 4, Los Angeles and Ventura Counties (CRWQCB), and by the United States Environmental Protection Agency, Region IX (USEPA). The CRWQCB has established cleanup criteria for measured hydrocarbon ranges (TPH), and for benzene, toluene, ethylbenzene and xylenes (BTEX) in a document entitled "Interim Site Assessment and Cleanup Guidebook (Guidebook)" (CRWQCB, 1996). The USEPA has established Preliminary Remediation Goals (PRGs) for use as a tool for evaluating and cleaning up contaminated sites for various chemical contaminants (USEPA, 1996).

Table 4-1 of the Guidebook presents multiple categories with differing threshold TPH and BTEX cleanup concentrations, which are based on site-specific data including the depth to groundwater, soil types, and whether the underlying groundwater is considered to be within a "drinking water aquifer." The varying threshold concentrations are related to the potential for TPH and BTEX to impact drinking water supplies. A copy of Table 4-1 from the Guidebook is included in Exhibit A - CRWQCB Table 4-1 for TPH/BTEX.

In determining what TPH and BTEX threshold concentrations would be applicable for this project, Table 4-1 of the Guidebook was followed, with two scenarios under consideration. Under the first scenario, it was assumed that groundwater at the site is a potential drinking water source, since some communication with the adjacent valley fill could exist. The depth to groundwater varies widely across the site, and therefore, the most conservative depth of 20 feet below ground surface (bgs) was used. The earth materials at the site are predominantly silt-rich, and therefore, silt was used as the lithologic classification.

Under the second scenario for TPH and BTEX, it was assumed that groundwater at the site is not a potential drinking water source. The actual determination of groundwater use is determined by CRWQCB staff, on a site-specific basis. Table 4-1 of the Guidebook indicates that for sites above non-drinking water aquifers, the ">150 feet to groundwater" category may be used for TPH concentrations, regardless of actual depth. The BTEX concentrations are determined by multiplying the "Maximum Contaminant Levels (MCLs) in Drinking Water" by a factor of 100. Considering the two scenarios, the derived threshold concentrations are presented in the table below.

TPH and BTEX Threshold Concentrations (mg/kg)						
TPH			Benzene	Toluene	Ethyl benzene	Xylenes
C ₁ to C ₁₂	C ₁₃ to C ₂₃	C ₂₄				
Assuming Groundwater is Potential Drinking Water						
100	100	1,000	0.011	0.45	2	5.3
Assuming Groundwater is <i>not</i> Potential Drinking Water						
1,000	10,000	50,000	0.1	Unregulated	68	175

For analytes other than BTEX, the PRGs established by the USEPA were considered. Based on discussions between ENV America and California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) personnel, it was understood that the DTSC has adopted the USEPA PRGs for projects in California. PRGs are used to streamline and standardize all stages of the risk decision-making process. The PRG concentrations are included in Exhibit B - USEPA PRG Table.

The PRG table combines current USEPA toxicity values with "standard" exposure factors to estimate contaminant concentrations in environment media (soil, air, and water) that are protective of humans, including sensitive groups, over a lifetime. The USEPA suggests that chemical concentrations above these levels would not automatically designate a site as "dirty" or trigger a response action. However, exceeding a PRG suggests that further evaluation of the potential risks that may be posed by site contaminants is appropriate.

The PRG values are subdivided on the basis of being either a "residential site" or an "industrial" site. Since the site is not located in a residential area, industrial PRG concentrations in the soil were considered to be appropriate.

5.0 INVESTIGATIVE FINDINGS

5.1 Introduction

The salient findings of research and investigation for this project are outlined in the following subsections below, on a location-by-location basis. Physical conditions of each location are discussed, along with the results of geophysical surveys and of soil sample analyses.

5.2 Sump 1 Findings

5.2.1 Sump 1 Physical Conditions

The location of Sump 1 is plainly evident in aerial photographs dated 1949 and 1954. The sump is positioned on the top of a southeast-trending natural ridgeline, about 210 feet southeast of an oil well known as "Standard Sesnon 24." Based on aerial photographs, the sump occupies an area of about 80 feet by 150 feet in plan view. Based on site reconnaissance and trenching data, the sump cavity was excavated in bedrock, and once filled, covered with locally derived materials.

One pothole trench was excavated at Sump 1, at the location shown on Figure 3 - Sump 1 Sample Locations. Light brown, gravelly silt was encountered from ground surface to about 5 feet bgs, where a thin, 1-foot thick layer of brown to black stained gravelly, silty clay was encountered. From 6 feet to 11 feet bgs, fill material consisting of gravelly and clayey sand was encountered. Well bedded, limy shale of the Monterey Formation was encountered at about 11 feet bgs.

5.2.2 Sump 1 Geophysical Interpretation

As indicated earlier, a geophysical survey was not performed at Sump 1, since research identified the sump location, and that the location was readily accessible for trenching.

5.2.3 Sump 1 Analytical Results

One sample was analyzed at the Sump 1 location, from Pothole PH1. The sample was collected in the most heavily stained interval at about 6 feet bgs, in order to evaluate the apparent "worst case scenario." The sample was analyzed for pH, TPH, BTEX, VOCs, metals, polycyclic aromatic hydrocarbons (PAHs), and selected anions and cations. The results of analyses are tabulated in Table 3a - Summary of Hydrocarbon Chain and BTEX Analytical Results; Table 3b - Summary of Detected Metals, Anions and Cations Analytical Results; and, Table 3c - Summary of Detected Polycyclic Aromatic Hydrocarbon Analytical Results. The laboratory reports are included in Exhibit C - Chemical Analyses. The analytes exhibiting elevated concentrations (i.e., above CRWQCB and USEPA thresholds) are presented in the table below.

Analytes Exhibiting Elevated Concentrations in Sump 1 (mg/kg)			
Sample ID	TPH _{C13-23}	TPH _{C23+}	Arsenic
S1-PH1-6	3,130	2,960	14.4
CRWQCB Assuming Drinking Water Aquifer	100	1,000	N/A
Assuming Non-Drinking Water Aquifer	10,000	50,000	N/A
USEPA PRG	N/A	N/A	2.4
N/A = Not Applicable			

5.3 Sump 2 Findings

5.3.1 Sump 2 Physical Conditions

The location of Sump 2 is distinctly conspicuous in aerial photographs dated 1949 and 1954. Previous information (CDM, 1991) has shown Sump 2 in a location southeast of where ENV America has determined the location. The previously suggested location is a cut pad area where several aboveground storage tanks (ASTs) had been located, and one still remains. ENV America believes that the previously suggested location was incorrect, since aerial photographs clearly show a sump in a nearby location. The pad that had been used for ASTs appears to be directly underlain by siltstone bedrock.

Sump 2 is positioned on a relatively flat pad near an oil well known as "Standard Sesnon 3." The area appears to have originally been naturally sloping terrain, where earth materials were cut from a higher area and placed in the adjacent lower area to generate a relatively flat pad on flanks of a slope. The sump occupies an area of about 80 feet by 100 feet, and straddles a cut-fill daylight line (i.e., transition).

Five exploratory trenches (T1, T2, T3, T4, and T5) were excavated at Sump 2. The trench locations are shown on Figure 4a - Sump 2 Sample Locations. In general, the upper 4.5 feet of material consisted of silt with abundant angular siltstone fragments and local asphalt and other debris. This surficial material was underlain by grey-stained sand, silt and clay, and drilling muds. In the central portion of the sump, these materials extend to a depth of more than 18 feet bgs, the maximum depth explored. In Trench T4, two 55-gallon drums were encountered at about 1 foot bgs. The drums were observed to be lying on their side; they were partially degraded and soil had accumulated in them. No odors or VOCs readings were noted emanating from the drums. Subsequent geophysical work suggested that up to eight additional drums could exist beneath the two observed drums. Along the perimeter areas, siltstone bedrock of the Monterey Formation was encountered below the sump fill.

5.3.2 Sump 2 Geophysical Interpretation

Electromagnetic conductivity values and map patterns, as shown on Figure 4b - EM-31 Survey, Sump 2, for the 0-3 meter and 0-6 meter depth ranges do not clearly show relatively high conductivity values and areas that typify wet, fine-grained sump fill materials. The 20 mS/M contour on the 0-3 meter depth map (Figure 4b) seems to define areas in the south and west that exhibit lower conductivities than the areas to the north. The northern areas are possible sump locations.

The 0-6 meter depth maps (Figure 4b) show a similar pattern, with the 25 mS/M contour dividing relatively resistive areas in the west from relatively conductive areas to the east. However, relatively conductive areas (23-27 mS/M) near Line 6E, Station 18N suggests that the western edge of the sump area may extend to 4E or 5E on 18N.

To better define the southern extent of the possible sump area from the 0-6 meter depth data, a second order polynomial surface was removed from the data. This resulted in relatively conductive areas found to about 5E on 18N, extending southeasterly to 10E on 0N, and thence east-northeasterly to 35E on 10N.

Negative or very low 0-6 meter conductivities are oftentimes indicative of buried metal. Beneath Sump 2, such areas are located near 24N 7E, 5N 6E, 25N 30E, and 17N 36E. The in-phase (metal) response can be used to confirm and further outline areas of buried metal, as indicated by relatively negative values. Such areas were found near 5N 6E, 1N 6E, 17N 6E, 26N 30E, 24N 36E, 1N 36E, and 1N 36E.

The interpreted GPR profiles, as shown on Figure 4c - EM-31 Survey with Ground Penetrating Radar Profiles, Sump 2, shows reflector geometries typical of sump fills with soft-sediment deformation. The sump fill geometry consists of a south-dipping slope, possibly the preexisting topographic slope, intersecting north-dipping slopes that represent dikes. The computed thickness of the sump and overlying fill varies from a feather edge to about 8 meters (26.4 feet) at maximum. The soft-sediment deformation is shown as a series of small displacements across reflectors, with amplitude (color) changes often accompanying the displacements.

5.3.3 Sump 2 Analytical Results

Extensive analytical testing was performed at Sump 2 since it was one of the earliest sumps investigated and methodology evaluation was being developed during this period. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C.

Multiple soil samples were obtained at variable depths in each trench in order to provide a vertical profile of analytical data. Selected samples were analyzed for pH, TPH, BTEX, VOCs, metals, PAHs, selected anions and cations, and PCBs.

The majority of hydrocarbon impact at Sump 2 was found in Trenches T1 and T2, with Trench T1 showing more impact than Trench T2. In general, contamination consisted primarily of high end carbon chain hydrocarbons in the C₁₃ to C₂₃₊ range. No analytes other than TPH exceeded the CRWQCB and USEPA thresholds. The samples exhibiting elevated concentrations of TPH are presented in the table below.

Samples Exhibiting Elevated Concentrations in Sump 2 (mg/kg)		
Sample ID	TPH _{C13-22}	TPH _{C13}
S2-T1-B110-6	1,110	960
S2-T1-B110-12	2,050	2,540
S2-T1-B110-15	12,220	6,960
S2-T1-B110-18	3,170	1,230
S2-T1-B125-3	424	541
S2-T1-B125-6	9,850	4,850
S2-T1-B125-9	2,090	3,440
S2-T1-B125-12	190	187
S2-T1-B125-15	25,900	17,000
S2-T1-B125-18	193	137
S2-T2-155-3	420	433
S2-T2-155-6	4,360	1,760
S2-T2-140-6	21,700	8,900
CRWQCB		
Assuming Drinking Water Aquifer	100	1,000
Assuming Non-Drinking Water Aquifer	10,000	50,000

5.4 Sump 3 Findings

5.4.1 Sump 3 Physical Conditions

A definitive location of Sump 3 was not readily discernable in available Fairchild Collection aerial photographs dated 1943, 1949 and 1954. CDM (1991) reported evidence of a sump in an aerial photograph dated 1948, placing it on an apparent cut pad about 210 feet southeast of an oil well known as "Porter 1." The topography of the area suggests this location would be a likely sump area in that it is at a lower elevation than the nearby oil well, and it probably would have been readily accessible during oil well drilling. ENV America's review of aerial photographs indicated that in 1943, the cut pad indicated by CDM hosts two large ASTs; in 1949, the cut pad was vacant; and, in 1954, the cut pad was still vacant. Therefore, the location of Sump 3 could not be verified by research.

Two hand auger borings (S3-HA1 and S3-HA2), and one soil boring (S3-B1) drilled with a limited access drill rig were advanced and sampled at the suspected Sump 3 location, at the locations indicated on Figure 5a - Sump 3 Boring Locations. In each of the three borings, yellow silt with abundant siltstone fragments was encountered from ground surface to about 6 feet bgs, where auger refusal occurred in gray siltstone of the Monterey Formation. During the field investigation, one partially buried drum was observed on the northwestern side of the suspected sump area. The exposed portion of the drum was tilted at about 45 degrees, and soil had partially infilled the drum. No odors or vapor reading was noted emanating from the drum.

5.4.2 Sump 3 Geophysical Interpretation

White sandstone bedrock of the Topanga Formation outcrops in the southwest portion of the survey area, and also in the rectangular area bounded approximately by Line 80S (-80), Line 110S (-110), Line 40 W (-40) and Line 30W (-30). An area of anomalously high conductivity (Figure 5b - EM-31 Survey, Sump 3) occurs north of Line 70S, and east of Line 25W, as shown on the conductivity map for the 0-6 meter depth interval. The conductivity values increase with depth, and suggest geologic materials that are perhaps more silty or clayey, or perhaps more moist than the materials at a similar depth to the south. The southern boundary of this conductivity 'high' is a low-conductivity ridge in the 0-20 feet conductivity map, and has conductivity values even lower than the adjacent dry sandstones on Line 40W. In this ridge area, the conductivity values decrease with depth. This suggests the possible occurrence of soil or rock saturated by hydrocarbons (a berm for the tank, possibly) underlying this ridge, or possibly a very well cemented sandstone. Metal effect highs, and conductivity highs, are associated with pipes found along Line 0W from Station OS to Station 15S. The interpreted GPR profiles are shown on Figure 5c - EM-31 Survey with Ground Penetrating Radar Profiles, Sump 3.

5.4.3 Sump 3 Analytical Results

The basal samples from Hand Auger Borings S3-HA1 and S3-HA2 were analyzed for pH and TPH. The sample from Hand Auger Boring S3-HA1 was also analyzed for BTEX, VOCs, metals, selected anions and cations, and PAHs. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C.

TPH, BTEX, VOCs, metals and anions and cations concentrations measured in the samples collected at Sump 3 were all below the CRWQCB and USEPA thresholds. However, the measured concentration of benzo[a]pyrene (0.74 milligrams per kilogram [mg/kg]), a PAH, was above the USEPA PRG guideline of 0.26 mg/kg.

5.5 Sump 4 Findings

5.5.1 Sump 4 Physical Conditions

Based on available data, the apparent location of Sump 4 is north of an oil well known as "Fernando Fee 11." One pothole trench (S4-PH1) was excavated to about 18 feet bgs and a soil boring (S4-B1) was drilled to about 21 feet bgs at the suspected Sump 4 location. The locations for the pothole trench and soil boring are shown on Figure 6a - Sump 4 Sample Locations.

Subsurface materials consisted of sandy silt from ground surface to about 3 feet bgs, sandy silt with some gravel from about 3 feet bgs to about 12 feet bgs, gray stained silt from about 12 feet bgs to about 15 feet bgs, gray stained drilling muds from about 15 feet bgs to about 18 feet bgs, and gray, stained silty sand from about 18 feet bgs to about 21 feet bgs. Auger refusal occurred at 21 feet bgs in gray stained sandstone of the Topanga Formation. Apparent saturated conditions were encountered at 19 feet bgs.

5.5.2 Sump 4 Geophysical Interpretation

Conductivity values in the mapped sump area (Figure 6b - EM-31 Survey, Sump 4) are very high, suggesting significant briny water saturation in a sand, or fresher water saturation in a clayey sand. Low conductivity values and low metal effect values passing northeasterly through the mapped sump area suggest an old pipeline connected to an abandoned well. Similar anomalies trending northerly show another pipeline location in the vicinity of the berm. The high conductivity area extends to the southwest of this pipeline and berm.

Other indications of buried metal are found in the areas SE of the mapped sump, as are areas having anomalously high conductivity. A linear anomaly pattern of low conductivity and low metal effect values indicates buried pipelines. Other buried metal areas are suggested near 20W 65S and 20W 170S.

In the 0-6 meter depth interval, relatively extensive areas have anomalously high conductivity values (greater than 100 to 120 mS/M) that may indicate briny water saturation of sands, or clayey fill materials. The generally lesser conductivity in the 0-3 meter depth interval indicates relatively dry, sandy fill overlying the more conductive materials. The relatively high conductivity areas in the 0-3 meter depth interval are associated with relatively high metal effect values, which probably indicates areas where the sandy fill is more clayey, or possibly other disturbance with some metal content. The interpreted GPR profiles are shown on Figure 6c - EM-31 Survey with Ground Penetrating Radar Profiles, Sump 4.

5.5.3 Sump 4 Analytical Results

Samples from Pothole Trench S4-PH1 at depths of 9 feet bgs, 12 feet bgs, and 18 feet bgs were analyzed for pH and TPH. The sample from 18 feet bgs was also analyzed for BTEX, VOCs, metals, selected anions and cations, and PAHs. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C.

TPH, BTEX, metals and anions and cations concentrations measured in the samples collected at Sump 4 were all below the CRWQCB and USEPA thresholds. However, the concentrations of two PAHs were above the USEPA PRGs: benzo[a]pyrene at 0.424 mg/kg (PRG = 0.26 mg/kg) and dibenzo[a,h]anthracene at 0.808 mg/kg (PRG = 0.26 mg/kg).

5.6 Sump 5 Findings

5.6.1 Sump 5 Physical Conditions

CDM (1991) plotted Sump 5 near the base of a ravine, west of Oil Well "Fernando Fee 11" (Figure 2). Research and reconnaissance mapping could not confirm or refute this location. If Sump 5 is in the assumed location, it is probably situated in alluvial sediments and bottomed in Topanga Formation sandstone. The sump could be covered with as much as 10 feet of artificial fill soil.

Access to the assumed sump location is via a descending steep (1H:1V to 1.5H:1V) slope that appears to have been recently graded. The slope face is soft/loose and exhibits tell-tail signs of downhill creep.

5.6.2 Sump 5 Geophysical Interpretation

An EM-31 survey was conducted on the assumed sump location. Conductivities appear to increase with depth (Figure 7a - EM-31 Survey, Sump 5; and, Figure 7b - EM-31 Survey Graphs, Sump 5), which may reflect increasing water saturation with depth. However, the values do not approach the anomalous values seen for Sumps 3 and 4. Similarly, metal effect values are not anomalous. Hence, this area appears to be "clean" with respect to significant metal, briny groundwater, or clayey material accumulations.

Anomalous conductivities were not found in the relatively shallow depth intervals investigated using EM-31. Based on limited topographic data, the fill area was not previously as extensive as it is now. Hence, it is possible that a sump is buried beneath deeper fill, and not found using the EM-31.

5.6.3 Sump 5 Analytical Results

As the location of Sump 5 could not be determined, no samples were collected for analyses.

5.7 Sump 6 Findings

5.7.1 Sump 6 Physical Conditions

The location of Sump 6 is clearly evident in Fairchild Collection aerial photographs dated 1949 and 1954. The sump is positioned on the top of a southwest-trending ridgeline that extends about 500 feet southwest of an oil well known as "Porter 32." Based on aerial photographs, the sump occupies an area of about 60 feet by 110 feet in plan view. Based on site reconnaissance and trenching data, the sump cavity was excavated in bedrock, and once filled, covered with locally derived materials.

The entire sump area is moderately to densely covered with chaparral type vegetation, and the ground surface profile slopes mildly to the southwest. Access to this sump is essentially limited to a 10-foot wide path between two aboveground pipelines and a steep northerly-descending slope.

Two pothole trenches (S6-PH1 and S6-PH2) were excavated on the ridgeline near the sump location, and one soil boring (S6-B1) was installed using the limited access drill rig in the central portion of the Sump 6 location, as shown on Figure 8 - Sump 6 Sample Locations. Within the trenches on the ridgeline, light brown silt with siltstone fragments was encountered from ground surface to about 3 feet bgs; dark brown soil staining was observed in the interval from 3 feet bgs to 4 feet bgs; and, siltstone bedrock of the Monterey Formation was found at about 5 feet bgs. It is estimated that the ridgeline probably served as an overground transmission trench for drilling fluids to the sump.

Within the sump area, as encountered in Boring S6-B1, light brown silt with siltstone fragments and some dark staining was encountered from ground surface to about 8 feet bgs. Grey siltstone of the Monterey Formation was encountered in the boring at 8 feet bgs and auger refusal occurred at 10 feet bgs.

5.7.2 Sump 6 Geophysical Interpretation

A geophysical survey was not performed at Sump 6, since research identified the sump location, and that the location was readily accessible for subsurface investigation.

5.7.3 Sump 6 Analytical Results

Samples from Pothole Trench S6-PH2 at depths of 2 feet bgs and 5 feet bgs, and a sample from Boring S6-B1 at 9 feet bgs, were analyzed for pH and TPH. The sample from S6-PH2 at 2 feet bgs and the sample from S6-B1 were also analyzed for BTEX, VOCs, metals, selected anions and cations, and PAHs. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C. All analytes measured in the samples collected at Sump 6 were below the CRWQCB and USEPA thresholds.

5.8 Sump 7 Findings

5.8.1 Sump 7 Physical Conditions

Sump 7 had been identified as a potential location, based on review of the CDM report (1991). CDM indicated its position in an earthwork "cut" area, in the vicinity of oil wells known as "Standard Sesnon 9, 19 and 45." Aerial photographic review and site reconnaissance could not confirm the presence of a sump in this area.

Two pothole trenches (S7-PH1 and S7-PH2) were excavated at the approximate reported location of Sump 7, as shown on Figure 9 - Sump 7 Pothole Trench Locations. Light yellow silt was encountered at ground surface and siltstone of the Monterey Formation was encountered between 1 foot bgs and 2 feet bgs at each pothole location. No field evidence of a sump was found at the Sump 7 location.

5.8.2 Sump 7 Geophysical Interpretation

A geophysical survey was not performed at Sump 7, due to the presence of numerous aboveground features that would impede such an investigation.

5.8.3 Sump 7 Analytical Results

No soil samples were collected from the reported location of Sump 7, as evidence of a sump was not encountered.

5.9 Sump 8 Findings

5.9.1 Sump 8 Physical Conditions

Sump 8, which is actually two distinctly separate sumps, is located on a relatively flat pad that straddles a cut-fill transition. The location of Sump 8 is clearly apparent in a Fairchild Collection 1949 aerial photograph. The sumps are positioned adjacent to an access road near an oil well known as "Porter 19." The flat area was apparently created by earthwork grading for the road. Based on review of the 1949 photograph, as compared to existing topographic maps, the local topography has been moderately modified by grading since the time the sumps were active. The two sumps measure about 35 feet by 35 feet (8 west), and about 25 feet by 25 feet (8 east) in plan view, and both could potentially straddle a cut-fill transition.

It should be noted that CDM (1991) had plotted Sump 8 in a location southwest of where ENV America has identified the sump. The location suggested by CDM is a cut pad area near oil well "Porter 25." ENV America believes CDM almost certainly misplotted the sumps, since the 1949 aerial photograph clearly shows two sumps in similar position near oil well "Porter 19," and that no evidence was uncovered to suggest sumps exist near oil well "Porter 25."

Two pothole trenches (S8E-PH1 and S8W-PH2) were excavated at Sump 8 at the locations shown on Figure 10 - Sump 8 Sample Locations. Concrete debris was encountered from ground surface to about 1 foot bgs at the Sump 8 west location. Light brown silt with siltstone fragments was encountered from 1 foot bgs to 11 feet bgs when landslide debris or siltstone bedrock of the Monterey Formation was encountered.

The lithology at the Sump 8 east location was similar except for the near surface material. Light brown gravelly silt was encountered from ground surface to about 3 feet bgs where landslide debris or siltstone bedrock of the Monterey Formation was encountered.

5.9.2 Sump 8 Geophysical Interpretation

A geophysical survey was not performed at Sump 8, as the locations were clearly evident in aerial photographs.

5.9.3 Sump 8 Analytical Results

Samples from the pothole trenches were analyzed for pH, TPH, BTEX, VOCs, metals, selected anions and cations, and PAHs. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C. All analytes measured in the samples collected at Sump 8 were below the CRWQCB and USEPA thresholds.

5.10 Sump 9 Findings

5.10.1 Sump 9 Physical Conditions

The location of Sump 9 is visible in a Fairchild Collection aerial photograph dated 1949. The sump is positioned on a relatively flat pad near oil well "Porter 46." The pad appears to have been created by earthwork cuts to the north, and a fill slope to the south. The sump occupies an area of about 25 feet by 60 feet, and appears to straddle a cut-fill transition.

One pothole trench (S9-PH1) was excavated at Sump 9 at the location shown on Figure 11 - Sump 9 Sample Locations. Light brown cobbly silt (fill) was encountered from ground surface to 12 feet bgs. At 12 feet bgs, siltstone of the Monterey Formation or landslide debris was encountered. No evidence of sump material, drilling muds or staining was noted at the Sump 9 site.

5.10.2 Sump 9 Geophysical Interpretation

A geophysical survey was not performed at Sump 9, as the location was clearly evident in aerial photographs.

5.10.3 Sump 9 Analytical Results

TPH, BTEX, metals and anions and cations and PAHs concentrations measured in the samples collected at Sump 9 were all below the CRWQCB and USEPA thresholds. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C.

5.11 Sump 10 Findings

5.11.1 Sump 10 Physical Conditions

The location of Sump 10 is noticeable in Fairchild Collection aerial photographs dated 1943, 1949, and 1954. The sump is located beneath a relatively flat pad near oil wells known as "Porter 22, 59 and 72." The pad appears to have been created by infilling of a ravine. The sump occupies an area of about 60 feet by 85 feet, as shown on Figure 12a - Sump 10 Sample Locations.

Four pothole trenches (S10-PH1, S10-PH2, S10-PH3, and S10-PH4) were excavated at Sump 10. The depths of the potholes ranged from 12 to 15 feet bgs. Fill consisting of sandy silt was encountered from ground surface to the total depth in all potholes. Based on reconnaissance mapping, the fill is underlain by alluvium and landslide debris or Topanga Formation.

5.11.2 Sump 10 Geophysical Interpretation

At Sump 10, an extensive system of pipelines on the surface prevented a detailed geophysical examination of the subsurface. However, in an effort to test the methodology in a less than ideal situation, three GPR profiles and two EM-31 profiles were run in the Sump 10 area. Refer to Figure 12b - EM-31 Survey, Sump 10; and, Figure 12c - EM-31 Survey With Ground Penetrating Radar Profiles, Sump 10.

GPR Line 0N and EM-31 Line 0N are coincidental, as are GPR Line 54E and EM-31 Line 54E. GPR Line 2N was located 2 meters north of GPR Line 0N; an EM-31 line was not run here, due to interference from surface piping.

EM-31 data from Line 0N clearly show the influence of the surface piping as increased conductivity values, beginning at Station 12 East, peaking at 18E, and slowly diminishing toward 50E. Conductivity lows, and relative metal effect lows, at 21E and 39E are probably associated with buried pipelines or culverts.

The EM-31 data values for Line 54E increase substantially from about 0N to about 22N. This increase may be due to several factors: approaching steel piping on the surface, decrease in depth to conductive bedrock, or possibly the presence of a sump.

GPR profiles do not unequivocally show the presence of a sump or sumps, but taken in conjunction with the EM data suggest the presence of a sump in the eastern portion of the investigation area. Several buried pipes and disturbed areas are interpretable on Lines 0N and 2N; a sump area may be visible on Line 2N, extending from about 37E to 57E. The cross line (54E) again does not unequivocally show a sump, but suggests sump-like features from about 0N to about 20N; part of the interpretational problem is due to the arrival of an "air wave" from surface piping.

5.11.3 Sump 10 Analytical Results

Samples collected from the Sump 10 area were analyzed for TPH. The concentrations were all below the CRWQCB thresholds. Sample summary results are provided on Table 3a. The laboratory reports are included in Exhibit C.

5.12 Sump 11 Findings

5.12.1 Sump 11 Physical Conditions

The location of Sump 11 is apparent in Fairchild Collection aerial photographs dated 1949 and 1954. The sump is on a relatively flat pad, with no immediately adjacent oil wells. A pipeline extends from the sump area northward to the vicinity of oil wells known as "Porter 11 and 24." The pad appears to have been created by significant earthwork cuts to the east, and a fill slope to the west. The sump occupies an area of about 55 feet by 220 feet, and appears to straddle a cut-fill transition.

Six pothole trenches (S11-L1, S11-L1A, S11-L2, S11-L3, S11-L4, and S11-L5) were excavated at Sump 11 at the locations shown on Figure 13a - Sump 11 Sample Locations. Pothole Trenches S11-L1, S11-L1A, S11-L2, S11-L3 and S11-L4 encountered silty sand (fill) from ground surface to between 3 and 6 feet bgs. The fill was underlain by sandstone of the Topanga Formation in all cases. Pothole S11-L5 consisted of silty sand talus debris to the total depth of 12 feet bgs, where sandstone of the Topanga Formation was encountered.

5.12.2 Sump 11 Geophysical Interpretation

The EM data from Sump 11 shows the presence of several buried metallic objects located beneath the western and northern portions of the investigation area (Figure 13b - EM-31 Survey, Sump 11). The EM data show a relatively higher conductivity area within about 10 meters east of the buried pipes, but the values do not suggest water-saturated, fine grained sediments as might be found in a sump. Leakage from the pipes may be the cause of the higher conductivities, or maybe the presence of the pipes themselves.

The GPR profiles also show the location and depth of the buried pipes (Figure 13c - EM-31 Survey With Ground Penetrating Radar Profiles, Sump 11). The indicated depth to the first reflector (1.5 to 2 meters) is interpreted as the fill thickness in this area. Air waves can be seen in some of the east-west profiles, probably resulting from overhead power lines. Other discontinuous reflections, occurring at depths of 3 to 6 meters, suggest the geometry of a sump, but may be the result of fill or natural structures in this area. On Line 21W between Stations 35S and 25S, at a depth of 4 meters or so, sump- or fill-like features are visible. Similar features can be inferred near Station 10S of Line 21W, and on Line 24W between Stations 17S and 27S. The east-west GPR profiles do not clearly show a consistent association of sump-like reflection geometries with the conductive feature east of the pipes, which suggests that the conductivity anomaly is not due to a sump.

5.12.3 Sump 11 Analytical Results

Samples collected from the Sump 11 area were analyzed for TPH. The majority of hydrocarbon impact at Sump 11 was found in Pothole Trenches S11-L1A, S11-L2, and S11-L3. In general, contamination consisted primarily of high end carbon chain hydrocarbons in the C₁₃ to C₂₃₊ range. Sample summary results are provided on Table 3a. The laboratory reports are included in Exhibit C. The samples exhibiting elevated concentrations are presented in the table below.

Samples Exhibiting Elevated Concentrations in Sump 11 (mg/kg)		
Sample ID	TPH _{C13-22}	TPH _{C23+}
S11-L1A	203	130
S11-L2-5	966	654
S11-L3-3	829	391
S11-L3-5	3,780	2,270
CRWQCB		
Assuming Drinking Water Aquifer	100	1,000
Assuming Non-Drinking Water Aquifer	10,000	50,000

5.13 Sump 12 Findings

5.13.1 Sump 12 Physical Conditions

The location of Sump 12 is the most uncertain of all sumps. CDM (1991) had plotted Sump 12 in the general vicinity of an oil well known as "Porter 42." This area hosts several aboveground features including pipelines, which are apparently used for odorization processes of natural gas. In general, the area is described as a relatively flat pad, with a steep cut slope to the west, and a fill slope to the east. In a 1954 Fairchild Collection aerial photograph reviewed by ENV America, a dark elongate feature was observed along the base of the cut slope at the western side of the flat pad.

CDM (1991) indicated that this sump was located in what appears to be the area south-southeast of the flat pad, which would place it in natural terrain. Based on site reconnaissance data, it is estimated that it should have been plotted within the fill slope area, nearer the eastern part of the pad. Access to that area is limited to hand-carried equipment.

Four hand auger borings were attempted at the locations indicated on Figure 14 - Sump 12 Exploratory Boring Locations. Refusal occurred between 6 inches and 2 feet bgs, when sandstone of the Topanga Formation was encountered. No evidence of a sump was identified.

5.13.2 Sump 12 Geophysical Interpretation

A geophysical survey was not conducted at the Sump 12 location, due to obvious interference from the aboveground features.

5.13.3 Sump 12 Analytical Results

Because no evidence of a sump was found, soil samples were not collected for analyses.

5.14 Sump 13 Findings

5.14.1 Sump 13 Physical Conditions

The location of Sump 13 is visible in a Fairchild Collection aerial photograph dated 1949. The sump is positioned on a relatively flat pad near an oil well known as "Porter Sesnon 20." The pad appears to have been created by earthwork cuts to the west, and a fill slope to the south. The sump occupies an area of about 35 feet by 75 feet, and appears to straddle a cut-fill transition.

One pothole trench (S13-PH1) was excavated at Sump 13 at the location shown on Figure 15a - Sump 13 Sample Locations. Fill material consisting of silt with siltstone fragments was encountered from the ground surface to 7.5 feet bgs. Landslide debris generated from siltstone bedrock of the Monterey Formation was encountered beneath the fill.

5.14.2 Sump 13 Geophysical Interpretation

The EM-31 data clearly map a metallic pipeline that runs beneath the western portion of the surveyed area, as evidenced by conductivity and in-phase (metal response) lows at this location. (Figure 15b - EM-31 Survey, Sump 13).

East of the concrete well pad (in the northeastern part of the mapped area), conductivity values in the 0-3-meter and 0-6-meter depth ranges in the fill area are typically 5-10 mS/M greater than equivalent areas to the southeast and south of the pad. These values remain within the range expected for relatively dry, silty or sandy fill, and are not directly indicative of damp or wet, fine-grained sump fill.

EM conductivities increase with depth in the mapped area of Sump 13, which may be related to fill materials being coarser grained, or drier, or both, than the underlying bedrock. A difference map of the 0-6 meter depth values minus the 0-3 meter depth values indicates slightly elevated 0-6 meter conductivities immediately east of the well pad, which may be due to somewhat thinner fill in this area, or perhaps more moisture content in the underlying bedrock.

The interpreted GPR profiles (Figure 15c - EM-31 Survey With Ground Penetrating Radar Profiles, Sump 13) support this interpretation as well as show the location of the pipeline along the western edge of the survey area. Fill thicknesses appear to reach a maximum of 4 meters (13.2 feet) to 6 meters (19.8 feet) in the areas east of Station 10E. The presence of higher-amplitude reflectors between 3 meters (9.9 feet) and 6 meters (19.8 feet) depth in the eastern portions of the east-west profiles may be related to lower EM conductivities in these areas, which imply lower water content and less attenuation of the radar wave.

5.14.3 Sump 13 Analytical Results

One sample from the Sump 13 area was analyzed for pH, TPH, BTEX, VOCs, metals, selected anions and cations, and PAHs. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C. All analytes measured in the samples collected at Sump 13 were below the CRWQCB and USEPA thresholds.

5.15 Fernando Fee Tank Farm Findings

5.15.1 Fernando Fee Tank Farm Physical Conditions

The Fernando Fee Tank Farm area is readily visible in aerial photographs. The tank farm is no longer used, and no tanks remain. The area is generally described as an essentially flat pad, with approximate dimensions of about 180 feet by 180 feet. The pad appears to have been created by earthwork cuts to the north and fills to the south.

Four pothole trenches (FF-PH1 through FF-PH-4) were excavated at the Fernando Fee Tank Farm at the locations shown on Figure 16 - Fernando Fee Tank Farm Sampling Locations. In Pothole Trench FF-PH1 location, black stained clay was encountered from ground surface to as deep as 6 feet bgs, and gray stained sandstone bedrock of the Topanga Formation was encountered beneath the clay. In Pothole Trench FF-PH2, located at the north end of the tank farm pad, silty sand (fill) was encountered from ground surface to about 2 feet bgs, where sandstone of the Topanga Formation was encountered. In Pothole Trench FF-PH3, yellow silty sand (fill) was encountered from ground surface to about 1 foot bgs, which was underlain by gray sandstone of the Topanga Formation. In Pothole Trench FF-PH4, yellow silty sand (fill) was encountered from ground surface to about 1 foot bgs, an oily black sand was encountered between 3 and 4 feet bgs, and gray stained sandstone of the Topanga Formation was encountered beneath the sand. It is estimated that the fill deepens significantly toward the south.

5.15.2 Fernando Fee Tank Farm Geophysical Interpretation

A geophysical survey was not conducted at the Fernando Fee Tank Farm.

5.15.3 Fernando Fee Tank Farm Analytical Results

Samples collected from the Fernando Fee Tank Farm area were analyzed for pH, TPH, BTEX, metals, selected anions and cations, and PAHs. TPH, BTEX, and one PAHs compound (benzo[a]anthrocene) were found at concentrations exceeding CRWQCB and USEPA thresholds. All other analytes measured in the samples collected were below the CRWQCB and USEPA thresholds. Sample summary results are provided on Tables 3a, 3b and 3c. The laboratory reports are included in Exhibit C. The samples exhibiting elevated concentrations are presented in the table below.

Analytes Exhibiting Elevated Concentrations in Fernando Fee Tank Farm (mg/kg)							
Sample ID	TPH _{C13-22}	TPH _{C13+}	Benzene	Toluene	Ethyl benzene	Xylenes	Benzo[a]anthrocene
FTF-PH1-9	121	46	ND	ND	ND	ND	ND
FTF-PH1W3	20,700	9,400	ND	ND	14	24	NT
FTF-PH4-3	214	110	ND	ND	ND	ND	NT
FTF-PH4-12	559	246	0.209	0.039	0.204	0.291	4.87
CRWQCB Assuming Drinking Water Aquifer	100	1,000	0.011	0.45	2	5.3	N/A
Assuming Non-Drinking Water Aquifer	10,000	50,000	0.1	unregula- ted	68	175	N/A
USEPA PRG	N/A	N/A	1.4	880	230	320	2.6

N/A = Not Applicable
 ND = Not Detected at or Above Detection Limit
 NT = Not Tested

check spelling

6.0 CONCLUSIONS

- ▶ The location of Sump 1 has been clearly identified. Analytical data indicates that TPH concentrations exceed CRWQCB thresholds, when it is assumed that a potential drinking water source underlies the area. On a sump-specific basis, it seems reasonable to consider that groundwater within the immediate sump area would not be directly connected to any drinking water source, and therefore, the TPH concentrations would be of much less significance. However, arsenic concentrations exceed the respective USEPA PRG value.
- ▶ It is believed that the location of Sump 2 has been accurately identified. TPH concentrations exceed CRWQCB thresholds, regardless of the classification of groundwater use in the area.
- ▶ The location of Sump 3 seems to have been determined, but with some degree of uncertainty, since absolute evidence of a sump was not found during field investigations. However, one PAHs compound (benzo[a]pyrene) was found to exist at a concentration exceeding the USEPA PRG.
- ▶ The location of Sump 4 appears to have been accurately determined, based on field and research data. Two PAHs compounds (benzo[a]pyrene and dibenzo[a,h]anthracene) were found to exist at concentrations exceeding the respective USEPA PRGs.
- ▶ The location of Sump 5 was not determined by research, field reconnaissance, or geophysical methods. It is possible that CDM (1991) mistakenly identified a sump in this location, that the sump has been covered deeply by fill soil, or that the sump has been destroyed by earthwork grading and/or mass wasting (i.e., landsliding).
- ▶ Sump 6 has been definitively identified. No analytes were detected above CRWQCB or USEPA thresholds.
- ▶ The location of Sump 7 has not been identified, and no evidence of a sump was found. It is possible that CDM (1991) mistakenly identified a sump in the reported location.

- ▶ Sump 8, which is actually two separate sumps in one area, has been identified based on research and field reconnaissance. However, no physical subsurface evidence of the sumps was identified. It is possible that the sumps were destroyed during earthwork grading in the area. No analytes were detected above CRWQCB or USEPA thresholds.
- ▶ The location of Sump 9 has been identified based on research and field reconnaissance. However, no physical subsurface evidence of the sump was identified. It is possible that the sump was destroyed during earthwork grading in the area. No analytes were detected above CRWQCB or USEPA thresholds.
- ▶ The location of Sump 10 has not been confirmed, albeit it was identified in aerial photographs. It is considered likely that the sump was destroyed during earthwork grading and/or mass wasting in the area. Analytical testing for TPH indicated that concentrations were below the CRWQCB thresholds.
- ▶ The location of Sump 11 was identified in aerial photographs, but physical subsurface evidence was not identified. Analytical data indicates that TPH concentrations exceed CRWQCB thresholds, when it is assumed that underlying groundwater is a potential drinking water source. On a sump-specific basis, it seems reasonable to consider that groundwater within the immediate sump area would not be directly connected to any drinking water source, and therefore, the TPH concentrations would be of much less significance.
- ▶ The location of Sump 12 was not determined. It is possible that the sump was destroyed during earthwork grading in the area.
- ▶ Sump 13 was clearly identified in aerial photographs, but definitive physical field evidence was not observed. No analytes were detected above CRWQCB or USEPA thresholds.
- ▶ The Fernando Fee Tank Farm is readily identifiable. Analytical data indicates that TPH and BTEX concentrations locally exist above CRWQCB thresholds, regardless of groundwater classification. One PAHs compound (benzo[a]anthracene) was found to exist at a concentration exceeding the USEPA PRG. The extent of impacted soil has not been approximately determined.
- ▶ As the Mission Adrian Tank Farm was inaccessible during field work, the environmental disposition of this tank farm is unknown.

7.0 LIMITATIONS

This report is intended exclusively for the Southern California Gas Company for the evaluation of petroleum related impact associated with identified sumps and tank farm locations as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other scientists and engineers practicing in the geosciences. No other warranty, either expressed or implied, is made. As with all environmental projects, there is no guarantee that the work performed has identified all or any of the sources or locations of impact. This report is issued with the understanding that the Southern California Gas Company is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency.

The following ENV America professional was responsible for all work associated with this project within the purview of the Professional Engineers Act of the California Code of Regulations.



A handwritten signature in black ink, appearing to read "S. Shahin".

S. "Sean" Shahin, P.E.
Principal

8.0 REFERENCES CITED

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TABLES

TABLE 1
SUMMARY OF INVESTIGATIVE TOOLS
Southern California Gas Company
Aliso Canyon
Northridge, California

Summary Identification	Investigative Tools					
	Geophysics EM Survey	Geophysics GPR	Trenching	Rot. Holing	Hand Auger Soil Borings	Limited Access Drill Rig Soil Sampling
1				X		
2	X	X	X			
3	X	X			X	X
4	X	X		X		X
5	X					
6				X		X
7				X		
8				X		
9			X			
10	X	X		X		
11	X	X		X		
12					X	
13	X	X		X		
Fernando Tank Farm				X		
Notes:						
EM = Electro-magnetic conductivity						
GPR = Ground penetrating radar						

QA/QC: *DK*
DATE: *9/16/11*

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TABLE 2
SUMMARY OF SAMPLE ANALYSES
Southern California Gas Company
Aliso Canyon
Northridge, California

Sample Identification	Sample Identification	pH	Analytical Method														
			3015M Catalytic C12	3015M C12 C2	3015M C12 C2	3020 BTEX	32-10 VOCs	6100-7400 Metals	9050 Aromatics Caudin	9010 NAPK Aromatics	8050 Polycyclic Aromatics	8050 PCBs					
1	S1-PH1-6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-B110-18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-110-3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-110-6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-110-9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-110-12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-110-15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-125-3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-125-6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-125-9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-125-12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-125-15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-125-15M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T1-B125-18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-170-3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-170-8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-155-18M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-140-3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-140-6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-140-9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-140-12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	S2-T2-140-15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

QA/QC: *PK*

DATE: *7/6/97*

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TABLE 2
SUMMARY OF SAMPLE ANALYSES
Southern California Gas Company
Aliso Canyon
Northridge, California

Sample Identification	Sample Identification	pH	Analytical Method																	
			3015M C ₁ TO C ₁₂	3015M C ₁₃ TO C ₂₂	3015M C ₂₃	S024 BTEX	S240 VOCs	5000-7000 Metals	2050 Anions Cations	0010 NEMs	8510 Polycyclic Aromatics	3080 PEBS								
2	S2-T2-140-18	X	X	X	X															
2	S2-T3-NW-3	X	X	X																
2	S2-T3-NW-6	X	X	X																
2	S2-T3-NW-9	X	X	X																
2	S2-T3-NW-12	X	X	X																
2	S2-T4-3	X	X	X				X											X	
2	S2-T4-6	X	X	X																
2	S2-T4-9	X	X	X																
2	S2-T4-9M	X	X	X																
2	S2-T4-12	X	X	X																
2	S2-T4-15	X	X	X																
2	S2-T5-SW-3	X	X	X																
2	S2-T5-SW-6	X	X	X																
2	S2-T5-SW-9	X	X	X																
2	S2-T5-SW-12	X	X	X																
2	S2-T5-SW-15	X	X	X																
3	S3-HA1-6	X	X	X				X											X	
3	S3-HA2-6	X	X	X																
4	S4-PH1-9	X	X	X																
4	S4-PH1-12	X	X	X																
4	S4-PH1-18	X	X	X																
6	S6-B1-9	X	X	X																
6	S6-PH2-2	X	X	X																
6	S6-PH2-5	X	X	X																
8E	S8E-PH1-3	X	X	X				X												
8W	S8W-PH1-12	X	X	X				X												
9	S9-PH1-12	X	X	X				X												

QA/QC: PS
DATE: 7/6/99

TABLE 2
SUMMARY OF SAMPLE ANALYSES
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

Sample Identification	Sample Identification	pH	Analytical Method																	
			MUSM C1, C2, C12	NO-SV C1, C2, C12	SUSM C1, C2	S120 BTEX	S241 VOCs	6000-7000 Metals	9180 Anions Cations	40-1 Na/K	2510 Polycyclic Aromatics	8180 PCBS								
10	S10-L1-3		X	X	X															
10	S10-L1-6		X	X	X															
10	S10-L1-9		X	X	X															
10	S10-L1-12		X	X	X															
10	S10-L1-15		X	X	X															
10	S10-L2-3		X	X	X															
10	S10-L2-6		X	X	X															
10	S10-L2-9		X	X	X															
10	S10-L2-12		X	X	X															
10	S10-L2-14		X	X	X															
10	S10-L3-3		X	X	X															
10	S10-L3-6		X	X	X															
10	S10-L3-9		X	X	X															
10	S10-L3-12		X	X	X															
10	S10-L3-15		X	X	X															
10	S10-L4-3		X	X	X															
10	S10-L4-6		X	X	X															
10	S10-L4-9		X	X	X															
10	S10-L4-12		X	X	X															
11	S11-L1-3		X	X	X															
11	S11-L1A-3		X	X	X															
11	S11-L1A-5		X	X	X															
11	S11-L2-3		X	X	X															
11	S11-L2-5		X	X	X															
11	S11-L3-3		X	X	X															
11	S11-L3-5		X	X	X															
11	S11-L4-6		X	X	X															
11	S11-L5-12		X	X	X															

QA/QC: DC

DATE: 9/16/98

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TABLE 2
SUMMARY OF SAMPLE ANALYSES
Southern California Gas Company
Aliso Canyon
Northridge, California

Sample Identification	Sample Identification	Analytical Method														
		pH	3015M C ₁ TO C ₁₂	3015M C ₁₅ TO C ₂₂	3015M C ₂₅ - C ₂₈	8020 BTEX	8240 VOCs	6000-7000 Metals	9050 ANIONS CATIONS	6010 NIAK	8510 Polycyclic Aromatics	3080-PCBS				
13	S13-PH1-6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fernando Tank Farm	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTES:
 BTEX = benzene, toluene, ethylbenzene, and total xylenes, respectively.
 VOCs = volatile organic compounds.
 N2 = sodium.
 K = potassium.
 PCBs = polychlorinated biphenyls.

QA/QC: JK
 DATE: 9/12/17
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TABLE 3a
SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	PHI (EPA 815)			BTEX (EPA 820)			Total Xylenes (ug/g)
		C6-10 (ug/g)	C10-C12 (ug/g)	C13-C15 (ug/g)	Toluene (ug/g)	Benzene (ug/g)	Btylbenzene (ug/g)	
S1-PH1-6	04/09/97	ND<1	3130	2960	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S1-PH1-12	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S2-T1-B110-3	11/13/96	ND<1	5	5	NT	NT	NT	NT
S2-T1-B110-6	11/13/96	ND<1	1110	960	NT	NT	NT	NT
S2-T1-B110-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T1-B110-12	11/13/96	ND<1	2050	2540	NT	NT	NT	NT
S2-T1-B110-15	11/13/96	2.6	12200	6960	ND<0.005	ND<0.005	ND<0.005	2.6
S2-T1-B110-18	11/13/96	3.9	3170	1230	NT	NT	NT	NT
S2-T1-B125-3	11/13/96	ND<1	424	541	NT	NT	NT	NT
S2-T1-B125-6	11/13/96	1.8	9850	4850	NT	NT	NT	NT
S2-T1-B125-9	11/13/96	ND<1	2090	3440	NT	NT	NT	NT
S2-T1-B125-12	11/13/96	ND<1	190	187	NT	NT	NT	NT
S2-T1-B125-15	11/13/96	1.5	25900	17000	NT	NT	NT	NT
S2-T1-B125-15M	11/13/96	2	14800	20400	NT	NT	NT	NT
S2-T1-B125-18	11/13/96	5.5	193	137	ND<0.005	10	ND<0.005	24
S2-T2-170-3	11/13/96	ND<1	20	12	NT	NT	NT	NT
S2-T2-170-8	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-3	11/13/96	ND<1	420	433	NT	NT	NT	NT
S2-T2-155-6	11/13/96	2.2	4360	1760	NT	NT	NT	NT
S2-T2-155-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-12	11/13/96	ND<1	14	4	NT	NT	NT	NT
S2-T2-155-15	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-18	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-18M	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-140-3	11/13/96	ND<1	33	28	NT	NT	NT	NT

QA/QC: DS
 DATE: 9/15/97
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TABLE 3a
 SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	PHI (EPA 8015)			BTEX (EPA 8020)			
		C1 TO C2 (mg/kg)	C3 TO C22 (mg/kg)	C23 (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)
S2-T2-140-6	11/13/96	1.2	21700	8900	NT	NT	NT	NT
S2-T2-140-9	11/13/96	ND<1	ND<10	140	NT	NT	NT	NT
S2-T2-140-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-140-15	11/13/96	2.1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-140-18	11/13/96	ND<4	ND<10	ND<10	NT	NT	NT	NT
S2-T3-NW-3	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T3-NW-6	11/13/96	ND<1	ND<10	80	NT	NT	NT	NT
S2-T3-NW-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T3-NW-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-3	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-6	11/13/96	3	ND<10	ND<10	NT	NT	NT	NT
S2-T4-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-9M	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-15	11/13/96	8.4	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-3	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-6	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-9	11/13/96	2.1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-15	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S3-HA1-6	04/10/97	ND<1	29	13	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S3-HA2-6	04/10/97	ND<10	33	14	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-B1-20	04/22/97	ND<1	76	10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-PHI-9	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-PHI-12	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-PHI-18	04/09/97	26	119	70	ND<0.005	ND<0.005	ND<0.005	ND<0.01

QA/QC: D5
 DATE: 9/15/97
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TABLE 3a
 SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	NPE (EPA 816)			BTEX (EPA 8020)			
		C ₁₀ -C ₂ (mg/kg)	C ₉ -C ₁₀ (mg/kg)	C ₈ -C ₉ (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (mg/kg)
S6-B1-9	04/22/97	65	99	15	ND<0.005	0.078	ND<0.005	0.568
S6-PH2-2	04/10/97	ND<1	2	9	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S6-PH2-5	04/10/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S8E-PH1-3	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S8W-PH1-12	04/09/97	ND<1	2	9	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S9-PH1-12	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S10-L1-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L1-6	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L1-9	12/17/96	ND<1	75	61	NT	NT	NT	NT
S10-L1-12	12/17/96	ND<1	511	336	NT	NT	NT	NT
S10-L1-15	12/17/96	ND<1	48	6	NT	NT	NT	NT
S10-L2-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L2-6	12/17/96	ND<1	277	232	NT	NT	NT	NT
S10-L2-9	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L2-12	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L2-14	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L3-3	12/17/96	ND<1	40	22	NT	NT	NT	NT
S10-L3-6	12/17/96	ND<1	92	39	NT	NT	NT	NT
S10-L3-9	12/17/96	ND<1	55	33	NT	NT	NT	NT
S10-L3-12	12/17/96	ND<1	13	4	NT	NT	NT	NT
S10-L3-15	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L4-3	12/17/96	ND<1	63	27	NT	NT	NT	NT
S10-L4-6	12/17/96	ND<1	44	7	NT	NT	NT	NT
S10-L4-9	12/17/96	ND<1	121	54	NT	NT	NT	NT
S10-L4-12	12/17/96	ND<1	21	6	NT	NT	NT	NT
S11-L1-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT

QA/QC: DJ
 DATE: 9/15/98
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TABLE 3a
 SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	TSPH (EPA 8015)				BTEX (EPA 8020)				Total xylenes (ug/kg)
		C ₁ , I ₀ , C ₂ (ug/kg)	C ₁₅ TO C ₂₀ (ug/kg)	C ₂₅ (ug/kg)	C ₂₅₊ (ug/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	1,2,4-trimethylbenzene (ug/kg)	
S11-L1A-3	12/17/96	ND<1	203	130	NT	NT	NT	NT	NT	NT
S11-L1A-5	12/17/96	ND<1	33	9	NT	NT	NT	NT	NT	NT
S11-L2-3	12/17/96	ND<1	34	7	NT	NT	NT	NT	NT	NT
S11-L2-5	12/17/96	ND<1	966	654	NT	NT	NT	NT	NT	NT
S11-L3-3	12/17/96	ND<1	829	391	NT	NT	NT	NT	NT	NT
S11-L3-5	12/17/96	ND<1	3780	2270	NT	NT	NT	NT	NT	NT
S11-L4-6	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT	NT	NT
S11-L5-12	12/17/96	ND<1	20	3	NT	NT	NT	NT	NT	NT
S13-PH1-6	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH1E-3	04/10/97	ND<10	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH1-9	04/10/97	1.8	121	46	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH1W-3	04/10/97	5.8	20700	9400	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	24
FTF-PH2-3	04/10/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH3-3	04/10/97	ND<10	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH3-6	04/10/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH4-3	04/10/97	ND<1	214	110	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.01
FTF-PH4-12	04/10/97	10.9	559	246	209	39	204	204	204	291

NOTES:
 mg/kg = milligrams per kilogram
 ug/kg = micrograms per kilogram
 ND<S = not detected at the indicated laboratory detection limit
 TSPH = total petroleum hydrocarbons

QA/QC: *[Signature]*
 DATE: 5/14/98
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TABLE 3b
SUMMARY OF DETECTED METALS, ANIONS AND CATIONS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	Metals (Method 6000-7000)										Anions and Cations						
	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Thallium	Mercury	Zinc	Nitrate	Sulfate	Soluble Ammonia	Processium	Sodium
S1-PH1-6	14.4	1240	9.7	11.9	5.4	38.3	13.2	ND<5	45.3	17.1	73.5	201	1.4	0.7	7.2	ND<0.5	443
S1-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-15	ND<1	239	ND<2.5	11.1	ND<5	21.3	ND<5	5.3	42.3	ND<10	71	68	ND<1	ND<0.2	ND<10	1180	635
S2-T1-B110-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-18	ND<1	214	7.7	11.3	ND<5	23.4	ND<5	5.3	60.5	ND<10	86.5	65.5	ND<1	ND<0.2	ND<10	1250	588
S2-T2-170-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-170-8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-NW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-NW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *PK*
 DATE: *7/11/17*

TABLE 3b
 SUMMARY OF DETECTED METALS, ANIONS AND CATIONS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	METALS (mg/L)										ANIONS (mg/L)					
	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Manganese	Nickel	Vanadium	Zinc	Nitrate	Soluble Nitrite	Sulfate	Soluble Ammonia	Potassium	Sodium
S2-T3-NW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S3-HA1-6	1.8	193	8.1	ND<5	23.1	ND<5	ND<5	15.3	31.7	21.6	75	1.3	1.2	3710	17.6	2710
S3-HA2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-B1-20	ND<1	82	ND<2.5	ND<5	7.8	ND<5	ND<5	ND<5	ND<5	15.8	37.8	ND<1	0.3	280	9.2	2570
S4-PH1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-18	ND<1	40.3	3	5.3	12.4	ND<5	ND<5	19.3	11.4	12.1	111	ND<1	1.4	700	13.6	1180
S6-B1-9	1.2	44.1	2.6	ND<5	16.6	ND<5	ND<5	25.2	ND<5	12.1	75	ND<1	ND<0.2	730	8.5	3000
S6-PH2-2	ND<1	124	4.6	ND<5	7.8	ND<5	ND<5	7.4	17.1	22.2	54.5	ND<1	0.5	1140	0.8	3140
S6-PH2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S8E-PH1-3	2.3	269	13.8	7.6	50	ND<5	5.5	74.5	ND<5	72.5	132	17.1	0.2	37	9.6	3120
S8W-PH1-12	ND<1	175	12.9	12.8	42.7	ND<5	ND<5	68.5	22.1	96.5	116	ND<1	ND<0.2	42	14.4	2300
S9-PH1-12	ND<1	176	12.6	9	41.8	ND<5	6.8	84	28.3	94.5	120	16.1	0.4	58	0.6	1570
S10-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: 25
 DATE: 9/16/12

TABLE 3b
 SUMMARY OF DETECTED METALS, ANIONS AND CATIONS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	DETECTION METHOD 300-000										ANIONS AND CATIONS							
	Ascorbic Acid	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Vanadium	Zinc	Nitrate	Sulfate	Soluble Nitrite	Soluble Sulfate	Soluble Ammonia	Potassium	Sodium
S10-L2-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L3-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L5-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH1-6	ND<1	219	18.6	4.3	8.4	55.5	ND<5	ND<5	117	32.6	141	125	10.8	ND<0.2	16	1590	357	
FTF-PH1-9	ND<1	44.8	4.3	ND<5	ND<5	7.9	ND<5	ND<5	ND<5	17.1	17.2	32.8	ND<1	1.6	20	2860	12.3	
FTF-PH1W-3	NT	NT	5.6	ND<5	5.3	20.9	ND<5	ND<5	23	20.6	26.7	63.5	NT	NT	NT	NT	NT	
FTF-PH2-3	NT	134	NT	ND<5	7.9	35.3	ND<5	ND<5	39.2	33.6	59.5	99.5	NT	NT	NT	NT	NT	
FTF-PH3-6	NT	245	9.5	32.3	8	33.9	ND<5	ND<5	42.9	31.4	56.5	106	ND<1	2.3	36.8	2590	3310	
FTF-PH4-3	NT	322	10.5	25.3	8	33.9	ND<5	ND<5	42.9	31.4	56.5	106	ND<1	2.3	36.8	2590	3310	
FTF-PH4-12	ND<1	322	10.5	25.3	8	33.9	ND<5	ND<5	42.9	31.4	56.5	106	ND<1	2.3	36.8	2590	3310	

NOTES:
 All results are in units of mg/kg unless otherwise noted.
 ND<5 = Not Detected at or below the analytical detection limit.
 NT = Not Tested

QA/QC: DA
 DATE: 7/16/13
 F:\ENVDOCS\SCG\T20-NRTH\SUM\INFO\SUMFOSOIL.XLS

TABLE 3c
SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)										
	Benzo (a) anthracene	Benzo (b) pyrene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Anthracene	Fluoranthene	Naphthalene	Indeno (1,2,3-cd) pyrene	Benzo (e) pyrene	Perylene
S1-PH1-6	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S1-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-15	ND<0.02	ND<0.02	0.112	0.107	ND<0.02	ND<0.02	ND<0.02	0.637	0.187	ND<0.02	0.818
S2-T1-B110-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-18	ND<0.02	0.039	ND<0.02	0.122	ND<0.02	0.277	ND<0.02	0.104	ND<0.02	ND<0.02	0.529
S2-T2-170-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-170-8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *DX*
 DATE: *5/6/17*
 F:\ENVDOCS\SCG\T20-NRTH\SUMP\INFO\SUMPSOIL.XLS

TABLE 3c
SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAH)													
	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Anthracene	Fluorene	Indene(1,2,3-cd)perylene	Benzo(a)pyrene	Pyrene				
S2-T2-140-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S3-HA1-6	0.468	0.74	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.29	0.139	ND<0.02	0.168	0.168	0.168
S3-HA2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-B1-20	0.148	0.424	ND<0.02	0.11	0.092	0.808	0.808	0.808	ND<0.02	0.808	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S4-PH1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-18	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S6-B1-9	0.034	0.284	ND<0.02	0.467	0.467	0.467	0.467	0.467	0.361	0.026	0.043	0.043	0.043	0.145
S6-PH2-2	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S6-PH2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *24*
 DATE: *9/16/92*
 FAENVDOCS\CG\T20-NRTH\SUMPINFO\SUMPSOIL.XLS

TABLE 3c
SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)											
	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Diaceanthracene	Fluorene	Anthracene	Phenanthrene	Naphthalene	Indeno(1,2,3-cd)perylene	Benzofluoranthene	Pyrene
S8E-PH1-3	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S8W-PH1-12	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S9-PH1-12	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S10-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *[Signature]*
 DATE: 7/16/84
 F:\ENVDOCS\SCG\120-NR\THISUM\INFO\SUMPSOIL.XLS

TABLE 3c
SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)											
	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(e)pyrene	Benzo(a)pyrene	Fluorene	Anthracene	Fluoranthene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Pyrene
S11-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L3-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L5-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S13-PH1-6	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
F1F-PH1-9	0.026	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.109	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
F1F-PH1W-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
F1F-PH2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
F1F-PH3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
F1F-PH4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
F1F-PH4-12	4.87	ND<0.02	1.39	0.319	3.43	1.9	7.31	ND<0.02	ND<0.02	ND<0.02	1.32	4.25

NOTES:
 All results reported in milligrams per kilogram (mg/kg)
 ND<S = not detected at the indicated laboratory detection limit
 NT = not tested

QA/QC: *RS*
 DATE: 7/16/17
 F:\ENVDOCS\SCG\T20-NR\THISUM\INFO\SUMPSOIL.XLS

FIGURES

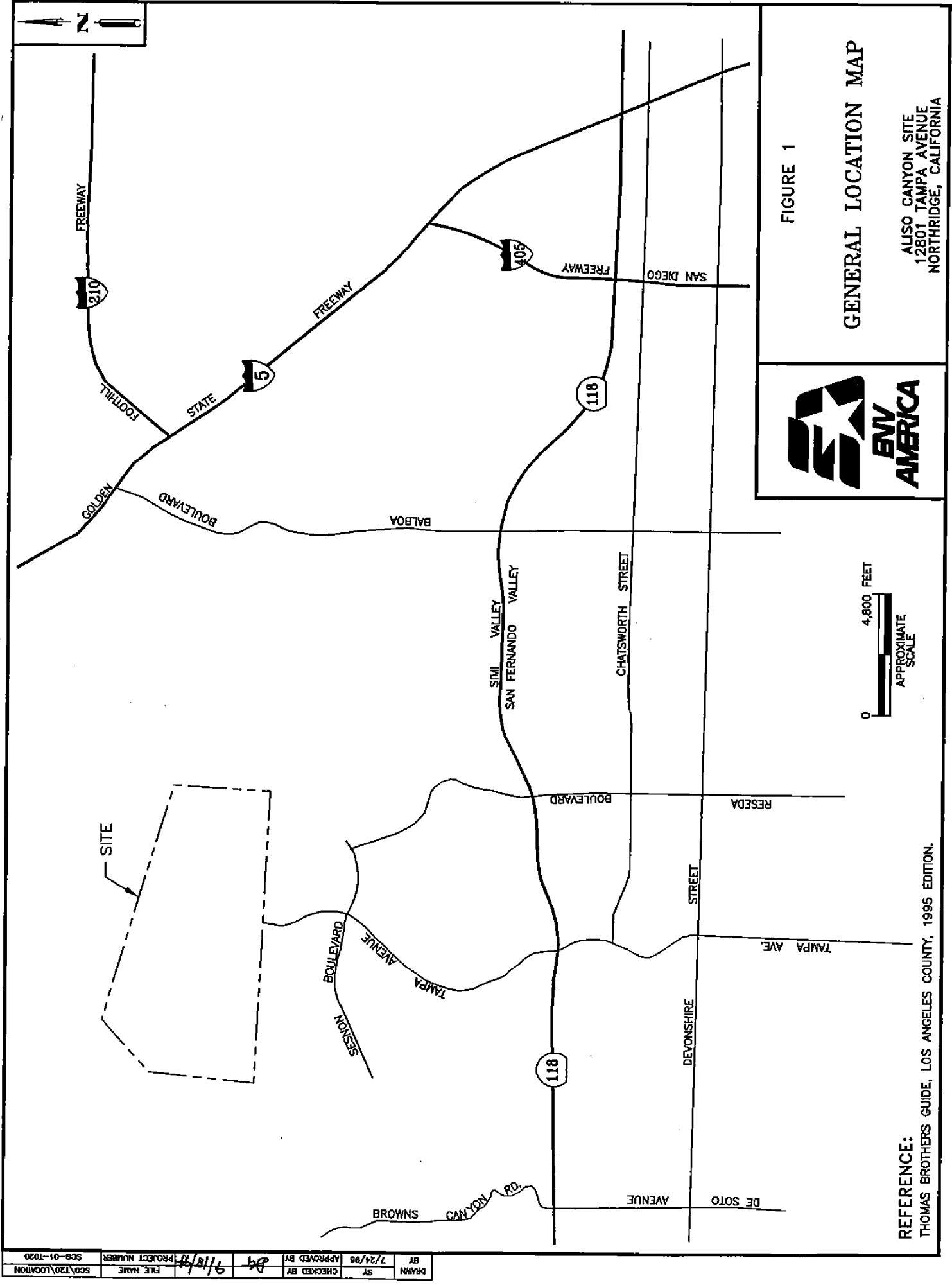


FIGURE 1

GENERAL LOCATION MAP

ALSO CANYON SITE
 12801 TAMPA AVENUE
 NORTHRIDGE, CALIFORNIA



REFERENCE:
 THOMAS BROTHERS GUIDE, LOS ANGELES COUNTY, 1995 EDITION.

DRAWN BY	ST	CHECKED BY	DA	FILE NAME	SC0120LOCATION
BY	7/24/96	APPROVED BY	9/18/96	PROJECT NUMBER	SC9-01-1020

FIGURE 2
INDEX MAP

NOTE: THIS MAP SHOWN HEREON IS BASED UPON AERIAL PHOTOGRAPHIC INFORMATION OBTAINED IN JUNE OF 1953. THE INFORMATION WAS USED TO COMPLETE THIS INFORMATION WAS OBTAINED FROM THE SURVEY EQUIPMENT AND SURVEY PROCEDURES. THE DATA FOR THIS SYSTEM IS BASED UPON THE STATE NETWORK (ZONES 5, AND 1983 DATUM OF THE CALIFORNIA COORDINATE SYSTEM.

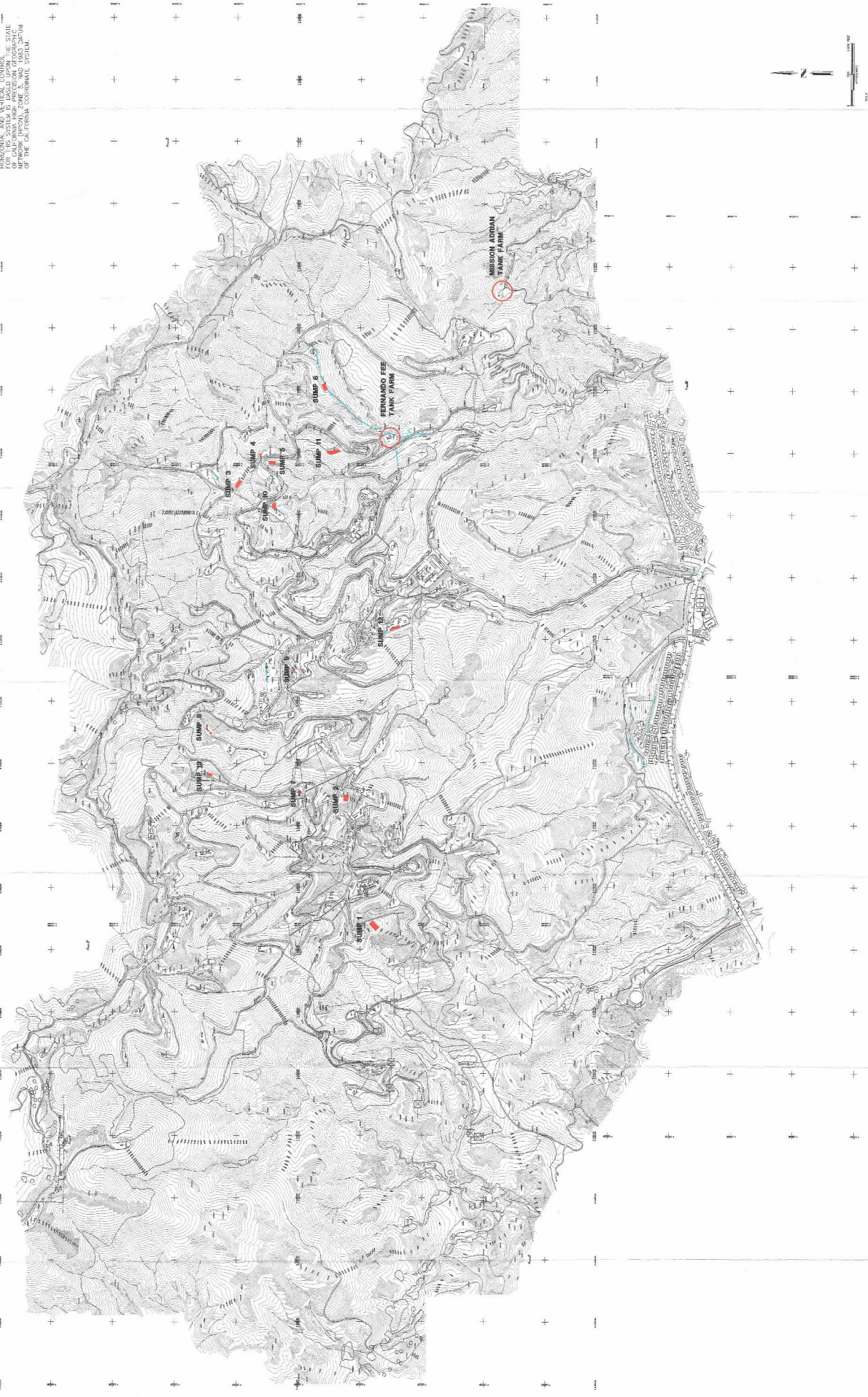


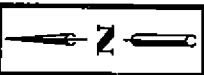
FIGURE 2
INDEX MAP

SOUTHERN CALIFORNIA GAS COMPANY
AFTER LARSEN SUMP DISTRIBUTION

DATE: 11/20/1985
DRAWN BY: JAC
APPROVED BY: JAC

ENVIRONMENTAL
AMERICA

REFERENCE: THE GAS COMPANY, EES - TECHNICAL, EXISTING, PROPOSED ANALYSIS AND SURVEY 11/20/1985



EXPLANATION	
S1-PH1	POT-HOLE SAMPLING LOCATION
---	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2500	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

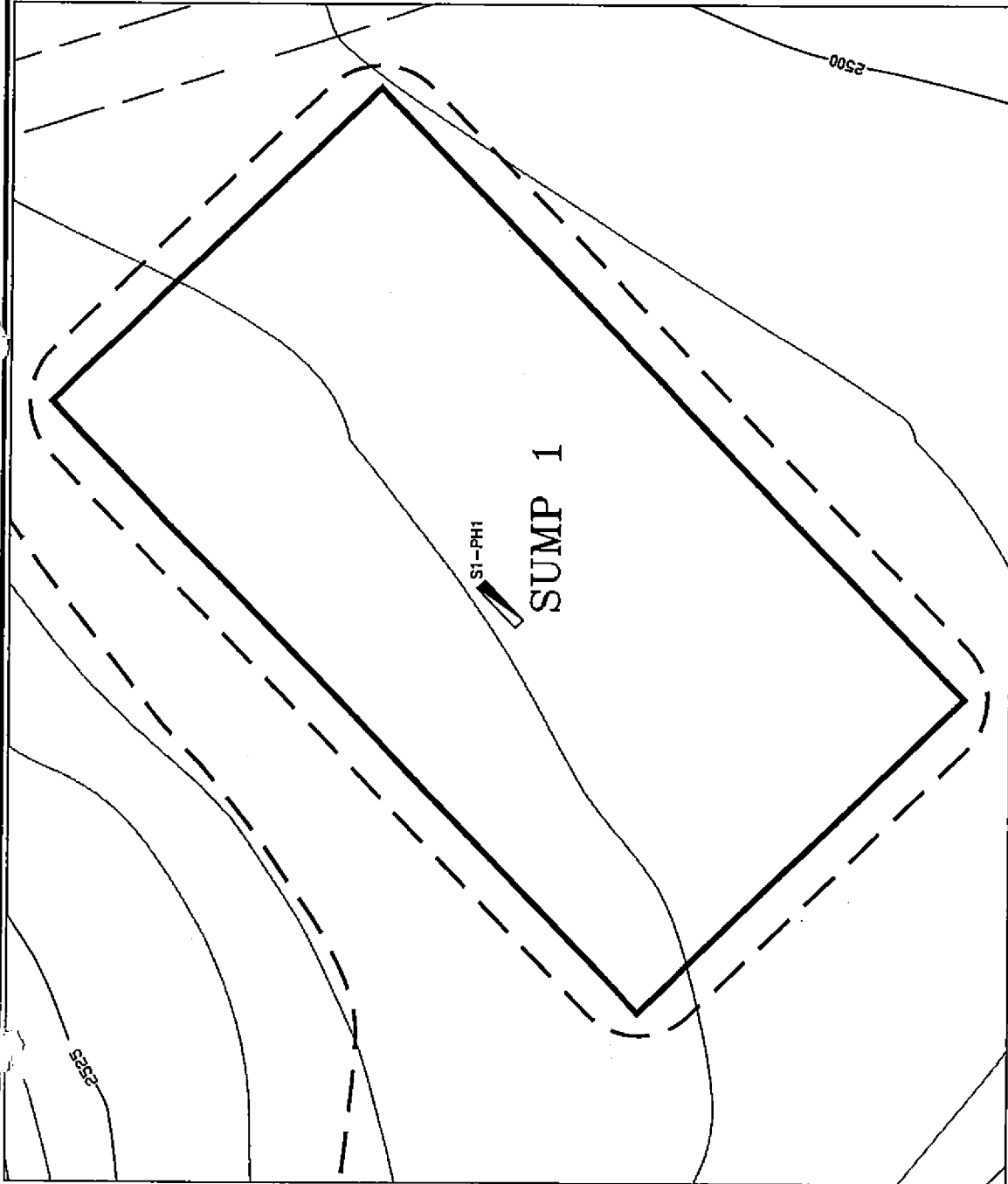
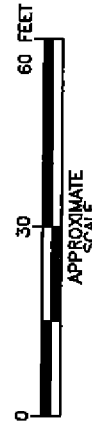


FIGURE 3

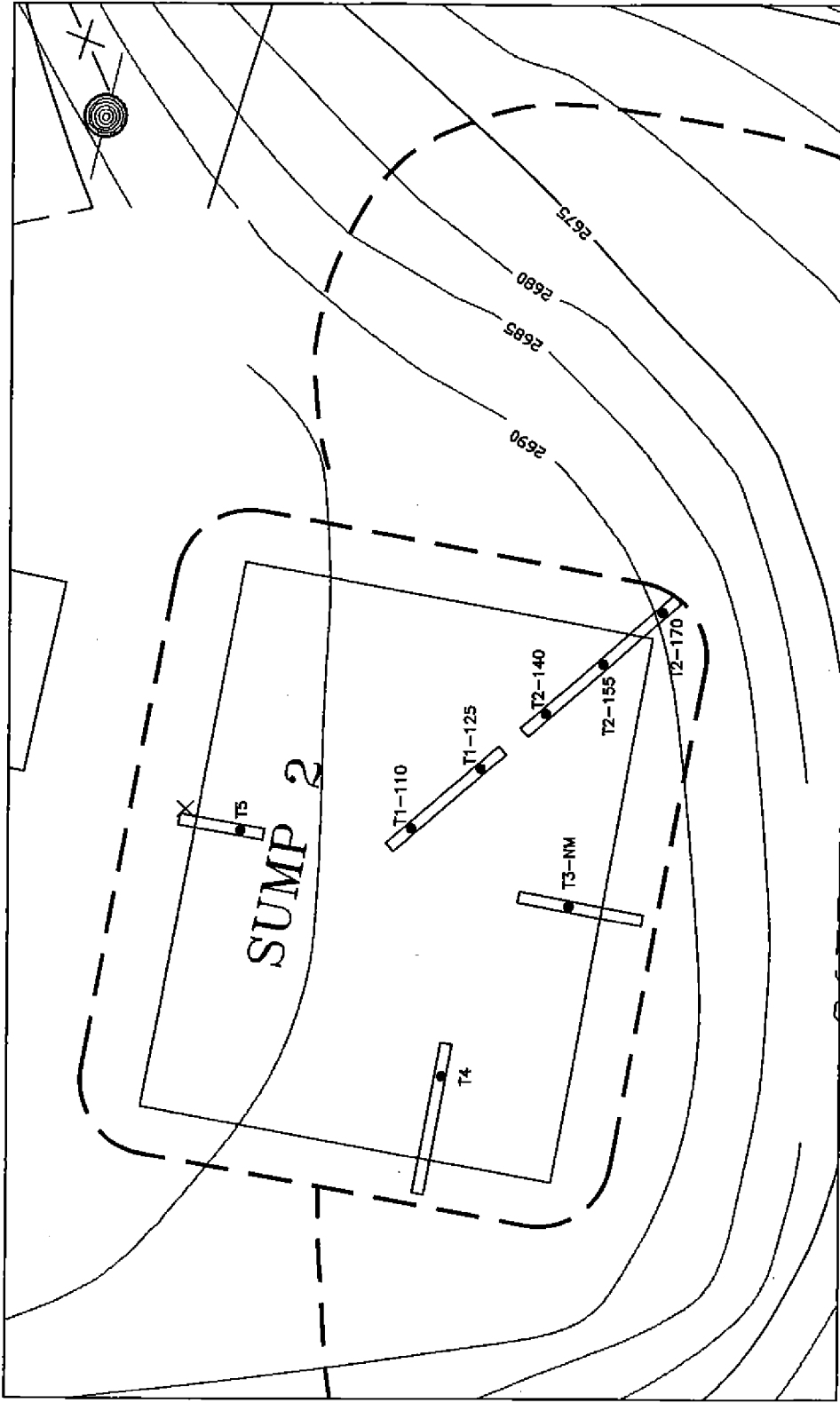
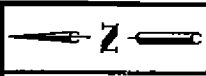
SUMP 1
SAMPLE LOCATIONS

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION



SC0\120\SUMP\SUMP1	FILE NAME	SC0-01-1020	PROJECT NUMBER	4/21/97	APPROVED BY	ST	CHECKED BY	BY
--------------------	-----------	-------------	----------------	---------	-------------	----	------------	----

DRAWN BY: *[Signature]*
 SY: *[Signature]*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*
 DATE: 8/28/97
 PROJECT NUMBER: SC0-01-7020
 FILE NAME: SC0\T20\SUMPS\SUMP2



EXPLANATION	
T1-110	TRENCH SAMPLING LOCATION
[Symbol]	TRENCH LOCATION
[Symbol]	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
[Symbol]	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

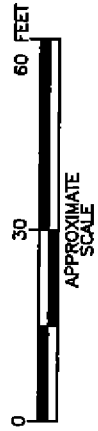
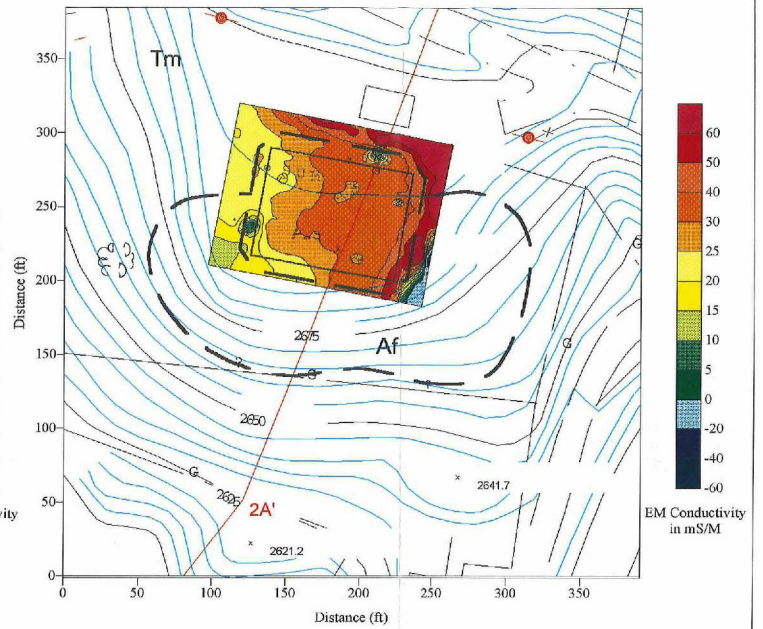
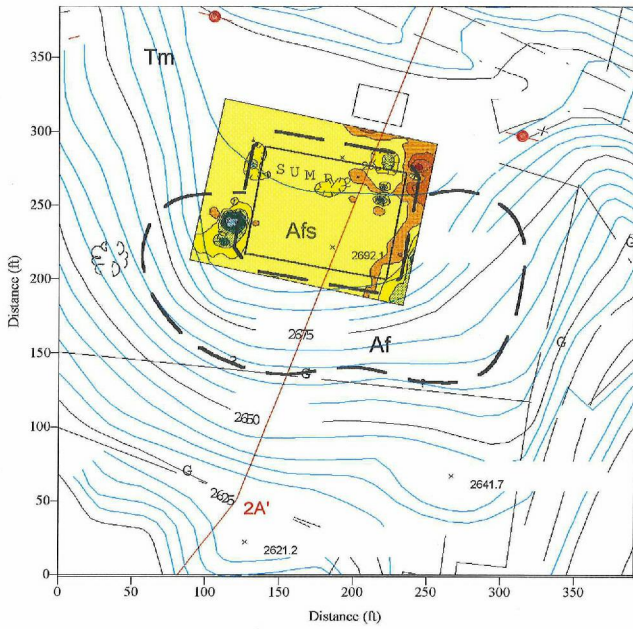


FIGURE 4a
SUMP 2
SAMPLE LOCATIONS
 SOUTHERN CALIFORNIA GAS COMPANY
 ALSO CANYON SITE INVESTIGATION

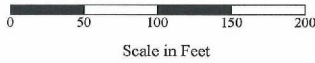


Electromagnetic Conductivity Response
0 - 3 Meters

Electromagnetic Conductivity Response
0 - 6 Meter Depth



Topographic Contours
Major contour interval = 25 ft
Minor contour interval = 5 ft



Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location based on previous ENV America Incorporated site investigations and interpretation.



Figure 4b
EM-31 Survey
Sump 2
Aliso Canyon Site Investigation
Southern California Gas Company

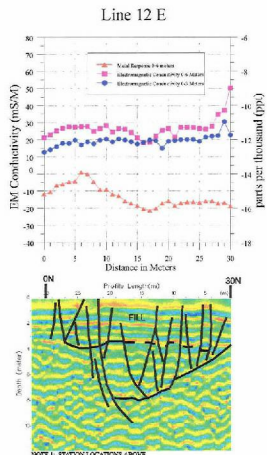
Proj. No. SCG-01-T020 Drawn By: SY Approved: DE Date: 11/8/96
F:\ENVDOCS\SCG\T20-NRTH\SUMP\INFO\S-2\GPIEM-31\SUMP2.SRF

Proj. No. SCG-01-T020 November 8, 1996

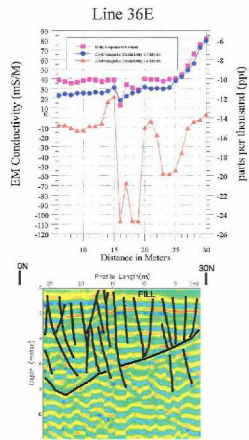
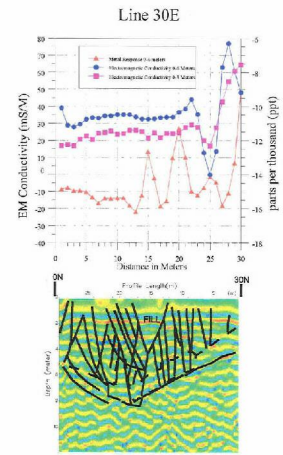
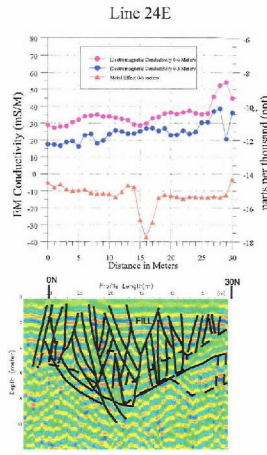
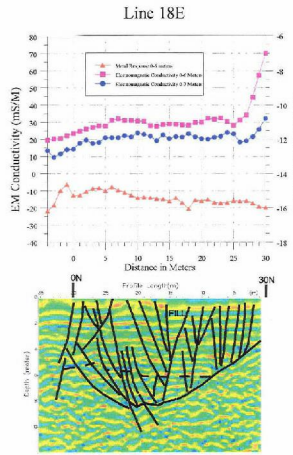
FIGURE 4c

**EM-31 SURVEY AND GROUND PENETRATING
RADAR PROFILES**

SUMP 2



NOTE 1: REFLECTION LOCATIONS ABOVE PROFILE LENGTH MARKERS INDICATE DISTANCE SOUTH OF EM BASELINE (0M)
NOTE 2: DASHES INDICATED UNIDENTIFIED POSITIONS OF ALLIANCE SURVEICES OR DEPRECIATIONAL ACTIVITIES IN SOFT BEDDING



Notes

1. Scales are as noted
2. GPR Surveys were not performed at every EM-31 survey location.
3. P denotes a pipeline



Figure 4c
EM-31 Survey with Ground Penetrating Radar Profiles
Sump 2
Aliso Canyon Sump Investigation
Southern California Gas Company

Proj. No. SCG-01-T020

May 15, 1997

DRAWN	BY	SY	CHECKED BY	DATE	APPROVED BY	DATE
				8/28/07		
PROJECT NUMBER	SC01720\SUP3\SUMP3					
FILE NAME	SC01-1020					

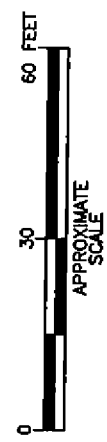
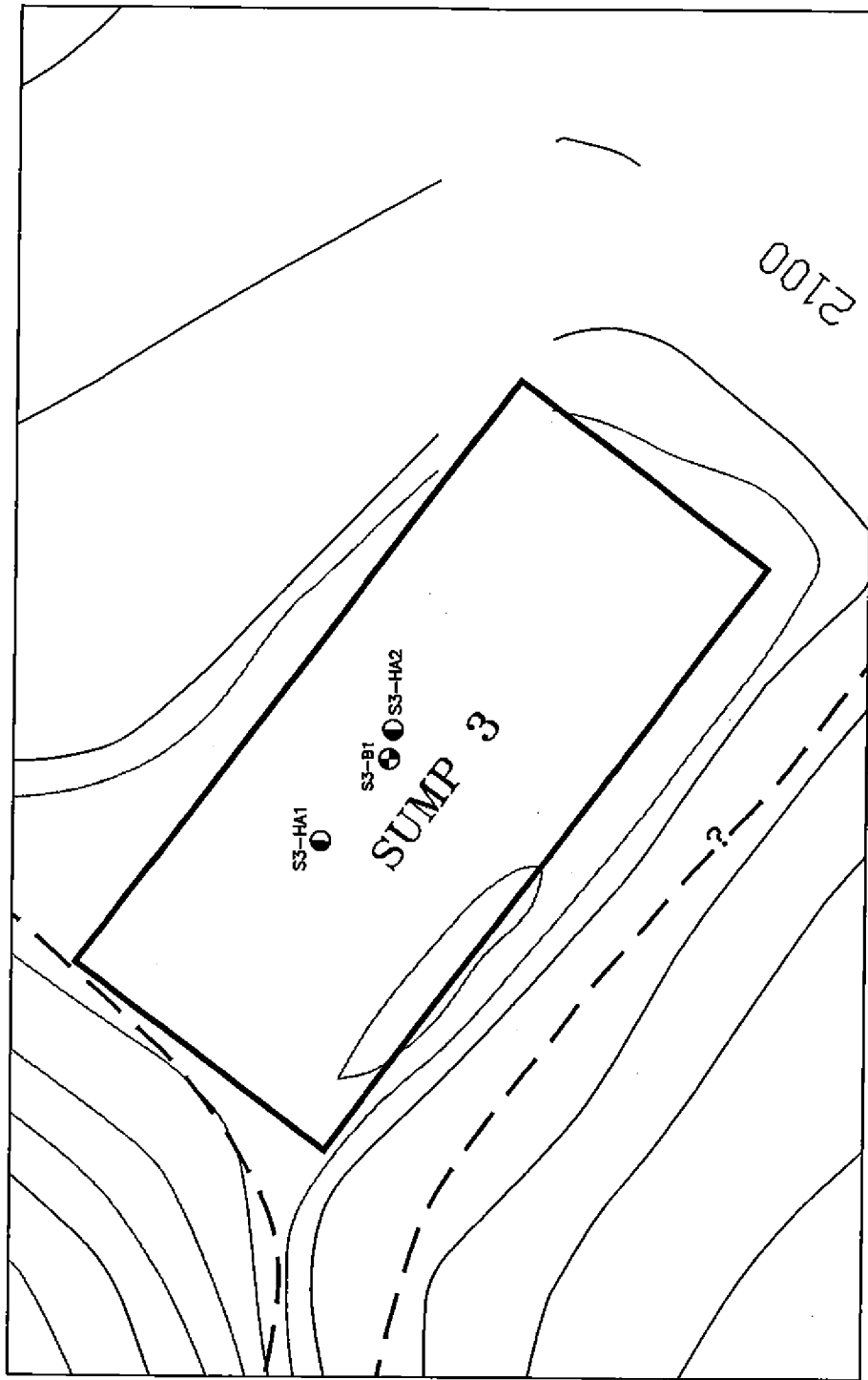


FIGURE 5a

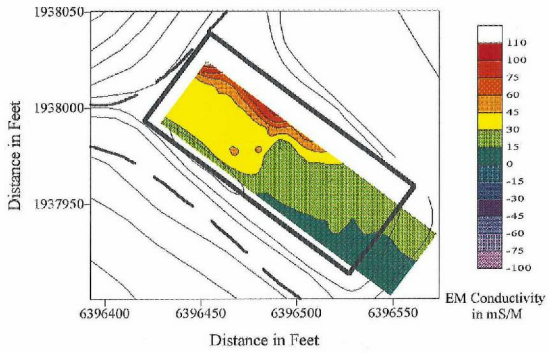
**SUMP 3
BORING LOCATIONS**

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION

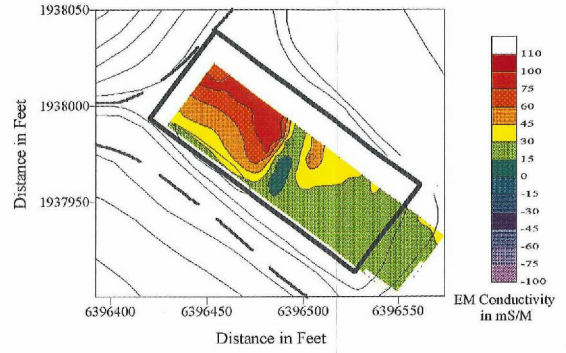


EXPLANATION	
S3-B1	SOIL BORING LOCATION
S3-HA2	HAND AUGER BORING LOCATION
- - -	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

Electromagnetic Conductivity Response
0 - 3 Meter Depth

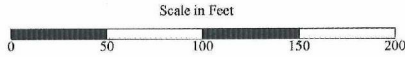


Electromagnetic Conductivity Response
0 - 6 Meter Depth



Topographic Contours
Major contour interval = 25 ft
Minor contour interval = 5 ft

Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location based on previous ENV America Incorporated site investigations and interpretation.



Proj. No. SCG-01-T020 Drawn by: SY Approved: [Signature] Date: 9/18/96
F:\ENVDOCS\SCG\T20-NRTH\SUMPINFO\3\EM-31\3_3and6m.SRF



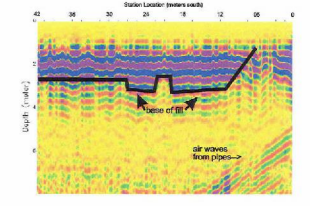
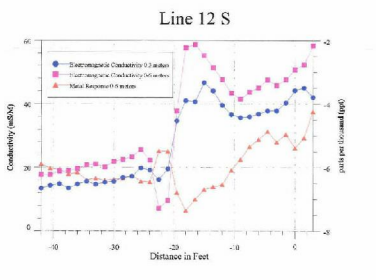
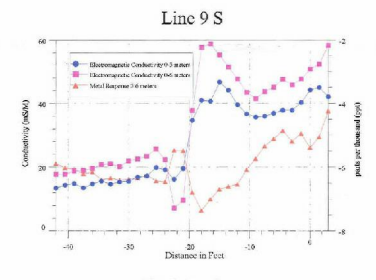
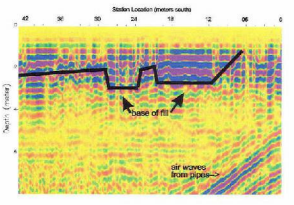
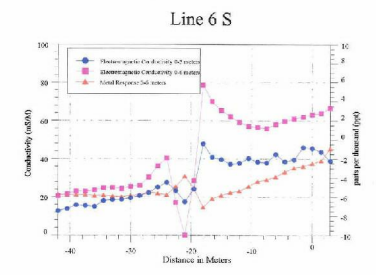
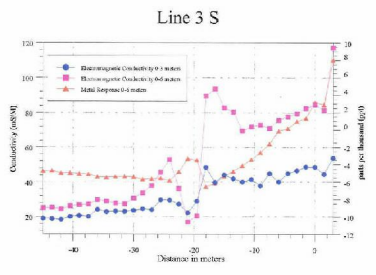
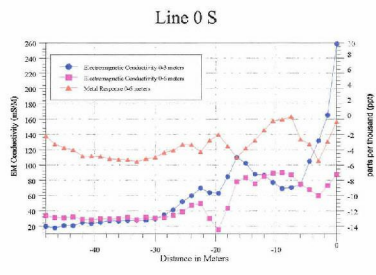
Figure 5b
EM-31 Survey
Sump 3
Aliso Canyon Site Investigation
Southern California Gas Company

Proj. No. SCG-01-T020 November 8, 1996

FIGURE 5c

**EM-31 SURVEY AND GROUND PENETRATING
RADAR PROFILES**

SUMP 3

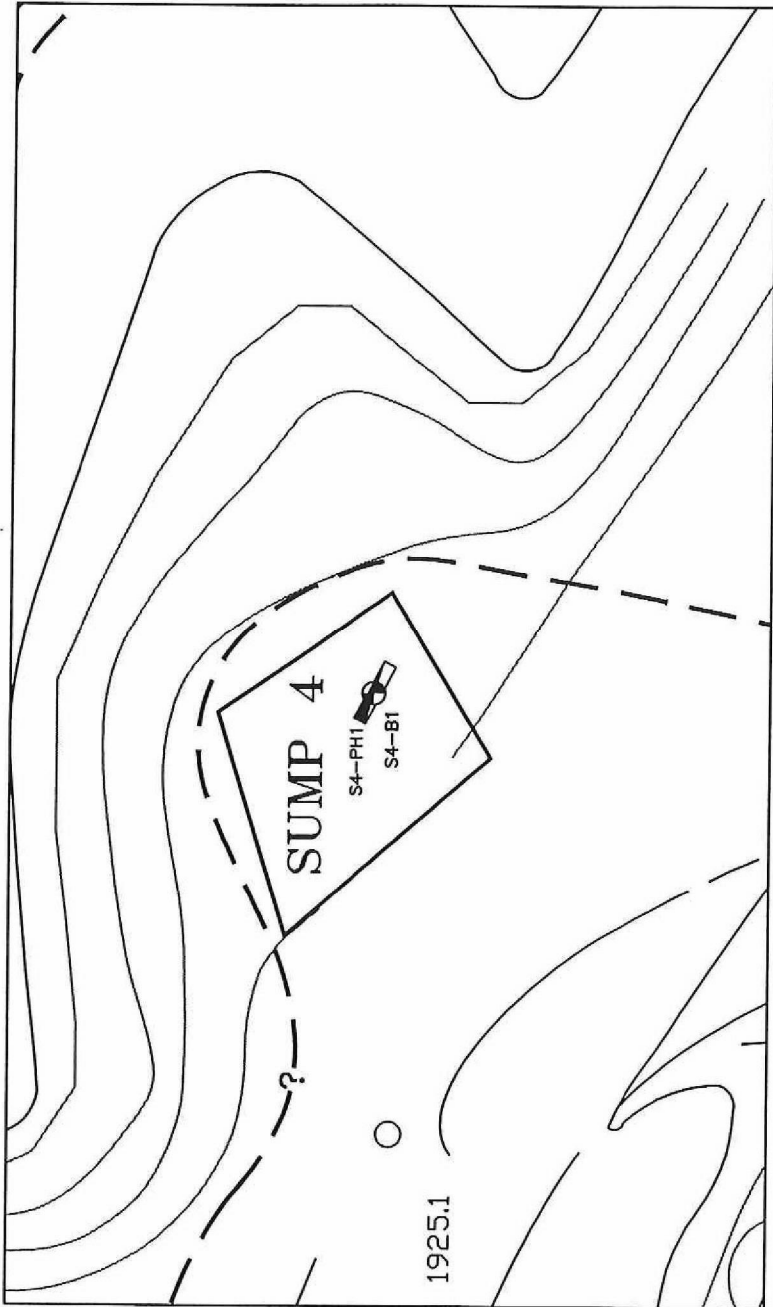


- Notes
1. Scales are as noted
 2. GPR surveys were not performed at every EM-31 survey location
 3. P denotes a pipeline



Figure 5c
EM-31 Survey and Ground Penetrating Radar Profiles
Sump 3
Aliso Canyon Sump Investigation
Southern California Gas Company
Proj. No. SCG-01-T001 May 15, 1997

DRAWN	ST	CHECKED BY	BS	FILE NAME	5/12/97	PROJECT NUMBER	SC0120(SUMPS,SUMP3
BY	8/28/97	APPROVED BY					SC0-01-1020



EXPLANATION	
S4-PH1	POT-HOLE SAMPLING LOCATION
S4-B1	SOIL BORING LOCATION
- - -	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

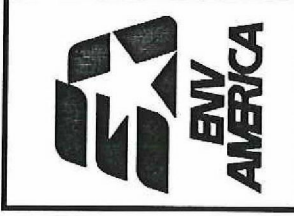
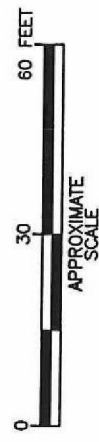
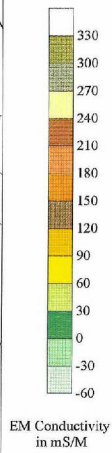
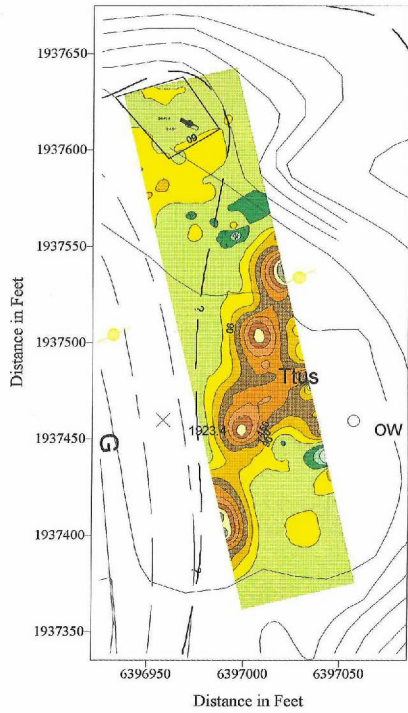
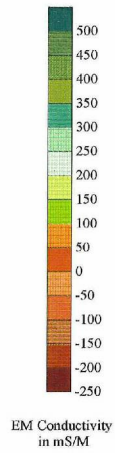
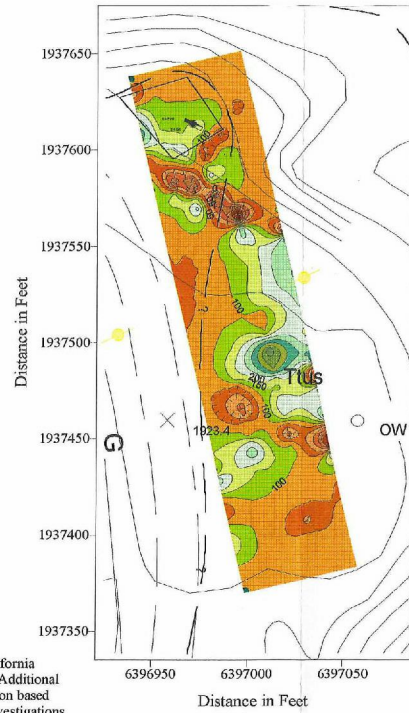


FIGURE 6a
SUMP 4
SAMPLE LOCATIONS
SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION

Electromagnetic Conductivity Response
0 - 3 Meter Depth



Electromagnetic Conductivity Response
0 - 6 Meter Depth



Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location based on previous ENV America Incorporated site investigations and interpretation.

Topographic Contours
Major contour interval = 25 ft
Minor contour interval = 5 ft

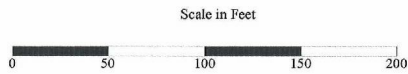


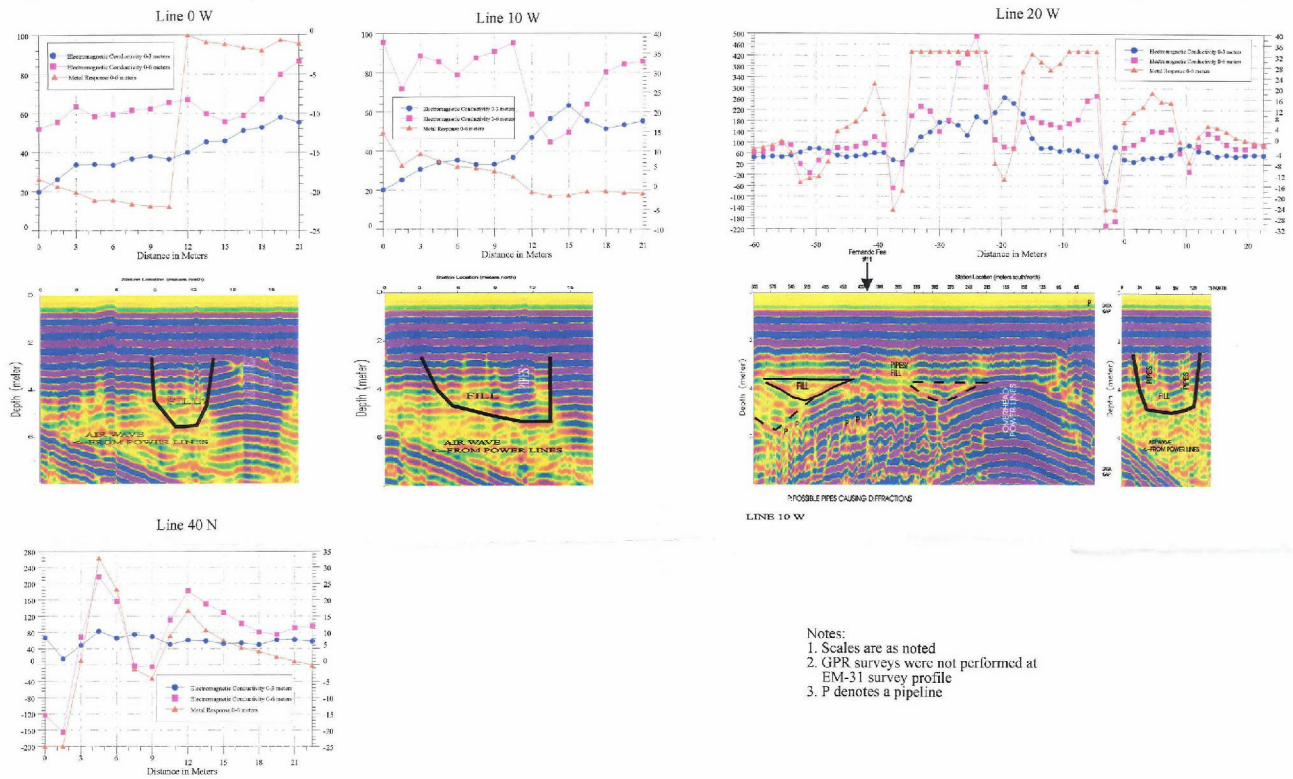
Figure 6b
EM-31 Survey
Sump 4
Aliso Canyon Site Investigation
Southern California Gas Company
Proj. No. SCG-01-T020 November 8, 1996

Proj. No. SCG-01-T020 Drawn by: SY Approved: DR Date: 11/12/96
F:\ENVDOCS\SCG\T20-NRTH\SUMPINFO\S-4EM-31\4_3and6m.SRF

FIGURE 6c

**EM-31 SURVEY AND GROUND PENETRATING
RADAR PROFILES**

SUMP 4



- Notes:
1. Scales are as noted
 2. GPR surveys were not performed at EM-31 survey profile
 3. P denotes a pipeline

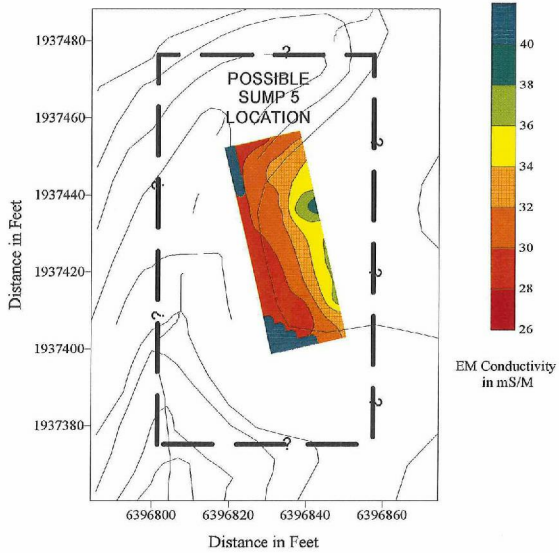


Figure 6c
EM-31 Survey With Ground Penetrating Radar Profiles
Sump 4
Aliso Canyon Sump Investigation
Southern California Gas Company

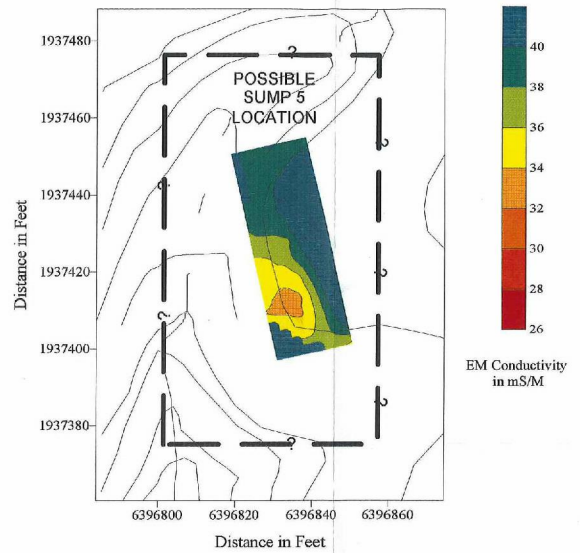
Proj. No. SCG-01-T020

May 15, 1997

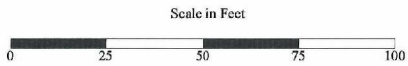
Electromagnetic Conductivity Response
0 - 3 Meter Depth



Electromagnetic Conductivity Response
0 - 6 Meter Depth



Topographic Contours
Major contour interval = 25 ft
Minor contour interval = 5 ft



Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location based on previous ENV America Incorporated site investigations and interpretation.



Figure 7a
EM-31 Survey
Sump 5
Aliso Canyon Site Investigation
Southern California Gas Company

Proj. No. SCG-01-T020 Drawn by: *SY* Approved: *PK* Date: 9/12/96

F:\ENVDOCS\SCG\T20-NRTH\SUMPINFO\S-5\EM-31\5_3and6m.SRF

Proj. No. SCG-01-T020 November 8, 1996

DRWN	SY	CHECKED BY	4/21/97	APPROVED BY		FILE NAME	SCO\120\SUNP\SUNP6
						PROJECT NUMBER	SCO-01-1020



EXPLANATION	
	POT-HOLE SAMPLING LOCATION
	SOIL BORING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

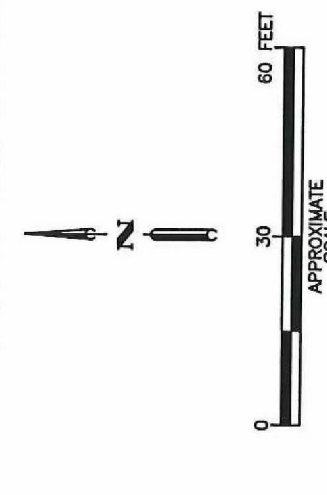
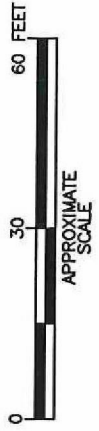
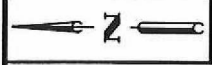


FIGURE 8
SUMP 6
SAMPLE LOCATIONS

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION

DRAWN BY SY
 CHECKED BY SY
 APPROVED BY SY
 DATE 8/28/97
 FILE NAME SC0\T20\SUPFS\SUMP7
 PROJECT NUMBER SC0-01-7020
 DATE 8/16/97







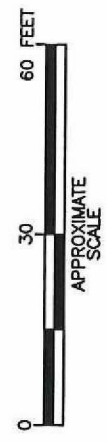
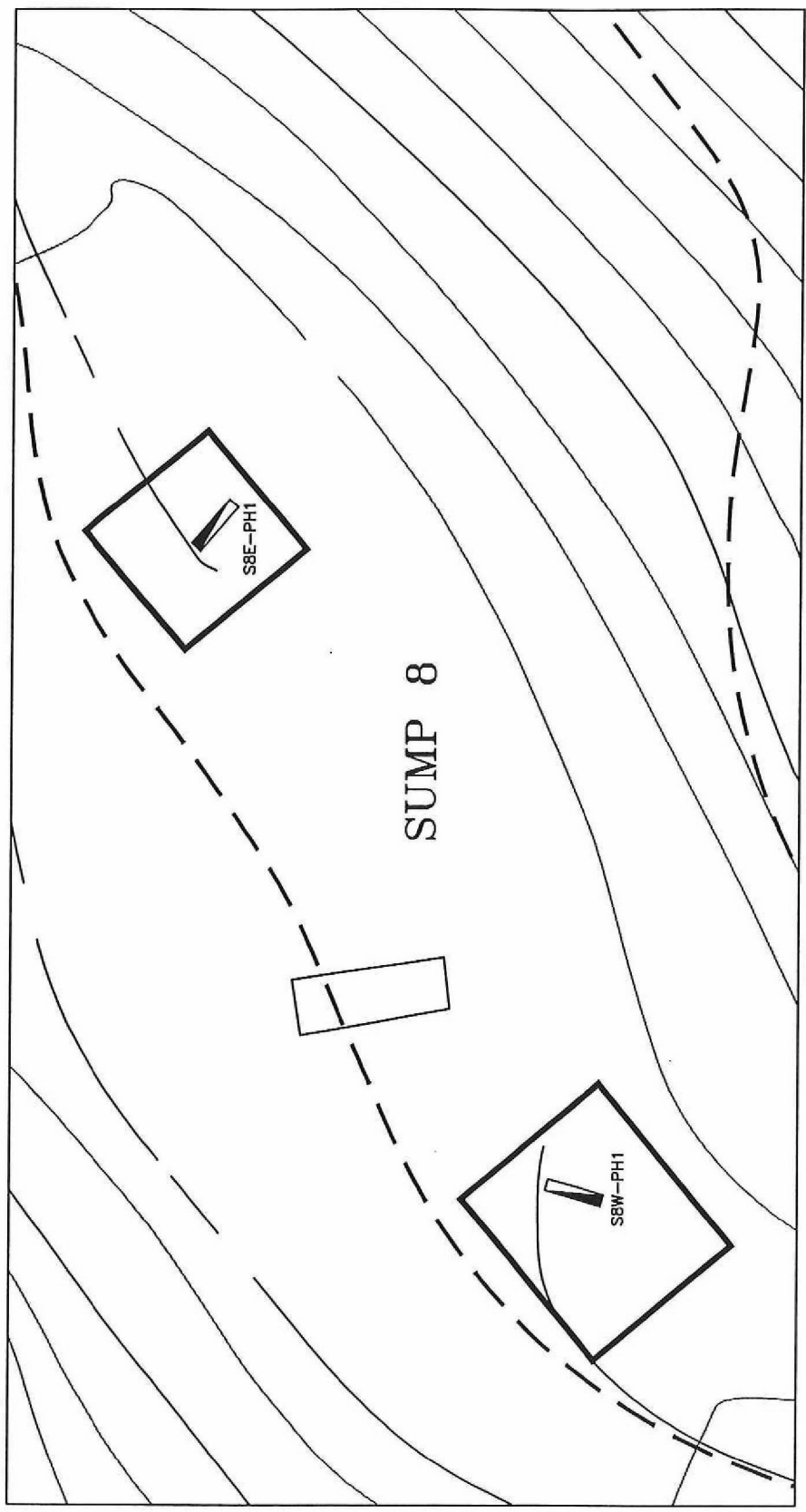
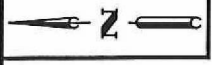
EXPLANATION	
	S7-PH1
	POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	2800 25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)



FIGURE 9
 SUMP 7 POTHOLE
 TRENCH LOCATIONS

SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION

DRAWN	SY	CHECKED BY	FILE NAME	PROJECT NUMBER	SC0\120\sumps\Sump3
BY	4/21/07	APPROVED BY	18/11	SCG-01-1020	






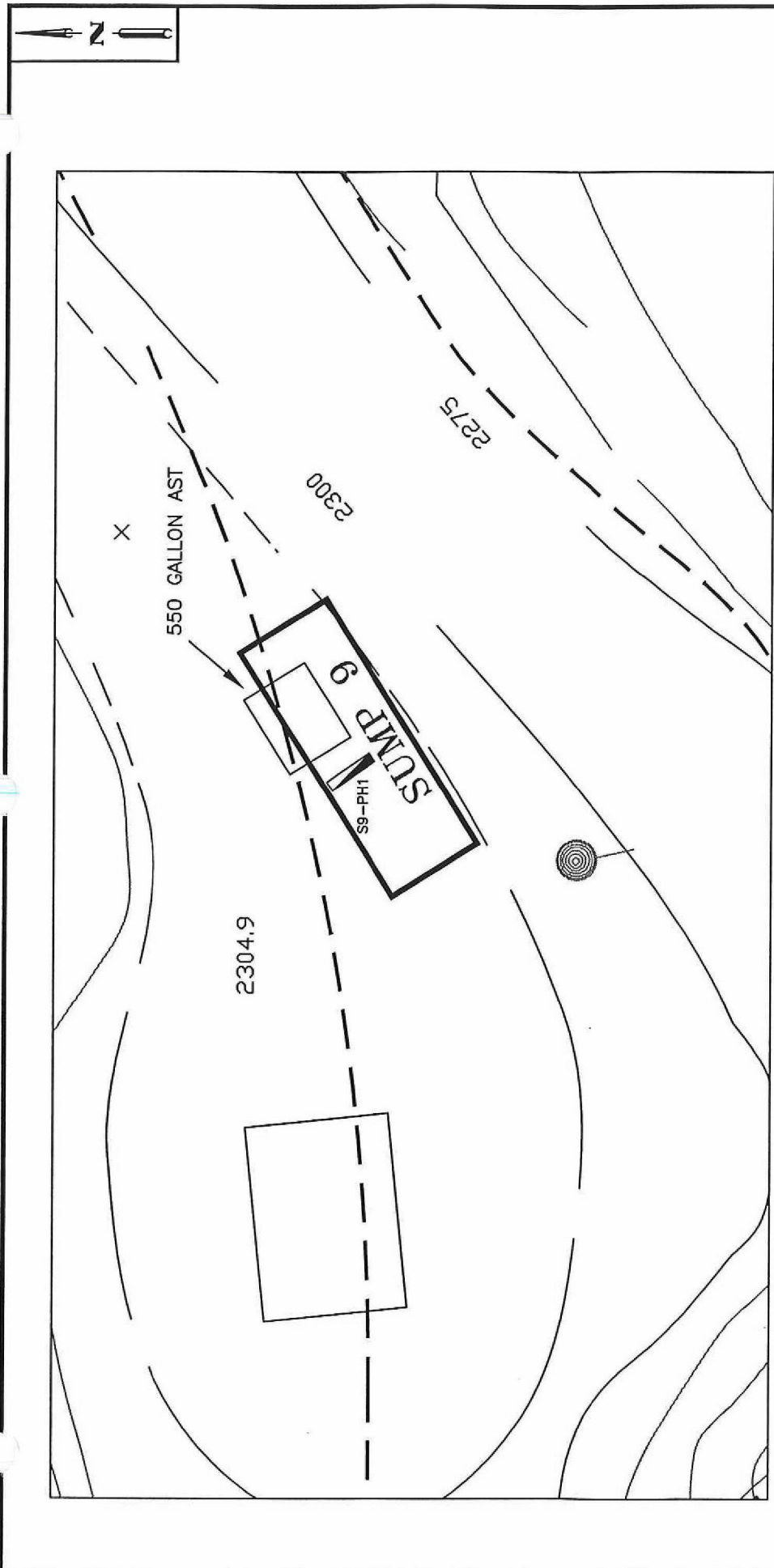
EXPLANATION	
	POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)



FIGURE 10
SUMP 8
SAMPLE LOCATIONS

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION

DRAWN BY: ST
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*
 DATE: 4/21/97
 PROJECT NUMBER: SC01-1020
 FILE NAME: SC0120\SUMPS\SUMPS






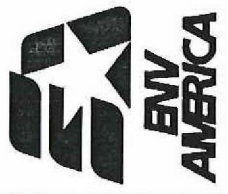
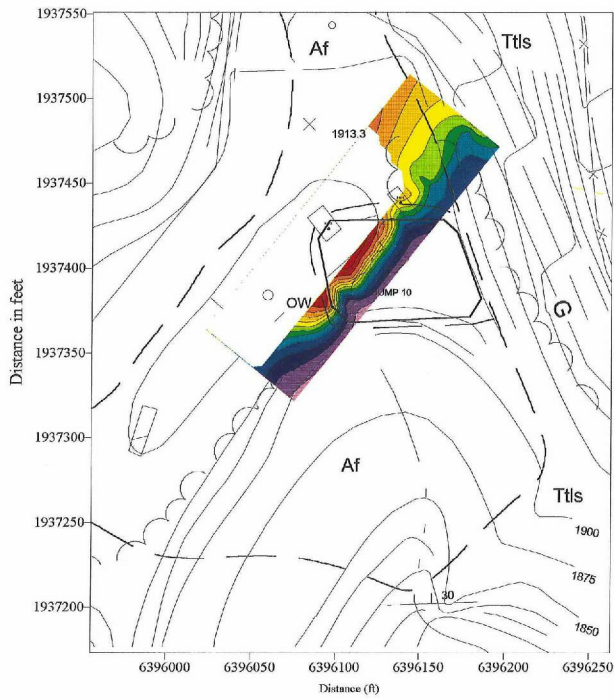
EXPLANATION	
	S9-PH1 POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

FIGURE 11
SUMP 9
SAMPLE LOCATIONS
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION

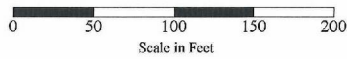


EM Conductivity Response
0 - 3 Meters



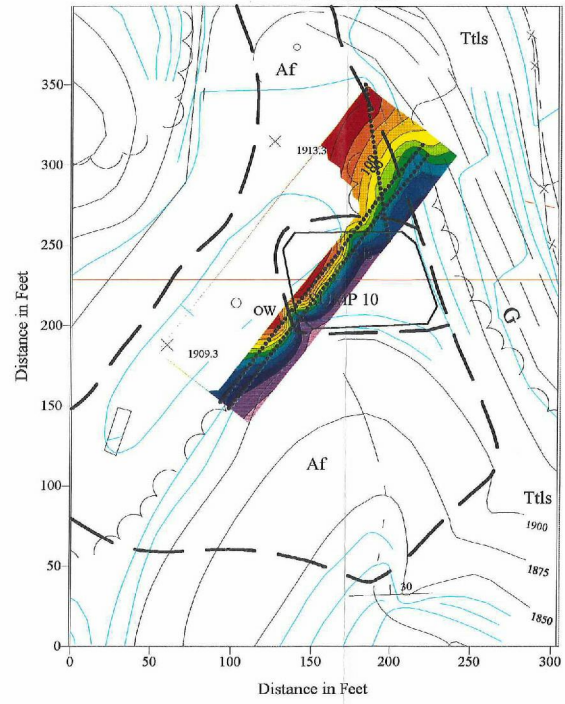
EM Conductivity
in mS/M

Topographic Contours
Major Contour Interval = 25 ft
Minor Contour Interval = 5 ft



Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location is based on previous ENV America Incorporated site investigation and interpretation.

EM Conductivity Response
0 - 6 Meters



EM Conductivity
in mS/M



Figure 12b
EM-31 Survey
Sump 10
Aliso Canyon Site Investigation
Southern California Gas Company

Proj. No. SCG-01-T020 Drawn By: [Signature] Approved: [Signature] Date: 5/1/97

FA\ENV\DOC\SCG\T20-NRTH\SUMP\INFO\S-10\GF\EM-31\SUMP-10.SRF

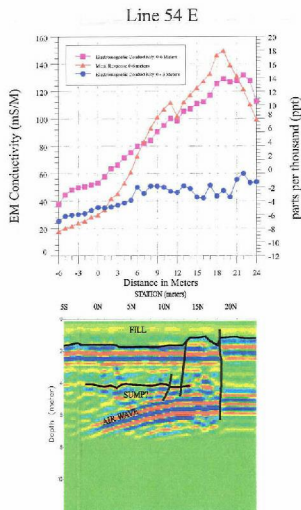
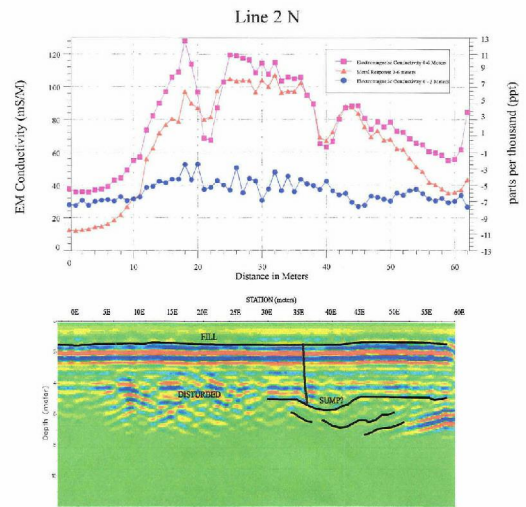
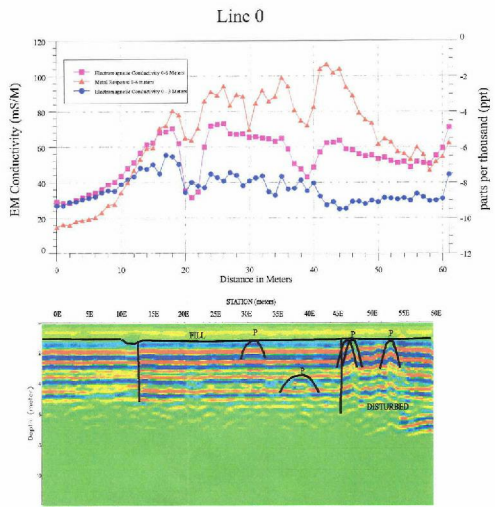
Proj. No. SCG-01-T020

May 1, 1997

FIGURE 12c

**EM-31 SURVEY AND GROUND PENETRATING
RADAR PROFILES**

SUMP 10



- Notes
1. Scales are as noted
 2. GPR surveys were not performed at every EM-31 location.
 3. P denotes a pipeline.

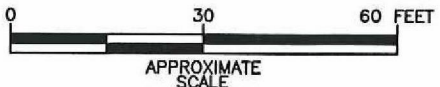
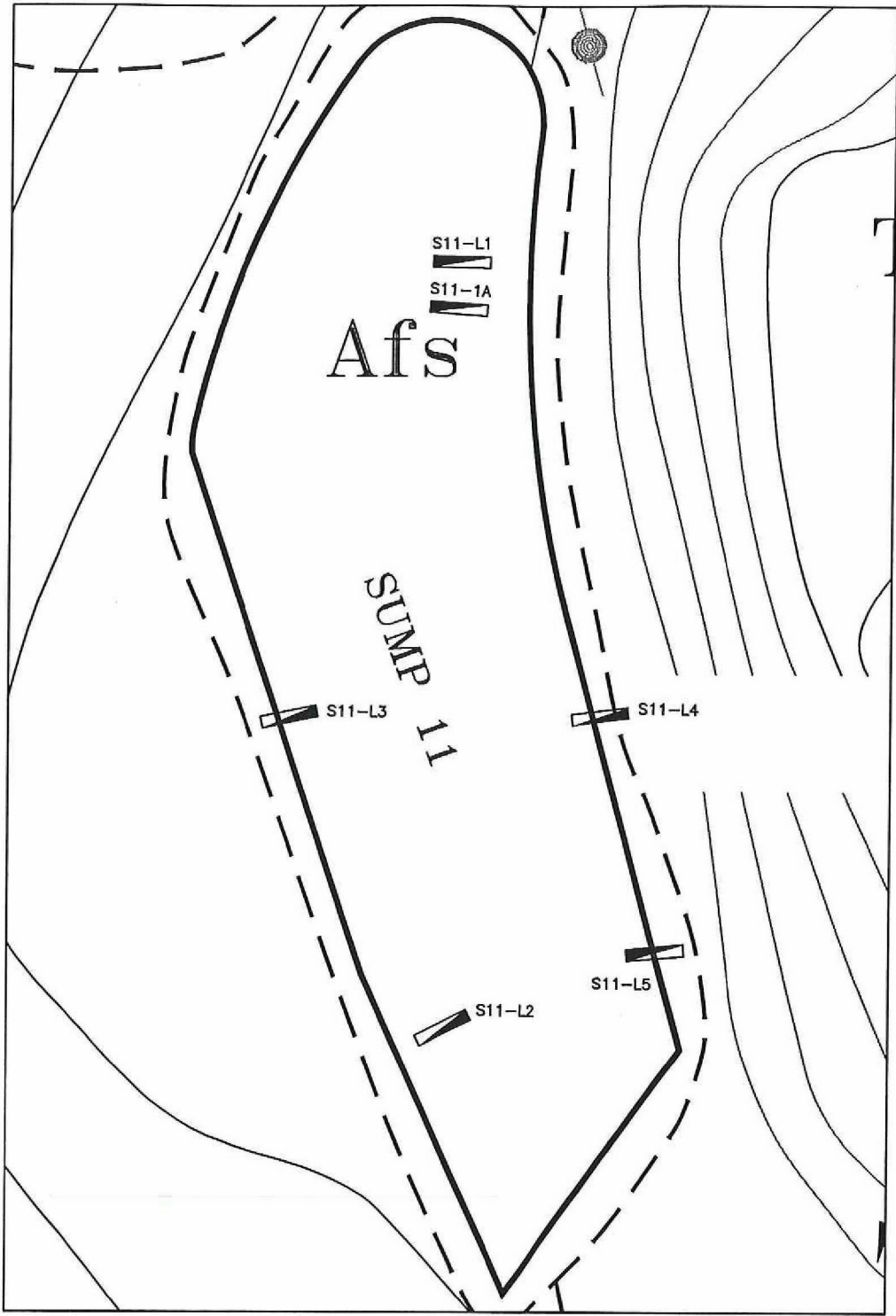
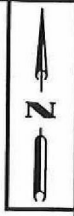


Figure 12c
EM-31 Survey With Ground
Penetrating Radar Profiles
Sump 10
Aliso Canyon Site Investigation
Southern California Gas Company

Proj. No. SCG-01-1020

May 15, 1997

DRAWN BY: *DG*
 SY: *8/28/97*
 CHECKED BY: *DG*
 FILE NAME: *13A1200\SUMPS\SUMP11*
 PROJECT NO: *SGC-01-T020*






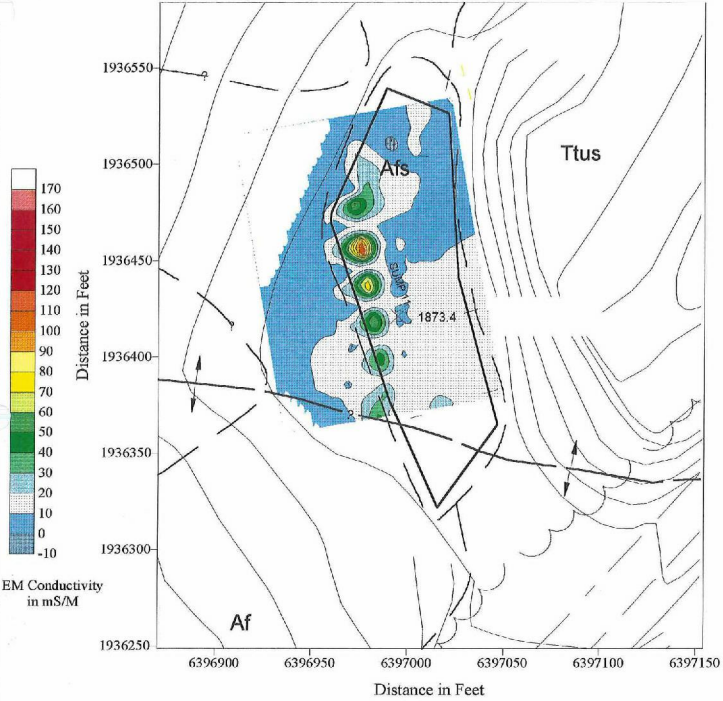
EXPLANATION	
	S11-L POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	2800 25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)



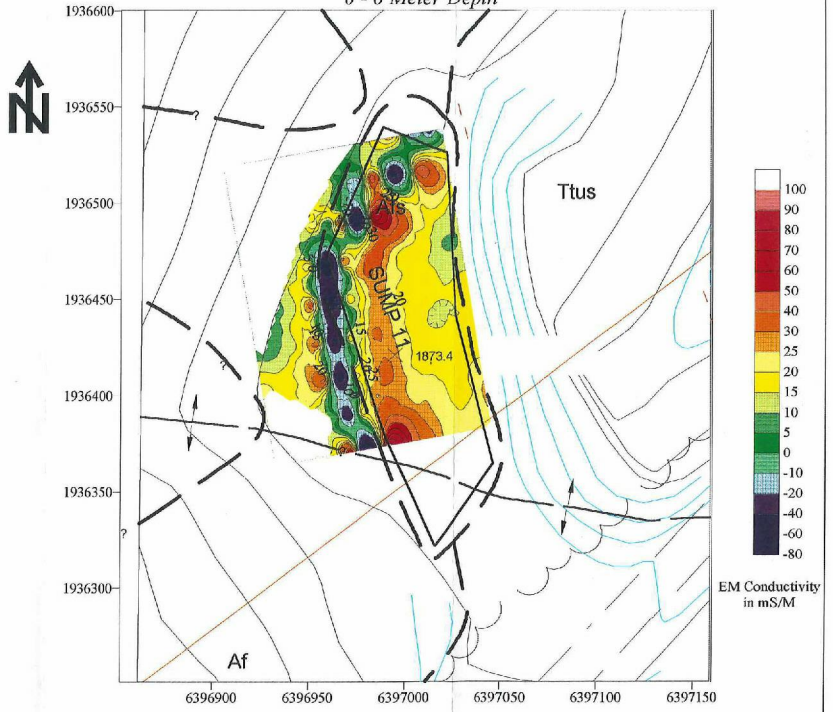
FIGURE 13a
 SUMP 11
 SAMPLE LOCATIONS

SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION

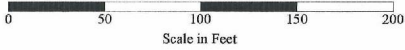
Electromagnetic Conductivity Response
0 - 3 Meter Depth



Electromagnetic Conductivity Response
0 - 6 Meter Depth



Topographic Contours
Major Contour Interval = 25 ft
Minor Contour Interval = 5 ft



Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location based on previous ENV America Incorporated site investigations and interpretation.



Figure 13b
EM-31 Survey
Sump 11
Aliso Canyon Site Investigation
Southern California Gas Company

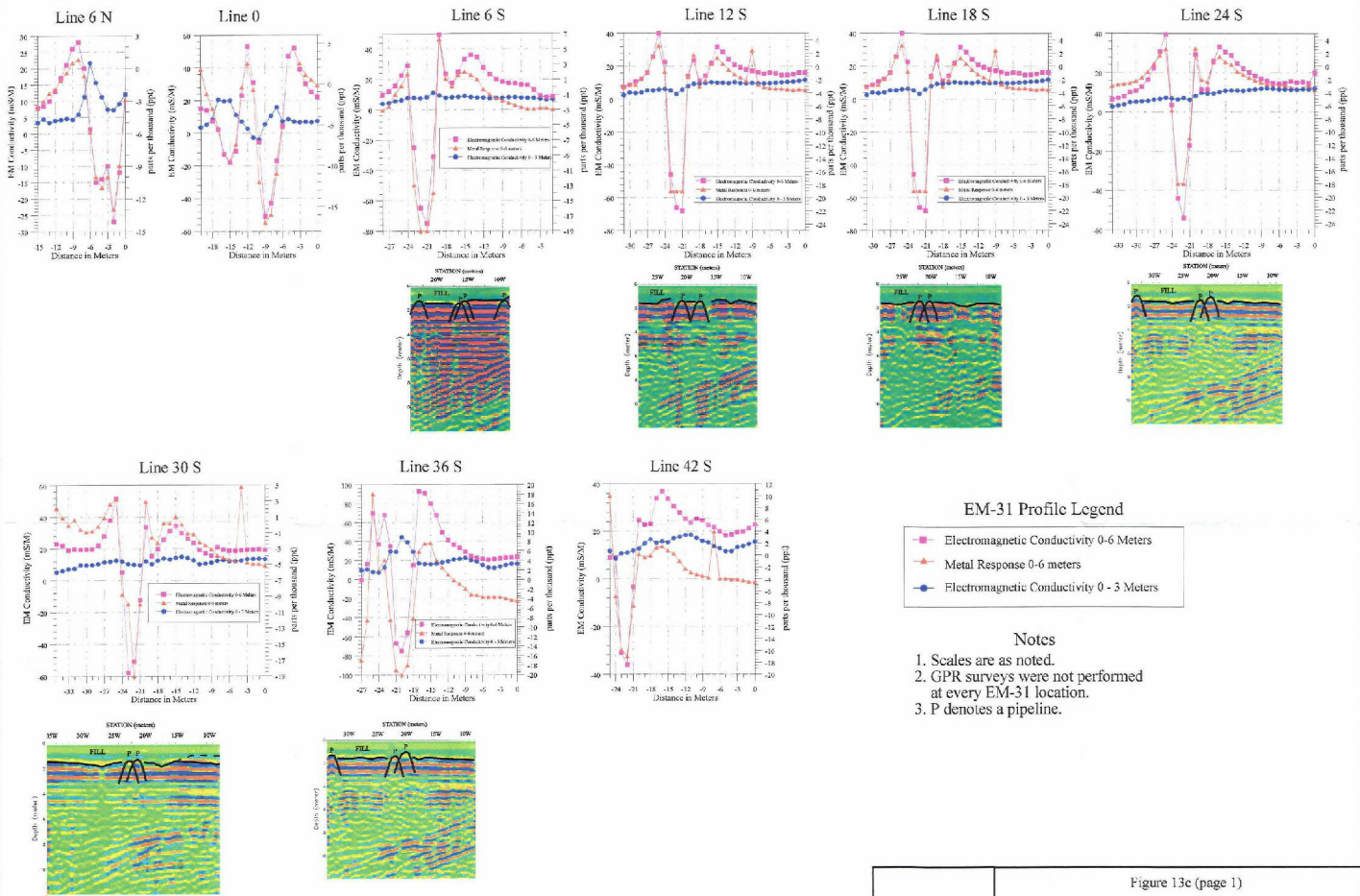
Proj. No. SCG-01-T020 Drawn By: SY Approved: DK Date: 9/18/97

Proj. No. SCG-01-T020 May 1, 1997

FIGURE 13c

**EM-31 SURVEY AND GROUND PENETRATING
RADAR PROFILES**

SUMP 11



EM-31 Profile Legend

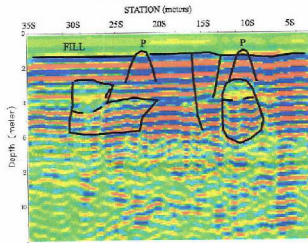
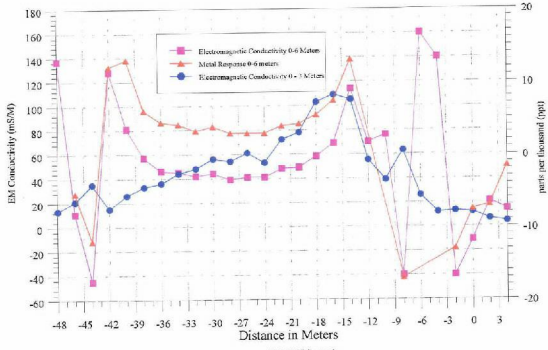
- Electromagnetic Conductivity 0-6 Meters
- ▲ Metal Response 0-6 meters
- Electromagnetic Conductivity 0 - 3 Meters

Notes

1. Scales are as noted.
2. GPR surveys were not performed at every EM-31 location.
3. P denotes a pipeline.

	<p>Figure 13c (page 1) EM-31 Survey with Ground Penetrating Radar Profiles Sump 11 Aliso Canyon Site Investigation Southern California Gas Company</p>
	<p>Proj. No. SCG-01-T020 May 15, 1997</p>

Line 21 W



Line 24 W

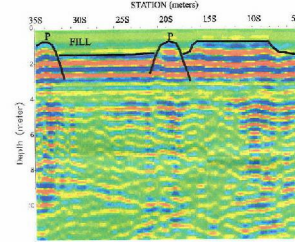
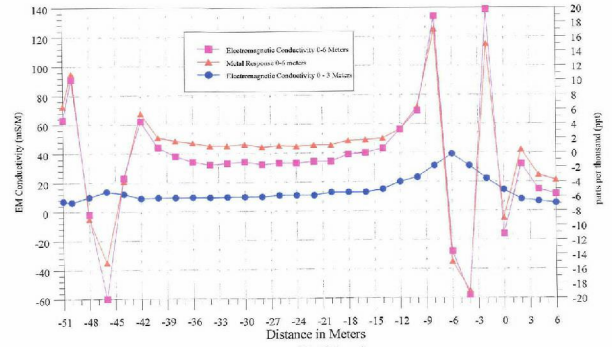
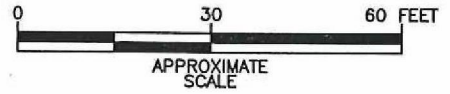
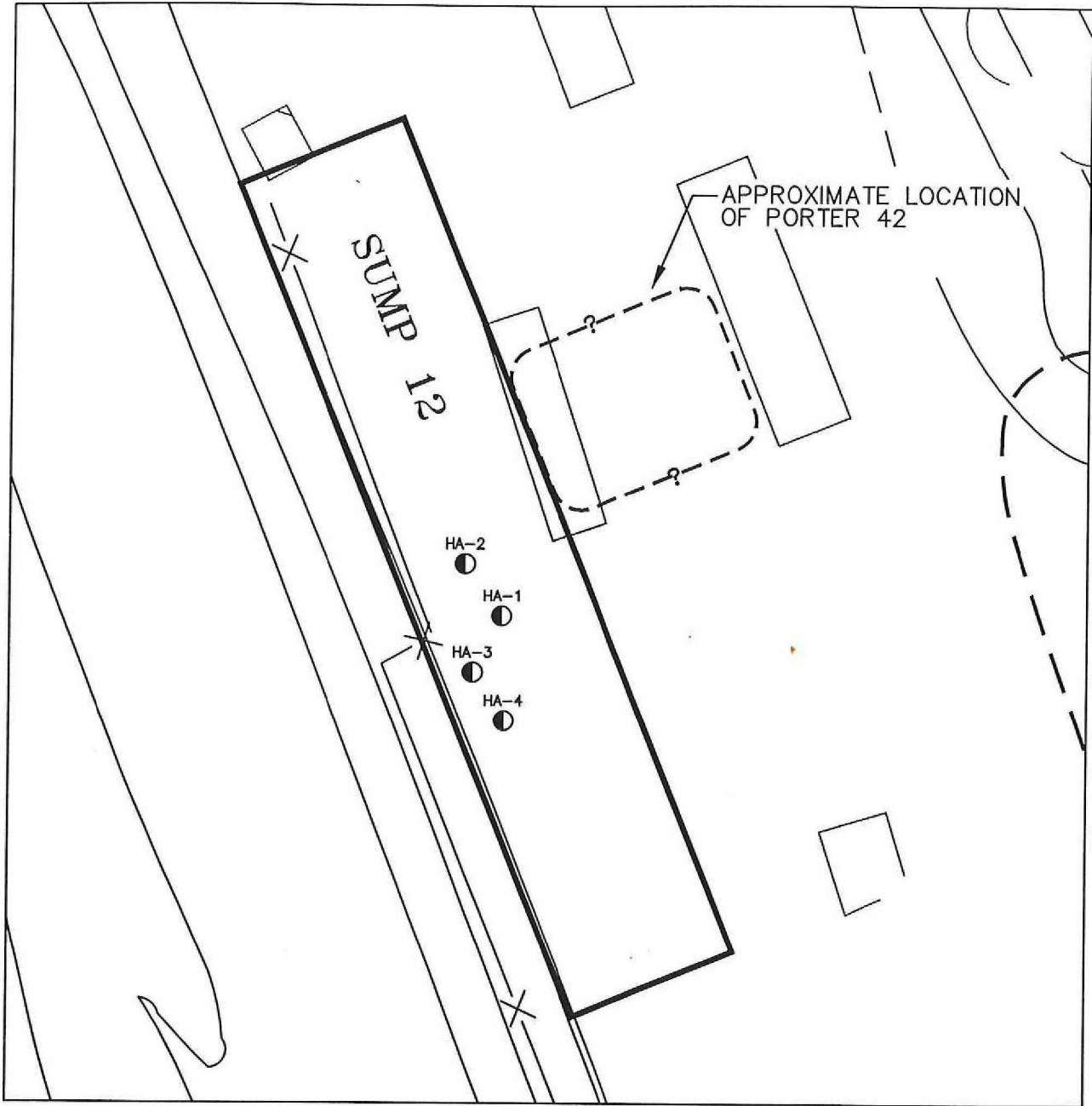


Figure 13c (page 2)
 EM-31 Survey With Ground Penetrating Radar Profiles
 Sump 11
 Aliso Canyon Sump Investigation
 Southern California Gas Company
 Proj No. SCG-01-T020 May 15, 1997

DRAWN BY: [Signature]
 SY: 9/9/97
 CHECKED BY: [Signature]
 FILE NAME: T20\SUMPS\SUMP12
 PROJECT NUM: 900-01-TD20

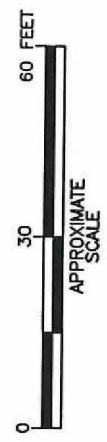
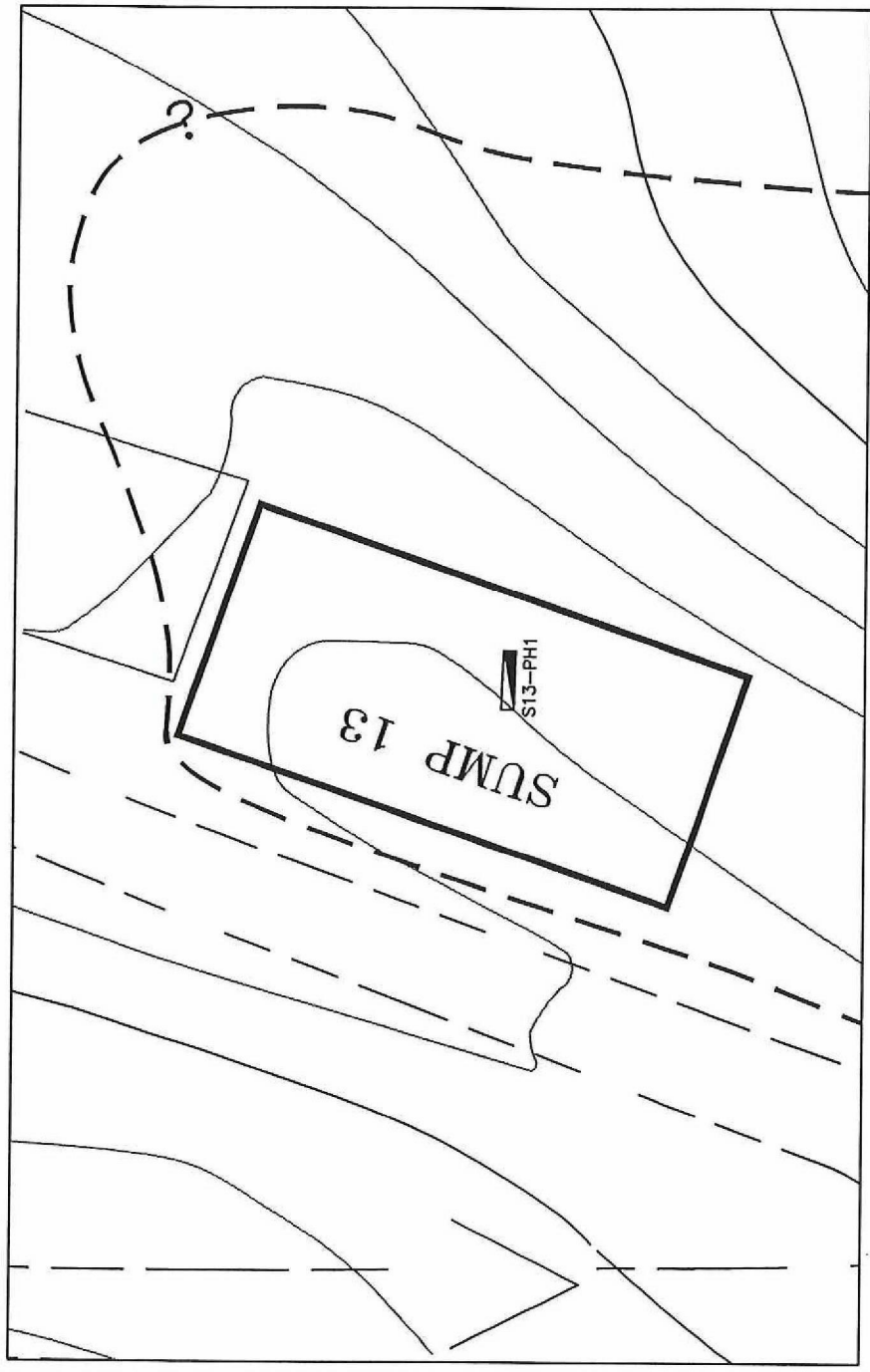
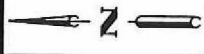


EXPLANATION	
HA-4 ●	HAND AUGER BORING LOCATION
- - - ? - - -	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)



FIGURE 14
SUMP 12 EXPLORATORY BORING LOCATIONS
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION

DRAWN	SY	8/28/97	CHECKED BY	APPROVED BY	FILE NAME	PROJECT NUMBER	SCG\120\SUMPS\SUMP13
					9/17/97	SCG-01-1020	



EXPLANATION	
S13-PH1	POT-HOLE SAMPLING LOCATION
- - - - -	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

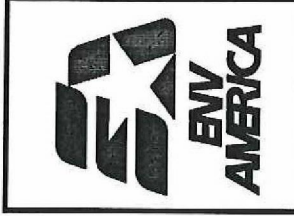
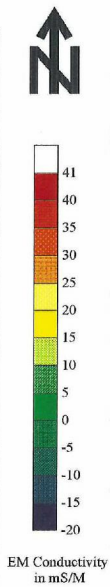
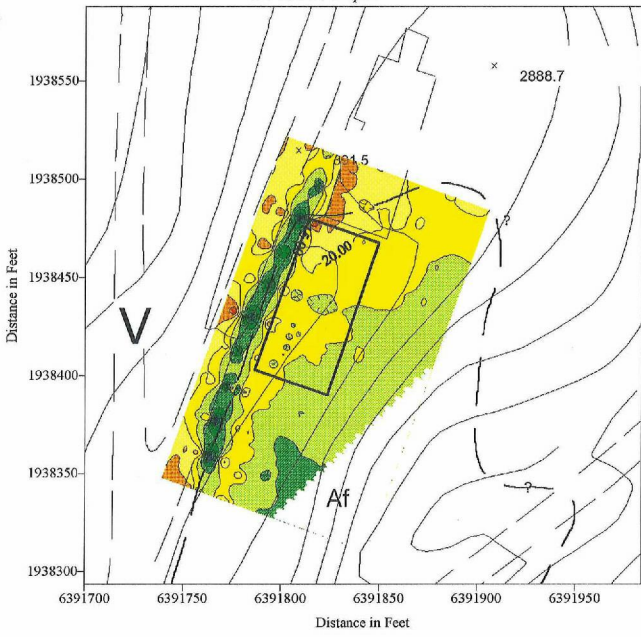


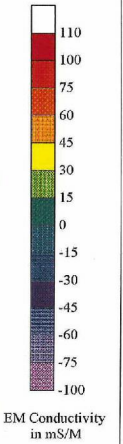
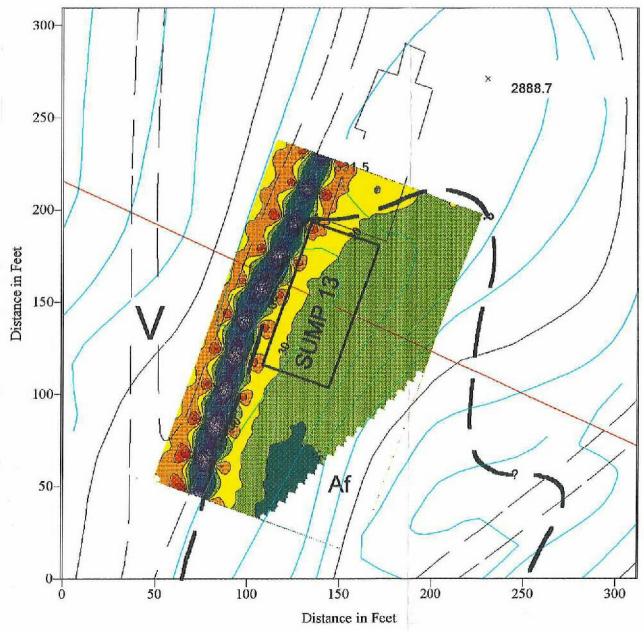
FIGURE 15a
SUMP 13
SAMPLE LOCATIONS

SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION

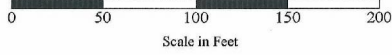
Electromagnetic Conductivity Response
0-3 Meter Depth



Electromagnetic Conductivity Response
0 - 6 Meter Depth



Topographic Contours
Major contour interval = 25 ft
Minor contour interval = 5 ft



Topographic map extracted from Southern California Gas Company supplied map in digital format. Additional information including approximate sump location based on previous ENV America Incorporated site investigations and interpretation.



Figure 15b
EM-31 Survey
Sump 13
Aliso Canyon Site Investigation
Southern California Gas Company

Proj. No. SCG-01-T020 Drawn by: *[Signature]* Approved: *[Signature]* Date: 9/18/96
fs\F:\ENVDOCS\SCG\T20-NR\TH\SUMP\INFO\S-13\EM-31\S13_3-6.SRF

Proj. No. SCG-01-T020 November 8, 1996

FIGURE 15c
EM-31 SURVEY AND GROUND PENETRATING
RADAR PROFILES
SUMP 13

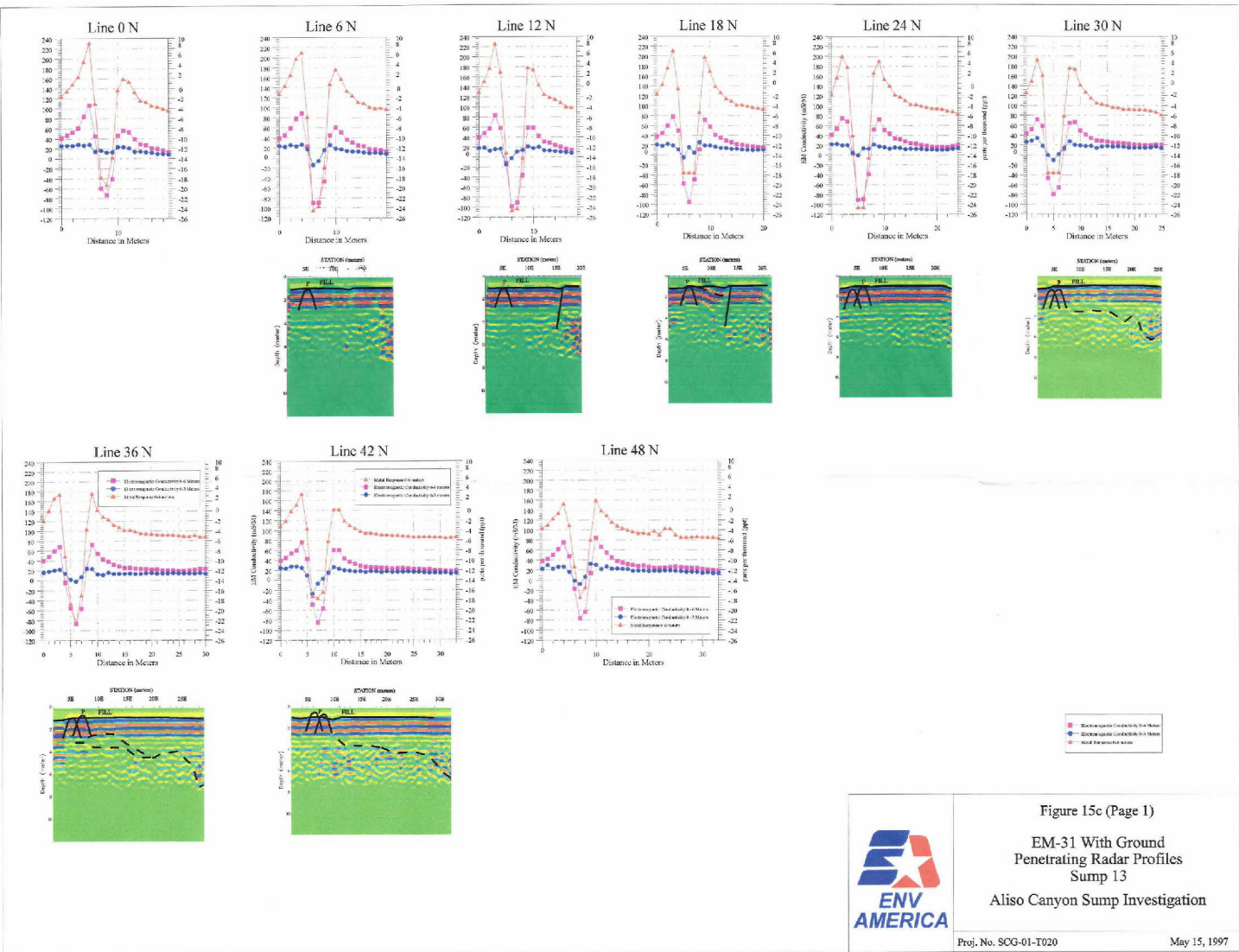
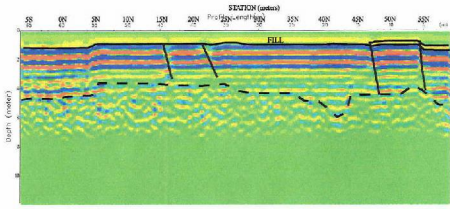
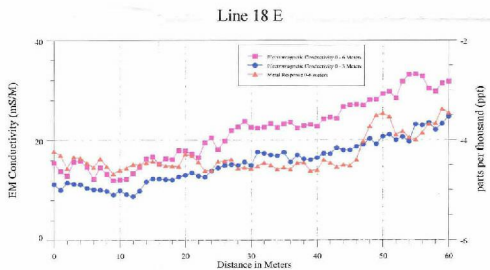
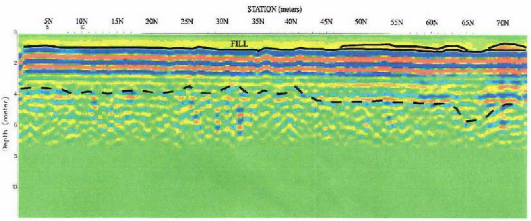
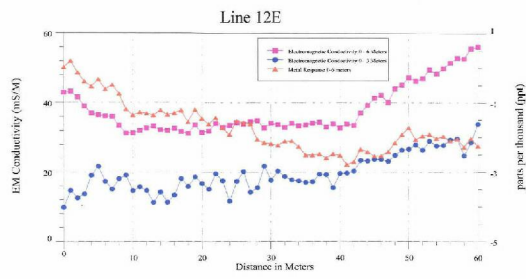
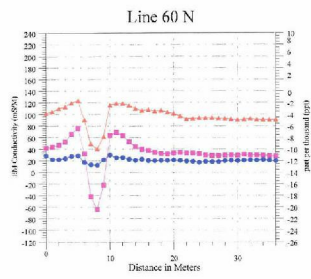
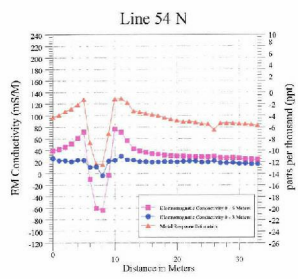


Figure 15c (Page 1)

EM-31 With Ground Penetrating Radar Profiles
Sump 13
Aliso Canyon Sump Investigation





EM-31 Profile Legend

- Electromagnetic Conductivity 0 - 6 Meters
- Electromagnetic Conductivity 0 - 3 Meters
- ▲ Metal Response 0-6 meters

Notes

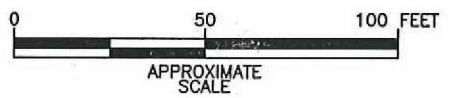
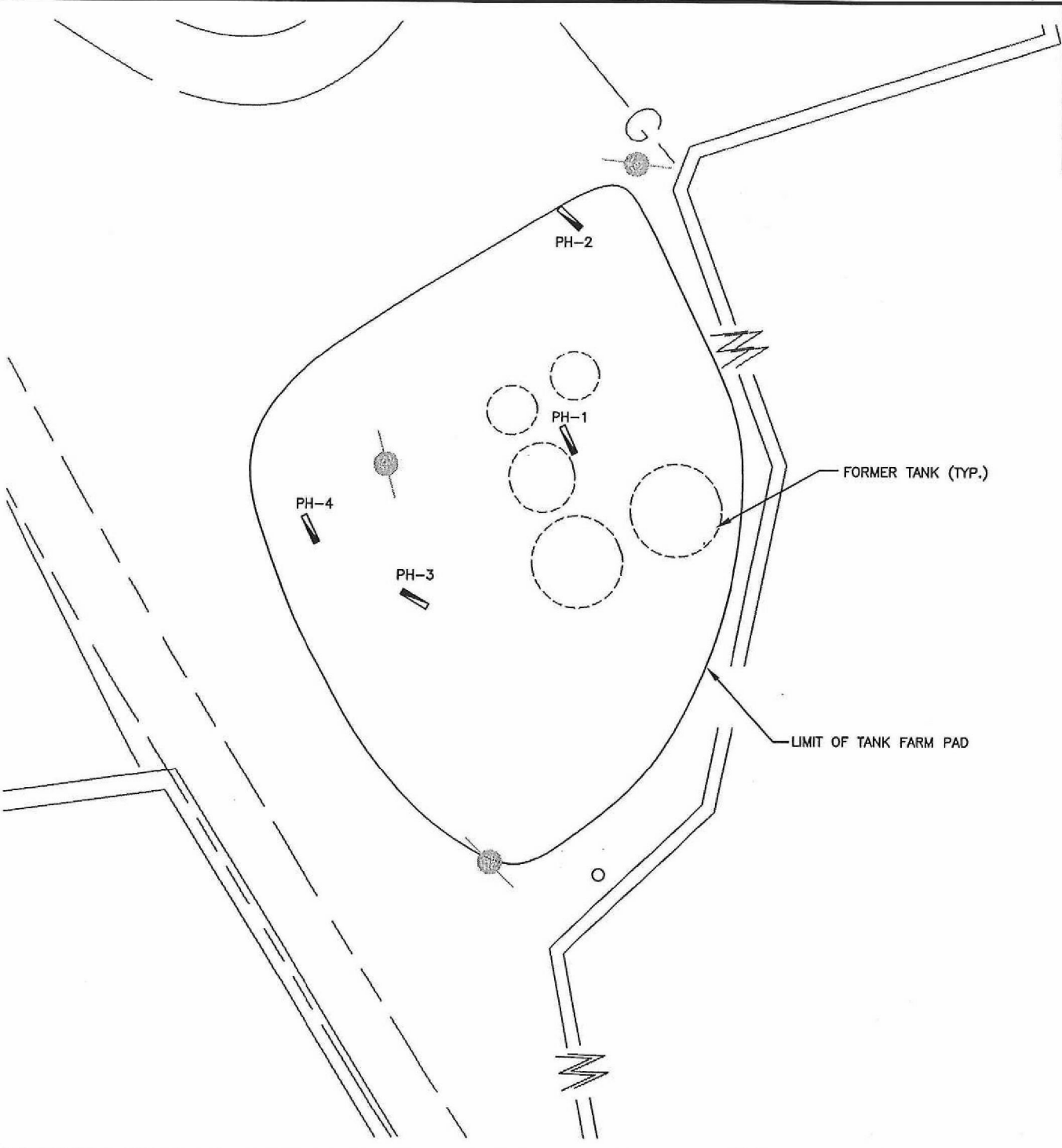
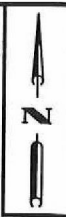
1. Scales are as noted
2. GPR surveys were not performed at every EM-31 survey location
3. P denotes a pipeline



Figure 15c (page 2)
EM-31 With Ground
Penetrating Radar Profiles
Sump 13
Aliso Canyon Sump Investigation

Proj. No. SCG-01-T020 May 15, 1997

DRAWN BY: [Blank]
 CHECKED BY: Dg
 FILE NO.: 2/17/98
 PROJECT NUMBER: ENV20 TANK FARM
 8/28/87
 900-01-1020



EXPLANATION	
PH-4 	APPROXIMATE POT-HOLE SAMPLE LOCATION



FIGURE 16
**FERNANDO FEE TANK
 FARM SAMPLING LOCATIONS**
 ALISO CANYON SITE INVESTIGATION
 SOUTHERN CALIFORNIA GAS COMPANY

EXHIBIT A

CRWQCB Table 4-1 for TPH/BTEX

Table 4-1: Maximum Soil Screening Levels (mg/kg) for TPH and BTEX above Drinking Water Aquifers

T P H	Distance	Carbon Range		
	Above Groundwater	C4-C12	C13-C22	C23-C32
	>150 feet	1,000	10,000	50,000
	20-150 feet	500	1,000	10,000
<20 feet	100	100	1,000	

B T E X	Distance	Lithology			
	Above Groundwater	Gravel	Sand	Silt	Clay
	150 feet	B=0.044 T=2 E=8 X=23	B=0.077 T=4 E=17 X=48	B=0.165 T=9 E=34 X=93	B=0.8 T=43 E=170 X=465
	80 feet	B=0.022 T=1 E=4 X=11	B=0.033 T=2 E=7 X=20	B=0.066 T=4 E=15 X=40	B=0.34 T=18 E=73 X=200
20 feet	B=0.011 T=0.15 E=0.7 X=1.75	B=0.011 T=0.3 E=0.7 X=1.75	B=0.011 T=0.45 E=2 X=5.3	B=0.044 T=2.3 E=9 X=24.5	

- TPH = Total petroleum hydrocarbons.
- BTEX = benzene, toluene, ethylbenzene, and xylenes, respectively. MCLs (ppm): B=0.001, T=0.15, E=0.7, X=1.75.
- MTBE (methyl tertiary butyl ether) must be included in BTEX analyses.
- BTEX screening concentrations determined per the attenuation factor method as described in RWQCB Guidance for VOC Impacted Sites (March 1996), with a natural degradation factor of 11 for benzene. Table values for BTEX can be linearly interpolated between distance above groundwater and are proportional to fraction of each lithological thickness.
- Values in Table 4-1 are for soils above drinking water aquifers. All groundwaters are considered as drinking water resources unless exempted by one of the criteria as defined under SWRCB Resolution 88-63 (TDS>3000 mg/L, or deliverability <200 gal/day, or existing contamination that cannot be reasonably treated). Regional Board staff will make a determination of potential water use at a particular site considering water quality objectives and beneficial uses. For non-drinking water aquifers, regardless of depth, TPH for ">150 feet" category in the table should be used; BTEX screening levels are set at 100 times respective MCLs as preliminary levels determined to be protective of human health and the environment.
- Distance above groundwater must be measured from the highest anticipated water level. Lithology is based on the USCS scale.
- For BTEX, each component is not to exceed the specified screening level.
- For TPH, the total allowable for each carbon range is not to be exceeded. In areas of naturally-occurring hydrocarbons, Regional Board staff will make allowance for TPH levels.
- BTEX to be analyzed by EPA Method 8020 or EPA Method 8260 (usually for confirmation).
- TPH to be analyzed by EPA Methods 418.1 plus 8015 (Modified). Ranges of TPH to be analyzed by GC/MS carbon range methods (EPA Method 8260) or EPA Method 8015 (Modified).

EXHIBIT B
USEPA PRG TABLE

FOR PLANNING PURPOSES

TOXICITY INFORMATION

SfO (mg/kg-d)	RfD (mg/kg-d)	SfI (mg/kg-d)	RfD (mg/kg-d)	CAS No.	Contaminant	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Soil Screening Level (mg/kg)	Soil Screening Level (mg/kg)
8.7E-03	4.0E-03	3.7E-03	4.0E-03	30860-19-1	Acetate	3.1E+01	2.2E+02	7.7E-01	7.7E+00	1.6E+01	8.0E-01
7.7E-03	2.6E-03	7.7E-03	2.6E-03	75-07-0	Acetaldehyde	9.2E+00	2.1E+01	8.7E-01	1.5E+00	1.6E+01	8.0E-01
2.0E-02	2.0E-02	7.7E-03	2.0E-02	34256-62-1	Acetochlor	1.3E+03	1.4E+04	7.3E+01	7.3E+02	1.6E+01	8.0E-01
1.0E-01	1.0E-01	1.0E-01	1.0E-01	67-64-1	Acetone	2.1E+03	8.8E+03	3.7E+02	9.1E+02	1.6E+01	8.0E-01
8.0E-04	2.9E-03	1.4E-02	2.9E-03	75-86-5	Acetonitrile	2.2E+01	5.5E+02	1.0E+01	2.9E+01	1.6E+01	8.0E-01
1.0E-01	1.0E-01	1.0E-01	1.0E-01	98-86-2	Acetophenone	4.9E-01	1.6E+00	4.7E-02	4.7E-02	1.6E+01	8.0E-01
1.3E-02	1.3E-02	1.3E-02	1.3E-02	50594-66-6	Acifluorfen	8.5E+02	8.9E+03	4.7E+01	4.7E+02	1.6E+01	8.0E-01
2.0E-02	2.0E-02	2.0E-02	2.0E-02	79-02-8	Acrolein	1.0E-01	3.4E-01	2.1E-02	4.2E-02	1.6E+01	8.0E-01
4.6E+00	2.0E-04	4.6E+00	2.0E-04	107-06-1	Acrylamide	9.8E-02	4.2E-01	1.5E-03	1.5E-02	1.6E+01	8.0E-01
5.4E-01	5.0E-01	2.4E-01	2.4E-01	79-10-7	Acrylic acid	3.1E+04	2.9E+05	1.0E+00	1.8E+04	1.6E+01	8.0E-01
8.1E-02	1.0E-02	8.0E-02	1.0E-02	107-13-1	Acrylonitrile	1.9E-01	4.7E-01	2.8E-02	3.7E+00	1.6E+01	8.0E-01
1.5E-01	1.5E-01	1.5E-01	1.5E-01	1596-84-5	Alachlor	5.5E+00	1.0E+05	5.5E+02	6.4E-01	1.6E+01	8.0E-01
1.0E-03	1.0E-03	1.0E-03	1.0E-03	118-06-3	Alar	9.8E+03	1.0E+05	3.7E+02	5.5E+03	1.6E+01	8.0E-01
1.0E-03	1.0E-03	1.0E-03	1.0E-03	1646-88-4	Aldicarb	6.5E+01	6.8E+02	3.7E+00	3.7E+01	1.6E+01	8.0E-01
3.0E-05	3.0E-05	1.7E+01	3.0E-05	309-90-2	Aldicarb sulfone	6.5E+01	6.8E+02	3.7E+00	3.7E+01	1.6E+01	8.0E-01
2.5E-01	2.5E-01	2.5E-01	2.5E-01	5585-64-8	Aldrin	1.6E-02	1.0E+05	3.9E+04	4.0E+03	1.2E+04	5.9E+02
5.0E-02	5.0E-02	5.0E-02	5.0E-02	107-18-6	Allyl alcohol	3.2E+03	3.4E+03	1.8E+01	1.8E+02	1.6E+01	8.0E-01
2.9E-04	2.9E-04	2.9E-04	2.9E-04	107-05-1	Allyl chloride	3.2E+03	3.4E+03	1.8E+01	1.8E+02	1.6E+01	8.0E-01
1.0E+00	1.0E+00	1.0E+00	1.0E+00	7428-90-5	Aluminum	7.7E+04	1.0E+05	1.0E+00	3.7E+04	1.6E+01	8.0E-01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	20859-73-8	Aluminum phosphite	3.1E+01	6.8E+02	1.1E+00	1.1E+01	1.6E+01	8.0E-01
3.0E-04	3.0E-04	3.0E-04	3.0E-04	67485-29-4	Amidro	2.0E+01	2.0E+02	3.3E+01	3.3E+02	1.6E+01	8.0E-01
9.0E-03	9.0E-03	9.0E-03	9.0E-03	834-12-8	Ametryn	5.9E+02	6.1E+03	2.6E+02	2.6E+03	1.6E+01	8.0E-01
7.0E-02	7.0E-02	7.0E-02	7.0E-02	591-27-5	m-Aminophenol	4.3E+03	4.5E+04	2.6E+02	2.6E+03	1.6E+01	8.0E-01
2.0E-05	2.0E-05	2.0E-05	2.0E-05	504-24-5	4-Aminopyridine	1.3E+00	1.4E+01	7.3E-02	7.3E-01	1.6E+01	8.0E-01
2.5E-03	2.5E-03	2.5E-03	2.5E-03	33089-61-1	Amirbaz	1.6E+02	1.7E+03	9.1E+00	9.1E+01	1.6E+01	8.0E-01
2.9E-02	2.9E-02	2.9E-02	2.9E-02	7884-41-7	Ammonia	1.3E+04	1.0E+05	1.0E+02	7.3E+03	1.6E+01	8.0E-01
2.9E-04	2.9E-04	2.9E-04	2.9E-04	7773-06-0	Ammonium sulfamate	1.9E+01	2.0E+02	1.0E+00	1.1E+01	1.6E+01	8.0E-01
4.0E-02	4.0E-02	4.0E-02	4.0E-02	62-53-3	Aniline	3.1E+01	6.8E+02	1.5E+01	1.5E+02	1.6E+01	8.0E-01
5.0E-04	5.0E-04	5.0E-04	5.0E-04	7440-36-6	Antimony and compounds	3.8E+01	8.5E+02	1.8E+01	1.8E+02	1.6E+01	8.0E-01
9.0E-04	9.0E-04	9.0E-04	9.0E-04	1314-60-9	Antimony pentoxide	6.9E+01	1.5E+03	3.3E+01	3.3E+02	1.6E+01	8.0E-01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	28900-74-5	Antimony potassium tartrate	3.1E+01	6.8E+02	1.5E+01	1.5E+02	1.6E+01	8.0E-01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	1332-81-6	Antimony trioxide	3.1E+01	6.8E+02	1.5E+01	1.5E+02	1.6E+01	8.0E-01
1.3E-02	1.3E-02	1.3E-02	1.3E-02	1309-64-4	Apoallo	8.5E+02	8.9E+03	4.7E+01	4.7E+02	1.6E+01	8.0E-01
5.0E-02	5.0E-02	5.0E-02	5.0E-02	74115-24-5	Aramite	1.9E+01	7.6E+01	2.7E-01	2.7E+00	1.6E+01	8.0E-01
2.5E-02	2.5E-02	2.5E-02	2.5E-02	140-57-8	Arsenic (noncancer endpoint)	2.5E+01	2.4E+00	4.5E-04	4.5E-02	2.9E+01	1.0E+00
1.9E+00	3.0E-04	1.5E+01	1.5E+01	7440-38-2	Arsenic (cancer endpoint)	3.8E-01	2.4E+00	4.5E-04	4.5E-02	2.9E+01	1.0E+00
9.0E-03	9.0E-03	9.0E-03	9.0E-03	76574-12-6	Assure	5.9E+02	6.1E+03	3.3E+01	3.3E+02	1.6E+01	8.0E-01
5.0E-02	5.0E-02	5.0E-02	5.0E-02	3337-71-9	Asulam	3.3E+03	3.4E+04	1.8E+02	1.8E+03	1.6E+01	8.0E-01
2.2E-01	3.5E-02	2.2E-01	3.5E-02	1912-22-8	Atrazine	2.0E+00	8.6E+00	3.1E-02	3.0E-01	1.6E+01	8.0E-01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	71751-41-2	Avermectin B1	2.6E+01	2.7E+02	1.5E+00	1.5E+01	1.6E+01	8.0E-01
1.1E-01	1.1E-01	1.1E-01	1.1E-01	103-33-3	Azobenzene	4.0E+00	1.7E+01	6.2E-02	6.1E-01	1.6E+01	8.0E-01
7.0E-02	1.4E-04	1.4E-04	1.4E-04	7440-39-3	Barium and compounds	3.2E+03	1.0E+05	5.2E-01	2.6E+03	1.6E+01	8.0E-01
4.0E-03	4.0E-03	4.0E-03	4.0E-03	114-28-1	Baygon	2.9E+02	2.7E+03	1.5E+01	1.5E+02	1.6E+01	8.0E-01
3.0E-02	3.0E-02	3.0E-02	3.0E-02	43121-43-3	Bayleton	2.0E+03	2.0E+04	1.1E+02	1.1E+03	1.6E+01	8.0E-01
2.5E-02	2.5E-02	2.5E-02	2.5E-02	69359-37-5	Baythroid	1.6E+03	1.7E+04	9.1E+01	9.1E+02	1.6E+01	8.0E-01
3.0E-01	3.0E-01	3.0E-01	3.0E-01	1861-40-1	Benfenit	2.0E+04	1.0E+05	1.1E+03	1.1E+04	1.6E+01	8.0E-01
5.0E-02	5.0E-02	5.0E-02	5.0E-02	17004-35-2	Benfomyl	3.5E+03	3.4E+04	1.8E+02	1.8E+03	1.6E+01	8.0E-01
2.5E-03	2.5E-03	2.5E-03	2.5E-03	26057-69-0	Bentazon	1.9E+02	1.7E+03	9.1E+00	9.1E+01	1.6E+01	8.0E-01
1.0E-01	1.0E-01	1.0E-01	1.0E-01	100-52-7	Benzaldehyde	6.5E+03	6.8E+04	3.7E+02	3.7E+03	1.6E+01	8.0E-01
2.9E-02	1.7E-03	2.9E-02	1.7E-03	71-43-2	Benzene	6.3E-01	4.4E-00	2.9E-01	2.9E-01	3.0E-02	2.0E-03
2.3E+02	3.0E-03	2.3E+02	3.0E-03	92-87-5	Benzidine	1.9E+03	1.7E+04	9.1E+02	9.1E+03	1.6E+01	8.0E-01
4.0E+00	4.0E+00	4.0E+00	4.0E+00	65-85-0	Benzonic acid	1.0E+05	1.0E+05	1.5E+04	1.5E+05	4.0E+02	2.0E+01
1.3E+01	1.3E+01	1.3E+01	1.3E+01	98-07-7	Benzotrithione	3.4E-02	1.3E-01	5.2E-04	5.2E-03	1.6E+01	8.0E-01
3.0E-01	3.0E-01	3.0E-01	3.0E-01	100-51-6	Benzyl alcohol	3.0E+04	1.0E+05	1.1E+03	1.1E+04	1.6E+01	8.0E-01
1.7E-01	1.7E-01	1.7E-01	1.7E-01	100-44-7	Benzyl chloride	8.1E-01	2.0E+00	4.0E-02	6.6E-02	1.6E+01	8.0E-01
4.3E+00	5.0E-03	8.4E+00	5.0E-03	100-41-7	Bifenthrin and compounds	1.4E-01	1.1E+00	6.0E-04	1.0E-02	6.3E+01	3.0E+00
1.5E-02	1.5E-02	1.5E-02	1.5E-02	141-86-2	Bifenthrin (Talstar)	6.5E+00	6.6E+01	3.7E-01	3.7E+00	1.6E+01	8.0E-01
5.0E-02	5.0E-02	5.0E-02	5.0E-02	82657-04-3	Biphenyl	9.8E+02	1.0E+04	5.5E+01	5.5E+02	1.6E+01	8.0E-01
1.1E+00	1.2E+00	1.2E+00	1.2E+00	92-52-4	1,1-Biphenyl	4.3E-02	9.7E-02	1.8E-02	3.0E-02	1.6E+01	8.0E-01
7.0E-02	4.0E-02	3.5E-02	4.0E-02	111-44-4	Bis(2-chloroethyl)ether	4.3E-02	9.7E-02	1.8E-02	3.0E-02	1.6E+01	8.0E-01
4.0E-02	4.0E-02	4.0E-02	4.0E-02	39638-32-9	Bis(2-chloroisopropyl)ether	2.5E+00	6.7E+00	1.9E-01	2.7E-01	1.6E+01	8.0E-01

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGS)

SOIL SCREENING LEVEL

Soil (mg/kg-d)	SFI (mg/kg-d)	RfDI (mg/kg-d)	Y	skin	C	soils	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Water to Ground Water (mg/kg)	DAF 1 (mg/kg)
2.2E-02	2.2E-02	2.2E-02	1	0.10	0	0.10	542-88-1	1.3E+04	4.2E+04	3.1E+05	5.2E+05	5.2E+05	5.2E+05
7.0E-02	7.0E-02	2.2E-02	0	0.10	0	0.10	108-90-1	2.7E+01	2.7E+01	9.6E+02	9.6E+01	9.6E+01	9.6E+01
1.4E-02	1.4E-02	5.0E-02	0	0.10	0	0.10	80-05-7	3.3E+01	3.3E+01	4.8E+01	4.8E+01	4.8E+01	4.8E+01
9.0E-02	9.0E-02	5.7E-03	0	0.10	0	0.10	7440-42-8	3.3E+03	3.3E+04	1.8E+02	1.8E+01	1.8E+01	1.8E+01
9.0E-02	9.0E-02	2.0E-04	0	0.10	0	0.10	7527-02-2	5.9E+03	6.1E+04	2.1E+01	2.1E+01	2.1E+01	2.1E+01
6.2E-02	6.2E-02	2.0E-02	1	0.10	0	0.10	75-27-4	6.3E+01	1.4E+02	1.1E+01	1.8E+01	1.8E+01	1.8E+01
7.9E-03	3.9E-03	2.0E-02	0	0.10	0	0.10	75-25-2	5.6E+01	2.4E+02	1.7E+01	8.5E+01	8.5E+01	8.5E+01
1.4E-03	1.4E-03	1.4E-03	0	0.10	0	0.10	74-83-9	6.9E+00	2.3E+01	5.2E+00	8.7E+00	8.7E+00	8.7E+00
5.0E-03	5.0E-03	5.0E-03	0	0.10	0	0.10	101-55-3	3.3E+02	3.4E+03	1.8E+01	1.8E+02	1.8E+02	1.8E+02
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	2104-86-3	1.3E+03	1.4E+04	7.3E+01	1.8E+02	1.8E+02	1.8E+02
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	1689-84-5	1.3E+03	1.4E+04	7.3E+01	1.8E+02	1.8E+02	1.8E+02
9.8E-01	9.8E-01	1.0E-01	0	0.10	0	0.10	105-99-0	6.5E+03	1.4E+02	6.9E+03	1.1E+02	1.1E+02	1.1E+02
1.0E-01	1.0E-01	1.0E-01	0	0.10	0	0.10	71-36-3	6.5E+03	6.8E+04	3.7E+02	3.7E+03	3.7E+03	3.7E+03
2.0E-02	2.0E-02	5.0E-02	0	0.10	0	0.10	2008-41-5	3.3E+03	3.4E+04	1.8E+02	1.8E+03	1.8E+03	1.8E+03
2.0E-01	2.0E-01	2.0E-01	0	0.10	0	0.10	86-88-7	9.3E+02	9.3E+02	7.3E+02	7.3E+03	7.3E+03	7.3E+03
1.0E+00	1.0E+00	1.0E+00	0	0.10	0	0.10	85-76-1	6.5E+04	1.0E+05	3.7E+03	3.7E+04	3.7E+04	3.7E+04
3.0E-03	3.0E-03	3.0E-03	0	0.10	0	0.10	75-50-5	2.0E+02	2.0E+03	1.1E+01	1.1E+02	1.1E+02	1.1E+02
5.0E-04	6.3E+00	5.7E-05	0	0.01	0	0.01	7440-43-9	9.0E+00	8.5E+02	1.1E+03	1.8E+01	1.8E+01	1.8E+01
5.0E-01	5.0E-01	5.0E-01	0	0.10	0	0.10	105-60-2	3.3E+04	1.0E+05	1.8E+03	1.8E+04	1.8E+04	1.8E+04
2.0E-03	8.6E-03	2.0E-03	0	0.10	0	0.10	2428-06-1	5.2E+01	2.2E+02	7.8E+01	7.8E+00	7.8E+00	7.8E+00
1.0E-01	3.5E-03	1.3E-01	0	0.10	0	0.10	133-06-2	1.3E+02	5.5E+02	1.9E+00	1.9E+01	1.9E+01	1.9E+01
2.0E-02	2.0E-02	1.1E-01	0	0.10	0	0.10	63-25-2	6.5E+03	6.8E+04	4.0E+02	3.7E+03	3.7E+03	3.7E+03
5.0E-03	2.0E-02	5.0E-03	0	0.10	0	0.10	86-74-8	2.2E+01	9.5E+01	3.4E+01	3.4E+00	3.4E+00	3.4E+00
1.0E-01	1.0E-01	2.9E-03	1	0.10	0	0.10	1503-66-2	3.3E+02	3.4E+03	1.8E+01	1.8E+02	1.8E+02	1.8E+02
7.0E-01	5.3E-02	5.7E-04	0	0.10	0	0.10	56-23-5	7.5E+00	2.4E+01	1.0E+01	2.1E+01	2.1E+01	2.1E+01
1.0E-01	1.0E-01	1.0E-01	0	0.10	0	0.10	5285-14-9	2.3E+01	5.0E+01	1.3E+01	1.7E+01	1.7E+01	1.7E+01
2.0E-03	2.0E-03	2.0E-03	0	0.10	0	0.10	5234-68-4	6.5E+03	6.8E+04	3.7E+02	3.7E+03	3.7E+03	3.7E+03
1.5E-02	1.5E-02	1.5E-02	0	0.10	0	0.10	302-17-0	1.3E+02	1.4E+03	7.3E+01	7.3E+02	7.3E+02	7.3E+02
4.0E-01	4.0E-01	4.0E-01	0	0.10	0	0.10	133-90-4	9.8E+02	1.0E+04	5.9E+01	5.9E+02	5.9E+02	5.9E+02
1.3E+00	1.3E+00	6.0E-05	0	0.10	0	0.10	118-75-2	1.1E+00	4.7E+00	1.7E+02	1.7E+01	1.7E+01	1.7E+01
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	57-74-9	3.4E+01	1.5E+00	5.2E+03	5.2E+02	5.2E+02	5.2E+02
1.0E-01	1.0E-01	5.7E-05	0	0.01	0	0.01	782-80-5	1.3E+03	1.4E+04	7.3E+01	7.3E+02	7.3E+02	7.3E+02
2.0E-03	2.0E-03	2.0E-03	0	0.10	0	0.10	10049-04-4	7.7E+03	1.7E+05	2.1E+01	2.1E+01	2.1E+01	2.1E+01
2.0E-03	2.0E-03	2.0E-03	0	0.10	0	0.10	107-20-0	1.3E+02	1.4E+03	7.3E+00	7.3E+01	7.3E+01	7.3E+01
8.6E-06	8.6E-06	8.6E-06	1	0.10	0	0.10	79-11-8	3.2E+02	1.1E+01	3.1E+02	5.2E+02	5.2E+02	5.2E+02
4.0E-03	4.0E-03	4.0E-03	0	0.10	0	0.10	532-27-4	2.9E+02	2.7E+03	1.5E+01	1.5E+02	1.5E+02	1.5E+02
2.0E-02	2.0E-02	5.7E-03	0	0.10	0	0.10	108-47-8	6.5E+01	2.2E+02	2.1E+01	3.9E+01	3.9E+01	3.9E+01
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	108-90-7	1.6E+00	7.1E+00	2.5E+02	2.5E+01	2.5E+01	2.5E+01
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	510-15-5	1.3E+04	1.0E+05	7.3E+02	7.3E+03	7.3E+03	7.3E+03
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	98-56-6	1.3E+03	1.4E+04	7.3E+01	7.3E+02	7.3E+02	7.3E+02
2.0E-02	2.0E-02	2.0E-02	0	0.10	0	0.10	126-99-9	3.6E+00	1.2E+01	7.3E+01	1.4E+01	1.4E+01	1.4E+01
4.0E-01	4.0E-01	4.0E-01	1	0.10	0	0.10	109-69-3	4.8E+02	4.8E+02	1.5E+03	2.4E+03	2.4E+03	2.4E+03
1.4E+01	1.4E+01	1.4E+01	1	0.10	0	0.10	110-76-8	3.4E+02	3.4E+02	5.2E+04	8.7E+04	8.7E+04	8.7E+04
6.1E-03	6.1E-03	6.1E-03	1	0.10	0	0.10	75-45-5	3.4E+02	3.4E+02	5.1E+04	8.5E+04	8.5E+04	8.5E+04
1.3E-02	1.3E-02	1.3E-02	1	0.10	0	0.10	67-86-3	2.5E+01	2.6E+00	1.1E+00	1.5E+00	1.5E+00	1.5E+00
4.6E-01	4.6E-01	4.6E-01	0	0.10	0	0.10	95-83-2	7.7E+01	3.3E+00	1.2E+02	1.2E+01	1.2E+01	1.2E+01
8.0E-02	8.0E-02	8.0E-02	1	0.10	0	0.10	91-58-7	1.1E+02	1.1E+02	2.9E+02	4.9E+02	4.9E+02	4.9E+02
2.9E-02	2.9E-02	2.9E-02	0	0.10	0	0.10	88-73-3	1.8E+01	1.8E+01	2.7E+01	2.7E+00	2.7E+00	2.7E+00
1.9E-02	1.9E-02	1.9E-02	1	0.10	0	0.10	100-00-5	2.5E+01	2.5E+01	3.7E+01	3.7E+01	3.7E+01	3.7E+01
2.9E-02	2.9E-02	2.9E-02	0	0.10	0	0.10	95-87-8	9.1E+01	9.1E+01	1.8E+01	3.8E+01	3.8E+01	3.8E+01
1.1E-02	1.1E-02	1.1E-02	0	0.10	0	0.10	1897-45-6	4.0E+01	4.0E+01	1.0E+02	1.7E+02	1.7E+02	1.7E+02
2.0E-01	2.0E-01	2.0E-01	0	0.10	0	0.10	55-49-8	1.6E+02	1.6E+02	7.3E+01	1.2E+02	1.2E+02	1.2E+02
2.0E-01	2.0E-01	2.0E-01	0	0.10	0	0.10	101-21-3	1.3E+04	1.0E+05	1.1E+01	1.1E+01	1.1E+01	1.1E+01
3.0E-03	3.0E-03	3.0E-03	0	0.10	0	0.10	2921-88-2	2.0E+02	2.0E+03	7.3E+02	7.3E+03	7.3E+03	7.3E+03
1.0E-02	1.0E-02	1.0E-02	0	0.10	0	0.10	5598-13-0	6.5E+02	6.8E+03	3.7E+01	3.7E+02	3.7E+02	3.7E+02

FOR PLANNING PURPOSES

TOXICITY INFORMATION				CONTAMINANT				PRELIMINARY REMEDIAL GOALS (PRGs)				SOIL SCREENING LEVEL	
SFO (mg/kg-d)	RfD (mg/kg-d)	SFI (mg/kg-d)	RfDI (mg/kg-d)	Y	sltn	CAS No.	Contaminant	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Soil to Groundwater (mg/kg)	Soil to Groundwater (mg/kg)
5.0E-02	5.0E-02	0	0	0	0	64902-72-3	Chlorisulfuron	3.5E+03	3.4E+04	1.8E+02	1.8E+03	nc	nc
8.0E-04	8.0E-04	0	0	0	0	502-38-56-4	Chloriophos	5.2E+01	5.5E+02	2.9E+00	2.9E+01	nc	nc
5.0E-03	4.2E-01	2.9E+02	1	0	0	7440-47-3	Total Chromium (1/6 ratio Cr:VI/Cr III)	2.1E+02	4.5E+02	1.6E-04	1.6E-01	nc	3.8E+01
6.0E-02	2.2E+00	2.9E+04	1	0	0	7440-48-4	Chromium VI	3.0E+01	6.4E+01	2.3E-05	1.6E-01	nc	3.8E+01
3.7E-02	1.9E+00	1.9E+00	1	0	0	8007-45-2	Cobalt	4.6E+03	9.7E+04	1.0E+00	2.2E+03	nc	2.0E+00
1.8E+00	1.0E-02	1.9E+00	1	0	0	7440-50-8	Coke Oven Emissions	2.8E+03	6.3E+04	3.1E-03	1.4E+03	nc	nc
8.4E-21	2.0E-03	8.4E-01	1	0	0	122-73-9	Copper and compounds	1.9E+01	6.2E+01	9.4E+00	5.9E+03	ca	nc
1.0E-01	4.0E-02	2.8E+03	1	0	0	99-82-3	Crotonaldehyde	5.3E-01	2.3E+00	8.0E-03	8.0E-02	ca	nc
4.0E-02	2.0E-03	2.0E-03	1	0	0	21725-46-2	Cyanazine	7.7E+03	1.0E+05	max	3.7E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	542-82-1	Barium cyanide	3.1E+03	6.8E+04	nc	1.5E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	592-01-8	Calcium cyanide	3.8E+03	8.5E+04	nc	1.8E+03	nc	nc
5.0E-03	5.0E-02	0	0	0	0	506-77-4	Chromite cyanide	3.8E+02	8.5E+03	nc	1.8E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	544-92-3	Copper cyanide	2.6E+03	2.7E+04	nc	1.5E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	450-19-5	Cyanogen	3.9E+03	1.0E+05	max	3.3E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	506-83-3	Cyanogen bromide	3.3E+03	3.4E+04	nc	1.8E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	506-77-4	Cyanogen chloride	1.3E+03	1.4E+04	nc	7.3E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	57-12-5	Free cyanide	3.3E+03	3.4E+04	nc	6.2E+00	nc	nc
5.0E-02	5.0E-02	0	0	0	0	74-30-8	Hydrogen cyanide	1.3E+04	1.0E+05	max	7.3E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	151-50-8	Potassium cyanide	3.3E+03	3.4E+04	nc	1.8E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	506-81-5	Potassium silver cyanide	1.3E+04	1.0E+05	max	7.3E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	506-84-9	Silver cyanide	6.5E+03	1.0E+05	max	3.7E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	143-33-9	Sodium cyanide	2.6E+03	2.7E+04	nc	1.5E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	557-21-1	Zinc cyanide	3.3E+03	3.4E+04	nc	1.8E+03	nc	nc
5.0E-02	5.0E-02	0	0	0	0	108-94-1	Cyclohexanone	1.0E+05	1.0E+05	max	1.8E+04	nc	nc
5.0E-02	5.0E-02	0	0	0	0	108-91-8	Cyclohexylamine	1.3E+04	1.0E+05	max	7.3E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	68066-85-8	Cyhalothrin/karate	3.3E+02	3.4E+03	nc	1.8E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	52315-07-8	Cypermethrin	6.5E+02	6.8E+03	nc	3.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	65216-27-8	Cyromazine	4.9E+02	5.1E+03	nc	2.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	1851-32-1	Dacthal	6.5E+02	1.0E+05	max	3.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	75-95-0	Dalapon	2.0E+03	2.0E+04	nc	1.1E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	39515-41-8	Dantrol	1.9E+03	1.7E+04	nc	9.1E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	72-54-8	DDD	1.8E+03	1.7E+04	nc	2.8E-01	ca	nc
5.0E-02	5.0E-02	0	0	0	0	72-55-9	DDD	1.9E+03	1.7E+04	nc	2.8E-02	ca	nc
5.0E-02	5.0E-02	0	0	0	0	50-29-3	DDT	1.3E+00	5.6E+00	ca	2.0E-02	ca	nc
5.0E-02	5.0E-02	0	0	0	0	1163-19-5	DDT	6.5E+02	6.8E+03	nc	3.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	8085-48-3	Demeton	2.9E+00	2.7E+01	nc	1.5E-01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	2303-18-4	Diallate	1.4E+02	1.4E+02	ca	3.3E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	333-41-5	Diazinon	5.9E+01	6.1E+02	nc	3.3E+00	nc	nc
5.0E-02	5.0E-02	0	0	0	0	132-84-9	Dibenzoturan	1.4E+02	1.4E+02	ca	3.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	106-37-5	1,4-Dibromobenzene	6.5E+02	6.8E+03	nc	3.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	124-46-1	Dibromochloromethane	5.3E+00	2.3E+01	ca	8.0E-02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	96-12-8	1,2-Dibromo-3-chloropropane	3.2E-01	1.4E+00	ca	4.8E-02	ca	nc
5.0E-02	5.0E-02	0	0	0	0	106-93-4	CAL-Modified PRG (PEA, 1994)	6.0E-02	2.0E-02	ca	7.6E-04	ca	nc
5.0E-02	5.0E-02	0	0	0	0	84-74-2	1,2-Dibromomethane	4.9E-03	2.0E-02	ca	8.7E-03	ca	nc
5.0E-02	5.0E-02	0	0	0	0	1918-00-9	Dibutyl phthalate	6.3E+03	6.8E+04	nc	3.7E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	95-50-1	Dicamba	7.0E+03	7.0E+04	nc	1.1E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	541-73-1	1,2-Dichlorobenzene	5.9E+02	6.1E+03	nc	3.7E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	106-46-7	1,3-Dichlorobenzene	3.6E+02	3.6E+03	nc	1.1E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	91-94-1	1,4-Dichlorobenzene	9.9E-01	4.2E+00	ca	4.7E-01	ca	nc
5.0E-02	5.0E-02	0	0	0	0	764-41-0	3,3-Dichlorobenzidine	7.5E-03	1.7E-02	ca	1.5E-02	ca	nc
5.0E-02	5.0E-02	0	0	0	0	75-71-8	1,2-Dichloro-2-butene	9.4E+01	3.1E+02	nc	3.9E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	75-34-3	Dichlorodifluoromethane	5.0E+02	1.7E+03	nc	8.1E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	107-96-2	1,1-Dichloroethane	3.7E-02	8.0E-02	ca	4.6E-02	ca	nc
5.0E-02	5.0E-02	0	0	0	0	75-35-4	1,1-Dichloroethene (EDC)	3.7E-02	8.0E-02	ca	3.8E-02	ca	nc
5.0E-02	5.0E-02	0	0	0	0	158-59-2	1,2-Dichloroethene (cis)	3.7E+01	1.0E+02	nc	6.1E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	156-80-5	1,2-Dichloroethene (trans)	7.8E+01	2.7E+02	nc	1.2E+02	nc	nc
5.0E-02	5.0E-02	0	0	0	0	540-59-0	1,2-Dichloroethene (mixture)	3.5E+01	1.2E+02	nc	3.3E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	120-33-2	2,4-Dichlorophenol	2.0E+02	2.0E+03	nc	1.1E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	94-92-6	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-D)	5.2E+02	5.5E+03	nc	2.9E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	94-75-7	2,4-Dichlorophenoxyacetic Acid (2,4-D)	6.5E+02	6.8E+03	nc	3.7E+01	nc	nc
5.0E-02	5.0E-02	0	0	0	0	78-37-5	1,2-Dichloropropane	3.1E-01	6.8E-01	ca	9.9E-02	ca	nc

FOR PLANNING PURPOSES

TOXICITY INFORMATION				PRELIMINARY REMEDIAL GOALS (PRGs)										SOIL SCREENING LEVEL	
Soil (mg/kg)	RfD (mg/kg-d)	SFI (mg/kg-d)	CAS No.	Y	X	skin	C	soils	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Tap Water (ug/l)	100X to Groundwater (mg/kg)	10X to Groundwater (mg/kg)
###	###	###	542-75-6	1	0	0	0	0	2.5E+01	5.5E+01	5.2E+02	8.1E+02	8.1E+02	4.0E+03	2.0E+04
###	###	###	616-23-9	1	0	0	0	0	2.0E+02	2.0E+03	1.1E+01	1.1E+02	1.1E+02	4.0E+03	2.0E+04
###	###	###	67-57-7	1	0	0	0	0	1.0E+00	0.9E+00	2.3E+02	2.3E+02	2.3E+02	4.0E+03	2.0E+04
###	###	###	115-32-2	1	0	0	0	0	1.0E+00	4.3E+00	2.1E+01	4.2E+01	4.2E+01	4.0E+03	2.0E+04
###	###	###	60-57-1	1	0	0	0	0	2.8E+02	1.2E+01	4.2E+04	4.2E+04	4.2E+04	4.0E+03	2.0E+04
###	###	###	112-34-5	1	0	0	0	0	3.7E+02	3.9E+03	2.1E+01	2.1E+02	2.1E+02	4.0E+03	2.0E+04
###	###	###	114-90-0	1	0	0	0	0	1.0E+05	1.0E+05	7.3E+03	7.3E+03	7.3E+03	4.0E+03	2.0E+04
###	###	###	617-84-5	1	0	0	0	0	7.4E+02	7.3E+03	4.0E+01	4.0E+02	4.0E+02	4.0E+03	2.0E+04
###	###	###	103-23-1	1	0	0	0	0	3.7E+02	1.6E+03	5.6E+00	5.6E+01	5.6E+01	4.0E+03	2.0E+04
###	###	###	84-66-2	1	0	0	0	0	5.2E+04	1.0E+05	2.9E+03	2.9E+04	2.9E+04	4.0E+03	2.0E+04
###	###	###	56-53-1	1	0	0	0	0	9.5E+05	4.1E+04	7.4E+06	7.4E+06	7.4E+06	4.0E+03	2.0E+04
###	###	###	43222-48-5	1	0	0	0	0	5.2E+03	5.5E+04	4.2E+04	4.2E+04	4.2E+04	4.0E+03	2.0E+04
###	###	###	35367-38-5	1	0	0	0	0	1.3E+03	1.4E+04	7.3E+01	7.3E+02	7.3E+02	4.0E+03	2.0E+04
###	###	###	75-37-6	1	0	0	0	0	3.2E+01	1.4E+02	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	1445-75-6	1	0	0	0	0	6.5E+02	2.4E+01	2.1E+02	2.1E+02	2.1E+02	4.0E+03	2.0E+04
###	###	###	55290-64-7	1	0	0	0	0	3.2E+01	1.4E+02	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	60-51-3	1	0	0	0	0	6.5E+02	2.4E+01	2.1E+02	2.1E+02	2.1E+02	4.0E+03	2.0E+04
###	###	###	119-90-4	1	0	0	0	0	3.2E+01	1.4E+02	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	124-40-3	1	0	0	0	0	6.5E+02	2.4E+01	2.1E+02	2.1E+02	2.1E+02	4.0E+03	2.0E+04
###	###	###	75-95-5	1	0	0	0	0	3.2E+01	1.4E+02	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	2.0E-03	1	0	0	0	0	6.5E+02	2.4E+01	2.1E+02	2.1E+02	2.1E+02	4.0E+03	2.0E+04
###	###	###	7.5E-01	1	0	0	0	0	5.9E+01	2.5E+00	9.0E+03	9.0E+02	9.0E+02	4.0E+03	2.0E+04
###	###	###	5.8E-01	1	0	0	0	0	7.7E-01	3.3E+00	1.2E+02	1.2E+01	1.2E+01	4.0E+03	2.0E+04
###	###	###	9.2E+00	1	0	0	0	0	4.8E-02	2.1E-01	7.3E-04	7.3E-03	7.3E-03	4.0E+03	2.0E+04
###	###	###	57-14-7	1	0	0	0	0	1.7E-01	7.3E-01	4.8E-01	4.8E+00	4.8E+00	4.0E+03	2.0E+04
###	###	###	540-73-8	1	0	0	0	0	1.7E-01	7.3E-01	1.9E-03	1.9E-03	1.9E-03	4.0E+03	2.0E+04
###	###	###	131-89-5	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	105-67-9	1	0	0	0	0	1.3E+03	1.4E+04	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	575-26-1	1	0	0	0	0	3.9E+01	4.1E+02	2.2E+00	2.2E+00	2.2E+00	4.0E+03	2.0E+04
###	###	###	95-65-3	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	131-11-3	1	0	0	0	0	1.0E+05	1.0E+05	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	120-61-6	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	131-89-5	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	99-65-0	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	528-29-0	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	100-25-4	1	0	0	0	0	2.6E+01	2.7E+02	1.5E+00	1.5E+01	1.5E+01	4.0E+03	2.0E+04
###	###	###	51-28-5	1	0	0	0	0	6.5E+03	6.8E+04	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	25321-14-6	1	0	0	0	0	1.3E+02	1.4E+03	7.3E+00	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	121-14-2	1	0	0	0	0	1.9E+02	1.4E+03	7.3E+00	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	605-20-2	1	0	0	0	0	6.5E+01	6.8E+02	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	89-95-7	1	0	0	0	0	6.5E+01	6.8E+02	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	117-84-0	1	0	0	0	0	1.3E+03	1.0E+04	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	123-91-1	1	0	0	0	0	4.0E+01	1.7E+02	6.1E+01	6.1E+01	6.1E+01	4.0E+03	2.0E+04
###	###	###	957-51-7	1	0	0	0	0	2.0E+03	2.7E+04	1.1E+02	1.1E+03	1.1E+03	4.0E+03	2.0E+04
###	###	###	122-38-4	1	0	0	0	0	1.0E+03	1.7E+04	9.1E+01	9.1E+02	9.1E+02	4.0E+03	2.0E+04
###	###	###	122-86-7	1	0	0	0	0	5.6E+01	2.4E+00	8.7E-03	8.4E-02	8.4E-02	4.0E+03	2.0E+04
###	###	###	85-006-7	1	0	0	0	0	5.2E+02	2.2E+01	8.0E+00	8.0E+01	8.0E+01	4.0E+03	2.0E+04
###	###	###	1937-37-7	1	0	0	0	0	5.6E+01	6.8E+02	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	2602-46-2	1	0	0	0	0	6.5E+01	6.8E+02	3.7E+00	3.7E+01	3.7E+01	4.0E+03	2.0E+04
###	###	###	16071-88-6	1	0	0	0	0	1.3E+03	1.0E+04	7.3E+01	7.3E+01	7.3E+01	4.0E+03	2.0E+04
###	###	###	289-04-4	1	0	0	0	0	4.0E+01	1.7E+02	6.1E+01	6.1E+01	6.1E+01	4.0E+03	2.0E+04
###	###	###	905-28-3	1	0	0	0	0	2.0E+03	2.7E+04	1.1E+02	1.1E+03	1.1E+03	4.0E+03	2.0E+04
###	###	###	330-54-1	1	0	0	0	0	4.8E-02	2.1E-01	7.2E-04	7.2E-03	7.2E-03	4.0E+03	2.0E+04
###	###	###	2439-10-3	1	0	0	0	0	6.5E+02	6.8E+03	3.7E+01	3.7E+02	3.7E+02	4.0E+03	2.0E+04
###	###	###	1672-87-0	1	0	0	0	0	2.6E+02	2.7E+03	1.5E+01	1.5E+02	1.5E+02	4.0E+03	2.0E+04
###	###	###	145-73-3	1	0	0	0	0	3.9E+02	4.1E+03	2.2E+01	2.2E+02	2.2E+02	4.0E+03	2.0E+04
###	###	###	72-20-8	1	0	0	0	0	2.0E+02	2.1E-01	1.0E+00	1.1E+01	1.1E+01	4.0E+03	2.0E+04
###	###	###	106-89-8	1	0	0	0	0	2.0E+02	2.1E-01	1.0E+00	1.1E+01	1.1E+01	4.0E+03	2.0E+04
###	###	###	105-83-7	1	0	0	0	0	3.7E+02	3.9E+03	2.1E+01	2.1E+02	2.1E+02	4.0E+03	2.0E+04
###	###	###	789-94-4	1	0	0	0	0	1.6E+03	1.6E+03	9.1E+01	9.1E+02	9.1E+02	4.0E+03	2.0E+04
###	###	###	1672-87-0	1	0	0	0	0	3.3E+02	3.4E+03	1.8E+01	1.8E+02	1.8E+02	4.0E+03	2.0E+04
###	###	###	563-12-2	1	0	0	0	0	2.6E+04	1.0E+05	2.1E+02	2.1E+03	2.1E+03	4.0E+03	2.0E+04
###	###	###	110-80-5	1	0	0	0	0	2.0E+04	1.0E+05	2.1E+02	2.1E+03	2.1E+03	4.0E+03	2.0E+04
###	###	###	111-15-9	1	0	0	0	0	2.0E+04	1.0E+05	2.1E+02	2.1E+03	2.1E+03	4.0E+03	2.0E+04
###	###	###	141-78-6	1	0	0	0	0	1.8E+04	1.0E+05	3.3E+03	3.3E+03	3.3E+03	4.0E+03	2.0E+04

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs)

SOIL SCREENING LEVEL

SFO (mg/kg-d)	RfD (mg/kg-d)	SFI (mg/kg-d)	RD1 (mg/kg-d)	Y	skin	CAS No.	Residential Soil (mg/kg)	Industrial Soil (ug/m ³)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Groundwater (mg/kg)	DAF 1 (mg/kg)
###	2.0E-03	###	###	0	0.10	2212-87-1	1.3E+02	1.4E+03	7.3E+00	7.3E+01	nc	nc
###	1.0E-01	###	###	0	0.01	7439-98-7	3.8E+02	8.5E+03	3.7E+02	1.8E+02	nc	nc
###	###	###	###	0	0.10	10599-90-3	6.5E+03	6.8E+04	3.7E+02	3.7E+03	nc	nc
###	###	###	###	0	0.10	300-76-5	1.3E+02	1.4E+03	7.3E+00	7.3E+01	nc	nc
###	###	###	###	0	0.10	15289-98-7	6.5E+03	6.8E+04	3.7E+02	3.7E+03	nc	nc
###	###	###	###	0	0.01	7440-02-0	1.5E+02	3.4E+04	3.7E+02	7.3E+02	nc	1.3E+02
###	###	###	###	0	0.01	n/a	9.8E+01	1.1E+04	8.0E+03	5.5E+01	ca	nc
###	1.5E-03	###	###	0	0.10	12035-72-2	9.8E+01	1.0E+03	4.0E+03	5.5E+01	ca	nc
###	###	###	###	0	0.10	14797-56-8	6.5E+03	1.0E+05	max	5.8E+04	nc	nc
###	###	###	###	0	0.10	14797-65-0	6.5E+03	1.0E+05	max	3.7E+03	nc	nc
###	###	###	###	0	0.10	88-74-1	3.9E+00	4.1E+01	2.1E-01	2.2E+00	nc	nc
###	###	###	###	0	0.10	99-09-2	1.8E+01	9.4E+01	2.1E+00	3.4E+00	nc	7.0E-03
###	###	###	###	0	0.10	100-01-6	4.6E+03	4.8E+04	2.6E+02	2.6E+03	nc	nc
###	7.0E-02	###	###	0	0.10	67-20-9	3.0E-01	1.3E+00	7.2E-04	4.5E-02	ca	nc
###	###	###	###	0	0.10	59-87-0	6.5E+03	6.8E+04	3.7E+02	3.7E+03	nc	nc
###	###	###	###	0	0.10	101102-44-0	6.5E+03	6.8E+04	3.7E+02	3.7E+03	nc	nc
###	###	###	###	0	0.10	556-88-7	2.2E-02	5.5E-02	1.2E-03	3.5E-01	ca	ca
###	###	###	###	0	0.10	100-02-7	1.6E-01	6.8E-01	2.4E-03	2.0E-03	ca	ca
###	###	###	###	1	0.10	79-46-9	3.0E-03	1.3E-02	4.5E-05	4.5E-04	ca	ca
###	###	###	###	1	0.10	924-16-3	9.1E+01	3.7E+02	1.4E+04	1.3E+03	ca	ca
###	###	###	###	0	0.10	55-118-5	6.3E-02	2.7E-01	9.6E-04	9.6E-03	ca	ca
###	###	###	###	0	0.10	62-75-9	2.0E-02	8.7E-02	3.1E-04	3.1E-03	ca	ca
###	4.9E-03	###	###	0	0.10	86-30-6	2.1E-01	8.7E-01	3.1E-04	3.2E-02	ca	ca
###	###	###	###	0	0.10	821-61-7	6.5E+02	6.8E+03	3.7E+01	3.7E+02	nc	nc
###	###	###	###	0	0.10	10595-95-6	6.5E+02	6.8E+03	3.7E+01	3.7E+02	nc	nc
###	###	###	###	0	0.10	930-55-2	4.6E+01	4.8E+02	2.6E+00	2.6E+01	nc	nc
###	###	###	###	0	0.10	99-08-1	2.0E+02	2.0E+03	1.1E+01	1.1E+02	nc	nc
###	###	###	###	0	0.10	99-99-0	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	27314-13-2	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	85009-18-9	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	32936-52-0	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	2891-41-0	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	152-16-9	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	19044-89-3	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	10565-30-9	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	23185-22-0	1.6E+02	1.7E+03	9.1E+01	1.8E+02	nc	nc
###	###	###	###	0	0.10	42874-09-3	2.0E+02	2.0E+03	1.1E+01	1.1E+02	nc	nc
###	###	###	###	0	0.10	4686-14-7	2.9E+02	3.1E+03	1.6E+01	1.6E+02	nc	nc
###	###	###	###	0	0.10	56-38-2	3.9E+02	4.1E+03	2.2E+01	2.2E+02	nc	nc
###	###	###	###	0	0.10	11114-71-2	3.9E+02	4.1E+03	2.2E+01	2.2E+02	nc	nc
###	2.3E-02	###	###	0	0.10	40487-42-1	3.9E+02	4.1E+03	2.2E+01	2.2E+02	nc	nc
###	###	###	###	0	0.10	87-84-3	2.6E+03	2.7E+04	1.5E+02	1.5E+03	nc	nc
###	###	###	###	0	0.10	608-93-5	1.9E+01	8.3E+01	2.9E-01	2.9E+00	ca	ca
###	3.0E-02	###	###	0	0.25	87-98-8	5.2E+01	5.5E+02	2.9E+00	2.9E+01	nc	nc
###	2.6E-01	###	###	0	0.10	52645-53-1	1.7E+00	7.9E+00	5.6E-02	5.6E-01	ca	ca
###	1.2E-01	###	###	0	0.10	13684-63-4	3.3E+03	3.4E+04	7.3E+02	7.3E+03	nc	nc
###	###	###	###	0	0.10	108-98-2	1.6E+04	1.0E+05	9.1E+02	9.1E+03	nc	nc
###	###	###	###	0	0.10	108-45-2	3.9E+02	4.1E+03	2.2E+01	2.2E+02	nc	nc
###	###	###	###	0	0.10	106-50-3	1.2E+04	1.0E+05	9.1E+02	9.1E+03	nc	nc
###	###	###	###	0	0.10	62-33-4	5.2E+00	5.5E+01	2.9E-01	2.9E+00	nc	nc
###	1.9E-03	###	###	0	0.10	90-43-7	2.3E+02	2.4E+03	3.5E+00	3.5E+01	ca	ca
###	###	###	###	0	0.10	298-02-2	1.3E+01	1.4E+02	7.3E+01	7.3E+02	nc	nc
###	###	###	###	0	0.10	732-11-6	1.3E+01	1.4E+02	7.3E+01	7.3E+02	nc	nc
###	###	###	###	0	0.10	7803-51-2	1.3E+01	1.4E+02	7.3E+01	7.3E+02	nc	nc
###	2.9E-03	###	###	0	0.10	7664-38-2	2.0E+01	2.0E+02	1.0E+01	1.1E+01	nc	nc
###	###	###	###	0	0.10	7723-14-0	2.0E+01	2.0E+02	1.0E+01	1.1E+01	nc	nc
###	###	###	###	0	0.10	100-21-0	2.0E+01	2.0E+02	1.0E+01	1.1E+01	nc	nc
###	###	###	###	0	0.10	n/a	3.7E+03	3.7E+03	3.7E+03	3.7E+03	nc	nc

FOR PLANNING PURPOSES

TOXICITY INFORMATION

TOXICITY INFORMATION				PRELIMINARY REMEDIAL GOALS (PRGS)				SOIL SCREENING LEVEL	
SFO mg/kg-d	RfD (mg/kg-d)	SFI 1/(mg/kg-d)	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Residential DAF-1 (mg/kg)	Industrial DAF-1 (mg/kg)
###	###	###	8887-189-0	3.0E+03	1.7E+04	9.1E+01	9.1E+02	3.0E+03	6.0E+03
###	###	###	1746-01-6	3.8E+06	2.4E+05	4.5E+07	4.5E+07	3.0E+03	6.0E+03
###	###	###	34014-18-1	4.6E+03	4.8E+04	2.6E+03	2.6E+03	3.0E+03	6.0E+03
###	###	###	3383-96-8	1.3E+03	1.4E+04	7.3E+01	7.3E+01	3.0E+03	6.0E+03
###	###	###	5902-51-2	8.5E+02	8.9E+03	4.7E+01	4.7E+01	3.0E+03	6.0E+03
###	###	###	13071-79-9	1.6E+00	1.7E+01	9.1E+02	9.1E+02	3.0E+03	6.0E+03
###	###	###	886-90-0	6.3E+01	6.8E+02	3.7E+00	3.7E+00	3.0E+03	6.0E+03
###	###	###	124-5-Tetrachlorobenzene	2.0E+01	2.0E+02	1.1E+00	1.1E+01	3.0E+03	6.0E+03
###	###	###	95-84-3	2.4E+01	5.4E+00	2.6E+01	4.3E+01	3.0E+03	6.0E+03
###	###	###	630-20-6	4.5E+01	1.7E+00	3.3E+02	5.5E+02	3.0E+03	6.0E+03
###	###	###	79-34-5	5.4E+00	1.7E+01	3.3E+00	1.1E+02	3.0E+03	6.0E+03
###	###	###	127-18-4	2.0E+03	2.0E+04	1.1E+02	1.1E+03	3.0E+03	6.0E+03
###	###	###	59-90-2	2.2E+02	9.5E+02	3.4E+04	3.4E+03	3.0E+03	6.0E+03
###	###	###	5216-25-1	1.9E+01	7.9E+01	2.8E+01	2.8E+00	3.0E+03	6.0E+03
###	###	###	961-11-5	3.3E+01	3.4E+02	1.8E+01	1.8E+01	3.0E+03	6.0E+03
###	###	###	3688-24-5	3.4E+00	1.2E+02	2.6E+00	2.6E+00	3.0E+03	6.0E+03
###	###	###	1314-32-5	6.9E+00	1.5E+02	3.3E+00	3.3E+00	3.0E+03	6.0E+03
###	###	###	563-68-8	6.1E+00	1.4E+02	2.9E+00	2.9E+00	3.0E+03	6.0E+03
###	###	###	6933-75-9	6.9E+00	1.5E+02	3.3E+00	3.3E+00	3.0E+03	6.0E+03
###	###	###	7791-12-0	6.9E+00	1.5E+02	3.3E+00	3.3E+00	3.0E+03	6.0E+03
###	###	###	10102-45-1	6.9E+00	1.5E+02	3.3E+00	3.3E+00	3.0E+03	6.0E+03
###	###	###	12035-52-0	6.9E+00	1.5E+02	3.3E+00	3.3E+00	3.0E+03	6.0E+03
###	###	###	7446-18-6	6.1E+00	1.4E+02	2.9E+00	2.9E+00	3.0E+03	6.0E+03
###	###	###	28249-77-6	6.5E+02	6.8E+03	3.7E+02	3.7E+02	3.0E+03	6.0E+03
###	###	###	3689-24-5	2.0E+03	2.0E+04	1.1E+02	1.1E+03	3.0E+03	6.0E+03
###	###	###	39196-18-4	2.0E+01	2.0E+02	1.1E+00	1.1E+01	3.0E+03	6.0E+03
###	###	###	23964-03-8	3.3E+02	3.4E+03	1.8E+02	1.8E+02	3.0E+03	6.0E+03
###	###	###	137-28-8	4.6E+04	1.0E+05	2.2E+04	2.2E+04	3.0E+03	6.0E+03
###	###	###	108-88-3	1.7E+01	6.0E+01	2.1E+03	2.1E+02	3.0E+03	6.0E+03
###	###	###	95-90-7	3.0E+04	1.0E+05	2.2E+03	2.2E+04	3.0E+03	6.0E+03
###	###	###	95-70-5	1.3E+04	1.0E+05	7.3E+02	7.3E+03	3.0E+03	6.0E+03
###	###	###	823-40-5	2.3E+00	1.0E+01	3.5E+02	3.5E+01	3.0E+03	6.0E+03
###	###	###	108-49-0	4.0E+01	1.7E+03	6.0E+02	6.1E+02	3.0E+03	6.0E+03
###	###	###	8001-35-2	4.9E+02	5.1E+03	2.7E+01	2.7E+02	3.0E+03	6.0E+03
###	###	###	66841-26-6	6.9E+02	8.9E+03	3.7E+02	3.7E+02	3.0E+03	6.0E+03
###	###	###	2303-17-5	3.3E+02	3.4E+03	1.8E+01	1.8E+02	3.0E+03	6.0E+03
###	###	###	82097-50-5	2.0E+00	2.0E+01	1.1E+01	1.1E+00	3.0E+03	6.0E+03
###	###	###	615-54-3	1.3E+01	5.6E+01	2.0E+01	2.0E+00	3.0E+03	6.0E+03
###	###	###	56-35-9	1.5E+01	6.6E+01	2.3E+01	2.3E+00	3.0E+03	6.0E+03
###	###	###	634-93-5	3.7E+02	3.9E+03	2.1E+02	2.1E+02	3.0E+03	6.0E+03
###	###	###	33663-50-2	1.2E+03	6.6E+03	2.1E+02	1.9E+02	3.0E+03	6.0E+03
###	###	###	120-82-1	6.5E+01	1.5E+03	1.0E+03	7.9E+02	3.0E+03	6.0E+03
###	###	###	71-55-6	3.2E+00	3.0E+03	1.0E+03	7.9E+02	3.0E+03	6.0E+03
###	###	###	79-00-5	3.8E+02	7.0E+00	1.1E+00	2.0E+01	3.0E+03	6.0E+03
###	###	###	79-01-6	3.8E+02	7.0E+00	1.1E+00	2.0E+01	3.0E+03	6.0E+03
###	###	###	75-58-4	6.3E+03	1.3E+03	7.3E+02	1.3E+03	3.0E+03	6.0E+03
###	###	###	95-95-4	6.3E+03	6.9E+04	3.7E+02	3.7E+02	3.0E+03	6.0E+03
###	###	###	88-06-2	4.0E+01	6.8E+03	6.2E+01	6.1E+02	3.0E+03	6.0E+03
###	###	###	93-76-5	6.5E+02	6.8E+03	3.7E+01	3.7E+02	3.0E+03	6.0E+03
###	###	###	93-72-1	6.2E+02	6.5E+03	2.9E+01	2.9E+02	3.0E+03	6.0E+03
###	###	###	588-77-6	1.5E+01	5.0E+01	1.8E+01	2.9E+02	3.0E+03	6.0E+03
###	###	###	96-18-4	1.4E+03	3.1E+03	9.6E+04	1.6E+03	3.0E+03	6.0E+03
###	###	###	86-19-5	1.1E+01	3.8E+01	1.8E+01	3.0E+01	3.0E+03	6.0E+03
###	###	###	76-13-1	5.6E+03	5.6E+03	3.1E+04	5.0E+04	3.0E+03	6.0E+03
###	###	###	58138-08-2	2.0E+02	2.0E+03	1.1E+01	1.1E+02	3.0E+03	6.0E+03
###	###	###	121-44-8	3.0E+01	3.0E+01	7.3E+00	1.2E+01	3.0E+03	6.0E+03
###	###	###	1682-09-8	3.0E+01	3.0E+01	7.3E+00	1.2E+01	3.0E+03	6.0E+03
###	###	###	99-35-4	1.2E+01	2.5E+02	8.7E+01	8.7E+00	3.0E+03	6.0E+03
###	###	###	479-45-9	3.3E+00	5.2E+01	1.8E+01	1.8E+00	3.0E+03	6.0E+03
###	###	###	118-96-7	6.5E+02	6.8E+03	3.7E+01	3.7E+02	3.0E+03	6.0E+03
###	###	###	7440-81-1	1.5E+01	6.4E+01	2.2E+01	2.2E+00	3.0E+03	6.0E+03
###	###	###	7440-82-2	5.4E+02	1.2E+04	2.6E+02	2.6E+02	3.0E+03	6.0E+03
###	###	###	1314-62-1	6.9E+02	1.5E+04	3.3E+02	3.3E+02	3.0E+03	6.0E+03

FOR PLANNING PURPOSES

TOXICITY INFORMATION				CONTAMINANT				PRELIMINARY REMEDIAL GOALS (PRGs)				SOIL SCREENING LEVEL	
SfO (mg/kg-d)	RfD (mg/kg-d)	SfI 1/(mg/kg-d)	RfDI (mg/kg-d)	Y abs.	X soils	CAS No.	Contaminant	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	100 ft from Ground (mg/kg)	Drinking Water (mg/kg)
###	###	###	###	0	0	13761-76-7	Vanadium sulfate	1.5E+03	3.4E+04	nc	7.3E+02	6.0E+03	3.0E+02
###	###	###	###	0	0	1929-77-7	Vernam	6.5E+01	6.8E+02	nc	3.7E+00	nc	nc
###	###	###	###	0	0	50471-44-8	Vinclozolin	1.6E+03	1.7E+04	nc	9.1E+01	nc	nc
###	###	###	###	1	1	108-95-4	Vinyl acetate	7.8E+02	2.6E+03	nc	4.1E+02	nc	8.0E+00
###	###	###	###	1	1	593-60-2	Vinyl bromide (bromoethene)	1.9E+01	4.1E-01	ca*	1.0E-01	ca*	nc
###	###	###	###	1	1	75-01-4	Vinyl chloride	1.6E+02	3.5E-02	ca	2.2E-02	ca	nc
###	###	###	###	0	0	81-81-2	Warfarin	2.0E+01	2.0E+02	nc	1.1E+00	nc	7.0E-04
###	###	###	###	1	1	108-96-3	m-Xylene	3.2E+02	3.2E+02	sat	7.3E+02	nc	1.0E+01
###	###	###	###	1	1	95-47-6	o-Xylene	3.2E+02	3.2E+02	sat	1.4E+03	nc	9.0E+00
###	###	###	###	1	1	108-92-3	p-Xylene	3.2E+02	3.2E+02	sat	1.4E+03	nc	1.0E+01
###	###	###	###	1	1	1330-20-7	Xylene (mixed)	3.2E+02	3.2E+02	sat	1.4E+03	nc	1.0E+01
###	###	###	###	0	0	7440-66-6	Zinc	2.3E+04	1.0E+05	max	1.1E+04	nc	6.2E+02
###	###	###	###	0	0	1314-84-7	Zinc phosphide	2.3E+01	5.1E+02	nc	1.1E+01	nc	nc
###	###	###	###	0	0	12122-87-7	Zincb	3.3E+03	3.4E+04	nc	1.8E+02	nc	nc

EXHIBIT C

EXHIBIT C

CHEMICAL ANALYSES



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200. Fax (818) 845-8840

DOHS 1541
LACSD 10181

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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 61
Date Received : 11/13/96
Date Reported : 11/20/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7358

Project Name : SCG - Aliso Canyon
Project Number : SCG-01-T020

Site: SCG - Aliso Canyon

Enclosed please find results of analyses of 24 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sweeney Approved By: C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
 2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 Certificate # 1541

AETL JOB# 7358

PAGE 1 OF 4

CHAIN OF CUSTODY RECORD

CLIENT: ENV America, Inc Bill to SCG (Massaud)
 ADDRESS: 16 Technology Dr #154
 SITE: SCG - Alise Canyon
 CONTACT PERSON: Frank Hegar
 PROJECT NAME: SCG - Alise Cyn PROJECT NUMBER: SCG-01-TO20
 TELEPHONE: 714-453-9191
 FAX: 714-453-9292

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID WASTE		
S2-TI-110-18	AE333374	11/13/96	0830	2x4oz	X			NONE	PH
S2-TI-110-3	AE333375		0840						TRH(gas) (4-12)
S2-TI-110-6	AE333376		0845						TRH(D-eel) ext (2)
S2-TI-110-9	AE333377		0855						8080-PCBs only
S2-TI-110-12	AE333378		0900						Metals 6010 (Sep)
S2-TI-110-15	AE333379		0910						8310
S2-TI-125-3	AE333380		0925						8020
S2-TI-125-6	AE333381		0930						8040
S2-TI-125-9	AE333382		0935						Arseuric
S2-TI-125-12	AE333383		0945						8310
S2-TI-125-15	AE333384		0950						8020
S2-TI-125-15M	AE333385	11/13/96	0955	2x4oz	X				8040

ANALYSIS REQUESTED
 PH
 TRH(gas) (4-12)
 TRH(D-eel) ext (2)
 8040
 8020
 8310
 Arseuric
 Metals 6010 (Sep)
 8080-PCBs only

Collected By: Roy Rogers / Frank Hegar Date: 11-13-96 Time: 1650
 Relinquished By: [Signature] Date: 11-13-96 Time: 4:45
 Turn Aro Time Normal Rush
 Delivered By: None Received For Laboratory: Coyne Date: 11-13-96 Time: 4:45



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7358

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 11-13-96
DATE SUBMITTED: 11-14-96
DATE ANALYSIS COMPLETED: 11-20-96
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		pH	GASOLINE C ₁ -C ₁₂	DIESEL C ₁₂ -C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33374	S2-T1-B110-18	6.15	3.9	3,170	1,230
AE33375	S2-T1-110-3	6.74	ND	5	5
AE33376	S2-T1-110-6	6.92	ND	1,110	960
AE33377	S2-T1-110-9	6.54	ND	ND	ND
AE33378	S2-T1-110-12	7.02	ND	2,050	2,540
AE33379	S2-T1-110-15	6.83	2.6	12,200	6,960
AE33380	S2-T1-125-3	6.63	ND	424	541
AE33381	S2-T1-125-6	7.23	1.8	9,850	4,850
AE33382	S2-T1-125-9	6.98	ND	2,090	3,440
AE33383	S2-T1-125-12	7.08	ND	190	187
AE33384	S2-T1-125-15	6.96	1.5	25,900	17,000
AE33385	S2-T1-12515M	6.98	2.0	14,800	20,400
AE33686	S2-T1-B125-18	7.16	5.5	193	137
AE33387	S2-T2-170-3	7.24	ND	20	12
AE33388	S2-T2-170-8	7.12	ND	ND	ND
AE33389	S2-T2-155-3	7.69	ND	420	433



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DOHS 1541
LACSD 10181

AETL JOB NO.: 7358

(Cont..)

ANALYTE		pH	GASOLINE C ₄ -C ₁₂	DIESEL C ₁₂ -C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33390	S2-T2-155-6	7.33	2.2	4,360	1,760
AE33391	S2-T2-155-9	7.13	ND	ND	ND
AE33392	S2-T2-155-12	6.96	ND	14	4
AE33393	S2-T2-155-15	6.42	ND	ND	ND
AE33394	S2-T2-155-18	6.23	ND	ND	ND
AE33395	S2-T2-155-18M	6.30	ND	ND	ND
AE33396	S2-T2-140-3	7.08	ND	33	28
AE33397	S2-T2-140-6	7.01	1.2	21,700	8,900
AE33398	Method Blank	ND	ND	ND	ND

ND = Not Detected at the Detection Limit

H. C. = Heavy Hydrocarbons

Cyrus Razmara, Ph.D.
Laboratory Director



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33374	AE33375	AE33376	AE33377	
Sample No:	S2-T1B110-18	S2-T1-110-3	S2-T1-110-6	S2-T1-110-9	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.15	6.74	6.92	6.54	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 5

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33378	AE33379	AE33380	AE33381	
Sample No:	S2-T1-110-12	S2-T1-110-15	S2-T1-125-3	S2-T1-125-6	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Detection Limit
PH	7.02	6.83	6.63	7.23	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 6

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33382	AE33383	AE33384	AE33385	
Sample No:	S2-T1-125-9	S2-T1-125-12	S2-T1-125-15	S2-T1-12515M	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.98	7.08	6.96	6.98	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33386	AE33387	AE33388	
Sample No:	S2-T1B125-18	S2-T2-170-3	S2-T2-170-8	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	Limit
PH	7.16	7.24	7.12	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33389	AE33390	AE33391	AE33392	
Sample No:	S2-T2-155-3	S2-T2-155-6	S2-T2-155-9	S2-T2-155-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	7.69	7.33	7.13	6.96	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.69	7.69	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33393	AE33394	AE33395	AE33396	
Sample No:	S2-T2-155-15	S2-T2-155-18	S2-T2-15518M	S2-T2-140-3	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.42	6.23	6.30	7.08	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.69	7.69	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33397	AE33398	
Sample No:	S2-T2-140-6	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit
PH	7.01	ND	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.69	7.69	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	Limit

Sulfides	ND	ND	ND	0.5
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
Nitrite as Nitrogen	ND	ND	ND	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	104

Comment to Sample(s)
AE33379: AE33386: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 13

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.3
Nitrogen, Ammonia (ISE)
Units: mg/L

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/21/96	11/21/96	11/21/96	Detection
Date Analyzed:	11/21/96	11/21/96	11/21/96	Limit
NH3 as Nitrogen	ND	ND	ND	0.1

QUALITY CONTROL SUMMARY

	LCS %REC.
NH3 as Nitrogen	98

Comment to Sample(s)
AE33379: AE333386: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
NO3 as N	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	111

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	Limit

Sulfate	ND	ND	ND	10
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	ND	ND	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000-7000)
15 Metals
Units: mg/Kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	ND	ND	ND	1.0
Barium (Ba)	239	214	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	ND	7.7	ND	2.5
Chromium (Cr)	11.1	11.3	ND	5.0
Cobalt (Co)	ND	ND	ND	5.0
Copper (Cu)	21.3	23.4	ND	5.0
Lead (Pb)	ND	ND	ND	5.0
Molybdenum (Mo)	5.3	5.3	ND	5.0
Nickel (Ni)	42.3	60.5	ND	5.0
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	10
Vanadium (V)	71.0	86.5	ND	5.0
Zinc (Zn)	68.0	65.5	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	80
Arsenic (As)	80
Barium (Ba)	102
Beryllium (Be)	95
Cadmium (Cd)	95
Chromium (Cr)	96
(Continued)	

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 17

Lab ID: AE33379 AE33386 AE33398

LCS %REC.

Cobalt (Co)	98
Copper (Cu)	93
Lead (Pb)	86
Molybdenum (Mo)	84
Nickel (Ni)	95
Silver (Ag)	96
Thallium (Tl)	103
Vanadium (V)	93
Zinc (Zn)	94

ND - Not Detected at The Detection Limit

AC_RWQCB_0000330



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
Potassium (K)	1180	1250	ND	10
Sodium (Na)	636	588	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	99
Sodium (Na)	96

ND - Not Detected at The Detection Limit

AC_RWQCB_0000331



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/20/96	11/20/96	11/20/96	Detection
Date Analyzed:	11/20/96	11/20/96	11/20/96	Limit
Benzo (a) anthracene	ND	ND	ND	0.020
Benzo (a) pyrene	ND	0.039	ND	0.020
Benzo (b) fluoranthene	0.112	ND	ND	0.020
Benzo (k) fluoranthene	0.107	ND	ND	0.020
Chrysene	ND	0.122	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	0.020
Indeno (1, 2, 3 -cd) pyrene	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	0.020
Anthracene	ND	0.277	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	0.020
Fluorene	0.637	0.104	ND	0.020
Naphthalene	0.187	ND	ND	0.020
Phenanthrene	0.818	0.120	ND	0.020
Pyrene	ND	0.529	ND	0.020

QUALITY CONTROL SUMMARY

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	105	101	3.9
Benzo (a) pyrene	108	108	<1
Naphthalene	116	108	7.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33374	AE33375	AE33376	AE33377	
Sample No:	S2-T1B110-18	S2-T1-110-3	S2-T1-110-6	S2-T1-110-9	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
TPH as Gasoline or Light HCs	3.9	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33374	AE33375	AE33376	AE33377
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	87	84	88	94
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	87	88	1.1	
Toluene	87	86	1.1	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33378	
Sample No:	S2-T1-110-12	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE33378

Surrogate Percent Recovery
Chlorobenzene 77

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



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DOHS 1541
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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID: AE33379
Sample No: S2-T1-110-15
Date Sampled: 11/13/96
Date Extracted: 11/14/96
Date Analyzed: 11/14/96
Detection Limit

Benzene ND 5
Ethylbenzene ND 5
Toluene ND 5
Xylenes (Total) ND 10
TPH as Gasoline or Light HCs 2.6 1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33379

Surrogate Percent Recovery
Chlorobenzene 113

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - NOT Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33380	AE33381	
Sample No:	S2-T1-125-3	S2-T1-125-6	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	
Date Analyzed:	11/14/96	11/14/96	Detection Limit
TPH as Gasoline or Light HCs	ND	1.8	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33380	AE33381	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	75	83	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33382	
Sample No:	S2-T1-125-9	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33382		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	84		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33383	AE33384	AE33385	
Sample No:	S2-T1-125-12	S2-T1-125-15	S2-T1-12515M	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	Limit

TPH as Gasoline or Light HCs	ND	1.5	2.0	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE33383	AE33384	AE33385
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	91	75	156
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	87	88	1.1
Toluene	87	86	1.1

Comment to Sample(s)

AE33385: Surrogate recovery high due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33386	
Sample No:	S2-T1B125-18	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

Benzene	ND	5
Ethylbenzene	10	5
Toluene	ND	5
Xylenes (Total)	24	10
TPH as Gasoline or Light HCs	5.5	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33386

Surrogate Percent Recovery
Chlorobenzene 131

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

Comment to Sample(s)
AE33386: Surrogate recovery high due to matrix interference

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33387	AE33388	
Sample No:	S2-T2-170-3	S2-T2-170-8	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit

TPH as Gasoline or Light HCs ND ND 1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33387	AE33388	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	86	90	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33389	AE33390	AE33391	AE33392	
Sample No:	S2-T2-155-3	S2-T2-155-6	S2-T2-155-9	S2-T2-155-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	11/15/96	Limit
TPH as Gasoline or Light HCs	ND	2.2	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33389	AE33390	AE33391	AE33392
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	72	86	87	88
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzene	96	99	3.1	
Toluene	96	98	2.1	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33393	AE33394	AE33395	AE33396	
Sample No:	S2-T2-155-15	S2-T2-155-18	S2-T2-15518M	S2-T2-140-3	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	11/15/96	Limit
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33393	AE33394	AE33395	AE33396
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	89	93	95	83
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	96	99	3.1	
Toluene	96	98	2.1	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33397	
Sample No:	S2-T2-140-6	
Date Sampled:	11/13/96	
Date Extracted:	11/19/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Gasoline or Light HCs	1.2	1.0
------------------------------	-----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33397		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	118		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	100	97	2.2
Toluene	94	94	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398		
Sample No:	METHOD BLANK		
Date Sampled:	11/13/96		
Date Extracted:	11/14/96	Detection	
Date Analyzed:	11/14/96	Limit	

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33398

Surrogate Percent Recovery

Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/15/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33398

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33398

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

Page: 34

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/19/96	Detection
Date Analyzed:	11/19/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Benzene	100	97	2.2
Toluene	94	94	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33374	
Sample No:	S2-T1B110-18	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	4400	30
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33374		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	107		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33374: C12-C25 3170 mg/Kg, C25+ 1230 mg/Kg

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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555 W. 5th St.-ML20B
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Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33375	
Sample No:	S2-T1-110-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

TPH as Diesel and Heavier HC	10	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33375		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	99	87	12.9

Comment to Sample(s)
AE33375: C12-C25: 5 mg/Kg, C25+ = 5 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 37

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33376	
Sample No:	S2-T1-110-6	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	2070	10
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33376		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33376: C12-C25 = 1110 mg/Kg, C25+ = 960 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 38

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33377	
Sample No:	S2-T1-110-9	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33377		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	92		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	99	87	12.9

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 39

Report To: (SC/G) -
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33378	
Sample No:	S2-T1-110-12	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	4590	60
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33378		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33378: C12-C25 = 2050 mg/Kg, C25+ = 2540 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33379	
Sample No:	S2-T1-110-15	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	19200	80
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QUALITY CONTROL SUMMARY

Lab ID:	AE33379		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33379: C12-C25 = 12200 mg/Kg, C25+ = 6960 mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 41

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33380	
Sample No:	S2-T1-125-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	965	40
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33380		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	87	9

Comment to Sample(s)
AE33380: C12-C25 = 424 mg/Kg, C25+ = 541 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 42

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33381	
Sample No:	S2-T1-125-6	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	14700	80
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QUALITY CONTROL SUMMARY

Lab ID:	AE33381		
Surrogate Percent Recovery			
Chlorobenzene	103		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33381: C12-C25 = 9850 mg/Kg, C25+ = 4850 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 43

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33382	AE33383	
Sample No:	S2-T1-125-9	S2-T1-125-12	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit
TPH as Diesel and Heavier HC	5530	377	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33382	AE33383	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102	94	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	99	87	12.9

Comment to Sample(s)

AE33382: C12-C25 = 2090 mg/Kg, C25+ = 3440 mg/Kg
AE33383: C12-C25 = 190 mg/Kg, C25+ = 187 mg/Kg

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

Page: 44

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33384	
Sample No:	S2-T1-125-15	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	42900	100
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33384		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	87	9

Comment to Sample(s)
AE33384: C12-C25 = 25900 mg/Kg, C25+ = 17000 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSO 10181

ANALYTICAL RESULTS

Page: 45

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33385	
Sample No:	S2-T1-12515M	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	35200	200
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QUALITY CONTROL SUMMARY

Lab ID:	AE33385		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33385: C12-C25= 14800 mg/Kg, C25+= 20400 mg/Kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 46

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33386	AE33387	AE33388	
Sample No:	S2-T1B125-18	S2-T2-170-3	S2-T2-170-8	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	
Date Analyzed:	11/14/96	11/14/96	11/14/96	Detection Limit
TPH as Diesel and Heavier HC	330	32	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33386	AE33387	AE33388
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	91	93	102
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	99	87	12.9

Comment to Sample(s)

AE33386: C12-C25 = 193 mg/Kg, C25+ = 137 mg/Kg
AE33387: C12-C25 = 20 mg/Kg, C25+ = 12 mg/Kg

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 47

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33389	
Sample No:	S2-T2-155-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit
TPH as Diesel and Heavier HC	853	60

QUALITY CONTROL SUMMARY

Lab ID:	AE33389		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	87	9

Comment to Sample(s)
AE33389: C12-C25 = 420 mg/Kg, C25+ = 433 mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	Sample No:	Date Sampled:	Date Extracted:	Date Analyzed:	Detection Limit
AE33390	S2-T2-155-6	11/13/96	11/14/96	11/18/96	
TPH as Diesel and Heavier HC					40

QUALITY CONTROL SUMMARY

Lab ID:	AE33390		
Surrogate Percent Recovery	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Chlorobenzene	103		
Diesel	95	87	9

Comment to Sample(s)
AE33390: C12-C25 = 4360 mg/Kg, C25+ = 1760 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 49

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33391	AE33392	
Sample No:	S2-T2-155-9	S2-T2-155-12	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/16/96	11/16/96	Limit
TPH as Diesel and Heavier HC	ND	18	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33391	AE33392	
Surrogate Percent Recovery			
Chlorobenzene	104	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	96	1

Comment to Sample(s)
AE33392: C12-C25 = 14 mg/Kg, C25+ = 4 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

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Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33393	AE33394	AE33395	
Sample No:	S2-T2-155-15	S2-T2-155-18	S2-T2-15518M	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
TPH as Diesel and Heavier HC	ND	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33393	AE33394	AE33395
<u>Surrogate Percent Recovery</u> Chlorobenzene	101	105	102
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>
Diesel	92	90	2.2

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 51

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33396	
Sample No:	S2-T2-140-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/16/96	Limit

TPH as Diesel and Heavier HC	61	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33396		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	96	1

Comment to Sample(s)
AE33396: C12-C25 = 33 mg/Kg, C25+ = 28 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LAGSD 10181

ANALYTICAL RESULTS

Page: 52

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	Sample No:	Date Sampled:	Date Extracted:	Date Analyzed:	Detection Limit
AE33397	S2-T2-140-6	11/13/96	11/15/96	11/20/96	
TPH as Diesel and Heavier HC				30600	100

QUALITY CONTROL SUMMARY

Lab ID:	AE33397		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33397: C12-C25 21700 mg/Kg, C25+ 8900 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 53

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	91	101	10

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

Page: 54

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/15/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	92	90	2.2

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 55

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/16/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	96	1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
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Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398		
Sample No:	METHOD BLANK		
Date Sampled:	11/13/96		
Date Extracted:	11/14/96		Detection
Date Analyzed:	11/18/96		Limit
TPH as Diesel and Heavier HC	ND		10

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 57

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	96	95	1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

ND - Not Detected at The Detection Limit



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2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 59

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/98	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/98	Limit
Acetone	ND	ND	ND	50
Benzene	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	10
Bromoform	ND	ND	ND	50
Bromomethane	ND	ND	ND	50
2 Butanone	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	10
Chloroethane	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	50
Chloroform	ND	ND	ND	10
Chloromethane	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	10
2 Hexanone	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	50
Styrene	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	10
Toluene	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	10
Trichloroethene	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

QUALITY CONTROL SUMMARY

Lab ID:	AE33379	AE33386	AE33398
<u>Surrogate Percent Recovery</u>			
Bromofluorobenzene	100	96	98
1,2 Dichloroethane-d4	106	103	100
Toluene-d8	112	110	99
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	102	106	4
Chlorobenzene	98	102	4
1,1 Dichloroethene	94	89	5
Toluene	111	116	5
Trichloroethene	94	97	3

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 61

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE33379	AE33398	
Sample No:	S2-T1-110-15	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	Limit

PCB-1016	ND	ND	0.1
PCB-1221	ND	ND	0.1
PCB-1232	ND	ND	0.1
PCB-1242	ND	ND	0.1
PCB-1248	ND	ND	0.1
PCB-1254	ND	ND	0.1
PCB-1260	ND	ND	0.1

QUALITY CONTROL SUMMARY

Lab ID:	AE33379	AE33398	
<u>Surrogate Percent Recovery</u>			
Tetrachloro M-Xylene	55	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
PCB-1016	114	117	3
PCB-1260	114	116	2

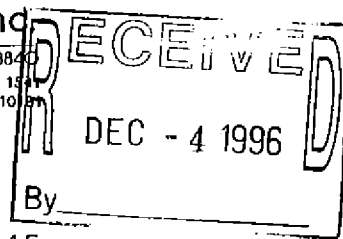
ND - Not Detected at The Detection Limit



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DOHS 13
LACSD 10



Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 45
Date Received : 11/13/96
Date Reported : 11/20/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7359

Project Name : SCG - Aliso Canyon
Project Number : SCG-01-T020

Site: SCG - Aliso Canyon

Enclosed please find results of analyses 20 soil & 1 water sample analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrano

Approved By: C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
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 Certificate # 1541

AETL JOB# 7359 PAGE 3 OF 4

CHAIN OF CUSTODY RECORD

CLIENT: ENV America, Inc. SCG - Massoud TELEPHONE: 714-453-9191
 ADDRESS: 16 Technology Dr. # 154, Irvine FAX: 714-453-7272
 SITE: SCG - Alisho Canyon

CONTACT PERSON: Frank Hager PROJECT NAME: SCG - Alisho Canyon PROJECT NUMBER: SCG-01-TD20
 ANALYSIS REQUESTED: PH (gds) (u-ls) TRH (Dist) (ext) (u-ls) TRH (Dist) (ext) (u-ls)

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID WASTE		
S2-T2-140-9	AE33399	11/3/96	1225	2x4oz	X			NONE	X
S2-T2-140-12	AE33400		1227	2x4oz					X
S2-T2-140-15	AE33401		1230						X
S2-T2-140-18	AE33402		1235						X
S2-T3-NW-3	AE33403		1300						X
S2-T3-RW-6	AE33404		1305						X
S2-T3-NW-9	AE33405		1320						X
S2-T3-NW-12	AE33406		1325						X
S2-T3-NW-15			1326						X
S2-T4-3	AE33407		1430						X
S2-T4-6	AE33408		1432						X
S2-T4-9	AE33409	11/3/96	1435	2x4oz	X			NONE	X

Collected By: Ben Rogers/Jim Lawrence Date 11/3/96 Time 1650
 Relinquished By: R.R. Date 11/3/96 Time 1650
 Turn Around Time Normal Rush
 Delivered By: Ben Rogers Date 11-13-96 Time 4:50
 Received For Laboratory: Ben Rogers



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7359

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 11-13-96
DATE SUBMITTED: 11-14-96
DATE ANALYSIS COMPLETED: 11-20-96
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		pH	GASOLINE C ₄ - C ₁₂	DIESEL C ₁₂ - C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33399	S2-T2-140-9	6.53	ND	10,200	15,300
AE33400	S2-T2-140-12	6.80	ND	6,210	4,690
AE33401	S2-T2-140-15	7.08	2.1	7,900	11,300
AE33402	S2-T2-140-18	7.81	ND	37	38
AE33403	S2-T3-NW-3	7.54	ND	35	19
AE33404	S2-T3-NW-6	6.74	ND	9,500	10,000
AE33405	S2-T3-NW-9	7.01	ND	370	500
AE33406	S2-T3-NW-12	6.87	ND	525	375
AE33407	S2-T4-3	7.95	ND	348	399
AE33408	S2-T4-6	6.54	3.0	17,400	10,200
AE33409	S2-T4-9	6.65	ND	109	127
AE33410	S2-T4-9M	6.42	ND	89	74
AE33411	S2-T4-12	6.34	ND	166	148
AE33412	S2-T4-15	6.54	8.4	3,980	1,000
AE33413	S2-T5-SW-3	7.01	ND	21	22
AE33414	S2-T5-SW-6	7.54	ND	138	185



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AETL JOB NO.: 7359

(Cont.)

ANALYTE		pH	GASOLINE C ₄ -C ₁₂	DIESEL C ₁₂ -C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33415	S2-T5-SW-9	6.61	2.1	5,450	1,460
AE33416	S2-T5-SW-12	7.06	ND	525	455
AE33417	S2-T5-SW-15	7.02	ND	64	23
AE33418	Trip Blank -S	NA	ND	NA	NA
AE33420	Method Blank	ND	ND	ND	ND

ND = Not Detected at the Detection Limit

H. C. = Heavy Hydrocarbons

NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33399	AE33400	AE33401	AE33402	
Sample No:	S2-T2-140-9	S2-T2-140-12	S2-T2-140-15	S2-T2-140-18	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.53	6.80	7.08	7.81	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.53	6.54	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33403	AE33404	AE33405	AE33406	
Sample No:	S2-T3-NW-3	S2-T3-NW-6	S2-T3-NW-9	S2-T3-NW-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	7.54	6.74	7.01	6.87	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.53	6.54	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 6

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33407	AE33408	AE33409	AE33410	
Sample No:	S2-T4-3	S2-T4-6	S2-T4-9	S2-T4-9M	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	7.95	6.54	6.65	6.42	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.53	6.54	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

Page: 7

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33411	AE33412	AE33413	AE33414	
Sample No:	S2-T4-12	S2-T4-15	S2-T5-SW-3	S2-T5-SW-6	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Detection Limit
PH	6.34	6.54	7.01	7.54	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.54	7.53	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33415	AE33416	AE33417	AE33420	
Sample No:	S2-T5-SW-9	S2-T5-SW-12	S2-T5-SW-15	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.61	7.06	7.02	ND	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.54	7.53	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33399	AE33400	
Sample No:	S2-T2-140-9	S2-T2-140-12	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	Detection Limit
Date Analyzed:	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33399	AE33400	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	85	84	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33401	AE33402	AE33403	AE33404	
Sample No:	S2-T2-140-15	S2-T2-140-18	S2-T3-NW-3	S2-T3-NW-6	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	11/15/96	Limit
TPH as Gasoline or Light HCs	2.1	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33401	AE33402	AE33403	AE33404
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	60	93	84	84
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	96	99	3.1	
Toluene	96	98	2.1	

Comment to Sample(s)

AE33401: Surrogate recovery low due to matrix effects.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33405	
Sample No:	S2-T3-NW-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection Limit
Date Analyzed:	11/15/96	
TPH as Gasoline or Light HCs	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33405		
<u>Surrogate Percent Recovery</u>	78		
Chlorobenzene			
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33406	
Sample No:	S2-T3-NW-12	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE33406

Surrogate Percent Recovery
Chlorobenzene 77

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LAGSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	Sample No:	Date Sampled:	Date Extracted:	Date Analyzed:	Detection Limit
AE33407	S2-T4-3	11/13/96	11/15/96	11/15/96	
TPH as Gasoline or Light HCs					ND
					1.0

QUALITY CONTROL SUMMARY

Lab ID: AE33407
Surrogate Percent Recovery
Chlorobenzene 74

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSO 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33408	AE33409	AE33410	AE33411	
Sample No:	S2-T4-6	S2-T4-9	S2-T4-9M	S2-T4-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	3.0	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33408	AE33409	AE33410	AE33411
<u>Surrogate Percent Recovery</u> Chlorobenzene	78	93	89	82
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Benzene	87	87	<1	
Toluene	83	83	<1	

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33412	AE33413	AE33414	AE33415	
Sample No:	S2-T4-15	S2-T5-SW-3	S2-T5-SW-6	S2-T5-SW-9	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	8.4	ND	ND	2.1	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33412	AE33413	AE33414	AE33415
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	98	85	74	78
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	87	87	<1	
Toluene	83	83	<1	

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33416	AE33417	
Sample No:	S2-T5-SW-12	S2-T5-SW-15	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33416	AE33417	
Surrogate Percent Recovery			
Chlorobenzene	73	88	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND = Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33418	
Sample No:	TRIP BLANK-S	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33418

Surrögate Percent Recovery
Chlorobenzene 99

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Water
Method: 8015MOD/602
TPH as Gasoline and BTXE
Units: ug/L

Lab ID:	AE33419	
Sample No:	TRIP BLANK-W	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	0.5
Ethylbenzene	ND	0.5
Toluene	ND	0.5
Xylenes (Total)	ND	1.0
TPH as Gasoline or Light HCs	ND	10

QUALITY CONTROL SUMMARY

Lab ID: AE33419

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP: %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Water
Method: 8015MOD/602
TPH as Gasoline and BTXE
Units: ug/L

Lab ID:	AE33421	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	0.5
Ethylbenzene	ND	0.5
Toluene	ND	0.5
Xylenes (Total)	ND	1.0
TPH as Gasoline or Light HCs	ND	10

QUALITY CONTROL SUMMARY

Lab ID: AE33421

Surrögate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/15/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33420

Surrogate Percent Recovery
Chlorobenzene

100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID: AE33420
Sample No: METHOD BLANK
Date Sampled: 11/13/96
Date Extracted: 11/18/96
Date Analyzed: 11/18/96
Detection Limit

Benzene ND 5
Ethylbenzene ND 5
Toluene ND 5
Xylenes (Total) ND 10
TPH as Gasoline or Light HCs ND 1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33420

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33399	
Sample No:	S2-T2-140-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	25500	100
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QUALITY CONTROL SUMMARY

Lab ID:	AE33399		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	96	95	1

Comment to Sample(s)
AE33399: C12 - C25 = 10,200mg/Kg, C25+ = 15,300mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33400	
Sample No:	S2-T2-140-12	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/95	Limit

TPH as Diesel and Heavier HC	10900	100

QUALITY CONTROL SUMMARY

Lab ID:	AE33400		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	96	95	1

Comment to Sample(s)
AE33400: C12 - C25 = 6,210mg/Kg, C25 + = 4,690mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33401	
Sample No:	S2-T2-140-15	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/95	Limit
TPH as Diesel and Heavier HC	19200	30

QUALITY CONTROL SUMMARY

Lab ID:	AE33401		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	96	95	1

Comment to Sample(s)
AE33401: C12-C25=7,900mg/Kg, C25 + = 11,300mg/Kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33402	AE33403	
Sample No:	S2-T2-140-18	S2-T3-NW-3	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/15/96	11/15/96	Limit
TPH as Diesel and Heavier HC	75	54	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33402	AE33403	
<u>Surrogate Percent Recovery</u> Chlorobenzene	106	101	
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>
Diesel	92	90	2, 2

Comment to Sample(s)

AE33402: C12-C25 = 37 mg/Kg, C25+ = 38 mg/Kg
AE33403: C12-C25 = 35 mg/Kg, C25+ = 19 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 26

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33404	
Sample No:	S2-T3-NW-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/95	Limit
TPH as Diesel and Heavier HC	19200	100

QUALITY CONTROL SUMMARY

Lab ID:	AE33404		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	97		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33404: C12-C25=7,900 mg/Kg, C25 + = 11,300mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33405	
Sample No:	S2-T3-NW-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	870	50
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QUALITY CONTROL SUMMARY

Lab ID:	AE33405		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	97		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33405: C12 - C25=370mg/Kg, C25 + = 500mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33406	AE33407	
Sample No:	S2-T3-NW-12	S2-T4-3	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	Detection
Date Analyzed:	11/20/96	11/20/96	Limit
TPH as Diesel and Heavier HC	900	747	40

QUALITY CONTROL SUMMARY

Lab ID:	AE33406	AE33407	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	108	89	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	91	101	10

Comment to Sample(s)

AE33406: C12-C25=525mg/Kg, C25+=375mg/Kg.
AE33407: C12 - C25=348mg/Kg, C25+=399mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33408	
Sample No:	S2-T4-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	27600	200
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QUALITY CONTROL SUMMARY

Lab ID: AE33408

Surrogate Percent Recovery
Chlorobenzene 89

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33408: C12-C25=17,400mg/Kg, C25+=10,200mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
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Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33409	
Sample No:	S2-T4-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	236	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE33409		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	97		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33409: C12-C25=109mg/Kg, C25+=127mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33410	
Sample No:	S2-T4-9M	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	163	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE33410		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33410: C12-C25=89mg/Kg, C25+=74mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 32

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33411	
Sample No:	S2-T4-12	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	314	20
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33411		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33411: C12-25=166mg/Kg, C25+=148mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33412	
Sample No:	S2-T4-15	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit
TPH as Diesel and Heavier HC	4980	40

QUALITY CONTROL SUMMARY

Lab ID:	AE33412		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	95		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33412: C12-C25=3,980mg/Kg, C25+=1,000mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33413	
Sample No:	S2-T5-SW-3	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	43	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33413		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	105		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	96	95	1

Comment to Sample(s)
AE33413: C12-C25=21mg/Kg, C25+=22mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 35

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33414	
Sample No:	S2-T5-SW-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	323	10
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33414		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	91	101	10

Comment to Sample(s)
AE33414: C12-C25=138mg/Kg, C25+=185mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 36

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33415	
Sample No:	S2-T5-SW-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection Limit
Date Analyzed:	11/20/96	
TPH as Diesel and Heavier HC	6910	40

QUALITY CONTROL SUMMARY

Lab ID:	AE33415		
<u>Surrogate Percent Recovery</u> Chlorobenzene	107		
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33415: C12-C25=5,450mg/Kg, C25+=1,460mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 37

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33416	
Sample No:	S2-T5-SW-12	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	980	40
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33416		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33416: C12-C25=525mg/Kg, C25+=455mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33417	
Sample No:	S2-T5-SW-15	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit
TPH as Diesel and Heavier HC	87	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33417		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	99		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33417: C12-C25=64mg/Kg, C25+=23mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 39

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/15/96	Limit
TPH as Diesel and Heavier HC	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33420		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	92	90	2.2

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33420		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	96	95	1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 41

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33420		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 42

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE33418	AE33420	
Sample No:	TRIP BLANK-S	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit

Acetone	ND	ND	50
Benzene	ND	ND	10
Bromodichloromethane	ND	ND	10
Bromoform	ND	ND	50
Bromomethane	ND	ND	50
2 Butanone	ND	ND	50
Carbon Disulfide	ND	ND	10
Carbon Tetrachloride	ND	ND	10
Chlorobenzene	ND	ND	10
Chloroethane	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	50
Chloroform	ND	ND	10
Chloromethane	ND	ND	50
Dibromochloromethane	ND	ND	10
1,2 Dichlorobenzene	ND	ND	10
1,3 Dichlorobenzene	ND	ND	10
1,4 Dichlorobenzene	ND	ND	10
1,1 Dichloroethane	ND	ND	10
1,2 Dichloroethane	ND	ND	10
1,1 Dichloroethene	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	10
1,2 Dichloropropane	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	10
Ethylbenzene	ND	ND	10
2 Hexanone	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	50
Methylene Chloride	ND	ND	50
Styrene	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	10
Tetrachloroethene	ND	ND	10
Toluene	ND	ND	10
1,1,1 Trichloroethane	ND	ND	10
1,1,2 Trichloroethane	ND	ND	10
Trichloroethene	ND	ND	10
Trichlorofluoromethane	ND	ND	10
Vinyl Acetate	ND	ND	50
Vinyl Chloride	ND	ND	50
Xylenes (Total)	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 43

QUALITY CONTROL SUMMARY

Lab ID:	AE33418	AE33420		
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	99	98		
1,2 Dichloroethane-d4	104	100		
Toluene-d8	97	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	102	106	4	
Chlorobenzene	98	102	4	
1,1 Dichloroethene	94	89	5	
Toluene	111	116	5	
Trichloroethene	94	97	3	

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 44

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Water
Method: 624
Purgeable Volatile Organics by GC/MS
Units: ug/L

Lab ID:	AE33419	AE33421	Detection Limit
Sample No:	TRIP BLANK-W	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	
Date Analyzed:	11/14/96	11/14/96	
Acetone	ND	ND	5
Benzene	ND	ND	1
Bromodichloromethane	ND	ND	1
Bromoform	ND	ND	5
Bromomethane	ND	ND	5
2 Butanone	ND	ND	5
Carbon Disulfide	ND	ND	1
Carbon Tetrachloride	ND	ND	1
Chlorobenzene	ND	ND	1
Chloroethane	ND	ND	5
2 Chloroethyl Vinylether	ND	ND	5
Chloroform	ND	ND	1
Chloromethane	ND	ND	5
Dibromochloromethane	ND	ND	1
1,2 Dichlorobenzene	ND	ND	1
1,3 Dichlorobenzene	ND	ND	1
1,4 Dichlorobenzene	ND	ND	1
1,1 Dichloroethane	ND	ND	1
1,2 Dichloroethane	ND	ND	1
1,1 Dichloroethene	ND	ND	1
CIS 1,2 Dichloroethene	ND	ND	1
TRNS 1,2 Dichloroethene	ND	ND	1
1,2 Dichloropropane	ND	ND	1
CIS 1,3 Dichloropropene	ND	ND	1
TRNS 1,3 Dichloropropene	ND	ND	1
Ethylbenzene	ND	ND	1
2 Hexanone	ND	ND	5
4 Methyl-2-Pentanone	ND	ND	5
Methylene Chloride	ND	ND	5
Styrene	ND	ND	1
1,1,2,2 Tetrachloroethane	ND	ND	1
Tetrachloroethene	ND	ND	1
Toluene	ND	ND	1
1,1,1 Trichloroethane	ND	ND	1
1,1,2 Trichloroethane	ND	ND	1
Trichloroethene	ND	ND	1
Trichlorofluoromethane	ND	ND	1
Vinyl Acetate	ND	ND	5
Vinyl Chloride	ND	ND	5
Xylenes (Total)	ND	ND	2

(Continued)

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 45

QUALITY CONTROL SUMMARY

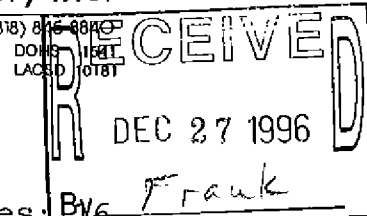
Lab ID:	AE33419	AE33421	
<u>Surrogate Percent Recovery</u>			
Bromofluorobenzene	94	100	
1,2 Dichloroethane-d4	100	100	
Toluene-d8	99	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	102	106	4
Chlorobenzene	98	102	4
1,1 Dichloroethene	94	89	5
Toluene	111	116	5
Trichloroethene	94	97	3

ND - Not Detected at The Detection Limit



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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: Byg
Date Received : 12/17/96
Date Reported : 12/24/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7521

Project Name : SCG - Aliso Cyn.
Project Number : SCG-T020-300

Site: Aliso Canyon

Enclosed please find results of analyses of 16 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sweeney

Approved By: C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
 2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 Certificate # 1541

AETL JOB# 7521 PAGE OF

CHAIN OF CUSTODY RECORD

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID LIQUID WASTE OTHER		
CLIENT: ENV America ADDRESS: 16 Technology Dr. SITE: Aliso Canyon CONTACT PERSON: Frank Hegar PROJECT NAME: SCG - Aliso Canyon PROJECT NUMBER: SCG-7020-300 TEL: 714-453-9191 FAX: 714-453-9292 ANALYSIS REQUESTED:									
S10-L4-12	AE34341	12/17/96		4oz.	X				X
S10-L1-3	AE34342								
S10-L1-6	AE34343								
S10-L1-9	AE34344								
S10-L1-15	AE34345								
S10-L2-3	AE34346								
S10-L2-6	AE34347								
S10-L2-9	AE34348								
S10-L2-12	AE34349								
S10-L2-14	AE34350								
S10-L3-15	AE34351								
S10-L3-12	AE34352								
Collected By: <u>R. Rogers</u> Date <u>12/17/96</u> Time Relinquished By: <u>R.R.</u> Date <u>12/17/96</u> Time <u>1545</u> Turn Arou me <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Delivered By: Received For Laboratory: <u>[Signature]</u> Date <u>12/17/96</u> Time <u>3:50</u>									



CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

CLIENT: ENV
 ADDRESS: 16 Technology
 SITE: SC6 - Aliso Canyon
 CONTACT PERSON: Frank Haagar
 PROJECT NAME: SC6 - Aliso Cyn
 PROJECT NUMBER:
 TELEPHONE: 714-453-9171
 FAX: 714-453-9292

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	LIQUID WASTE	OTHER		
S10-L3-9	AE34353	12/17/96		4 oz.	X				X
S10-L3-6	AE34354	↓		↓	X				X
S10-L3-3	AE34355	↓		↓	X				X
S10-L1-12	AE34356	↓		↓	X				X

Collected By: Ben Rogers Date 12/17/96 Time
 Relinquished By: R. Ry... Date 12/17/96 Time 1545
 Turn Around Time Normal Rush

Delivered By: Date Time
 Received For Laboratory: Date 12/17/96 Time 3:50



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7521

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 12-17-96
DATE SUBMITTED: 12-17-96
DATE ANALYSIS COMPLETED: 12-23-96
SAMPLE DESCRIPTION: Grab soil samples (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		GASOLINE	DIESEL	HYDR. CARB.
		C ₄ -C ₁₂	C ₁₂ -C ₂₅	C ₂₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULTS	RESULTS	RESULTS
AE34341	S10-L4-12	ND	21	6
AE34342	S10-L1-3	ND	ND	ND
AE34343	S10-L1-6	ND	ND	ND
AE34344	S10-L1-9	ND	75	61
AE34345	S10-L1-15	ND	48	6
AE34346	S10-L2-3	ND	ND	ND
AE34347	S10-L2-6	ND	277	232
AE34348	S10-L2-9	ND	ND	ND
AE34349	S10-L2-12	ND	ND	ND
AE34350	S10-L2-14	ND	ND	ND
AE34351	S10-L3-15	ND	ND	ND
AE34352	S10-L3-12	ND	13	4
AE34353	S10-L3-9	ND	55	33

ND =Not Detected at the detection limit



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DOHS 1541
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CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7521

ANALYTE		GASOLINE C ₄ -C ₁₂	DIESEL C ₁₂ -C ₂₅	HYDR. CARB. C ₂₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULTS	RESULTS	RESULTS
AE34354	S10-L3-6	ND	92	39
AE34355	S10-L3-3	ND	40	22
AE34356	S10-L1-12	ND	511	336
AE34357	Method Blank	ND	ND	ND

ND =Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34341	AE34342	AE34343	AE34344	
Sample No:	S10-L4-12	S10-L1-3	S10-L1-6	S10-L1-9	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	12/19/96	12/19/96	Limit
TPH as Diesel and Heavier HC	27	ND	ND	136	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34341	AE34342	AE34343	AE34344
<u>Surrogate Percent Recovery</u> Chlorobenzene	101	100	102	99
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	87	88	1.1	

Comment to Sample(s)

AE34341: C12-C25=21mg/Kg; C25+=6mg/Kg
AE34344: C12-C25=75mg/Kg; C25+=61mg/Kg

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34345	AE34346	
Sample No:	S10-L1-15	S10-L2-3	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	Limit

TPH as Diesel and Heavier HC	54	ND	10
------------------------------	----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34345	AE34346	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98	101	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	87	88	1.1

Comment to Sample(s)
AE34345: C12-C25=48mg/Kg; C25+=6mg/Kg

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

Page: 6

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	Sample No:	Date Sampled:	Date Extracted:	Date Analyzed:	Detection Limit
AE34347	S10-L2-6	12/17/96	12/20/96	12/20/96	
TPH as Diesel and Heavier HC				509	40

QUALITY CONTROL SUMMARY

Lab ID: AE34347

Surrogate Percent Recovery
Chlorobenzene 104

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	94	95	1

Comment to Sample(s)
AE34347: C12-C25=277mg/Kg; C25+=232mg/Kg

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 7

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34348	AE34349	AE34350	AE34351	
Sample No:	S10-L2-9	S10-L2-12	S10-L2-14	S10-L3-15	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Limit

TPH as Diesel and Heavier HC	ND	ND	ND	ND	10
------------------------------	----	----	----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34348	AE34349	AE34350	AE34351
<u>Surrogate Percent Recovery</u> Chlorobenzene	99	100	101	102
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	94	95	1	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34352	AE34353	AE34354	AE34355	Detection Limit
Sample No:	S10-L3-12	S10-L3-9	S10-L3-6	S10-L3-3	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	
TPH as Diesel and Heavier HC	17	88	131	62	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34352	AE34353	AE34354	AE34355
<u>Surrogate Percent Recovery</u> Chlorobenzene	101	110	109	104
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	94	95	1	

Comment to Sample(s)

AE34352: C12-C25=13mg/Kg; C25+=4mg/Kg
AE34353: C12-C25=55mg/Kg; C25+=33mg/Kg
AE34354: C12-C25=92mg/Kg; C25+=39mg/Kg
AE34355: C12-C25=40mg/Kg; C25+=22mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34356	AE34357	
Sample No:	S10-L1-12	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	Limit

TPH as Diesel and Heavier HC	847	ND	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE34356	AE34357	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100	100	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	94	95	1

Comment to Sample(s)
AE34356: C12-C25=511mg/Kg; C25+=336mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34357	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34357		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	87	88	1.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34341	AE34342	AE34343	AE34344	
Sample No:	S10-L4-12	S10-L1-3	S10-L1-6	S10-L1-9	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Detection Limit
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34341	AE34342	AE34343	AE34344
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	69	94	89	92
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	100	101	1	
Toluene	96	100	4.1	

Comment to Sample(s)

AE34341: Low surrogate recovery due to the interference of matrix.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34345	AE34346	AE34347	AE34348	
Sample No:	S10-L1-15	S10-L2-3	S10-L2-6	S10-L2-9	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Limit
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34345	AE34346	AE34347	AE34348
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	81	104	81	87
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzene	100	101	1	
Toluene	96	100	4.1	

ND - Not Detected at The Detection Limit

AC_RWQCB_0000437



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 13

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34349	AE34350	AE34351	
Sample No:	S10-L2-12	S10-L2-14	S10-L3-15	
Date Sampled:	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE34349	AE34350	AE34351
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	85	89	92
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34352	AE34353	AE34354	AE34355	Detection Limit
Sample No:	S10-L3-12	S10-L3-9	S10-L3-6	S10-L3-3	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/23/96	12/23/96	12/23/96	12/23/96	
Date Analyzed:	12/23/96	12/23/96	12/23/96	12/23/96	
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34352	AE34353	AE34354	AE34355
<u>Surrogate Percent Recovery</u> Chlorobenzene	103	72	70	83
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Benzene	110	105	4.7	
Toluene	108	103	4.7	

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34356	AE34357	
Sample No:	S10-L1-12	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/23/96	12/23/96	Detection
Date Analyzed:	12/23/96	12/23/96	Limit

TPH as Gasoline or Light HCs	ND	ND	1.0
------------------------------	----	----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE34356	AE34357	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	79	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	110	105	4.7
Toluene	108	103	4.7

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34357	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34357

Surrogate Percent Recovery
Chlorobenzene 100

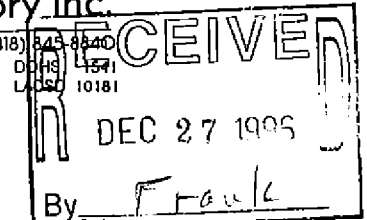
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages : 21
Date Received : 12/17/96
Date Reported : 12/24/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7520

Project Name : SCG - Aliso Cyn
Project Number : SCG-T020-300

Site: Aliso Canyon

Enclosed please find results of analyses of 12 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sevean

Approved By: C. Razmara
Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
 2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 Certificate #1541

AETL JOB# 7520 PAGE OF

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

CLIENT: ENV
 ADDRESS: 16 Technology St #154, Irvine, CA 92618
 SITE: Aliso Canyon
 CONTACT PERSON: Frank Hagar
 PROJECT NAME: SCG-Aliso Canyon
 PROJECT NUMBER: SCG-T020-300
 TELEPHONE: 714-453-9191
 FAX: 714-453-9292

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	WASTE		
S11-L1-3	AE34328	12/17/96		4oz	X			X	Hold Samples
S11-L1a-3	AE34329								For additional analysis
S11-L1a-5	AE34330								
S11-L2-3	AE34331								
S11-L2-5	AE34332								
S11-L3-3	AE34333								
S11-L3-5	AE34334								
S11-L4-6	AE34335								
S11-L5-12	AE34336								
S10-L4-3	AE34337								
S10E4-6	AE34338								
S10-L4-9	AE34339								

TPH - 3 Carbon Copy

Collected By: Rob Rogers Date 12/17/96 Time 1545
 Relinquished By: R. Rogers Date 12/17/96 Time 1545
 Turn Around Normal Rush
 Delivered By: Date Time
 Received For Laboratory: Date 12/17/96 Time 5:50



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7520

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 12-17-96
DATE SUBMITTED: 12-17-96
DATE ANALYSIS COMPLETED: 12-21-96
SAMPLE DESCRIPTION: Grab soil samples (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		GASOLINE C ₇ -C ₁₁	DIESEL C ₁₂ -C ₂₅	HYDR. CARB. C ₂₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULTS	RESULTS	RESULTS
AE34328	S11-L1-3	ND	ND	ND
AE34329	S11-L1A-3	ND	203	130
AE34330	S11-L1A-5	ND	33	9
AE34331	S11-L2-3	ND	34	7
AE34332	S11-L2-5	ND	966	654
AE34333	S11-L3-3	ND	829	391
AE34334	S11-L3-5	ND	3,780	2,270
AE34335	S11-L4-6	ND	ND	ND
AE34336	S11-L5-12	ND	20	3
AE34337	S10-L4-3	ND	63	27
AE34338	S10-L4-6	ND	44	7
AE34339	S10-L4-9	ND	121	54
AE34340	Method Blank	ND	ND	ND

ND =Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 3

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34328	
Sample No:	S11-L1-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34328		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	87	88	1.1

ND - Not Detected at The Detection Limit



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LACSO 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34329	
Sample No:	S11-L1A-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	333	20
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QUALITY CONTROL SUMMARY

Lab ID: AE34329

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	95	<1

Comment to Sample(s)
AE34329: C12-C25 = 203mg/kg; C25+ = 130mg/kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 5

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34330	AE34331	
Sample No:	S11-L1A-5	S11-L2-3	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	Limit
TPH as Diesel and Heavier HC	42	41	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34330	AE34331	
<u>Surrogate Percent Recovery</u> Chlorobenzene	106	102	
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>
Diesel	87	88	1.1

Comment to Sample(s)

AE34330: C12-C25 = 33mg/kg; C25+ = 9mg/kg.
AE34331: C12-C25 = 34mg/kg; C25+ = 7mg/kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34332	
Sample No:	S11-L2-5	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	1620	40
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QUALITY CONTROL SUMMARY

Lab ID:	AE34332		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	101		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	95	<1

Comment to Sample(s)
AE34332: C12-C25 =966mg/kg; C25+ =654mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 7

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID: AE34333
Sample No: S11-L3-3
Date Sampled: 12/17/96
Date Extracted: 12/19/96
Date Analyzed: 12/21/96
Detection Limit

TPH as Diesel and Heavier HC 1220 20

QUALITY CONTROL SUMMARY

Lab ID: AE34333
Surrogate Percent Recovery
Chlorobenzene 105
Spike %REC. Spike DUP. %REC. AVG. RPD
Diesel 95 95 <1

Comment to Sample(s)
AE34333: C12-C25 =829mg/kg; C25+ = 391mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34334	
Sample No:	S11-L3-5	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	6050	200
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QUALITY CONTROL SUMMARY

Lab ID:	AE34334		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	95	<1

Comment to Sample(s)
AE34334: C12-C25 =3780mg/kg; C25+ = 2270mg/kg.

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34335	AE34336	AE34337	AE34338	Detection Limit
Sample No:	S11-L4-6	S11-L5-12	S10-L4-3	S10-L4-6	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	12/19/96	12/19/96	
Date Analyzed:	12/19/96	12/19/96	12/19/96	12/19/96	
TPH as Diesel and Heavier HC	ND	23	90	51	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34335	AE34336	AE34337	AE34338
<u>Surrogate Percent Recovery</u> Chlorobenzene	103	98	98	101
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	87	88	1.1	

Comment to Sample(s)
AE34336: C12-C25 = 20mg/kg; C25+ = 3mg/kg
AE34337: C12-C25 = 63mg/kg; C25+ = 27mg/kg.
AE34338: C12-C25 = 44mg/kg; C25+ = 7mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34339	AE34340	
Sample No:	S10-L4-9	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/21/96	12/21/96	Limit

TPH as Diesel and Heavier HC	175	ND	10
------------------------------	-----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34339	AE34340	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	95	<1

Comment to Sample(s)
AE34339: C12-C25 =121 mg/kg; C25+ = 54mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34340	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34340		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	87	88	1.1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34328	AE34329	
Sample No:	S11-L1-3	S11-L1A-3	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	Limit

TPH as Gasoline or Light HCs	ND	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE34328	AE34329	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106	72	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 13

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34330	
Sample No:	S11-L1A-5	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE34330		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34331	
Sample No:	S11-L2-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID: AE34331

Surrogate Percent Recovery
Chlorobenzene 80

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34332	
Sample No:	S11-L2-5	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID: AE34332

Surrogate Percent Recovery
Chlorobenzene 82

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34333	
Sample No:	S11-L3-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34333

Surrogate Percent Recovery
Chlorobenzene 81

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34334	
Sample No:	S11-L3-5	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID: AE34334

Surrogate Percent Recovery
Chlorobenzene 68

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

Comment to Sample(s)

AE34334: Low surrogate recovery due to the interference of matrix.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34335	AE34336	AE34337	
Sample No:	S11-L4-6	S11-L5-12	S10-L4-3	
Date Sampled:	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	12/19/96	Limit

TPH as Gasoline or Light HCs	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE34335	AE34336	AE34337
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	90	75	74
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	100	99	1
Toluene	105	99	5.8

ND - NOT Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34338	
Sample No:	S10-L4-6	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34338

Surrogate Percent Recovery
Chlorobenzene 78

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34339	AE34340	
Sample No:	S10-L4-9	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34339	AE34340	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	74	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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OOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34340	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection Limit
Date Analyzed:	12/20/96	
TPH as Gasoline or Light HCs	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34340		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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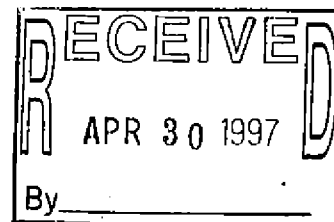
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Number of Pages: 46
Date Received : 04/09/97
Date Reported : 04/23/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7923
Project Number : SCG-01-T020

Site: SCG-Aliso Canyon



Enclosed please find results of analyses of 9 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrano

Approved By: C. Razmara
Cyrus Razmara Ph.D.
Laboratory Director



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 Certificate #1541

AETL JOB# 7923 PAGE 1 OF 2

CHAIN OF CUSTODY RECORD

CLIENT: SNV American Gas Co. TELEPHONE: 714-453-9191
 ADDRESS: 16 Technology FAX: 714-453-9292

SITE: SC6-Alice Canyon

CONTACT PERSON: _____ PROJECT NAME: _____ PROJECT NUMBER: _____

ANALYSIS \$ REQUESTED

TPH (C-G)	
TPH (C-G)	
TPH (C-G)	
BTEX	
PH	
Hold	
8440	
8310	
7400 Pestic	
6010 - see list	
Animals/containers - see list	

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	SOLID WASTE	LIQUID WASTE OTHER		
S1-PH1-3		4/9/97		4oz GL. JAR	X			ICE NO	
S1-PH1-6	AE36526	"			X			ICE	X X X X
S1-PH1-9		"			X				X X X X
S1-PH1-12	AE36521	"			X				X X X X
S4-PH1-3		"			X				X X X X
S4-PH1-6		"			X				X X X X
S4-PH1-9	AE36522	"			X				X X X X
S4-PH1-12	AE36523	"			X				X X X X
S4-PH1-15		"			X				X X X X
S4-PH1-18	AE36524	"			X				X X X X
S8E-PH1-3	AE36525	"			X				X X X X
S8W-PH1-3		"			X				X X X X

Collected By: R. Ry- Date 4/9/97 Time 1600 Delivered By: DANIEL ORDOÑEZ Date 4/09/97 Time 1615
 Relinquished By: R. Ry- Date 4/9/97 Time 1615 Received For Laboratory: _____ Date 4/09/97 Time 1640

Turn A. Normal Rush



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 Certificate #1541

AETL JOB# 7923

PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

CLIENT: ENV America TELEPHONE: 714
 ADDRESS: _____ FAX: _____

SITE: SC6 - Alijo Canyon PROJECT NUMBER: SC6-01-TORO

CONTACT PERSON: Ren Rogers PROJECT NAME: _____

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE				PRES.	REMARKS
					SOIL	WATER	LIQUID WASTE	OTHER		
8802-PH-6		4/9/97		4 oz JAR	X				ICE	
8812-PH-9					X					
8813-PH-12	AE3627				X					
89-PH-3					X					
89-PH-6					X					
89-PH-9					X					
89-PH-12	AE3627				X					
813-PH-3					X					
813-PH-6	AE3628				X					

ANALYSIS REQUESTED: TPB (G-C), TPB (G-C), TPB (G-C), BTEX, PH 905, Hold, 8810, 8310, 7400 Arsenic, 6010-see list, Anions/cations-see list

Collected By: Ren Rogers Date 4/9/97 Time 1600 Delivered By: DANIEL ORDONUEZ Date 4/9/97 Time 16:17
 Relinquished By: R. Rogers Date 4/9/97 Time 1615 Received For Laboratory: _____ Date 4/09/97 Time 16:41

Turn Around Time Normal Rush



American Environmental Testing Laboratory Inc.

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 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

				Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527
				Client Sample ID	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	S9-PH1-12
				Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
				Matrix	Soil	Soil	Soil	Soil	Soil
Analysis	Method	Units	DL	Date Analyzed	Results	Results	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	14.4	ND	2.3	ND	ND
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	1,240	40.3	269	175	176
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	9.7	3.0	13.8	12.9	12.6
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	11.9	5.3	7.6	12.8	9.0
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	5.4	ND	11.6	7.5	8.6
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	38.3	12.4	50.0	42.7	41.8
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	13.2	ND	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND	5.5	ND	6.8
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	45.3	13.3	74.5	68.5	84.0
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	04-15-97	17.1	11.4	ND	22.1	28.3
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	73.5	12.1	72.5	96.5	94.5
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	201	111	132	116	120
Nitrate as N	9200	mg/Kg	1.0	04-11-97	1.4	ND	17.1	ND	16.1
Nitrite as N (Soluble)	354.1	mg/L	0.2	04-11-97	0.7	1.4	0.2	ND	0.4
pH	9045	SU	1.00	04-10-97	7.60	8.80	8.30	8.50	8.60
Sulfate	9038	mg/Kg	10	04-17-97	72	700	37	42	58
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND	ND	ND	ND
Ammonia as N (Soluble)	350.2	mg/L	0.1	04-17-97	9.6	13.6	9.6	14.4	0.6
Potassium (K)	6010	mg/Kg	10	04-15-97	1,320	1,180	3,120	2,300	1,570
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	443	463	278	306	203

ND = Not Detected at the Detection Limit

DL = Detection Limit

a
 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

				Lab ID:	AE36528	AE36529			
				Client Sample ID:	S13-PH1-6	Method Blank			
				Date Sampled:	04-09-97	04-09-97			
				Matrix:	Soil	Soil			
Analysts	Method	Units	DL	Date Analyzed	Results	Results			
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND			
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	ND	ND			
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	219	ND			
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND			
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	18.6	ND			
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	25.1	ND			
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	8.4	ND			
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	55.5	ND			
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	ND	ND			
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND			
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	117	ND			
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND			
Thallium (Tl)	6010	mg/Kg	10	04-15-97	32.6	ND			
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	141	ND			
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	125	ND			
Nitrate as N	9200	mg/Kg	1.0	04-11-97	10.8	ND			
Nitrite as N (Soluble)	354.1	mg/L	0.2	04-11-97	ND	ND			
pH	9045	SU	1.00	04-10-97	7.40	NA			
Sulfate	9038	mg/Kg	10	04-17-97	32	ND			
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND			
Ammonia as N (Soluble)	350.2	mg/L	0.1	04-17-97	16.0	ND			
Potassium (K)	6010	mg/Kg	10	04-15-97	1,530	ND			
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	357	ND			

ND = Not Detected at the Detection Limit

DL = Detection Limit

a
Cyrus Razmara, Ph.D.
Laboratory Director



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 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011


AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-15-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527	AE36528
Client Sample ID	S1-PH1 -6	S4-PH1 -18	S8E-PH1 -3	S8W-PH1 -12	S9-PH1 -12	S13-PH1 -6
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
Date Extracted	04-14-97	04-14-97	04-14-97	04-14-97	04-14-97	04-14-97
Date Analyzed	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	ND	ND	ND	ND
Benzo (ghi) perylene	0.020	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	ND	ND
Fluoranthene	0.020	ND	ND	ND	ND	ND
Fluorene	0.020	ND	ND	ND	ND	ND
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND	ND
Phenanthrene	0.020	ND	ND	ND	ND	ND
Pyrene	0.020	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.
 DL = Detection Limit


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 Laboratory Director



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-15-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab I.D.	AE36529					
Client Sample I.D.	M. Blank					
Date Sampled	04-09-97					
Date Extracted	04-14-97					
Date Analyzed	04-15-97					
Matrix	Soil					
Units	mg/Kg					
Dilution Factor	1					
Analyte	DL	Results				
Acenaphthene	0.020	ND				
Acenaphthylene	0.020	ND				
Anthracene	0.020	ND				
Benzo (a) anthracene	0.020	ND				
Benzo (a) pyrene	0.020	ND				
Benzo (b) fluoranthene	0.020	ND				
Benzo (ghi) perylene	0.020	ND				
Benzo (k) fluoranthene	0.020	ND				
Chrysene	0.020	ND				
Dibenzo (a, h) anthracene	0.020	ND				
Fluoranthene	0.020	ND				
Fluorene	0.020	ND				
Indeno (1,2,3-cd) pyrene	0.020	ND				
Naphthalene	0.020	ND				
Phenanthrene	0.020	ND				
Pyrene	0.020	ND				

ND = Not Detected at the detection limit.

DL = Detection Limit

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Laboratory Director



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020

SITE: SCG-Aliso Canyon

DATE SAMPLED: 04-09-97

DATE SUBMITTED: 04-09-97

DATE ANALYSIS COMPLETED: 04-10-97

SAMPLE DESCRIPTION: Grab soil sample (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by EnvAmerica.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	GASOLINE
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg	mg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020	M8015G
DETECTION LIMIT		5	5	5	10	1.0
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
AE36520	S1-PH1-6	ND	ND	ND	ND	ND
AE36521	S1-PH1-12	ND	ND	ND	ND	ND
AE36522	S4-PH1-9	ND	ND	ND	ND	ND
AE36523	S4-PH1-12	ND	ND	ND	ND	ND
AE36524	S4-PH1-18	ND	ND	ND	ND	26
AE36525	S8E-PH1-3	ND	ND	ND	ND	ND
AE36526	S8W-PH1-12	ND	ND	ND	ND	ND
AE36527	S9-PH1-12	ND	ND	ND	ND	ND
AE36528	S13-PH1-6	ND	ND	ND	ND	ND
AE36529	Method Blank	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.

NA = Not Applicable

CR
Cyrus Razmara, Ph.D.
Laboratory Director

Handwritten signature/initials



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS


CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-10-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		pH	GASOLINE C ₁ -C ₁₂	DIESEL C ₁₂ -C ₁₅	H.C. C ₁₅
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE36520	S1-PH1-6	7.60	ND	3,130	2,960
AE36521	S1-PH1-12	7.00	ND	ND	ND
AE36522	S4-PH1-9	7.50	ND	ND	ND
AE36523	S4-PH1-12	7.50	ND	ND	ND
AE36524	S4-PH1-18	8.80	26	119	70
AE36525	S8E-PH1-3	8.30	ND	2	9
AE36526	S8W-PH1-12	8.50	ND	ND	ND
AE36527	S9-PH1-12	8.60	ND	ND	ND
AE36528	S13-PH1-6	7.40	ND	ND	ND
AE36529	Method Blank	NA	ND	ND	ND

ND = Not Detected at the detection limit


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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527	AE36528
Client Sample ID	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	S13-PH1-6
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
Acetone	50	ND	ND	ND	ND	ND
Benzene	10	ND	ND	ND	ND	ND
Bromodichloromethane	10	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND
Carbon Disulfide	10	ND	ND	ND	ND	ND
Carbon Tetrachloride	10	ND	ND	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
2-Chloroethyl Vinylether	50	ND	ND	ND	ND	ND
Chloroform	10	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
Dibromochloromethane	10	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,1-Dichloroethane	10	ND	ND	ND	ND	ND
1,2-Dichloroethane	10	ND	ND	ND	ND	ND
1,1-Dichloroethene	10	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
trans-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND	ND
cis-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
trans-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.



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 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527	AE36528
Client Sample ID	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	S13-PH1-6
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
2-Hexanone	50	ND	ND	ND	ND	ND
4-Methy-1-2-Pentanone	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Styrene	10	ND	ND	ND	ND	ND
1,1,2,2- Tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	10	ND	ND	ND	ND	ND
Toluene	10	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	10	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	10	ND	ND	ND	ND	ND
Trichloroethene	10	ND	ND	ND	ND	ND
Trichlorofluoromethane	10	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
Xylenes (Total)	20	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit

ca
 Cyrus Razmara, Ph.D.
 Laboratory Director



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OOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36529					
Client Sample ID	M. Blank					
Date Sampled	04-09-97					
Date Extracted	04-11-97					
Date Analyzed	04-11-97					
Matrix	Soil					
Units	µg/Kg					
Dilution Factor	1					
Analyte	DL	Results				
Acetone	50	ND				
Benzene	10	ND				
Bromodichloromethane	10	ND				
Bromoform	50	ND				
Bromomethane	50	ND				
2-Butanone	50	ND				
Carbon Disulfide	10	ND				
Carbon Tetrachloride	10	ND				
Chlorobenzene	10	ND				
Chloroethane	50	ND				
2-Chloroethyl Vinyl ether	50	ND				
Chloroform	10	ND				
Chloromethane	50	ND				
Dibromochloromethane	10	ND				
1,2-Dichlorobenzene	10	ND				
1,3-Dichlorobenzene	10	ND				
1,4-Dichlorobenzene	10	ND				
1,1-Dichloroethane	10	ND				
1,2-Dichloroethane	10	ND				
1,1-Dichloroethene	10	ND				
cis-1,2 Dichloroethene	10	ND				
trans-1,2 Dichloroethene	10	ND				
1,2-Dichloropropane	10	ND				
cis-1,3 Dichloropropene	10	ND				
trans-1,3 Dichloropropene	10	ND				
Ethylbenzene	10	ND				

ND = Not Detected at the detection limit.



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36529					
Client Sample ID	M. Blank					
Date Sampled	04-09-97					
Date Extracted	04-11-97					
Date Analyzed	04-11-97					
Matrix	Soil					
Units	µg/Kg					
Dilution Factor	1					
Analyte	DL	Results				
2-Hexanone	50	ND				
4-Methy-1-2-Pentanone	50	ND				
Methylene Chloride	50	ND				
Styrene	10	ND				
1,1,2- Tetrachloroethane	10	ND				
Tetrachloroethene	10	ND				
Toluene	10	ND				
1,1,1-Trichloroethane	10	ND				
1,1,2-Trichloroethane	10	ND				
Trichloroethene	10	ND				
Trichlorofluoromethane	10	ND				
Vinyl Acetate	50	ND				
Vinyl Chloride	50	ND				
Xylenes (Total)	20	ND				

ND = Not Detected at the detection limit


Cyrus Razmara, Ph.D.
Laboratory Director



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Detection Limit
Antimony (Sb)	ND	ND	ND	ND	10
Arsenic (As)	14.4	ND	2.3	ND	1.0
Barium (Ba)	1240	40.3	269	175	5.0
Beryllium (Be)	ND	ND	ND	ND	2.5
Cadmium (Cd)	9.7	3.0	13.8	12.9	2.5
Chromium (Cr)	11.9	5.3	7.6	12.8	5.0
Cobalt (Co)	5.4	ND	11.6	7.5	5.0
Copper (Cu)	38.3	12.4	50.0	42.7	5.0
Lead (Pb)	13.2	ND	ND	ND	5
Molybdenum (Mo)	ND	ND	5.5	ND	5
Nickel (Ni)	45.3	13.3	74.5	68.5	5.0
Silver (Ag)	ND	ND	ND	ND	5.0
Thallium (Tl)	17.1	11.4	ND	22.1	10
Vanadium (V)	73.5	12.1	72.5	96.5	5.0
Zinc (Zn)	201	111	132	116	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	81
Arsenic (As)	84
Barium (Ba)	80
Beryllium (Be)	80
Cadmium (Cd)	88
Chromium (Cr)	84
Cobalt (Co)	81
(Continued)	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 13

Lab ID: AE36520 AE36524 AE36525 AE36526

	LCS %REC.
Copper (Cu)	102
Lead (Pb)	80
Molybdenum (Mo)	80
Nickel (Ni)	81
Silver (Ag)	82
Thallium (Tl)	80
Vanadium (V)	80
Zinc (Zn)	93

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit

Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	ND	ND	ND	1.0
Barium (Ba)	176	219	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	12.6	18.6	ND	2.5
Chromium (Cr)	9.0	25.1	ND	5.0
Cobalt (Co)	8.6	8.4	ND	5.0
Copper (Cu)	41.8	55.5	ND	5.0
Lead (Pb)	ND	ND	ND	5.0
Molybdenum (Mo)	6.8	ND	ND	5.0
Nickel (Ni)	84.0	117	ND	5.0
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	28.3	32.6	ND	10
Vanadium (V)	94.5	141	ND	5.0
Zinc (Zn)	120	125	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	81
Arsenic (As)	84
Barium (Ba)	80
Beryllium (Be)	80
Cadmium (Cd)	88
Chromium (Cr)	84
Cobalt (Co)	81
(Continued)	

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 15

Lab ID: AE36527 AE36528 AE36529

	LCS %REC.
Copper (Cu)	102
Lead (Pb)	80
Molybdenum (Mo)	80
Nickel (Ni)	81
Silver (Ag)	82
Thallium (Tl)	80
Vanadium (V)	80
Zinc (Zn)	93

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Limit
Benzo (a) anthracene	ND	ND	ND	ND	0.020
Benzo (a) pyrene	ND	ND	ND	ND	0.020
Benzo (b) fluoranthene	ND	ND	ND	ND	0.020
Benzo (k) fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36520	AE36524	AE36525	AE36526
<u>Surrogate Percent Recovery</u>				
Decafluorobiphenyl	101	103	101	107

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 17

Lab ID:	AE36520	AE36524	AE36525	AE36526
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzo (a) anthracene	104	109	4.7	
Benzo (a) pyrene	102	101	<1	
Naphthalene	100	101	<1	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit

Benzo(a)anthracene	ND	ND	ND	0.020
Benzo(a)pyrene	ND	ND	ND	0.020
Benzo(b)fluoranthene	ND	ND	ND	0.020
Benzo(k)fluoranthene	ND	ND	ND	0.020
Chrysene	ND	ND	ND	0.020
Dibenzo(a,h)anthracene	ND	ND	ND	0.020
Indeno(1,2,3-cd)pyrene	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	0.020
Anthracene	ND	ND	ND	0.020
Benzo(ghi)perylene	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	0.020
Fluorene	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	0.020
Pyrene	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36527	AE36528	AE36529
Surrogate Percent Recovery			
Decafluorobiphenyl	104	101	101

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 19

Lab ID:	AE36527	AE36528	AE36529
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/17/97	04/17/97	04/17/97	04/17/97	Detection
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Limit
Sulfate	72	700	37	42	10

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	72	72	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/17/97	04/17/97	04/17/97	Detection
Date Analyzed:	04/17/97	04/17/97	04/17/97	Limit

Sulfate	58	32	ND	10
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	72	72	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit

NO3 as N	1.4	ND	17.1	ND	1.0
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QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	110

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

NO3 as N	16.1	10.8	ND	1.0
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QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	110

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/16/97	04/16/97	04/16/97	04/16/97	
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Detection Limit
NH3 as Nitrogen	9.6	13.6	9.6	14.4	0.1

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	9.60	9.60	<1

Comment to Sample(s)

AE36520: Distilled water leaching procedure.
AE36524: Distilled water leaching procedure.
AE36525: Distilled water leaching procedure.
AE36526: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/16/97	04/16/97	04/16/97	Detection
Date Analyzed:	04/17/97	04/17/97	04/17/97	Limit

NH3 as Nitrogen	0.6	16.0	ND	0.1
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	9.60	9.60	<1

Comment to Sample(s)

AE36527: Distilled water leaching procedure.
AE36528: Distilled water leaching procedure.
AE36529: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit
Nitrite as Nitrogen	0.7	1.4	0.2	ND	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	100

Comment to Sample(s)
AE36520: Distilled water leaching procedure.
AE36524: Distilled water leaching procedure.
AE36525: Distilled water leaching procedure.
AE36526: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

Nitrite as Nitrogen	0.4	ND	ND	0.2
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QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	100

Comment to Sample(s)

AE36527: Distilled water leaching procedure.
AE36528: Distilled water leaching procedure.
AE36529: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Limit
Potassium (K)	1320	1180	3120	2300	10
Sodium (Na)	443	463	278	306	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	80
Sodium (Na)	109

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit
Potassium (K)	1570	1530	ND	10
Sodium (Na)	203	357	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	80
Sodium (Na)	109

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 30

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36520	AE36521	AE36522	AE36523	
Sample No:	S1-PH1-6	S1-PH1-12	S4-PH1-9	S4-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36520	AE36521	AE36522	AE36523
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	78	108	104	97
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	98	98	<1	
Toluene	105	102	2.9	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36524		
Sample No:	S4-PH1-18		
Date Sampled:	04/09/97		
Date Extracted:	04/10/97	Detection	
Date Analyzed:	04/10/97	Limit	

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	26	10 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36524

Surrogate Percent Recovery
Chlorobenzene 91

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	98	98	<1
Toluene	105	102	2.9

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 32

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36525	AE36526	AE36527	
Sample No:	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	04/10/97	Limit

Benzene	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	5
Toluene	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36525	AE36526	AE36527
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	91	95	100
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	98	98	<1
Toluene	105	102	2.9

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36528	AE36529	
Sample No:	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	Limit

Benzene	ND	ND	5
Ethylbenzene	ND	ND	5
Toluene	ND	ND	5
Xylenes (Total)	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36528	AE36529	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	99	100	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	98	98	<1
Toluene	105	102	2.9

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 34

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36520	
Sample No:	S1-PH1-6	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

TPH as Diesel and Heavier HC	6090	400
------------------------------	------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE36520		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	96	96	<1

Comment to Sample(s)
AE36520: C12-C25 = 3130 mg/kg; C25+ = 2960 mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36521	AE36522	AE36523	AE36524	
Sample No:	S1-PH1-12	S4-PH1-9	S4-PH1-12	S4-PH1-18	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Limit
TPH as Diesel and Heavier HC	ND	ND	ND	189	10

QUALITY CONTROL SUMMARY

Lab ID:	AE36521	AE36522	AE36523	AE36524
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	101	99	107	99
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Diesel	96	96	<1	

Comment to Sample(s)
AE36524: C12-C25 = 119mg/kg; C25+ = 70mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 36

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36525	AE36526	AE36527	AE36528	
Sample No:	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	S13-PH1-6	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Limit
TPH as Diesel and Heavier HC	11	ND	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE36525	AE36526	AE36527	AE36528
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	96	99	100	101
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Diesel	96	96	<1	

Comment to Sample(s)
AE36525: C12-C25 = 2 mg/kg; C25+ = 9 mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 37

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36529	
Sample No:	METHOD BLANK	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

TPH as Diesel and Heavier HC	ND	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE36529		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	96	96	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 38

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit
Acetone	ND	ND	ND	ND	50
Benzene	ND	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	ND	10
Bromoform	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	50
2 Butanone	ND	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	ND	50
Chloroform	ND	ND	ND	ND	10
Chloromethane	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	10
2 Hexanone	ND	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	ND	50
Styrene	ND	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	ND	10
Toluene	ND	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	ND	10
Trichloroethene	ND	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 39

QUALITY CONTROL SUMMARY

Lab ID:	AE36520	AE36524	AE36525	AE36526
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	90	92	92	95
1,2 Dichloroethane-d4	106	102	107	105
Toluene-d8	96	97	97	100
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	103	102	1	
Chlorobenzene	102	101	1	
1,1 Dichloroethene	102	98	4	
Toluene	103	102	1	
Trichloroethene	102	100	2	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

Acetone	ND	ND	ND	50
Benzene	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	10
Bromoform	ND	ND	ND	50
Bromomethane	ND	ND	ND	50
2 Butanone	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	10
Chloroethane	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	50
Chloroform	ND	ND	ND	10
Chloromethane	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	10
2 Hexanone	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	50
Styrene	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	10
Toluene	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	10
Trichloroethene	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 41

QUALITY CONTROL SUMMARY

Lab ID:	AE36527	AE36528	AE36529
Surrogate Percent Recovery			
Bromofluorobenzene	94	93	99
1,2 Dichloroethane-d4	103	107	94
Toluene-d8	99	99	100
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	103	102	1
Chlorobenzene	102	101	1
1,1 Dichloroethene	102	98	4
Toluene	103	102	1
Trichloroethene	102	100	2

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 42

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit
Sulfides	ND	ND	ND	ND	0.5

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 43

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

Sulfides	ND	ND	ND	0.5
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 44

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045

PH

Units: PH units

Lab ID:	AE36520	AE36521	AE36522	AE36523	
Sample No:	S1-PH1-6	S1-PH1-12	S4-PH1-9	S4-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit

PH	7.60	7.00	7.50	7.50	1.00
----	------	------	------	------	------

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.60	7.60	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 45

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36524	AE36525	AE36526	AE36527	
Sample No:	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit
PH	8.80	8.30	8.50	8.60	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.60	7.60	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 46

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36528	
Sample No:	S13-PH1-6	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

PH	7.40	1.00
----	------	------

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.60	7.60	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 50
Date Received : 04/10/97
Date Reported : 04/18/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7932

Project Name : SCG-Aliso Canyon
Project Number : SCG-01-T020

Site: SCG-Aliso Canyon

Enclosed please find results of analyses of 10 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By:

Joe Sullivan

Approved By:

C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 50
Date Received : 04/10/97
Date Reported : 04/18/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7932

Project Name : SCG-Aliso Canyon
Project Number : SCG-01-T020

Site: SCG-Aliso Canyon

Enclosed please find results of analyses of 10 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrano

Approved By: _____

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
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 Certificate # 1541

AETL JOB# 7932 PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

CLIENT: ENV AMERICA
 ADDRESS: 16 TECHNOLOGY
 SITE: SCG-ALISO CANYON
 CONTACT PERSON: R. Rogers

TELEPHONE: 714-453-9191
 FAX: 714-453-9292

PROJECT NAME: SCG-01-1020

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	ANALYSIS REQUESTED							REMARKS												
					SOIL	WATER	SOLID WASTE		LIQUID WASTE	OTHER	TRH (G-C)	TPH (G-C)	TPH (G-C)	PH	8410		8310	TRD RESURIC	6010-1st	ANION/CATIONS-1st								
FTF-P112-3	AE36582	4/10/97	0955							X	X	X																
FTF-P113-3			1010																									
FTF-P114-6	AE36583		1020								X	X	X															
FTF-P114-3	AE36584		1035								X	X	X															
FTF-P114-6			1045																									
FTF-P114-9			1050																									
FTF-P114-12	AE36585		1100								X	X	X															

Collected By: R.R. Date 4/10/97 Time 1600 Delivered By: _____
 Relinquished By: R.R. Date 4/10/97 Time 1640 Received For Laboratory: Joe Sewer Date 4-10-97 Time 445



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 Certificate # 1541

AETL JOB# 7932

PAGE 1 OF 2

CHAIN OF CUSTODY RECORD

CLIENT: ENV AMERICA
 ADDRESS: 16 Technology Dr. #154
 SITE: SC6-ALISO CANYON

TELEPHONE: 714-453-9191
 FAX: 714-453-9292

PROJECT NAME: SC6-ALISO CANYON PROJECT NUMBER: SC6-01-1020

CONTACT PERSON: Ron Rogers

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	LIQUID WASTE		
S3-HAZ-3		4/10/97	1430	4oz Jar	X			NONE	
S3-HAZ-6	AE36576		1500						X X X X X
S3-HAZ-3			1530						X X X X X
S3-HAZ-6	AE36577		1545						X X X X X
S6-PH1-3			0750						X X X X X
S6-PH1-6			0800						X X X X X
S6-PH2-2	AE36578		0805						X X X X X
S6-PH2-5	AE36579		0815						X X X X X
FTF-PH1-3	FTF-PH1E-3		0900						X X X X X
FTF-PH1-6			0915						X X X X X
FTF-PH1-9	AE36580		0925						X X X X X
FTF-PH1-3	AE36581		0900						X X X X X

ANALYSIS REQUESTED
 PH (GC-5)
 TPH (GC-5)
 BTEX (GC)
 PH
 Hg
 Hald
 8310
 8310
 7400 Arsenic
 6010-157
 6010-157
 6010-157

Collected By: RR Date 4/10/97 Time 1600
 Relinquished By: RR Date 4/10/97 Time 1640
 Turn Around Normal Rush
 Delivered By: Received For Laboratory Joe Surran Date 4-10-97 Time 445pm




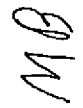
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Certificate #1541

AETL JOB# 7932

PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

CLIENT:	TELEPHONE: 714-453-9191		PROJECT NAME:	PROJECT NUMBER:	SAMPLE TYPE				PRES.	REMARKS
	ENV AMERICA	FAX: 714-453-9292			SCG-01-JR20	SOIL	WATER	LIQUID WASTE		
ADDRESS:	DATE	TIME	CONTAINER SIZE/TYPE							
GAS Co.										
16 TECHNOLOGY										
SITE: SCG - Aliso Canyon										
CONTACT PERSON: R. Rogers										
SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SOIL	WATER	LIQUID WASTE	OTHER	PRES.	REMARKS
FTF-PH2-3	AE36582	4/10/97	0955							
FTF-PH3-3			1010							
FTF-PH4-6	AE36583		1020							
FTF-PH4-3	AE36584		1035							
FTF-PH4-6			1045							
FTF-PH4-9			1050							
FTF-PH4-2	AE36585		1100							
										
										
Collected By: R.R.	Date: 4/10/97	Time: 1600	Delivered By:	Date:	Time:					
Relinquished By: R.R.	Date: 4/10/97	Time: 1640	Received For Laboratory:	Date:	Time:					
Turn Around Time	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Rush								

Handwritten notes on the right side of the form, including a signature and date: "Joe Severy Date 4-10-97 Time 445".



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

				Lab ID	AE36576	AE36578	AE36580	AE36582	AE36584
				Client Sample ID	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH2-3	FTF-PH4-3
				Date Sampled	04-10-97	04-10-97	04-10-97	04-10-97	04-10-97
				Matrix	Soil	Soil	Soil	Soil	Soil
Analysis	Method	Units	DL	Date Analyzed	Results	Results	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	1.8	ND	ND	NA	NA
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	193	124	44.8	134	245
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	8.1	4.6	4.3	5.6	9.5
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	32.3
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	5.5	6.7	ND	5.3	7.9
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	23.1	16.6	7.9	20.9	35.3
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	15.3	7.4	ND	23.0	39.2
Mercury (Hg)	7471	mg/Kg	0.2	04-15-97	NA	NA	ND	ND	ND
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	04-15-97	31.7	17.1	17.1	20.6	33.6
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	21.6	22.2	17.2	26.7	59.5
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	75.0	54.5	32.8	63.5	99.5
Nitrate as N	9200	mg/Kg	1.0	04-12-97	1.3	ND	ND	NA	NA
Soluble Nitrite as N	354.1	mg/L	0.2	04-11-97	1.2	0.5	1.6	NA	NA
pH	9045	SU	1.00	04-10-97	6.74	6.60	7.71	6.93	8.07
Sulfate	9038	mg/Kg	10	04-17-97	3,710	1,140	228	NA	NA
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND	ND	NA	NA
Soluble Ammonia as N	350.2	mg/L	0.1	04-17-97	17.6	0.8	20.0	NA	NA
Potassium (K)	6010	mg/Kg	10	04-15-97	2,710	3,140	2,360	NA	NA
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	301	87.1	12.3	NA	NA

ND = Not Detected at the Detection Limit
 DL = Detection Limit

CR
 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica

				Lab ID	AE36585	AE36586		
				Client Sample ID	FTF-PH4-12	Method Blank		
				Date Sampled	04-10-97	04-10-97		
				Matrix	Soil	Soil		
Analysis	Method	Units	DL	Date Analyzed	Results	Results		
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND		
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	ND	ND		
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	322	ND		
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND		
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	10.5	ND		
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	25.3	ND		
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	8.0	ND		
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	33.9	ND		
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	ND	ND		
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND		
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	42.9	ND		
Mercury (Hg)	7471	mg/Kg	0.2	04-15-97	ND	ND		
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND		
Thallium (Tl)	6010	mg/Kg	10	04-15-97	31.4	ND		
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	56.5	ND		
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	106	ND		
Nitrate as N	9200	mg/Kg	1.0	04-12-97	ND	ND		
Soluble Nitrite as N	354.1	mg/L	0.2	04-11-97	2.3	ND		
pH	9045	SU	1.00	04-10-97	8.73	NA		
Sulfate	9038	mg/Kg	10	04-17-97	90	ND		
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND		
Soluble Ammonia as N	350.2	mg/L	0.1	04-17-97	36.8	ND		
Potassium (K)	6010	mg/Kg	10	04-15-97	2,390	ND		
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	3,310	ND		

ND = Not Detected at the Detection Limit
 DL = Detection Limit

C
 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 DOHS 1541
 LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-15-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab ID.	AE36576	AE36578	AE36580	AE36585	AE36586	
Client Sample ID.	S3-HA1 -6	S6-PH2 -2	FTF-PH1 -9	FTF-PH4 -12	M. Blank	
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	
Date Extracted	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97	
Date Analyzed	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97	
Matrix	Soil	Soil	Soil	Soil	Soil	
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Dilution Factor	1	1	1	1	1	
Analyte	DL	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	0.468	ND	0.026	4.87	ND
Benzo (a) pyrene	0.020	0.740	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	ND	ND	1.39	ND
Benzo (ghi) perylene	0.020	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	0.319	ND
Chrysene	0.020	ND	ND	ND	3.43	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	ND	ND
Fluoranthene	0.020	0.290	ND	ND	7.31	ND
Fluorene	0.020	ND	ND	0.109	1.90	ND
Indeno (1,2,3-cd) pyrene	0.020	0.139	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND	ND
Phenanthrene	0.020	ND	ND	ND	1.32	ND
Pyrene	0.020	0.168	ND	ND	4.25	ND

ND = Not Detected at the detection limit.
 DL = Detection Limit

ca
 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-14-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	GASOLINE
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg	mg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020	M8015G
DETECTION LIMIT		5	5	5	10	1.0
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
AE36576	S3-HA1-6	ND	ND	ND	ND	ND
AE36577	S3-HA2-6	ND	ND	ND	ND	ND
AE36578	S6-PH2-2	ND	ND	ND	ND	ND
AE36579	S6-PH2-5	ND	ND	ND	ND	ND
AE36580	FTF-PH1-9	ND	ND	ND	ND	1.8
AE36581	FTF-PHIW-3	ND	ND	14	24	5.8
AE36582	FTF-PH2-3	ND	ND	ND	ND	ND
AE36583	FTF-PH3-6	ND	ND	ND	ND	ND
AE36584	FTF-PH4-3	ND	ND	ND	ND	ND
AE36585	FTF-PH4-12	209	39	204	291	10.9
AE36586	Method Blank	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.

NA = Not Applicable

a
Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-14-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		pH	GASOLINE C ₄ - C ₁₁	DIESEL C ₁₀ - C ₂₅	H.C. C ₂₅
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE36576	S3-HA1-6	6.74	ND	29	13
AE36577	S3-HA2-6	6.80	ND	33	14
AE36578	S6-PH2-2	6.60	ND	2	9
AE36579	S6-PH2-5	7.16	ND	ND	ND
AE36580	FTF-PH1-9	7.71	1.8	121	46
AE36581	FTF-PH1W-3	7.21	5.8	20,700	9,400
AE36582	FTF-PH2-3	6.93	ND	ND	ND
AE36583	FTF-PH3-6	8.09	ND	ND	ND
AE36584	FTF-PH4-3	8.07	ND	214	110
AE36585	FTF-PH4-12	8.73	10.9	559	246
AE36586	Method Blank	ND	ND	ND	ND

ND = Not Detected at the detection limit

ca
Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36576	AE36578	AE36580	AE36585	AE36586	
Client Sample ID	S3-HA1 -6	S6-PH2 -2	FTF-PH1 -9	FTF-PH4 -12	Method Blank	
Date Sampled	04-10-97	04-10-97	04-10-97	04-10-97	04-10-97	
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Matrix	Soil	Soil	Soil	Soil	Soil	
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	
Dilution Factor	1	1	1	1	1	
Analyte	DL	Results	Results	Results	Results	Results
Acetone	50	ND	ND	ND	ND	ND
Benzene	10	ND	ND	ND	371	ND
Bromodichloromethane	10	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND
Carbon Disulfide	10	ND	ND	ND	ND	ND
Carbon Tetrachloride	10	ND	ND	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
2-Chloroethyl Vinylether	50	ND	ND	ND	ND	ND
Chloroform	10	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
Dibromochloromethane	10	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,1-Dichloroethane	10	ND	ND	ND	ND	ND
1,2-Dichloroethane	10	ND	ND	ND	ND	ND
1,1-Dichloroethene	10	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
trans-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND	ND
cis-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
trans-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	415	ND

ND = Not Detected at the detection limit.



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SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)

SITE: SCG-Aliso Canyon

DATE SAMPLED: 04-10-97

DATE SUBMITTED: 04-10-97

DATE ANALYSIS COMPLETED: 04-11-97

SAMPLE DESCRIPTION: Grab soil sample (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36576	AE36578	AE36580	AE36585	AE36586	
Client Sample ID	S3-HA1 -6	S6-PH2 -2	FTF-PH1 -9	FTF-PH4 -12	Method Blank	
Date Sampled	04-10-97	04-10-97	04-10-97	04-10-97	04-10-97	
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Matrix	Soil	Soil	Soil	Soil	Soil	
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	
Dilution Factor	1	1	1	1	1	
Analyte	DL	Results	Results	Results	Results	Results
2-Hexanone	50	ND	ND	ND	ND	ND
4-Methy-1-2-Pentanone	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Styrene	10	ND	ND	ND	ND	ND
1,1,2,2- Tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	10	ND	ND	ND	ND	ND
Toluene	10	ND	ND	ND	46	ND
1,1,1-Trichloroethane	10	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	10	ND	ND	ND	ND	ND
Trichloroethene	10	ND	ND	ND	ND	ND
Trichlorofluoromethane	10	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
Xylenes (Total)	20	ND	ND	ND	529	ND

ND = Not Detected at the detection limit

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Cyrus Razmara, Ph.D.
Laboratory Director



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36576	AE36578	
Sample No:	S3-HA1-6	S6-PH2-2	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	Limit

Antimony (Sb)	ND	ND	10
Arsenic (As)	1.8	ND	1.0
Barium (Ba)	193	124	5.0
Beryllium (Be)	ND	ND	2.5
Cadmium (Cd)	8.1	4.6	2.5
Chromium (Cr)	ND	ND	5.0
Cobalt (Co)	5.5	6.7	5.0
Copper (Cu)	23.1	16.6	5.0
Lead (Pb)	ND	ND	5.0
Molybdenum (Mo)	ND	ND	5.0
Nickel (Ni)	15.3	7.4	5.0
Silver (Ag)	ND	ND	5.0
Thallium (Tl)	31.7	17.1	10
Vanadium (V)	21.6	22.2	5.0
Zinc (Zn)	75.0	54.5	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	82
Arsenic (As)	84
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
Chromium (Cr)	92
(Continued)	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 10

Lab ID: AE36576 AE36578

	LCS %REC.
Cobalt (Co)	87
Copper (Cu)	102
Lead (Pb)	80
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000-7000)
16 Metals
Units: mg/Kg

Lab ID:	AE36580	
Sample No:	FTF-PH1-9	
Date Sampled:	04/10/97	
Date Extracted:	04/14/97	Detection
Date Analyzed:	04/15/97	Limit

Antimony (Sb)	ND	10
Arsenic (As)	ND	1.0
Barium (Ba)	44.8	5.0
Beryllium (Be)	ND	2.5
Cadmium (Cd)	4.3	2.5
Chromium (Cr)	ND	5.0
Cobalt (Co)	ND	5.0
Copper (Cu)	7.9	5.0
Lead (Pb)	ND	5.0
Mercury (Hg)	ND	0.2
Molybdenum (Mo)	ND	5.0
Nickel (Ni)	ND	5.0
Silver (Ag)	ND	5.0
Thallium (Tl)	17.1	10
Vanadium (V)	17.2	5.0
Zinc (Zn)	32.8	5.0

QUALITY CONTROL SUMMARY

	LCS
	%REC.
Antimony (Sb)	82
Arsenic (As)	84
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
(Continued)	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 12

Lab ID: AE36580

	LCS %REC.
Chromium (Cr)	92
Cobalt (Co)	87
Copper (Cu)	102
Lead (Pb)	80
Mercury (Hg)	96
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 13

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000\7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36582	AE36584	
Sample No:	FTF-PH2-3	FTF-PH4-3	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	Limit

Element	AE36582	AE36584	Detection Limit
Antimony (Sb)	ND	ND	10
Barium (Ba)	134	245	5.0
Beryllium (Be)	ND	ND	2.5
Cadmium (Cd)	5.6	9.5	2.5
Chromium (Cr)	ND	32.3	5.0
Cobalt (Co)	5.3	7.9	5.0
Copper (Cu)	20.9	35.3	5.0
Lead (Pb)	ND	ND	5.0
Mercury (Hg)	ND	ND	0.2
Molybdenum (Mo)	ND	ND	5.0
Nickel (Ni)	23.0	39.2	5.0
Silver (Ag)	ND	ND	5.0
Thallium (Tl)	20.6	33.6	10
Vanadium (V)	26.7	59.5	5.0
Zinc (Zn)	63.5	99.5	5.0

QUALITY CONTROL SUMMARY

Element	LCS %REC.
Antimony (Sb)	82
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
Chromium (Cr)	92
Cobalt (Co)	87
(Continued)	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 14

Lab ID: AE36582 AE36584

LCS %REC.

Copper (Cu)	102
Lead (Pb)	80
Mercury (Hg)	96
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

Page: 15

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000-7000)
16 Metals
Units: mg/Kg

Lab ID:	AE36585	AE36586	
Sample No:	FTF-PH4-12	METHOD BLANK	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	Limit
Antimony (Sb)	ND	ND	10
Arsenic (As)	ND	ND	1.0
Barium (Ba)	322	ND	5.0
Beryllium (Be)	ND	ND	2.5
Cadmium (Cd)	10.5	ND	2.5
Chromium (Cr)	25.3	ND	5.0
Cobalt (Co)	8.0	ND	5.0
Copper (Cu)	33.9	ND	5.0
Lead (Pb)	ND	ND	5.0
Mercury (Hg)	ND	ND	0.2
Molybdenum (Mo)	ND	ND	5.0
Nickel (Ni)	42.9	ND	5.0
Silver (Ag)	ND	ND	5.0
Thallium (Tl)	31.4	ND	10
Vanadium (V)	56.5	ND	5.0
Zinc (Zn)	106	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	82
Arsenic (As)	84
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
(Continued)	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 16

Lab ID: AE36585 AE36586

	LCS %REC.
Chromium (Cr)	92
Cobalt (Co)	87
Copper (Cu)	102
Lead (Pb)	80
Mercury (Hg)	96
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36576	AE36578	AE36580	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	
Date Sampled:	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/15/97	04/15/97	04/15/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit

Benzo(a)anthracene	0.468	ND	0.026	0.020
Benzo(a)pyrene	0.740	ND	ND	0.020
Benzo(b)fluoranthene	ND	ND	ND	0.020
Benzo(k)fluoranthene	ND	ND	ND	0.020
Chrysene	ND	ND	ND	0.020
Dibenzo(a,h)anthracene	ND	ND	ND	0.020
Indeno(1,2,3-cd)pyrene	0.139	ND	ND	0.020
Acenaphthene	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	0.020
Anthracene	ND	ND	ND	0.020
Benzo(ghi)perylene	ND	ND	ND	0.020
Fluoranthene	0.290	ND	ND	0.020
Fluorene	ND	ND	0.109	0.020
Naphthalene	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	0.020
Pyrene	0.168	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36576	AE36578	AE36580
Surrogate Percent Recovery			
Decafluorobiphenyl	120	120	116

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 18

Lab ID:	AE36576	AE36578	AE36580
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36585	
Sample No:	FTF-PH4-12	
Date Sampled:	04/10/97	
Date Extracted:	04/15/97	Detection
Date Analyzed:	04/15/97	Limit

Benzo (a) anthracene	4.87	0.200
Benzo (a) pyrene	ND	0.200
Benzo (b) fluoranthene	1.39	0.200
Benzo (k) fluoranthene	0.319	0.200
Chrysene	3.43	0.200
Dibenzo (a, h) anthracene	ND	0.200
Indeno (1, 2, 3-cd) pyrene	ND	0.200
Acenaphthene	ND	0.200
Acenaphthylene	ND	0.200
Anthracene	ND	0.200
Benzo (ghi) perylene	ND	0.200
Fluoranthene	7.31	0.200
Fluorene	1.90	0.200
Naphthalene	ND	0.200
Phenanthrene	1.32	0.200
Pyrene	4.25	0.200

QUALITY CONTROL SUMMARY

Lab ID:	AE36585
<u>Surrogate Percent Recovery</u>	
Decafluorobiphenyl	118

(Continued)

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 20

Lab ID:

AE36585

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo(a)anthracene	104	109	4.7
Benzo(a)pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/15/97	Detection
Date Analyzed:	04/15/97	Limit

Benzo(a)anthracene	ND	0.020
Benzo(a)pyrene	ND	0.020
Benzo(b)fluoranthene	ND	0.020
Benzo(k)fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo(a,h)anthracene	ND	0.020
Indeno(1,2,3-cd)pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo(ghi)perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36586
<u>Surrogate Percent Recovery</u>	
Decafluorobiphenyl	100

(Continued)

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

Page: 22

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Lab ID:

AE36586

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSO 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/17/97	04/17/97	04/17/97	04/17/97	
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Detection Limit
Sulfate	3710	1140	228	90	10

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	3710	3710	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/17/97	Detection
Date Analyzed:	04/17/97	Limit

Sulfate	ND	10
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	3710	3710	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/12/97	04/12/97	04/12/97	04/12/97	Detection
Date Analyzed:	04/12/97	04/12/97	04/12/97	04/12/97	Limit
NO3 as N	1.3	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	110

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/12/97	Detection
Date Analyzed:	04/12/97	Limit

NO3 as N	ND	1.0
----------	----	-----

QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	110

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7932
 Project ID: SCG-01-T020
 Project Name: SCG-Aliso Canyon

Page: 27

Report To: (SC/G)
 Southern California Gas Company
 555 W. 5th St.-ML20B
 Los Angeles, CA 90013-1011

Site: SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
 Method: 350.2
 Nitrogen, Ammonia
 Units: mg/L

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/16/97	04/16/97	04/16/97	04/16/97	
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Detection Limit
NH3 as Nitrogen	17.6	0.8	20.0	36.8	0.1

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	17.60	17.60	<1

Comment to Sample(s)

AE36576: AE36578, AE36580, AE36585: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/16/97	Detection
Date Analyzed:	04/17/97	Limit

NH3 as Nitrogen	ND	0.1
-----------------	----	-----

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	17.60	17.60	<1

Comment to Sample(s)
AE36586: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit
Nitrite as Nitrogen	1.2	0.5	1.6	2.3	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	100

Comment to Sample(s)

AE36576: AE36578,AE36580,AE36585: Distilled water leaching procedure.

ND - NOT Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/11/97	Detection
Date Analyzed:	04/11/97	Limit

Nitrite as Nitrogen	ND	0.2
---------------------	----	-----

QUALITY CONTROL SUMMARY

	LCS
	%REC.
Nitrite as Nitrogen	100

Comment to Sample(s)
AE36586: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Detection Limit
Potassium (K)	2710	3140	2360	2390	10
Sodium (Na)	301	87.1	12.3	3310	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	80
Sodium (Na)	109

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

Page: 32

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso CanyonReport To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/14/97	Detection
Date Analyzed:	04/15/97	Limit

Potassium (K)	ND	10.
Sodium (Na)	ND	5.0

QUALITY CONTROL SUMMARY

	LCS	
	%REC.	
Potassium (K)	80	
Sodium (Na)	109	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Detection Limit
Acetone	ND	ND	ND	ND	50
Benzene	ND	ND	ND	371	10
Bromodichloromethane	ND	ND	ND	ND	10
Bromoform	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	50
2 Butanone	ND	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	ND	50
Chloroform	ND	ND	ND	ND	10
Chloromethane	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	415	10
2 Hexanone	ND	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	ND	50
Styrene	ND	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	ND	10
Toluene	ND	ND	ND	46	10
1,1,1 Trichloroethane	ND	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	ND	10
Trichloroethene	ND	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	529	20

(Continued)

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 34

QUALITY CONTROL SUMMARY

Lab ID:	AE36576	AE36578	AE36580	AE36585
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	80	97	100	95
1,2 Dichloroethane-d4	101	105	106	114
Toluene-d8	92	101	101	105
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	103	102	1	
Chlorobenzene	102	101	1	
1,1 Dichloroethene	102	98	4	
Toluene	103	102	1	
Trichloroethene	102	100	2	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36586
Sample No: METHOD BLANK
Date Sampled: 04/10/97
Date Extracted: 04/11/97
Date Analyzed: 04/11/97
Detection Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

QUALITY CONTROL SUMMARY

Lab ID: AE36586

Surrogate Percent Recovery

Bromofluorobenzene	99
1,2 Dichloroethane-d4	94
Toluene-d8	100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	103	102	1
Chlorobenzene	102	101	1
1,1 Dichloroethene	102	98	4
Toluene	103	102	1
Trichloroethene	102	100	2

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 37

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit
Sulfides	ND	ND	ND	ND	0.5

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/11/97	Detection
Date Analyzed:	04/11/97	Limit

Sulfides	ND	0.5
----------	----	-----

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 39

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36576	AE36577	AE36578	
Sample No:	S3-HA1-6	S3-HA2-6	S6-PH2-2	
Date Sampled:	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/14/97	04/14/97	04/14/97	Limit
Benzene	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	5
Toluene	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36576	AE36577	AE36578
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	66	61	90
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	95	101	6.1
Toluene	97	100	3

Comment to Sample(s)

AE36576: Low surrogate recovery due to matrix interference.
AE36577: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36579	AE36580	AE36581	AE36582	
Sample No:	S6-PH2-5	FTF-PH1-9	FTF-PH1W-3	FTF-PH2-3	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Detection Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	14	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	ND	24	ND	10
TPH as Gasoline or Light HCs	ND	1.8	5.8	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36579	AE36580	AE36581	AE36582
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	92	99	71	97
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	94	95	1	
Toluene	100	99	1	

Comment to Sample(s)
AE36580: Mostly heavy fraction of gasoline.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 41

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36583	AE36584	AE36585	AE36586	
Sample No:	FTF-PH3-6	FTF-PH4-3	FTF-PH4-12	METHOD BLANK	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Detection Limit
Benzene	ND	ND	209	ND	5
Ethylbenzene	ND	ND	204	ND	5
Toluene	ND	ND	39	ND	5
Xylenes (Total)	ND	ND	291	ND	10
TPH as Gasoline or Light HCs	ND	ND	10.9	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36583	AE36584	AE36585	AE36586
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	97	76	97	100
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	94	95	1	
Toluene	100	99	1	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 42

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/14/97	Detection
Date Analyzed:	04/14/97	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36586

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	95	101	6.1
Toluene	97	100	3

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 43

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36576	AE36577	AE36578	
Sample No:	S3-HA1-6	S3-HA2-6	S6-PH2-2	
Date Sampled:	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit
TPH as Diesel and Heavier HC	42	47	11	10

QUALITY CONTROL SUMMARY

Lab ID:	AE36576	AE36577	AE36578
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	107	102	104
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	102	100	2

Comment to Sample(s)

AE36576: C12-C25 = 29mg/kg; C25+ = 13mg/kg.
AE36577: C12-C25 = 33mg/kg; C25+ = 14mg/kg.
AE36578: C12-C25 = 2mg/kg; C25+ = 9mg/kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 44

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36579	AE36580	
Sample No:	S6-PH2-5	FTF-PH1-9	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	Limit
TPH as Diesel and Heavier HC	ND	167	10

QUALITY CONTROL SUMMARY

Lab ID:	AE36579	AE36580	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	101	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	102	100	2

Comment to Sample(s)
AE36580: C12-C25 = 121mg/kg; C25+ = 46mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 45

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36581	
Sample No:	FTF-PH1W-3	
Date Sampled:	04/10/97	
Date Extracted:	04/11/97	Detection
Date Analyzed:	04/11/97	Limit

TPH as Diesel and Heavier HC	30100	400
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE36581		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	105		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	102	100	2

Comment to Sample(s)
AE36581: C12-C25 = 20700mg/kg; C25+ = 9400mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 46

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36582	AE36583	AE36584	AE36585	
Sample No:	FTF-PH2-3	FTF-PH3-6	FTF-PH4-3	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Detection Limit
TPH as Diesel and Heavier HC	ND	ND	324	805	10

QUALITY CONTROL SUMMARY

Lab ID:	AE36582	AE36583	AE36584	AE36585
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	100	100	102	106
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Diesel	102	100	2	

Comment to Sample(s)

AE36584: C12-C25 = 214mg/kg; C25+ = 110mg/kg.
AE36585: C12-C25 = 559mg/kg; C25+ = 246mg/kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

Page: 47

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36586	
Sample No:	METHOD BLANK	
Date Sampled:	04/10/97	
Date Extracted:	04/11/97	Detection
Date Analyzed:	04/11/97	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE36586		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	102	100	2

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 48

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36576	AE36577	AE36578	AE36579	
Sample No:	S3-HA1-6	S3-HA2-6	S6-PH2-2	S6-PH2-5	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit
PH	6.74	6.80	6.60	7.16	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.74	6.74	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 49

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36580	AE36581	AE36582	AE36583	
Sample No:	FTF-PH1-9	FTF-PH1W-3	FTF-PH2-3	FTF-PH3-6	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit
PH	7.71	7.21	6.93	8.09	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.74	6.74	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 50

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36584	AE36585	
Sample No:	FTF-PH4-3	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	Limit
PH	8.07	8.73	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.74	6.74	<1

ND - Not Detected at The Detection Limit



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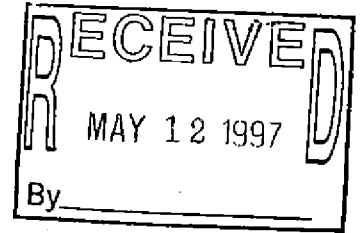
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 32
Date Received : 04/22/97
Date Reported : 04/30/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7992

Project Name : Aliso Canyon
Project Number : SCG-01-TO20



Enclosed please find results of analyses of 2 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sevean

Approved By: C. Razmara
Cyrus Razmara Ph.D.
Laboratory Director



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-25-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica

				Lab ID	AE36948	AE36949	AE36950		
				Client Sample ID	S4-B1-20	S6-B1-9	M. Blank		
				Date Sampled	04-22-97	04-22-97	04-22-97		
				Matrix	Soil	Soil	Soil		
Analysis	Method	Units	DL	Date Analyzed	Results	Results	Results		
Antimony (Sb)	6010	mg/Kg	10	04-25-97	ND	ND	ND		
Arsenic (As)	7060	mg/Kg	1.0	04-25-97	ND	1.2	ND		
Barium (Ba)	6010	mg/Kg	5.0	04-25-97	82.0	44.1	ND		
Beryllium (Be)	6010	mg/Kg	2.5	04-25-97	ND	ND	ND		
Cadmium (Cd)	6010	mg/Kg	2.5	04-25-97	ND	2.6	ND		
Chromium (Cr)	6010	mg/Kg	5.0	04-25-97	ND	ND	ND		
Cobalt (Co)	6010	mg/Kg	5.0	04-25-97	ND	8.0	ND		
Copper (Cu)	6010	mg/Kg	5.0	04-25-97	7.8	26.9	ND		
Lead (Pb)	6010	mg/Kg	5.0	04-25-97	ND	ND	ND		
Molybdenum (Mo)	6010	mg/Kg	5.0	04-25-97	ND	ND	ND		
Nickel (Ni)	6010	mg/Kg	5.0	04-25-97	ND	25.2	ND		
Silver (Ag)	6010	mg/Kg	5.0	04-25-97	ND	ND	ND		
Thallium (Tl)	6010	mg/Kg	10	04-25-97	ND	ND	ND		
Vanadium (V)	6010	mg/Kg	5.0	04-25-97	15.8	12.1	ND		
Zinc (Zn)	6010	mg/Kg	5.0	04-25-97	37.8	75.0	ND		
Nitrate as N	9200	mg/Kg	1.0	04-22-97	ND	ND	ND		
Nitrite as N (Soluble)	354.1	mg/L	0.2	04-22-97	0.3	ND	ND		
pH	9045	SU	1.00	04-22-97	8.60	6.10	ND		
Sulfate	9038	mg/Kg	10	04-23-97	280	730	ND		
Sulfide (Total)	9030	mg/Kg	0.5	04-22-97	ND	ND	ND		
Ammonia as N (Soluble)	350.2	mg/L	0.1	04-24-97	9.2	8.5	ND		
Potassium (K)	6010	mg/Kg	10	04-25-97	2,570	3,000	ND		
Sodium (Na)	6010	mg/Kg	5.0	04-25-97	399	2,490	ND		

ND = Not Detected at the Detection Limit
DL = Detection Limit

ca
Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-28-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab ID	AE36948	AE36949	AE36950			
Client Sample ID	S4-B1-20	S6-B1-9	M. Blank			
Date Sampled	04-22-97	04-22-97	04-22-97			
Date Extracted	04-25-97	04-25-97	04-25-97			
Date Analyzed	04-28-97	04-28-97	04-28-97			
Matrix	Soil	Soil	Soil			
Units	mg/Kg	mg/Kg	mg/Kg			
Dilution Factor	2	1	1			
Analyte	DL	Results	Results	Results		
Acenaphthene	0.020	ND	ND	ND		
Acenaphthylene	0.020	ND	ND	ND		
Anthracene	0.020	ND	ND	ND		
Benzo (a) anthracene	0.020	0.148	0.034	ND		
Benzo (a) pyrene	0.020	0.424	0.284	ND		
Benzo (b) fluoranthene	0.020	ND	ND	ND		
Benzo (ghi) perylene	0.020	ND	ND	ND		
Benzo (k) fluoranthene	0.020	0.110	ND	ND		
Chrysene	0.020	0.092	ND	ND		
Dibenzo (a, h) anthracene	0.020	0.808	0.467	ND		
Fluoranthene	0.020	ND	0.361	ND		
Fluorene	0.020	ND	0.026	ND		
Indeno (1,2,3-cd) pyrene	0.020	ND	0.043	ND		
Naphthalene	0.020	ND	ND	ND		
Phenanthrene	0.020	ND	ND	ND		
Pyrene	0.020	ND	0.145	ND		

ND = Not Detected at the detection limit

DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-28-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	GASOLINE
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg	mg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020	M8015G
DETECTION LIMIT		5	5	5	10	1.0
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
AE36948	S4-B1-20	ND	ND	ND	ND	ND
AE36949	S6-B1-9	ND	78	ND	568	65
AE36950	Method Blank	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.
 NA = Not Applicable

cc

Cyrus Razmara, Ph.D.
 Laboratory Director



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-28-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		GASOLINE C ₄ -C ₁₂	DIESEL C ₁₃ -C ₁₅	DIESEL C ₁₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT
AE36948	S4-B1-20	ND	76	10
AE36949	S6-B1-9	65	99	15
AE36950	Method Blank	ND	ND	ND

ND = Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-24-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36948	AE36949	AE36950			
Client Sample ID	S4-B1-20	S6-B1-9	M. Blank			
Date Sampled	04-22-97	04-22-97	04-22-97			
Date Extracted	04-23-97	04-24-97	04-23-97			
Date Analyzed	04-23-97	04-24-97	04-23-97			
Matrix	Soil	Soil	Soil			
Units	µg/Kg	µg/Kg	µg/Kg			
Dilution Factor	1	20	1			
Analyte	DL	Results	Results	Results		
Acetone	50	ND	ND	ND		
Benzene	10	ND	ND	ND		
Bromodichloromethane	10	ND	ND	ND		
Bromoform	50	ND	ND	ND		
Bromomethane	50	ND	ND	ND		
2-Butanone	50	ND	ND	ND		
Carbon Disulfide	10	ND	ND	ND		
Carbon Tetrachloride	10	ND	ND	ND		
Chlorobenzene	10	ND	ND	ND		
Chloroethane	50	ND	ND	ND		
2-Chloroethyl Vinylether	50	ND	ND	ND		
Chloroform	10	ND	ND	ND		
Chloromethane	50	ND	ND	ND		
Dibromochloromethane	10	ND	ND	ND		
1,2-Dichlorobenzene	10	ND	ND	ND		
1,3-Dichlorobenzene	10	ND	ND	ND		
1,4-Dichlorobenzene	10	ND	ND	ND		
1,1-Dichloroethane	10	ND	ND	ND		
1,2-Dichloroethane	10	ND	ND	ND		
1,1-Dichloroethene	10	ND	ND	ND		
cis-1,2 Dichloroethene	10	ND	ND	ND		
trans-1,2 Dichloroethene	10	ND	ND	ND		
1,2-Dichloropropane	10	ND	ND	ND		
cis-1,3 Dichloropropene	10	ND	ND	ND		
trans-1,3 Dichloropropene	10	ND	ND	ND		
Ethylbenzene	10	ND	ND	ND		

ND = Not Detected at the detection limit



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-24-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36948	AE36949	AE36950			
Client Sample ID	S4-B1-20	S6-B1-9	M. Blank			
Date Sampled	04-22-97	04-22-97	04-22-97			
Date Extracted	04-23-97	04-24-97	04-23-97			
Date Analyzed	04-23-97	04-24-97	04-23-97			
Matrix	Soil	Soil	Soil			
Units	µg/Kg	µg/Kg	µg/Kg			
Dilution Factor	1	20	1			
Analyte	DL	Results	Results	Results		
2-Hexanone	50	ND	ND	ND		
4-Methy-1-2-Pentanone	50	ND	ND	ND		
Methylene Chloride	50	ND	ND	ND		
Styrene	10	ND	ND	ND		
1,1,2,2- Tetrachloroethane	10	ND	ND	ND		
Tetrachloroethene	10	ND	ND	ND		
Toluene	10	ND	322	ND		
1,1,1-Trichloroethane	10	ND	ND	ND		
1,1,2-Trichloroethane	10	ND	ND	ND		
Trichloroethene	10	ND	ND	ND		
Trichlorofluoromethane	10	ND	ND	ND		
Vinyl Acetate	50	ND	ND	ND		
Vinyl Chloride	50	ND	ND	ND		
Xylenes (Total)	20	ND	309	ND		

ND = Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



ANALYTICAL RESULTS

AETL Job No: 7992
 Project ID: SCG-01-T020
 Project Name: Aliso Canyon

Report To: (SC/G)
 Southern California Gas Company
 555 W. 5th St.-ML20B
 Los Angeles, CA 90013-1011

Attn: Masood Hosseini Phone: 213/244-3292

Matrix: Soil
 Method: (6000/7000)
 15 Metals
 Units: mg/Kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/24/97	04/24/97	04/24/97	Detection
Date Analyzed:	04/25/97	04/25/97	04/25/97	Limit

Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	ND	1.2	ND	1.0
Barium (Ba)	82.0	44.1	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	ND	2.6	ND	2.5
Chromium (Cr)	ND	ND	ND	5.0
Cobalt (Co)	ND	8.0	ND	5.0
Copper (Cu)	7.8	26.9	ND	5.0
Lead (Pb)	ND	ND	ND	5.0
Molybdenum (Mo)	ND	ND	ND	5.0
Nickel (Ni)	ND	25.2	ND	5.0
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	10
Vanadium (V)	15.8	12.1	ND	5.0
Zinc (Zn)	37.8	75.0	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	84
Arsenic (As)	95
Barium (Ba)	103
Beryllium (Be)	108
Cadmium (Cd)	115
Chromium (Cr)	114
(Continued)	

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 9

Lab ID: AE36948 AE36949 AE36950

	LCS %REC.
Cobalt (Co)	114
Copper (Cu)	103
Lead (Pb)	116
Molybdenum (Mo)	108
Nickel (Ni)	112
Silver (Ag)	120
Thallium (Tl)	108
Vanadium (V)	111
Zinc (Zn)	112

ND - Not Detected at The Detection Limit

AC_RWQCB_0000579



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36948	
Sample No:	S4-B1-20	
Date Sampled:	04/22/97	
Date Extracted:	04/25/97	Detection
Date Analyzed:	04/28/97	Limit
Benzo(a)anthracene	0.148	0.040
Benzo(a)pyrene	0.424	0.040
Benzo(b)fluoranthene	ND	0.040
Benzo(k)fluoranthene	0.110	0.040
Chrysene	0.092	0.040
Dibenzo(a,h)anthracene	0.808	0.040
Indeno(1,2,3-cd)pyrene	ND	0.040
Acenaphthene	ND	0.040
Acenaphthylene	ND	0.040
Anthracene	ND	0.040
Benzo(ghi)perylene	ND	0.040
Fluoranthene	ND	0.040
Fluorene	ND	0.040
Naphthalene	ND	0.040
Phenanthrene	ND	0.040
Pyrene	ND	0.040

QUALITY CONTROL SUMMARY

Lab ID: AE36948

Surrogate Percent Recovery
Decafluorobiphenyl 93

(Continued)

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 11

Lab ID:

AE36948

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo(a)anthracene	102	108	5.7
Benzo(a)pyrene	100	95	5.1
Naphthalene	109	109	<1

ND - Not Detected at The Detection Limit

AC_RWQCB_0000581



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36949	AE36950	
Sample No:	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	
Date Extracted:	04/25/97	04/25/97	Detection
Date Analyzed:	04/28/97	04/28/97	Limit
Benzo(a)anthracene	0.034	ND	0.020
Benzo(a)pyrene	0.284	ND	0.020
Benzo(b)fluoranthene	ND	ND	0.020
Benzo(k)fluoranthene	ND	ND	0.020
Chrysene	ND	ND	0.020
Dibenzo(a,h)anthracene	0.467	ND	0.020
Indeno(1,2,3-cd)pyrene	0.043	ND	0.020
Acenaphthene	ND	ND	0.020
Acenaphthylene	ND	ND	0.020
Anthracene	ND	ND	0.020
Benzo(ghi)perylene	ND	ND	0.020
Fluoranthene	0.361	ND	0.020
Fluorene	0.026	ND	0.020
Naphthalene	ND	ND	0.020
Phenanthrene	ND	ND	0.020
Pyrene	0.145	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36949	AE36950
<u>Surrogate Percent Recovery</u>		
Decafluorobiphenyl	98	100

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Page: 13

Lab ID:	AE36949	AE36950	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	108	5.7
Benzo (a) pyrene	100	95	5.1
Naphthalene	109	109	<1

ND - Not Detected at The Detection Limit

AC_RWQCB_0000583



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/23/97	04/23/97	04/23/97	Detection
Date Analyzed:	04/23/97	04/23/97	04/23/97	Limit
Sulfate	280	730	ND	10

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	280	280	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	04/22/97	Detection
Date Analyzed:	04/22/97	04/22/97	04/22/97	Limit
NO3 as N	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	99

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
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Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/24/97	04/24/97	04/24/97	Detection
Date Analyzed:	04/24/97	04/24/97	04/24/97	Limit

NH3 as Nitrogen	9.2	8.5	ND	0.1
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	9.20	9.20	<1

Comment to Sample(s)
AE36948: Distilled water leaching procedure.
AE36949: Distilled water leaching procedure.
AE36950: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	04/22/97	Detection
Date Analyzed:	04/22/97	04/22/97	04/22/97	Limit
Nitrite as Nitrogen	0.3	ND	ND	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	99

Comment to Sample(s)

AE36948: Distilled water leaching procedure.
AE36949: Distilled water leaching procedure.
AE36950: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/24/97	04/24/97	04/24/97	Detection
Date Analyzed:	04/25/97	04/25/97	04/25/97	Limit
Potassium (K)	2570	3000	ND	10
Sodium (Na)	399	2490	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	92
Sodium (Na)	98

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36948	
Sample No:	S4-B1-20	
Date Sampled:	04/22/97	
Date Extracted:	04/28/97	Detection
Date Analyzed:	04/28/97	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36948

Surrogate Percent Recovery
Chlorobenzene 94

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	97	100	3
Toluene	99	99	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36949		
Sample No:	S6-B1-9		
Date Sampled:	04/22/97		
Date Extracted:	04/28/97	Detection	
Date Analyzed:	04/28/97	Limit	

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	78	25
Xylenes (Total)	568	50
TPH as Gasoline or Light HCs	65	5 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36949

Surrogate Percent Recovery
Chlorobenzene

112

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	97	100	3
Toluene	99	99	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36950	
Sample No:	METHOD BLANK	
Date Sampled:	04/22/97	
Date Extracted:	04/28/97	Detection
Date Analyzed:	04/28/97	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36950

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	97	100	3
Toluene	99	99	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/28/97	04/28/97	04/28/97	Detection
Date Analyzed:	04/28/97	04/28/97	04/28/97	Limit

TPH as Diesel and Heavier HC:	86	114	ND	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE36948	AE36949	AE36950
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	84	88	100
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	105	104	1

Comment to Sample(s)
AE36948: C12-C25 = 76 mg/kg; C25+ = 10 mg/kg.
AE36949: C12-C25 = 99 mg/kg; C25+ = 15mg/kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36948
Sample No: S4-B1-20
Date Sampled: 04/22/97
Date Extracted: 04/23/97
Date Analyzed: 04/23/97
Detection Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

QUALITY CONTROL SUMMARY

Lab ID: AE36948

Surrogate Percent Recovery

Bromofluorobenzene 95
1,2 Dichloroethane-d4 102
Toluene-d8 97

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	98	99	1
Chlorobenzene	98	98	<1
1,1 Dichloroethene	97	100	3
Toluene	98	98	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE36949	
Sample No:	S6-B1-9	
Date Sampled:	04/22/97	
Date Extracted:	04/24/97	Detection
Date Analyzed:	04/24/97	Limit

Acetone	ND	1000
Benzene	ND	200
Bromodichloromethane	ND	200
Bromoform	ND	1000
Bromomethane	ND	1000
2 Butanone	ND	1000
Carbon Disulfide	ND	200
Carbon Tetrachloride	ND	200
Chlorobenzene	ND	200
Chloroethane	ND	1000
2 Chloroethyl Vinylether	ND	1000
Chloroform	ND	200
Chloromethane	ND	1000
Dibromochloromethane	ND	200
1,2 Dichlorobenzene	ND	200
1,3 Dichlorobenzene	ND	200
1,4 Dichlorobenzene	ND	200
1,1 Dichloroethane	ND	200
1,2 Dichloroethane	ND	200
1,1 Dichloroethene	ND	200
CIS 1,2 Dichloroethene	ND	200
TRNS 1,2 Dichloroethene	ND	200
1,2 Dichloropropane	ND	200
CIS 1,3 Dichloropropene	ND	200
TRNS 1,3 Dichloropropene	ND	200
Ethylbenzene	ND	200
2 Hexanone	ND	1000
4 Methyl-2-Pentanone	ND	1000
Methylene Chloride	ND	1000
Styrene	ND	200
1,1,2,2 Tetrachloroethane	ND	200
Tetrachloroethene	ND	200
Toluene	322	200
1,1,1 Trichloroethane	ND	200
1,1,2 Trichloroethane	ND	200
Trichloroethene	ND	200
Trichlorofluoromethane	ND	200
Vinyl Acetate	ND	1000
Vinyl Chloride	ND	1000
Xylenes (Total)	309	200

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

QUALITY CONTROL SUMMARY

Lab ID: AE36949

Surrogate Percent Recovery

Bromofluorobenzene	102
1,2 Dichloroethane-d4	103
Toluene-d8	98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	101	100	1
Chlorobenzene	102	100	2
1,1 Dichloroethene	102	101	1
Toluene	102	102	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36950
Sample No: METHOD BLANK
Date Sampled: 04/22/97
Date Extracted: 04/23/97
Date Analyzed: 04/23/97

Detection
Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 28

QUALITY CONTROL SUMMARY

Lab ID: AE36950

Surrogate Percent Recovery

Bromofluorobenzene	97
1,2 Dichloroethane-d4	85
Toluene-d8	98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	98	99	1
Chlorobenzene	98	98	<1
1,1 Dichloroethene	97	100	3
Toluene	98	98	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36950
Sample No: METHOD BLANK
Date Sampled: 04/22/97
Date Extracted: 04/24/97
Date Analyzed: 04/24/97
Detection Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 30

QUALITY CONTROL SUMMARY

Lab ID: AE36950

Surrogate Percent Recovery

Bromofluorobenzene	102
1,2 Dichloroethane-d4	103
Toluene-d8	98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	101	100	1
Chlorobenzene	102	100	2
1,1 Dichloroethene	102	101	1
Toluene	102	102	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	04/22/97	Detection
Date Analyzed:	04/22/97	04/22/97	04/22/97	Limit
Sulfides	ND	ND	ND	0.5

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1641
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36948	AE36949	Detection Limit
Sample No:	S4-B1-20	S6-B1-9	
Date Sampled:	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	
Date Analyzed:	04/22/97	04/22/97	
PH	8.60	6.10	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	8.60	8.60	<1

ND - Not Detected at The Detection Limit

**ADDENDUM REPORT
SUMP AND TANK FARM INVESTIGATIONS
Aliso Canyon Storage Facility
Northridge, California**

Prepared for:

**Southern California Gas Company
555 West 5th Street
Los Angeles, California 90013-1011**

Prepared by:

**ENV America Incorporated
16 Technology, Suite 154
Irvine, California 92618
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FAX (949) 453-9292
*ENV America Project No. SCG-01-T020***

October 6, 1998

TABLE OF CONTENTS

EXECUTIVE SUMMARY	v
1.0 INTRODUCTION	1
2.0 BACKGROUND INFORMATION	2
2.1 General Site History	2
2.2 Pertinent Previous Environmental Studies	2
2.2.1 Phase I Environmental Assessment	2
2.2.2 Recent Sump and Tank Farm Investigation	3
3.0 1998 SITE ACTIVITIES	5
3.1 Overview	5
3.2 General Procedures	5
3.3 Drum Removals	6
3.3.1 Sump 2	6
3.3.2 Sump 3	6
3.4 Sump 4 - Groundwater Investigation	7
3.5 Tank Farm Investigations	7
3.5.1 Fernando Fee Tank Farm	8
3.5.2 Mission Adrian Tank Farm	9
3.6 Waste Material Handling	10
4.0 LABORATORY TESTING	11
4.1 Analytical Testing Rationale	11
4.2 Analytical Data Evaluation Criteria	11
4.3 Analytical Test Results	13
4.3.1 Sump 2 Drum Removal	13
4.3.2 Sump 3 Drum Removal	13
4.3.3 Sump 4 Groundwater Investigation	14
4.3.4 Fernando Fee Tank Farm Investigation	14
4.3.5 Mission Adrian Tank Farm	14
5.0 COMPREHENSIVE FINDINGS	16
5.1 Introduction	16

TABLE OF CONTENTS
(Continued)

5.2	Sump 1	16
5.3	Sump 2	16
5.4	Sump 3	17
5.5	Sump 4	17
5.6	Sump 5	17
5.7	Sump 6	18
5.8	Sump 7	18
5.9	Sump 8	18
5.10	Sump 9	19
5.11	Sump 10	19
5.12	Sump 11	19
5.13	Sump 12	19
5.14	Sump 13	20
5.15	Fernando Fee Tank Farm	20
5.16	Mission Adrian Tank Farm	21
5.17	Analytical Summary	21
 6.0 CONCLUSIONS		 23
 7.0 LIMITATIONS		 24
 8.0 REFERENCES CITED		 25

LIST OF TABLES

Table 1	Summary of Investigative Tools
Table 2	Fernando Fee Tank Farm, Trench Descriptions
Table 3	Summary of Sample Analyses

TABLE OF CONTENTS
(Continued)

LIST OF FIGURES

Figure 1	General Location Map
Figure 2	Index Map
Figure 3	Sump 1 Sample Locations Map
Figure 4	Sump 2 Sample Locations Map
Figure 5	Sump 3 Sample Locations Map
Figure 6	Sump 4 Sample Locations Map
Figure 7	Sump 5 Sample Locations Map
Figure 8	Sump 6 Sample Locations Map
Figure 9	Sump 7 Sample Locations Map
Figure 10	Sump 8 Sample Locations Map
Figure 11	Sump 9 Sample Locations Map
Figure 12	Sump 10 Sample Locations Map
Figure 13	Sump 11 Sample Locations Map
Figure 14	Sump 12 Sample Locations Map
Figure 15	Sump 13 Sample Locations Map
Figure 16	Fernando Fee Tank Farm, Boring and Trench Locations Map
Figure 17	Mission Adrian Tank Farm, Boring Locations Map

LIST OF EXHIBITS

Exhibit A	1996/1997 Analytical Data
Exhibit B	Health and Safety Plan
Exhibit C	Boring Logs
Exhibit D	Non-Hazardous Waste Manifest
Exhibit E	CRWQCB Table 4-1 for TPH/BTEX
Exhibit F	USEPA PRG Table, 1998
Exhibit G	Complete Summary of Analytical Laboratory Results (1998)
	Table G-1 Summary of Hydrocarbon Chain and BTEX Analytical Results
	Table G-2 Summary of Metals Analytical Results
	Table G-3 Summary of Polycyclic Aromatic Hydrocarbon Analytical Results
	Table G-4 Summary of VOCs, SVOCs, and PCBs Analytical Results
Exhibit H	Laboratory Reports (1998)

EXECUTIVE SUMMARY

This report summarizes investigative work performed by ENV America Incorporated (ENV America) on behalf of Southern California Gas Company (The Gas Company) at the Aliso Canyon Storage Facility (facility). This study focused on thirteen former sump locations, Sumps 1 through 13, and two former tank farms, Fernando Fee and Mission Adrian. This project was implemented to confirm earlier findings regarding the former sump locations which were identified by Camp Dresser & McKee Inc. (CDM) in a project performed for the previous owner, Texaco Exploration and Production (Texaco).

This project was conducted in two phases, one in 1996/1997 and one in 1998. The initial phase of work consisted of the following: a review of previous environmental-related site documents; review of published geologic literature on the site area; photogrammetric research of historical aerial photographs; surficial geologic reconnaissance mapping; geophysical surveys; and, limited subsurface trenching and drilling. This work was performed to confirm the presence of sumps and to investigate the nature of potential soil contamination at each identified sump location and at the Fernando Fee Tank Farm. This initial phase of project work was detailed by ENV America in a report entitled "Final Report - Sump and Tank Farm Investigation," dated September 16, 1997.

The second phase of this project consisted of the following: extrication of buried drums at Sumps 2 and 3; limited investigation of potential groundwater impact at Sump 4; further investigation of impacted soil at the Fernando Fee Tank Farm; and, limited investigation of the Mission Adrian Tank Farm. The nature of this secondary phase of work is detailed herein.

In this report, analytical data for all confirmed sump locations and the two tank farm locations have been compared to soil cleanup screening criteria set forth by the California Regional Water Quality Control Board (CRWQCB) and the United States Environmental Protection Agency (USEPA). It should be noted that exceeding these values may not necessarily indicate that remedial measures (i.e., cleanup) are mandatory from a regulatory standpoint. Rather, exceeding these values suggests that further evaluation of the potential risks is appropriate. The key findings of this project, essentially a comparison of detected analyte concentrations to the regulatory soil screening criteria, are summarized below.

- ▶ Arsenic was detected in Sump 1 in one sample at a depth of 6 feet below ground surface (bgs) at a concentration well above the Preliminary Remediation Goal (PRG). As only one sample was analyzed from this location, the full extent and nature of contamination is not defined.

- ▶ At Sump 2, total petroleum hydrocarbons (TPH) concentrations were greater than the CRWQCB screening levels in some soil samples, extending to a depth of 15 feet bgs. Albeit the extent of significantly- impacted soil is not well defined, it appears that it may be somewhat randomly present through the sump fill.
- ▶ At Sump 3, one soil sample from a depth of 6 feet bgs contained a PAH compound, benzo(a)pyrene, above the PRG. The extent of polycyclic aromatic hydrocarbons (PAHs)-impacted soil is not defined.
- ▶ At Sump 4, one soil sample from a depth of 20 feet bgs contained benzo(a)pyrene above the PRG. The extent of PAHs-impacted soil is not defined.
- ▶ At the Fernando Fee Tank Farm, the following data was generated: localized TPH concentrations in excess of the CRWQCB screening levels to a depth of 3 feet bgs; the presence of benzene in excess of the CRWQCB screening levels to a depth of at least 50 feet bgs; and, the presence of PAHs compounds greater than the PRGs to a depth of at least 63 feet bgs.
- ▶ Sumps 5 through 13 and the Mission Adrian Tank Farm have either not been found or the regulatory screening levels were not exceeded in the soil samples analyzed.

1.0 INTRODUCTION

ENV America Incorporated (ENV America) was retained by Southern California Gas Company (The Gas Company) to conduct an addendum environmental investigation at various sump and tank locations at the Aliso Canyon Storage Facility (facility). The facility is located in the northwestern portion of Los Angeles County, along the southerly-descending flanks of the Santa Susana Mountains, north of the community of Northridge. The location of the facility is shown on Figure 1 - General Location Map.

The facility is presently owned and operated by The Gas Company as a natural gas storage field. Several arterial roads and smaller interior and connector roads are present, with the main access to the site being from the south, via Tampa Avenue. Numerous oil production wells, gas storage wells, underground and aboveground pipelines, aboveground storage tanks, and various natural gas-related features are present at the facility.

In general, the scope of field services completed for this project included the following: limited investigation of potentially impacted soil at two former tank farm sites (Fernando Fee and Mission Adrian); extrication of buried drums at two former oil well sump locations (Sumps 2 and 3); and, limited investigation of potential groundwater impact at another former oil well sump location (Sump 4). The locations of these features, as well as other pertinent site features, are shown on Figure 2 - Index Map.

2.0 BACKGROUND INFORMATION

2.1 General Site History

The Aliso Canyon Storage Facility was originally developed, from natural hillside terrain, for oil production in the 1930's or 1940's. The Gas Company acquired the majority of the facility property from Texaco and converted the primary use of the facility to natural gas storage in 1972. The portion of the property investigated under this project (i.e., the sump and tank farm sites) was purchased in November of 1993.

Texaco had operated and maintained aboveground storage tanks at each of the two tank farm sites which were investigated, Fernando Fee and Mission Adrian. Former Sumps 2 and 3, where buried drums were removed, as well as Sump 4 which was investigated for groundwater impact, are among several other former sump locations that have been identified at the facility. The sumps were constructed to collect runoff, drilling mud, and cuttings from drilling operations.

2.2 Pertinent Previous Environmental Studies

2.2.1 Phase I Environmental Assessment

In 1991, Camp Dresser & McKee Inc. (CDM), conducted a phase I environmental assessment of the site for the previous owner, Texaco Exploration and Production (Texaco). The CDM study indicated that several environmental investigations have been conducted previously at the facility, mainly dealing with underground storage tanks (USTs).

CDM identified 13 known or suspected sump locations, based in large part on review of historical aerial photographs (CDM, 1991). The CDM study did not include subsurface investigations or field confirmation efforts.

2.2.2 Recent Sump and Tank Farm Investigation

ENV America implemented a project in 1996 and 1997 which focused on confirming the presence of the 13 sumps that were identified by CDM and investigation of the Fernando Fee Tank Farm. Additionally, the investigation of the former Mission Adrian Tank Farm had also been proposed. However, due to site access limitations, investigation of this location could not be conducted. The nature of this project was detailed in a report entitled "Final Report - Sump and Tank Farm Investigation," dated September 16, 1997.

The project consisted of a preliminary phase which included review of previous environmental-related site documents, review of published geologic literature on the site area, photogrammetric research of historical aerial photographs, and surficial geologic reconnaissance mapping. This preliminary phase was implemented to confirm earlier findings and to refine the locations identified by CDM which were considered approximate at best.

The secondary phase of the study consisted of a series of geophysical surveys which were performed on selected sump locations where the presence of a sump was suspected or where the exact location or dimensions were uncertain. The tertiary stage of the project consisted of limited subsurface trenching and drilling to confirm the presence of sumps and to investigate the nature of potential soil contamination at each identified sump location and at the Fernando Fee Tank Farm.

Cleanup criteria for total petroleum hydrocarbons (TPH) and benzene have been established by the California Regional Water Quality Control Board (CRWQCB, 1996). Cleanup criteria for polycyclic aromatic hydrocarbons (PAHs) and arsenic are identified in the Preliminary Remediation Goals (PRGs) established by the United States Environmental Protection Agency (USEPA, 1998).

Sumps 5, 7, and 12 could not be definitively located and, therefore, were not investigated. Sumps 6, 8, 9, 10, 11, and 13 were identified by one or more methods, but further action was not recommended for these sumps as field evidence of the sump was not found or the contaminant concentrations were below regulatory screening criteria. At Sumps 1, 2, 3, and 4, and at the Fernando Fee Tank Farm, some soil samples were reported at concentrations which exceeded regulatory screening criteria levels for either TPH, benzene, PAHs, or arsenic. Individual maps of Sumps 1 through 13 are attached herewith as Figures 3 through 15, respectively. Individual maps of the Fernando Fee and Mission Adrian Tank Farms are attached as Figures 16 and 17, respectively. Tabulated summaries of analytical results and laboratory reports from the 1996/1997 study are attached as Exhibit A - 1996/1997 Analytical Data.

The table below summarizes which sumps were found, and where concentrations of contaminants exceeding cleanup screening criteria were detected during the initial phase of investigations conducted in 1996 and 1997.

**Summary of Sumps Found
and Areas Where Concentrations Exceeded Regulatory Screening Criteria
Previous Investigations**

Site Description	Verification of Sump Presence	Detection of Concentrations Exceeding Regulatory Screening Levels			
		TPH ⁽¹⁾	Benzene ⁽¹⁾	PAHs ⁽²⁾	Arsenic ⁽²⁾
Sump 1	Found				✓
Sump 2	Found	✓			
Sump 3	Found			✓	
Sump 4	Found			✓	
Sump 5	Not Found				
Sump 6	Found				
Sump 7	Not Found				
Sump 8	Found				
Sump 9	Found				
Sump 10	Found				
Sump 11	Found				
Sump 12	Not Found				
Sump 13	Found				
Fernando Fee	---	✓	✓	✓	

Notes:
⁽¹⁾Cleanup criteria for TPH and benzene established by CRWQCB 1996
⁽²⁾PRGs for PAHs and Arsenic established by USEPA 1998
Not Found Sumps not found and therefore not investigated

As shown in the summary table above, Sumps 1, 2, 3, and 4, and the Fernando Fee Tank Farm were found to contain elevated concentrations of contaminants in soil and/or rock which exceeded regulatory screening levels. The results of the 1996/1997 investigation are detailed in the September 1997 report entitled "Final Report - Sump and Tank Farm Investigation," and are summarized in forthcoming sections of this report.

3.0 1998 SITE ACTIVITIES

3.1 Overview

The scope of work performed for this project was based on data collected during the 1996-1997 investigation, performed by ENV America. More specifically, this project included the following:

- ▶ Removal of buried drums previously identified at Sumps 2 and 3;
- ▶ Investigation of any potential impact to groundwater at Sump 4, as PAHs compounds were previously detected at elevated concentrations in soil/rock which was estimated to be saturated;
- ▶ A supplemental investigation of impacted soil at the Fernando Fee Tank Farm, where TPH, benzene, and a PAHs compound were previously detected at elevated concentrations; and,
- ▶ A limited investigation of the Mission Adrian Tank Farm, which had not been previously investigated due to access limitations.

This scope of work was implemented in accordance with a "Workplan for Environmental Services" (workplan), dated August 6, 1998. The workplan was approved by The Gas Company. In order to minimize potential hazards, a project-specific health and safety plan was implemented during site work (refer to Exhibit B - Health and Safety Plan).

3.2 General Procedures

Various methods of exploration were employed for different locations. Methods of exploration included trenching and pot-holing using a backhoe, hand-digging, hand augering, and drilling using a drill rig equipped with hollow stem augers. A summary of investigative tools used at each site area is included as Table 1 - Summary of Investigative Tools. All samples collected were submitted under chain of custody to American Environmental Testing Laboratories (AETL), a California DHS-certified analytical laboratory, for analyses.

3.3 Drum Removals

3.3.1 Sump 2

Three buried 55-gallon drums were removed from the Sump 2 area in the vicinity of Trench T4, as shown on Figure 4 - Sump 2 Sample Locations Map. The drums were located about 1 to 2 feet below ground surface (bgs) and found to be on their sides. The drums were uncovered by backhoe and by hand-digging with shovels. The soil removed from the vicinity of the drums was stockpiled separately on plastic during the removal of the drums. Two of the drums were found to be severely corroded with several large holes and were empty. One drum was also rusted with several large holes, but filled with approximately 5 gallons of sludge. The sludge was removed from the old drum and placed in a new drum and sealed. The soil excavated around the drums was returned to the cavity and the area was graded to a relatively smooth surface. The old drums were scraped clean and removed from the site.

Soil samples were collected from the cavity bottom, from the sludge in the 5-gallon bucket, and from the soil stockpile. The soil stockpile showed no visual signs of contamination and, as indicated above, was used to backfill the cavity following sampling. The samples were analyzed for TPH, PAHs, Title 22 metals per USEPA Method 6000/7000, volatile organic compounds (VOCs) per USEPA Method 8240, semi-volatile organic compounds (SVOCs) per USEPA Method 8270, polychlorinated biphenyls (PCBs) per USEPA Method 8080, and pH per USEPA Method 9045. Laboratory analytical results are discussed further in Section 4.0.

3.3.2 Sump 3

One buried 55-gallon drum was removed from the Sump 3 area as shown on Figure 5 - Sump 3 Sample Locations Map. The drum was partially covered with about 2 to 3 feet of soil and was uncovered by hand-digging with shovels. The drum was found to be rusted with several large holes, but filled with approximately 8 gallons of sludge. The drum was cleaned of the sludge and the sludge was placed in a new drum and sealed. The old drum was scraped clean and removed from the site.

Soil samples were collected from beneath the drum (one sample) and from the small quantity of sludge. The soil samples were analyzed for TPH (8015), PAHs (8310), Title 22 metals (6000/7000), VOCs (8240), SVOCs (8270), PCBs (8080), and pH per USEPA Method 9045. Laboratory test results are discussed further in Section 4.0.

3.4 Sump 4 - Groundwater Investigation

During the previous investigation, "apparent saturated conditions" were noted at 19 feet bgs in a boring (S4-B1) drilled at the Sump 4 location. Moreover, PAHs compounds were detected in this boring at concentrations exceeding the PRGs. During this investigation, one boring (S4-HP1) was drilled to 21 feet bgs in an attempt to collect a groundwater sample in the vicinity of Sump 4 where elevated PAHs concentrations had been detected. However, groundwater was not encountered during this investigation and, therefore, a groundwater sample could not be obtained.

A truck-mounted, hollow-stem auger drill rig, equipped with a hydropunch groundwater sampling device was used to drill the boring during the recent investigation. Soil samples were collected at 5-foot intervals from 5 feet bgs to total depth for field inspection. Soil samples were not submitted for laboratory analyses for the following two reasons: 1) the purpose of the drilling was for the collection and analysis of a groundwater sample; and, 2) the boring drilled for the groundwater sample was placed in the vicinity of soil boring S4-B1, which was drilled, sampled and analyzed during the previous investigation. Drilling and soil sample collection procedures were as previously discussed in Section 3.2.1 - Fernando Fee Tank Farm.

As groundwater was apparently located beneath the Sump 4 location during the previous investigation, conducted in April of 1997, but not found during the recent investigation in August of 1998, it is estimated that groundwater at this location is perched, transient water which is present only on a seasonal basis. The location of borings, and other pertinent site features, are shown on Figure 6 - Sump 4 Sample Locations Map.

3.5 Tank Farm Investigations

TPH-impacted soil was previously identified at the Fernando Fee Tank Farm, but the extent of impacted soil was not defined. The current work further defined the extent of impacted soil at the Fernando Fee Tank Farm with the use of a backhoe and a drill rig.

The Mission Adrian Tank Farm is located remotely, such that vehicular access was precluded and investigation of any contamination was not previously conducted. The current investigation at the Mission Adrian Tank Farm was conducted using hand-auger tools.

3.5.1 Fernando Fee Tank Farm

To supplement the previous investigation, borings and trenches were used to further define the extent of impacted soil which had been detected in Pothole Trenches FF-PH1 and FF-PH4. During this investigation, six pothole trenches (FF-PH5 through FF-PH10) and four soil borings (FF-B1 through FF-B4) were excavated at the Fernando Fee Tank Farm. The trenches were excavated by a rubber-tired backhoe to total depths ranging from 4 to 13 feet bgs. The borings were drilled to total depths ranging from 20 to 63 feet bgs. The locations of borings and trenches are shown on Figure 16 - Fernando Fee Tank Farm, Boring and Trench Locations Map. Boring logs are included in Exhibit C - Boring Logs. Trench descriptions are summarized in Table 2 - Fernando Fee Tank Farm, Trench Descriptions.

Trenching

Trenches were excavated at Fernando Fee Tank Farm for the observation and evaluation of subsurface conditions, determination of the depth of fill, and for the collection of soil samples for chemical analyses. In trenches less than 4 feet deep, and where it was safe to do so, the field geologist collected samples from the sidewalls of the trenches by direct insertion of a laboratory-supplied glass sample container. In deeper trenches, the samples were collected from within the backhoe bucket. Sample locations and depths were selected on the basis of visual inspection and organic vapor meter readings. Samples were collected directly from the bucket into a laboratory-supplied glass sample container.

Drilling

A truck-mounted hollow-stem auger drill rig, provided by BC² Environmental Corp., of Fullerton, California, was used to investigate subsurface conditions at the Fernando Fee Tank Farm. The drill rig was equipped with 8-inch diameter hollow-stem augers.

Prior to advancing soil borings with the drill rig, each boring location was hand augered and/or post-hole dug to a depth of about 5 feet bgs to minimize the potential for damage to any unmarked underground utilities. In the borings, discrete, undisturbed samples were collected at depths of 2.5 and 5 feet bgs, and at 5-foot intervals from thereon to total depth.

At each sampling depth, an 18-inch long, California-modified, split-spoon sampler, lined with three 6-inch long by 2-inch diameter stainless steel sample sleeves, was lowered into the borehole. A 140-pound hammer was used to drive the sampler. The sampler was then retracted and the sample sleeves were removed. The ends of the lead (i.e., lowest) sample sleeve were covered with Teflon® sheets, sealed with plastic end caps, and secured with silicon tape. The lead sample sleeve was labeled with indelible ink and placed in a resealable plastic bag. Sample sleeves were then submitted to the laboratory for selected chemical analyses under chain of custody procedures. The sampler and sample sleeves were decontaminated between sampling events by washing in a Liqui-Nox solution and then double rinsed in de-ionized water.

Laboratory Testing

Based on the analytes which were detected at the Fernando Fee Tank Farm during the previous investigation, each soil sample was analyzed for TPH by USEPA Method 8015M, PAHs by USEPA Method 8310, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA Method 8020. Laboratory analytical results are discussed further in Section 4.0 of this report.

3.5.2 Mission Adrian Tank Farm

Access to the Mission Adrian Tank Farm was only available by footpaths. Therefore, a field crew hand carried an assortment of hand-excavating tools such as shovels, picks, hand augers, and similar equipment to the tank farm area. Seven hand-auger borings (MA-CP-B1, MA-CP-S-B1, MA-N-B1, MA-S-B1, MA-NT-B1, MA-ST-B1 and MA-SW-B1) were advanced to total depths ranging from 4 to 10 feet bgs. Borings MA-CP-B1 and MA-CP-S-B1 were advanced in the vicinity of a nearly square-shaped feature, presumably a concrete pad, which was observed on a topographic base map provided by The Gas Company. Borings MA-N-B1 and MA-S-B1 were drilled arbitrarily in the central portion of the former tank farm. Borings MA-NT-B1 and MA-ST-B1 were drilled at suspected former locations of aboveground tanks, which were identified as circular-shaped features on the topographic base map. Boring MA-SW-B1 was drilled in a topographic depression which was considered a possible sump location. The location of the hand-auger borings and the general layout of the Mission Adrian Tank Farm is shown on Figure 17 - Mission Adrian Tank Farm, Boring Locations Map. Boring Logs are included in Exhibit C.

Hand-Auger Borings

Hand augering was performed at Mission Adrian Tank Farm to collect subsurface soil samples for analyses. Hand-auger boreholes were advanced by means of a manually-rotated, hand-auger set equipped with a stainless steel bit.

During advancement, soil was geologically logged and inspected for apparent staining or odors. When the target sample depth was reached, soil samples were collected with an 8.5-inch long, 2.25-inch diameter, solid-spoon sampler. The sampler was lined with two 3-inch-long, 2-inch diameter brass sample sleeves. The sampler was manually driven into subsurface soils with a slide hammer.

The sample sleeves were removed from the sampler, and the ends of the lead sample were covered with Teflon[®] sheets, sealed with plastic end caps and secured with silicon tape. The lead sample sleeve was labeled with indelible ink and placed in a resealable plastic bag. Sample sleeves were then submitted to the laboratory for selected chemical analyses. All equipment, including the sampler and sample sleeves, was decontaminated between sampling events by washing in a non-phosphate detergent solution (Liqui-Nox), and then double rinsed in de-ionized water.

Laboratory Testing

Selected soil samples were analyzed for TPH (8015), BTEX (8020), PAHs (8310), Title 22 metals per USEPA Method 6000/7000, VOCs per USEPA Method 8240, SVOCs per USEPA Method 8270, and PCBs per USEPA Method 8080. Laboratory analytical results are discussed further in Section 4.0.

3.6 Waste Material Handling

Drill cuttings, materials containerized from buried drums, and decontamination rinsate water were placed in 55-gallon drums and left onsite, pending the results of analytical testing. The drums were then removed from the site on September 10, 1998, by W.A. Woods Industries of South Gate, California.

The water, amounting to a limited volume of less than 20 gallons, was distributed into the soil. The soil was then transported as non-hazardous waste and recycled at the TPS Technologies thermal treatment facility in Adelanto, California. A copy of the waste manifest is included as Exhibit D - Non-Hazardous Waste Manifest.

4.0 LABORATORY TESTING

4.1 Analytical Testing Rationale

Soil samples were collected from the identified sump locations and former tank farm locations and were submitted for chemical analyses. Chemical analyses were necessary to identify both potential organic and non-organic contaminants at the sump and tank farm locations. As noted earlier, the sumps were probably used to collect materials and runoff associated with drilling, exploration and well rehabilitation activities during the oil production era at the site.

Soil samples were analyzed for certain constituents, based on past analytical data and site usage. A list of analytical tests for each sample is included as Table 3 - Summary of Sample Analyses.

4.2 Analytical Data Evaluation Criteria

In order to evaluate the relative degree of impacted soil, the results of soil sample analyses are compared to the regulatory screening criteria established by the CRWQCB and the USEPA. As indicated earlier in Section 2.2.2 of this report, the CRWQCB has established soil screening levels for TPH and BTEX in a document entitled "Interim Site Assessment and Cleanup Guidebook (Guidebook)" (CRWQCB, 1996). The USEPA has established PRGs for use as a tool for evaluating and screening contaminated sites for various chemical contaminants (USEPA, 1998).

Table 4-1 of the Guidebook presents multiple categories with differing thresholds for TPH and BTEX cleanup concentrations, which are based on site-specific data including the depth to groundwater, soil types, and whether the underlying groundwater is considered to be within a "drinking water aquifer." The varying threshold concentrations are related to the relative potential for TPH and BTEX to impact drinking water supplies. A copy of Table 4-1 from the Guidebook is included in Exhibit E - CRWQCB Table 4-1 for TPH/BTEX.

The Guidebook, in the evaluation of TPH and BTEX concentrations in soil, indicates that "all groundwaters are considered as drinking water resources unless exempted by one of the criteria as defined under SWRCB [State Water Resources Control Board] Resolution 88-63 (TDS>3000 mg/L, or deliverability <200 gal/day, or existing contamination that cannot be reasonably treated)." The Guidebook also states that "Board staff will make a determination of potential water use at a particular site considering water quality objectives and beneficial uses."

In the previous investigation (1996-1997), two scenarios were considered: one scenario considered that the site was underlain by a potential drinking water source, since some communication with the adjacent valley fill could exist; and, the second scenario considered was that the site was not underlain by a drinking water source. During this investigation, the classification of groundwater was further evaluated and ENV America has concluded that the "non-drinking water" classification is appropriate for all the locations investigated in the facility. The basis for the "non-drinking water" determination is based on the following factors:

- ▶ The site is not located within a recognized groundwater basin; and,
- ▶ ENV America's professional geologic and engineering geologic interpretations indicate that each location investigated at the facility is not underlain by an aquifer, based on the traditional definition. In fact, groundwater was only encountered at the Sump 4 location (1996-1997 investigation). As indicated earlier, the groundwater at the Sump 4 location is believed to be only seasonally present, perched, transient water which is not capable of producing sufficient water to be categorized as a drinking water aquifer.

The Guidebook indicates that for sites above non-drinking water aquifers, the ">150 feet to groundwater" category may be used for TPH concentrations, regardless of actual depth. The BTEX concentrations are determined by multiplying the "Maximum Contaminant Levels (MCLs) in Drinking Water" by a factor of 100. The derived TPH and BTEX threshold concentrations are presented in the table below.

TPH and BTEX Threshold Concentrations (mg/kg) <i>[assuming non-drinking water aquifer]</i>						
TPH			Benzene	Toluene	Ethyl- benzene	Xylenes
C ₄ to C ₁₂	C ₁₃ to C ₂₃	C ₁₊₂₃				
1,000	10,000	50,000	0.1	Unregulated	68	175

For analytes other than TPH and BTEX, the PRGs established by the USEPA were considered. Based on discussions between ENV America and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) personnel, it is understood that the DTSC has adopted the USEPA PRGs for projects in California, as have various local regulatory agencies. PRGs are used to streamline and standardize all stages of the risk decision-making process. The PRG concentrations are included in Exhibit F - USEPA PRG Table, 1998.

The PRG table combines current USEPA toxicity values with "standard" exposure factors to estimate contaminant concentrations in environment media (soil, air, and water) that are protective of humans over a lifetime. The USEPA suggests that chemical concentrations above these levels would not automatically designate a site as "dirty" or trigger a response action. However, exceeding a PRG suggests that further evaluation of the potential risks that may be posed by site contaminates is appropriate.

The PRG values are subdivided on the basis of being either a "residential" site or an "industrial" site. Since the site is not located in a residential area, industrial PRG concentrations in the soil are considered to be appropriate.

4.3 Analytical Test Results

The following sections briefly summarize the analytical results for the most recent investigation. A summary of these analytical laboratory results is provided in Exhibit G - Complete Summary of Analytical Laboratory Results, Tables G-1, G-2, G-3, and G-4. Copies of the analytical reports are included in Exhibit H - Laboratory Reports. The analytical results from both this investigation and the earlier investigation (1996-1997) are presented in Section 5 of this report.

4.3.1 Sump 2 Drum Removal

At Sump 2, following the removal of buried drums, 5 soil samples were collected. Two soil samples, S2-T4D-4.5A and S2-T4D-3.5A, were collected from the cavity bottom. Two soil samples, S2-T4-SP1 and S2-T4-SP2, were collected from the soil stockpile, and one sample, S2-T4-DRUM, was collected from the contents of one drum. All samples with the exception of one stockpile sample, SD2-T4-SP2, were analyzed for TPH, metals, VOCs, SVOCs, PCBs, and pH, as shown in Table 3. Sample S2-T4-SP2 was not analyzed as field evidence of contaminated soil was not observed. A complete summary of laboratory results is presented in Tables G-1, G-2, G-3, and G-4, in Exhibit G. During this investigation, the only sample found to contain a concentration greater than the CRWQCB or USEPA screening criteria was Sample S2-T4-Drum, which represents containerized material which was sent offsite for treatment/recycling.

4.3.2 Sump 3 Drum Removal

At Sump 3, following the removal of one buried drum, one soil sample, S3-DC, was collected from the contents of the drum and one soil sample, S3-DB-2, was collected from soil beneath the former location of the drum. Both soil samples were analyzed for TPH, metals, VOCs, SVOCs, PCBs, and pH, as shown in Table 3. A complete summary of all laboratory results is included in Exhibit G.

During this investigation, the only sample found to contain a concentration greater than the CRWQCB or USEPA screening criteria was Sample S3-DC, which represents containerized material which was sent offsite for treatment/recycling.

4.3.3 Sump 4 Groundwater Investigation

As indicated earlier, groundwater was not encountered in the boring drilled at the Sump 4 location and, therefore, a groundwater sample was not collected. Since the boring was drilled adjacent to a boring with previous analytical data, the soil samples collected were not analyzed. However, samples were collected and visually inspected, as noted on the boring log included in Exhibit C.

4.3.4 Fernando Fee Tank Farm Investigation

To further define the limits of impacted soils at this location, six additional trenches (FF-PH5 through FF-PH10) and four soil borings (FF-B1 through FF-B4) were advanced during this investigation. Soil samples were collected from Trenches FF-PH6, FF-PH7, and FF-PH10, and the remaining trenches were used for visual observation and evaluation of subsurface conditions such as the depth of fill and limits of impacted soil and rock. Soil samples were collected from all four soil borings, beginning at 5 feet bgs and continuing at 5-foot intervals to total depth. All soil samples were analyzed for TPH, BTEX, and PAHs. A complete summary of all laboratory results is presented in Tables G-1, G-2, G-3, and G-4, in Exhibit G.

During this investigation, only one sample contained a TPH concentration in excess of the CRWQCB screening threshold. This sample, collected from Trench FF-PH6 at a depth of 1.8 feet bgs, contained a TPH (C₁₃ to C₂₃ range) concentration of 13,900 mg/kg (CRWQCB screening level = 10,000 mg/kg). Benzene was present in Boring FF-B4 at concentrations exceeding the CRWQCB screening level of 0.100 mg/kg from 15 to 50 feet bgs (0.252 to 15.9 mg/kg). Benzo(a)fluoranthene (PRG = 3.6 mg/kg), a PAH compound, was detected at elevated concentrations in Boring FF-B3 at depths of 5 feet bgs (4 mg/kg) and 10 feet bgs (4.57 mg/kg). Dibenzo(a,h)anthracene (PRG = 0.36 mg/kg), also a PAH compound, was detected at elevated concentrations in Boring FF-B3 at a depth 10 feet bgs (0.478). In Boring FF-B4, benzo(a)fluoranthene was detected at elevated concentrations at variable depths between 3 feet bgs and 63 feet bgs (3.92 to 6.09 mg/kg).

4.3.5 Mission Adrian Tank Farm

As indicated earlier, access to the Mission Adrian Tank Farm was only available by footpaths. Therefore, only hand excavation and sampling techniques were possible for the investigation of this area. Seven hand auger borings were drilled to depths ranging from 4 feet to 10 feet bgs.

Boring MA-CP-B1 was placed in the northwest corner of the tank farm and could not be advanced beyond 5 feet bgs due to the presence of an apparent concrete slab at 5 feet bgs. All soil samples collected from the remaining borings, with the exception of MA-NT-B1-2.5 and MA-ST-B1-2.5, were selectively analyzed for some of the following tests: TPH, BTEX, VOCs, metals, and PAHs. Table 3 summarizes the tests utilized for each sample analyzed. A complete summary of analytical results is presented in Exhibit G and copies of laboratory analytical reports are provided in Exhibit H. No analytes exceeded the CRWQCB and USEPA screening thresholds.

5.0 COMPREHENSIVE FINDINGS

5.1 Introduction

The key findings of both this investigation (1998) and the previous investigation (1996/1997) are discussed collectively in this section. It should again be noted that the regulatory screening thresholds presented herein are based on the conclusion that investigated locations are not underlain by a drinking water aquifer. This position differs somewhat from the previous investigation (ENV America, 1997) which presented both drinking water and non-drinking water aquifer scenarios. A summary of key comprehensive findings is presented below on a location-by-location basis.

5.2 Sump 1

The location of Sump 1 was verified by review of historical aerial photographs and by the excavation of one pothole trench. Sump 1 measures approximately 80 feet by 150 feet in plan view and extends to about 11 feet bgs. The lithologic profile of Sump 1, at the location investigated, is characterized as follows: zero to 5 feet bgs consists of unstained fill soil; 5 to 6 feet bgs consists of stained fill soil; 6 to 11 feet bgs consists of unstained fill soils; and, at 11 feet bgs shale bedrock was encountered. One sample of the apparent worst-case condition encountered, from 5 to 6 feet bgs, was sampled. In this sample, the only analyte exceeding a regulatory screening level was arsenic, which was detected at 14.4 mg/kg (PRG = 2.4 mg/kg).

5.3 Sump 2

The location of Sump 2 appears to have been confirmed by review of historical aerial photographs and by trenching. The sump occupies an area of about 80 feet by 100 feet, and extends to a depth of more than 18 feet bgs. Five exploratory trenches (T1, T2, T3, T4, and T5) were excavated at Sump 2 and several samples were analyzed. The upper 4.5 feet of material consisted of unstained fill soils with scattered debris. This surficial material was underlain by stained soil and drilling muds. Two samples from a depth of 15 feet bgs in Trench T1 contained concentrations of TPH (C₁₃ to C₂₃ range) of 12,220 mg/kg and 25,900 mg/kg, which are greater than the CRWQCB screening level of 10,000 mg/kg. One soil sample collected from Trench T2 contained a TPH (C₁₃ to C₂₃ range) concentration of 21,700 mg/kg, also above the CRWQCB screening level.

Three buried drums were removed from the Sump 2 location. Analyses of samples of the soil underlying the drums and the soil removed from over and around the drums did not result in concentrations exceeding the CRWQCB and PRG screening levels.

5.4 Sump 3

The location of Sump 3 appears to have been identified, although conclusive field evidence was not found. Two hand auger borings (S3-HA1 and S3-HA2) and one mechanically-drilled soil boring (S3-B1) were advanced and sampled at the suspected Sump 3 location. One soil sample was also collected beneath a partially buried drum which was extricated. In each of the three borings, fill soil was encountered from ground surface to about 6 feet bgs, where auger refusal occurred in siltstone bedrock.

Only one sample contained an analyte concentration greater than regulatory screening levels. This sample, collected at a depth of 6 feet in Hand Auger Boring S3-HA1, contained 0.74 mg/kg of benzo(a)pyrene (PRG = 0.26 mg/kg), a PAHs compound.

5.5 Sump 4

The location of Sump 4 appears to have been accurately determined. One pothole trench (S4-PH1) was excavated to about 18 feet bgs and two soil borings (S4-B1 and S4-HP1) were drilled to about 21 feet bgs at the apparent Sump 4 location. Subsurface materials consisted of: unstained fill soils from ground surface to about 12 feet bgs; stained soil from about 12 to 15 feet bgs; drilling muds from about 15 to 18 feet bgs; and stained soil from about 18 to 21 feet bgs, where stained sandstone bedrock was encountered.

Samples from various depths were analyzed. One sample collected from apparently saturated soil at a depth of 20 feet in Boring S4-B1 contained 0.424 mg/kg of benzo(a)pyrene (PRG = 0.26 mg/kg). An attempt to collect a groundwater sample at this location was unsuccessful, as groundwater was not encountered during the second investigation.

5.6 Sump 5

The location of Sump 5 was not confirmed through review of historical aerial photographs, through reconnaissance mapping, or through geophysical surveying. As the location of Sump 5 was not established, no analytical data was generated.

5.7 Sump 6

The location of Sump 6 was confirmed through research and field work. The sump is positioned near the end of a ridge line, at a lower elevation from the nearest oil well. Two pothole trenches (S6-PH1 and S6-PH2) were excavated along the ridge line, between the oil well and the sump location, in the area which appeared to have served as a transmission route to transfer drilling wastes from the oil well to the sump. In this area, fill soils were encountered from ground surface to about 5 feet bgs, with the interval from 3 to 4 feet bgs being stained. Siltstone bedrock was encountered at 5 feet bgs.

In the sump area itself, one soil boring (S6-B1) was advanced. Fill soils, exhibiting some staining, were encountered from ground surface to about 8 feet bgs where siltstone bedrock was encountered. No analytes were detected above the regulatory screening levels in Sump 6.

5.8 Sump 7

Aerial photographic review and field reconnaissance efforts could not confirm the presence of a sump in this area. In an attempt to verify the absence of a sump at this location, two pothole trenches (S7-PH1 and S7-PH2) were excavated. Unstained fill soils were encountered from ground surface to about 1 to 2 feet bgs, where siltstone bedrock was encountered. No field evidence of a sump was found at the Sump 7 location, and no analytes were detected above the regulatory screening levels in the suspected sump area.

5.9 Sump 8

The location of Sump 8 was confirmed by research and field work. This sump actually consists of two adjacent, but physically distinct, sumps. These two sumps are referred to as the eastern and western sumps. The two sumps measure about 35 feet by 35 feet (west), and about 25 feet by 25 feet (east) in plan view. One pothole trench was excavated in each sump, S8W-PH2 at the western location and S8E-PH1 at the eastern location. At the western location, concrete debris was encountered from ground surface to about 1 foot bgs, unstained fill soil was encountered 1 foot bgs to 11 feet bgs, where siltstone was encountered. At the eastern location, unstained fill soil was encountered from ground surface to about 3 feet bgs where and siltstone was observed. Soil samples were analyzed from each trench, and no analytes were detected above the regulatory screening levels.

5.10 Sump 9

The location of Sump 9 was confirmed by review of historical aerial photographs, but actual field evidence of sump materials (i.e., drilling muds or stained soil) was not found. Based on aerial photographs, the sump occupies an area of about 25 feet by 60 feet. One pothole trench (S9-PH1) was excavated at the Sump 9 location and unstained fill soil was encountered from ground surface to 12 feet bgs. At 12 feet bgs, siltstone was encountered. Samples from each sump location were analyzed and no analytes were detected above the regulatory screening levels.

5.11 Sump 10

The location of Sump 10 has not been confirmed, albeit it was identified in aerial photographs. It is considered likely that the sump was destroyed during earthwork grading and/or mass wasting in the area. Based on historical aerial photographs, the sump occupied an area of about 60 feet by 85 feet. Four pothole trenches (S10-PH1, S10-PH2, S10-PH3, and S10-PH4) were excavated at Sump 10. Unstained fill soils were encountered from ground surface to the total depth explored (15 feet bgs) in all potholes. Based on reconnaissance mapping, the fill is underlain by alluvium and landslide debris or bedrock. Samples analyzed from the sump location indicated that no analytes were detected above the regulatory screening levels.

5.12 Sump 11

The location of Sump 11 is apparent in historical aerial photographs, but actual field evidence was not observed. Based on historical aerial photographs, the sump occupied an area of about 55 feet by 220 feet. Six pothole trenches (S11-L1, S11-L1A, S11-L2, S11-L3, S11-L4, and S11-L5) were excavated at Sump 11. Pothole Trenches S11-L1, S11-L1A, S11-L2, S11-L3 and S11-L4 encountered unstained fill soil from ground surface to between 3 and 6 feet bgs, and the fill was underlain by sandstone bedrock in all cases. Pothole S11-L5 consisted of silty sand talus debris to the total depth of 12 feet bgs, where sandstone was encountered. Samples analyzed from the pothole trenches indicated that no analytes contained concentrations above the regulatory screening levels.

5.13 Sump 12

The location of Sump 12 is the most uncertain of all sumps. Four hand auger borings were attempted at the potential Sump 12 location. Refusal occurred between 6 inches and 2 feet bgs, when sandstone was encountered. As no evidence of a sump was identified, no analytical testing was performed.

5.14 Sump 13

Sump 13 was clearly identified in historical aerial photographs, but definitive physical field evidence was not observed. Based on aerial photographs, the sump occupied an area of about 35 feet by 75 feet. One pothole trench (S13-PH1) was excavated at the suspected location of Sump 13. Unstained fill soils were encountered from the ground surface to 7.5 feet bgs. Landslide debris generated from siltstone bedrock was encountered beneath the fill. One sample, arbitrarily selected from Trench S13-PH1, was analyzed and no analytes were detected above the regulatory screening levels.

5.15 Fernando Fee Tank Farm

The Fernando Fee Tank Farm area is readily visible in aerial photographs and currently recognizable in the field, although no tanks remain. The area measures approximately 180 feet by 180 feet. Several trenches and borings were advanced at the Fernando Fee Tank Farm. The tank pad is underlain by variable depths (<8 feet thick) of stained and unstained fill soil overlying siltstone and sandstone bedrock.

Several samples from the borings and trenches were analyzed and TPH, benzene, and PAHs were detected at concentrations exceeding the CRWQCB and PRG screening levels. TPH in the C₁₃ to C₂₂ range were found at concentrations greater than the CRWQCB screening level of 10,000 mg/kg in two trenches (PH1 at 3 feet = 20,700 mg/kg; PH6 at 1.8 feet = 13,900 mg/kg). Benzene was detected at concentrations exceeding the CRWQCB screening level of 0.1 mg/kg in several samples (elevated concentrations ranged from 0.252 to 15.9 mg/kg), and extended as deep as 50 feet bgs. PAHs compounds were found at concentrations exceeding the PRGs at variable depths, and extended as deep as 63 feet.

The deepest boring drilled was Boring B4, which extended to 63 feet where refusal was encountered. As a result of drilling refusal, the vertical extent of impacted soil has not been defined in this area. The lateral extent of impacted soil is roughly defined in the shallow depths, but is not defined at greater depths.

5.16 Mission Adrian Tank Farm

Historical aerial photographs of the Mission Adrian Tank Farm were not reviewed. However, conspicuous features indicative of a tank farm were noted on the topographic base map provided by The Gas Company. Seven hand-auger borings (MA-CP-B1, MA-CP-S-B1, MA-N-B1, MA-S-B1, MA-NT-B1, MA-ST-B1 and MA-SW-B1) were advanced to total depths ranging from 4 to 10 feet bgs. Several soil samples from the hand-auger borings were analyzed and no analytes exceeded the regulatory screening levels.

5.17 Analytical Summary

The analytical results for samples containing analyte concentrations greater than the CRWQCB and PRG screening levels, generated during both the 1996/1997 and the 1998 investigation, are presented in the table below.

In-Situ Soil Samples Exhibiting Elevated Concentrations Concentrations in milligrams per kilogram (mg/kg)									
Sample ID	TPH per USEPA 8016			Metals per USEPA 7000- 8090	HTEX per USEPA 8020	PAHs per USEPA 8310			
	TPH ₍₀₋₁₁₎	TPH ₍₁₁₋₂₄₎	TPH ₍₂₄₋₃₇₎	Arsenic	Benzene	Benzo(a)- pyrene	Benzo(a) anthra- cene	Benzo(b) fluor- anthene	Dibenzo (a,h) anthracene
Sump 1									
S1-PH1-6	ND < 1	3,130	2,960	14.4	ND < 0.005	ND < 0.02	ND < 0.02	ND < 0.02	ND < 0.02
Sump 2									
S2-T1-B110-15	2.6	12,220	6,960	ND < 1	ND < 0.005	ND < 0.02	ND < 0.02	0.112	ND < 0.02
S2-T1-B125-15	1.5	25,900	17,000	-	-	-	-	-	-
S2-T2-140-6	1.2	21,700	8,900	-	-	-	-	-	-
Sump 3									
S3-HA1-6	ND < 1	29	13	1.8	ND < 0.005	0.74	0.468	ND < 0.02	ND < 0.02
Sump 4									
S4-B1-20	ND < 1	76	10	ND < 1	ND < 0.005	0.424	0.148	0.11	0.808
Fernando Fee Tank Farm									
FTF-PH1W-3	5.8	20,700	9,400	-	ND < 0.005	-	-	-	-
FTF-PH4-12	10.9	559	246	ND < 1	0.209	ND < 0.02	4.87	1.39	ND < 0.02
FF-PH6-1.8	2.1	13,900	7,800	-	ND < 0.005	ND < 0.02	ND < 0.02	0.647	ND < 0.02
FF-B3-5	ND < 1	1,120	670	-	ND < 0.005	ND < 0.02	ND < 0.02	4	0.163
FF-B3-10	2.1	1,990	1,030	-	ND < 0.005	ND < 0.02	ND < 0.02	4.57	0.478
FF-B4-3	ND < 1	1,040	610	-	ND < 0.005	0.096	ND < 0.02	3.92	0.203
FF-B4-15	5.5	1,620	910	-	0.578	ND < 0.02	ND < 0.02	1.1	0.091
FF-B4-20	20	1,990	1,250	-	1.79	0.029	ND < 0.02	1.48	0.116
FF-B4-25	12	1,770	1,210	-	0.874	0.02	ND < 0.02	0.589	0.095
FF-B4-30	14	1,360	850	-	0.995	0.023	ND < 0.02	0.573	0.096
FF-B4-35	332	1,710	640	-	15.9	ND < 0.02	ND < 0.02	5.88	0.134
FF-B4-40	20	3,270	1,680	-	1.63	ND < 0.02	ND < 0.02	4.62	ND < 0.02
FF-B4-45	11	1,750	840	-	0.629	0.035	ND < 0.02	2.04	ND < 0.02
FF-B4-50	9.3	1,910	1,100	-	0.252	0.028	ND < 0.02	1.71	ND < 0.02
FF-B4-63	1.2	1,660	2,520	-	0.019	ND < 0.02	ND < 0.02	6.09	0.136
CRWQCB Thresholds (Assuming Non- Drinking Water Aquifer)	10,000	10,000	50,000		0.100			N/A	N/A
USEPA PRG	N/A	N/A	N/A	2.4	1.4	0.26	2.6	3.6	0.36
Notes: Concentrations exceeding CRWQCB and/or PRG Screening Levels are shown in "Bold" Font - = Not Tested/Analyzed N/A = Not Applicable ND < 1 = Not Detected at or Above Detection Limit of 1 mg/kg									

6.0 CONCLUSIONS

As described earlier in this report, analytical data for the sump and tank farm locations have been compared to the CRWQCB and USEPA PRG screening criteria. Exceeding these values may not necessarily indicate that remedial measures (i.e., cleanup) are mandatory from a regulatory standpoint. Rather, exceeding these values suggests that further evaluation of the potential risks is appropriate. The following conclusions are in essence a comparison of detected analytes versus regulatory screening criteria.

- ▶ At Sump 1, arsenic was detected in one sample at a concentration well above the PRG. As only one sample was analyzed from this location, the extent and nature of contamination is not defined.
- ▶ At Sump 2, TPH concentrations were greater than the CRWQCB screening levels in some soil samples. Albeit the extent of significantly-impacted soil is not well defined, it appears that it may be somewhat randomly present through the sump fill.
- ▶ At Sump 3, one soil sample contained a PAHs compound, benzo(a)pyrene, above the PRG. The extent of PAHs-impacted soil is not defined.
- ▶ At Sump 4, one soil sample contained benzo(a)pyrene above the PRG. The extent of PAHs-impacted soil is not defined.
- ▶ At the Fernando Fee Tank Farm, the following data was generated: localized TPH concentrations in excess of the CRWQCB screening levels; the presence of benzene in excess of the CRWQCB screening levels to a depth of at least 50 feet bgs; and, the presence of PAHs compounds greater than the PRGs to a depth of at least 63 feet bgs.
- ▶ Based on the results of project work completed to date, Sumps 5 through 13 and the Mission Adrian Tank Farm have either not been found or the regulatory screening levels were not exceeded in the soil samples analyzed.

7.0 LIMITATIONS

This report is intended exclusively for the Southern California Gas Company for the evaluation of petroleum related impact associated with identified sumps and tank farm locations as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other scientists and engineers practicing in the geosciences. No other warranty, either expressed or implied, is made. As with all environmental projects, there is no guarantee that the work performed has identified all or any of the sources or locations of impact. This report is issued with the understanding that the Southern California Gas Company is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency.

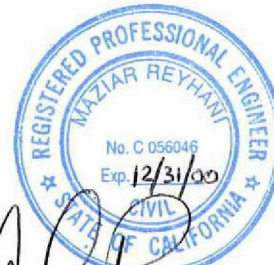
The following ENV America professionals were responsible for all work associated with this project within the purview of the Professional Engineer's Act and the Registered Geologist and Geophysicist Act of the California Code of Regulations.

Respectfully submitted,

ENV America Incorporated



Daniel J. Gifford, R.G., C.E.G., C.HG.
Senior Project Manager



Maziar Reyhani, P.E.
Principal

8.0 REFERENCES CITED

Camp Dresser & McKee Inc., June 18, 1991, "Phase 1 Environmental Assessment," Texaco-Aliso Canyon, Los Angeles County, California.

ENV America, September 16, 1997, "Final Report - Sump and Tank Farm Investigation," Aliso Canyon Site, Los Angeles County, California.

ENV America, August 6, 1998, "Workplan for Environmental Services - Sump and Tank Farm Sites," Aliso Canyon Site, Los Angeles County, California.

Los Angeles Regional Water Quality Control Board (LARWQCB), May 1996, "Interim Site Assessment & Cleanup Guidebook," Los Angeles and Ventura Counties, Region 4.

United States Environmental Protection Agency (USEPA), 1998, "Region 9 Preliminary Remediation Goals (PRGs)."

TABLES

TABLE 1
SUMMARY OF INVESTIGATIVE TOOLS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California
 ENV America Project No. SCG-01-1020

Area Identification	Investigative Tools			
	Backhoe Trenching/Pot- Holing	Hand-Digging	Hand Auger Soil Borings	Hollow-Stem Drill Rig
Sump 2	X	X		
Sump 3		X		
Sump 4				X
Fernando Fee Tank Farm	X			X
Mission Adrian Tank Farm		X	X	

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 DATE: 12/6/13
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TABLE 2
SUMMARY OF TRENCH DESCRIPTIONS
Fernando Fee Tank Farm
Southern California Gas Company
Aliso Canyon
Northridge, California



Trench No.	Depth (ft.)	Description	Sample ID	Sample Depth (ft.)	Sample Time
PH5	0 to 4.5	SANDSTONE (SP), Light grey to white, damp, very dense, some orange Iron-oxide stained joints.	-	-	-
		Total Depth 4.5'	-	-	-
PH6	0 to 1.3	SILTY SAND (SM), Light brown, dry, loose, scattered roots.	PH6-1	1	1240
	1.3 to 1.6	3" thick gravel layer, Black, damp, medium dense, heavy hydrocarbon staining and odors.	-	-	-
	1.6 to 2.5	SANDSTONE (SP), Brown to black, damp, medium dense to dense, abundant hydrocarbon staining and odors to about 2.5'.	PH6-1.8	1.8	1242
	2.5 to 3	slight staining, slight odor	PH6-3	3	1244
	3 to 4	no staining, no odor	PH6-4	4	1250
		Total Depth 4'			
PH7	0 to 3	SILTY SAND (SM), Light brown, dry, loose, scattered roots.	-	-	-
	3 to 3.2	2" to 3" thick CLAYEY SAND (SC) layer, medium grey to black, moist, medium dense, heavy hydrocarbon staining and odors.	-	-	-
	3.2 to 7.5	SANDY CLAY (SC), medium grey mottled with brown and black, moist to wet, medium stiff, slight hydrocarbon staining and odors	PH7-3.5	3.5	1310
		Total Depth 7.5'			
PH8	0 to 3	SILTY SAND (SM), Light brown, dry, loose, scattered roots.	-	-	-
	3 to 5	SANDSTONE (SP), Medium orange brown, damp to moist, dense to very dense, some cobbles.	-	-	-
		Total Depth 5'			

TABLE 2
SUMMARY OF TRENCH DESCRIPTIONS
Fernando Fee Tank Farm
Southern California Gas Company
Aliso Canyon
Northridge, California



Trench No.	Depth (ft.)	Description	Sample ID	Sample Depth (ft.)	Sample Time
PH9	0 to 1.5	SILTY SAND (SM), Light brown to brown, dry, loose, scattered roots.	-	-	-
	1.5 to 3.5	CLAYEY SILTSTONE (ML), medium gray to black, damp, stiff, moderately fractured, heavy hydrocarbon staining, slight hydrocarbon odors.	-	-	-
	3.5 to 5.5	moderate staining, slight odors	-	-	-
	Total Depth 5.5'				
PH10	0 to 1	CLAYEY SAND (SC), medium brown, damp, medium dense.	-	-	-
	1 to 3	CLAYEY SAND (SC), medium orange brown, damp, medium dense.	-	-	-
	3 to 7	CLAYEY SILTSTONE (ML), medium grey to black, damp, stiff, moderately fractured, moderate hydrocarbon staining and odors.	-	-	-
	7 to 10	slight to moderate hydrocarbon staining, moderate odor	FF-PH10-7	7	1425
	10 to 11	slight hydrocarbon odor	FF-PH10-10	10	1430
	11 to 13	CLAYEY SANDSTONE (SC), light yellow to light grey, damp, very dense	FF-PH10-13	13	1440
Total Depth 13'					

SUMMARY OF SAMPLE ANALYSES
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



ENV America Project No. SCG-01-1020

Area ID	Sample ID	Analytical Method													
		pH	3015M C ₁ TO C ₆	3015M C ₇ TO C ₂₂	50:50 BITEN	5:20 YOC	8:70 SYOC	6000:7000 Metals	\$310 PAH	3080 PCB	N/A				
Sump 2	S2-T4D-4.5A	X	X	X		X		X		X			X		
	S2-T4D-3.5A	X	X	X		X		X		X			X		
	S2-T4-SP1	X	X	X		X		X		X			X		
	S2-T4-SP2														X
Sump 3	S2-T4-DRUM	X	X	X		X		X		X			X		
	S3-DC	X	X	X		X		X		X			X		
	S3-DB-2	X	X	X		X		X		X			X		
Sump 4	S4-HP1-5														X
	S4-HP1-10														X
	S4-HP1-15														X
	S4-HP1-21														X
Fernando Fee Tank Farm	FF-PHG-1	X	X	X				X							X
	FF-PHG-1.8	X	X	X				X							X
	FF-PHG-3	X	X	X				X							X
	FF-PHG-4	X	X	X				X							X
	FF-PHG-3.5	X	X	X				X							X
	FF-PH10-7	X	X	X				X							X
	FF-PH10-10	X	X	X				X							X
	FF-PH10-13	X	X	X				X							X
	FF-B1-5	X	X	X				X							X
	FF-B1-10	X	X	X				X							X
	FF-B1-15	X	X	X				X							X
	FF-B1-20	X	X	X				X							X
	FF-B2-3.5	X	X	X				X							X
	FF-B2-5	X	X	X				X							X
	FF-B2-10	X	X	X				X							X
	FF-B2-15	X	X	X				X							X
	FF-B2-20	X	X	X				X							X
	FF-B2-25	X	X	X				X							X
	FF-B3-2	X	X	X				X							X
	FF-B3-5	X	X	X				X							X
FF-B3-10	X	X	X				X							X	
FF-B3-15	X	X	X				X							X	
FF-B3-20	X	X	X				X							X	
FF-B3-25	X	X	X				X							X	

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FIGURES

FIGURES

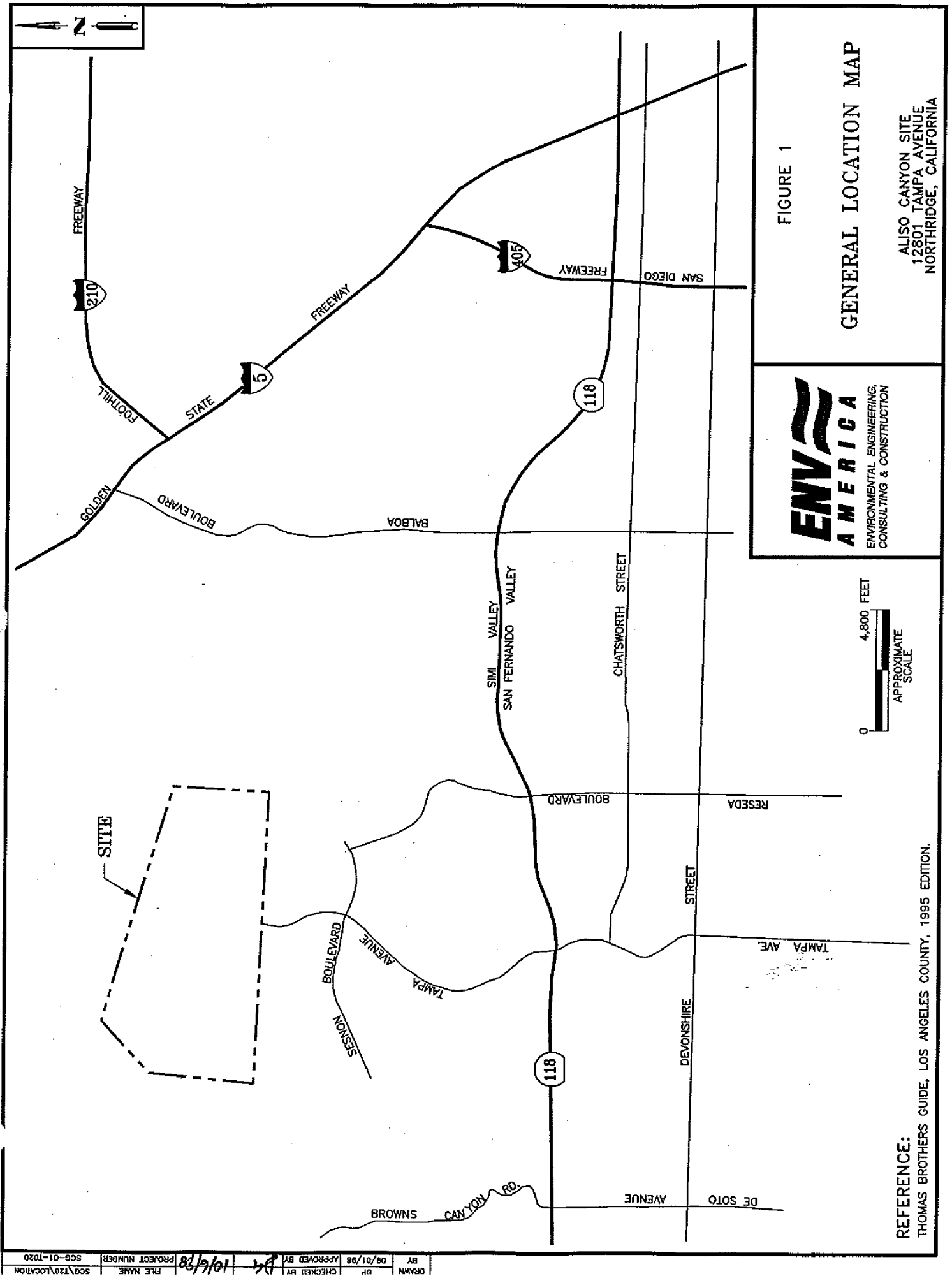


FIGURE 1

GENERAL LOCATION MAP

ALISO CANYON SITE
 12801 TAMPA AVENUE
 NORTHRIDGE, CALIFORNIA



REFERENCE:
 THOMAS BROTHERS GUIDE, LOS ANGELES COUNTY, 1995 EDITION.

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CHECKED BY					PROJECT NUMBER	SC0-01-1020

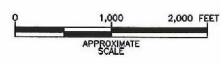
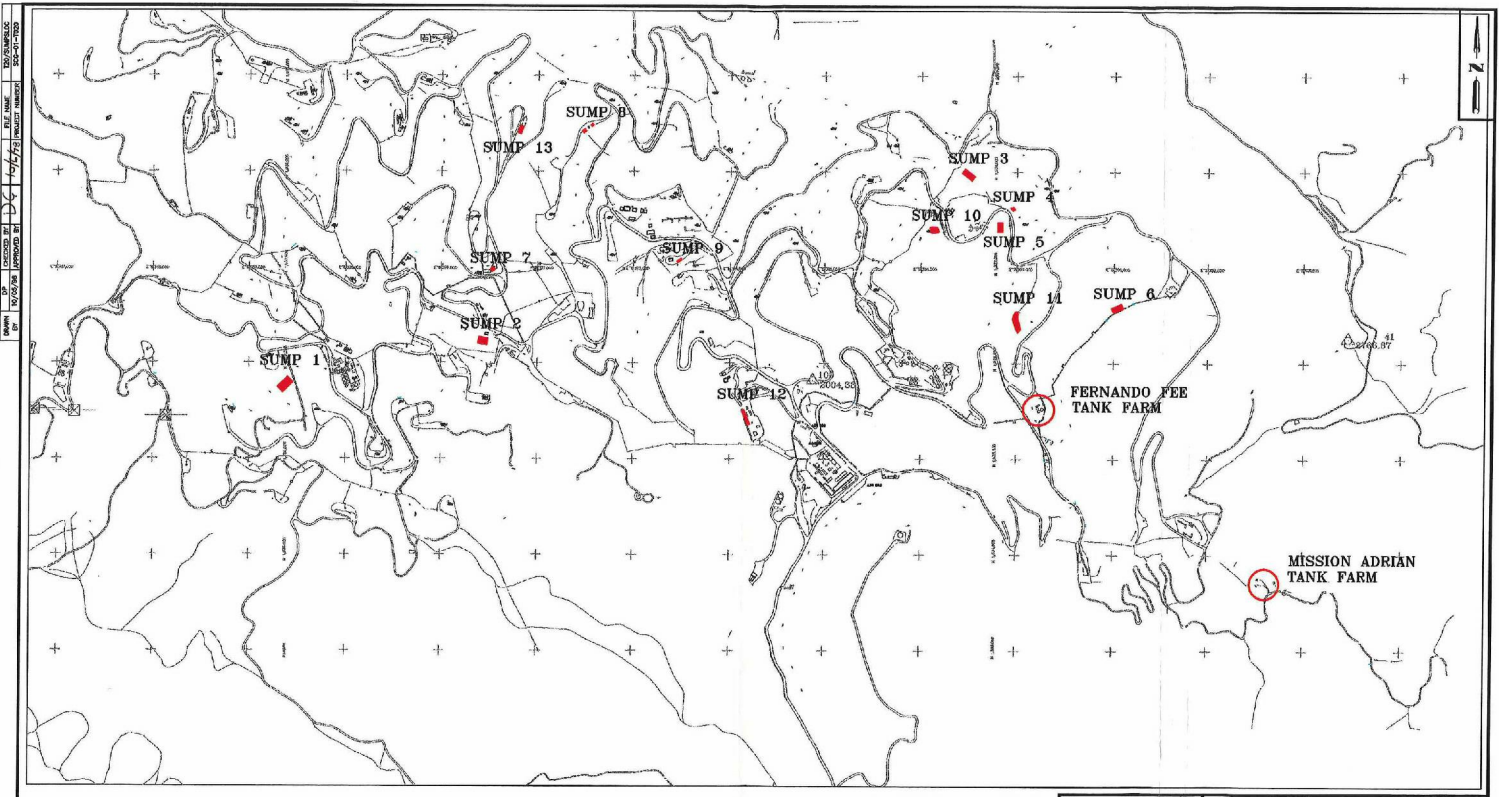
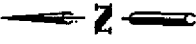


FIGURE 2
INDEX MAP
SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA

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EXPLANATION	
	POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

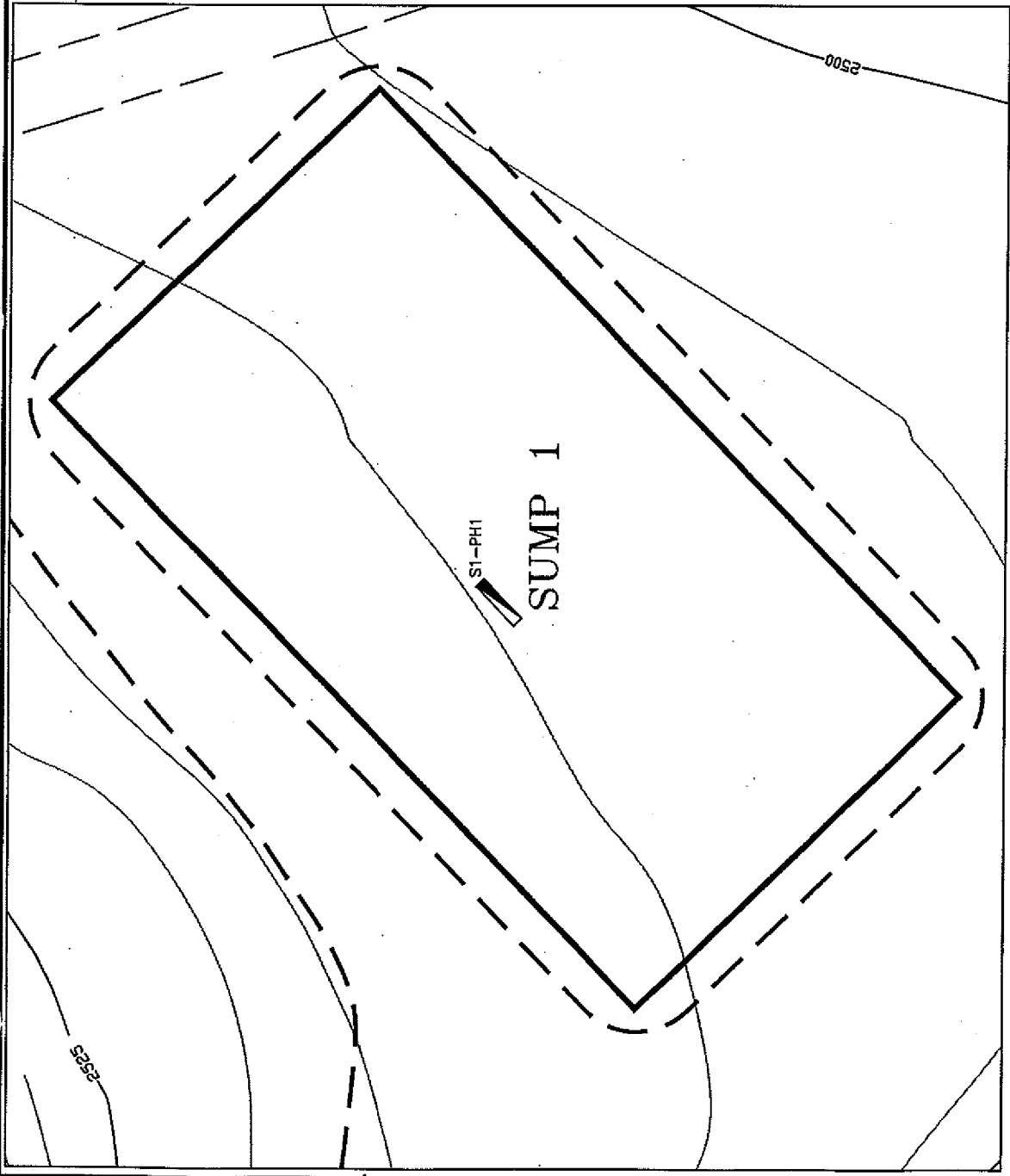
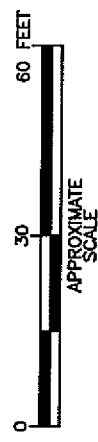


FIGURE 3

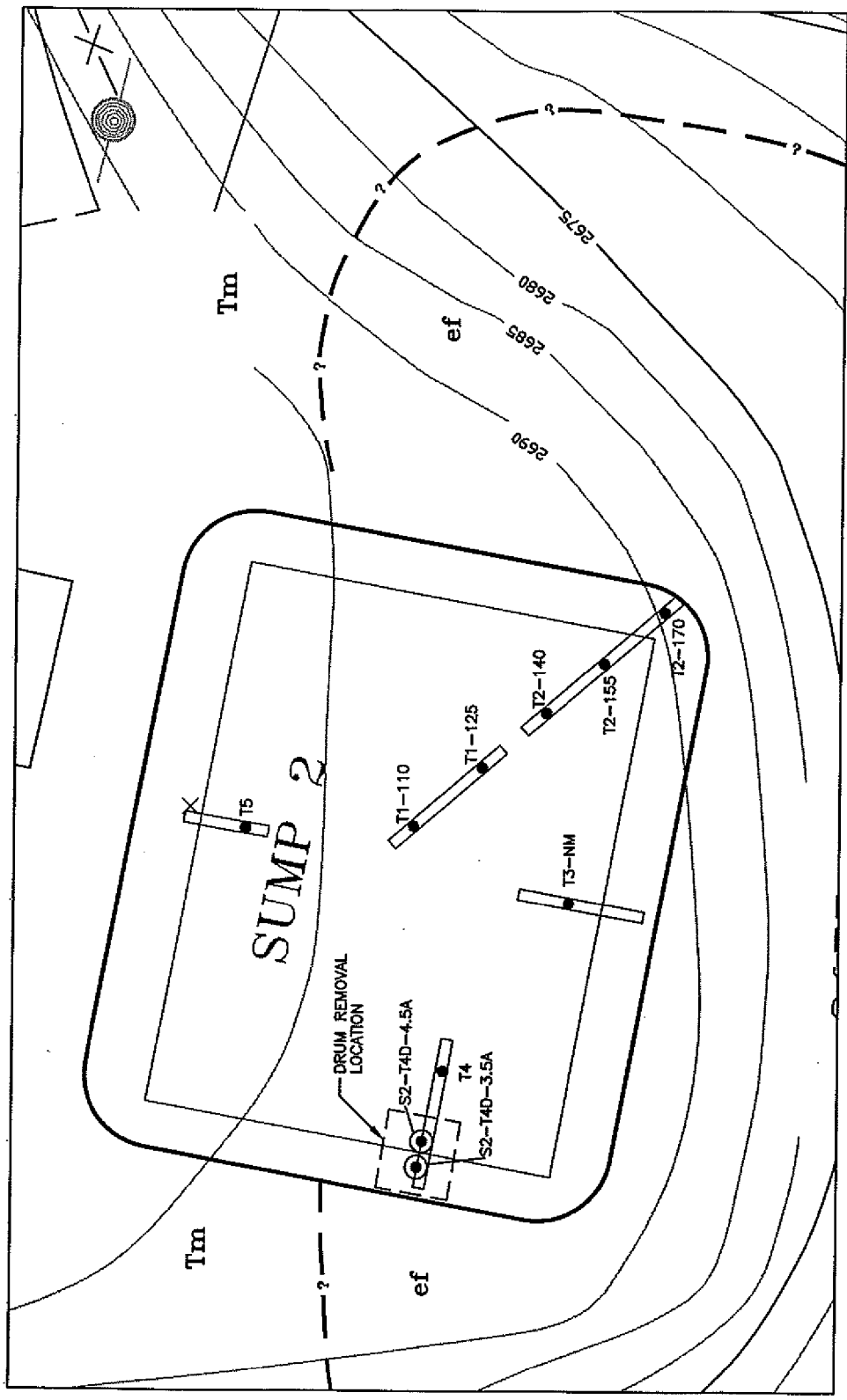
**SUMP 1
SAMPLE LOCATIONS MAP**

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA



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 APPROVED BY: [Signature]
 DATE: 10/05/88
 PROJECT NUMBER: 1019/88
 FILE NAME: 120/SUMP2.DOC
 SCB-01-1020



EXPLANATION
S2-T40-3.5
● SAMPLING LOCATION
T1-110
● TRENCH SAMPLING LOCATION (PREVIOUS INVESTIGATION)
□
□ TRENCH LOCATION
- - -
- - - APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
- - -
- - - 5-FOOT INTERVAL GROUND SURFACE ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL
ef
ef EXISTING FILL
Tm
Tm MONTEREY SHALE


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FIGURE 4
 SUMP 2
 SAMPLE LOCATIONS MAP
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA

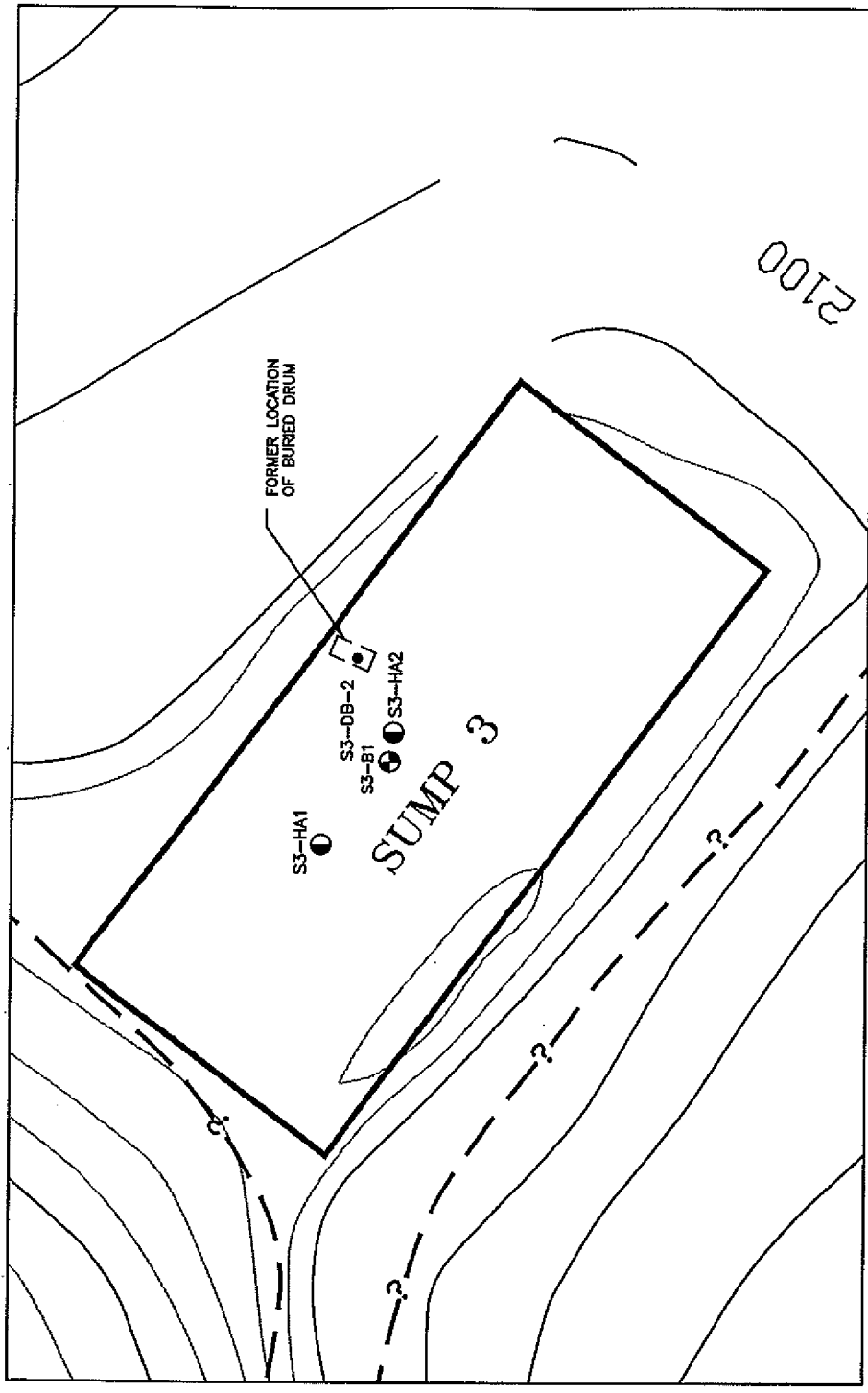
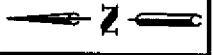
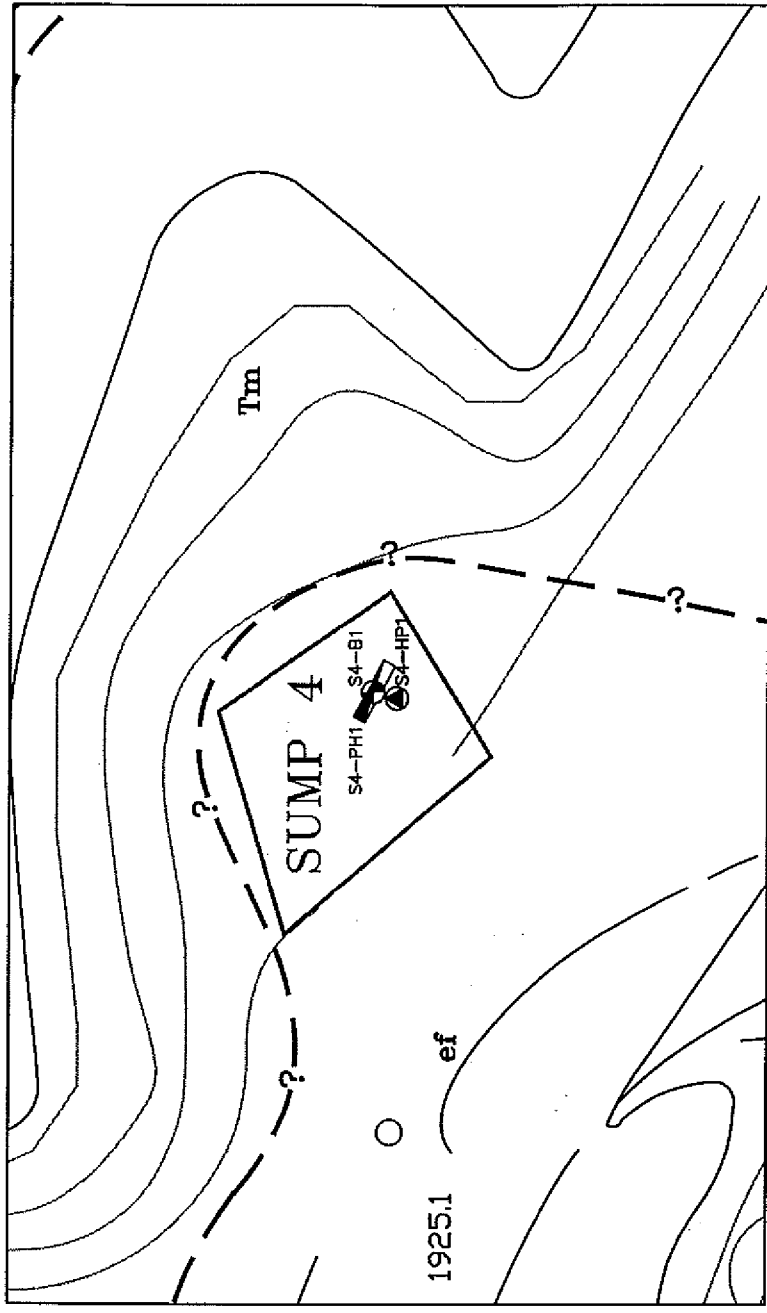
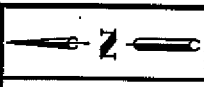


FIGURE 5
SUMP 3
SAMPLE LOCATIONS MAP
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA



EXPLANATION	
S3-DB-2	SAMPLING LOCATION
S3-B1	SOIL BORING LOCATION (PREVIOUS INVESTIGATION)
S3-HA2	HAND AUGER BORING LOCATION (PREVIOUS INVESTIGATION)
-?-	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	5-FOOT INTERVAL GROUND SURFACE ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL

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 PROJECT NUMBER: 120/TASK400/SUMP3 FILE NAME: []
 SCB-01-1020



EXPLANATION	
S4-PH1	POT-HOLE SAMPLING LOCATION (PREVIOUS INVESTIGATION)
S4-HP1	SOIL BORING LOCATION (CURRENT INVESTIGATION)
S4-B1	SOIL BORING LOCATION (PREVIOUS INVESTIGATION)
-?-	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
-2800-	5-FOOT INTERVAL GROUND SURFACE ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL
ef	EXISTING FILL
Tm	MONTEREY SHALE

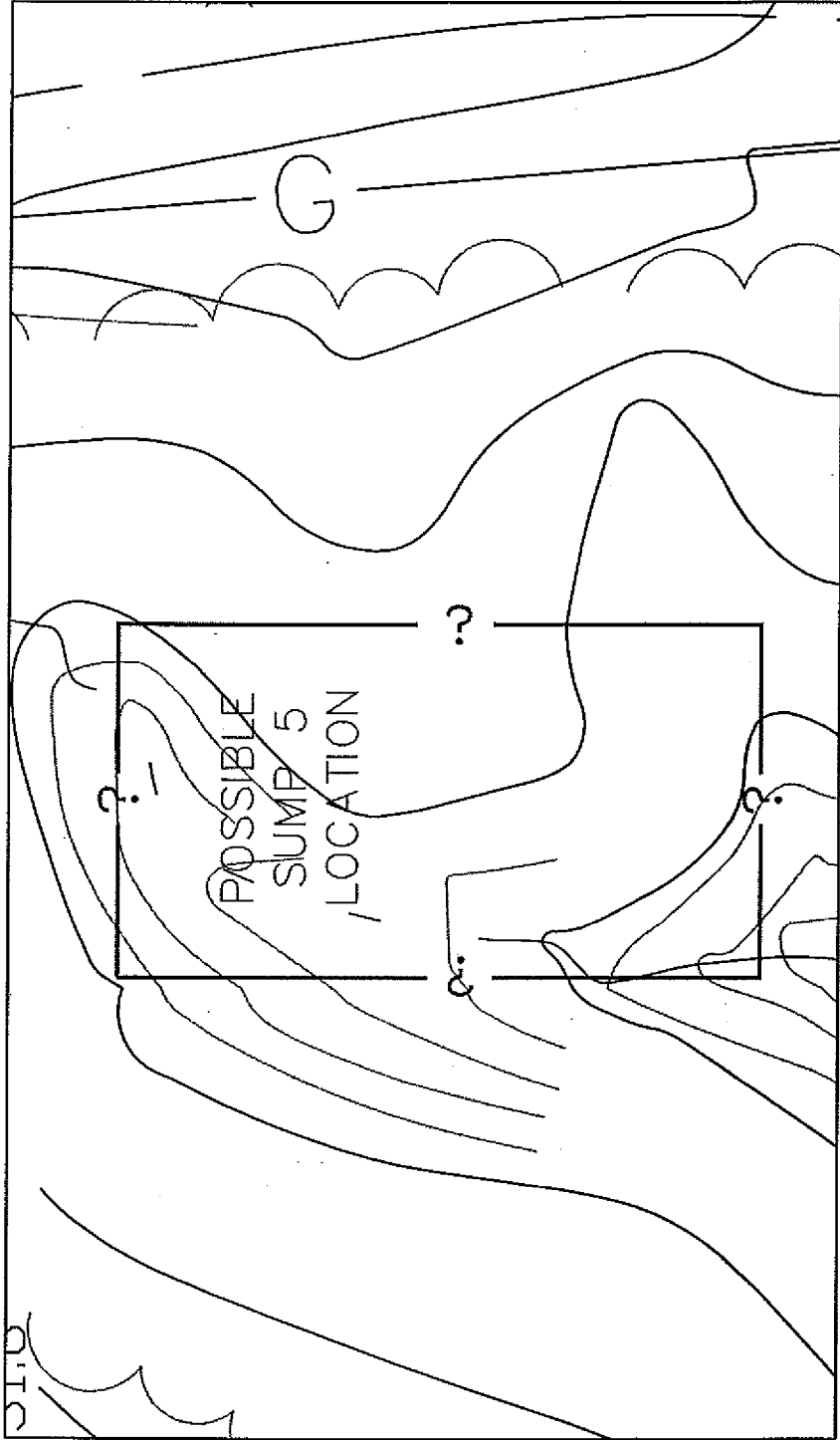
FIGURE 6

**SUMP 4
SAMPLE LOCATIONS MAP**

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA



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 FILE NAME S00\120\SUMPS\SUMPS
 PROJECT NUMBER S00-01-1020



EXPLANATION	
S3-HA2	HAND AUGER BORING LOCATION
—	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
-2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

FIGURE 7

**SUMP 5
 SAMPLE LOCATIONS MAP**

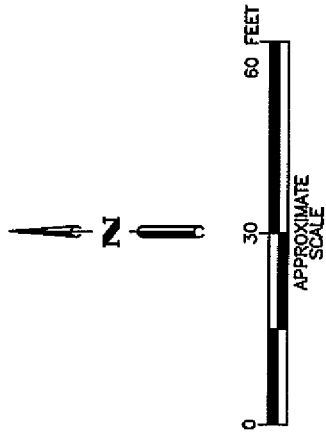
SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA






DRAWN	DP	CHECKED BY	10/6/98	FILE NAME	SC0\170\SUMPS\SUMPR
BY	10/05/98	APPROVED BY		PROJECT NUMBER	SC0-01-1020

EXPLANATION	
S6-PH1	POT-HOLE SAMPLING LOCATION
S6-B1	SOIL BORING LOCATION
---	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)





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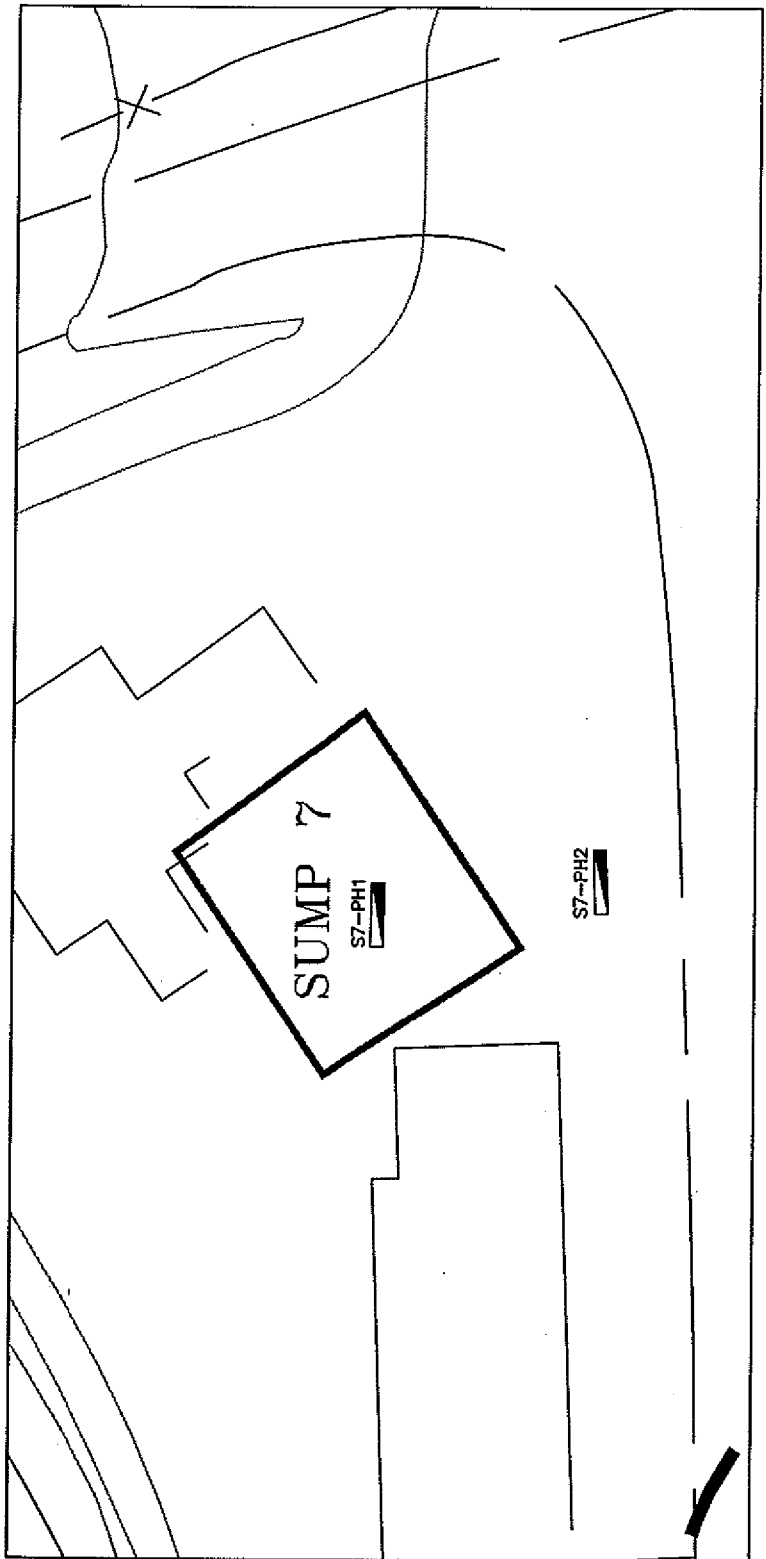
FIGURE 8

SUMP 6

SAMPLE LOCATIONS MAP


SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA

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SC01720\SUMP5\SUMP7	FILE NAME	SC01720\SUMP5\SUMP7	PROJECT NUMBER	SC01-1020	FILE NAME	SC01720\SUMP5\SUMP7	PROJECT NUMBER



EXPLANATION	
S7-PH1	POT-HOLE, SAMPLING LOCATION
—	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)





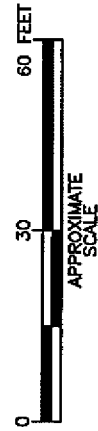
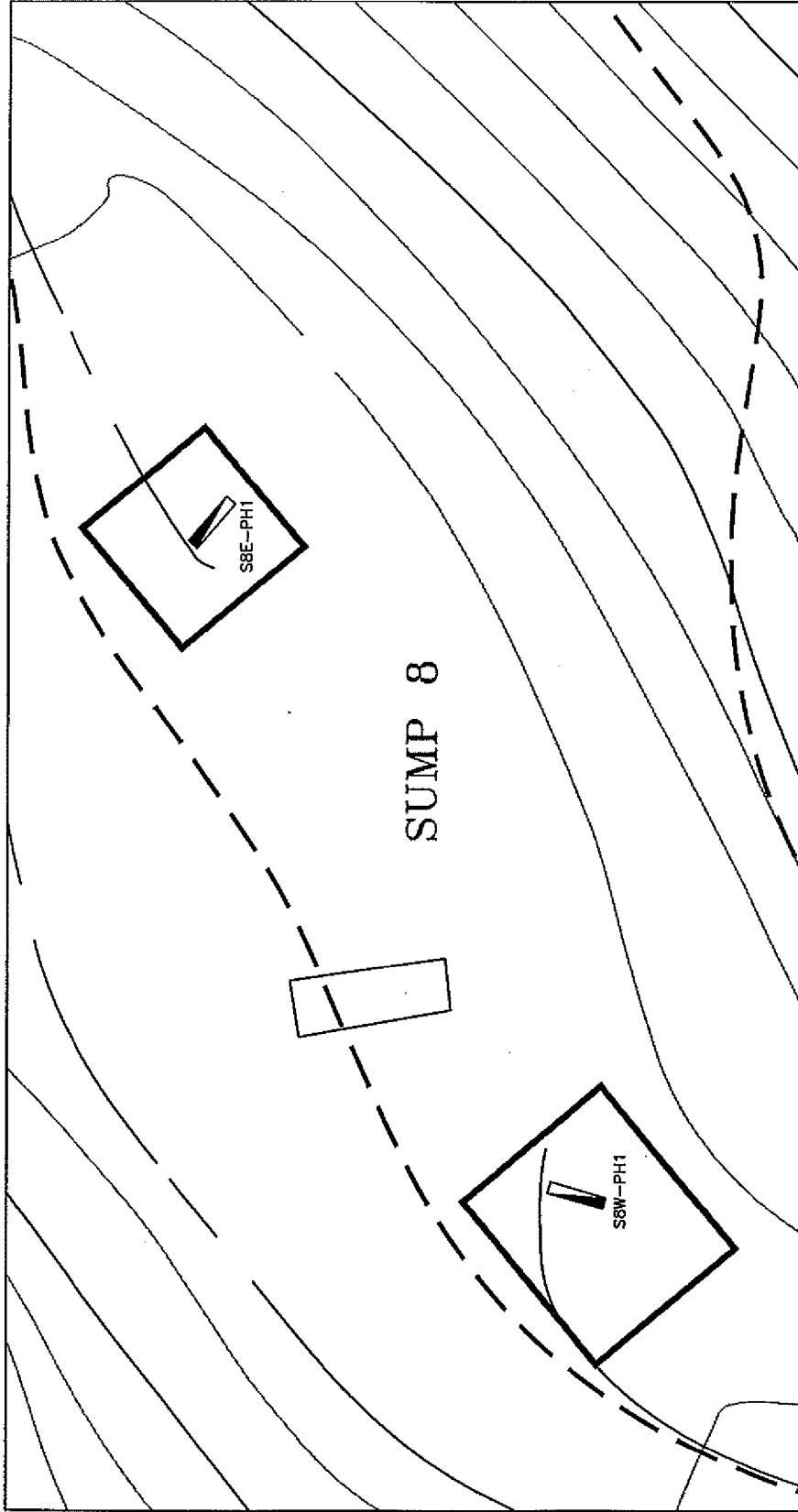
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FIGURE 9

**SUMP 7 POTHOLE
TRENCH LOCATIONS MAP**

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA

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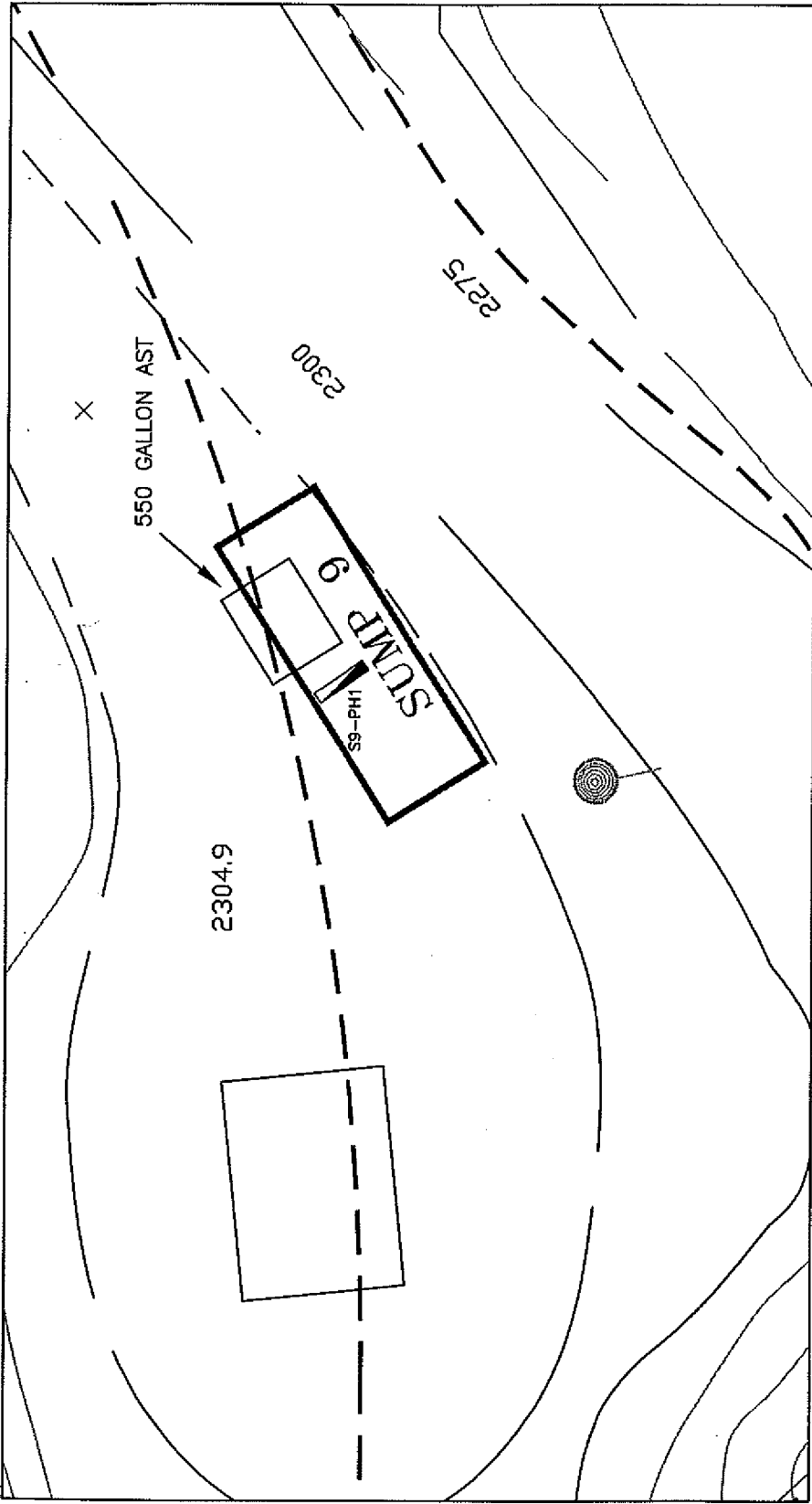
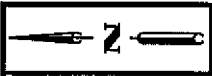
EXPLANATION	
	POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL. (MINOR CONTOURS ARE 5-FOOT INTERVALS)

FIGURE 10
SUMP 8
SAMPLE LOCATIONS MAP
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA



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 DATE: 10/05/98
 PROJECT NUMBER: SCG-01-1020
 FILE NAME: SCG120\SUMPS\SUMP9



EXPLANATION	
S9-PH1	POT-HOLE SAMPLING LOCATION
[Dashed line symbol]	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

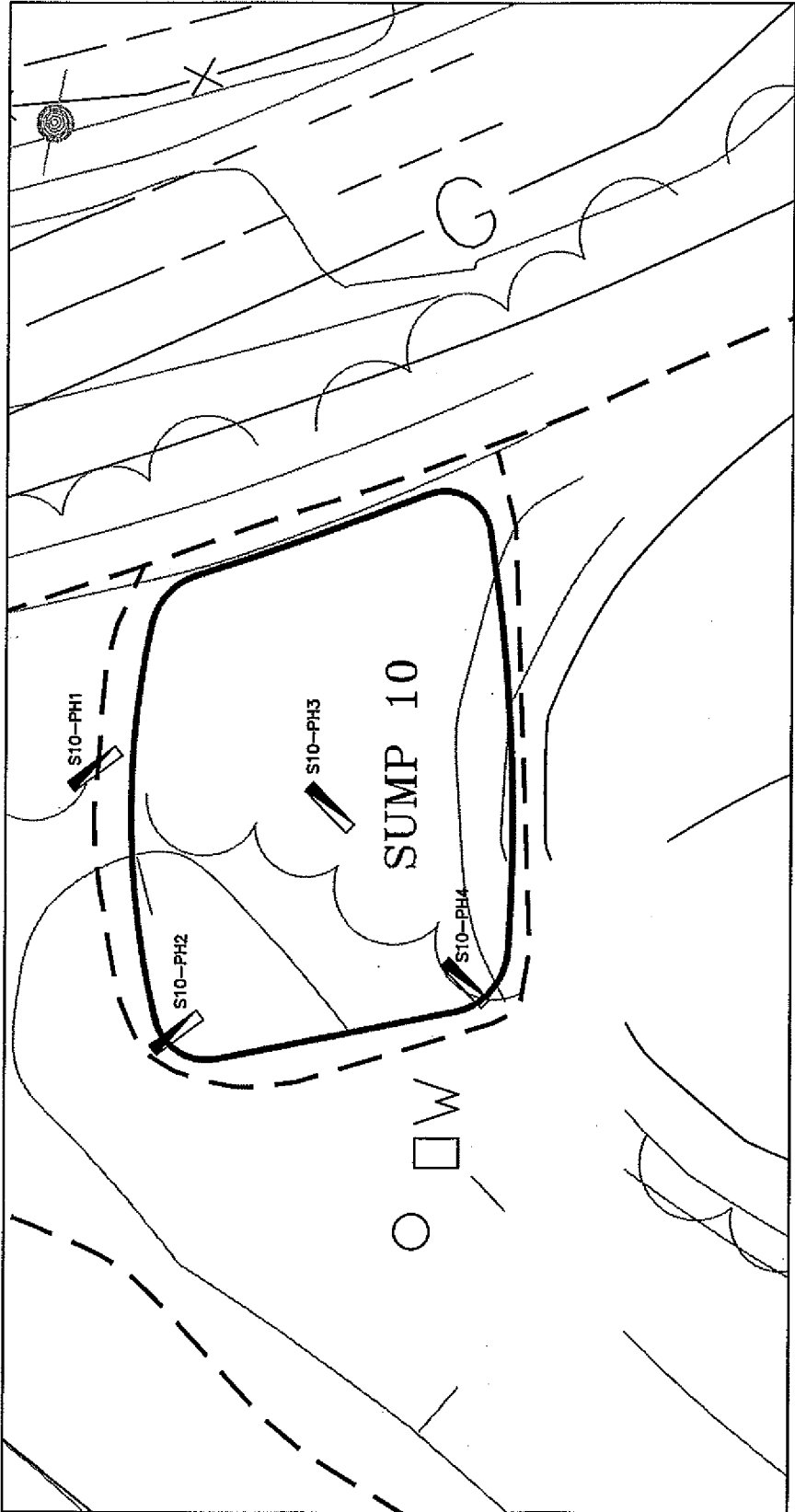
FIGURE 11

**SUMP 9
SAMPLE LOCATIONS MAP**



SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA

DRWN	DP	CHECKED BY	10/03/98	APPROVED BY	10/03/98	PROJECT NUMBER	SC0-01-1020
FILE NAME	SC0120\SAMP\51N\PI0						



EXPLANATION	
S10-PH1	POT-HOLE SAMPLING LOCATION
- - -	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

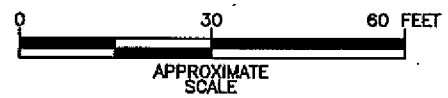
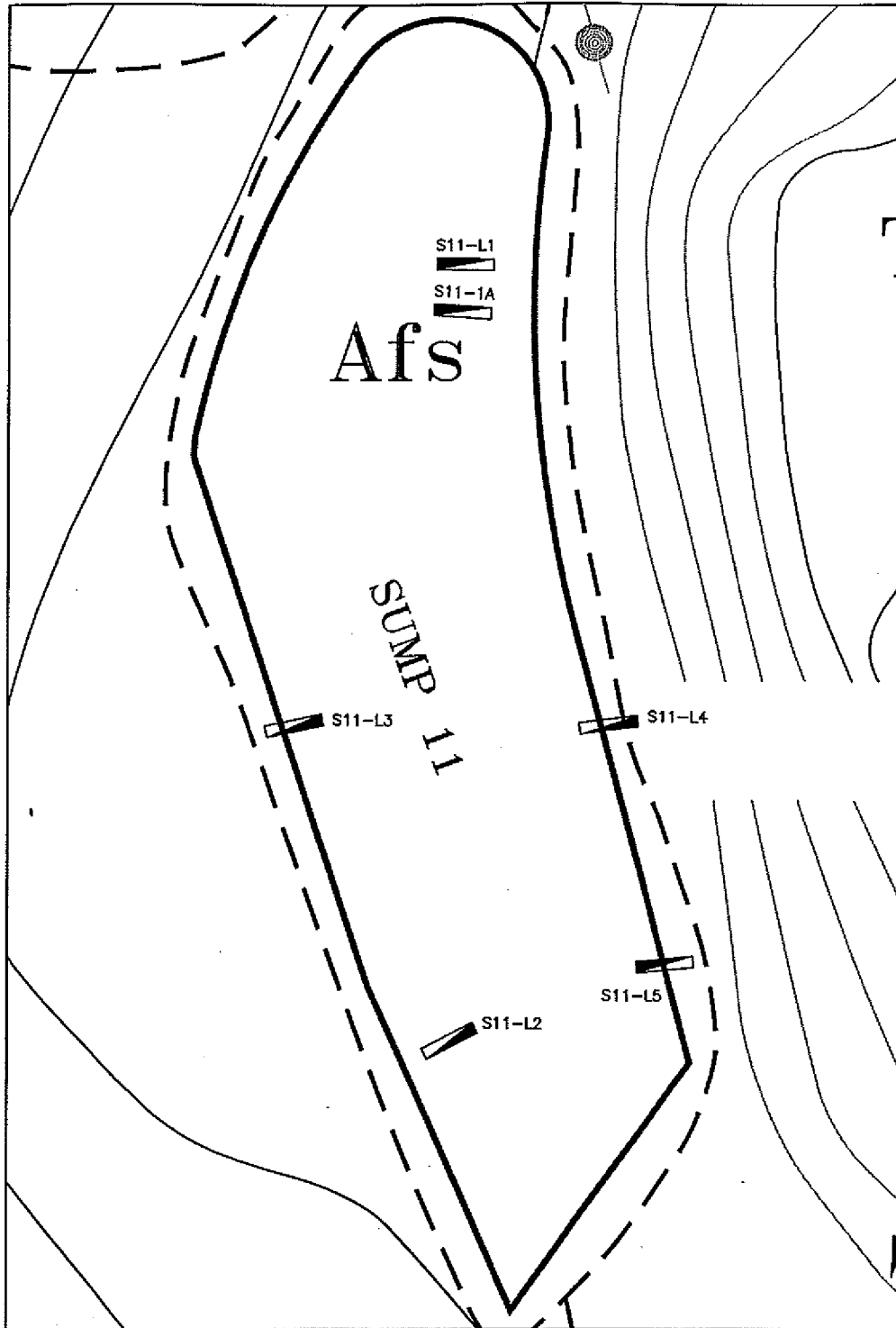
FIGURE 12

**SUMP 10
SAMPLE LOCATIONS MAP**



SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA

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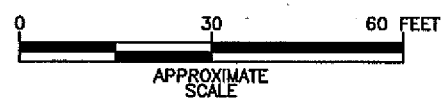
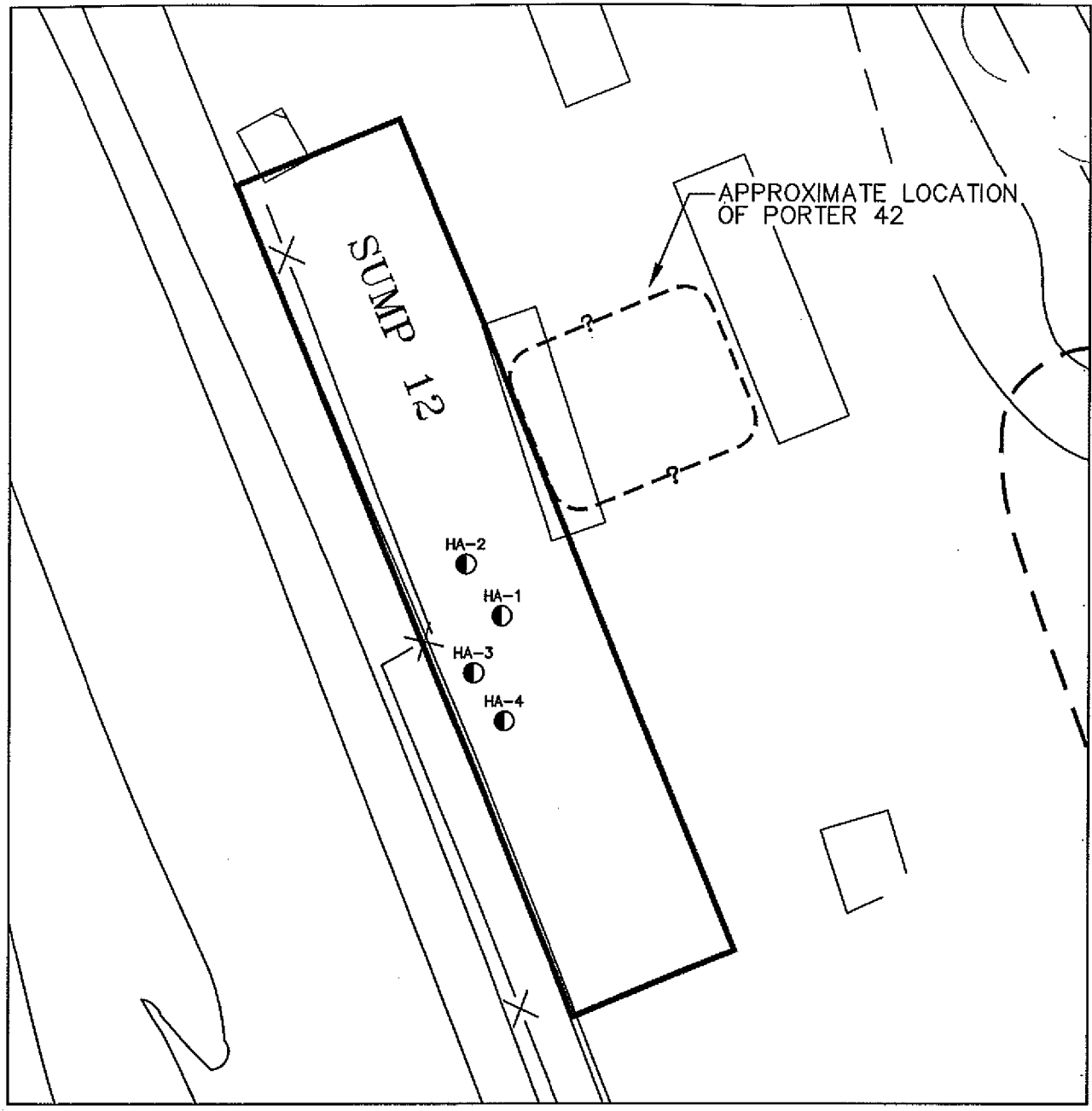


EXPLANATION	
	S11-L1 POT-HOLE SAMPLING LOCATION
	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
	2800 25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

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FIGURE 13
 SUMP 11
 SAMPLE LOCATIONS MAP
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA

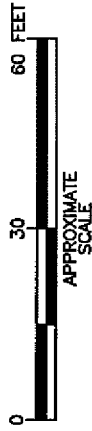
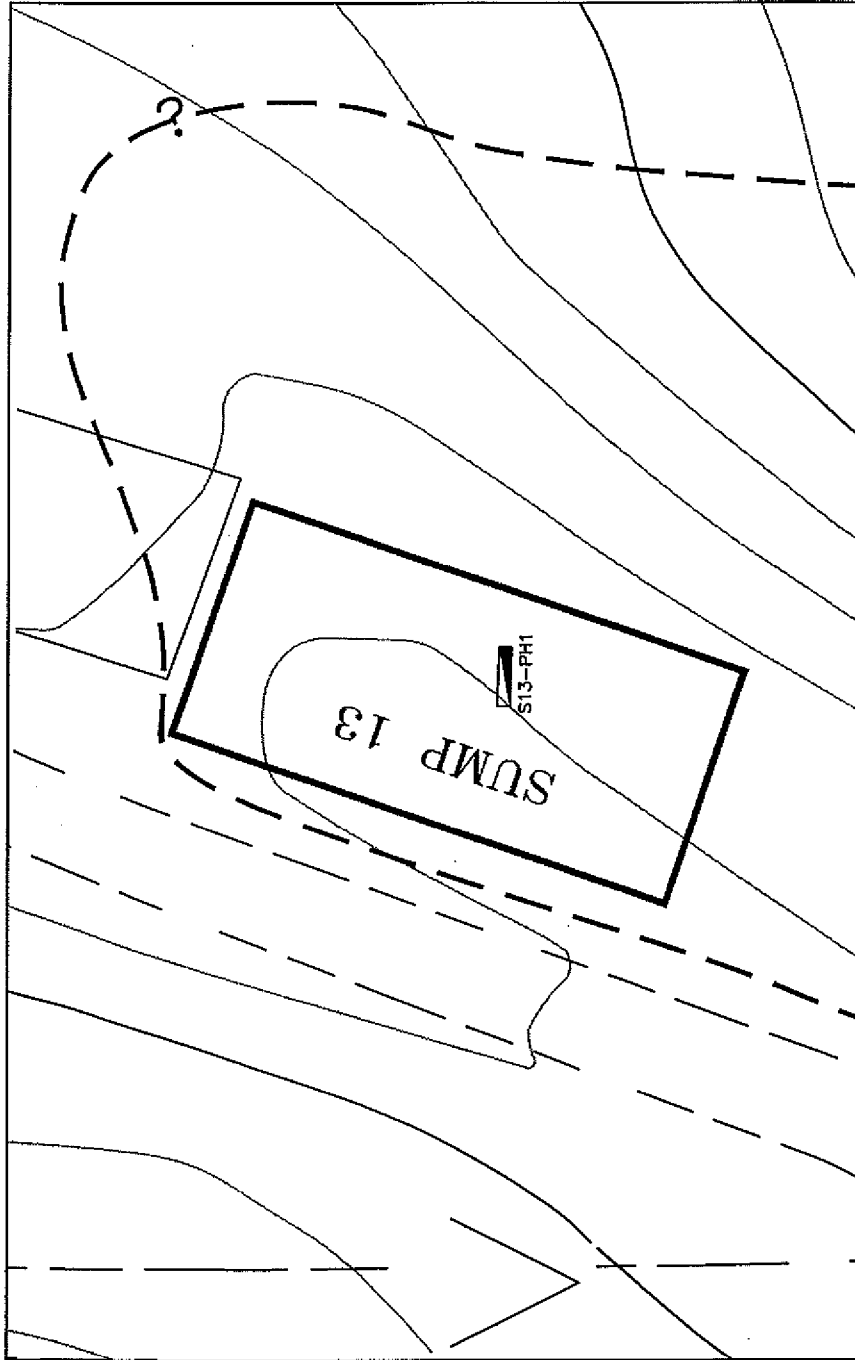
DRAWN BY: **KC**
 CHECKED BY: **KC**
 DATE: 10/06/98
 FILE NAME: 1220\SUMPS\SUMP12
 PROJECT: SCC-01-T020



EXPLANATION	
HA-4 ●	HAND AUGER BORING LOCATION
- - -	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)



FIGURE 14
SUMP 12 EXPLORATORY BORING LOCATIONS
 SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA



EXPLANATION	
S13-PH1	POT-HOLE, SAMPLING LOCATION
-?-	APPROXIMATE GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
2800	25-FOOT INTERVAL ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MINOR CONTOURS ARE 5-FOOT INTERVALS)

ENVI
A M E R I C A
 ENVIRONMENTAL ENGINEERING,
 CONSULTING & CONSTRUCTION

FIGURE 15
SUMP 13
SAMPLE LOCATIONS MAP

SOUTHERN CALIFORNIA GAS COMPANY
 ALISO CANYON SITE INVESTIGATION
 ALISO CANYON, CALIFORNIA

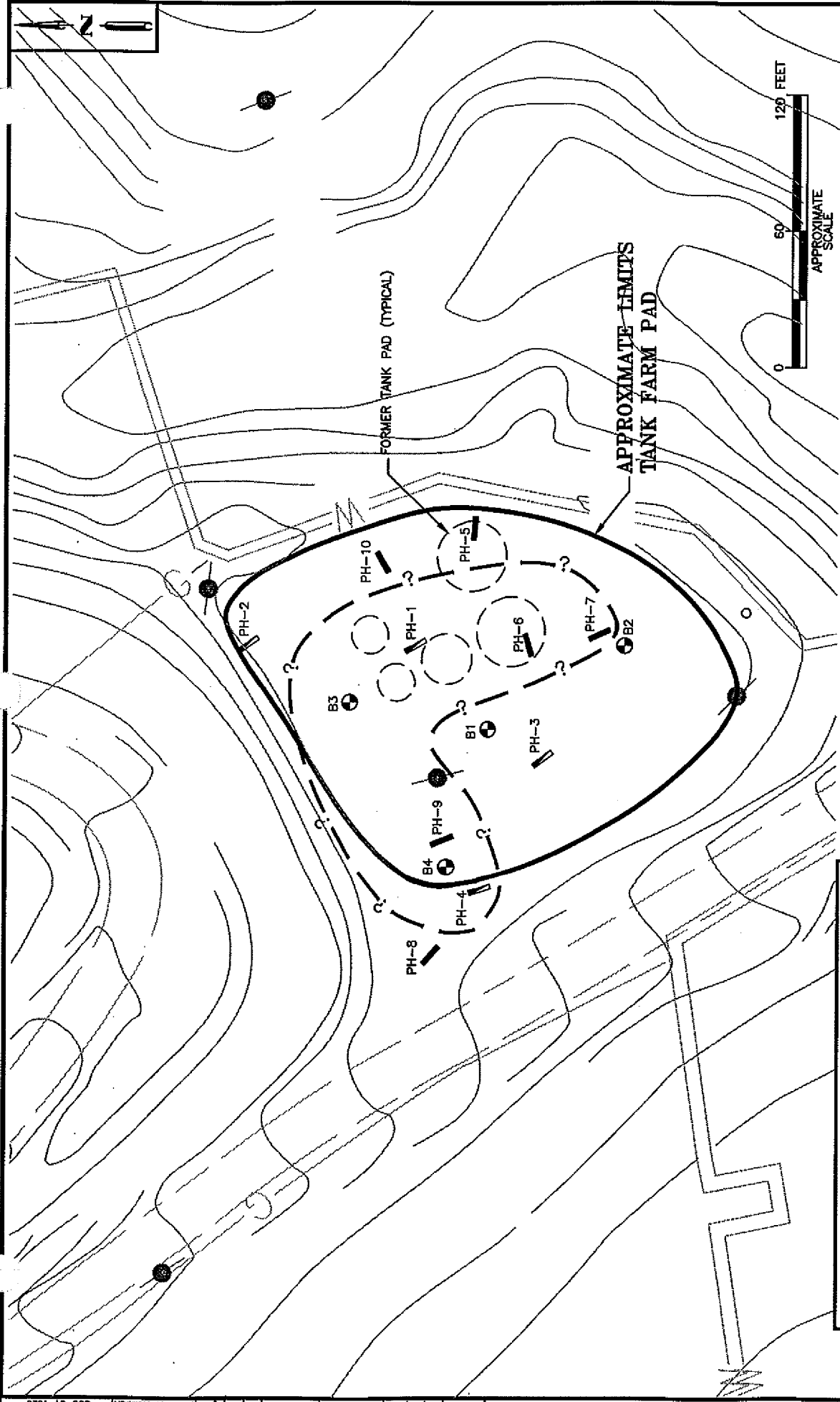


FIGURE 16

**FERNANDO FEE TANK FARM
BORING AND TRENCH
LOCATIONS MAP**

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA



EXPLANATION	
	PH-3 PREVIOUS POTHOLE TRENCH LOCATION, 1996 AND 1997 (PH1 THROUGH PH4)
	B1 BORING LOCATION CURRENT INVESTIGATION, 1998
	PH-5 POTHOLE TRENCH LOCATION CURRENT INVESTIGATION, 1998 (PH-5 THROUGH PH-10)
	ESTIMATED GENERALIZED LATERAL EXTENT OF SOIL CONCENTRATIONS EXCEEDING REGULATORY THRESHOLDS IN SHALLOW ZONES

DRAWN BY	10/06/98	APPROVED BY	10/6/98	PROJECT NUMBER	SC9-01-1020
DP				FILE NAME	120/TASK400/TANKFER

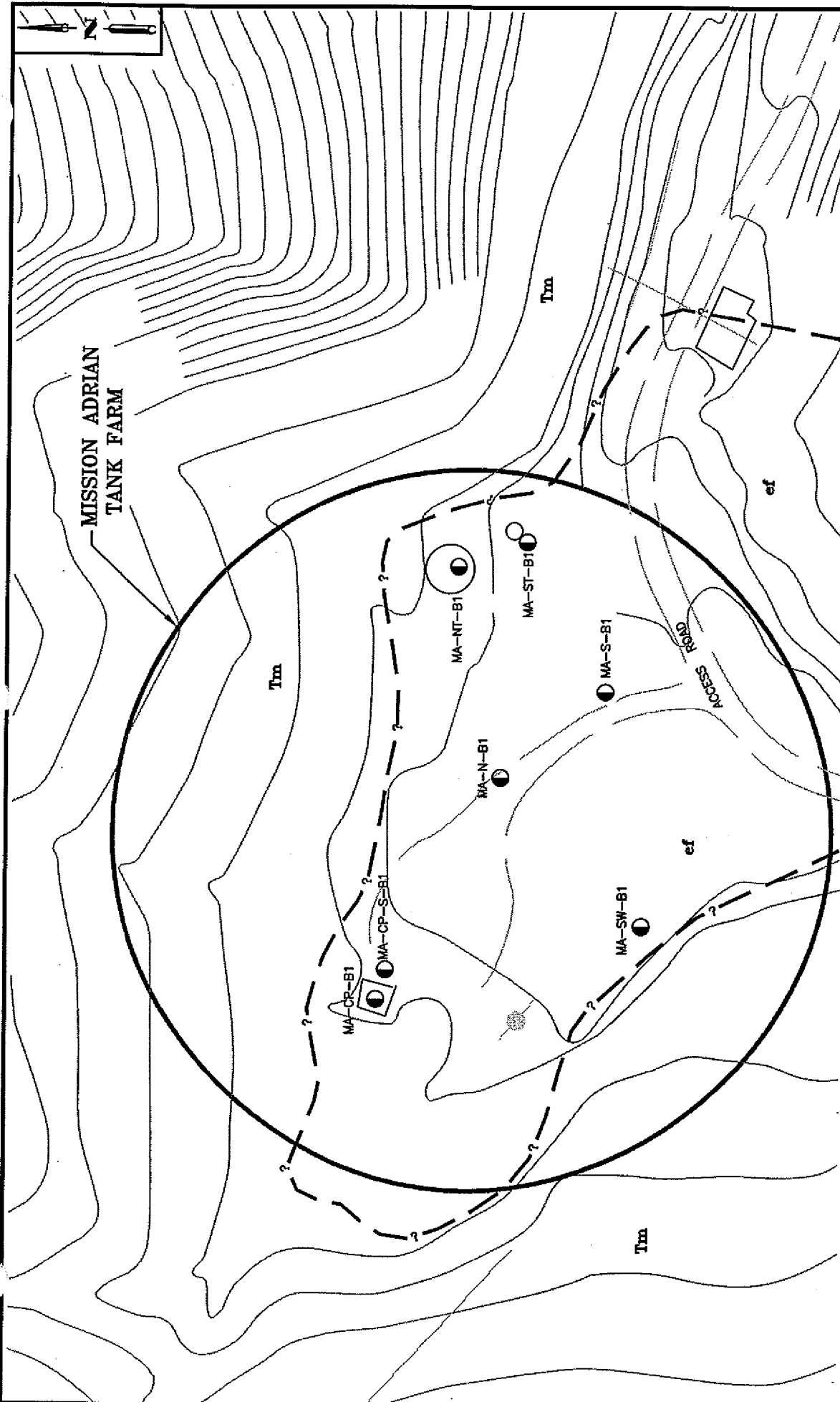
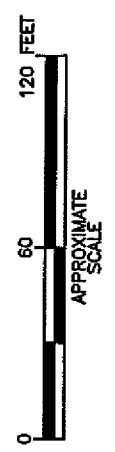
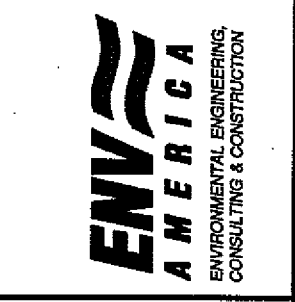


FIGURE 17
**MISSION ADRIAN TANK FARM
BORING LOCATIONS MAP**
SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON SITE INVESTIGATION
ALISO CANYON, CALIFORNIA



EXPLANATION	
MA-CP-B1	HAND AUGER BORING LOCATION
— ? —	GEOLOGIC CONTACT, DASHED WHERE APPROXIMATE, QUERIED WHERE UNCERTAIN.
ef	EXISTING FILL
Tm	MONTEREY SHALE

DRAWN BY: DP
CHECKED BY: 10/05/98
APPROVED BY: [Signature]
PROJECT NUMBER: SCG-01-1020
FILE NAME: 120/TASK100/TANKFMS

EXHIBIT A

1996/1997 ANALYTICAL DATA

TABLE 3a
 SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	MPF (EPA 8015)			BTEX (EPA 8020)			Total Xylenes (µg/kg)
		C4-10 (mg/kg)	C13-10 (mg/kg)	C25+ (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	
S1-PH1-6	04/09/97	ND<1	3130	2960	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S1-PH1-12	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S2-T1-B110-3	11/13/96	ND<1	5	5	NT	NT	NT	NT
S2-T1-B110-6	11/13/96	ND<1	1110	960	NT	NT	NT	NT
S2-T1-B110-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T1-B110-12	11/13/96	ND<1	2050	2540	NT	NT	NT	NT
S2-T1-B110-15	11/13/96	2.6	12200	6960	ND<0.005	ND<0.005	ND<0.005	2.6
S2-T1-B110-18	11/13/96	3.9	3170	1230	NT	NT	NT	NT
S2-T1-B125-3	11/13/96	ND<1	424	541	NT	NT	NT	NT
S2-T1-B125-6	11/13/96	1.8	9850	4850	NT	NT	NT	NT
S2-T1-B125-9	11/13/96	ND<1	2090	3440	NT	NT	NT	NT
S2-T1-B125-12	11/13/96	ND<1	190	187	NT	NT	NT	NT
S2-T1-B125-15	11/13/96	1.5	25900	17000	NT	NT	NT	NT
S2-T1-B125-15M	11/13/96	2	14800	20400	NT	NT	NT	NT
S2-T1-B125-18	11/13/96	5.5	193	137	ND<0.005	10	ND<0.005	24
S2-T2-170-3	11/13/96	ND<1	20	12	NT	NT	NT	NT
S2-T2-170-8	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-3	11/13/96	ND<1	420	433	NT	NT	NT	NT
S2-T2-155-6	11/13/96	2.2	4360	1760	NT	NT	NT	NT
S2-T2-155-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-12	11/13/96	ND<1	14	4	NT	NT	NT	NT
S2-T2-155-15	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-18	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-155-18M	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-140-3	11/13/96	ND<1	33	28	NT	NT	NT	NT

QA/QC: *DS*
 DATE: 1/15/02
 F:\ENVDOCS\SCGT20-NRTH\SUMP\INFO\SUMPSOIL.XLS

TABLE 3a
 SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	1,1,1-TRICHLOROETHANE (EPA 3015)			BTEX (EPA 3020)			
		C1, TOLUENE (mg/kg)	C2, ETHYLENE (mg/kg)	C3, TOLUENE (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)
S2-T2-140-6	11/13/96	1.2	21700	8900	NT	NT	NT	NT
S2-T2-140-9	11/13/96	ND<1	ND<10	140	NT	NT	NT	NT
S2-T2-140-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-140-15	11/13/96	2.1	ND<10	ND<10	NT	NT	NT	NT
S2-T2-140-18	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T3-NW-3	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T3-NW-6	11/13/96	ND<1	ND<10	80	NT	NT	NT	NT
S2-T3-NW-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T3-NW-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-3	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-6	11/13/96	3	ND<10	ND<10	NT	NT	NT	NT
S2-T4-9	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-9M	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T4-15	11/13/96	8.4	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-3	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-6	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-9	11/13/96	2.1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-12	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S2-T5-SW-15	11/13/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S3-HA1-6	04/10/97	ND<1	29	13	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S3-HA2-6	04/10/97	ND<10	33	14	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-B1-20	04/22/97	ND<1	76	10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-PH1-9	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-PH1-12	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S4-PH1-18	04/09/97	26	119	70	ND<0.005	ND<0.005	ND<0.005	ND<0.01

QA/QC: *DG*
 DATE: 5/15/97
 F:\ENVDOCS\ISCGIT20-NRTH\SUMPFINFO\SUMPSOIL.XLS

TABLE 3a
SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	EPE (EPA 3015)			BTEX (EPA 3020)			
		C4 TO C6 (mg/kg)	C7 TO C9 (mg/kg)	C10 TO C12 (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)
S6-B1-9	04/22/97	65	99	15	ND<0.005	0.078	ND<0.005	0.568
S6-PH2-2	04/10/97	ND<1	2	9	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S6-PH2-5	04/10/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S8E-PH1-3	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S8W-PH1-12	04/09/97	ND<1	2	9	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S9-PH1-12	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01
S10-L1-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L1-6	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L1-9	12/17/96	ND<1	75	61	NT	NT	NT	NT
S10-L1-12	12/17/96	ND<1	511	336	NT	NT	NT	NT
S10-L1-15	12/17/96	ND<1	48	6	NT	NT	NT	NT
S10-L2-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L2-6	12/17/96	ND<1	277	232	NT	NT	NT	NT
S10-L2-9	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L2-12	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L2-14	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L3-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L3-6	12/17/96	ND<1	40	22	NT	NT	NT	NT
S10-L3-9	12/17/96	ND<1	92	39	NT	NT	NT	NT
S10-L3-12	12/17/96	ND<1	55	33	NT	NT	NT	NT
S10-L3-15	12/17/96	ND<1	13	4	NT	NT	NT	NT
S10-L4-3	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT
S10-L4-6	12/17/96	ND<1	63	27	NT	NT	NT	NT
S10-L4-9	12/17/96	ND<1	44	7	NT	NT	NT	NT
S10-L4-12	12/17/96	ND<1	121	54	NT	NT	NT	NT
S11-L1-3	12/17/96	ND<1	21	6	NT	NT	NT	NT
	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT

QA/QC: *DS*
 DATE: 9/15/98

F:\ENVDOCS\CGI\20-NRTHSUMP\INFO\SUMPSOIL.XLS

TABLE 3a
SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	SAMPLE DATE	IPII (EPA 8015)				BTEX (EPA 8020)			
		O ₂ TO C ₁₂ (mg/kg)	C ₁₃ TO C ₂₂ (mg/kg)	C ₂₃ (mg/kg)	C ₂₅ (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)
S11-L1A-3	12/17/96	ND<1	203	130	NT	NT	NT	NT	NT
S11-L1A-5	12/17/96	ND<1	33	9	NT	NT	NT	NT	NT
S11-L2-3	12/17/96	ND<1	34	7	NT	NT	NT	NT	NT
S11-L2-5	12/17/96	ND<1	966	654	NT	NT	NT	NT	NT
S11-L3-3	12/17/96	ND<1	829	391	NT	NT	NT	NT	NT
S11-L3-5	12/17/96	ND<1	3780	2270	NT	NT	NT	NT	NT
S11-L4-6	12/17/96	ND<1	ND<10	ND<10	NT	NT	NT	NT	NT
S11-L5-12	12/17/96	ND<1	20	3	NT	NT	NT	NT	NT
S13-PH1-6	04/09/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH1E-3	04/10/97	ND<10	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH1-9	04/10/97	1.8	121	46	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH1W-3	04/10/97	5.8	20700	9400	ND<0.005	ND<0.005	14	24	24
FTF-PH2-3	04/10/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH3-3	04/10/97	ND<10	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH3-6	04/10/97	ND<1	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH4-3	04/10/97	ND<1	214	110	ND<0.005	ND<0.005	ND<0.005	ND<0.01	ND<0.01
FTF-PH4-12	04/10/97	10.9	559	246	209	39	204	291	291

NOTES:
 mg/kg = milligrams per kilogram
 ug/kg = micrograms per kilogram
 ND-S = no detected at the indicated laboratory detection limit
 IPII = total petroleum hydrocarbons

QA/QC: *[Signature]*
 DATE: 3/15/98
 F:\ENVDOCS\SCGIT20-NRTHSUMPINFO\SUMPSOIL.XLS

TABLE 3b
SUMMARY OF DETECTED METALS, ANIONS AND CATIONS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	METALS (EPA Method 8000-7000)										ANIONS AND CATIONS							
	Arsenic	Barium	Gadolinium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Thallium	Vanadium	Zinc	Nitrate	Soluble Nitrite	Sulfate	Soluble Ammonia	Potassium	Sodium
S1-PH1-6	14.4	1240	9.7	11.9	5.4	38.3	13.2	ND<S	453	17.1	73.5	201	1.4	0.7	7.2	ND<0.5	1320	443
S1-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-15	ND<1	239	ND<2.5	11.1	ND<S	21.3	ND<S	5.3	42.3	ND<10	71	68	ND<1	ND<0.2	ND<10	ND<0.1	1180	636
S2-T1-B110-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-18	ND<1	214	7.7	11.3	ND<S	23.4	ND<S	5.3	60.5	ND<10	86.5	65.5	ND<1	ND<0.2	ND<10	ND<0.1	1250	588
S2-T2-170-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-170-8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-NW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-NW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *PS*
 DATE: 7/15/13
 F:\ENVDOCS\ISCG\T20-NRTH\SUMP\INFO\SUMPSOIL.XLS

TABLE 3b
 SUMMARY OF DETECTED METALS, ANIONS AND CATIONS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	Metals (EPA Method 6000-7000)										Anions and Cations							
	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Thallium	Vanadium	Zinc	Nitrate	Soluble Nitrite	Sulfate	Soluble Ammonia	Potassium	Sodium
S2-T3-NW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S3-HA1-6	1.8	193	8.1	ND<5	5.5	23.1	ND<5	ND<5	15.3	31.7	21.6	75	1.3	3710	17.6	2710	301	NT
S3-HA2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-B1-20	ND<1	92	ND<0.5	ND<5	ND<5	7.8	ND<5	ND<5	ND<5	ND<5	15.8	37.8	ND<1	280	9.2	2570	399	NT
S4-PH1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-18	ND<1	40.3	3	5.3	ND<5	12.4	ND<5	ND<5	13.3	11.4	12.1	111	ND<1	700	13.6	1180	463	NT
S6-B1-9	1.2	44.1	2.6	ND<5	8	26.9	ND<5	ND<5	25.2	ND<5	12.1	75	ND<1	730	8.5	3000	2490	NT
S6-PH2-2	ND<1	124	4.6	ND<5	6.7	16.6	ND<5	ND<5	7.4	17.1	22.2	54.5	ND<1	1140	0.8	3140	87.1	NT
S6-PH2-5	NT	NT	NT	NT	NT	NT	NT	NT	7.4	NT	NT	NT	NT	NT	NT	NT	NT	NT
S8E-PH1-3	2.3	269	13.8	7.6	11.6	50	ND<5	5.5	74.5	ND<5	72.5	132	17.1	37	9.6	3120	278	NT
S8W-PH1-12	ND<1	175	12.9	12.8	7.5	42.7	ND<5	ND<5	68.5	22.1	96.5	116	ND<1	42	14.4	2300	306	NT
S9-PH1-12	ND<1	176	12.6	9	8.6	41.8	ND<5	6.8	84	28.3	94.5	120	16.1	58	0.6	1570	203	NT
S10-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: PS
 DATE: 7/16/98

TABLE 3b
SUMMARY OF DETECTED METALS, ANIONS AND CATIONS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon
 Northridge, California

SAMPLE ID	METALS (EPA Method 8000-000)										ANIONS AND CATIONS								
	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Thallium	Vanadium	Zinc	Nitrate	Soluble Nitrate	Sulfate	Soluble Phosphate	Ammonia	Potassium	Sodium
S10-L2-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L3-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L5-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S12-PH1-6	ND<1	219	18.6	25.1	8.4	55.5	ND<5	117	32.6	141	125	10.8	ND<0.2	32	16	1530	1530	357	357
FTF-PH1-9	ND<1	44.8	4.3	ND<5	ND<5	7.9	ND<5	ND<5	17.1	17.2	32.8	ND<1	1.6	228	20	2360	2360	12.3	12.3
FTF-PH1W-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH2-3	NT	134	5.6	ND<5	5.3	20.9	ND<5	23	20.6	26.7	63.5	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH4-3	NT	245	9.5	32.3	7.9	35.3	ND<5	39.2	33.6	59.5	99.5	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH4-12	ND<1	322	10.5	25.3	8	35.9	ND<5	42.9	31.4	56.5	106	ND<1	2.3	90	36.8	2390	2390	NT	3310

NOTES:
 All results reported in this summary are based on the following methods:
 Metals: EPA Method 8000-000
 Anions and Cations: EPA Method 8000-000
 ND<5 = No Detectable Concentration
 NT = Not Tested

QA/QC: D4
 DATE: 7/16/97

SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS

Southern California Gas Company

Aliso Canyon

Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)											
	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(e)pyrene	Benzo(a)pyrene	Fluorene	Anthracene	Phenanthrene	Fluorene	Benzo(a)pyrene	Benzo(b)fluoranthene	Pyrene
S1-PHI-6	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S1-PHI-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B110-15	ND<0.02	0.112	0.107	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.637	0.187	ND<0.02	0.818	ND<0.02
S2-T1-B110-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-15M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T1-B125-18	ND<0.02	0.039	ND<0.02	ND<0.02	0.122	ND<0.02	0.277	0.104	ND<0.02	0.12	0.529	0.529
S2-T2-170-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-170-8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-155-18M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

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 DATE: 5/15/17
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TAL 33c

SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS

Southern California Gas Company

Aliso Canyon

Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)											
	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
S2-T2-140-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T2-140-18	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T3-NW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-9M	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T4-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S2-T5-SW-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S3-HA1-6	0.468	0.74	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.29	NT	0.139	ND<0.02	0.168	0.168
S3-HA2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-B1-20	0.148	0.424	ND<0.02	0.11	0.808	ND<0.02	0.092	0.808	0.808	ND<0.02	ND<0.02	ND<0.02
S4-PH1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S4-PH1-18	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S6-B1-9	0.034	0.284	ND<0.02	0.284	0.467	ND<0.02	0.467	0.467	0.467	0.043	0.043	0.145
S6-PH2-2	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S6-PH2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *PL*
 DATE: 9/16/90
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SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS

Southern California Gas Company

Aliso Canyon

Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)											
	Benzo (a) anthracene	Benzo (b) fluorene	Benzo (k) fluorene	Benzo (g) indene	Chrysene	Dibenz (a,h) anthracene	Anthracene	Fluoranthene	Naphthalene	Indeno (1,2,3-cd) pyrene	Phenanthrene	Pyrene
S8E-PH1-3	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S8W-PH1-12	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S9-PH1-12	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
S10-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L1-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L2-14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L3-15	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S10-L4-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L1A-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L2-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QA/QC: *[Signature]*
 DATE: *7/16/18*
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TAB 3c

SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS

Southern California Gas Company

Aliso Canyon

Northridge, California

Sample ID	Polycyclic Aromatic Hydrocarbons (PAHs)											
	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Benzo(e)pyrene	Benzo(a)anthracene	Dibenz(a,h)anthracene	Anthracene	Fluorene	Fluorene	Phenanthrene	Pyrene
S11-L3-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L3-5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L4-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S11-L5-12	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S13-PH1-6	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02
FTF-PH1-9	0.026	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.109	ND<0.02	ND<0.02	ND<0.02
FTF-PH1W-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH2-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH3-6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH4-3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
FTF-PH4-12	4.87	ND<0.02	1.39	0.319	3.43	ND<0.02	7.31	1.9	ND<0.02	1.32	4.25	

NOTES:
 All results reported in milligrams per kilogram (mg/kg).
 ND = not detected at the indicated laboratory detection limit.
 NT = not tested.

QA/QC: *PS*
 DATE: 1/16/13
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American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

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Los Angeles, CA 90013-1011

Number of Pages: 61
Date Received : 11/13/96
Date Reported : 11/20/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7358

Project Name : SCG - Aliso Canyon
Project Number : SCG-01-T020

Site: SCG - Aliso Canyon

Enclosed please find results of analyses of 24 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sweeney

Approved By: C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
 2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840
 Certificate # 1541

AETL JOB# 7358 PAGE 1 OF 4

CHAIN OF CUSTODY RECORD

CLIENT: ENV America, Inc Bill to SCG (Massened)
 ADDRESS: 16 Technology Dr # 154
 SITE: SCG - Aliso Canyon
 CONTACT PERSON: Frank Hagar
 PROJECT NAME: SCG - Aliso Can PROJECT NUMBER: SCG-01-TDZO
 TELEPHONE: 714-453-9191
 FAX: 714-453-9292

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE				PRES.	REMARKS	
					SOIL	WATER	SOLID WASTE	LIQUID WASTE			OTHER
S2-T1-110-18	AE33374	11/13/96	0830	2X 4oz.	X					NONE	PH (gas) (4-12) X PH (D-res) (4-12) X 84/0 X 8000 X 8310 X Arsenic X Metals 600 (See Metals 600 (See) 8080-PCBS only)
S2-T1-110-3	AE33375		0840								
S2-T1-110-6	AE33376		0845								
S2-T1-110-9	AE33377		0855								
S2-T1-110-12	AE33378		0900								
S2-T1-110-15	AE33379		0910								
S2-T1-125-3	AE33380		0925								
S2-T1-125-6	AE33381		0930								
S2-T1-125-9	AE33382		0935								
S2-T1-125-12	AE33383		0945								
S2-T1-125-15	AE33384		0950								
S2-T1-125-15M	AE33385	11/13/96	0955	2 x 4oz.	X						

Collected By: R. Regis / J. Lomax Date: 11-13-96 Time: 1650
 Relinquished By: R. Regis Date: 11-13-96 Time: 4:45
 Turn Aro. Normal Rush
 Delivered By: _____ Date: _____ Time: _____
 Received For Laboratory: R. Regis Date: 11-13-96 Time: 4:45



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7358

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 11-13-96
DATE SUBMITTED: 11-14-96
DATE ANALYSIS COMPLETED: 11-20-96
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		pH	GASOLINE C ₄ - C ₁₂	DIESEL C ₁₂ - C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33374	S2-T1-B110-18	6.15	3.9	3,170	1,230
AE33375	S2-T1-110-3	6.74	ND	5	5
AE33376	S2-T1-110-6	6.92	ND	1,110	960
AE33377	S2-T1-110-9	6.54	ND	ND	ND
AE33378	S2-T1-110-12	7.02	ND	2,050	2,540
AE33379	S2-T1-110-15	6.83	2.6	12,200	6,960
AE33380	S2-T1-125-3	6.63	ND	424	541
AE33381	S2-T1-125-6	7.23	1.8	9,850	4,850
AE33382	S2-T1-125-9	6.98	ND	2,090	3,440
AE33383	S2-T1-125-12	7.08	ND	190	187
AE33384	S2-T1-125-15	6.96	1.5	25,900	17,000
AE33385	S2-T1-12515M	6.98	2.0	14,800	20,400
AE33686	S2-T1-B125-18	7.16	5.5	193	137
AE33387	S2-T2-170-3	7.24	ND	20	12
AE33388	S2-T2-170-8	7.12	ND	ND	ND
AE33389	S2-T2-155-3	7.69	ND	420	433



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DOHS 1541
LAGSD 10181

AETL JOB NO.: 7358

(Cont.)

ANALYTE		pH	GASOLINE C ₄ - C ₁₂	DIESEL C ₁₂ - C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33390	S2-T2-155-6	7.33	2.2	4,360	1,760
AE33391	S2-T2-155-9	7.13	ND	ND	ND
AE33392	S2-T2-155-12	6.96	ND	14	4
AE33393	S2-T2-155-15	6.42	ND	ND	ND
AE33394	S2-T2-155-18	6.23	ND	ND	ND
AE33395	S2-T2-155-18M	6.30	ND	ND	ND
AE33396	S2-T2-140-3	7.08	ND	33	28
AE33397	S2-T2-140-6	7.01	1.2	21,700	8,900
AE33398	Method Blank	ND	ND	ND	ND

ND = Not Detected at the Detection Limit

H. C. = Heavy Hydrocarbons

Cyrus Razmara, Ph.D.
Laboratory Director



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33374	AE33375	AE33376	AE33377	
Sample No:	S2-T1B110-18	S2-T1-110-3	S2-T1-110-6	S2-T1-110-9	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.15	6.74	6.92	6.54	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33378	AE33379	AE33380	AE33381	
Sample No:	S2-T1-110-12	S2-T1-110-15	S2-T1-125-3	S2-T1-125-6	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	7.02	6.83	6.63	7.23	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 6

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33382	AE33383	AE33384	AE33385	
Sample No:	S2-T1-125-9	S2-T1-125-12	S2-T1-125-15	S2-T1-12515M	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.98	7.08	6.96	6.98	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33386	AE33387	AE33388	
Sample No:	S2-T1B125-18	S2-T2-170-3	S2-T2-170-8	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	Limit
PH	7.16	7.24	7.12	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.15	6.17	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10161

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33389	AE33390	AE33391	AE33392	
Sample No:	S2-T2-155-3	S2-T2-155-6	S2-T2-155-9	S2-T2-155-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	7.69	7.33	7.13	6.96	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.69	7.69	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33393	AE33394	AE33395	AE33396	
Sample No:	S2-T2-155-15	S2-T2-155-18	S2-T2-15518M	S2-T2-140-3	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.42	6.23	6.30	7.08	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.69	7.69	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33397	AE33398	
Sample No:	S2-T2-140-6	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit
PH	7.01	ND	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.69	7.69	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	Limit
Sulfides	ND	ND	ND	0.5

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
Nitrite as Nitrogen	ND	ND	ND	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	104

Comment to Sample(s)
AE33379: AE33386: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.3
Nitrogen, Ammonia (ISE)
Units: mg/L

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/21/96	11/21/96	11/21/96	Detection
Date Analyzed:	11/21/96	11/21/96	11/21/96	Limit

NH3 as Nitrogen	ND	ND	ND	0.1
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QUALITY CONTROL SUMMARY

	LCS %REC.
NH3 as Nitrogen	98

Comment to Sample(s)
AE33379; AE33386: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit

NO3 as N	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	111

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	Limit

Sulfate	ND	ND	ND	10
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	ND	ND	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000-7000)
15 Metals
Units: mg/Kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit

Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	ND	ND	ND	1.0
Barium (Ba)	239	214	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	ND	7.7	ND	2.5
Chromium (Cr)	11.1	11.3	ND	5.0
Cobalt (Co)	ND	ND	ND	5.0
Copper (Cu)	21.3	23.4	ND	5.0
Lead (Pb)	ND	ND	ND	5.0
Molybdenum (Mo)	5.3	5.3	ND	5.0
Nickel (Ni)	42.3	60.5	ND	5.0
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	10
Vanadium (V)	71.0	86.5	ND	5.0
Zinc (Zn)	68.0	65.5	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	80
Arsenic (As)	80
Barium (Ba)	102
Beryllium (Be)	95
Cadmium (Cd)	95
Chromium (Cr)	96
(Continued)	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 17

Lab ID:	AE33379	AE33386	AE33398
	LCS		
	%REC.		
Cobalt (Co)	98		
Copper (Cu)	93		
Lead (Pb)	86		
Molybdenum (Mo)	84		
Nickel (Ni)	95		
Silver (Ag)	96		
Thallium (Tl)	103		
Vanadium (V)	93		
Zinc (Zn)	94		

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit

Potassium (K)	1180	1250	ND	10
Sodium (Na)	636	588	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	99
Sodium (Na)	96

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/20/96	11/20/96	11/20/96	Detection
Date Analyzed:	11/20/96	11/20/96	11/20/96	Limit

Benzo (a) anthracene	ND	ND	ND	0.020
Benzo (a) pyrene	ND	0.039	ND	0.020
Benzo (b) fluoranthene	0.112	ND	ND	0.020
Benzo (k) fluoranthene	0.107	ND	ND	0.020
Chrysene	ND	0.122	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	0.020
Anthracene	ND	0.277	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	0.020
Fluorene	0.637	0.104	ND	0.020
Naphthalene	0.187	ND	ND	0.020
Phenanthrene	0.818	0.120	ND	0.020
Pyrene	ND	0.529	ND	0.020

QUALITY CONTROL SUMMARY

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	105	101	3.9
Benzo (a) pyrene	108	108	<1
Naphthalene	116	108	7.1

ND - NOT Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33374	AE33375	AE33376	AE33377	
Sample No:	S2-T1B110-18	S2-T1-110-3	S2-T1-110-6	S2-T1-110-9	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
TPH as Gasoline or Light HCs	3.9	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33374	AE33375	AE33376	AE33377
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	87	84	88	94
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	87	88	1.1	
Toluene	87	86	1.1	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33378	
Sample No:	S2-T1-110-12	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

TPH as Gasoline or Light HCs ND 1.0

QUALITY CONTROL SUMMARY

Lab ID: AE33378

Surrogate Percent Recovery
Chlorobenzene 77

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



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DOHS 1641
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33379	
Sample No:	S2-T1-110-15	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	2.6	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33379

Surrogate Percent Recovery
Chlorobenzene 113

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - NOT Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33380	AE33381	
Sample No:	S2-T1-125-3	S2-T1-125-6	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit

TPH as Gasoline or Light HCs	ND	1.8	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE33380	AE33381	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	75	83	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33382	
Sample No:	S2-T1-125-9	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Gasoline or Light HCs ND 1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33382		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	84		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33383	AE33384	AE33385	
Sample No:	S2-T1-125-12	S2-T1-125-15	S2-T1-12515M	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	Limit
TPH as Gasoline or Light HCs	ND	1.5	2.0	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33383	AE33384	AE33385
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	91	75	156
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	87	88	1.1
Toluene	87	86	1.1

Comment to Sample(s)
AE33385: Surrogate recovery high due to matrix interference.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 26

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID: AE33386
Sample No: S2-T1B125-18
Date Sampled: 11/13/96
Date Extracted: 11/14/96
Date Analyzed: 11/14/96
Detection Limit

Benzene	ND	5
Ethylbenzene	10	5
Toluene	ND	5
Xylenes(Total)	24	10
TPH as Gasoline or Light HCs	5.5	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33386

Surrogate Percent Recovery
Chlorobenzene 131

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

Comment to Sample(s)
AE33386: Surrogate recovery high due to matrix interference

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33387	AE33388	
Sample No:	S2-T2-170-3	S2-T2-170-8	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33387	AE33388	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	86	90	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33389	AE33390	AE33391	AE33392	
Sample No:	S2-T2-155-3	S2-T2-155-6	S2-T2-155-9	S2-T2-155-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	11/15/96	Limit
TPH as Gasoline or Light HCs	ND	2.2	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33389	AE33390	AE33391	AE33392
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	72	86	87	88
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzene	96	99	3.1	
Toluene	96	98	2.1	

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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33393	AE33394	AE33395	AE33396	
Sample No:	S2-T2-155-15	S2-T2-155-18	S2-T2-15518M	S2-T2-140-3	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	11/15/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	11/15/96	Limit

TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE33393	AE33394	AE33395	AE33396
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	89	93	95	83
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	96	99	3.1	
Toluene	96	98	2.1	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33397	
Sample No:	S2-T2-140-6	
Date Sampled:	11/13/96	
Date Extracted:	11/19/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Gasoline or Light HCs	1.2	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE33397		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	118		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Benzene	100	97	2.2
Toluene	94	94	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33398

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	88	1.1
Toluene	87	86	1.1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/15/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes(Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33398

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33398

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/19/96	Detection
Date Analyzed:	11/19/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	100	97	2.2
Toluene	94	94	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33374	
Sample No:	S2-T1B110-18	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	4400	30
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QUALITY CONTROL SUMMARY

Lab ID: AE33374

Surrogate Percent Recovery
Chlorobenzene 107

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33374: C12-C25 3170 mg/Kg, C25+ 1230 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33375	
Sample No:	S2-T1-110-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

TPH as Diesel and Heavier HC	10	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33375		
<u>Surrogate Percent Recovery</u> Chlorobenzene	100		
	<u>Spike</u> %REC.	<u>Spike DUP.</u> %REC.	<u>AVG.</u> RPD
Diesel	99	87	12.9

Comment to Sample(s)
AE33375: C12-C25: 5 mg/Kg, C25+ = 5 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33376	
Sample No:	S2-T1-110-6	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	2070	10
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33376		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33376: C12-C25 = 1110 mg/Kg, C25+ = 960 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33377	
Sample No:	S2-T1-110-9	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/14/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33377		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	92		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	99	87	12.9

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 39

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33378	
Sample No:	S2-T1-110-12	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	4590	60
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QUALITY CONTROL SUMMARY

Lab ID:	AE33378		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33378: C12-C25 = 2050 mg/Kg, C25+ = 2540 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33379	
Sample No:	S2-T1-110-15	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	19200	80
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QUALITY CONTROL SUMMARY

Lab ID:	AE33379		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	87	9

Comment to Sample(s)
AE33379: C12-C25 = 12200 mg/Kg, C25+ = 6960 mg/Kg

ND - NOT Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 41

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33380	
Sample No:	S2-T1-125-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	965	40
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33380		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	87	9

Comment to Sample(s)
AE33380: C12-C25 = 424 mg/Kg, C25+ = 541 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33381	
Sample No:	S2-T1-125-6	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	14700	80
------------------------------	-------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33381		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	87	9

Comment to Sample(s)
AE33381: C12-C25 = 9850 mg/Kg, C25+ = 4850 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 43

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33382	AE33383	
Sample No:	S2-T1-125-9	S2-T1-125-12	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit

TPH as Diesel and Heavier HC	5530	377	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE33382	AE33383	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102	94	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	99	87	12.9

Comment to Sample(s)
AE33382: C12-C25 = 2090 mg/Kg, C25+ = 3440 mg/Kg
AE33383: C12-C25 = 190 mg/Kg, C25+ = 187 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33384	
Sample No:	S2-T1-125-15	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	42900	100
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QUALITY CONTROL SUMMARY

Lab ID: AE33384

Surrogate Percent Recovery
Chlorobenzene 98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	87	9

Comment to Sample(s)
AE33384: C12-C25 = 25900 mg/Kg, C25+ = 17000 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 45

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33385	
Sample No:	S2-T1-12515M	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	35200	200
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QUALITY CONTROL SUMMARY

Lab ID:	AE33385		
<u>Surrogate Percent Recovery</u> Chlorobenzene	106		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33385: C12-C25= 14800 mg/Kg, C25+= 20400 mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G) Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011
Site: SCG - Aliso Canyon
Attn: Masood Hosseini Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33386	AE33387	AE33388	
Sample No:	S2-T1B125-18	S2-T2-170-3	S2-T2-170-8	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	Limit
TPH as Diesel and Heavier HC	330	32	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33386	AE33387	AE33388
Surrogate Percent Recovery			
Chlorobenzene	91	93	102
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	99	87	12.9

Comment to Sample(s)
AE33386: C12-C25 = 193 mg/Kg, C25+ = 137 mg/Kg
AE33387: C12-C25 = 20 mg/Kg, C25+ = 12 mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 47

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33389	
Sample No:	S2-T2-155-3	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	853	60
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QUALITY CONTROL SUMMARY

Lab ID:	AE33389		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	87	9

Comment to Sample(s)
AE33389: C12-C25 = 420 mg/Kg, C25+ = 433 mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 48

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33390	
Sample No:	S2-T2-155-6	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC	6120	40
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33390		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	87	9

Comment to Sample(s)
AE33390: C12-C25 = 4360 mg/Kg, C25+ = 1760 mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 49

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33391	AE33392	
Sample No:	S2-T2-155-9	S2-T2-155-12	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection Limit
Date Analyzed:	11/16/96	11/16/96	
TPH as Diesel and Heavier HC	ND	18	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33391	AE33392	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104	100	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	95	96	1

Comment to Sample(s)
AE33392: C12-C25 = 14 mg/Kg, C25+ = 4 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33393	AE33394	AE33395	
Sample No:	S2-T2-155-15	S2-T2-155-18	S2-T2-15518M	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/15/96	11/15/96	11/15/96	Limit
TPH as Diesel and Heavier HC	ND	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE33393	AE33394	AE33395
Surrogate Percent Recovery			
Chlorobenzene	101	105	102
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	92	90	2.2

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 51

Report To: (SC/G) Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011
Site: SCG - Aliso Canyon
Attn: Masood Hosseini
Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID: AE33396
Sample No: S2-T2-140-3
Date Sampled: 11/13/96
Date Extracted: 11/14/96
Date Analyzed: 11/16/96
Detection Limit

TPH as Diesel and Heavier HC 61 10

QUALITY CONTROL SUMMARY

Lab ID: AE33396
Surrogate Percent Recovery
Chlorobenzene 100
Spike %REC. Spike DUP. %REC. AVG. RPD
Diesel 95 96 1

Comment to Sample(s)
AE33396: C12-C25 = 33 mg/Kg, C25+ = 28 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33397	
Sample No:	S2-T2-140-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	30600	100
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33397		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33397: C12-C25 21700 mg/Kg, C25+ 8900 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 53

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	91	101	10

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/15/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	92	90	2.2

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 55

Report To: (SC/G) Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011
Site: SCG - Aliso Canyon
Attn: Masood Hosseini Phone: 213/244-3292

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID: AE33398
Sample No: METHOD BLANK
Date Sampled: 11/13/96
Date Extracted: 11/14/96
Date Analyzed: 11/16/96
Detection Limit

TPH as Diesel and Heavier HC ND 10

QUALITY CONTROL SUMMARY

Lab ID: AE33398
Surrogate Percent Recovery
Chlorobenzene 100
Spike %REC. Spike DUP. %REC. AVG. RPD
Diesel 95 96 1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Diesel and Heavier HC ND 10

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	95	87	9

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 57

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 58

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33398	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33398		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	91	101	10

ND - Not Detected at The Detection Limit



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DOHS 1541
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ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 59

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE33379	AE33386	AE33398	
Sample No:	S2-T1-110-15	S2-T1B125-18	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/98	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/98	Limit

Acetone	ND	ND	ND	50
Benzene	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	10
Bromoform	ND	ND	ND	50
Bromomethane	ND	ND	ND	50
2 Butanone	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	10
Chloroethane	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	50
Chloroform	ND	ND	ND	10
Chloromethane	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	10
2 Hexanone	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	50
Styrene	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	10
Toluene	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	10
Trichloroethene	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 60

QUALITY CONTROL SUMMARY

Lab ID:	AE33379	AE33386	AE33398
Surrogate Percent Recovery			
Bromofluorobenzene	100	96	98
1,2 Dichloroethane-d4	106	103	100
Toluene-d8	112	110	99
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	102	106	4
Chlorobenzene	98	102	4
1,1 Dichloroethene	94	89	5
Toluene	111	116	5
Trichloroethene	94	97	3

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7358
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 61

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE33379	AE33398	
Sample No:	S2-T1-110-15	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	Limit
PCB-1016	ND	ND	0.1
PCB-1221	ND	ND	0.1
PCB-1232	ND	ND	0.1
PCB-1242	ND	ND	0.1
PCB-1248	ND	ND	0.1
PCB-1254	ND	ND	0.1
PCB-1260	ND	ND	0.1

QUALITY CONTROL SUMMARY

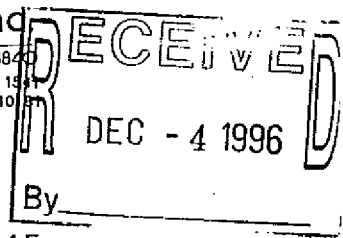
Lab ID:	AE33379	AE33398	
<u>Surrogate Percent Recovery</u>			
Tetrachloro M-Xylene	55	100	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
PCB-1016	114	117	3
PCB-1260	114	116	2

ND - Not Detected at The Detection Limit



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DOHS 15
LAGSD 10



Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 45
Date Received : 11/13/96
Date Reported : 11/20/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7359

Project Name : SCG - Aliso Canyon
Project Number : SCG-01-T020

Site: SCG - Aliso Canyon

Enclosed please find results of analyses 20 soil & 1 water sample analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrano

Approved By: C. Razmara
Cyrus Razmara Ph.D.
Laboratory Director



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 Certificate #1541

AETL JOB# 7359

PAGE 4 OF 4

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

CLIENT: ENV America, Inc. TELEPHONE: 714-453-9191

ADDRESS: 16 Technology Dr., Irvine FAX: 714-453-9292

SITE: SGG Aliso Canyon

CONTACT PERSON: Frank Hagad PROJECT NAME: _____ PROJECT NUMBER: _____

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID LIQUID WASTE OTHER		
S2-T4-9M	AE33410	11/19/96	1440	2x4oz	X			None	X
S2-T4-12	AE33411		1441						X
S2-T4-15	AE33412		1445						X
S2-T5-SW-3	AE33413		1518 1448	NR					X
S2-T5-SW-3	AE33413		1518						X
S2-T5-SW-6	AE33414		1521						X
S2-T5-SW-9	AE33415		1523						X
S2-T5-SW-12	AE33416		1525						X
S2-T5-SW-15	AE33417		1528	24oz					X
TRIP Blank - S	AE33418	11/19/96		1.4oz	X			NONE	X
TRIP Blank - W	AE33419			4x40ml VOA		X			X

Collected By: Ren Rogers / Jim Larwood Date: 11/13/96 Time: _____

Relinquished By: R.R. Date: 11/13/96 Time: 1650

Turn Ar: _____ Time: _____

Delivered By: _____ Date: _____ Time: _____

Received For Laboratory: C. Raymond Date: 11-13-96 Time: 4:50

Normal Rush

CHAIN OF CUSTODY RECORD

CLIENT: ENV America, Inc. SCG - Mosswood TELEPHONE: 714-453-9191
ADDRESS: 16 Technology Dr # 154, Irvine FAX: 714-453-7272

SITE: SCG - Aise Canyon

CONTACT PERSON: Frank Hagar PROJECT NAME: SCG - Aise Canyon PROJECT NUMBER: SCG-01-T020

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS															
					SOIL	WATER	LIQUID WASTE OTHER																	
S2-T2-140-9	AE33399	11/3/96	1225	2x4oz	X			NONE	X	X														
S2-T2-140-12	AE33400		1227	2x4oz					X	X														
S2-T2-140-15	AE33401		1230						X	X														
S2-T2-140-18	AE33402		1235						X	X														
S2-T3-NW-3	AE33403		1300						X	X														
S2-T3-NW-6	AE33404		1305						X	X														
S2-T3-NW-9	AE33405		1320						X	X														
S2-T3-NW-12	AE33406		1325						X	X														
S2-T3-NW-15			1326																					
S2-T4-3	AE33407		1430																					
S2-T4-6	AE33408		1432																					
S2-T4-9	AE33409	11/13/96	1435	2x4oz	X																			

ANALYSIS REQUESTED

PH (gase) 44-45
TPH (liq) ext 45-49
TPH (liq) ext 45-49
Foc

Collected By: Ron Rogers / Jim Mosswood Date 11/13/96 Time 1650
Relinquished By: R.R. Date 11/13/96 Time 1650
Turn Around Time Normal Rush
Delivered By: _____ Date _____ Time _____
Received For Laboratory: C. Reynolds Date 11-13-96 Time 4:51



SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7359

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 11-13-96
DATE SUBMITTED: 11-14-96
DATE ANALYSIS COMPLETED: 11-20-96
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		pH	GASOLINE C ₄ - C ₁₂	DIESEL C ₁₂ - C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33399	S2-T2-140-9	6.53	ND	10,200	15,300
AE33400	S2-T2-140-12	6.80	ND	6,210	4,690
AE33401	S2-T2-140-15	7.08	2.1	7,900	11,300
AE33402	S2-T2-140-18	7.81	ND	37	38
AE33403	S2-T3-NW-3	7.54	ND	35	19
AE33404	S2-T3-NW-6	6.74	ND	9,500	10,000
AE33405	S2-T3-NW-9	7.01	ND	370	500
AE33406	S2-T3-NW-12	6.87	ND	525	375
AE33407	S2-T4-3	7.95	ND	348	399
AE33408	S2-T4-6	6.54	3.0	17,400	10,200
AE33409	S2-T4-9	6.65	ND	109	127
AE33410	S2-T4-9M	6.42	ND	89	74
AE33411	S2-T4-12	6.34	ND	166	148
AE33412	S2-T4-15	6.54	8.4	3,980	1,000
AE33413	S2-T5-SW-3	7.01	ND	21	22
AE33414	S2-T5-SW-6	7.54	ND	138	185



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AETL JOB NO.: 7359

(Cont..)

ANALYTE		pH	GASOLINE C ₄ -C ₁₂	DIESEL C ₁₂ -C ₂₅	H.C. C ₂₅₊
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE33415	S2-T5-SW-9	6.61	2.1	5,450	1,460
AE33416	S2-T5-SW-12	7.06	ND	525	455
AE33417	S2-T5-SW-15	7.02	ND	64	23
AE33418	Trip Blank -S	NA	ND	NA	NA
AE33420	Method Blank	ND	ND	ND	ND

ND = Not Detected at the Detection Limit

H. C. = Heavy Hydrocarbons

NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33399	AE33400	AE33401	AE33402	
Sample No:	S2-T2-140-9	S2-T2-140-12	S2-T2-140-15	S2-T2-140-18	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit

PH	6.53	6.80	7.08	7.81	1.00
----	------	------	------	------	------

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.53	6.54	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33403	AE33404	AE33405	AE33406	
Sample No:	S2-T3-NW-3	S2-T3-NW-6	S2-T3-NW-9	S2-T3-NW-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	7.54	6.74	7.01	6.87	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.53	6.54	<1

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 6

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33407	AE33408	AE33409	AE33410	
Sample No:	S2-T4-3	S2-T4-6	S2-T4-9	S2-T4-9M	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Detection Limit
PH	7.95	6.54	6.65	6.42	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	6.53	6.54	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 7

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33411	AE33412	AE33413	AE33414	
Sample No:	S2-T4-12	S2-T4-15	S2-T5-SW-3	S2-T5-SW-6	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit

PH	6.34	6.54	7.01	7.54	1.00
----	------	------	------	------	------

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.54	7.53	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE33415	AE33416	AE33417	AE33420	
Sample No:	S2-T5-SW-9	S2-T5-SW-12	S2-T5-SW-15	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	11/14/96	11/14/96	Limit
PH	6.61	7.06	7.02	ND	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.54	7.53	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33399	AE33400	
Sample No:	S2-T2-140-9	S2-T2-140-12	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33399	AE33400	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	85	84	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33401	AE33402	AE33403	AE33404	
Sample No:	S2-T2-140-15	S2-T2-140-18	S2-T3-NW-3	S2-T3-NW-6	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	11/15/96	11/15/96	
Date Analyzed:	11/15/96	11/15/96	11/15/96	11/15/96	Detection Limit
TPH as Gasoline or Light HCs	2.1	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33401	AE33402	AE33403	AE33404
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	60	93	84	84
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	96	99	3.1	
Toluene	96	98	2.1	

Comment to Sample(s)
AE33401: Surrogate recovery low due to matrix effects.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33405	
Sample No:	S2-T3-NW-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/15/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE33405

Surrogate Percent Recovery
Chlorobenzene 78

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33406	
Sample No:	S2-T3-NW-12	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE33406

Surrogate Percent Recovery
Chlorobenzene 77

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - NOT Detected at The Detection Limit

ANALYTICAL RESULTS

Page: 13

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33407	
Sample No:	S2-T4-3	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/15/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE33407

Surrogate Percent Recovery
Chlorobenzene 74

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

ND - Not Detected at The Detection Limit



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DOHS 1541
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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33408	AE33409	AE33410	AE33411	
Sample No:	S2-T4-6	S2-T4-9	S2-T4-9M	S2-T4-12	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	3.0	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33408	AE33409	AE33410	AE33411
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	78	93	89	82
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	87	87	<1	
Toluene	83	83	<1	

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33412	AE33413	AE33414	AE33415	
Sample No:	S2-T4-15	S2-T5-SW-3	S2-T5-SW-6	S2-T5-SW-9	
Date Sampled:	11/13/96	11/13/96	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	8.4	ND	ND	2.1	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33412	AE33413	AE33414	AE33415
<u>Surrogate Percent Recovery</u> Chlorobenzene	98	85	74	78
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Benzene	87	87	<1	
Toluene	83	83	<1	

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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE33416	AE33417	
Sample No:	S2-T5-SW-12	S2-T5-SW-15	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/18/96	11/18/96	Detection
Date Analyzed:	11/18/96	11/18/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE33416	AE33417	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	73	88	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33418	
Sample No:	TRIP BLANK-S	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33418

Surrögatè Percent Recovery
Chlorobenzene 99

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Water
Method: 8015MOD/602
TPH as Gasoline and BTXE
Units: ug/L

Lab ID: AE33419
Sample No: TRIP BLANK-W
Date Sampled: 11/13/96
Date Extracted: 11/18/96
Date Analyzed: 11/18/96
Detection Limit

Benzene	ND	0.5
Ethylbenzene	ND	0.5
Toluene	ND	0.5
Xylenes (Total)	ND	1.0
TPH as Gasoline or Light HCs	ND	10

QUALITY CONTROL SUMMARY

Lab ID: AE33419

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP: %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Water
Method: 8015MOD/602
TPH as Gasoline and BTXE
Units: ug/L

Lab ID:	AE33421	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	0.5
Ethylbenzene	ND	0.5
Toluene	ND	0.5
Xylenes (Total)	ND	1.0
TPH as Gasoline or Light HCs	ND	10

QUALITY CONTROL SUMMARY

Lab ID: AE33421

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID: AE33420
Sample No: METHOD BLANK
Date Sampled: 11/13/96
Date Extracted: 11/15/96
Date Analyzed: 11/15/96
Detection Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33420

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	96	99	3.1
Toluene	96	98	2.1

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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/18/96	Detection
Date Analyzed:	11/18/96	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE33420

Surrogate Percent Recovery
Chlorobenzene 100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	87	<1
Toluene	83	83	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33399	
Sample No:	S2-T2-140-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	25500	100
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33399		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33399: C12 - C25 = 10,200mg/Kg, C25+ = 15,300mg/Kg

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33400	
Sample No:	S2-T2-140-12	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/95	Limit

TPH as Diesel and Heavier HC	10900	100
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33400		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33400: C12 - C25 = 6,210mg/Kg, C25 + = 4,690mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

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Site:
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Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33401	
Sample No:	S2-T2-140-15	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/95	Limit

TPH as Diesel and Heavier HC	19200	30
------------------------------	-------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33401		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33401: C12-C25=7,900mg/Kg, C25 + = 11,300mg/Kg.

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7359
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 Project Name: SCG - Aliso Canyon

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Site:
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Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
 Method: 8015M(DHS-LUFT)
 TPH as Diesel and Heavier HCs (Extended Run)
 Units: mg/kg

Lab ID:	AE33402	AE33403	
Sample No:	S2-T2-140-18	S2-T3-NW-3	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/15/96	11/15/96	Limit

TPH as Diesel and Heavier HC	75	54	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE33402	AE33403	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106	101	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	92	90	2, 2

Comment to Sample(s)
 AE33402: C12-C25 = 37 mg/Kg, C25+ = 38 mg/Kg
 AE33403: C12-C25 = 35 mg/Kg, C25+ = 19 mg/Kg

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
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Project Name: SCG - Aliso Canyon

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Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33404	
Sample No:	S2-T3-NW-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/95	Limit

TPH as Diesel and Heavier HC	19200	100
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID: AE33404

Surrogate Percent Recovery
Chlorobenzene 97

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33404: C12-C25=7,900 mg/Kg, C25 + = 11,300mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33405	
Sample No:	S2-T3-NW-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	870	50
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID: AE33405

Surrogate Percent Recovery
Chlorobenzene 97

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33405: C12 - C25=370mg/Kg, C25 + = 500mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33406	AE33407	
Sample No:	S2-T3-NW-12	S2-T4-3	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/15/96	11/15/96	
Date Analyzed:	11/20/96	11/20/96	Detection Limit
TPH as Diesel and Heavier HC	900	747	40

QUALITY CONTROL SUMMARY

Lab ID:	AE33406	AE33407	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	108	89	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)

AE33406: C12-C25=525mg/Kg, C25+=375mg/Kg.
AE33407: C12 - C25=348mg/Kg, C25+=399mg/Kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33408	
Sample No:	S2-T4-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	27600	200
------------------------------	-------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE33408		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	89		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33408: C12-C25=17,400mg/Kg, C25+=10,200mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

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Project Name: SCG - Aliso Canyon

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Site:
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Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33409	
Sample No:	S2-T4-9	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	236	10
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33409		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	97		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33409: C12-C25=109mg/Kg, C25+=127mg/Kg.

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33410	
Sample No:	S2-T4-9M	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	163	10
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33410		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	96	95	1

Comment to Sample(s)
AE33410: C12-C25=89mg/Kg, C25+=74mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

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Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33411	
Sample No:	S2-T4-12	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	314	20
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33411		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33411: C12-25=166mg/Kg, C25+=148mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33412	
Sample No:	S2-T4-15	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	4980	40
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33412		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	95		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

Comment to Sample(s)
AE33412: C12-C25=3,980mg/Kg, C25+=1,000mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

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Los Angeles, CA 90013-1011

Site:
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Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33413	
Sample No:	S2-T5-SW-3	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	43	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33413		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	105		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	96	95	1

Comment to Sample(s)
AE33413: C12-C25=21mg/Kg, C25+=22mg/Kg.

ND - Not Detected at The Detection Limit



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OOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33414	
Sample No:	S2-T5-SW-6	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	323	10
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33414		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33414: C12-C25=138mg/Kg, C25+=185mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID: AE33415
Sample No: S2-T5-SW-9
Date Sampled: 11/13/96
Date Extracted: 11/15/96
Date Analyzed: 11/20/96
Detection Limit

TPH as Diesel and Heavier HC 6910 40

QUALITY CONTROL SUMMARY

Lab ID: AE33415
Surrogate Percent Recovery
Chlorobenzene 107
Spike %REC. Spike DUP. %REC. AVG. RPD
Diesel 91 101 10

Comment to Sample(s)
AE33415: C12-C25=5,450mg/Kg, C25+=1,460mg/Kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 37

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33416	
Sample No:	S2-T5-SW-12	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	980	40
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33416		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Diesel	91	101	10

Comment to Sample(s)
AE33416: C12-C25=525mg/Kg, C25+=455mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 38

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33417	
Sample No:	S2-T5-SW-15	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	87	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33417		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	99		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

Comment to Sample(s)
AE33417: C12-C25=64mg/Kg, C25+=23mg/Kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 39

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/14/96	Detection
Date Analyzed:	11/15/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33420		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	92	90	2.2

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33420		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	95	1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 41

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE33420	
Sample No:	METHOD BLANK	
Date Sampled:	11/13/96	
Date Extracted:	11/15/96	Detection
Date Analyzed:	11/20/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE33420		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	91	101	10

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE33418	AE33420	
Sample No:	TRIP BLANK-S	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit

Acetone	ND	ND	50
Benzene	ND	ND	10
Bromodichloromethane	ND	ND	10
Bromoform	ND	ND	50
Bromomethane	ND	ND	50
2 Butanone	ND	ND	50
Carbon Disulfide	ND	ND	10
Carbon Tetrachloride	ND	ND	10
Chlorobenzene	ND	ND	10
Chloroethane	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	50
Chloroform	ND	ND	10
Chloromethane	ND	ND	50
Dibromochloromethane	ND	ND	10
1,2 Dichlorobenzene	ND	ND	10
1,3 Dichlorobenzene	ND	ND	10
1,4 Dichlorobenzene	ND	ND	10
1,1 Dichloroethane	ND	ND	10
1,2 Dichloroethane	ND	ND	10
1,1 Dichloroethene	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	10
1,2 Dichloropropane	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	10
Ethylbenzene	ND	ND	10
2 Hexanone	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	50
Methylene Chloride	ND	ND	50
Styrene	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	10
Tetrachloroethene	ND	ND	10
Toluene	ND	ND	10
1,1,1 Trichloroethane	ND	ND	10
1,1,2 Trichloroethane	ND	ND	10
Trichloroethene	ND	ND	10
Trichlorofluoromethane	ND	ND	10
Vinyl Acetate	ND	ND	50
Vinyl Chloride	ND	ND	50
Xylenes (Total)	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 43

QUALITY CONTROL SUMMARY

Lab ID:	AE33418	AE33420
<u>Surrogate Percent Recovery</u>		
Bromofluorobenzene	99	98
1,2 Dichloroethane-d4	104	100
Toluene-d8	97	100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	102	106	4
Chlorobenzene	98	102	4
1,1 Dichloroethene	94	89	5
Toluene	111	116	5
Trichloroethene	94	97	3

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG - Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Water
Method: 624
Purgeable Volatile Organics by GC/MS
Units: ug/L

Lab ID:	AE33419	AE33421	
Sample No:	TRIP BLANK-W	METHOD BLANK	
Date Sampled:	11/13/96	11/13/96	
Date Extracted:	11/14/96	11/14/96	Detection
Date Analyzed:	11/14/96	11/14/96	Limit

Acetone	ND	ND	5
Benzene	ND	ND	1
Bromodichloromethane	ND	ND	1
Bromoform	ND	ND	5
Bromomethane	ND	ND	5
2 Butanone	ND	ND	5
Carbon Disulfide	ND	ND	1
Carbon Tetrachloride	ND	ND	1
Chlorobenzene	ND	ND	1
Chloroethane	ND	ND	5
2 Chloroethyl Vinylether	ND	ND	5
Chloroform	ND	ND	1
Chloromethane	ND	ND	5
Dibromochloromethane	ND	ND	1
1,2 Dichlorobenzene	ND	ND	1
1,3 Dichlorobenzene	ND	ND	1
1,4 Dichlorobenzene	ND	ND	1
1,1 Dichloroethane	ND	ND	1
1,2 Dichloroethane	ND	ND	1
1,1 Dichloroethene	ND	ND	1
CIS 1,2 Dichloroethene	ND	ND	1
TRNS 1,2 Dichloroethene	ND	ND	1
1,2 Dichloropropane	ND	ND	1
CIS 1,3 Dichloropropene	ND	ND	1
TRNS 1,3 Dichloropropene	ND	ND	1
Ethylbenzene	ND	ND	1
2 Hexanone	ND	ND	5
4 Methyl-2-Pentanone	ND	ND	5
Methylene Chloride	ND	ND	5
Styrene	ND	ND	1
1,1,2,2 Tetrachloroethane	ND	ND	1
Tetrachloroethene	ND	ND	1
Toluene	ND	ND	1
1,1,1 Trichloroethane	ND	ND	1
1,1,2 Trichloroethane	ND	ND	1
Trichloroethene	ND	ND	1
Trichlorofluoromethane	ND	ND	1
Vinyl Acetate	ND	ND	5
Vinyl Chloride	ND	ND	5
Xylenes (Total)	ND	ND	2

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7359
Project ID: SCG-01-T020
Project Name: SCG - Aliso Canyon

Page: 45

QUALITY CONTROL SUMMARY

Lab ID:	AE33419	AE33421
<u>Surrogate Percent Recovery</u>		
Bromofluorobenzene	94	100
1,2 Dichloroethane-d4	100	100
Toluene-d8	99	100

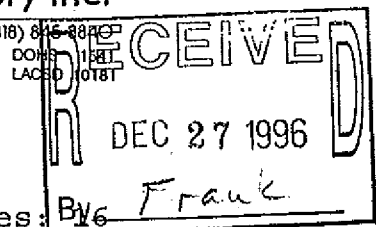
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	102	106	4
Chlorobenzene	98	102	4
1,1 Dichloroethene	94	89	5
Toluene	111	116	5
Trichloroethene	94	97	3

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: By 6
Date Received : 12/17/96
Date Reported : 12/24/96

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7521

Project Name : SCG - Aliso Cyn.
Project Number : SCG-T020-300

Site: Aliso Canyon

Enclosed please find results of analyses of 16 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sweeney

Approved By: C. Razmara
Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.
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 Certificate #1541

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

CLIENT: ENV America TELEPHONE: 714-453-9191
 ADDRESS: 16 Technology Dr. FAX: 714-453-9292
 SITE: Aliso Canyon
 CONTACT PERSON: Frank Hegar PROJECT NAME: SCG - Aliso Canyon PROJECT NUMBER: SCG-T020-300

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE				PRES.	REMARKS	
					SOIL	WATER	SOLID WASTE	LIQUID WASTE			OTHER
S10-L4-12	AE34341	12/17/96		4oz	X					X	Hold Remaining Samples For Analysis
S10-L1-3	AE34342										
S10-L1-6	AE34343										
S10-L1-9	AE34344										
S10-L1-15	AE34345										
S10-L2-3	AE34346										
S10-L2-6	AE34347										
S10-L2-9	AE34348										
S10-L2-12	AE34349										
S10-L2-14	AE34350										
S10-L3-15	AE34351										
S10-L3-12	AE34352										

Collected By: R. Rogers Date 12/17/96 Time 5:45 Delivered By: Date Time
 Relinquished By: R.P. Date 12/17/96 Time 3:50 Received For Laboratory: Date 12/17/96 Time 3:50
 Turn Around Time: Normal Rush



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7521

PROJECT: SCG-Aliso Canyon
SITE: SCG-Aliso Canyon
DATE SAMPLED: 12-17-96
DATE SUBMITTED: 12-17-96
DATE ANALYSIS COMPLETED: 12-23-96
SAMPLE DESCRIPTION: Grab soil samples (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America Inc.

ANALYTE		GASOLINE C ₆ -C ₁₂	DIESEL C ₁₁ -C ₂₅	HYDR. CARB. C ₂₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULTS	RESULTS	RESULTS
AE34341	S10-L4-12	ND	21	6
AE34342	S10-L1-3	ND	ND	ND
AE34343	S10-L1-6	ND	ND	ND
AE34344	S10-L1-9	ND	75	61
AE34345	S10-L1-15	ND	48	6
AE34346	S10-L2-3	ND	ND	ND
AE34347	S10-L2-6	ND	277	232
AE34348	S10-L2-9	ND	ND	ND
AE34349	S10-L2-12	ND	ND	ND
AE34350	S10-L2-14	ND	ND	ND
AE34351	S10-L3-15	ND	ND	ND
AE34352	S10-L3-12	ND	13	4
AE34353	S10-L3-9	ND	55	33

ND =Not Detected at the detection limit



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DOHS 1541
LACSD 10181

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7521

ANALYTE		GASOLINE C ₇ -C ₁₂	DIESEL C ₁₂ -C ₂₅	HYDR. CARB. C ₂₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULTS	RESULTS	RESULTS
AE34354	S10-L3-6	ND	92	39
AE34355	S10-L3-3	ND	40	22
AE34356	S10-L1-12	ND	511	336
AE34357	Method Blank	ND	ND	ND

ND =Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10101

ANALYTICAL RESULTS

Page: 4

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34341	AE34342	AE34343	AE34344	
Sample No:	S10-L4-12	S10-L1-3	S10-L1-6	S10-L1-9	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	12/19/96	12/19/96	Limit
TPH as Diesel and Heavier HC	27	ND	ND	136	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34341	AE34342	AE34343	AE34344
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	101	100	102	99
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Diesel	87	88	1.1	

Comment to Sample(s)

AE34341: C12-C25=21mg/Kg; C25+=6mg/Kg
AE34344: C12-C25=75mg/Kg; C25+=61mg/Kg

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

Page: 5

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34345	AE34346	
Sample No:	S10-L1-15	S10-L2-3	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	Limit

TPH as Diesel and Heavier HC	54	ND	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE34345	AE34346	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98	101	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	87	88	1.1

Comment to Sample(s)
AE34345: C12-C25=48mg/Kg; C25+=6mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

Page: 6

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34347	
Sample No:	S10-L2-6	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Diesel and Heavier HC	509	40
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34347		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	104		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	94	95	1

Comment to Sample(s)
AE34347: C12-C25=277mg/Kg; C25+=232mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34348	AE34349	AE34350	AE34351	
Sample No:	S10-L2-9	S10-L2-12	S10-L2-14	S10-L3-15	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Detection Limit
TPH as Diesel and Heavier HC	ND	ND	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34348	AE34349	AE34350	AE34351
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	99	100	101	102
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Diesel	94	95	1	

ND - Not Detected at The Detection Limit



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DOHS 1641
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34352	AE34353	AE34354	AE34355	
Sample No:	S10-L3-12	S10-L3-9	S10-L3-6	S10-L3-3	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Limit
TPH as Diesel and Heavier HC	17	88	131	62	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34352	AE34353	AE34354	AE34355
<u>Surrogate Percent Recovery</u> Chlorobenzene	101	110	109	104
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Diesel	94	95	1	

Comment to Sample(s)
AE34352: C12-C25=13mg/Kg; C25+=4mg/Kg
AE34353: C12-C25=55mg/Kg; C25+=33mg/Kg
AE34354: C12-C25=92mg/Kg; C25+=39mg/Kg
AE34355: C12-C25=40mg/Kg; C25+=22mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34356	AE34357	
Sample No:	S10-L1-12	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	Limit
TPH as Diesel and Heavier HC	847	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34356	AE34357	
Surrogate Percent Recovery			
Chlorobenzene	100	100	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	94	95	1

Comment to Sample(s)
AE34356: C12-C25=511mg/Kg; C25+=336mg/Kg

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34357	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE34357		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	87	88	1.1

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34341	AE34342	AE34343	AE34344	
Sample No:	S10-L4-12	S10-L1-3	S10-L1-6	S10-L1-9	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE34341	AE34342	AE34343	AE34344
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	69	94	89	92
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzene	100	101	1	
Toluene	96	100	4.1	

Comment to Sample(s)
AE34341: Low surrogate recovery due to the interference of matrix.

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34345	AE34346	AE34347	AE34348	
Sample No:	S10-L1-15	S10-L2-3	S10-L2-6	S10-L2-9	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	12/20/96	
Date Analyzed:	12/20/96	12/20/96	12/20/96	12/20/96	Detection Limit
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34345	AE34346	AE34347	AE34348
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	81	104	81	87
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	100	101	1	
Toluene	96	100	4.1	

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34349	AE34350	AE34351	
Sample No:	S10-L2-12	S10-L2-14	S10-L3-15	
Date Sampled:	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/20/96	12/20/96	12/20/96	Detection
Date Analyzed:	12/20/96	12/20/96	12/20/96	Limit
TPH as Gasoline or Light HCs	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34349	AE34350	AE34351
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	85	89	92
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34352	AE34353	AE34354	AE34355	
Sample No:	S10-L3-12	S10-L3-9	S10-L3-6	S10-L3-3	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/23/96	12/23/96	12/23/96	12/23/96	Detection
Date Analyzed:	12/23/96	12/23/96	12/23/96	12/23/96	Limit

TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID:	AE34352	AE34353	AE34354	AE34355
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	103	72	70	83
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	110	105	4.7	
Toluene	108	103	4.7	

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Report To: (SC/G)
Southern-California Gas Company
555 W 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34356	AE34357	
Sample No:	S10-L1-12	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/23/96	12/23/96	Detection
Date Analyzed:	12/23/96	12/23/96	Limit

TPH as Gasoline or Light HCs	ND	ND	1.0
------------------------------	----	----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE34356	AE34357	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	79	100	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	110	105	4.7
Toluene	108	103	4.7

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7521
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn.

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34357	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
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QUALITY CONTROL SUMMARY

Lab ID: AE34357

Surrogate Percent Recovery
Chlorobenzene 100

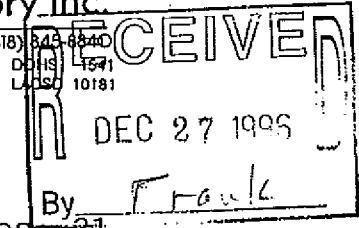
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 21
Date Received : 12/17/96
Date Reported : 12/24/96

Attn: Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7520
Project Name : SCG - Aliso Cyn
Project Number : SCG-T020-300
Site: Aliso Canyon

Enclosed please find results of analyses of 12 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sevean

Approved By: C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7520

PROJECT: SCG-Aliso Canyon

SITE: SCG-Aliso Canyon

DATE SAMPLED: 12-17-96

DATE SUBMITTED: 12-17-96

DATE ANALYSIS COMPLETED: 12-21-96

SAMPLE DESCRIPTION: Grab soil samples (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by ENV America Inc.

ANALYTE		GASOLINE C ₄ -C ₁₂	DIESEL C ₁₂ -C ₂₅	HYDR. CARB. C ₂₅₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB NO.	FIELD NO.	RESULTS	RESULTS	RESULTS
AE34328	S11-L1-3	ND	ND	ND
AE34329	S11-L1A-3	ND	203	130
AE34330	S11-L1A-5	ND	33	9
AE34331	S11-L2-3	ND	34	7
AE34332	S11-L2-5	ND	966	654
AE34333	S11-L3-3	ND	829	391
AE34334	S11-L3-5	ND	3,780	2,270
AE34335	S11-L4-6	ND	ND	ND
AE34336	S11-L5-12	ND	20	3
AE34337	S10-L4-3	ND	63	27
AE34338	S10-L4-6	ND	44	7
AE34339	S10-L4-9	ND	121	54
AE34340	Method Blank	ND	ND	ND

ND =Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 3

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID: AE34328
Sample No: S11-L1-3
Date Sampled: 12/17/96
Date Extracted: 12/19/96
Date Analyzed: 12/19/96
Detection Limit

TPH as Diesel and Heavier HC ND 10

QUALITY CONTROL SUMMARY

Lab ID: AE34328
Surrogate Percent Recovery
Chlorobenzene 100
Spike %REC. Spike DUP. %REC. AVG. RPD
Diesel 87 88 1.1

ND - NOT Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 4

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34329	
Sample No:	S11-L1A-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	333	20
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34329		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	95	<1

Comment to Sample(s)
AE34329: C12-C25 = 203mg/kg; C25+ = 130mg/kg.

ND - NOT Detected at The Detection Limit



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DOHS 1541
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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 5

Report To: (SC/G)
Southern California Gas Company
555-W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34330	AE34331	
Sample No:	S11-L1A-5	S11-L2-3	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	
Date Analyzed:	12/19/96	12/19/96	Detection Limit

TPH as Diesel and Heavier HC	42	41	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE34330	AE34331	
<u>Surrogate Percent Recovery</u> Chlorobenzene	106	102	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	87	88	1.1

Comment to Sample(s)

AE34330: C12-C25 = 33mg/kg; C25+ = 9mg/kg.
AE34331: C12-C25 = 34mg/kg; C25+ = 7mg/kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34332	
Sample No:	S11-L2-5	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	1620	40
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QUALITY CONTROL SUMMARY

Lab ID:	AE34332		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	101		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	95	95	<1

Comment to Sample(s)
AE34332: C12-C25 =966mg/kg; C25+ =654mg/kg.

ND - Not Detected at The Detection Limit



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DOHS 1641
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 7

Report To: (SC/G)
Southern California Gas Company
555 W 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34333	
Sample No:	S11-L3-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	1220	20
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34333		
<u>Surrogate Percent Recovery</u> Chlorobenzene	105		
	<u>Spike</u> %REC.	<u>Spike DUP.</u> %REC.	<u>AVG.</u> RPD
Diesel	95	95	<1

Comment to Sample(s)
AE34333: C12-C25 =829mg/kg; C25+ = 391mg/kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34334	
Sample No:	S11-L3-5	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/21/96	Limit

TPH as Diesel and Heavier HC	6050	200
------------------------------	------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE34334		
<u>Surrogate Percent Recovery</u>	100		
Chlorobenzene			
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	95	<1

Comment to Sample(s)
AE34334: C12-C25 =3780mg/kg; C25+ = 2270mg/kg.

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34335	AE34336	AE34337	AE34338	
Sample No:	S11-L4-6	S11-L5-12	S10-L4-3	S10-L4-6	
Date Sampled:	12/17/96	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	12/19/96	12/19/96	
Date Analyzed:	12/19/96	12/19/96	12/19/96	12/19/96	Detection Limit
TPH as Diesel and Heavier HC	ND	23	90	51	10

QUALITY CONTROL SUMMARY

Lab ID:	AE34335	AE34336	AE34337	AE34338
<u>Surrogate Percent Recovery</u> Chlorobenzene	103	98	98	101
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	87	88	1.1	

Comment to Sample(s)
AE34336: C12-C25 = 20mg/kg; C25+ = 3mg/kg
AE34337: C12-C25 = 63mg/kg; C25+ = 27mg/kg.
AE34338: C12-C25 = 44mg/kg; C25+ = 7mg/kg.

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34339	AE34340	
Sample No:	S10-L4-9	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/21/96	12/21/96	Limit

TPH as Diesel and Heavier HC	175	ND	10
------------------------------	-----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34339	AE34340	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98	100	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	95	95	<1

Comment to Sample(s)
AE34339: C12-C25 =121 mg/kg; C13+ = 54mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE34340	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE34340		
<u>Surrogate Percent Recovery</u> Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	87	88	1.1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34328	AE34329	
Sample No:	S11-L1-3	S11-L1A-3	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	
Date Analyzed:	12/19/96	12/19/96	Detection Limit

TPH as Gasoline or Light HCs	ND	ND	1.0
------------------------------	----	----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE34328	AE34329	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106	72	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 13

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34330	
Sample No:	S11-L1A-5	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE34330		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34331	
Sample No:	S11-L2-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34331

Surrogate Percent Recovery
Chlorobenzene 80

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34332	
Sample No:	S11-L2-5	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34332

Surrogate Percent Recovery
Chlorobenzene 82

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34333	
Sample No:	S11-L3-3	
Date Sampled:	12/17/96	
Date Extracted:	12/19/96	Detection
Date Analyzed:	12/19/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34333

Surrogate Percent Recovery
Chlorobenzene 81

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34334	
Sample No:	S11-L3-5	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34334

Surrogate Percent Recovery
Chlorobenzene 68

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

Comment to Sample(s)

AE34334: Low surrogate recovery due to the interference of matrix.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. - ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34335	AE34336	AE34337	
Sample No:	S11-L4-6	S11-L5-12	S10-L4-3	
Date Sampled:	12/17/96	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	12/19/96	Limit
TPH as Gasoline or Light HCs	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34335	AE34336	AE34337
<u>Surrogate Percent Recovery</u> Chlorobenzene	90	75	74
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34338	
Sample No:	S10-L4-6	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	Detection
Date Analyzed:	12/20/96	Limit

TPH as Gasoline or Light HCs	ND	1.0
------------------------------	----	-----

QUALITY CONTROL SUMMARY

Lab ID: AE34338

Surrogate Percent Recovery
Chlorobenzene 78

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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DOHS 1541
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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34339	AE34340	
Sample No:	S10-L4-9	METHOD BLANK	
Date Sampled:	12/17/96	12/17/96	
Date Extracted:	12/19/96	12/19/96	Detection
Date Analyzed:	12/19/96	12/19/96	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34339	AE34340	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	74	100	
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>
Benzene	100	99	1
Toluene	105	99	5.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7520
Project ID: SCG-T020-300
Project Name: SCG - Aliso Cyn

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/kg

Lab ID:	AE34340	
Sample No:	METHOD BLANK	
Date Sampled:	12/17/96	
Date Extracted:	12/20/96	
Date Analyzed:	12/20/96	Detection Limit
TPH as Gasoline or Light HCs	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE34340		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	101	1
Toluene	96	100	4.1

ND - Not Detected at The Detection Limit



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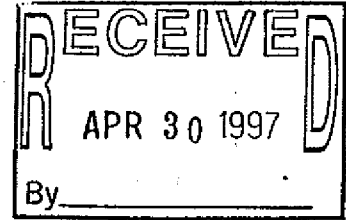
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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 46
Date Received : 04/09/97
Date Reported : 04/23/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7923
Project Number : SCG-01-T020
Site: SCG-Aliso Canyon



Enclosed please find results of analyses of 9 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sertean

Approved By: C. Razmara
Cyrus Razmara Ph.D.
Laboratory Director

CHAIN OF CUSTODY RECORD

CLIENT: ENV AMERICAS TELEPHONE: 714-453-9191

ADDRESS: 16 Technology FAX: 714-453-9292

SITE: SC6-Alice Canyon

CONTACT PERSON: _____

PROJECT NAME: _____ PROJECT NUMBER: _____

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	SOLID WASTE	LIQUID WASTE OTHER		
S1-PH1-3		4/9/97		4oz. jar	X			ICE NO	
S1-PH1-6	AE36526	"			X			ICE	X
S1-PH1-9		"			X				X
S1-PH1-12	AE36521	"			X				X
S4-PH1-3		"			X				X
S4-PH1-6		"			X				X
S4-PH1-9	AE36522	"			X				X
S4-PH1-12	AE36523	"			X				X
S4-PH1-15		"			X				X
S4-PH1-18	AE36524	"			X				X
S8E-PH1-3	AE36525	"			X				X
S8W-PH1-3		"			X				X

ANALYSIS REQUESTED

TPH (C-G)	X
TPH (C-G)	X
TPH (C-G)	X
TPH (C-G)	X
PH	X
Hold	X
840	X
830	X
7400 Rescric	X
6010 - see list	X
Analysis/cations - see list	X

Collected By: R. Ry- Date: 4/9/97 Time: 1600 Delivered By: DANIEL ORJONET Date: 4/9/97 Time: 1615

Relinquished By: R. Ry- Date: 4/9/97 Time: 1115 Received For Laboratory: _____ Date: 4/9/97 Time: 1640

Turn A. Time Normal Rush



American Environmental Testing Laboratory Inc.
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 Certificate #1541

AETL JOB# 7923

PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

CLIENT: ENV AMERICA TELEPHONE: 714
 ADDRESS: _____ FAX: _____

SITE: SC67 - Alijo Canyon PROJECT NUMBER: SC6-01-TOZO
 CONTACT PERSON: Ron Rogers PROJECT NAME: _____

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID LIQUID WASTE OTHER		
SWJ-PH1-6		4/9/97		4 OZ JAR	X			ICE	
SWJ-PH1-9					X				X
SWJ-PH1-12	AE36526				X				X X X X X
SP-PH1-3					X				X X X X X
SP-PH1-6					X				X X X X X
SP-PH1-9					X				X X X X X
SP-PH1-12	AE36527				X				X X X X X
SI3-PH1-3					X				X X X X X
SI3-PH1-6	AE36528				X				X X X X X

PH (G-C) X
 TPH (G-C) X
 TPH (G-C) X
 BTEX X
 PH 905 H
 Hold
 8210
 8310
 7400 Arsenic
 6010 - see list
 Arsenic/other - see list

Collected By: R. Rogers Date 4/7/97 Time 1600 Delivered By: DANIEL ORDONUEZ Date 4/9/97 Time 16:15
 Relinquished By: R. Rogers Date 4/9/97 Time 1615 Received For Laboratory: _____ Date 4/09/1997 Time 16:00
 Turn Around Time Normal Rush

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

				Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527
				Client Sample ID	S1-PH1 -6	S4-PH1 -18	S8E-PH1 -3	S8W-PH1 -12	S9-PH1 -12
				Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
				Matrix	Soil	Soil	Soil	Soil	Soil
Analysis	Method	Units	DL	Date Analyzed	Results	Results	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	14.4	ND	2.3	ND	ND
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	1,240	40.3	269	175	176
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	9.7	3.0	13.8	12.9	12.6
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	11.9	5.3	7.6	12.8	9.0
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	5.4	ND	11.6	7.5	8.6
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	38.3	12.4	50.0	42.7	41.8
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	13.2	ND	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND	5.5	ND	6.8
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	45.3	13.3	74.5	68.5	84.0
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	04-15-97	17.1	11.4	ND	22.1	28.3
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	73.5	12.1	72.5	96.5	94.5
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	201	111	132	116	120
Nitrate as N	9200	mg/Kg	1.0	04-11-97	1.4	ND	17.1	ND	16.1
Nitrite as N (Soluble)	354.1	mg/L	0.2	04-11-97	0.7	1.4	0.2	ND	0.4
pH	9045	SU	1.00	04-10-97	7.60	8.80	8.30	8.50	8.60
Sulfate	9038	mg/Kg	10	04-17-97	72	700	37	42	58
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND	ND	ND	ND
Ammonia as N (Soluble)	350.2	mg/L	0.1	04-17-97	9.6	13.6	9.6	14.4	0.6
Potassium (K)	6010	mg/Kg	10	04-15-97	1,320	1,180	3,120	2,300	1,570
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	443	463	278	306	203

ND = Not Detected at the Detection Limit

DL = Detection Limit

a
Cyrus Razmara, Ph.D.
Laboratory Director



SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

Analysis	Method	Units	DL	Date Analyzed	Results	Results			
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND			
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	ND	ND			
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	219	ND			
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND			
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	18.6	ND			
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	25.1	ND			
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	8.4	ND			
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	55.5	ND			
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	ND	ND			
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND			
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	117	ND			
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND			
Thallium (Tl)	6010	mg/Kg	10	04-15-97	32.6	ND			
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	141	ND			
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	125	ND			
Nitrate as N	9200	mg/Kg	1.0	04-11-97	10.8	ND			
Nitrite as N (Soluble)	354.1	mg/L	0.2	04-11-97	ND	ND			
pH	9045	SU	1.00	04-10-97	7.40	NA			
Sulfate	9038	mg/Kg	10	04-17-97	32	ND			
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND			
Ammonia as N (Soluble)	350.2	mg/L	0.1	04-17-97	16.0	ND			
Potassium (K)	6010	mg/Kg	10	04-15-97	1,530	ND			
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	357	ND			

ND = Not Detected at the Detection Limit

DL = Detection Limit

ca

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Laboratory Director



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923


PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-15-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527	AE36528
Client Sample ID	S1-PH1 -6	S4-PH1 -18	S8E-PH1 -3	S8W-PH1 -12	S9-PH1 -12	S13-PH1 -6
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
Date Extracted	04-14-97	04-14-97	04-14-97	04-14-97	04-14-97	04-14-97
Date Analyzed	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	ND	ND	ND	ND
Benzo (ghi) perylene	0.020	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	ND	ND
Fluoranthene	0.020	ND	ND	ND	ND	ND
Fluorene	0.020	ND	ND	ND	ND	ND
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND	ND
Phenanthrene	0.020	ND	ND	ND	ND	ND
Pyrene	0.020	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.

DL = Detection Limit


Cyrus Razmara, Ph.D.
Laboratory Director



SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011


AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-15-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab ID:	AE36529					
Client Sample ID:	M. Blank					
Date Sampled:	04-09-97					
Date Extracted:	04-14-97					
Date Analyzed:	04-15-97					
Matrix:	Soil					
Units:	mg/Kg					
Dilution Factor:	1					
Analyte	DL	Results				
Acenaphthene	0.020	ND				
Acenaphthylene	0.020	ND				
Anthracene	0.020	ND				
Benzo (a) anthracene	0.020	ND				
Benzo (a) pyrene	0.020	ND				
Benzo (b) fluoranthene	0.020	ND				
Benzo (ghi) perylene	0.020	ND				
Benzo (k) fluoranthene	0.020	ND				
Chrysene	0.020	ND				
Dibenzo (a, h) anthracene	0.020	ND				
Fluoranthene	0.020	ND				
Fluorene	0.020	ND				
Indeno (1,2,3-cd) pyrene	0.020	ND				
Naphthalene	0.020	ND				
Phenanthrene	0.020	ND				
Pyrene	0.020	ND				

ND = Not Detected at the detection limit.
DL = Detection Limit


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Laboratory Director



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DOHS 1541
LACSD 10181

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020

SITE: SCG-Aliso Canyon

DATE SAMPLED: 04-09-97

DATE SUBMITTED: 04-09-97

DATE ANALYSIS COMPLETED: 04-10-97

SAMPLE DESCRIPTION: Grab soil sample (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by EnvAmerica.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	GASOLINE
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg	mg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020	M8015G
DETECTION LIMIT		5	5	5	10	1.0
LAB#	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
AE36520	S1-PH1-6	ND	ND	ND	ND	ND
AE36521	S1-PH1-12	ND	ND	ND	ND	ND
AE36522	S4-PH1-9	ND	ND	ND	ND	ND
AE36523	S4-PH1-12	ND	ND	ND	ND	ND
AE36524	S4-PH1-18	ND	ND	ND	ND	26
AE36525	S8E-PH1-3	ND	ND	ND	ND	ND
AE36526	S8W-PH1-12	ND	ND	ND	ND	ND
AE36527	S9-PH1-12	ND	ND	ND	ND	ND
AE36528	S13-PH1-6	ND	ND	ND	ND	ND
AE36529	Method Blank	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.

NA = Not Applicable

ca
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Laboratory Director



SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020

SITE: SCG-Aliso Canyon

DATE SAMPLED: 04-09-97

DATE SUBMITTED: 04-09-97

DATE ANALYSIS COMPLETED: 04-10-97


SAMPLE DESCRIPTION: Grab soil sample (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by EnvAmerica.

ANALYTE		pH	GASOLINE C ₄ -C ₁₀	DIESEL C ₁₀ -C ₂₅	H.C. C ₂₅
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE36520	S1-PH1-6	7.60	ND	3,130	2,960
AE36521	S1-PH1-12	7.00	ND	ND	ND
AE36522	S4-PH1-9	7.50	ND	ND	ND
AE36523	S4-PH1-12	7.50	ND	ND	ND
AE36524	S4-PH1-18	8.80	26	119	70
AE36525	S8E-PH1-3	8.30	ND	2	9
AE36526	S8W-PH1-12	8.50	ND	ND	ND
AE36527	S9-PH1-12	8.60	ND	ND	ND
AE36528	S13-PH1-6	7.40	ND	ND	ND
AE36529	Method Blank	NA	ND	ND	ND

ND = Not Detected at the detection limit


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Laboratory Director



SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527	AE36528
Client Sample ID	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	S13-PH1-6
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
Acetone	50	ND	ND	ND	ND	ND
Benzene	10	ND	ND	ND	ND	ND
Bromodichloromethane	10	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND
Carbon Disulfide	10	ND	ND	ND	ND	ND
Carbon Tetrachloride	10	ND	ND	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl ether	50	ND	ND	ND	ND	ND
Chloroform	10	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
Dibromochloromethane	10	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,1-Dichloroethane	10	ND	ND	ND	ND	ND
1,2-Dichloroethane	10	ND	ND	ND	ND	ND
1,1-Dichloroethene	10	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
trans-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND	ND
cis-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
trans-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.



SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020

SITE: SCG-Aliso Canyon

DATE SAMPLED: 04-09-97

DATE SUBMITTED: 04-09-97

DATE ANALYSIS COMPLETED: 04-11-97

SAMPLE DESCRIPTION: Grab soil sample (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36520	AE36524	AE36525	AE36526	AE36527	AE36528
Client Sample ID	S1-PHI-6	S4-PHI-18	S8E-PHI-3	S8W-PHI-12	S9-PHI-12	S13-PHI-6
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DI	Results	Results	Results	Results	Results
2-Hexanone	50	ND	ND	ND	ND	ND
4-Methy-1-2-Pentanone	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Styrene	10	ND	ND	ND	ND	ND
1,1,2,2- Tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	10	ND	ND	ND	ND	ND
Toluene	10	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	10	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	10	ND	ND	ND	ND	ND
Trichloroethene	10	ND	ND	ND	ND	ND
Trichlorofluoromethane	10	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
Xylenes (Total)	20	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit

ca
Cyrus Razmara, Ph.D.
Laboratory Director

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36529					
Client Sample ID	M. Blank					
Date Sampled	04-09-97					
Date Extracted	04-11-97					
Date Analyzed	04-11-97					
Matrix	Soil					
Units	µg/Kg					
Dilution Factor	1					
Analyte	DL	Results				
Acetone	50	ND				
Benzene	10	ND				
Bromodichloromethane	10	ND				
Bromoform	50	ND				
Bromomethane	50	ND				
2-Butanone	50	ND				
Carbon Disulfide	10	ND				
Carbon Tetrachloride	10	ND				
Chlorobenzene	10	ND				
Chloroethane	50	ND				
2 -Chloroethyl Vinyl ether	50	ND				
Chloroform	10	ND				
Chloromethane	50	ND				
Dibromochloromethane	10	ND				
1,2-Dichlorobenzene	10	ND				
1,3-Dichlorobenzene	10	ND				
1,4-Dichlorobenzene	10	ND				
1,1-Dichloroethane	10	ND				
1,2-Dichloroethane	10	ND				
1,1-Dichloroethene	10	ND				
cis-1,2 Dichloroethene	10	ND				
trans-1,2 Dichloroethene	10	ND				
1,2-Dichloropropane	10	ND				
cis-1,3 Dichloropropene	10	ND				
trans-1,3 Dichloropropene	10	ND				
Ethylbenzene	10	ND				

ND = Not Detected at the detection limit.

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO.: 7923

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-09-97
DATE SUBMITTED: 04-09-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36529					
Client Sample ID	M. Blank					
Date Sampled	04-09-97					
Date Extracted	04-11-97					
Date Analyzed	04-11-97					
Matrix	Soil					
Units	µg/Kg					
Dilution Factor	1					
Analyte	DL	Results				
2-Hexanone	50	ND				
4-Methy-1-2-Pentanone	50	ND				
Methylene Chloride	50	ND				
Styrene	10	ND				
1,1,2,2- Tetrachloroethane	10	ND				
Tetrachloroethene	10	ND				
Toluene	10	ND				
1,1,1-Trichloroethane	10	ND				
1,1,2-Trichloroethane	10	ND				
Trichloroethene	10	ND				
Trichlorofluoromethane	10	ND				
Vinyl Acetate	50	ND				
Vinyl Chloride	50	ND				
Xylenes (Total)	20	ND				

ND = Not Detected at the detection limit

C
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 Laboratory Director



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Limit
Antimony (Sb)	ND	ND	ND	ND	10
Arsenic (As)	14.4	ND	2.3	ND	1.0
Barium (Ba)	1240	40.3	269	175	5.0
Beryllium (Be)	ND	ND	ND	ND	2.5
Cadmium (Cd)	9.7	3.0	13.8	12.9	2.5
Chromium (Cr)	11.9	5.3	7.6	12.8	5.0
Cobalt (Co)	5.4	ND	11.6	7.5	5.0
Copper (Cu)	38.3	12.4	50.0	42.7	5.0
Lead (Pb)	13.2	ND	ND	ND	5.0
Molybdenum (Mo)	ND	ND	5.5	ND	5.0
Nickel (Ni)	45.3	13.3	74.5	68.5	5.0
Silver (Ag)	ND	ND	ND	ND	5.0
Thallium (Tl)	17.1	11.4	ND	22.1	10
Vanadium (V)	73.5	12.1	72.5	96.5	5.0
Zinc (Zn)	201	111	132	116	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	81
Arsenic (As)	84
Barium (Ba)	80
Beryllium (Be)	80
Cadmium (Cd)	88
Chromium (Cr)	84
Cobalt (Co)	81
(Continued)	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 13

Lab ID: AE36520 AE36524 AE36525 AE36526

	LCS %REC.
Copper (Cu)	102
Lead (Pb)	80
Molybdenum (Mo)	80
Nickel (Ni)	81
Silver (Ag)	82
Thallium (Tl)	80
Vanadium (V)	80
Zinc (Zn)	93

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit

Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	ND	ND	ND	1.0
Barium (Ba)	176	219	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	12.6	18.6	ND	2.5
Chromium (Cr)	9.0	25.1	ND	5.0
Cobalt (Co)	8.6	8.4	ND	5.0
Copper (Cu)	41.8	55.5	ND	5.0
Lead (Pb)	ND	ND	ND	5.0
Molybdenum (Mo)	6.8	ND	ND	5.0
Nickel (Ni)	84.0	117	ND	5.0
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	28.3	32.6	ND	10
Vanadium (V)	94.5	141	ND	5.0
Zinc (Zn)	120	125	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	81
Arsenic (As)	84
Barium (Ba)	80
Beryllium (Be)	80
Cadmium (Cd)	88
Chromium (Cr)	84
Cobalt (Co)	81
(Continued)	

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 15

Lab ID: AE36527 AE36528 AE36529

	LCS %REC.
Copper (Cu)	102
Lead (Pb)	80
Molybdenum (Mo)	80
Nickel (Ni)	81
Silver (Ag)	82
Thallium (Tl)	80
Vanadium (V)	80
Zinc (Zn)	93

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Limit
Benzo (a) anthracene	ND	ND	ND	ND	0.020
Benzo (a) pyrene	ND	ND	ND	ND	0.020
Benzo (b) fluoranthene	ND	ND	ND	ND	0.020
Benzo (k) fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36520	AE36524	AE36525	AE36526
<u>Surrogate Percent Recovery</u>				
Decafluorobiphenyl	101	103	101	107

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 17

Lab ID:	AE36520	AE36524	AE36525	AE36526
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzo (a) anthracene	104	109	4.7	
Benzo (a) pyrene	102	101	<1	
Naphthalene	100	101	<1	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit

Benzo (a) anthracene	ND	ND	ND	0.020
Benzo (a) pyrene	ND	ND	ND	0.020
Benzo (b) fluoranthene	ND	ND	ND	0.020
Benzo (k) fluoranthene	ND	ND	ND	0.020
Chrysene	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	0.020
Anthracene	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	0.020
Fluorene	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	0.020
Pyrene	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36527	AE36528	AE36529
<u>Surrogate Percent Recovery</u>			
Decafluorobiphenyl	104	101	101

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 19

Lab ID:	AE36527	AE36528	AE36529
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/17/97	04/17/97	04/17/97	04/17/97	
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Detection Limit
Sulfate	72	700	37	42	10

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	72	72	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/17/97	04/17/97	04/17/97	Detection
Date Analyzed:	04/17/97	04/17/97	04/17/97	Limit

Sulfate	58	32	ND	10
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	72	72	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit

NO3 as N	1.4	ND	17.1	ND	1.0
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QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	110

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 23

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

NO3 as N	16.1	10.8	ND	1.0
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QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	110

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/16/97	04/16/97	04/16/97	04/16/97	
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Detection Limit
NH3 as Nitrogen	9.6	13.6	9.6	14.4	0.1

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. REP
NH3 as Nitrogen	9.60	9.60	<1

Comment to Sample(s)

AE36520: Distilled water leaching procedure.
AE36524: Distilled water leaching procedure.
AE36525: Distilled water leaching procedure.
AE36526: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/16/97	04/16/97	04/16/97	Detection
Date Analyzed:	04/17/97	04/17/97	04/17/97	Limit

NH3 as Nitrogen	0.6	16.0	ND	0.1
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	9.60	9.60	<1

Comment to Sample(s)

AE36527: Distilled water leaching procedure.
AE36528: Distilled water leaching procedure.
AE36529: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit
Nitrite as Nitrogen	0.7	1.4	0.2	ND	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	100

Comment to Sample(s)

AE36520: Distilled water leaching procedure.
AE36524: Distilled water leaching procedure.
AE36525: Distilled water leaching procedure.
AE36526: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit
Nitrite as Nitrogen	0.4	ND	ND	0.2

QUALITY CONTROL SUMMARY

	LCS %REC.
Nitrite as Nitrogen	100

Comment to Sample(s)
AE36527: Distilled water leaching procedure.
AE36528: Distilled water leaching procedure.
AE36529: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	04/14/97	
Date Analyzed:	04/15/97	04/15/97	04/15/97	04/15/97	Detection Limit
Potassium (K)	1320	1180	3120	2300	10
Sodium (Na)	443	463	278	306	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	80
Sodium (Na)	109

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/14/97	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit
Potassium (K)	1570	1530	ND	10
Sodium (Na)	203	357	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	80
Sodium (Na)	109

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 30

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36520	AE36521	AE36522	AE36523	
Sample No:	S1-PH1-6	S1-PH1-12	S4-PH1-9	S4-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit

Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36520	AE36521	AE36522	AE36523
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	78	108	104	97
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	98	98	<1	
Toluene	105	102	2.9	

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7923
 Project ID: SCG-01-T020

Page: 31

Report To: (SC/G)
 Southern California Gas Company
 555 W. 5th St.-ML20B
 Los Angeles, CA 90013-1011

Site:
 SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
 Method: 8015MOD/8020
 TPH as Gasoline and BTXE
 Units: ug/kg

Lab ID:	AE36524	
Sample No:	S4-PH1-18	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	26	10 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36524

Surrogate Percent Recovery
 Chlorobenzene 91

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	98	98	<1
Toluene	105	102	2.9

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 32

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36525	AE36526	AE36527	
Sample No:	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	04/10/97	Limit

Benzene	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	5
Toluene	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36525	AE36526	AE36527
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	91	95	100
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	98	98	<1
Toluene	105	102	2.9

ND - NOT Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE36528	AE36529	
Sample No:	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	Limit
Benzene	ND	ND	5
Ethylbenzene	ND	ND	5
Toluene	ND	ND	5
Xylenes (Total)	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE36528	AE36529	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	99	100	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	98	98	<1
Toluene	105	102	2.9

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36520	
Sample No:	S1-PH1-6	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

TPH as Diesel and Heavier HC	6090	400
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QUALITY CONTROL SUMMARY

Lab ID:	AE36520		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	102		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	96	<1

Comment to Sample(s)
AE36520: C12-C25 = 3130 mg/kg; C25+ = 2960 mg/kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36521	AE36522	AE36523	AE36524	
Sample No:	S1-PH1-12	S4-PH1-9	S4-PH1-12	S4-PH1-18	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit
TPH as Diesel and Heavier HC	ND	ND	ND	189	10

QUALITY CONTROL SUMMARY

Lab ID:	AE36521	AE36522	AE36523	AE36524
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	101	99	107	99
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD.</u>	
Diesel	96	96	<1	

Comment to Sample(s)
AE36524: C12-C25 = 119mg/kg; C25+ = 70mg/kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36525	AE36526	AE36527	AE36528	
Sample No:	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	S13-PH1-6	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Detection Limit

TPH as Diesel and Heavier HC	11	ND	ND	ND	10
------------------------------	----	----	----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE36525	AE36526	AE36527	AE36528
<u>Surrogate Percent Recovery</u> Chlorobenzene	96	99	100	101
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	96	96	<1	

Comment to Sample(s)
AE36525: C12-C25 = 2 mg/kg; C25+ = 9 mg/kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
 Project ID: SCG-01-T020

Page: 37

Report To: (SC/G)
 Southern California Gas Company
 555 W. 5th St.-ML20B
 Los Angeles, CA 90013-1011

Site:
 SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
 Method: 8015M{DHS-LUFT}
 TPH as Diesel and Heavier HCs (Extended Run)
 Units: mg/kg

Lab ID:	AE36529	
Sample No:	METHOD BLANK	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE36529		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	100		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	96	96	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 38

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masoqd Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Limit

Acetone	ND	ND	ND	ND	50
Benzene	ND	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	ND	10
Bromoform	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	50
2 Butanone	ND	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	ND	50
Chloroform	ND	ND	ND	ND	10
Chloromethane	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	10
2 Hexanone	ND	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	ND	50
Styrene	ND	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	ND	10
Toluene	ND	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	ND	10
Trichloroethene	ND	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 39

QUALITY CONTROL SUMMARY

Lab ID:	AE36520	AE36524	AE36525	AE36526
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	90	92	92	95
1,2 Dichloroethane-d4	106	102	107	105
Toluene-d8	96	97	97	100
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	103	102	1	
Chlorobenzene	102	101	1	
1,1 Dichloroethene	102	98	4	
Toluene	103	102	1	
Trichloroethene	102	100	2	

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

Acetone	ND	ND	ND	50
Benzene	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	10
Bromoform	ND	ND	ND	50
Bromomethane	ND	ND	ND	50
2 Butanone	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	10
Chloroethane	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	50
Chloroform	ND	ND	ND	10
Chloromethane	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	10
2 Hexanone	ND	ND	ND	50
4 Methyl-2-Pentanone	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	50
Styrene	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	10
Toluene	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	10
Trichloroethene	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 41

QUALITY CONTROL SUMMARY

Lab ID:	AE36527	AE36528	AE36529
Surrogate Percent Recovery			
Bromofluorobenzene	94	93	99
1,2 Dichloroethane-d4	103	107	94
Toluene-d8	99	99	100
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	103	102	1
Chlorobenzene	102	101	1
1,1 Dichloroethene	102	98	4
Toluene	103	102	1
Trichloroethene	102	100	2

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36520	AE36524	AE36525	AE36526	
Sample No:	S1-PH1-6	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	04/11/97	
Date Analyzed:	04/11/97	04/11/97	04/11/97	04/11/97	Detection Limit
Sulfides	ND	ND	ND	ND	0.5

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 43

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36527	AE36528	AE36529	
Sample No:	S9-PH1-12	S13-PH1-6	METHOD BLANK	
Date Sampled:	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/11/97	04/11/97	04/11/97	Detection
Date Analyzed:	04/11/97	04/11/97	04/11/97	Limit

Sulfides	ND	ND	ND	0.5
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 44

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36520	AE36521	AE36522	AE36523	
Sample No:	S1-PH1-6	S1-PH1-12	S4-PH1-9	S4-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Limit
PH	7.60	7.00	7.50	7.50	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.60	7.60	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 45

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36524	AE36525	AE36526	AE36527	
Sample No:	S4-PH1-18	S8E-PH1-3	S8W-PH1-12	S9-PH1-12	
Date Sampled:	04/09/97	04/09/97	04/09/97	04/09/97	
Date Extracted:	04/10/97	04/10/97	04/10/97	04/10/97	Detection
Date Analyzed:	04/10/97	04/10/97	04/10/97	04/10/97	Limit
PH	8.80	8.30	8.50	8.60	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.60	7.60	<1

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7923
Project ID: SCG-01-T020

Page: 46

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36528	
Sample No:	S13-PH1-6	
Date Sampled:	04/09/97	
Date Extracted:	04/10/97	Detection
Date Analyzed:	04/10/97	Limit

PH	7.40	1.00
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.60	7.60	<1

ND - Not Detected at The Detection Limit



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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 50
Date Received : 04/10/97
Date Reported : 04/18/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7932

Project Name : SCG-Aliso Canyon
Project Number : SCG-01-T020

Site: SCG-Aliso Canyon

Enclosed please find results of analyses of 10 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sweeney

Approved By: C. Razmara

Cyrus Razmara Ph.D.
Laboratory Director

AETL * *

American Environmental Testing Laboratory Inc.

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Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Number of Pages: 50
Date Received : 04/10/97
Date Reported : 04/18/97

Attn : Masood Hosseini
Phone: 213/244-3292

AETL Job Number: 7932

Project Name : SCG-Aliso Canyon
Project Number : SCG-01-T020

Site: SCG-Aliso Canyon

Enclosed please find results of analyses of 10 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By:

Joe Serrano

Approved By: _____

Cyrus Razmara Ph.D.
Laboratory Director



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 Certificate #1541

AETL JOB # 7832

PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

CLIENT: ENV Gas Co.
 ADDRESS: 16 TECHNOLOGY
 SITE: SCG - ALISO CANYON
 CONTACT PERSON: R. Rogers

TELEPHONE: 714-453-9191
 FAX: 714-453-9292

PROJECT NAME: _____
 PROJECT NUMBER: SCG-01-102P

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	LIQUID WASTE	OTHER		
FTF-PH2-3	AE36582	4/10/97	0955						PH (Gas) X TPH (Gas) X TPH (Li-Gas) X TSH (Li-Gas) X
FTF-PH3-3			1010					X	
FTF-PH4-6	AE36583		1020						PH (Gas) X TPH (Gas) X TPH (Li-Gas) X TSH (Li-Gas) X
FTF-PH4-3	AE36584		1035						
FTF-PH4-6			1045					X	
FTF-PH4-9			1050					X	
FTF-PH4-2	AE36585		1100					X	PH (Gas) X TPH (Gas) X TPH (Li-Gas) X TSH (Li-Gas) X

ANALYSIS REQUESTED
 HOLD
 8410
 8310
 TMD Resevoir
 6010-1st
 Avion/Catons-1st
 Hg

Collected By: R.R. Date: 4/10/97 Time: 1600
 Relinquished By: R.R. Date: 4/10/97 Time: 1640
 Delivered By: _____ Date: _____ Time: _____
 Received For Laboratory: Joe Serrano Date: 4-10-97 Time: 445



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AETL JOB# 7932

PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

PH (Acid)	PH
TPH (Acid)	TPH
TPH (Alk)	TPH
Lead	Lead
8310	8310
7410 RESURIC	7410 RESURIC
6010-1ST	6010-1ST
MIRON/CATIONS-1ST	MIRON/CATIONS-1ST

CLIENT: ENV AMERICA TELEPHONE: 714-453-9191

ADDRESS: 16 TECHNOLOGY FAX: 714-453-9272

SITE: SCG-ALISO CANYON

CONTACT PERSON: R. Rogers PROJECT NAME: PROJECT NUMBER: SCG-01-702B

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID WASTE		
ETF-PH2-3	AE36582	4/10/97	0955						X
ETF-PH3-3			1010						X
ETF-PH4-6	AE36583		1020						X
ETF-PH4-3	AE36584		1035						X
ETF-PH4-6			1045						X
ETF-PH4-9			1050						X
ETF-PH4-2	AE36585		1100						X



MB

Collected By: R.R. Date 4/10/97 Time 1600 Delivered By: _____ Date _____ Time _____

Relinquished By: R.R. Date 4/10/97 Time 1640 Received For Laboratory: Joe Seurean Date 4-10-97 Time 445

Turn Around Time Normal Rush

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

				Lab ID	AE36576	AE36578	AE36580	AE36582	AE36584
				Client Sample ID	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH2-3	FTF-PH4-3
				Date Sampled	04-10-97	04-10-97	04-10-97	04-10-97	04-10-97
				Matrix	Soil	Soil	Soil	Soil	Soil
Analysis	Method	Units	DL	Date Analyzed	Results	Results	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	1.8	ND	ND	NA	NA
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	193	124	44.8	134	245
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	8.1	4.6	4.3	5.6	9.5
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	32.3
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	5.5	6.7	ND	5.3	7.9
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	23.1	16.6	7.9	20.9	35.3
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	15.3	7.4	ND	23.0	39.2
Mercury (Hg)	7471	mg/Kg	0.2	04-15-97	NA	NA	ND	ND	ND
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	04-15-97	31.7	17.1	17.1	20.6	33.6
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	21.6	22.2	17.2	26.7	59.5
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	75.0	54.5	32.8	63.5	99.5
Nitrate as N	9200	mg/Kg	1.0	04-12-97	1.3	ND	ND	NA	NA
Soluble Nitrite as N	354.1	mg/L	0.2	04-11-97	1.2	0.5	1.6	NA	NA
pH	9045	SU	1.00	04-10-97	6.74	6.60	7.71	6.93	8.07
Sulfate	9038	mg/Kg	10	04-17-97	3,710	1,140	228	NA	NA
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND	ND	NA	NA
Soluble Ammonia as N	350.2	mg/L	0.1	04-17-97	17.6	0.8	20.0	NA	NA
Potassium (K)	6010	mg/Kg	10	04-15-97	2,710	3,140	2,360	NA	NA
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	301	87.1	12.3	NA	NA

ND = Not Detected at the Detection Limit

DL = Detection Limit

ca
Cyrus Razmara, Ph.D.
Laboratory Director

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-21-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica

				Lab ID:	AE36585	AE36586		
				Client Sample ID:	FTF-PH4-12	Method Blank		
				Date Sampled:	04-10-97	04-10-97		
				Matrix:	Soil	Soil		
Analysis	Method	Units	DL	Date Analyzed	Results	Results		
Antimony (Sb)	6010	mg/Kg	10	04-15-97	ND	ND		
Arsenic (As)	7060	mg/Kg	1.0	04-21-97	ND	ND		
Barium (Ba)	6010	mg/Kg	5.0	04-15-97	322	ND		
Beryllium (Be)	6010	mg/Kg	2.5	04-15-97	ND	ND		
Cadmium (Cd)	6010	mg/Kg	2.5	04-15-97	10.5	ND		
Chromium (Cr)	6010	mg/Kg	5.0	04-15-97	25.3	ND		
Cobalt (Co)	6010	mg/Kg	5.0	04-15-97	8.0	ND		
Copper (Cu)	6010	mg/Kg	5.0	04-15-97	33.9	ND		
Lead (Pb)	6010	mg/Kg	5.0	04-15-97	ND	ND		
Molybdenum (Mo)	6010	mg/Kg	5.0	04-15-97	ND	ND		
Nickel (Ni)	6010	mg/Kg	5.0	04-15-97	42.9	ND		
Mercury (Hg)	7471	mg/Kg	0.2	04-15-97	ND	ND		
Silver (Ag)	6010	mg/Kg	5.0	04-15-97	ND	ND		
Thallium (Tl)	6010	mg/Kg	10	04-15-97	31.4	ND		
Vanadium (V)	6010	mg/Kg	5.0	04-15-97	56.5	ND		
Zinc (Zn)	6010	mg/Kg	5.0	04-15-97	106	ND		
Nitrate as N	9200	mg/Kg	1.0	04-12-97	ND	ND		
Soluble Nitrite as N	354.1	mg/L	0.2	04-11-97	2.3	ND		
pH	9045	SU	1.00	04-10-97	8.73	NA		
Sulfate	9038	mg/Kg	10	04-17-97	90	ND		
Sulfide (Total)	9030	mg/Kg	0.5	04-11-97	ND	ND		
Soluble Ammonia as N	350.2	mg/L	0.1	04-17-97	36.8	ND		
Potassium (K)	6010	mg/Kg	10	04-15-97	2,390	ND		
Sodium (Na)	6010	mg/Kg	5.0	04-15-97	3,310	ND		

ND = Not Detected at the Detection Limit

DL = Detection Limit

cc

Cyrus Razmara, Ph.D.
Laboratory Director

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-15-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8310

Lab ID:	AE36576	AE36578	AE36580	AE36585	AE36586	
Client Sample ID:	S3-HA1 -6	S6-PH2 -2	FTF-PH1 -9	FTF-PH4 -12	M. Blank	
Date Sampled	04-09-97	04-09-97	04-09-97	04-09-97	04-09-97	
Date Extracted	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97	
Date Analyzed	04-15-97	04-15-97	04-15-97	04-15-97	04-15-97	
Matrix	Soil	Soil	Soil	Soil	Soil	
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Dilution Factor	1	1	1	1	1	
Analyte	DL	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	0.468	ND	0.026	4.87	ND
Benzo (a) pyrene	0.020	0.740	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	ND	ND	1.39	ND
Benzo (ghi) perylene	0.020	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	0.319	ND
Chrysene	0.020	ND	ND	ND	3.43	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	ND	ND
Fluoranthene	0.020	0.290	ND	ND	7.31	ND
Fluorene	0.020	ND	ND	0.109	1.90	ND
Indeno (1,2,3-cd) pyrene	0.020	0.139	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND	ND
Phenanthrene	0.020	ND	ND	ND	1.32	ND
Pyrene	0.020	0.168	ND	ND	4.25	ND

ND = Not Detected at the detection limit.

DL = Detection Limit

ca

Cyrus Razmara, Ph.D.
Laboratory Director



SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-14-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	GASOLINE
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg	mg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020	M8015G
DETECTION LIMIT		5	5	5	10	1.0
LAB#	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
AE36576	S3-HA1-6	ND	ND	ND	ND	ND
AE36577	S3-HA2-6	ND	ND	ND	ND	ND
AE36578	S6-PH2-2	ND	ND	ND	ND	ND
AE36579	S6-PH2-5	ND	ND	ND	ND	ND
AE36580	FTF-PH1-9	ND	ND	ND	ND	1.8
AE36581	FTF-PH1W-3	ND	ND	14	24	5.8
AE36582	FTF-PH2-3	ND	ND	ND	ND	ND
AE36583	FTF-PH3-6	ND	ND	ND	ND	ND
AE36584	FTF-PH4-3	ND	ND	ND	ND	ND
AE36585	FTF-PH4-12	209	39	204	291	10.9
AE36586	Method Blank	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit.

NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director



SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-14-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

ANALYTE		pH	GASOLINE C ₄ -C ₁₂	DIESEL C ₁₂ -C ₁₅	H.C C ₂₅
UNITS		pH Unit	mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		9045	M8015G	M8015D	M8015D
DETECTION LIMIT		1.00	1.0	10	10
LAB NO.	FIELD NO.	RESULT	RESULT	RESULT	RESULT
AE36576	S3-HA1-6	6.74	ND	29	13
AE36577	S3-HA2-6	6.80	ND	33	14
AE36578	S6-PH2-2	6.60	ND	2	9
AE36579	S6-PH2-5	7.16	ND	ND	ND
AE36580	FTF-PH1-9	7.71	1.8	121	46
AE36581	FTF-PHIW-3	7.21	5.8	20,700	9,400
AE36582	FTF-PH2-3	6.93	ND	ND	ND
AE36583	FTF-PH3-6	8.09	ND	ND	ND
AE36584	FTF-PH4-3	8.07	ND	214	110
AE36585	FTF-PH4-12	8.73	10.9	559	246
AE36586	Method Blank	ND	ND	ND	ND

ND = Not Detected at the detection limit

CR

Cyrus Razmara, Ph.D.
Laboratory Director

6/14/97

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36576	AE36578	AE36580	AE36585	AE36586	
Client Sample ID	S3-HA1 -6	S6-PH2 -2	FTF-PH1 -9	FTF-PH4 -12	Method Blank	
Date Sampled	04-10-97	04-10-97	04-10-97	04-10-97	04-10-97	
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Matrix	Soil	Soil	Soil	Soil	Soil	
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	
Dilution Factor	1	1	1	1	1	
Analyte	DL	Results	Results	Results	Results	Results
Acetone	50	ND	ND	ND	ND	ND
Benzene	10	ND	ND	ND	371	ND
Bromodichloromethane	10	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND
Carbon Disulfide	10	ND	ND	ND	ND	ND
Carbon Tetrachloride	10	ND	ND	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl ether	50	ND	ND	ND	ND	ND
Chloroform	10	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
Dibromochloromethane	10	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND	ND
1,1-Dichloroethane	10	ND	ND	ND	ND	ND
1,2-Dichloroethane	10	ND	ND	ND	ND	ND
1,1-Dichloroethene	10	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
trans-1,2 Dichloroethene	10	ND	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND	ND
cis-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
trans-1,3 Dichloropropene	10	ND	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	415	ND

ND = Not Detected at the detection limit.



SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7932

PROJECT: SCG-Aliso Canyon (SCG-01-T020)
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-10-97
DATE SUBMITTED: 04-10-97
DATE ANALYSIS COMPLETED: 04-11-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by Client.

EPA Method 8240

Lab ID	AE36576	AE36578	AE36580	AE36585	AE36586	
Client Sample ID	S3-HA1 -6	S6-PH2 -2	FTF-PH1 -9	FTF-PH4 -12	Method Blank	
Date Sampled	04-10-97	04-10-97	04-10-97	04-10-97	04-10-97	
Date Extracted	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Date Analyzed	04-11-97	04-11-97	04-11-97	04-11-97	04-11-97	
Matrix	Soil	Soil	Soil	Soil	Soil	
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	
Dilution Factor	1	1	1	1	1	
Analyte	DF	Results	Results	Results	Results	Results
2-Hexanone	50	ND	ND	ND	ND	ND
4-Methy-1-2-Pentanone	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Styrene	10	ND	ND	ND	ND	ND
1,1,2,2- Tetrachloroethane	10	ND	ND	ND	ND	ND
Tetrachloroethene	10	ND	ND	ND	ND	ND
Toluene	10	ND	ND	ND	46	ND
1,1,1-Trichloroethane	10	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	10	ND	ND	ND	ND	ND
Trichloroethene	10	ND	ND	ND	ND	ND
Trichlorofluoromethane	10	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
Xylenes (Total)	20	ND	ND	ND	529	ND

ND = Not Detected at the detection limit

a
Cyrus Razmara, Ph.D.
Laboratory Director

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36576	AE36578	
Sample No:	S3-HA1-6	S6-PH2-2	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	Limit

	AE36576	AE36578	Detection Limit
Antimony (Sb)	ND	ND	10
Arsenic (As)	1.8	ND	1.0
Barium (Ba)	193	124	5.0
Beryllium (Be)	ND	ND	2.5
Cadmium (Cd)	8.1	4.6	2.5
Chromium (Cr)	ND	ND	5.0
Cobalt (Co)	5.5	6.7	5.0
Copper (Cu)	23.1	16.6	5.0
Lead (Pb)	ND	ND	5.0
Molybdenum (Mo)	ND	ND	5.0
Nickel (Ni)	15.3	7.4	5.0
Silver (Ag)	ND	ND	5.0
Thallium (Tl)	31.7	17.1	10
Vanadium (V)	21.6	22.2	5.0
Zinc (Zn)	75.0	54.5	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	82
Arsenic (As)	84
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
Chromium (Cr)	92
(Continued)	

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 10

Lab ID: AE36576 AE36578

	LCS %REC.
Cobalt (Co)	87
Copper (Cu)	102
Lead (Pb)	80
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000-7000)
16 Metals
Units: mg/Kg

Lab ID: AE36580
Sample No: FTF-PH1-9
Date Sampled: 04/10/97
Date Extracted: 04/14/97
Date Analyzed: 04/15/97

Detection
Limit

Antimony (Sb)	ND	10
Arsenic (As)	ND	1.0
Barium (Ba)	44.8	5.0
Beryllium (Be)	ND	2.5
Cadmium (Cd)	4.3	2.5
Chromium (Cr)	ND	5.0
Cobalt (Co)	ND	5.0
Copper (Cu)	7.9	5.0
Lead (Pb)	ND	5.0
Mercury (Hg)	ND	0.2
Molybdenum (Mo)	ND	5.0
Nickel (Ni)	ND	5.0
Silver (Ag)	ND	5.0
Thallium (Tl)	17.1	10
Vanadium (V)	17.2	5.0
Zinc (Zn)	32.8	5.0

QUALITY CONTROL SUMMARY

LCS
%REC.

Antimony (Sb)	82
Arsenic (As)	84
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
(Continued)	

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 12

Lab ID: AE36580

	LCS %REC.
Chromium (Cr)	92
Cobalt (Co)	87
Copper (Cu)	102
Lead (Pb)	80
Mercury (Hg)	96
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 13

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000\7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36582	AE36584	
Sample No:	FTF-PH2-3	FTF-PH4-3	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	
Date Analyzed:	04/15/97	04/15/97	Detection Limit
Antimony (Sb)	ND	ND	10
Barium (Ba)	134	245	5.0
Beryllium (Be)	ND	ND	2.5
Cadmium (Cd)	5.6	9.5	2.5
Chromium (Cr)	ND	32.3	5.0
Cobalt (Co)	5.3	7.9	5.0
Copper (Cu)	20.9	35.3	5.0
Lead (Pb)	ND	ND	5.0
Mercury (Hg)	ND	ND	0.2
Molybdenum (Mo)	ND	ND	5.0
Nickel (Ni)	23.0	39.2	5.0
Silver (Ag)	ND	ND	5.0
Thallium (Tl)	20.6	33.6	10
Vanadium (V)	26.7	59.5	5.0
Zinc (Zn)	63.5	99.5	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	82
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
Chromium (Cr)	92
Cobalt (Co)	87
(Continued)	

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 14

Lab ID: AE36582 AE36584

LCS
%REC.

Copper (Cu)	102
Lead (Pb)	80
Mercury (Hg)	96
Molybdenum (Mo)	85
Nickel (Ni)	83
Silver (Ag)	80
Thallium (Tl)	86
Vanadium (V)	87
Zinc (Zn)	98

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000-7000)
16 Metals
Units: mg/Kg

Lab ID:	AE36585	AE36586	
Sample No:	FTF-PH4-12	METHOD BLANK	
Date Sampled:	04/10/97	04/10/97	
Date Extracted:	04/14/97	04/14/97	Detection
Date Analyzed:	04/15/97	04/15/97	Limit

Antimony (Sb)	ND	ND	10
Arsenic (As)	ND	ND	1.0
Barium (Ba)	322	ND	5.0
Beryllium (Be)	ND	ND	2.5
Cadmium (Cd)	10.5	ND	2.5
Chromium (Cr)	25.3	ND	5.0
Cobalt (Co)	8.0	ND	5.0
Copper (Cu)	33.9	ND	5.0
Lead (Pb)	ND	ND	5.0
Mercury (Hg)	ND	ND	0.2
Molybdenum (Mo)	ND	ND	5.0
Nickel (Ni)	42.9	ND	5.0
Silver (Ag)	ND	ND	5.0
Thallium (Tl)	31.4	ND	10
Vanadium (V)	56.5	ND	5.0
Zinc (Zn)	106	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	82
Arsenic (As)	84
Barium (Ba)	85
Beryllium (Be)	84
Cadmium (Cd)	91
(Continued)	

ND - NOT Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 16

Lab ID:	AE36585	AE36586
	LCS	
	%REC.	
Chromium (Cr)	92	
Cobalt (Co)	87	
Copper (Cu)	102	
Lead (Pb)	80	
Mercury (Hg)	96	
Molybdenum (Mo)	85	
Nickel (Ni)	83	
Silver (Ag)	80	
Thallium (Tl)	86	
Vanadium (V)	87	
Zinc (Zn)	98	

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36576	AE36578	AE36580	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	
Date Sampled:	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/15/97	04/15/97	04/15/97	Detection
Date Analyzed:	04/15/97	04/15/97	04/15/97	Limit
Benzo (a) anthracene	0.468	ND	0.026	0.020
Benzo (a) pyrene	0.740	ND	ND	0.020
Benzo (b) fluoranthene	ND	ND	ND	0.020
Benzo (k) fluoranthene	ND	ND	ND	0.020
Chrysene	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	0.139	ND	ND	0.020
Acenaphthene	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	0.020
Anthracene	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	0.020
Fluoranthene	0.290	ND	ND	0.020
Fluorene	ND	ND	0.109	0.020
Naphthalene	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	0.020
Pyrene	0.168	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36576	AE36578	AE36580
Surrogate Percent Recovery			
Decafluorobiphenyl	120	120	116

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 18

Lab ID:	AE36576	AE36578	AE36580
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36585	
Sample No:	FTF-PH4-12	
Date Sampled:	04/10/97	
Date Extracted:	04/15/97	Detection
Date Analyzed:	04/15/97	Limit
Benzo (a) anthracene	4.87	0.200
Benzo (a) pyrene	ND	0.200
Benzo (b) fluoranthene	1.39	0.200
Benzo (k) fluoranthene	0.319	0.200
Chrysene	3.43	0.200
Dibenzo (a, h) anthracene	ND	0.200
Indeno (1, 2, 3-cd) pyrene	ND	0.200
Acenaphthene	ND	0.200
Acenaphthylene	ND	0.200
Anthracene	ND	0.200
Benzo (ghi) perylene	ND	0.200
Fluoranthene	7.31	0.200
Fluorene	1.90	0.200
Naphthalene	ND	0.200
Phenanthrene	1.32	0.200
Pyrene	4.25	0.200

QUALITY CONTROL SUMMARY

Lab ID: AE36585
Surrogate Percent Recovery
Decafluorobiphenyl 118

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 20

Lab ID: AE36585

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID: AE36586
Sample No: METHOD BLANK
Date Sampled: 04/10/97
Date Extracted: 04/15/97
Date Analyzed: 04/15/97
Detection Limit

Compound	Result	Detection Limit
Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	ND	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE36586
Surrogate Percent Recovery
Decafluorobiphenyl 100

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 22

Lab ID:	AE36586		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	109	4.7
Benzo (a) pyrene	102	101	<1
Naphthalene	100	101	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7932
Project ID: SCG-01-T020
Project Name: SCG-Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
SCG-Aliso Canyon

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36576	AE36578	AE36580	AE36585	
Sample No:	S3-HA1-6	S6-PH2-2	FTF-PH1-9	FTF-PH4-12	
Date Sampled:	04/10/97	04/10/97	04/10/97	04/10/97	
Date Extracted:	04/17/97	04/17/97	04/17/97	04/17/97	Detection
Date Analyzed:	04/17/97	04/17/97	04/17/97	04/17/97	Limit
Sulfate	3710	1140	228	90	10

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	3710	3710	<1

ND - Not Detected at The Detection Limit



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020
SITE: SCG-Aliso Canyon
DATE SAMPLED: 04-22-97
DATE SUBMITTED: 04-22-97
DATE ANALYSIS COMPLETED: 04-24-97
SAMPLE DESCRIPTION: Grab soil sample (For details see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36948	AE36949	AE36950			
Client Sample ID	S4-B1-20	S6-B1-9	M. Blank			
Date Sampled	04-22-97	04-22-97	04-22-97			
Date Extracted	04-23-97	04-24-97	04-23-97			
Date Analyzed	04-23-97	04-24-97	04-23-97			
Matrix	Soil	Soil	Soil			
Units	µg/Kg	µg/Kg	µg/Kg			
Dilution Factor	1	20	1			
Analyte	DL	Results	Results	Results		
Acetone	50	ND	ND	ND		
Benzene	10	ND	ND	ND		
Bromodichloromethane	10	ND	ND	ND		
Bromoform	50	ND	ND	ND		
Bromomethane	50	ND	ND	ND		
2-Butanone	50	ND	ND	ND		
Carbon Disulfide	10	ND	ND	ND		
Carbon Tetrachloride	10	ND	ND	ND		
Chlorobenzene	10	ND	ND	ND		
Chloroethane	50	ND	ND	ND		
2-Chloroethyl Vinylether	50	ND	ND	ND		
Chloroform	10	ND	ND	ND		
Chloromethane	50	ND	ND	ND		
Dibromochloromethane	10	ND	ND	ND		
1,2-Dichlorobenzene	10	ND	ND	ND		
1,3-Dichlorobenzene	10	ND	ND	ND		
1,4-Dichlorobenzene	10	ND	ND	ND		
1,1-Dichloroethane	10	ND	ND	ND		
1,2-Dichloroethane	10	ND	ND	ND		
1,1-Dichloroethene	10	ND	ND	ND		
cis-1,2 Dichloroethene	10	ND	ND	ND		
trans-1,2 Dichloroethene	10	ND	ND	ND		
1,2-Dichloropropane	10	ND	ND	ND		
cis-1,3 Dichloropropene	10	ND	ND	ND		
trans-1,3 Dichloropropene	10	ND	ND	ND		
Ethylbenzene	10	ND	ND	ND		

ND = Not Detected at the detection limit



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LACSD 10181

SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO.: 7992

PROJECT: SCG-01-T020

SITE: SCG-Aliso Canyon

DATE SAMPLED: 04-22-97

DATE SUBMITTED: 04-22-97

DATE ANALYSIS COMPLETED: 04-24-97

SAMPLE DESCRIPTION: Grab soil sample (For details see COC)

SAMPLE MATRIX: Soil

NOTE: Samples were collected by EnvAmerica.

EPA Method 8240

Lab ID	AE36948	AE36949	AE36950			
Client Sample ID	S4-B1-20	S6-B1-9	M. Blank			
Date Sampled	04-22-97	04-22-97	04-22-97			
Date Extracted	04-23-97	04-24-97	04-23-97			
Date Analyzed	04-23-97	04-24-97	04-23-97			
Matrix	Soil	Soil	Soil			
Units	µg/Kg	µg/Kg	µg/Kg			
Dilution Factor	1	20	1			
Analyte	DL	Results	Results	Results		
2-Hexanone	50	ND	ND	ND		
4-Methy-1-2-Pentanone	50	ND	ND	ND		
Methylene Chloride	50	ND	ND	ND		
Styrene	10	ND	ND	ND		
1,1,2,2- Tetrachloroethane	10	ND	ND	ND		
Tetrachloroethene	10	ND	ND	ND		
Toluene	10	ND	322	ND		
1,1,1-Trichloroethane	10	ND	ND	ND		
1,1,2-Trichloroethane	10	ND	ND	ND		
Trichloroethene	10	ND	ND	ND		
Trichlorofluoromethane	10	ND	ND	ND		
Vinyl Acetate	50	ND	ND	ND		
Vinyl Chloride	50	ND	ND	ND		
Xylenes (Total)	20	ND	309	ND		

ND = Not Detected at the detection limit

Cyrus Razmara, Ph.D.
Laboratory Director



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DOHS 1541
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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (6000/7000)
15 Metals
Units: mg/Kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/24/97	04/24/97	04/24/97	Detection
Date Analyzed:	04/25/97	04/25/97	04/25/97	Limit

Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	ND	1.2	ND	1.0
Barium (Ba)	82.0	44.1	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	ND	2.6	ND	2.5
Chromium (Cr)	ND	ND	ND	5.0
Cobalt (Co)	ND	8.0	ND	5.0
Copper (Cu)	7.8	26.9	ND	5.0
Lead (Pb)	ND	ND	ND	5.0
Molybdenum (Mo)	ND	ND	ND	5.0
Nickel (Ni)	ND	25.2	ND	5.0
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	10
Vanadium (V)	15.8	12.1	ND	5.0
Zinc (Zn)	37.8	75.0	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	84
Arsenic (As)	95
Barium (Ba)	103
Beryllium (Be)	108
Cadmium (Cd)	115
Chromium (Cr)	114
(Continued)	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 9

Lab ID: AE36948 AE36949 AE36950

LCS
%REC.

Cobalt (Co)	114
Copper (Cu)	103
Lead (Pb)	116
Molybdenum (Mo)	108
Nickel (Ni)	112
Silver (Ag)	120
Thallium (Tl)	108
Vanadium (V)	111
Zinc (Zn)	112

ND - Not Detected at The Detection Limit



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LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID: AE36948
Sample No: S4-B1-20
Date Sampled: 04/22/97
Date Extracted: 04/25/97
Date Analyzed: 04/28/97
Detection Limit

Benzo (a)anthracene	0.148	0.040
Benzo (a)pyrene	0.424	0.040
Benzo (b)fluoranthene	ND	0.040
Benzo (k)fluoranthene	0.110	0.040
Chrysene	0.092	0.040
Dibenzo (a, h) anthracene	0.808	0.040
Indeno (1, 2, 3-cd) pyrene	ND	0.040
Acenaphthene	ND	0.040
Acenaphthylene	ND	0.040
Anthracene	ND	0.040
Benzo (ghi) perylene	ND	0.040
Fluoranthene	ND	0.040
Fluorene	ND	0.040
Naphthalene	ND	0.040
Phenanthrene	ND	0.040
Pyrene	ND	0.040

QUALITY CONTROL SUMMARY

Lab ID: AE36948

Surrogate Percent Recovery
Decafluorobiphenyl 93

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Page: 11

Lab ID: AE36948

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	108	5.7
Benzo (a) pyrene	100	95	5.1
Naphthalene	109	109	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE36949	AE36950	
Sample No:	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	
Date Extracted:	04/25/97	04/25/97	Detection
Date Analyzed:	04/28/97	04/28/97	Limit
Benzo (a) anthracene	0.034	ND	0.020
Benzo (a) pyrene	0.284	ND	0.020
Benzo (b) fluoranthene	ND	ND	0.020
Benzo (k) fluoranthene	ND	ND	0.020
Chrysene	ND	ND	0.020
Dibenzo (a, h) anthracene	0.467	ND	0.020
Indeno (1, 2, 3-cd) pyrene	0.043	ND	0.020
Acenaphthene	ND	ND	0.020
Acenaphthylene	ND	ND	0.020
Anthracene	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	0.020
Fluoranthene	0.361	ND	0.020
Fluorene	0.026	ND	0.020
Naphthalene	ND	ND	0.020
Phenanthrene	ND	ND	0.020
Pyrene	0.145	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE36949	AE36950
<u>Surrogate Percent Recovery</u>		
Decafluorobiphenyl	98	100

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 13

Lab ID:	AE36949	AE36950	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzó (a) anthracene	102	108	5.7
Benzo (a) pyrene	100	95	5.1
Naphthalene	109	109	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9038)
Sulfate (Turbidimetric)
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/23/97	04/23/97	04/23/97	Detection
Date Analyzed:	04/23/97	04/23/97	04/23/97	Limit

Sulfate	280	730	ND	10
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QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfate	280	280	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: (9200)
Nitrate as Nitrogen
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	04/22/97	Detection
Date Analyzed:	04/22/97	04/22/97	04/22/97	Limit

NO3 as N	ND	ND	ND	1.0
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QUALITY CONTROL SUMMARY

	LCS %REC.
NO3 as N	99

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

2834 North Naomi Street, Burbank, California 91504 Phone (818) 845-8200, Fax (818) 845-8840

DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 350.2
Nitrogen, Ammonia
Units: mg/L

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/24/97	04/24/97	04/24/97	Detection
Date Analyzed:	04/24/97	04/24/97	04/24/97	Limit
NH3 as Nitrogen	9.2	8.5	ND	0.1

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
NH3 as Nitrogen	9.20	9.20	<1

Comment to Sample(s)

AE36948: Distilled water leaching procedure.
AE36949: Distilled water leaching procedure.
AE36950: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 354.1
Nitrite as Nitrogen (Spectrophotometric)
Units: mg/L

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	04/22/97	Detection
Date Analyzed:	04/22/97	04/22/97	04/22/97	Limit

Nitrite as Nitrogen	0.3	ND	ND	0.2
---------------------	-----	----	----	-----

QUALITY CONTROL SUMMARY

LCS
%REC.

Nitrite as Nitrogen 99

Comment to Sample(s)

AE36948: Distilled water leaching procedure.
AE36949: Distilled water leaching procedure.
AE36950: Distilled water leaching procedure.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 6010/ICP.
(Sodium, Potassium)
Units: mg/Kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/24/97	04/24/97	04/24/97	Detection
Date Analyzed:	04/25/97	04/25/97	04/25/97	Limit
Potassium (K)	2570	3000	ND	10
Sodium (Na)	399	2490	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Potassium (K)	92
Sodium (Na)	98

ND - Not Detected at The Detection Limit

ANALYTICAL RESULTS

AETL Job No: 7992
 Project ID: SCG-01-TO20
 Project Name: Aliso Canyon

Page: 19

Report To: (SC/G)
 Southern California Gas Company
 555 W. 5th St.-ML20B
 Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
 Method: 8015MOD/8020
 TPH as Gasoline and BTXE
 Units: ug/kg

Lab ID:	AE36948	
Sample No:	S4-B1-20	
Date Sampled:	04/22/97	
Date Extracted:	04/28/97	Detection
Date Analyzed:	04/28/97	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36948

Surrogate Percent Recovery
 Chlorobenzene 94

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	97	100	3
Toluene	99	99	<1

ND - Not Detected at The Detection Limit



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DOHS 1541
LACSD 10181

ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID: AE36949
Sample No: S6-B1-9
Date Sampled: 04/22/97
Date Extracted: 04/28/97
Date Analyzed: 04/28/97
Detection Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	78	25
Xylenes (Total)	568	50
TPH as Gasoline or Light HCs	65	5 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36949

Surrogate Percent Recovery
Chlorobenzene 112

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	97	100	3
Toluene	99	99	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID: AE36950
Sample No: METHOD BLANK
Date Sampled: 04/22/97
Date Extracted: 04/28/97
Date Analyzed: 04/28/97
Detection Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE36950

Surrogate Percent Recovery
Chlorobenzene

100

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	97	100	3
Toluene	99	99	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/28/97	04/28/97	04/28/97	Detection
Date Analyzed:	04/28/97	04/28/97	04/28/97	Limit

TPH as Diesel and Heavier HC	86	114	ND	10
------------------------------	----	-----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE36948	AE36949	AE36950
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	84	88	100
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	105	104	1

Comment to Sample(s)

AE36948: C12-C25 = 76 mg/kg; C25+ = 10 mg/kg.
AE36949: C12-C25 = 99 mg/kg; C25+ = 15mg/kg.

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36948
Sample No: S4-B1-20
Date Sampled: 04/22/97
Date Extracted: 04/23/97
Date Analyzed: 04/23/97
Detection Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

QUALITY CONTROL SUMMARY

Lab ID: AE36948

Surrogate Percent Recovery

Bromofluorobenzene	95
1,2 Dichloroethane-d4	102
Toluene-d8	97

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	98	99	1
Chlorobenzene	98	98	<1
1,1 Dichloroethene	97	100	3
Toluene	98	98	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36949
Sample No: S6-B1-9
Date Sampled: 04/22/97
Date Extracted: 04/24/97
Date Analyzed: 04/24/97
Detection Limit

Acetone	ND	1000
Benzene	ND	200
Bromodichloromethane	ND	200
Bromoform	ND	1000
Bromomethane	ND	1000
2 Butanone	ND	1000
Carbon Disulfide	ND	200
Carbon Tetrachloride	ND	200
Chlorobenzene	ND	200
Chloroethane	ND	1000
2 Chloroethyl Vinylether	ND	1000
Chloroform	ND	200
Chloromethane	ND	1000
Dibromochloromethane	ND	200
1,2 Dichlorobenzene	ND	200
1,3 Dichlorobenzene	ND	200
1,4 Dichlorobenzene	ND	200
1,1 Dichloroethane	ND	200
1,2 Dichloroethane	ND	200
1,1 Dichloroethene	ND	200
CIS 1,2 Dichloroethene	ND	200
TRNS 1,2 Dichloroethene	ND	200
1,2 Dichloropropane	ND	200
CIS 1,3 Dichloropropene	ND	200
TRNS 1,3 Dichloropropene	ND	200
Ethylbenzene	ND	200
2 Hexanone	ND	1000
4 Methyl-2-Pentanone	ND	1000
Methylene Chloride	ND	1000
Styrene	ND	200
1,1,2,2 Tetrachloroethane	ND	200
Tetrachloroethene	ND	200
Toluene	322	200
1,1,1 Trichloroethane	ND	200
1,1,2 Trichloroethane	ND	200
Trichloroethene	ND	200
Trichlorofluoromethane	ND	200
Vinyl Acetate	ND	1000
Vinyl Chloride	ND	1000
Xylenes (Total)	309	200

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 26

QUALITY CONTROL SUMMARY

Lab ID: AE36949

Surrogate Percent Recovery

Bromofluorobenzene	102
1,2 Dichloroethane-d4	103
Toluene-d8	98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	101	100	1
Chlorobenzene	102	100	2
1,1 Dichloroethene	102	101	1
Toluene	102	102	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36950
Sample No: METHOD BLANK
Date Sampled: 04/22/97
Date Extracted: 04/23/97
Date Analyzed: 04/23/97
Detection Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

QUALITY CONTROL SUMMARY

Lab ID: AE36950

Surrogate Percent Recovery

Bromofluorobenzene	97
1,2 Dichloroethane-d4	85
Toluene-d8	98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	98	99	1
Chlorobenzene	98	98	<1
1,1 Dichloroethene	97	100	3
Toluene	98	98	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID: AE36950
Sample No: METHOD BLANK
Date Sampled: 04/22/97
Date Extracted: 04/24/97
Date Analyzed: 04/24/97
Detection Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 30

QUALITY CONTROL SUMMARY

Lab ID: AE36950

Surrogate Percent Recovery

Bromofluorobenzene	102
1,2 Dichloroethane-d4	103
Toluene-d8	98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	101	100	1
Chlorobenzene	102	100	2
1,1 Dichloroethene	102	101	1
Toluene	102	102	<1
Trichloroethene	115	115	<1

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-TO20
Project Name: Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9030
Total Sulfides
Units: mg/kg

Lab ID:	AE36948	AE36949	AE36950	
Sample No:	S4-B1-20	S6-B1-9	METHOD BLANK	
Date Sampled:	04/22/97	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	04/22/97	Detection
Date Analyzed:	04/22/97	04/22/97	04/22/97	Limit
Sulfides	ND	ND	ND	0.5

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
Sulfides	ND	ND	<1

ND - Not Detected at The Detection Limit



ANALYTICAL RESULTS

AETL Job No: 7992
Project ID: SCG-01-T020
Project Name: Aliso Canyon

Page: 32

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Attn: Masood Hosseini

Phone: 213/244-3292

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE36948	AE36949	
Sample No:	S4-B1-20	S6-B1-9	
Date Sampled:	04/22/97	04/22/97	
Date Extracted:	04/22/97	04/22/97	Detection Limit
Date Analyzed:	04/22/97	04/22/97	Limit
PH	8.60	6.10	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	8.60	8.60	<1

ND - Not Detected at The Detection Limit

EXHIBIT B

EXHIBIT B

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN
Site Assessment and Drum Removal Activities
Aliso Canyon Oil Field
12801 Tampa Avenue
Los Angeles County, California

Prepared for:

Southern California Gas Company
555 West Fifth Street
Box 3249, ML 20B3
Los Angeles, California 90051-1249

Prepared by:

ENV America Incorporated
16 Technology Drive, Suite 154
Irvine, California 926718
(949) 453-9191
(949) 453-9292 (fax)

August 6, 1998

TABLE OF CONTENTS

OVERVIEW	vii
1.0 BACKGROUND	1
2.0 KEY PERSONNEL RESPONSIBLE FOR HEALTH AND SAFETY	2
2.1 Project Manager	2
2.2 Site Manager	2
2.3 Site Safety Officer	3
2.4 Work Parties	3
2.5 Subcontractors	4
3.0 JOB HAZARD ANALYSIS	5
3.1 Primary Health Hazards	5
3.2 Physical Hazards	6
3.2.1 Eye/Face Protection	6
3.2.2 Head Protection	6
3.2.3 Foot Protection	6
3.2.4 Heavy Equipment Operation	7
3.2.5 Equipment Failure	7
3.2.6 Underground Utility Lines	7
3.2.7 Excavation	7
3.2.8 Confined Space Entry	7
3.2.9 Protection from Moving Machinery Parts	7
3.2.10 Slips, Trips, Falls	8
3.2.11 Back Injury	8
3.2.12 Fire	8
3.2.13 Compressed Gas Cylinders	8
3.2.14 Noise	8
3.2.15 Heat Stress	9
4.0 RISK ASSESSMENT SUMMARY	10
4.1 Low Risk Work Activities	10
4.2 Moderate Risk Work Activities	10
4.3 High Risk Work Activities	11
5.0 EXPOSURE MONITORING PLAN	12
5.1 Direct-Reading Instrumentation	12
5.2 Industrial Hygiene Sample Collection and Analysis	13
5.3 Site Perimeter Sample Collection and Analyses	13

TABLE OF CONTENTS
(Continued)

5.4	Miscellaneous Other Laboratory Analyses	13
5.5	Noise	14
5.7	Maintenance and Calibration of Monitoring Equipment	14
6.0	PERSONAL PROTECTIVE EQUIPMENT	15
7.0	WORK ZONES AND SECURITY MEASURES	18
8.0	DECONTAMINATION MEASURES	19
9.0	GENERAL SAFE WORK PRACTICES	21
10.0	SANITATION	23
11.0	STANDARD OPERATING PROCEDURES	24
11.1	Buddy System	24
11.2	Personal Protective Equipment	24
11.3	Emission Control	24
11.4	Air Monitoring	24
11.5	Air Sampling	24
11.6	Tobacco Smoking Policy	25
11.7	Observance of Unanticipated Hazardous Materials	25
11.8	Symptoms of Distress	25
11.9	Heat Stress	25
11.10	Daily Shutdown	26
11.11	Stop Work Orders	26
12.0	CONTINGENCY PLANS	27
13.0	TRAINING REQUIREMENTS	29
14.0	RECORD KEEPING	30

LIST OF EXHIBITS

- Exhibit A - Primary Health Hazards and Air Monitoring Action Levels
- Exhibit B - Air Monitoring Log Sheets
- Exhibit C - Emergency Hospital Location and Route Information

OVERVIEW

This Health and Safety Plan (HSP) has been developed for site assessment and drum removal activities scheduled at the Aliso Canyon Oil Field, located at 12801 Tampa Avenue in Los Angeles County, California. The purpose of this document is to provide detailed information regarding anticipated site health and safety matters, and to establish policies and procedures adequate to protect workers, the public and the environment from the predicted site hazards. This HSP is based, in part, on the best available health hazard information to date. It should be recognized that one or more sections of this HSP may not apply or may require modifications in the event the anticipated conditions at the subject site do not exist or change. A copy of this HSP will be available at the site for the duration of all phases of work involving contaminated or potentially-contaminated materials.

The following documents were used in preparing this Plan:

- 1) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), U.S. Coast Guard (USCG), and U.S. Environmental Protection Agency (USEPA), Publication No. 85-115, October, 1985.
- 2) Draft Site Safety Plan Outline and Guidance for Site Assessment or Site Mitigation Project, Department of Health Services, Toxic Substances Control Division (DHS, TSCD), August, 1988.
- 3) U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), Hazardous Waste Operations and Emergency Response; Final Rule, 29 CFR, Part 1910.120 (March 6, 1989).
- 4) U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), Code of Federal Regulations, Title 29 (29 CFR), Labor, Part 1910.
 - Subpart C--General Safety and Health Provisions
 - Subpart E--Means of Egress
 - Subpart G--Occupational Health and Environmental Control
 - Subpart H--Hazardous Materials
 - Subpart I--Personal Protective Equipment
 - Subpart K--Medical and First Aid
 - Subpart L--Fire Protection
 - Subpart Z--Toxic and Hazardous Substances

- 5) State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA), California Code of Regulations (CCR), Title 8, General Industry Safety Orders:
- Section 5155--Airborne Contaminants
 - Section 3215--Means of Egress
 - Section 3203--Injury and Illness Prevention Program
 - Section 3301--Use of Compressed Air or Gas
 - Section 4650--Storage, Handling, and Use of Cylinders
 - Section 5097--Allowable Exposure (Noise)
 - Section 5141--Control of Harmful Exposure to Employees
 - Section 5144--Respiratory Protective Equipment
 - Section 5192--Hazardous Waste Operations and Emergency Response
 - Article 10--Personal Safety Devices and Safeguards
- 6) Registry of Toxic Effects of Chemical Substances 1981-1982 with subsequent supplements, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health.
- 7) Dangerous Properties of Industrial Materials, Sixth Edition, 1984, N. Irving Sax.
- 8) Handbook of Toxic and Hazardous Chemicals, 1981, Marshall Sittig.
- 9) Casarett and Doull's Toxicology, The Basic Science of Poisons, 1986, Curtis D. Klaassen, Ph.D., et al.
- 10) Threshold Limits Values and Biological Exposure Indices for 1994-1995, American Conference of Governmental Industrial Hygienists.
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- 13) Chemical Hazards of the Workplace, 1991, Nick H. Proctor, Ph.D. and James P. Hughes, M.D., et. al.
- 14) U.S. EPA Standard Operating Safety Guides, EPA Office of Emergency Response, Hazardous Response Support Division, Edison, New Jersey.
- 15) Guidelines for the Selection of Chemical Protective Clothing, American Conference of Governmental Industrial Hygienists, A.D. Little, et. al., 1983.

- 16) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health, October, 1985.
- 17) Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health, June 1990.

1.0 BACKGROUND

The Aliso Canyon Oil Field is located at 12801 Tampa Avenue, in Los Angeles County, California. The project site is located in foothills of the Santa Susana Mountains, north of the city of Northridge. The site includes roughly 2 square miles of relatively natural hillside terrain with mild to steep access roads, various drill pads, and associated graded features. Several arterial roads and smaller interior and connector roads are present with access to the site from Tampa Avenue to the south. Land usage has been primarily oil production for the past several decades. Oil production wells and related facilities are present at the site.

The project area consists of steep-sided hills and valleys. Surficial drainage is generally to the south within Limekiln Canyon and Aliso Canyon with associated tributary canyons and side slopes. Several large landslide complexes are present within the canyon areas. Groundwater is considered deep throughout the site except within the landslide complexes and alluvial drainage courses where perched groundwater exists.

In general, work activities at the site are anticipated to include drilling, trenching, drum handling, and sampling of soil and/or groundwater. Suspected contaminants in soil and groundwater associated with oil fields include metals associated with drilling muds and unrefined crude oil, methane and hydrogen sulfide vapors, petroleum hydrocarbons, chemicals associated with well maintenance, aromatic volatile organic compounds including benzene, toluene, ethylbenzene, xylenes, and chlorinated volatile organic compounds including various types of solvents and degreasers.

2.0 KEY PERSONNEL RESPONSIBLE FOR HEALTH AND SAFETY

2.1 Project Manager: Maziar "Max" Reyhani, P.E.
ENV America Incorporated
Telephone: (949) 453-9191
Pager: (949) 217-2545
Home: (714) 573-1443

The Project Manager is responsible for the overall performance and compliance with applicable regulations and procedural guidelines as specified in this HSP. This individual, with assistance from the Site Safety Officer, will be responsible for the supervision and direction of personnel at the site. In the event the Project Manager becomes aware of a deficiency in implementation of the HSP, this individual may recommend changes to the Plan, or recommend changes in the interpretation of the Plan, and shall take appropriate action by consulting with the project Site Safety Officer. The Project Manager will also provide all Contractor senior management with written documentation of deficiencies or changes when they apply to Contractor's work.

2.2 Site Manager: Daniel J. Gifford, C.E.G.
ENV America Incorporated
Telephone: (949) 453-9191
Pager: (949) 725-7580
Home: (949) 586-8388

The Site Manager is responsible for coordinating and supervising all site activities, including technical field activities. This individual, or a qualified substitute, will be onsite at all times during the field operations. This individual will document all work progress, keep a log of field activities, and will be responsible for decontamination procedures, and execution of the HSP. This individual is responsible for controlling access to the site, and shall be responsible for maintaining communications and visual contact with work parties and, as needed, emergency assistance. Upon recommendations from the Site Safety Officer, this individual has the authority to prohibit individuals from continuing onsite work due to safety infractions, and to upgrade personal protective equipment. This individual will maintain a record of all logs and a copy of the HSP.

2.3 Site Safety Officer: James A. Larwood, C.E.G.
ENV America Incorporated
Telephone: (949) 453-9191
Home: (619) 631-0707

The Site Safety Officer will make assessments of health and safety practices at the site. The Site Safety Officer shall maintain employee illness and injury records, and exposure monitoring results. This individual will conduct health and safety inspections on a daily basis during which he shall observe personnel and authorized visitors for indications of impaired health due to contaminant exposure, heat stress or other stress, and: he shall evaluate whether site conditions present hazards not previously predicted; he shall inspect personal protective equipment, and verify its use, maintenance, and decontamination; and he shall evaluate site conditions and work practices in light of current applicable regulations and sound health and safety principals. The Site Safety Officer shall determine the need for additional safety equipment to be used onsite. The Site Safety Officer will conduct safety meetings involving persons who are permitted to enter the site and control entry and exit, recording names and job assignments of all personnel entering the regulated work area. The Site Safety Officer shall have the authority to cease operations if infractions of the HSP are observed. The Site Safety Officer shall ensure that air monitoring is conducted in accordance with the schedules outlined in this HSP. As deemed appropriate, this individual shall document all work progress, keep a log of field activities, and shall be responsible for decontamination procedures, and execution of the HSP. This individual is responsible for controlling access to the site, and shall be responsible for maintaining communications and visual contact with work parties and, as needed, obtain emergency assistance. This individual has the authority to prohibit individuals from continuing onsite work due to safety infractions, and to upgrade or downgrade the use of personal protective equipment.

2.4 Work Parties: To be determined.

Each member of a work party has the responsibility to read the HSP and understand their assigned tasks and how to perform such tasks in accordance with the HSP. The work party members shall inform their supervisors of any unforeseen health and/or safety hazards, symptoms of exposure, malfunctioning equipment, identification of previously unknown or unanticipated waste or contamination, or other unanticipated conditions.

The safe and efficient implementation of this HSP requires teamwork and the cooperation of all employees. Employees who refuse or fail to follow the standards set forth in this HSP are subject to disciplinary action, which may include discharge from the site. In all cases not specifically mentioned, employees are expected to use good judgment and shall refer all questions to appropriate supervisors and health and safety personnel.

2.5 Subcontractors: To be determined.

Individual subcontractors are responsible for assigning specific duties to their employed persons determined to be qualified for the assignments and for allocating the time, facilities, equipment and funds necessary for the successful and safe completion of the project in accordance with this HSP. Senior management of each subcontractor shall conduct sufficient project oversight to assure that their personnel are adequately performing their assignments and that the allocated resources are sufficient to allow the project to be completed in a safe manner. Whenever deficiencies are noted, the subcontractor shall take appropriate corrective and/or disciplinary action. Each subcontractor also has the responsibility to ensure that all of their employees are properly trained in accordance with all applicable regulations.

3.0 JOB HAZARD ANALYSIS

During the predictable site operations, the following job classifications will be present:

- Site Manager
- Heavy equipment operator
- Truck driver
- Geologist
- Site Safety Officer
- Technician
- Management representatives of engineering firms, owner, and regulatory agencies

3.1 Primary Health Hazards

This subsection contains information concerning the primary health hazards of the chemical substances known or suspected to exist on the subject site. Each of the job classifications indicated above may potentially be exposed to one or more of the health hazards listed during the course of work. The primary health hazard(s) associated with exposure to these substances are provided in the tables which are included as Exhibit A - Primary Health Hazards and Air Monitoring Action Levels. Applicable employee 8-hour permissible exposure limits and threshold limit values (TLVs) are also indicated in these tables.

Note that preparation of this HSP was based, in part, on the chemical compounds identified through laboratory analyses, predictable by-product compounds, and other hazardous materials that are expected to exist on the subject site. If other chemical substances are later identified on the site, then additional health hazard summary information shall be included with this HSP as an addendum.

The applicable permissible exposure limits are defined by the State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA), in the volume identified as the California Code of Regulations (CCR), Title 8, General Industry Safety Orders, Section 5155, or other sections. The majority of permissible exposure limits represent time-weighted average values based on an 8-hour work day, 40 hour work week. Other exposure limits are expressed as short-term exposure limit (STEL) values which, generally, represent limits not to be exceeded for time periods longer than 15 minutes. Certain substances have a "Skin" notation following the exposure limit which dictates that the overall exposure to a substance is enhanced by skin, mucous membrane and/or eye contact exposure. Some substances have a ceiling limit, designated by the letter "C" which shall not be exceeded at any time during a work shift.

The TLVs listed in the tables are recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). TLVs refer to airborne concentrations of substances and represent conditions during which it is believed that nearly all workers may be repeatedly exposed, eight hours per day, day after day, for a 40-year working lifetime, without adverse effects. Because of a wide variation in individual susceptibility, however, a small percentage of workers may experience discomfort to chemical substances at concentrations equal to or below the TLVs. A still smaller percentage of persons may be affected more seriously from exposures at or below the TLVs due to aggravation of a pre-existing condition or by development of an occupational illness. TLVs are based on the best available information from industrial experience, from experimental human and animal studies, and when possible, from a combination of the three sources. Similar to the Cal-OSHA permissible exposure limits, TLVs are expressed as 8-hour time-weighted averages (TLV-TWA), short-term exposure limits (TLV-STEL), ceiling values (TLV-C), and a portion of which carry the "Skin" notation.

3.2 Physical Hazards

This subsection contains information concerning the primary safety issues posed by known or potential physical hazards on the subject site. Each of the job classifications indicated above may potentially be exposed to one or more of these physical hazards listed during the course of work. Many of these hazards will appear obvious to experienced site personnel and, therefore, exhaustive explanations of each have not been provided with this HSP. Brief descriptions of the expected primary physical hazards are provided below with personal protective equipment or other control requirements and applicable Cal-OSHA regulations.

3.2.1 Eye/Face Protection

Impact resistant safety glasses shall be worn as necessary to protect against flying particulates or projections. Appropriately shaded lenses shall be used to protect against injurious rays (T8, CCR, 1516 and 3382). If appropriate, chemical goggles or face shields shall be worn during sample collection activities to protect against splashing liquids.

3.2.2 Head Protection

Hard hats shall be worn by all personnel at all times onsite.

3.2.3 Foot Protection

During all phases of work, boots or shoes having steel reinforced toe and shank shall be worn to protect against falling objects and crushing or penetrating actions. Metatarsal guards may be worn if protection to top of foot is required. Other types of foot protection may be required for work in wet locations.

3.2.4 Heavy Equipment Operation

Seat belts shall be provided on all equipment where rollover protection is installed and employees shall be instructed in their use. Only those individuals trained in safe operation and authorized by the employer may operate such equipment. All heavy equipment operators shall provide proof of current applicable certification/license (T8, CCR, Sec. 3653, 3660, 3664).

3.2.5 Equipment Failure

All equipment shall be inspected and tested before use. All equipment shall be maintained by qualified persons in accordance with manufacturer's specifications. Any modifications shall be made in accordance with good engineering practice. Malfunctioning equipment shall be tagged and locked until repairs can be made. Machinery and equipment components shall be designed, secured, or covered to minimize hazards caused by breakage, release of mechanical energy, or other condition which may cause injury (T8, CCR, Sec. 3328).

3.2.6 Underground Utility Lines

The Project Manager will require contact with the representatives of the oilfield to define utility locations in the excavation areas. In addition, the Project Manager may require contact with Underground Service Alert to define utility locations or may require the use of ground penetrating radar (or equivalent) prior to excavating in order to avoid utility line contact.

3.2.7 Excavation

All excavation work shall be performed in compliance with the regulations on excavations, trenches, and earthwork (T8, CCR, Article 6).

3.2.8 Confined Space Entry

All trenches/excavations onsite shall be considered confined spaces and shall be entered only following the protocols identified in the Occupational Safety and Health Administration (OSHA) confined space entry regulation (T8, CCR, Article 108).

3.2.9 Protection from Moving Machinery Parts

Guards are required on machines, parts, and components which create hazardous revolving, reciprocating, running, shearing, punching, pressing, squeezing, drawing, cutting, rolling, mixing, or similar action, including pinch points and shear points, if not guarded by the frame or the machine or by location. All machine guards shall be appropriate for the hazards involved, secured in-place, constructed of substantial material, and have surfaces free of hazardous projections; guards shall be provided with hinged or removable sections where it is necessary to change belts, make adjustments, or for the administration of lubricants. In addition, personnel shall restrain, loose clothing, jewelry, and long hair to prevent entanglement.

Machinery or equipment capable of movement shall be stopped and the power source de-energized or disengaged, and if necessary, the movable parts shall be mechanically blocked or locked to prevent inadvertent movement during cleaning, servicing, or adjusting operations; if machinery must be able to move during servicing, use extension tools to protect employees from the movement; controls shall be locked in the "off" position and marked with accident prevention signs and/or tags (T8, CCR, Sec. 3314).

3.2.10 Slips, Trips, Falls

Personnel shall attempt to minimize the potential for slips, trips, falls by providing clear footing. They shall be aware of uneven terrain and existing ground level piping and conduit, and maintain good housekeeping in the area. Permanent roadways, walkways, and material storage areas shall be maintained free of dangerous depressions, obstructions, and debris (T8, CCR, Sec. 3273). All personnel must take great care in order to avoid falling into the UST cavity.

3.2.11 Back Injury

Extreme caution shall be exercised during operations involving the manual handling or lifting of heavy objects. Employees shall be instructed to follow the "How to Lift" guidelines found in T8, CCR, Sec. 1938 of the Construction Safety Orders.

3.2.12 Fire

Tobacco smoking shall be limited to a designated smoking area determined by the Project Manager or Site Safety Officer. Smoking shall be prohibited during fueling operations, if any. Hot work, including welding, shall not be performed in potentially flammable atmospheres without prior monitoring using a combustible gas indicator (CGI). Instrumentation used in potentially flammable atmospheres shall be rated intrinsically safe for Class I atmospheres. Equipment and vehicles shall be shut down during fueling and rest periods, as appropriate, equipment shall have spark arresters. Vehicles shall not park or drive across heavily vegetated areas to reduce the chance of fire caused by hot catalytic convertors or other hot equipment parts.

3.2.13 Compressed Gas Cylinders

Such vessels, if required, shall be secured and used with the manufacturer's recommended valves and fittings; unused cylinders shall be secured and capped.

3.2.14 Noise

Equipment shall be properly maintained in order to minimize noise at the source. Employees shall use hearing protection when noise exposures exceed 85 dBA. As a general rule, hearing protection will be required when voices must be raised to communicate at a 3-foot distance.

3.2.15 Heat Stress

At elevated ambient temperatures, workers, particularly those wearing protective clothing, may experience varying degrees of heat stress, if prudent precautions are not taken. Recognized forms of heat stress and the associated symptoms are:

- Heat Rash can be caused by continuous exposure to hot and/or humid air. The condition is characterized by a localized red skin rash and reduced sweating.
- Heat Cramps can be caused by profuse perspiration with inadequate fluid intake and salt replacement. This condition is characterized by muscle spasms and pain in the extremities and abdomen.
- Heat Exhaustion, a mild form of shock, can be caused by substantial physical activity in heat and profuse perspiration without adequate fluid and salt replacement. The symptoms include weak pulse; shallow breathing; pale, cool, moist skin; profuse sweating; dizziness; and fatigue.
- Heat Stroke, the most severe form of heat stress, can be fatal. The symptoms include red, hot, dry skin; body temperature of 105°F or greater; no perspiration; nausea; dizziness and confusion; strong rapid pulse; coma; and death.

4.0 RISK ASSESSMENT SUMMARY

The following risk assessment summary indicates anticipated risk levels associated with proposed work activities:

4.1 Low Risk Work Activities

The following work activities at the site are anticipated to involve low risk of exposure to chemical and physical hazards:

- General site work
- Sample collection

During these operations there will be minimal movement of waste materials at the site. Minimal generation of airborne contaminants will occur during these activities. Primary hazards are associated with physical hazards such as slips, trips and falls due to close proximity of mechanical parts as well as existing parts storage areas and aboveground pipelines and wires.

4.2 Moderate Risk Work Activities

The following work activities at the site are anticipated to involve moderate risk of exposure to chemical and physical hazards:

- Exposure to rattlesnakes or poison oak,
- Exposure to vehicular to heavy construction traffic and related oil field operations.
- Exposure to heavy construction traffic and related oil field operations.
- Exposure to physical hazards associated with drilling and trenching operations (i.e. snapping cables, struck by equipment, becoming entwined with rotating tools, falling objects, fires, excessive noise, above ground and underground utilities and pipelines, caused by various heavy construction traffic and related oil field operations.
- Exposure to chemical hazards associated with oilfield operations.

During these operations there will be hiking across natural hillside terrain. Rattlesnakes often frequent grassy and brushy areas. In addition, existing aboveground and underground utility and pipelines may be hidden by vegetation, soil, and debris. Many of the site roads are narrow and heavily traveled by construction vehicles. Caution should be taken when merging and traveling on these roads. Procedures will be established to limit exposures to physical and chemical hazards to the extent feasible.

4.3 High Risk Work Activities

No work activities at the site are expected to involve high risk of exposure to chemical and physical hazards. No exposures to Immediately Dangerous to Life or Health (IDLH) or oxygen deficient atmospheres are anticipated. No work activities such as confined space entry or activities involving Level A protection are anticipated.

5.0 EXPOSURE MONITORING PLAN

This section of the HSP outlines the air monitoring strategies and analytical methods which will be employed to determine potential baseline airborne concentrations of contaminants. All monitoring and air sampling shall be performed by the Site Safety Officer or other qualified persons. If deemed necessary by the Safety Officer, industrial hygiene sampling techniques may also be used for perimeter monitoring in order to quantify migration of airborne contaminants to offsite locations.

All laboratory analyses of industrial hygiene samples shall be analyzed at laboratories that are accredited by the American Industrial Hygiene Association (AIHA) who participate in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program and are deemed proficient. Until such time as worker and community exposures are established with confidence, all samples collected using industrial hygiene procedures shall be analyzed on a priority turnaround time basis. At the discretion of the Site Safety Officer, turnaround times may be lengthened but may not exceed appropriate holding time limits. All monitoring and sampling procedures and data shall be recorded in a bound log or field notebook. All samples submitted for analysis shall be accompanied by "Chain-of-Custody" and "Request for Analysis" forms.

5.1 Direct-Reading Instrumentation

Direct-reading instrumentation, such as a flame-ionization detector (FID) or photoionization detector (PID) will be used initially and at regular intervals thereafter, to determine airborne concentrations of organic compounds. Properly equipped, the FID is capable of measuring airborne concentrations of many organic vapors between 0.1 to 1000 parts per million (ppm). The PID is capable of detecting many organic vapors between 1 and 2000 ppm. Background air monitoring data will be collected and recorded for future comparison. At a minimum, such monitoring shall be performed in worker breathing zones, at various Exclusion Zone locations, and at different site perimeter locations. Initially, readings shall be recorded every 15 minutes at each of the target locations. Monitoring frequency will be modified as deemed appropriate by the Site Safety Officer. All readings shall be documented in the field logbook. All readings shall be compared to the action levels which are included in Exhibit A. The Instrument Calibration Log, the Site Entry / Exit Log, and the acknowledgment of the HSP review are included in Exhibit B - Air Monitoring Log Sheets.

As deemed appropriate by the Site Safety Officer, a direct-reading airborne particulate monitor may be used to determine airborne particulate emissions at the site. All readings shall be documented in the field logbook. These data shall also be compared to applicable South Coast Air Quality Management District Rules.

5.2 Industrial Hygiene Sample Collection and Analysis

If deemed necessary by the Site Safety Officer, samples shall be collected in employee breathing zones for the purposes of determining employee exposures to airborne selected volatile organic compounds (VOCs), including but not limited to aromatics (such as benzene, ethylbenzene, toluene and xylenes), selected polycyclic aromatic hydrocarbon compounds, and metals associated with drilling muds. Employee exposure determinations for each job classification shall be made as frequently as deemed necessary by the Site Safety Officer. Selection of respiratory protection for site personnel shall be made, in part, through evaluation of all industrial hygiene data recorded. If any analytical results exceed the applicable Cal-OSHA permissible exposure limits (independent of respiratory protection factors), the Project Manager shall be notified immediately.

Organic vapor samples shall be collected using personal sampling pumps equipped with charcoal sorbent tubes, or other appropriate collection media in accordance with applicable NIOSH or OSHA methods, calibrated to flow rates from 0.05 to 0.2 liters per minute (LPM). Analysis shall be performed by gas chromatography with mass spectrometry detection (if volatile organic hydrocarbon screening is required) or by gas chromatography with flame-ionization detection in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 1501, or equivalent.

Polycyclic aromatic hydrocarbon (PAH) samples shall be collected using personal sampling pumps, equipped with a 37-millimeter diameter PTFE filter having a pore size of 2 micrometers (first stage) connected in series with a washed XAD-2 sorbent tube (second stage), calibrated to a flow rate of 2 LPM. Analysis shall be performed in an AIHA-accredited laboratory by either high pressure liquid chromatography according to NIOSH Method 5506, or by gas chromatography, with a capillary column and flame-ionization detector, according to NIOSH Method 5155.

Metals shall be collected using personal sampling pumps, equipped with a 37-millimeter diameter mixed cellulose ester membrane filter having a pore size of 0.8 micrometer, calibrated to a flow rate of approximately 2 LPM. Analysis shall be performed in an AIHA-accredited laboratory by either flame atomic absorption or by inductively coupled argon plasma in accordance with NIOSH Method 7300.

5.3 Site Perimeter Sample Collection and Analyses

If deemed necessary by the Safety Officer, samples shall be collected at site perimeter locations for determination of airborne levels of selected volatile organic compounds, PAHs, and metals. The collection and analytical methods used shall be comparable to those described above.

5.4 Miscellaneous Other Laboratory Analyses

At the discretion of the Site Safety Officer, air samples for determination of other analytes may be collected at varying locations. In all such instances, the sampling techniques and analytical methods shall be performed in accordance with the applicable NIOSH or other appropriate methods.

5.5 Noise

Excessive noise is not anticipated at the site. If noise becomes excessive, as determined by the Safety Officer, noise exposure determinations should be performed by an industrial hygienist using audio dosimeters or sound level meters. A sufficient number of readings shall be made in order to accurately quantify 8-hour time-weighted average and peak noise exposure levels for each employee job classification. In accordance with Cal-OSHA regulations (T8, CCR, Article 105), employees exposed to noise levels higher than 90 dBA for 8 hours are required to wear hearing protection. For the purposes of this project, hearing protection shall be worn when levels exceed the "action level" of 85 dBA. As a minimum, hearing protection will be required for persons in close proximity to heavy equipment operations.

5.6 Heat Stress

If due to site or weather conditions, the Site Safety Officer determines that a heat stress potential exists, then a Wet Bulb Globe Temperature (WBGT) monitor, or equivalent, shall be used to determine heat stress potentials. Such determinations shall be made at representative site locations at least once per hour throughout the work shift(s) when heat stress potentials are expected to exist.

The WBGT data shall be given in units of degrees centigrade (°C) which shall then be used to assign work/rest schedule regimens in accordance with the table found in Section 11.0, Standard Operating Procedures, of this HSP. As an alternative, heart rate (pulse) determinations may be made as each worker leaves his/her work area and again one minute following exit. The heart rate determinations shall be compared to the criteria found in Section 11.0 of this HSP in order to evaluate the adequacy of the work/rest regimen schedule.

5.7 Maintenance and Calibration of Monitoring Equipment

All monitoring equipment shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated on a daily basis. Both the FID and PID shall be calibrated to a known concentration of hexane (in range of less than 100 ppm). The calibration of the combustible gas indicator shall be performed using a known concentration of flammable gas (in percent of the lower explosive limit). Calibration of the direct-reading field instruments shall be performed by the Site Safety Officer. Calibration of all industrial hygiene equipment will be performed immediately before and after use by the Site Safety Officer.

6.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment and safety requirements shall be appropriate to protect against the known and potential health hazards that may be encountered during performance of the site work at the site. Personal protective equipment (PPE) will be selected based on the contaminant type(s), concentration(s) in air (if any), standing liquid (if any), or other applicable matrix, and the known route(s) of entry into the human body. In situations where the type of materials, their concentrations, or exposure potentials are unknown, a subjective decision regarding the assignment of personal protective equipment will be made by the Site Safety Officer. The Site Safety Officer may choose to upgrade or downgrade the required personal protective equipment, depending on work area conditions, airborne concentrations of contaminants, air temperature, or other factors.

The USEPA levels of protection shall be described as follows:

- Level A: The highest level of respiratory, skin and eye protection.
- Level B: The highest level of respiratory protection, but a lesser level of skin protection.
- Level C: The same level of skin protection as Level B, but a lower level of respiratory protection.
- Level D: No respiratory protection and minimal skin protection.

Based on available information, the airborne concentrations of volatile organic compound contaminants could periodically exceed the respiratory protection volatile organic compound upgrade action level of 5 ppm sustained above background, and may at times, exceed the respiratory protection upgrade action level of 50 ppm sustained above background. Therefore, the following protocols shall be in effect:

- All workers and visitors shall maintain, as a minimum, Level D personal protection while outside and upwind of active Exclusion Zone(s).
- If direct-reading instruments show sustained organic airborne contaminant concentrations of greater than 250 ppm above background in employee breathing zones, then affected site personnel shall maintain Level B protection, which includes a full-face pressure-demand supplied air respirator. Downgrading to lesser protection levels may be authorized by the Site Safety Officer.
- All persons who have the potential for direct contact with contaminated wastes, water, soils, or equipment shall be required to wear appropriate skin protection, in addition to the respiratory protective equipment which may be required. As appropriate, skin protection will include the use of Tyvek polyethylene-coated spun bonded polyolefin coveralls (or equivalent), nitrile outer gloves, latex inner gloves, and neoprene boots. Personal protective equipment openings shall be taped to provide closure at all times.

- All workers whose predictable 8-hour time-weighted average exposure to noise equals or exceeds the Cal-OSHA action level of 85 dBA shall be provided and required to wear hearing protection during all operations where excessive sound levels are generated.
- Due to changes in airborne concentrations of contaminants, moisture content in debris or other matrix, heat stress potentials, or other health or safety stress or hazard, levels of protection may be upgraded or downgraded by the Site Safety Officer. In such circumstances, levels of protection shall be assigned on a case by case basis. Changes of protection levels shall be documented with supporting rationale.

The Level B equipment shall include:

- Boots (PVC with steel toe and shank, if high direct contact potential exists)
- Protective gloves, inner (surgical latex or nitrile)
- Protective gloves, outer (nitrile or PVC)
- Protective gloves (leather, permissible if high direct contact potential does not exist)
- Coveralls (polyethylene-coated spun bonded polyolefin)
- Coveralls (uncoated spun bonded polyolefin, permissible if high direct contact potential does not exist)
- Hard hat
- Full-face pressure demand air-supplied respiratory protection

The Level C equipment shall include:

- Boots (PVC with steel toe and shank, if high direct contact potential exists)
- Protective gloves, inner (surgical latex or nitrile)
- Protective gloves, outer (nitrile or PVC)
- Protective gloves (leather, permissible if high direct contact potential does not exist)
- Coveralls (polyethylene-coated spun bonded polyolefin)
- Coveralls (uncoated spun bonded polyolefin, permissible if high direct contact potential does not exist)
- Hard hat
- Full-face air-purifying respiratory protection with NIOSH/OSHA approved cartridges (organic vapor/acid gas/HEPA)

The Modified Level C equipment shall include:

- Boots (PVC with steel toe and shank, if high direct contact potential exists)
- Protective gloves, inner (surgical latex or nitrile)
- Protective gloves, outer (nitrile or PVC)
- Protective gloves (leather, permissible if high direct contact potential does not exist)
- Coveralls (polyethylene-coated spun bonded polyolefin)
- Coveralls (uncoated spun bonded polyolefin, permissible if high direct contact potential does not exist)
- Hard hat
- Safety glasses or goggles

- Half-mask air-purifying respiratory protection with NIOSH/OSHA approved cartridges (organic vapor/acid gas/HEPA)

The Level D equipment shall include:

- Boots or work shoes (with steel toe and shank)
- Work coveralls
- Hard hat
- Safety glasses

7.0 WORK ZONES AND SECURITY MEASURES

The area work zones will be identified as appropriate with safety cones, flags, caution delineation tape and signs. The work zones shall include:

- Exclusion Zone (contaminated and active work areas)
- Contamination Reduction Zone and Corridor Support Zone

The anticipated locations of the work zones, the Contamination Reduction Corridor, equipment storage areas, rest areas, restroom facilities, and routes of exit will be determined on the first day of site operations and documented in the Site Manager's Field Log. The Contamination Reduction Zone shall consist of the Contamination Reduction Corridor, and the areas for decontamination, equipment storage, sample storage, and contaminated personal protective equipment storage. The area of this zone shall not be larger than is necessary to allow for the completion of these functions. The Support Zone shall be outside of the Contamination Reduction Zone and shall be located upwind of the Exclusion Zone. A rest area shall be located in the Support Zone.

The Site Safety Officer may, under some circumstances, require that the work zones be relocated. In either case, the work zones will be reconfigured.

Only authorized persons shall be permitted entry into the site and those persons shall identify themselves to the Project Manager or Site Safety Officer.

8.0 DECONTAMINATION MEASURES

As part of the system to prevent or reduce the physical transfer of contaminants by people and/or equipment from the subject area, procedures will be instituted for decontaminating all articles leaving the Exclusion and Contamination Reduction Zones. The Site Safety Officer shall oversee all decontamination procedures.

- All authorized visitors and personnel shall enter and leave the Exclusion Zone(s) via the Contamination Reduction Corridor(s).
- When operating under Level D conditions, visible contamination shall be removed from boots and gloves.
- When operating under Level C conditions, outer gloves shall be removed and decontaminated with soap and water (and allowed to air dry in a Support Zone Area), or discarded in appropriately marked containers for disposal (if excessive wear, damage or contamination is observed upon inspection) as each individual steps from the Exclusion Zone to the Contamination Reduction Zone. Visible contamination shall be removed from boots and inner gloves by washing with soap and water in a wading pool or other appropriate basin as each individual steps from the Contamination Reduction Zone to the Support Zone. Each individual shall remove protective clothing and the air-purifying respirator cartridge(s) and place it in appropriately marked containers for disposal as they step into the Support Zone. Air-purifying respirators shall be dismantled, washed with warm water and soap, disinfected, and allowed to air dry in a clean Support Zone area.
- When operating under Level B conditions, outer gloves shall be removed and decontaminated with soap and water (and allowed to air dry in a Support Zone Area), or discarded in appropriately marked containers for disposal (if excessive wear, damage or contamination is observed upon inspection) as each individual steps from the Exclusion Zone to the Contamination Reduction Zone. Visible contamination shall be removed from boots and inner gloves by washing with soap and water in a wading pool or other appropriate basin as each individual steps from the Contamination Reduction Zone to the Support Zone. Each individual shall remove protective clothing and place it in appropriately marked containers as they step into the Support Zone. Air-supplied respirators shall be dismantled, washed with warm water and soap, disinfected, and allowed to air dry in a clean area.
- The spent decontamination solutions shall be collected onsite in a suitable container and shall be handled as hazardous wastes pending analytical testing. The results of such analysis shall determine treatment or disposal options.
- All decontamination tools, brushes, sponges and the like, and used/soiled disposable personal protective equipment shall, unless shown otherwise, be considered contaminated and so treated. Such wastes shall be stored onsite in sealed Department of Transportation (DOT) specification 17-II (open top) 55-gallon drums.

- Large equipment potentially contaminated during work activities in the Exclusion Zone should be decontaminated using a portable steam generator with a spray nozzle, or equivalent. The rinsate from such cleaning procedures shall be collected, analyzed, and handled as hazardous waste pending receipt of analytical data. Such data shall determine treatment or disposal options. A record of such procedures showing equipment identification numbers shall be kept in a bound log.
- Workers/visitors will be required to wash thoroughly with soap and water prior to leaving the site and will be instructed to remove work clothes and shower as soon as possible thereafter.
- Wash materials will be disposed of properly. All porous equipment which is believed to be contaminated shall be handled as hazardous waste.

9.0 GENERAL SAFE WORK PRACTICES

- The subject work area will be restricted to authorized visitors and personnel. These individuals will be required to attend a tailgate safety meeting upon entering the subject area during which they will be informed of the various work zones and facilities, the health and safety hazards associated with their assigned work activities, control measures, the care and use of personal protective equipment, emergency action plans, and other pertinent information. Tailgate safety meetings will be conducted on a daily basis at the beginning of each shift. Attendance rosters will be recorded and maintained by the Project Manager or Site Safety Officer.
- All persons entering the site will be required to identify themselves to the Project Manager or Site Safety Officer. Persons who have not attended a tailgate safety meeting on that day shall be required to do so with the Site Safety Officer or other authorized representative. Persons unfamiliar with the site will be informed of site hazards and instructed to avoid contact with contaminated surfaces, soils, sample materials, or related equipment, and, at the discretion of the Site Safety Officer, may be instructed to remain a minimum of 50 feet upwind of all active work areas.
- All persons entering the Contamination Reduction Zone and the Exclusion Zone shall do so at the Contamination Reduction Corridor while wearing the appropriate personal protective equipment (as applicable).
- Eating, drinking, chewing gum or tobacco, smoking or any other activity that increases the potential to ingest contaminated material is prohibited in all areas of the Exclusion and Contamination Reduction Zones.
- Any skin contact with contaminated or potentially contaminated surfaces, samples or equipment shall be avoided.
- Personnel shall use the "Buddy System" when performing site duties. If work activities are required to be performed in Exclusion and Contamination Reduction Zones, communication and visual contact between members shall be maintained at all times.
- As appropriate, equipment will be bonded and grounded, and will be spark resistant.
- A fire extinguisher shall be available for use in the subject area during all working hours. If the travel distance to the extinguisher from any point in the area is greater than 50 feet, then additional fire extinguishers shall be furnished and strategically located so that the travel distance does not exceed 50 feet.

- A portable emergency eyewash station shall be strategically located in the work area. The eye wash station shall be capable of flushing both eyes simultaneously with copious amounts of water for a period of at least 15 minutes.
- Whenever feasible, all equipment and ground surfaces which will be in direct contact with contaminated soils shall be plasticized.
- Removal of materials from protective clothing or equipment by blowing, shaking, or any other means which may disperse contaminated materials into the air is prohibited.
- All hazardous wastes, raw materials, intermediates, products, mixtures, samples, contaminated personal protective equipment, or other contaminated materials which are removed from the subject site shall be properly packaged, marked, labeled, accompanied by appropriate shipping papers and transported in accordance with all applicable Federal, state, and local regulations including, but not limited to, the California Code of Regulations, Title 22, and the Code of Federal Regulations, Title 49--Transportation.
- All stockpiled soils which are believed potentially contaminated shall be covered with sheet plastic.
- At the end of each working day and/or the work being performed, site personnel shall restore the work area to the same degree of neatness as when work commenced.
- Site personnel must effectively barricade excavations, street openings, etc., as required by all applicable regulations.
- A first aid kit will be located onsite.
- In areas of vehicle traffic, site personnel shall wear reflective vests so as to be easily visible to the operators of motor vehicles.

10.0 SANITATION

Potable (drinking quality) water, hand washing, and toilet facilities shall be provided, and shall be maintained in a safe and sanitary manner.

11.0 STANDARD OPERATING PROCEDURES

11.1 Buddy System

A minimum of two workers shall be on the site at all times during all operations (with the exception of the routine site inspection). The buddy pair(s) shall maintain visual or voice contact at all times.

11.2 Personal Protective Equipment

All persons entering active work zones (or Exclusion Zones, if required) shall do so while wearing the prescribed personal protective equipment documented in Section 6.0 of this HSP. Such individuals shall be trained in the proper use, care and maintenance of this equipment. Personnel wearing respirators more than 30 days in a year shall complete a physical examination by a licensed medical physician, and shall be deemed physically fit to wear such equipment. Such equipment shall be inspected by the user prior to donning. Donned gloves and boots shall be taped to protective clothing to provide closure. All persons who are required to wear respiratory protection shall perform the necessary inspections and pressure checks prior to entering the subject work zones. Workers should be aware of the potential for "breakthrough" for contaminants through respirator cartridges. Signs of breakthrough may include smelling, tasting, or experiencing respiratory irritation while wearing the respirator.

11.3 Emission Control

Wet methods will be employed in order to limit dispersion of fugitive dust emissions. Site personnel shall abide by South Coast Air Quality Management District Rule 402 (Nuisance Dust) and Rule 403 (Fugitive Dust). Under no circumstances shall downwind airborne dust emissions exceed upwind levels by more than 0.1 mg/m³.

11.4 Air Monitoring

Air monitoring, using direct reading instrumentation, shall be performed in employee breathing zones and, at the discretion of the Site Safety Officer, at varying site area and perimeter locations.

11.5 Air Sampling

Air sampling, using industrial hygiene sampling methods and laboratory analytical procedures, shall be performed in employee breathing zones and, at the discretion of the Site Safety Officer, at varying site area and perimeter locations.

11.6 Tobacco Smoking Policy

Tobacco smoking shall be permitted only in a smoking area designated by the Site Safety Officer.

11.7 Observance of Unanticipated Hazardous Materials

If unanticipated hazardous material(s) is observed or symptoms of distress are experienced by workers, the Site Safety Officer shall conduct an investigation. This individual has the authority to collect samples to ascertain the identity of the material(s).

11.8 Symptoms of Distress

The Project Manager and Site Safety Officer shall periodically observe personnel for symptoms of distress. Indications of such adverse effects include:

- Changes in complexion, skin discoloration
- Signs of incoordination, changes in demeanor or disposition
- Excessive salivation, papillary response
- Changes in speech patterns

Field personnel are required to contact the Site Safety Officer upon experiencing ill effects such as:

- Headache
- Blurred vision
- Irritation to the eyes, mucous membranes, respiratory tract or skin
- Dizziness
- Heat stress

11.9 Heat Stress

The Site Safety Officer shall be trained to recognize the symptoms of heat rash, heat cramps, heat exhaustion, and heat stroke. Utilizing the following procedures will help reduce the potential for workers to experience symptoms of heat stress:

- Provide plenty of liquids to replace loss of body fluids, including salt water solutions or commercial mixes such as Gatorade (registered product). Commercial mixes may be preferred by those individuals on low sodium diets.
- Adherence to the following work/rest regimen for acclimatized field workers performing light/moderate work while wearing protective clothing outdoors. The regimen may require modification for persons not acclimatized to work in hot environments.

WBGT Values		
Work/Rest Regimen	°C	°F
Continuous Work	<26	78.8
75% Work/25% Rest Each Hour	26.6	79.8
50% Work/50% Rest Each Hour	27.4	81.3
25% Work/75% Rest Each Hour	28.2	82.8

- In order to evaluate the adequacy of this work/rest schedule, heart rate (pulse) determinations shall be made involving each worker as he/she leaves the active work zone (or Exclusion Zone, if required) and again approximately one minute after exit. If the exit pulse exceeds 0.7 (220 - age of the individual) or if the one-minute pulse exceeds 110 beats per minute, then the work schedule shall be reduced by ten minutes.
- Portable showers and water hoses may be used to cool protective gear.

11.10 Daily Shutdown

All equipment and materials shall be parked and/or stored in a safe location designated by the Project Manager.

11.11 Stop Work Orders

The Project Manager, Site Safety Officer, or another authorized representative will stop all work at the site in the event that it is determined upon inspection that continuation of work is likely to endanger any person or public and/or private property. Stop work orders may be issued by verbal command or written notice.

12.0 CONTINGENCY PLANS

In the event of an emergency, the team member that observes this condition shall give an emergency alarm (three blasts of a vehicle horn). All unnecessary communications will cease and the member giving the alarm shall notify the Project Manager and Site Safety Officer of all pertinent information. Actions shall be directed by the Project Manager and Site Safety Officer. Actions to be taken will be dictated by the emergency. All injured personnel shall be taken to the designated local medical facility and all uninjured personnel shall remain in a safe area. The emergency care medical facility nearest the subject site is Granada Hills Community Hospital located at 10445 Balboa Boulevard in Granada Hills, California (refer to Thomas Brothers Guide map page number 501). Figure 2 - Site Vicintiy and Hospital Location Map is included as Exhibit C - Emergency Hospital Location and Route Information). Directions from the site to the medical facility are as follows:

- Proceed south on Tampa Avenue exiting the site;
- Turn east (left) on San Fernando Valley Freeway (State Route 118);
- Exit freeway south (right) on Balboa Boulevard;
- Travel approximately 1.5 miles south on Balboa Boulevard, hospital will be on the right.

All appropriate local emergency response agencies shall be notified immediately. Emergency contacts include:

- | | |
|--|----------------|
| • Granada Hills Community Hospital | (818) 360-1021 |
| • Fire Department | 911 |
| • Police | 911 |
| • Ambulance/paramedics | 911 |
| • Poison Control Center (University of California) | (714) 634-5988 |
| • National Response Center | (800) 424-8802 |
| • Chemtrec (24 hours) | (800) 424-9300 |

All emergency actions as well as emergency and non-emergency accidents/injuries shall be documented by the Site Safety Officer, Project Manager, or another competent individual in accordance with all applicable regulations.

Special consideration shall be given to personnel showing signs of heat stress. The following guidelines and first aid and medical procedures shall be used:

Heat Rash can be caused by continuous exposure to hot and/or humid air. The condition is characterized by a localized red skin rash and reduced sweating. The treatment includes keeping skin hygienically clean and allowing the skin to dry thoroughly after using protective clothing.

Heat Cramps can be caused by profuse perspiration with inadequate fluid intake and salt replacement. This condition is characterized by muscle spasms and pain in the extremities and abdomen. The treatment involves removing the victim to a cool place and providing sips of salted water (one teaspoon of salt in one quart of water). Manual pressure may also be applied to the cramped muscles.

Heat Exhaustion, a mild form of shock, can be caused by substantial physical activity in heat and profuse perspiration without adequate fluid and salt replacement. The symptoms include weak pulse; shallow breathing; pale, cool, moist skin; profuse sweating; dizziness; and fatigue. The treatment involves removing the victim to a cool place and removing as much clothing as possible. Give sips of salted water and fan the victim continuously to remove heat by convection. Do not allow victim to become chilled. Treat for shock as necessary.

Heat Stroke, the most severe form of heat stress, can be fatal. The symptoms include red, hot, dry skin; body temperature of 105°F or greater; no perspiration; nausea; dizziness and confusion; strong rapid pulse; coma; and death. Heat stroke is a true medical emergency. The treatment involves removing as much clothing as possible and wrapping the victim in a sheet soaked with water. Apply cold packs, if available, under arms, around neck, or on another body part where the packs can cool large surface blood vessels. If convulsions develop, prevent victim from biting tongue. Transport the victim to an emergency medical facility. If transportation to a facility is not possible, immerse the victim in an ice water bath. Do not over chill the victim once the body temperature is reduced to below 102°F.

13.0 TRAINING REQUIREMENTS

All onsite personnel (except those with temporary, short-term, and sporadic site visits, i.e., supply delivery personnel) shall have successfully completed all applicable training requirements found in the Final Rule for Hazardous Waste Operations and Emergency Response, Code of Federal Regulations, Title 29, Part 1910.120, dated March 6, 1989, as well as specific requirements found in the following regulations (as applicable).

State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA), California Code of Regulations (CCR), Title 8, General Industry Safety Orders:

- Section 5155--Airborne Contaminants
- Section 3215--Means of Egress
- Section 3203--Injury and Illness Prevention Program
- Section 3301--Use of Compressed Air or Gas
- Section 4650--Storage, Handling, and use of Cylinders
- Section 5097--Allowable Exposure (Noise)
- Section 5141--Control of Harmful Exposure to Employees
- Section 5144--Respiratory Protective Equipment
- Section 3204--Employee Exposure and Medical Records
- Section 5192--Hazardous Waste Operations and Emergency Response
- Article 10--Personal Safety Devices and Safeguards

14.0 RECORD KEEPING

Records shall be kept consistent with all applicable OSHA regulations. The following records will be maintained at the offices of each subcontractor:

- Hazard Communication and Hazardous Waste Site training
- Respiratory Protection Training (and proof of annual fit testing)
- Respirator Assignment
- Medical Surveillance
- Site Safety Inspection Reports
- Personal Monitoring Records
- Accident Logs and OSHA Logs

The following records will be maintained by the Project Manager and each subcontractor, Site Manager at the site and/or the corporate offices as appropriate:

- Site Entry Log
- Visitors Log
- Accident Log
- HSP (and changes)
- Sampling activities
- Chain-of-Custody forms
- Emergency Action forms
- Worker illness and/or injury reports
- Work Plan (progress and changes)
- Telephone conversations
- Site Safety Inspection Reports
- Daily work activities and conditions
- Decontamination Log (as applicable)
- Tailgate Safety Meeting forms

All subcontractors shall be responsible to maintain their employee records in a manner consistent with the applicable regulations.

EXHIBIT A

**PRIMARY HEALTH HAZARDS AND
AIR MONITORING ACTION LEVELS**

Primary Health Hazards of Potential Metal Contaminants

Analyte	Primary Health Hazard	PEL	TLV
Cadmium (dust, as Cd)	Lung irritant, kidney damage, anemia, yellow discoloration of teeth, ulceration of nasal septum, damage to olfactory nerve, suspected human carcinogen	0.005 mg/m ³	0.01 mg/m ³ (total); 0.002 mg/m ³ (respirable)
Lead (Pb)	Weakness, insomnia, anemia, abdominal pain, tremors, facial pallor, colic	0.05 mg/m ³	0.05 mg/m ³

Primary Health Hazards of Potential Volatile Organic Compounds

Analyte	Primary Health Hazard	PEL	TLV
Benzene	Eye and mucous membrane irritant, headache, central nervous system depressant, leukemia	1 ppm	1 ppm
1,2 - Dichlorobenzene	Eye, skin, and mucous membrane irritant, central nervous system depressant, dizziness, headache, nausea, liver and kidney damage in animals	50 ppm	25 ppm
1,3 - Dichlorobenzene	N/L	N/L	N/L
1,4 - Dichlorobenzene	Eye and upper respiratory tract irritant, headache, runny nose, anorexia, nausea, vomiting, liver toxicity	75 ppm	10 ppm
Ethylbenzene	Irritant, central nervous system depressant, headaches	100 ppm	100 ppm

**Primary Health Hazards of Potential Volatile Organic Compounds
(continued)**

Analyte	Primary Health Hazard	PEL	TLV
Perchloroethylene (tetrachloroethylene)	Eye and skin irritant, central nervous system depressant, dizziness, possible liver and kidney damage, animal carcinogen	25 ppm	25 ppm
Toluene	Eye and skin irritant, central nervous system depressant, lassitude, defats skin, headaches	100 ppm	50 ppm
Total Petroleum Hydrocarbons	Reference individual components	N/L	N/L
1,1,1 - Trichloroethane	Central nervous system depressant, sensitizes heart muscle, possible liver and kidney injury	350 ppm	350 ppm
Xylenes	Eye and skin irritant, central nervous system depressant, lassitude, defats skin, headaches	100 ppm	100 ppm

**Primary Health Hazards of Potential Semi-Volatile Organic Compounds
and Polycyclic Aromatic Hydrocarbons**

Analyte	Primary Health Hazard	PEL	TLV
Acenaphthalene	Eye, skin and mucous membrane irritant	N/L	N/L
Acenaphthene	Eye, skin and mucous membrane irritant, liver and kidney toxin	N/L	N/L
Anthracene	Eye, skin, and mucous membrane irritant	N/L	N/L
bis-(2-Ethylhexyl) phthalate (di-sec-octyl phthalate or diethylhexyl phthalate)	Skin irritant and sensitizer, acute toxicity is low, chronic associated with liver and testicular damage, cancer and birth defects in animals	5 mg/m ³	5 mg/m ³
Butylbenzyl phthalate	N/L	N/L	N/L
Diethylphthalate	Low toxicity, exposure to heated vapor may produce nose and throat irritation, no cumulative effects known	5 mg/m ³	5 mg/m ³
Fluoranthene	Eye, skin and mucous membrane irritant, carcinogen	N/L	N/L
Fluorene	Eye, skin, and mucous membrane irritant	N/L	N/L

**Primary Health Hazards of Potential Semi-Volatile Organic Compounds
and Polycyclic Aromatic Hydrocarbons
(continued)**

Analyte	Primary Health Hazard	PEL	TLV
1 - Methylnaphthalene	N/L	N/L	N/L
2 - Methylnaphthalene	N/L	N/L	N/L
Naphthalene	Upper respiratory tract, eye and skin irritant, kidney and liver toxin	10 ppm	10 ppm
Phenanthrene	Eye, skin, and mucous membrane irritant	N/L	N/L
Pyrene	Eye, skin, and mucous membrane irritant, liver toxin, carcinogen	N/L	N/L

mg/m³ = milligrams per cubic meter of air
 ppm = parts per million
 PEL = Cal-OSHA 8-hour time-weighted permissible exposure limit
 TLV = ACGIH 8-hour time-weighted average threshold limit value
 N/L = not listed

Air Monitoring Action Levels

Contaminant	Monitoring Location	Monitoring Device	Action Level (Above Background)	Action
Organic vapors	OBZ	FID/PID	<5 ppm	Continue work using Level D PPE
Organic vapors	OBZ	FID/PID	5 to 50 ppm	Upgrade to Modified Level C PPE
Organic vapors	OBZ	FID/PID	>50 to 250 ppm	Upgrade to Level C PPE with full-face APR
Organic vapors	OBZ	FID/PID	>250 ppm	Upgrade to Level B PPE
Organic vapors	Spoil pile	FID/PID	>50 ppm	Comply with SCAQMD Rule 1166
Organic vapors	Site perimeter	FID/PID	≤5 ppm	Continue work
Organic vapors	Site perimeter	FID/PID	>5 ppm	Cease work, use engineering controls to limit emissions

OBZ = operator breathing zone
 FID = flame-ionization detector
 PID = photoionization detector
 ppm = parts per million
 PPE = personal protective equipment
 APR = air-purifying respirator
 SCAQMD = South Coast Air Quality Management District

EXHIBIT B
AIR MONITORING LOG SHEETS

**ENV AMERICA INCORPORATED
INSTRUMENT CALIBRATION LOG**

PROJECT NAME:
PROJECT LOCATION:
DATE:

Person Calibrating:	Calibration Gas:
Instrument Type:	Cal. Gas Concentration:
Model/Serial No.:	Reading:
Comments:	Adjusted Reading:
Person Calibrating:	Calibration Gas:
Instrument Type:	Cal. Gas Concentration:
Model/Serial No.:	Reading:
Comments:	Adjusted Reading:
Person Calibrating:	Calibration Gas:
Instrument Type:	Cal. Gas Concentration:
Model/Serial No.:	Reading:
Comments:	Adjusted Reading:

**ENV AMERICA INCORPORATED
SITE ENTRY / EXIT LOG**

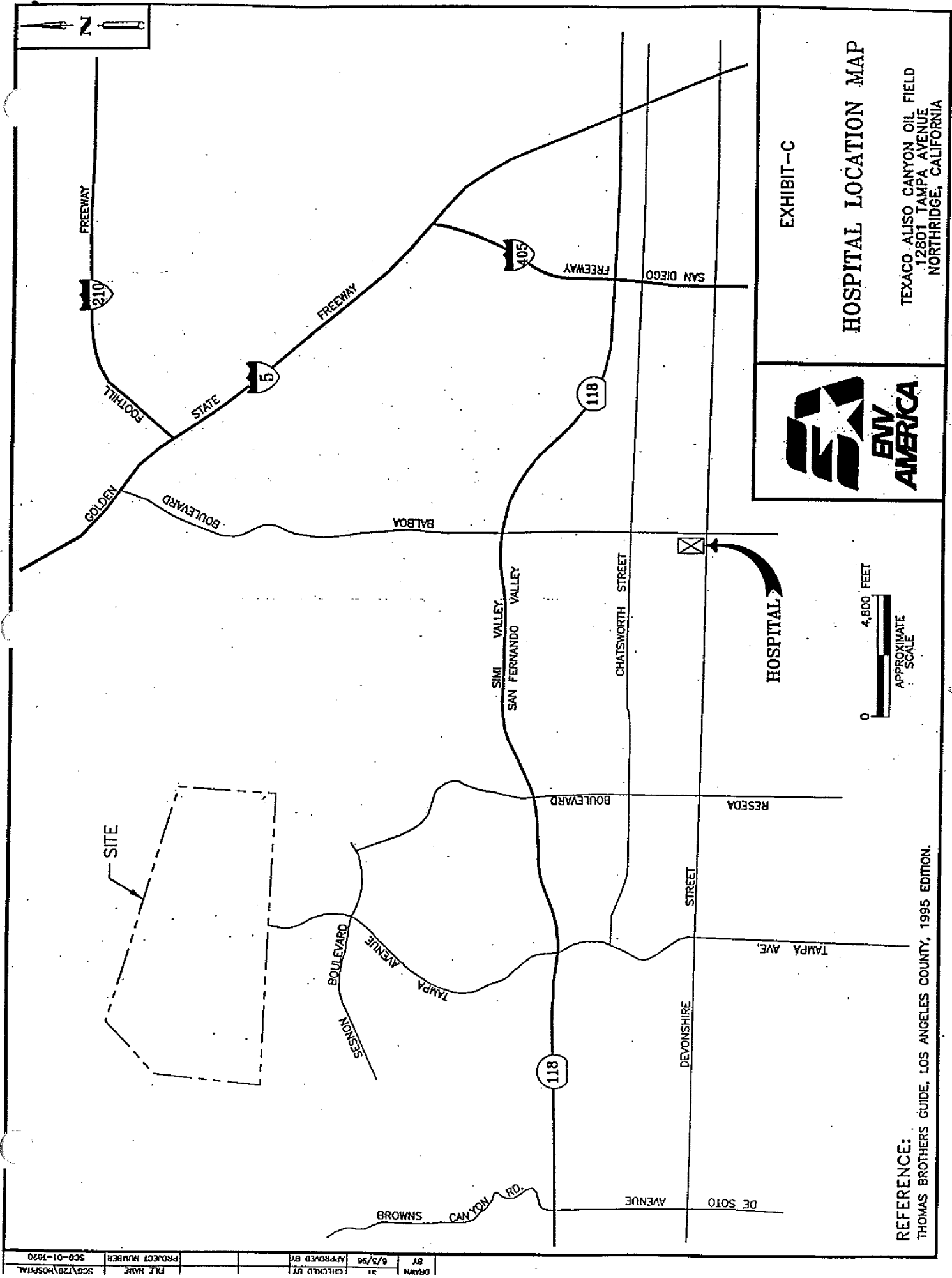
SITE:
LOCATION:
DATE:

TIME		NAME	ORGANIZATION
IN	OUT		



EXHIBIT C

**EMERGENCY HOSPITAL LOCATION
AND ROUTE INFORMATION**



DRAMA	CHECKED BY	DATE	APPROVED BY	PROJECT NUMBER	FILE NAME
		6/2/96		SC6120YHOSPITAL	SC6120YHOSPITAL

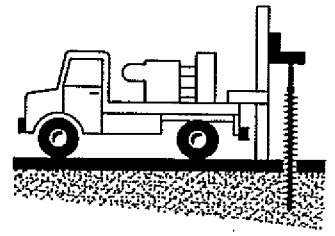
REFERENCE:
 THOMAS BROTHERS GUIDE, LOS ANGELES COUNTY, 1995 EDITION.

EXHIBIT C

EXHIBIT C

BORING LOGS

BORING FF-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./ Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)
1		SILTY SAND (SM), light to medium brown, dry to damp, loose to medium dense, fine grained, no odor.	1		
2			2		
3			3		
4			4		
5			5	FF-B1-5 1035	5/5/8
6		SANDSTONE (SP), medium grey, damp, medium dense, fine to medium grained, massive texture, slight hydrocarbon odor.	6		
7			7		
8			8		
9			9		
10			10	FF-B1-10 1038	10/12/18
11		SANDSTONE (SP), light grey, damp, dense, fine to medium grained, massive texture, no odor.	11		
12			12		
13			13		
14			14		
15			15	FF-B1-15 1043	10/16/21
16		SANDSTONE (SP), light grey, damp, dense, fine grained, massive texture, no odor.	16		
17			17		
18			18		
19			19		
20			20	FF-B1-20 1045	15/18/24
21		SANDSTONE (SP), light grey, damp, dense, fine to medium grained, massive texture, no odor.	21		
22			22		
23			23		
24			24		

8"

TOTAL DEPTH
20.0 FEET

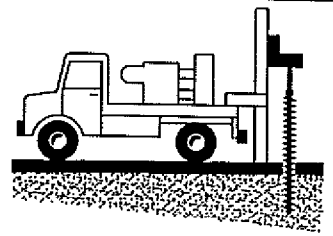
Date: Started 8/12/98
Date: Completed 8/12/98
Driller: BC² ENVIRONMENTAL
Logged By: DAN GIFFORD
Approved By: MAX REYHANI

Drilling Method: 8-in. Hollow Stem Auger
Sampler Type: Driven Split Spoon
Hammer Wt./Drop: 140 lb./30 in.
Spoon Sampler ID: 2 inch

EXPLANATION

	SILTY SAND		CONCRETE/ASPHALT
	SANDSTONE		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED

BORING FF-B2



BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)
1		SILTY SAND (SM), light brown, dry to damp, loose to medium dense, fine to medium grained, no staining, no odor. (fill)	1		
2			2		
3			3		
4		SANDY SILT (ML), medium to dark brown, damp, medium stiff, no staining, no odor.	4	FF-B2-3.5 1120	N/A 0.3
5		6" sand lense @ 5.5' to 6'. (fill)	5	FF-B2-5 1125	4/5/7 0.4
6			6		
7			7		
8			8		
9			9		
10		SILTY CLAYSTONE (CL), dark brown, moist, medium stiff, no staining, no odor.	10	FF-B2-10 1130	11/9/12 1.1
11			11		
12			12		
13			13		
14			14		
15		SILTY CLAYSTONE (CL), medium to dark olive brown, moist, stiff, no staining, no odor.	15	FF-B2-15 1135	6/13/18 0.9
16			16		
17			17		
18			18		
19			19		
20		SILTY CLAYSTONE (CL), dark brown, moist, stiff, no staining, no odor.	20	FF-B2-20 1140	5/5/11 1.0
21			21		
22			22		
23			23		
24			24		
25		SILTY CLAYSTONE (CL), dark brown, moist, stiff, no staining, no odor.	25	FF-B2-25 1145	10/13/17 0.5
26			26		

8"

TOTAL DEPTH 26 FEET

Date: Started 8/12/98
 Date: Completed 8/12/98
 Driller: BC² ENVIRONMENTAL
 Logged By: DAN GIFFORD
 Approved By: MAX REYHANI

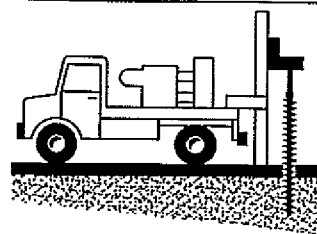
Drilling Method: 8-in. Hollow Stem Auger
 Sampler Type: Driven Split Spoon
 Hammer Wt./Drop: 140 lb./30 in.
 Spoon Sampler ID: 2 Inch

EXPLANATION

	SILTY SAND		SILTY CLAYSTONE
	SANDY SILT		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED

PROJECT NAME: SCG, ALISO CANYON, CALIFORNIA

PROJECT NO: SCG-01-T020



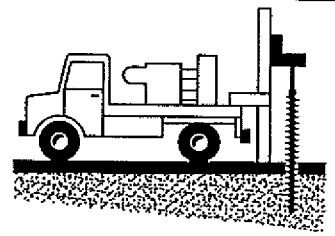
BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./ Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)
1		SILTY SAND (SM), light to medium brown, dry to damp, loose to medium dense, fine grained, no staining, no odor. (fill)	1		
2			2	FF-B3-2 1205	N/A
3		SILTSTONE (ML), dark brown to black, moist, stiff, fractured, diatomaceous, moderate odor/staining.	3		0
4			4		
5		SILTSTONE (ML), dark brown to black, moist, stiff, fractured, diatomaceous, moderate staining, no odor.	5	FF-B3-5 1225	6/8/14
6			6		
7			7		
8			8		
9			9		
10		SILTSTONE (ML), dark brown to black, moist, stiff, fractured, diatomaceous, moderate staining, slight odor.	10	FF-B3-10 1229	8/11/16
11			11		
12			12		
13			13		
14			14		
15		SILTSTONE (ML), dark brown to black, moist, stiff, fractured, diatomaceous, moderate staining, slight odor.	15	FF-B3-15 1234	8/17/16
16			16		
17			17		
18			18		
19			19		
20		SILTSTONE (ML), dark brown to black, stiff, moderate odor, black oily stained fractures.	20	FF-B3-20 1237	13/16/27
21			21		
22			22		
23			23		
24			24		
25		SANDSTONE (SP), light grey, damp, dense, fine grained, massive texture, faint hydrocarbon odor.	25	FF-B3-25 1250	9/19/27
26			26		

Date: Started: 8/12/98
 Date: Completed: 8/12/98
 Driller: BC² ENVIRONMENTAL
 Logged By: DAN GIFFORD
 Approved By: MAX REYHANI

Drilling Method: 8-in. Hollow Stem Auger
 Sampler Type: Driven Split Spoon
 Hammer Wt./Drop: 140 lb./30 in.
 Spoon Sampler ID: 2 inch

EXPLANATION

	SILTY SAND		SANDSTONE
	SILTSTONE		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED



BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./ Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)
27		SANDSTONE (SP), light gray, damp, dense, fine grained, massive texture, no odor.	27		0
28					
29					
30					
31					
32					
33					
34					
35					
36					
37			37		
38					
39					
40					
41					
42					
43					
44					
45					
46					
47			47		
48					
49					
50					
51					
52					

TOTAL DEPTH
30 FEET

FF-B3-30
1255

50/6"

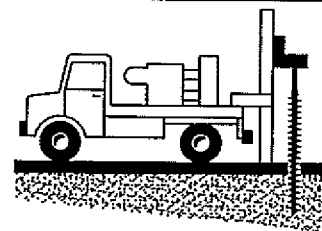
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Date: Started: 8/12/98
 Date: Completed: 8/12/98
 Driller: BC² ENVIRONMENTAL
 Logged By: DAN GIFFORD
 Approved By: MAX REYHANI

Drilling Method: 8-in. Hollow Stem Auger
 Sampler Type: Driven Split Spoon
 Hammer Wt./Drop: 140 lb./30 in.
 Spoon Sampler ID: 2 inch

EXPLANATION

	SILTY SAND		SANDSTONE
	SILTSTONE		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED



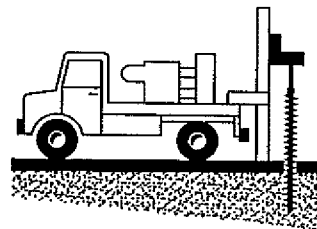
BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)
1		SILTY SAND, GRAVELLY (SM), light to medium brown, dry to damp, loose to medium dense, abundant small subrounded cobbles, no staining, no odor.	1		
2			2		
3		SILTSTONE (ML), dark brown, medium stiff, fractured, no odor.	3	FF-B4-3 1345	N/A 0
4			4		
5		SILTSTONE (ML), dark brown, moist, medium stiff, fractured, no odor.	5	FF-B4-5 1350	5/5/14 0
6			6		
7			7		
8			8		
9			9		
10		SILTSTONE (ML), dark brown, moist, stiff, fractured, slight odor.	10	FF-B4-10 1355	8/8/19 0
11			11		
12			12		
13			13		
14			14		
15		SILTSTONE (ML), dark brown, moist, stiff, fractured, slight to moderate odor.	15	FF-B4-15 1400	27/50-6" 4.3
16			16		
17			17		
18			18		
19			19		
20		SILTSTONE (ML), dark brown, moist, stiff, fractured, slight to moderate odor.	20	FF-B4-20 1410	10/14/26 5.6
21			21		
22			22		
23			23		
24			24		
25		SILTSTONE (ML), dark brown, moist, stiff, fractured, moderate odor.	25	FF-B4-25 1415	16/24/30 2.8
26			26		

Date: Started: 8/12/98
 e: Completed: 8/12/98
 Driller: BC² ENVIRONMENTAL
 Logged By: DAN GIFFORD
 Approved By: MAX REYHANI

Drilling Method: 8-in. Hollow Stem Auger
 Sampler Type: Driven Split Spoon
 Hammer Wt./Drop: 140 lb./30 in.
 Spoon Sampler ID: 2 inch

EXPLANATION

	SILTY SAND		SANDSTONE
	SILTSTONE		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED



BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./ Time	Penetration Blows (Blows/6in.)	OMV Reading (ppm)
27			27		
28			28		
29			29		
30		SILTSTONE (ML), dark brown, moist, stiff, fractured, strong hydrocarbon odor.	30	FF-B4-30 1420	29/50-3" 3.2
31			31		
32			32		
33			33		
34			34		
35		SILTSTONE (ML), dark brown, moist, stiff, fractured, slight odor.	35	FF-B4-35 1435	14/27/32 8.4
36			36		
37			37		
38			38		
39			39		
40		SILTSTONE (ML), dark brown, moist, stiff, fractured, moderate to strong odor.	40	FF-B4-40 1445	13/29/34 9.7
41			41		
42			42		
43			43		
44			44		
45		SILTSTONE (ML), dark brown, moist, stiff, fractured, moderate to strong odor.	45	FF-B4-45 1510	14/38/14 7.3
46			46		
47			47		
48			48		
49			49		
50		SILTSTONE (ML), dark brown, moist, stiff, fractured, moderate to strong odor.	50	FF-B4-50 1515	17/19/30 14.3
51			51		
52			52		

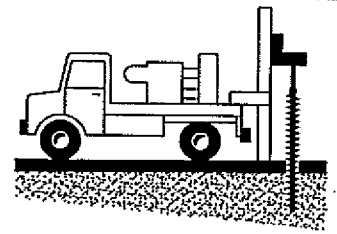
8"

Date: Started: 8/12/98
 Date Completed: 8/12/98
 Driller: BC² ENVIRONMENTAL
 Logged By: DAN GIFFORD
 Approved By: MAX REYHANI

Drilling Method: 8-in. Hollow Stem Auger
 Sampler Type: Driven Split Spoon
 Hammer Wt./Drop: 140 lb./30 in.
 Spoon Sampler ID: 2 inch

EXPLANATION

	SILTY SAND		SANDSTONE
	SILTSTONE		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED



BACKFILL DETAIL		LITHOLOGY		TEST DATA	
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./ Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)
54					
55		SILTSTONE (ML), dark grey, moist, very stiff, steep joint fracture with black oil - like sheen, strong hydrocarbon odor.	FF-B4-55 1535	18/20/35	0
56					
57					
58					
59					
60		SILTSTONE (ML), dark grey, moist, very stiff, steep joint fracture with black oil - like sheen, moderate odor.	FF-B4-60 1550	16/22/28	11.1
61					
62					
63		SILTSTONE (ML), dark grey, moist, very stiff, steep joint fracture with black oil - like sheen, moderate odor.	FF-B4-63 1600	24/19/32	5.0
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					

8"

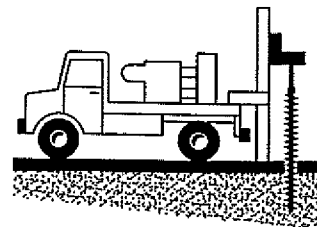
TOTAL DEPTH
64 FEET

Date: Started: 8/12/98 Drilling Method: 8-in. Hollow Stem Auger
 Date Completed: 8/12/98 Sampler Type: Driven Split Spoon
 Driller: BC² ENVIRONMENTAL Hammer Wt./Drop: 140 lb./30 in.
 Logged By: DAN GIFFORD Spoon Sampler ID: 2 inch
 Approved By: MAX REYHANI

EXPLANATION

	SILTY SAND		SANDSTONE
	SILTSTONE		SAMPLES COLLECTED AND ANALYZED
	BENTONITE SLURRY		SAMPLES COLLECTED

BORING S4-HP1



BACKFILL DETAIL		LITHOLOGY		TEST DATA		
Depth (feet)	GRAPHIC LOG	DESCRIPTION	Sample ID./ Time	Penetration Blows (Blows/6in.)	OVM Reading (ppm)	
1		SANDY SILT (ML), medium brown, dry to damp, soft to medium stiff, fine grained with scattered coarse, no staining, no odor. (fill soil)	1			
2			2			
3			3			
4			4			
5		SILTY SAND (SM), medium olive-brown, damp, medium dense, fine grained, no odor, no staining.	5 S4-HP1-5 0835	10/12/16	0	
6			6			
7			7			
8			8			
9			9			
10		SILTY SAND (SM), medium olive-brown, damp, medium dense, fine grained, no odor, no staining.	10 S4-HP1-10 0840	10/14/20	0	
11			11			
12			12			
13			13			
14			14			
15		SILTY SAND (SM), grey to brown, damp, dense, fine to medium grained, no odor.	15 S4-HP1-15 0845	12/15/22	0	
16			16			
17			17			
18			18			
19			19			
20			20			
21		SANDSTONE (SP), grey, moist, dense, medium grained, steeply dipping/tight joint fractures, massive texture, no odor.	21 S4-HP1-21 0930	11/17/24	0	
22			22			
23		TOTAL DEPTH 22 FEET	23			
24			24			
25			25			
26			26			

Date: Started: 8/12/98
 Date Completed: 8/12/98
 Driller: BC² ENVIRONMENTAL
 Logged By: DAN GIFFORD
 Approved By: MAX REYHANI

Drilling Method: 8-in. Hollow Stem Auger
 Sampler Type: Driven Split Spoon
 Hammer Wt./Drop: 140 lb./30 in.
 Spoon Sampler ID: 2 inch

EXPLANATION	
	SILTY SAND
	SANDSTONE
	SANDY SILT
	BENTONITE SLURRY
	SAMPLES COLLECTED AND ANALYZED
	SAMPLES COLLECTED

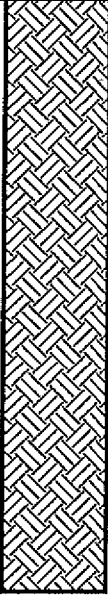
PROJECT NAME: SCG, ALISO CANYON, CALIFORNIA

PROJECT NO: SCG-01-T020

BORING LOG

BORING MA-CP-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./ Time
1		SANDY SILT, GRAVELLY (ML), light to medium brown, dry to damp, soft to medium stiff, fine grained, abundant angular siltstone pebbles and cobbles, no odor.		
2				
3				
4		SANDY SILT, GRAVELLY (ML), dark brown, damp to moist, medium stiff, fine grained, abundant angular siltstone pebbles, no odor.		
5		Refusal @ 5' on apparent concrete slab.		
	3-1/2"	TOTAL DEPTH 5 feet		
6				
7				
8				
9				
10				

Date Started: 8/14/98
 Date Completed: 8/14/98
 Logged By: DAN GIFFORD, C.E.G.
 Approved By: MAX REYHANI, PE
 Drilling Method: Hand Auger
 Spoon Sampler: 2 inch diameter
 Sampler Type: Driven Solid Spoon

EXPLANATION

-  Soil cuttings
-  Sandy Silt
-  Samples analyzed by laboratory

PROJECT NAME: SCG - ALISO CANYON

PROJECT NO: SCG-01-T020

BORING LOG

BORING MA-S-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./Time
0		GRAVELLY SILT (ML), dark grey @ surface.		
1				
2				
3		SANDY SILT, GRAVELLY (ML), light to dark brown, damp, stiff, fine grained, scattered angular siltstone pebbles and cobbles, no odor.		MA-S-B1-2.5 1045
4		@ 3.7' bgs black gravel layer		
5				
6		GRAVELLY SILT (ML), dark brown to black, damp, stiff, apparent staining, scattered angular siltstone pebbles, no odor.		MA-S-B1-5.0 1100
7				
8				
9				
10		GRAVELLY SILT (ML), dark brown to black, damp, stiff, apparent staining, scattered angular siltstone pebbles, no odor.		MA-S-B1-10 1145
TOTAL DEPTH				
	3-1/2"	10 feet 6 inches		

Date Started: 8/14/98
 Date Completed: 8/14/98
 Logged By: DAN GIFFORD, C.E.G.
 Approved By: MAX REYHANI, PE
 Drilling Method: Hand Auger
 Spoon Sampler: 2 inch diameter
 Sampler Type: Driven Solid Spoon

EXPLANATION

	Soil cuttings		Samples analyzed by laboratory
	Sandy Silt		

BORING LOG

BORING MA-NT-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./ Time
1				
2				
3		SANDY SILT, GRAVELLY (ML), light to dark brown, dry to damp, soft to medium stiff, scattered angular siltstone pebbles and small cobbles, no odor.		MA-NT-B1-2.5 08/13 0950
4		Scattered 1 to 3 mm charcoal fragments @ 3' to 5' (±).		
5		@ 5' layered dark brown, black stained angular gravel		
6		SANDY SILT (ML), dark brown, moist, stiff, fine grained, scattered angular pebbles and small cobbles, no odor.		MA-NT-B1-5.5 08/13 1120
7				
8		SANDY SILT(ML), dark brown, moist, stiff, fine grained, scattered angular pebbles and small cobbles, no odor.		MA-NT-B1-8 08/14 1030
9				
10				
<p>← 3-1/2" →</p> <p>TOTAL DEPTH 8 feet 6 inches</p>				

Date Started: 8/13/98
 Date Completed: 8/14/98
 Logged By: DAN GIFFORD, C.E.G.
 Approved By: MAX REYHANI, PE
 Drilling Method: Hand Auger
 Spoon Sampler: 2 inch diameter
 Sampler Type: Driven Solid Spoon

EXPLANATION

- Soil cuttings
- Sandy Silt
- Samples analyzed by laboratory

BORING LOG

BORING MA-CP-S-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./ Time
1		GRAVELLY SILT (ML), light brown, dry, soft, abundant angular siltstone pebbles and cobbles.		
2		SANDY SILT, GRAVELLY (ML), dark brown to black, moist, medium stiff, abundant angular siltstone pebbles, appears oily, mild petroleum odor.		MA-CP-S-B1-1.5 1300
3				
4		SANDY SILT, GRAVELLY (ML), dark brown to black, moist, medium stiff, abundant angular siltstone pebbles, appears oily, mild petroleum odor. Refusal ● 4.0 feet bgs on apparent concrete slab.		MA-CP-S-B1-4 1315
5		TOTAL DEPTH 4 feet 6 inches		
6				
7				
8				
9				
10				

3-1/2"

EXPLANATION

- Soil cuttings
- Sandy Silt
- Samples analyzed by laboratory

Date Started: 8/14/98
 Date Completed: 8/14/98
 Logged By: DAN GIFFORD, C.E.G.
 Approved By: MAX REYHANI, PE
 Drilling Method: Hand Auger
 Spoon Sampler: 2 inch diameter
 Sampler Type: Driven Solid Spoon

BORING LOG

BORING MA-N-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./ Time
1				
2				
3		SILT (ML), medium to dark brown, dry to damp, soft to medium stiff, no odor.		MA-N-B1-2.5 1050
4				
5		SILT (ML), dark brown, moist, stiff, local black-stained angular fragments, no odor.		MA-N-B1-5.0 1110
6		TOTAL DEPTH 5 feet 6 inches		
7				
8				
9				
10				

→ 3-1/2" ←

TOTAL DEPTH
5 feet 6 inches

EXPLANATION

Date Started: 8/14/98
Date Completed: 8/14/98
Logged By: DAN GIFFORD, C.E.G.
Approved By: MAX REYHANI, PE
Drilling Method: Hand Auger
Spoon Sampler: 2 inch diameter
Sampler Type: Driven Solid Spoon

- Soil cuttings
- Sandy Silt
- Samples analyzed by laboratory

PROJECT NAME: SCG - ALISO CANYON

PROJECT NO: SCG-01-T020

BORING LOG

BORING MA-ST-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./ Time
1				
2				
3		SANDY SILT (ML), light to medium brown, dry to damp, soft to medium stiff, scattered angular pebbles and small cobbles, no odor.		MA-ST-B1-2.5 08/13 1000
4				
5		GRAVELLY SILT, SANDY (ML), dark brown to black, stiff, fine grained, angular pebbles and small cobbles, heavy oil staining - possibly former tankpad surface.		MA-ST-B1-5.0 08/13 1010
6				
7				
8				
9		SANDY SILT (ML), dark brown, damp, stiff, fine grained, scattered angular siltstone fragments (pebble size), no odor.		MA-ST-B1-9 08/14 1015
10				
	3-1/2"	TOTAL DEPTH 9 feet 6 inches		

Date Started: 8/13/98
 Date Completed: 8/14/98
 Logged By: DAN GIFFORD, C.E.G.
 Approved By: MAX REYHANI, PE
 Drilling Method: Hand Auger
 Spoon Sampler: 2 inch diameter
 Sampler Type: Driven Solid Spoon

EXPLANATION

- Soil cuttings
- Sandy Silt
- Samples analyzed by laboratory

BORING LOG

BORING MA-SW-B1



BACKFILL DETAIL		LITHOLOGY		TEST DATA
Depth (feet)	GRAPHIC LOG	DESCRIPTION		Sample ID./ Time
1		SANDY SILT, GRAVELLY (ML), dark brown, damp to moist, soft to medium stiff, fine grained, scattered angular pebbles and cobbles, no odor.		
2				
3				
4				
5		SANDY SILT, GRAVELLY (ML), dark brown, damp to moist, soft to medium stiff, fine grained, scattered angular pebbles and cobbles, no odor.		MA-SW-B1-5 1410
6				
7				
8		SANDY SILT, GRAVELLY (ML), dark brown, damp to moist, soft to medium stiff, fine grained, scattered angular pebbles and cobbles, no odor. Refusal @ 8.5 feet bgs.		MA-SW-B1-8 1430
9				
TOTAL DEPTH 8 feet 6 inches				
10				

Date Started: 8/14/98
 Date Completed: 8/14/98
 Logged By: DAN GIFFORD, C.E.G.
 Approved By: MAX REYHANI, PE
 Drilling Method: Hand Auger
 Spoon Sampler: 2 inch diameter
 Sampler Type: Driven Solid Spoon

EXPLANATION

Soil cuttings Samples analyzed by laboratory

Sandy Silt

EXHIBIT D

EXHIBIT D

NON-HAZARDOUS WASTE MANIFEST

TPS Technologies Soil Recycling
 Non-Hazardous Soils

Generator and/or Consultant

Date of Shipment: 09 - 10 - 98	Responsible for Payment: TRANSPORTER	Transporter Truck #: 47 115-215	Facility #: A 07	Given by TPS: 11256	Load #: 0 0 1
Generator's Name and Billing Address: SOUTHERN CALIFORNIA GAS COMPANY 555 WEST FIFTH STREET LOS ANGELES, CA 90013-1011		Generator's Phone #: Person to Contact: FAX#:		Generator's US EPA ID No. Customer Account Number with TPS:	
Consultant's Name and Billing Address: ENV AMERICA, INC. 16 TECHNOLOGY DRIVE, SUITE 154 IRVINE, CA 92718		Consultant's Phone #: (949) 453-9191 Person to Contact: MAX REYHANI FAX#: (949) 453-9292		Customer Account Number with TPS:	
Generation Site (Transport from): (name & address) SOUTHERN CALIFORNIA GAS COMPANY 12801 TAMPA AVE., NORTHRIDGE, CA 91326-1045		Site Phone #: () - Person to Contact: JOHN FRINCE FAX#: () -		BTEX Levels TPH Levels AVC Levels	
Designated Facility (Transport to): (name & address) TPS Technologies Inc. 12328 Hibiscus Avenue Adelanto, California 92301		Facility Phone #: (800) 562-8004 Person to Contact: Darren Bartlett/ FAX#: (760) 246-8004		Facility Permit Number: DELLENA BENTON	
Transporter Name and Mailing Address: W.A. Woods Industries 10120 W. Frontage Rd. South Gate, CA 90280		Transporter's Phone #: (562) 927-1367 Person to Contact: Ron Benson FAX#: (562) 806-1857		Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS: 1000238	

3

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>		12 Drums soil 1 Drum Haz Drum	16680	9940	6740
Sand <input type="checkbox"/> Organic <input checked="" type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input checked="" type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>					337

List any exceptions to items listed above: 33877

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator Consultant Signature and date: *John Prince* Month: 09 Day: 10 Year: 98

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: *Darren Bartlett* Signature and date: *Darren Bartlett* Month: 10 Day: 05 Year: 98

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:
 Print or Type Name: Darren Bartlett/Dellena Benton Signature and date: *DB* 10/5/98

EXHIBIT E

EXHIBIT E

CRWQCB TABLE 4-1 FOR TPH/BTEX

Table 4-1: Maximum Soil Screening Levels (mg/kg) for TPH and BTEX above Drinking Water Aquifers

T P H	Distance Above Groundwater	Carbon Range		
		C4-C12	C13-C22	C23-C32
	>150 feet	1,000	10,000	50,000
	20-150 feet	500	1,000	10,000
<20 feet	100	100	1,000	

B T E X	Distance Above Groundwater	Lithology			
		Gravel	Sand	Silt	Clay
	150 feet	B=0.044 T=2 E=8 X=23	B=0.077 T=4 E=17 X=48	B=0.165 T=9 E=34 X=93	B=0.8 T=43 E=170 X=465
	80 feet	B=0.022 T=1 E=4 X=11	B=0.033 T=2 E=7 X=20	B=0.066 T=4 E=15 X=40	B=0.34 T=18 E=73 X=200
20 feet	B=0.011 T=0.15 E=0.7 X=1.75	B=0.011 T=0.3 E=0.7 X=1.75	B=0.011 T=0.45 E=2 X=5.3	B=0.044 T=2.3 E=9 X=24.5	

- TPH = Total petroleum hydrocarbons.
- BTEX = benzene, toluene, ethylbenzene, and xylenes, respectively. MCLs (ppm): B=0.001, T=0.15, E=0.7, X=1.75.
- MTBE (methyl tertiary butyl ether) must be included in BTEX analyses.
- BTEX screening concentrations determined per the attenuation factor method as described in RWQCB Guidance for VOC Impacted Sites (March 1996), with a natural degradation factor of 11 for benzene. Table values for BTEX can be linearly interpolated between distance above groundwater and are proportional to fraction of each lithological thickness.
- Values in Table 4-1 are for soils above drinking water aquifers. All groundwaters are considered as drinking water resources unless exempted by one of the criteria as defined under SWRCB Resolution 88-63 (TDS>3000 mg/L, or deliverability <200 gal/day, or existing contamination that cannot be reasonably treated). Regional Board staff will make a determination of potential water use at a particular site considering water quality objectives and beneficial uses. For non-drinking water aquifers, regardless of depth, TPH for ">150 feet" category in the table should be used; BTEX screening levels are set at 100 times respective MCLs as preliminary levels determined to be protective of human health and the environment.
- Distance above groundwater must be measured from the highest anticipated water level. Lithology is based on the USCS scale.
- For BTEX, each component is not to exceed the specified screening level.
- For TPH, the total allowable for each carbon range is not to be exceeded. In areas of naturally-occurring hydrocarbons, Regional Board staff will make allowance for TPH levels.
- BTEX to be analyzed by EPA Method 8020 or EPA Method 8260 (usually for confirmation).
- TPH to be analyzed by EPA Methods 418.1 plus 8015 (Modified). Ranges of TPH to be analyzed by GC/MS carbon range methods (EPA Method 8260) or EPA Method 8015 (Modified).

EXHIBIT F

USEPA PRGs TABLE, 1998

Key: I=IRIS H=HEAST R=NCEA X=WITHDRAWN O=Other EPA DOCUMENTS F=ROUTE EXTRAPOLATION CAS=CANCER PRG NC=NONCANCER PRG AS=SOIL SATURATION max=CELLING LIMIT * (where: nr < 100, ca) ** (where: nr < 100, ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

Residential Soil (mg/kg) Industrial Soil (mg/kg) Ambient Air (ug/m³) Tap Water (ug/l) Migration to Ground Water DAF 20 (mg/kg) DAF 1 (mg/kg)

SFO	RfDo	SFI	RfDI	V. skin	CAS No.	Contaminant	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
8.7E-03	4.0E-03	8.7E-03	4.0E-03	0	30590-19-1	Acetate	5.1E+01	3.4E+02	7.7E-01	7.7E+00	5.0E+01	5.0E+01
7.7E-03	2.9E-03	7.7E-03	2.9E-03	0	75-07-0	Acetaldehyde	9.2E+00	2.2E+01	8.7E-01	1.5E+00	7.3E+02	7.3E+02
2.0E-02	2.0E-02	2.0E-02	2.0E-02	0	34295-82-1	Acetochlor	1.1E+03	2.1E+04	7.3E-01	7.3E+02	7.3E+02	7.3E+02
1.0E-01	1.0E-01	1.0E-01	1.0E-01	1	67-64-1	Acetone	1.4E+03	6.1E+03	3.7E+02	6.1E+02	1.6E+01	8.0E-01
8.0E-04	2.9E-03	7.7E-03	2.9E-03	0	75-06-5	Acetone cyanohydrin	4.4E+01	8.6E+02	1.0E+01	2.9E+01	7.1E+01	7.1E+01
6.0E-03	1.4E-02	1.4E-02	1.4E-02	1	75-05-8	Acetonitrile	2.0E+02	1.3E+03	5.2E+01	7.1E+01	7.1E+01	7.1E+01
1.1E-01	1.3E-02	1.1E-01	1.3E-02	0	98-85-2	Acetophenone	4.9E-01	1.6E+00	2.1E-02	4.2E-02	4.2E-02	4.2E-02
4.6E+00	2.0E-04	4.6E+00	2.0E-04	0	50594-65-6	Acifluorfen	4.0E+00	2.7E+01	6.1E-02	6.1E-01	6.1E-01	6.1E-01
5.4E-01	1.0E-03	2.4E-01	5.7E-04	1	107-02-8	Acrolein	1.0E-01	3.4E-01	2.1E-02	4.2E-02	4.2E-02	4.2E-02
3.1E-02	1.0E-02	9.0E-02	1.0E-02	0	79-06-1	Acrylamide	9.8E-02	6.6E-01	1.9E-03	1.5E-02	1.5E-02	1.5E-02
1.0E-03	5.0E-01	2.9E-04	2.9E-04	0	79-10-7	Acrylic acid	2.6E+04	4.2E+05	1.0E+00	1.8E+04	1.8E+04	1.8E+04
2.9E-01	1.0E-03	2.4E-01	5.7E-04	1	107-13-1	Acrylonitrile	1.9E-01	4.9E-01	2.8E-02	3.7E+00	3.7E+00	3.7E+00
1.0E-03	1.0E-02	9.0E-02	1.0E-02	0	15972-80-8	Alachlor	5.5E+00	3.7E+01	8.4E-02	8.4E-01	8.4E-01	8.4E-01
1.0E-03	1.0E-03	1.0E-03	1.0E-03	0	166-88-4	Aldicarb sulfone	8.2E+03	1.6E+05	5.5E+02	5.5E+03	5.5E+03	5.5E+03
1.7E-01	3.0E-05	1.7E-01	3.0E-05	0	309-00-2	Aldrin	5.5E+01	1.1E+03	3.7E+00	3.7E+01	3.7E+01	3.7E+01
2.9E-01	2.5E-01	2.5E-01	2.5E-01	0	589-64-8	Ally	2.6E-02	1.8E-01	3.9E-04	4.0E-03	4.0E-03	4.0E-03
5.0E-03	5.0E-03	5.0E-03	5.0E-03	0	107-18-6	Allyl alcohol	1.4E+04	1.0E+05	1.8E+02	1.8E+03	1.8E+03	1.8E+03
5.0E-02	2.9E-04	2.9E-04	2.9E-04	0	107-05-1	Allyl chloride	2.7E+02	5.3E+03	1.8E+01	1.8E+02	1.8E+02	1.8E+02
1.0E+00	1.0E+00	1.0E+00	1.0E+00	0	7429-90-5	Aluminum	7.5E+04	1.0E+05	1.0E+05	3.7E+04	3.7E+04	3.7E+04
4.0E-04	3.0E-04	3.0E-04	3.0E-04	0	20689-79-8	Aluminum phosphide	3.0E+01	7.5E+02	1.5E+01	1.5E+01	1.5E+01	1.5E+01
9.0E-03	9.0E-03	9.0E-03	9.0E-03	0	67465-29-4	Amdro	1.6E+01	3.2E+02	1.1E+00	1.1E+01	1.1E+01	1.1E+01
7.0E-02	7.0E-02	7.0E-02	7.0E-02	0	894-12-8	Ametryn	4.9E+02	9.6E+03	3.3E+01	3.3E+02	3.3E+02	3.3E+02
2.0E-05	2.0E-05	2.0E-05	2.0E-05	0	591-37-5	m-Aminophenol	3.8E+03	7.5E+04	2.6E+02	2.6E+03	2.6E+03	2.6E+03
2.5E-03	2.5E-03	2.5E-03	2.5E-03	0	504-24-5	4-Aminopyridine	1.1E+00	2.1E+01	7.3E-02	7.3E-01	7.3E-01	7.3E-01
2.9E-02	2.9E-02	2.9E-02	2.9E-02	0	33089-61-1	Amitraz	1.4E+02	2.7E+03	9.1E+00	9.1E+01	9.1E+01	9.1E+01
2.0E-01	2.0E-01	2.0E-01	2.0E-01	0	7864-41-7	Ammonia	1.1E+04	1.0E+05	1.0E+02	7.3E+03	7.3E+03	7.3E+03
7.0E-03	7.0E-03	7.0E-03	7.0E-03	0	7774-06-0	Ammonium sulfamate	7.8E+01	5.3E+02	1.0E+00	1.2E+01	1.2E+01	1.2E+01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	0	62-03-3	Aniline	3.0E+01	7.5E+02	1.5E+01	1.5E+01	1.5E+01	1.5E+01
5.0E-04	5.0E-04	5.0E-04	5.0E-04	0	7440-36-0	Antimony and compounds	3.7E+01	9.4E+02	1.8E+01	1.8E+01	1.8E+01	1.8E+01
9.0E-04	9.0E-04	9.0E-04	9.0E-04	0	1314-60-9	Antimony pentoxide	6.7E+01	1.7E+03	3.3E+01	3.3E+01	3.3E+01	3.3E+01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	0	28300-74-5	Antimony potassium tartrate	3.0E+01	7.5E+02	1.5E+01	1.5E+01	1.5E+01	1.5E+01
1.3E-02	1.3E-02	1.3E-02	1.3E-02	0	1332-81-5	Antimony trioxide	3.0E+01	7.5E+02	1.5E+01	1.5E+01	1.5E+01	1.5E+01
5.0E-02	5.0E-02	5.0E-02	5.0E-02	0	1309-64-4	Antimony trioxide	3.0E+01	7.5E+02	1.5E+01	1.5E+01	1.5E+01	1.5E+01
3.0E-04	3.0E-04	3.0E-04	3.0E-04	0	74115-24-5	Apollo	7.1E+02	1.4E+04	4.7E+01	4.7E+02	4.7E+02	4.7E+02
1.5E+00	1.5E+00	1.5E+00	1.5E+00	0	140-57-8	Atamite	1.8E+01	4.8E+02	2.7E+01	2.7E+00	2.7E+00	2.7E+00
5.0E-03	5.0E-03	5.0E-03	5.0E-03	0	7440-38-2	Arsenic (noncancer endpoint)	2.1E+01	4.8E+02	4.5E-04	4.5E-02	4.5E-02	4.5E-02
5.0E-02	5.0E-02	5.0E-02	5.0E-02	0	7440-38-2	Arsenic (cancer endpoint)	3.8E-01	3.0E+00	5.2E-02	5.2E-02	5.2E-02	5.2E-02
3.5E-02	3.5E-02	3.5E-02	3.5E-02	0	7784-42-1	Arsine (see arsenic for cancer endpoint)	4.9E+02	9.6E+03	3.3E+01	3.3E+02	3.3E+02	3.3E+02
4.0E-04	4.0E-04	4.0E-04	4.0E-04	0	76578-12-6	Assure	2.7E+03	5.3E+04	1.8E+02	1.8E+03	1.8E+03	1.8E+03
1.1E-01	1.1E-01	1.1E-01	1.1E-01	0	3337-71-1	Asulam	2.0E+00	1.3E+01	3.1E-02	3.0E-01	3.0E-01	3.0E-01
3.5E-02	3.5E-02	3.5E-02	3.5E-02	0	1915-24-9	Atrazine	2.2E+01	4.3E+02	1.5E+00	1.5E+01	1.5E+01	1.5E+01
4.0E-04	4.0E-04	4.0E-04	4.0E-04	0	71751-41-2	Avermectin B1	2.2E+00	4.3E+02	1.5E+00	1.5E+01	1.5E+01	1.5E+01
1.1E-01	1.1E-01	1.1E-01	1.1E-01	0	103-33-3	Azobenzene	4.0E+00	2.7E+01	6.2E-02	6.1E-01	6.1E-01	6.1E-01

Key: F=FIRST; R=RECENT; S=SOURCE; W=WITHDRAWN; O=OTHER; EPA=DOCUMENTS; R=ROUTE; E=EXTRAPOLATION; CA=CANCER PRG; NC=NONCANCER PRG; SAT=SOIL SATURATION; MAX=CELLING LIMIT; *WHERE: NC < 100X CA; **WHERE: NC < 10X CA

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RDDo	SFI	RFDI	V. skin	CAS No.	Residential	Industrial	Ambient Air	Tap Water	Migration to Ground Water	DAF 20	DAF 1
1/(mg/kg-d)	(mg/kg-d)	1/(mg/kg-d)	(mg/kg-d)	O. abs.		Soil (mg/kg)	Soil (mg/kg)	(µg/m ³)	(µg/l)	(mg/kg)	(mg/kg)	(mg/kg)
7.0E-02	1.4E-04	h	0	0.10	7440-38-3	5.2E+03	nc	5.2E-01	nc	2.6E+03	nc	1.6E+03
4.0E-03	4.0E-03	r	0	0.10	114-28-1	2.2E+02	nc	1.5E+01	nc	1.5E+02	nc	1.5E+02
3.0E-02	3.0E-02	r	0	0.10	43121-43-3	1.6E+03	nc	3.2E+04	nc	1.1E+02	nc	1.1E+03
2.5E-02	2.5E-02	r	0	0.10	68859-37-5	1.4E+03	nc	9.1E+01	nc	9.1E+02	nc	9.1E+02
3.0E-01	3.0E-01	r	0	0.10	1861-40-1	1.6E+04	nc	1.0E+05	nc	1.1E+03	nc	1.1E+04
5.0E-02	5.0E-02	r	0	0.10	17804-55-2	2.7E+03	nc	5.3E+04	nc	1.8E+02	nc	1.8E+03
3.0E-02	3.0E-02	r	0	0.10	25057-89-0	1.6E+03	nc	3.2E+04	nc	1.1E+02	nc	1.1E+03
1.0E-01	1.0E-01	r	0	0.10	100-52-7	5.5E+03	nc	1.1E+05	nc	3.7E+03	nc	3.7E+03
2.9E-02	2.9E-02	r	1	0.10	71-43-2	6.2E-01	ca*	2.3E-01	ca*	3.9E-01	ca*	3.0E-02
2.3E-02	3.0E-03	i	3.0E-03	r	0	1.9E-03	ca	2.9E-05	ca	2.9E-04	ca	2.9E-04
4.0E+00	4.0E+00	i	4.0E+00	r	0	1.0E+05	max	1.5E+04	nc	1.5E+05	nc	1.5E+05
1.3E-01	1.3E+01	r	0	0.10	98-07-7	3.4E-02	ca	2.3E-01	ca	5.2E-04	ca	5.2E-03
3.0E-01	3.0E-01	r	0	0.10	100-51-8	1.6E+04	nc	1.0E+05	nc	1.1E+03	nc	1.1E+04
2.0E-03	1.7E-01	r	1	0.10	100-44-7	8.1E-01	ca	2.2E+00	ca	4.0E-02	ca	6.6E-02
1.0E-04	8.4E+00	i	5.7E-06	r	0	1.5E+02	ca	3.4E+03	ca	8.0E-04	ca	7.3E+01
1.0E-04	1.0E-04	r	0	0.10	141-68-2	5.5E+00	nc	1.0E+00	nc	3.7E-01	nc	3.7E+00
1.9E-02	1.5E-02	r	0	0.10	82687-04-3	8.2E+02	nc	1.6E+04	nc	5.5E+01	nc	5.5E+02
5.0E-02	5.0E-02	r	1	0.10	92-52-4	2.3E+03	nc	2.4E+04	nc	1.8E+02	nc	3.0E+02
1.1E+00	1.2E+00	i	1	0.10	111-44-4	1.8E-01	ca	5.6E-01	ca	9.8E-03	ca	9.8E-03
7.0E-02	4.0E-02	i	3.5E-02	h	0	2.5E+00	ca	7.4E+00	ca	1.9E-01	ca	2.7E-01
2.2E-02	2.2E+02	i	1	0.10	542-88-1	1.9E-04	ca	4.3E-04	ca	3.1E-05	ca	5.2E-05
7.0E-02	3.5E-02	h	0	0.10	108-60-1	6.3E+00	ca	4.3E+01	ca	1.9E-01	ca	9.6E-01
1.4E-02	1.4E-02	r	2.2E-02	r	0	3.2E+01	ca*	2.1E+02	ca	4.8E-01	ca	4.8E+00
5.0E-02	5.0E-02	r	0	0.10	80-05-7	2.7E+03	nc	5.3E+04	nc	1.8E+02	nc	1.8E+03
9.0E-02	5.7E-03	h	0	0.10	7440-42-8	4.9E+03	nc	9.6E+04	nc	2.1E+01	nc	3.3E+03
2.0E-02	2.0E-04	n	2.9E-03	n	1	2.8E+01	nc	9.2E+01	nc	1.0E+01	nc	2.0E+01
6.2E-02	6.2E-02	r	2.0E-02	r	1	9.8E-01	ca	2.3E+00	ca	1.1E-01	ca	1.8E-01
7.9E-03	3.9E-03	i	2.0E-02	r	0	5.6E+01	ca*	3.8E+02	ca*	1.7E+00	ca*	8.5E+00
1.4E-03	1.4E-03	i	1.4E-03	i	1	3.8E+00	nc	1.3E+01	nc	5.2E+00	nc	8.7E+00
5.0E-03	5.0E-03	h	0	0.10	2104-95-3	2.7E+02	nc	5.3E+03	nc	1.8E+01	nc	1.8E+02
2.0E-02	2.0E-02	r	0	0.10	1689-84-5	1.1E+03	nc	2.1E+04	nc	7.3E+01	nc	1.8E+02
2.0E-02	2.0E-02	r	0	0.10	1689-99-2	6.5E-03	nc	1.4E-02	nc	6.9E-03	nc	7.3E+02
1.0E-01	9.8E-01	i	1.0E-01	r	0	5.5E+03	nc	1.1E+05	nc	3.7E+02	nc	3.7E+03
5.0E-02	5.0E-02	r	0	0.10	2008-41-5	2.7E+03	nc	5.3E+04	nc	1.8E+02	nc	1.8E+03
1.0E-02	1.0E-02	n	1.0E-02	r	1	1.0E+02	nc	5.5E+02	nc	3.7E+01	nc	6.1E+01
1.0E-02	1.0E-02	r	1	0.10	195-9-88	1.0E+02	nc	4.1E+02	nc	3.7E+01	nc	6.1E+01
1.0E-02	1.0E-02	n	1.0E-02	r	1	1.0E+02	nc	4.9E+02	nc	3.7E+01	nc	6.1E+01
2.0E-01	2.0E-01	r	0	0.10	85-58-7	9.3E+02	sat	9.3E+02	sat	7.3E+02	nc	7.3E+03
1.0E+00	1.0E+00	i	1.0E+00	r	0	5.5E+04	nc	1.0E+05	nc	3.7E+03	nc	3.7E+04
3.0E-03	3.0E-03	h	3.0E-03	r	0	1.6E+02	nc	3.2E+03	nc	1.1E+01	nc	1.1E+02
5.0E-04	6.3E+00	i	5.7E-05	x	0	3.7E+01	nc	9.3E+02	nc	1.1E-03	ca	1.8E+01
						9.0E+00						8.0E+00

"CAL-Modified PRG" (PEA, 1994)

Key: IIRIS I=HEAST n=NCEA x=WITHDRAWN c=Other EPA DOCUMENTS f=ROUTE EXTRAFOILATION ca=CANCER PRG nc=NONCANCER PRG ss=SOIL SATURATION max=CELLING LIMIT (where: nc < 100X ca) (where: nc < 10X ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RfDo	SFI	RfDi	V skin	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)
1/(mg·kg-d)	(mg/kg-d)	1/(mg/kg-d)	(mg/kg-d)	O abs. C soils							
8.0E-04 h		4.2E+01 i	8.0E-04 r	0 0.10	60238-58-4	4.4E+01 nc	8.6E+02 nc	2.9E+00 nc	2.9E+01 nc		
		2.9E+02 i		0 0.01	n/a	2.1E+02 ca	4.5E+02 ca	1.6E-04 ca		3.8E+01 2.0E+00	
				0 0.01	7440-47-3	3.0E+01 ca	6.4E+01 ca	2.3E-05 ca	1.8E+02 nc	3.8E+01 2.0E+00	
6.0E-02 x			5.7E-06 x	0 0.01	7440-46-4	2.0E-01	2.9E+04 nc	2.1E-02 nc	1.6E-01		
		2.2E+00 i		0 0.01	8007-45-2	3.3E+03 nc	2.9E+04 nc	3.1E-03 ca	2.2E+03 nc		
3.7E-02 h				0 0.01	7440-50-8	2.8E+03 nc	7.0E+04 nc		1.4E+03 nc		
1.9E+00 h		1.9E+00 x	1.0E-02 r	1 0.10	123-73-9	5.3E-03 ca	1.1E-02 ca	3.5E-03 ca	5.9E-03 ca		
1.0E-01 i			1.1E-01 i	1 0.10	98-82-8	1.6E+02 nc	5.2E+02 nc	4.0E+02 nc	6.6E+02 nc		
8.4E-01 h		8.4E-01 r	2.0E-03 r	0 0.10	21725-48-2	5.3E-01 ca	3.6E+00 ca	8.0E-03 ca	8.0E-02 ca		
				0 0.10	n/a						
1.0E-01 h				0 0.10	542-62-1	5.5E+03 nc	1.0E+05 max		3.7E+03 nc		
4.0E-02 i				0 0.10	592-01-8	2.2E+03 nc	4.3E+04 nc		1.5E+03 nc		
5.0E-03 i				0 0.10	544-92-3	2.7E+02 nc	5.3E+03 nc		1.8E+02 nc		
4.0E-02 i				0 0.10	460-19-5	2.2E+03 nc	4.3E+04 nc		1.5E+03 nc		
9.0E-02 i				0 0.10	505-69-3	4.9E+03 nc	1.0E+05 max		3.3E+03 nc		
5.0E-02 i				0 0.10	506-77-4	2.7E+03 nc	5.3E+04 nc		1.8E+03 nc		
2.0E-02 i				0 0.10	57-12-5	1.1E+03 nc	2.1E+04 nc		7.3E+02 nc	4.0E+01 2.0E+00	
2.0E-02 i			3.6E-04 i	1 0.10	74-93-8	1.1E+01 nc	3.5E+01 nc	3.1E+00 nc	6.2E+00 nc		
5.0E-02 i				0 0.10	151-50-8	2.7E+03 nc	5.3E+04 nc		1.8E+03 nc		
2.0E-01 i				0 0.10	506-61-6	1.1E+04 nc	1.0E+05 max		7.3E+03 nc		
1.0E-01 i				0 0.10	506-64-9	5.5E+03 nc	1.1E+05 nc		3.7E+03 nc		
4.0E-02 i				0 0.10	149-39-9	2.2E+03 nc	4.3E+04 nc		1.5E+03 nc		
5.0E-02 i				0 0.10	557-21-1	2.7E+03 nc	5.3E+04 nc		1.8E+03 nc		
3.0E+00 i			5.0E+00 r	0 0.10	106-94-1	1.0E+05 max	1.0E+05 max	1.8E+04 nc	1.8E+05 nc		
2.0E-01 i			2.0E-01 r	0 0.10	106-91-8	1.1E+04 nc	1.0E+05 max	7.3E+02 nc	7.3E+03 nc		
5.0E-03 i			5.0E-03 r	0 0.10	69085-85-8	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
1.0E-02 i			1.0E-02 r	0 0.10	52315-07-8	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
7.9E-03 i			7.9E-03 r	0 0.10	66215-27-8	4.1E+02 nc	8.0E+03 nc	2.7E+01 nc	2.7E+02 nc		
1.0E-02 i			1.0E-02 r	0 0.10	1861-32-1	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
3.0E-02 i			3.0E-02 r	0 0.10	75-89-0	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
2.5E-02 i			2.5E-02 r	0 0.10	39515-41-8	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc	1.6E+01 8.0E-01	
3.4E-01 i			2.4E-01 r	0 0.03	72-84-8	2.4E+00 ca	1.9E+01 ca	2.8E-02 ca	2.8E-01 ca	5.4E+01 3.0E+00	
3.4E-01 i			3.4E-01 r	0 0.03	72-85-9	1.7E+00 ca	1.3E+01 ca	2.0E-02 ca	2.0E-01 ca	3.2E+01 2.0E+00	
1.0E-02 i			5.0E-04 r	0 0.03	50-29-3	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
4.0E-05 i			4.0E-05 r	0 0.10	1163-19-5	7.3E+00 ca	4.9E+01 ca	1.1E+00 ca	1.1E+00 ca		
6.1E-02 h			6.1E-02 r	0 0.10	3003-16-4	7.3E+00 ca	4.9E+01 ca	1.1E+00 ca	1.1E+00 ca		
9.0E-04 h			9.0E-04 r	0 0.10	332-41-5	4.9E+01 ca	9.6E+02 nc	3.3E+00 nc	3.3E+01 ca		
4.0E-03 x			4.0E-03 r	1 0.10	132-64-9	2.1E+02 nc	3.2E+03 nc	1.5E+01 nc	2.4E+01 nc		
1.0E-02 i			1.0E-02 r	0 0.10	106-37-6	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
8.4E-02 i			8.4E-02 r	0 0.10	124-46-1	5.3E+00 ca	3.6E+01 ca	8.0E-02 ca	1.0E+00 ca	4.0E-01 2.0E-02	
1.4E+00 h			5.7E-05 i	0 0.10	98-12-8	3.2E-01 ca	2.1E+00 ca	2.1E-01 nc	4.8E-02 ca		
6.5E-01 i			7.7E-01 i	1 0.10	105-99-4	6.0E-02	2.9E-02 ca	9.6E-04 ca	4.7E-03		
			5.7E-05 r	1 0.10		4.9E-03 ca	2.9E-02 ca	8.7E-03 ca	7.6E-04 ca		

Key: I=IRIS H=HEAST N=NCEA X=WITHDRAWN R=ROUTE EXTRAPOLATION C=CANCER PRG NC=NONCANCER PRG SB=SOIL SATURATION max=CELLING LIMIT. *Where: nc < 100X ca **Where: nc < 10X ca

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

1/(mg/kg-d)	RD ₀ (mg/kg-d)	SFI 1/(mg/kg-d)	RFDI (mg/kg-d)	V skin O abs. C soils	CAS No.	Contaminant	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)	DAF 20 (mg/kg)	DAF 1 (mg/kg)
1.0E-01	1.0E-01	1.0E-01	1.0E-01	0 0 0	84-74-2	Diethyl phthalate	5.5E+03	1.1E+05	3.7E+02	3.7E+03	2.3E+03	2.7E+02		
3.0E-02	3.0E-02	3.0E-02	3.0E-02	0 0 0	1918-009-9	Dicamba	1.6E+03	3.2E+04	1.1E+02	1.1E+03	1.1E+03	1.7E+01	9.0E-01	
9.0E-02	9.0E-02	9.0E-02	9.0E-02	1 0 1	96-50-1	1,2-Dichlorobenzene	3.7E+02	3.7E+02	2.1E+02	3.7E+02	3.7E+02			
3.0E-02	3.0E-02	3.0E-02	3.0E-02	1 0 1	541-73-1	1,3-Dichlorobenzene	4.1E+01	1.4E+02	8.4E+00	1.7E+01				
2.0E-01	2.0E-01	2.0E-01	2.0E-01	1 0 1	106-46-7	1,4-Dichlorobenzene	3.0E+00	7.3E+00	2.8E-01	4.7E-01	2.0E+00	1.0E-01		
4.5E-01	4.5E-01	4.5E-01	4.5E-01	0 0 0	91-84-1	3,3-Dichlorobenzidine	9.9E-01	6.7E+00	1.5E-02	1.5E-01	7.0E-03	3.0E-04		
9.3E+00	9.3E+00	9.3E+00	9.3E+00	1 0 1	764-41-0	1,4-Dichloro-2-Butene	7.5E-03	1.8E-02	7.2E-04	1.2E-03				
2.0E-01	2.0E-01	2.0E-01	2.0E-01	1 0 1	75-71-8	Dichlorodifluoromethane	9.4E+01	3.1E+02	2.1E+02	3.9E+02				
1.0E-01	1.0E-01	1.0E-01	1.0E-01	1 0 1	75-34-3	1,1-Dichloroethane	5.7E+02	2.0E+03	5.2E+02	8.1E+02				
3.1E-02	3.1E-02	3.1E-02	3.1E-02	1 0 1	107-06-2	1,2-Dichloroethane (EDC)	3.4E-01	7.6E-01	7.4E-02	1.2E-01	2.0E-02	1.0E-03		
9.0E-01	9.0E-01	9.0E-01	9.0E-01	1 0 1	75-35-4	1,1-Dichloroethylene	5.2E-02	1.2E-01	3.8E-02	4.6E-02	6.0E-02	3.0E-03		
1.0E-02	1.0E-02	1.0E-02	1.0E-02	1 0 1	156-59-2	1,2-Dichloroethylene (cis)	4.2E+01	1.5E+02	3.7E+01	6.1E+01	4.0E-01	2.0E-02		
2.0E-02	2.0E-02	2.0E-02	2.0E-02	1 0 1	156-50-5	1,2-Dichloroethylene (trans)	6.2E+01	2.1E+02	7.3E+01	1.2E+02	7.0E-01	3.0E-02		
3.0E-03	3.0E-03	3.0E-03	3.0E-03	0 0 0	120-83-2	2,4-Dichlorophenol	1.6E+02	3.2E+03	1.1E+01	1.1E+02	1.0E+00	5.0E-02		
8.0E-03	8.0E-03	8.0E-03	8.0E-03	0 0 0	94-82-6	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	4.4E+02	8.6E+03	2.9E+01	2.9E+02				
1.0E-02	1.0E-02	1.0E-02	1.0E-02	0 0 0	94-75-7	2,4-Dichlorophenoxyacetic Acid (2,4-D)	6.4E+02	1.4E+04	3.7E+01	3.7E+02	3.0E-02	1.0E-03		
6.8E-02	6.8E-02	6.8E-02	6.8E-02	1 0 1	78-87-5	1,2-Dichloropropane	3.4E-01	7.6E-01	9.9E-02	1.6E-01	3.0E-02	1.0E-03		
1.8E-01	1.8E-01	1.8E-01	1.8E-01	1 0 1	542-75-6	1,3-Dichloropropene	8.1E-02	1.8E-01	5.2E-02	8.1E-02	4.0E-03	2.0E-04		
3.0E-03	3.0E-03	3.0E-03	3.0E-03	0 0 0	616-23-9	2,3-Dichloropropanol	1.8E+02	3.2E+03	1.1E+01	1.1E+02				
5.0E-04	5.0E-04	5.0E-04	5.0E-04	0 0 0	62-79-7	Dichlorvos	1.5E+00	1.0E+01	2.3E-02	2.3E-01				
4.4E-01	4.4E-01	4.4E-01	4.4E-01	0 0 0	115-32-2	Dicofol	1.0E+00	6.8E+00	1.5E-02	1.5E-01				
3.0E-02	3.0E-02	3.0E-02	3.0E-02	1 0 1	77-79-6	Dicyclopentadiene	5.4E-01	1.8E+00	2.1E-01	4.2E-01	4.0E-03	2.0E-04		
5.0E-05	5.0E-05	5.0E-05	5.0E-05	0 0 0	60-57-1	Dieldrin	2.8E-02	1.9E-01	4.2E-04	4.2E-03				
5.7E-03	5.7E-03	5.7E-03	5.7E-03	0 0 0	112-94-5	Diethylene glycol, monoethyl ether	3.1E+02	6.1E+03	2.1E+01	2.1E+02				
2.0E+00	2.0E+00	2.0E+00	2.0E+00	0 0 0	111-80-0	Diethylene glycol, monoethyl ether	1.0E+05	1.0E+05	7.3E+03	7.3E+04				
1.1E-02	1.1E-02	1.1E-02	1.1E-02	0 0 0	617-94-5	Diethylformamide	6.0E-02	1.2E+04	4.0E+01	4.0E+02				
6.0E-01	6.0E-01	6.0E-01	6.0E-01	0 0 0	109-23-1	Di(2-ethylhexyl)adipate	3.7E+02	2.5E+03	5.6E+00	5.6E+01				
8.0E-01	8.0E-01	8.0E-01	8.0E-01	0 0 0	84-86-2	Diethyl phthalate	4.4E+04	1.0E+05	2.9E+03	2.9E+04				
8.0E-02	8.0E-02	8.0E-02	8.0E-02	0 0 0	56-53-1	Diethylstilbestrol	9.4E-05	6.4E-04	1.4E-06	1.4E-05				
2.0E-02	2.0E-02	2.0E-02	2.0E-02	0 0 0	49222-49-6	Diflufenuron	4.4E+03	8.6E+04	2.9E+02	2.9E+03				
2.0E-02	2.0E-02	2.0E-02	2.0E-02	0 0 0	35357-38-5	Diflubenzuron	1.1E+03	2.1E+04	7.3E+01	7.3E+02				
1.1E+01	1.1E+01	1.1E+01	1.1E+01	1 0 1	75-37-6	1,1-Difluoroethane	4.4E+03	8.6E+04	2.9E+02	2.9E+03				
8.0E-02	8.0E-02	8.0E-02	8.0E-02	0 0 0	1445-75-6	Diisopropyl methylphosphonate	1.1E+03	2.1E+04	7.3E+01	7.3E+02				
2.0E-02	2.0E-02	2.0E-02	2.0E-02	0 0 0	56290-94-7	Dimethipin	1.1E+01	2.1E+02	7.3E-01	7.3E+00				
2.0E-04	2.0E-04	2.0E-04	2.0E-04	0 0 0	60-51-5	Dimethoate	3.2E+01	2.1E+02	4.8E-01	4.8E+00				
1.4E-02	1.4E-02	1.4E-02	1.4E-02	0 0 0	119-90-4	3,3'-Dimethoxybenzidine	6.3E-02	2.5E-01	2.1E-02	3.5E-02				
5.7E-06	5.7E-06	5.7E-06	5.7E-06	1 0 1	124-40-3	Dimethylamine	1.1E+02	2.1E+03	7.3E+00	7.3E+01				
2.0E-03	2.0E-03	2.0E-03	2.0E-03	0 0 0	121-89-7	N,N-Dimethylaniline	5.9E-01	4.0E+00	9.0E-03	9.0E-02				
7.5E-01	7.5E-01	7.5E-01	7.5E-01	0 0 0	96-58-1	2,4-Dimethylaniline	7.7E-01	5.2E+00	1.2E-02	1.2E-01				
5.8E-01	5.8E-01	5.8E-01	5.8E-01	0 0 0	21436-95-4	2,4-Dimethylaniline hydrochloride	4.8E-02	3.3E-01	7.3E-04	7.3E-03				
9.2E+00	9.2E+00	9.2E+00	9.2E+00	0 0 0	119-93-7	3,3'-Dimethylbenzidine	1.7E-01	1.2E+00	1.9E-03	2.6E-02				
2.8E+00	2.8E+00	2.8E+00	2.8E+00	0 0 0	57-14-7	1,1-Dimethylhydrazine	1.2E-02	8.1E-02	3.1E+01	3.7E+03				
3.7E+01	3.7E+01	3.7E+01	3.7E+01	0 0 0	540-73-8	1,2-Dimethylhydrazine	5.4E+03	1.1E+05	3.7E+00	3.7E+01				
1.0E-01	1.0E-01	1.0E-01	1.0E-01	0 0 0	68-12-2	N,N-Dimethylformamide	5.5E+01	1.1E+03	3.7E+00	3.7E+01				
1.0E-03	1.0E-03	1.0E-03	1.0E-03	0 0 0	122-09-8	Dimethylphenethylamine								

Key: I=IRIS H=HEAST N=NCEA X=WITHDRAWN C=Other EPA DOCUMENTS F=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT * (where: nc < 100X ca) ** (where: nc < 10X ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RD ₅₀	SFI	RFDI	Y	skin	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
1/(mg/kg-d)	(mg/kg-d)	1/(mg/kg-d)	(mg/kg-d)	O	abs.							
				C	soils							
2.0E-02	2.0E-02	0.0	0.0	0.0	105-67-9	2,4-Dimethylphenol	1.1E+03	2.1E+04	7.3E+01	7.3E+02	nc	9.0E+00
6.0E-04	6.0E-04	0.0	0.0	0.0	576-26-1	2,6-Dimethylphenol	3.3E+01	6.4E+02	2.2E+00	2.2E+01	nc	4.0E-05
1.0E-03	1.0E-03	0.0	0.0	0.0	95-65-8	3,4-Dimethylphenol	5.5E+01	1.1E+03	7.3E+00	3.7E+01	nc	4.0E-05
1.0E+01	1.0E+01	0.0	0.0	0.0	131-11-3	Dimethyl phthalate	1.0E+05	1.0E+05	3.7E+04	3.7E+05	nc	3.0E-01
1.0E-01	1.0E-01	0.0	0.0	0.0	126-61-6	Dimethyl terephthalate	5.5E+03	1.1E+05	7.3E+02	3.7E+03	nc	8.0E-04
2.0E-03	2.0E-03	0.0	0.0	0.0	131-89-5	4,6-Dinitro-o-cyclohexyl phenol	1.1E+02	2.1E+03	7.3E+00	7.3E+01	nc	8.0E-04
4.0E-04	4.0E-04	0.0	0.0	0.0	528-29-0	1,2-Dinitrobenzene	2.2E+01	4.3E+02	1.5E+00	1.5E+01	nc	7.0E-04
1.0E-04	1.0E-04	0.0	0.0	0.0	99-65-0	1,3-Dinitrobenzene	5.5E+00	1.1E+02	3.7E+01	3.7E+00	nc	1.0E+02
4.0E-04	4.0E-04	0.0	0.0	0.0	100-25-4	1,4-Dinitrobenzene	2.2E+01	4.3E+02	1.5E+00	1.5E+01	nc	3.0E-01
2.0E-03	2.0E-03	0.0	0.0	0.0	51-28-5	2,4-Dinitrophenol	1.1E+02	2.1E+03	7.3E+00	7.3E+01	nc	8.0E-04
2.0E-03	2.0E-03	0.0	0.0	0.0	25321-14-6	Dinitrotoluene mixture	6.5E-01	4.4E+00	9.9E-03	9.9E-02	ca	8.0E-04
1.0E-03	1.0E-03	0.0	0.0	0.0	121-14-2	2,4-Dinitrotoluene (also see Dinitrotoluene mixture)	1.1E+02	2.1E+03	7.3E+00	7.3E+01	nc	8.0E-04
1.0E-03	1.0E-03	0.0	0.0	0.0	608-20-2	2,6-Dinitrotoluene	5.5E+01	1.1E+03	3.7E+00	3.7E+01	nc	7.0E-04
2.0E-02	2.0E-02	0.0	0.0	0.0	88-85-7	Dinoseb	1.1E+03	2.7E+04	9.1E+01	9.1E+02	nc	3.0E-05
1.1E-02	1.1E-02	0.0	0.0	0.0	117-84-0	di-n-Octyl phthalate	1.1E+03	2.7E+04	9.1E+01	9.1E+02	nc	1.0E+04
1.5E-05	1.5E-05	0.0	0.03	0.0	1746-01-6	1,4-Dioxane	4.0E+01	2.7E+02	6.1E+01	6.1E+00	ca	1.0E+04
3.0E-02	3.0E-02	0.0	0.0	0.0	957-51-7	Dioxin (2,3,7,8-TCDD)	3.8E-06	3.0E-05	4.5E-08	4.5E-07	ca	1.0E+04
2.5E-02	2.5E-02	0.0	0.0	0.0	2602-46-2	Diphenamid	1.6E+03	3.2E+04	1.1E+02	1.1E+03	nc	1.0E+04
9.0E-03	9.0E-03	0.0	0.0	0.0	122-39-4	Diphenylamine	1.4E+03	2.7E+04	9.1E+01	9.1E+02	nc	1.0E+04
2.2E-03	2.2E-03	0.0	0.0	0.0	85-00-7	1,2-Diphenylhydrazine	5.6E-01	3.7E+00	8.7E-03	8.4E-02	ca	1.0E+04
8.0E-01	8.0E-01	0.0	0.0	0.0	127-63-9	Diphenyl sulfone	4.9E+02	9.6E+03	3.3E+01	3.3E+02	nc	1.0E+04
8.0E+00	8.0E+00	0.0	0.0	0.0	1697-37-7	Diquat	1.2E+02	2.4E+03	8.0E+00	8.0E+01	nc	1.0E+04
8.1E+00	8.1E+00	0.0	0.0	0.0	2602-46-2	Direct black 38	5.2E-02	3.5E-01	7.8E-04	7.8E-03	ca	1.0E+04
9.3E+00	9.3E+00	0.0	0.0	0.0	16071-86-6	Direct blue 6	5.5E-02	3.7E-01	8.3E-04	8.3E-03	ca	1.0E+04
4.0E-05	4.0E-05	0.0	0.0	0.0	298-04-4	Disulfoton	4.8E-02	3.2E-01	7.2E-04	7.2E-03	ca	1.0E+04
1.0E-02	1.0E-02	0.0	0.0	0.0	505-29-3	1,4-Dithiane	2.2E+00	4.3E+01	1.5E-01	1.5E+00	nc	1.0E+04
2.0E-03	2.0E-03	0.0	0.0	0.0	350-54-1	Diuron	1.1E+02	2.1E+03	7.3E+00	7.3E+01	nc	1.0E+04
4.0E-03	4.0E-03	0.0	0.0	0.0	2439-10-3	Endosulfan	2.2E+02	4.3E+03	1.5E+01	1.5E+02	nc	1.0E+04
3.0E-04	3.0E-04	0.0	0.0	0.0	115-29-7	Dodine	3.3E+02	6.4E+03	2.2E+01	2.2E+02	nc	1.0E+04
5.0E-03	5.0E-03	0.0	0.0	0.0	145-73-3	Endothall	1.1E+03	2.1E+04	7.3E+01	7.3E+02	nc	1.0E+04
5.7E-03	5.7E-03	0.0	0.0	0.0	105-88-7	Endrin	1.6E+01	3.2E+02	1.1E+00	1.1E+01	nc	1.0E+04
2.5E-02	2.5E-02	0.0	0.0	0.0	72-29-8	Epichlorohydrin	7.4E+00	2.6E+01	1.0E+00	2.0E+00	nc	1.0E+04
5.0E-03	5.0E-03	0.0	0.0	0.0	106-89-8	1,2-Epoxybutane	3.1E+02	6.1E+03	2.1E+01	2.1E+02	nc	1.0E+04
5.0E-04	5.0E-04	0.0	0.0	0.0	563-12-2	EPTC (S-Ethyl dipropylthiocarbamate)	1.4E+03	2.7E+04	9.1E+01	9.1E+02	nc	1.0E+04
4.0E-01	4.0E-01	0.0	0.0	0.0	111-19-5	Ethephon (2-chloroethyl phosphonic acid)	2.7E+02	5.3E+03	1.8E+01	1.8E+02	nc	1.0E+04
3.0E-01	3.0E-01	0.0	0.0	0.0	147-78-6	Ethion	2.7E+01	5.3E+02	1.8E+00	1.8E+01	nc	1.0E+04
9.0E-01	9.0E-01	0.0	0.0	0.0	140-88-5	2-Ethoxyethanol	1.6E+04	1.0E+05	max 2.1E+02	2.1E+04	nc	1.0E+04
1.0E-01	1.0E-01	0.0	0.0	0.0	100-41-4	2-Ethoxyethanol acetate	1.7E+04	7.7E+04	sat 3.3E+03	3.5E+03	nc	1.0E+04
4.0E-02	4.0E-02	0.0	0.0	0.0	147-78-6	Ethyl acetate	2.1E-01	4.5E-01	1.4E-01	2.3E-01	ca	1.0E+04
4.0E-01	4.0E-01	0.0	0.0	0.0	75-00-3	Ethyl acrylate	1.6E+03	1.6E+03	sat 1.0E+04	8.6E+03	nc	1.0E+04
3.0E-01	3.0E-01	0.0	0.0	0.0	109-78-4	Ethylbenzene	1.6E+04	1.0E+05	max 1.1E+03	1.1E+04	nc	1.0E+04
2.0E-02	2.0E-02	0.0	0.0	0.0	107-15-3	Ethylene cyanohydrin	1.1E+03	2.1E+04	nc 7.3E+01	7.3E+02	nc	1.0E+04
						Ethylene diamine						

Key: I=IRIS, H=HEAST, M=NCEA, W=WITHDRAWN, O=Other EPA DOCUMENTS, F=ROUTE EXTRAPOLATION, C=CANCER PRG, N=NONCANCER PRG, S=SOIL SATURATION, max=CELLING LIMIT, * (where: nc < 100X ca) ** (where: nc < 10X ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RfDc	SFI	RfDi	V	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)
1/(mg/kg-d)	(mg/kg-d)	1/(mg/kg-d)	(mg/kg-d)	skin O abs. C soils						
2.0E+00	2.0E+00	r	0	0	107-21-1	1.0E+05	max 1.0E+05	7.3E+03	nc	7.3E+04
5.7E-03	5.7E-03	h	0	0	111-76-2	3.1E+02	6.1E+03	2.1E+01	nc	2.1E+02
1.0E+00	3.5E-01	h	1	0	75-21-8	1.3E-01	ca 3.4E-01	1.9E-02	ca	2.4E-02
1.1E-01	1.1E-01	r	0	0	96-45-7	4.0E+00	ca 2.7E+01	6.1E-02	ca	6.1E-01
2.0E-01	2.0E-01	r	1	0	80-29-7	1.8E+03	sat 1.8E+03	7.3E+02	nc	1.2E+03
9.0E-02	9.0E-02	h	1	0	97-83-2	1.4E+02	sat 1.4E+02	3.3E+02	nc	5.5E+02
1.0E-05	1.0E-05	r	0	0	2104-64-5	5.5E-01	nc 1.1E+01	3.7E-02	nc	3.7E-01
3.0E+00	3.0E+00	r	0	0	84-72-0	1.0E+05	max 1.0E+05	1.1E+04	nc	1.1E+05
8.0E-03	8.0E-03	r	0	0	101200-46	4.4E+02	nc 8.6E+03	2.9E+01	nc	2.9E+02
2.8E-04	2.8E-04	r	0	0	22224-92-8	1.4E+01	nc 2.7E+02	9.1E-01	nc	9.1E+00
1.3E-02	1.3E-02	r	0	0	2164-17-2	7.1E+02	nc 1.4E+04	4.7E+01	nc	4.7E+02
6.0E-02	6.0E-02	r	0	0	16984-18-5	3.3E+03	nc 6.4E+04	nc	nc	2.2E+03
8.0E-02	8.0E-02	r	0	0	59756-60-4	4.4E+03	nc 8.6E+04	2.9E+02	nc	2.9E+03
2.0E-02	2.0E-02	r	0	0	56425-91-3	1.1E+03	nc 2.1E+04	7.3E+01	nc	7.3E+02
6.0E-02	6.0E-02	r	0	0	85332-98-5	3.3E+03	nc 6.4E+04	2.2E+02	nc	2.2E+03
1.0E-02	1.0E-02	r	0	0	69402-94-5	5.8E+02	nc 1.1E+04	3.7E+01	nc	3.7E+02
1.0E-01	3.5E-03	r	1	0	135-07-3	1.3E+02	ca 8.6E+02	1.9E+00	ca	1.9E+01
1.9E-01	1.9E-01	r	0	0	72178-02-0	2.3E+00	ca 1.6E+01	3.5E-02	ca	3.5E-01
2.0E-03	2.0E-03	r	0	0	944-22-9	1.1E+02	nc 2.1E+03	7.3E+00	nc	7.3E+01
1.5E-01	4.8E-02	i	0	0	50-00-0	8.2E+03	nc 1.0E+05	1.5E-01	ca	5.5E+03
2.0E+00	2.0E+00	h	0	0	64-18-6	1.0E+05	max 1.0E+05	7.3E+03	nc	7.3E+04
3.0E+00	3.0E+00	r	0	0	39748-24-9	1.0E+05	max 1.0E+05	1.1E+04	nc	1.1E+05
1.0E-03	1.0E-03	r	1	0	110-00-9	1.2E-01	ca 7.9E-01	1.8E-03	ca	1.8E-02
3.8E+00	3.8E+00	r	0	0	67-45-3	1.6E+02	nc 3.2E+03	5.2E+01	nc	1.1E+02
5.0E-01	5.0E-01	r	0	0	531-82-8	8.9E-03	ca 6.0E-02	1.3E-04	ca	1.3E-03
3.0E-02	3.0E-02	r	0	0	60563-05-0	1.5E+01	ca 1.0E+02	2.2E-01	ca	2.2E+00
4.0E-04	4.0E-04	r	0	0	77182-82-2	2.2E+01	nc 4.3E+02	1.5E+00	nc	1.5E+01
4.0E-04	2.9E-04	h	0	0	765-34-4	2.2E+01	nc 4.3E+02	1.0E+00	nc	1.5E+01
1.0E-01	1.0E-01	r	0	0	1071-93-6	5.9E+03	nc 1.1E+05	3.7E+02	nc	3.7E+03
5.0E-05	5.0E-05	r	0	0	69506-43-2	2.7E+00	nc 5.3E+01	1.8E-01	nc	1.8E+00
1.3E-02	1.3E-02	r	0	0	76277-27-3	7.1E+02	nc 1.4E+04	4.7E+01	nc	4.7E+02
5.0E-04	4.5E-04	i	0	0	78-44-8	9.9E-02	ca 3.3E-01	1.5E-03	ca	1.5E-02
1.3E-05	9.1E-05	i	0	0	1024-57-3	4.9E-02	ca 3.3E-01	7.4E-04	ca	7.4E-03
2.0E-03	2.0E-03	r	0	0	87-82-1	1.1E+02	nc 2.1E+03	7.3E+00	nc	7.3E+01
8.0E-04	8.0E-04	r	0	0	118-74-1	2.8E-01	ca 1.9E+00	4.2E-03	ca	4.2E-02
7.8E-02	7.7E-02	i	0	0	87-88-3	5.7E+00	ca 3.8E+01	8.7E-02	ca	8.6E-01
6.3E+00	6.3E+00	i	0	0	319-84-6	8.6E-02	ca 6.7E-01	1.1E-03	ca	1.1E-02
1.8E+00	1.8E+00	i	0	0	319-85-7	3.0E-01	ca 2.3E+00	3.7E-03	ca	3.7E-02
1.9E+00	1.3E+00	r	0	0	58-89-9	4.2E-01	ca 3.2E+00	5.2E-03	ca	5.2E-02
1.9E+00	1.8E+00	i	0	0	508-73-1	3.0E-01	ca 2.3E+00	3.7E-03	ca	3.7E-02
7.0E-03	2.0E-03	i	0	0	77-47-4	3.8E-02	nc 7.1E+03	7.3E-02	nc	2.6E+02
6.2E-03	4.6E-03	i	0	0	19408-74-3	7.2E-05	ca 4.8E-04	1.5E-06	ca	1.1E-05
1.4E-02	1.4E-02	i	0	0	67-72-1	3.2E+01	ca 2.1E+02	4.8E-01	ca	4.8E+00
3.0E-04	3.0E-04	r	0	0	70-30-4	1.6E+01	nc 3.2E+02	1.1E+00	nc	1.1E+01

Key: I=IRIS H=EAST R=NCEA X=WITHDRAWN e=Other EPA DOCUMENT'S r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT * (where: nc < 100X ca) ** (where: nc < 10X ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RfDo	SFI	RfD	V. Sln	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 1 (mg/kg)	DAF 1 (mg/kg)
1/(mg/kg-d)	(mg/kg-d)	1/(mg/kg-d)	(mg/kg-d)	O abs	C soils						
1.1E-01	3.0E-03	1.1E-01	3.0E-03	0	0	0	0	0	0	0	0
2.9E-06	2.9E-06	2.9E-06	2.9E-06	0	0	0	0	0	0	0	0
6.0E-02	6.0E-02	6.0E-02	6.0E-02	0	0	0	0	0	0	0	0
3.3E-02	3.3E-02	3.3E-02	3.3E-02	0	0	0	0	0	0	0	0
3.0E-00	3.0E-00	3.0E-00	3.0E-00	0	0	0	0	0	0	0	0
3.0E-03	3.0E-03	3.0E-03	3.0E-03	0	0	0	0	0	0	0	0
4.0E-02	4.0E-02	4.0E-02	4.0E-02	0	0	0	0	0	0	0	0
1.3E-02	1.3E-02	1.3E-02	1.3E-02	0	0	0	0	0	0	0	0
2.5E-01	2.5E-01	2.5E-01	2.5E-01	0	0	0	0	0	0	0	0
4.0E-02	4.0E-02	4.0E-02	4.0E-02	0	0	0	0	0	0	0	0
3.0E-01	3.0E-01	3.0E-01	3.0E-01	0	0	0	0	0	0	0	0
3.0E-01	3.0E-01	3.0E-01	3.0E-01	0	0	0	0	0	0	0	0
9.5E-04	9.5E-04	9.5E-04	9.5E-04	0	0	0	0	0	0	0	0
1.5E-02	1.5E-02	1.5E-02	1.5E-02	0	0	0	0	0	0	0	0
1.0E-01	1.0E-01	1.0E-01	1.0E-01	0	0	0	0	0	0	0	0
5.0E-02	5.0E-02	5.0E-02	5.0E-02	0	0	0	0	0	0	0	0
1.8E-01	1.8E-01	1.8E-01	1.8E-01	0	0	0	0	0	0	0	0
2.0E-03	2.0E-03	2.0E-03	2.0E-03	0	0	0	0	0	0	0	0
PRGs Based on EPA Methods, IEUBK (1994) and TRW (1996)											
1.0E-07	1.0E-07	1.0E-07	1.0E-07	0	0	0	0	0	0	0	0
2.0E-03	2.0E-03	2.0E-03	2.0E-03	0	0	0	0	0	0	0	0
2.0E-02	2.0E-02	2.0E-02	2.0E-02	0	0	0	0	0	0	0	0
2.0E-01	2.0E-01	2.0E-01	2.0E-01	0	0	0	0	0	0	0	0
2.0E-02	2.0E-02	2.0E-02	2.0E-02	0	0	0	0	0	0	0	0
1.0E-01	1.0E-01	1.0E-01	1.0E-01	0	0	0	0	0	0	0	0
6.0E-01	6.0E-01	6.0E-01	6.0E-01	0	0	0	0	0	0	0	0
2.0E-05	2.0E-05	2.0E-05	2.0E-05	0	0	0	0	0	0	0	0
3.0E-02	3.0E-02	3.0E-02	3.0E-02	0	0	0	0	0	0	0	0
6.0E-02	6.0E-02	6.0E-02	6.0E-02	0	0	0	0	0	0	0	0
2.9E-02	2.9E-02	2.9E-02	2.9E-02	0	0	0	0	0	0	0	0
3.0E-04	3.0E-04	3.0E-04	3.0E-04	0	0	0	0	0	0	0	0
1.0E-04	1.0E-04	1.0E-04	1.0E-04	0	0	0	0	0	0	0	0
3.0E-05	3.0E-05	3.0E-05	3.0E-05	0	0	0	0	0	0	0	0
6.0E-02	6.0E-02	6.0E-02	6.0E-02	0	0	0	0	0	0	0	0
1.0E-04	1.0E-04	1.0E-04	1.0E-04	0	0	0	0	0	0	0	0
5.0E-05	5.0E-05	5.0E-05	5.0E-05	0	0	0	0	0	0	0	0
5.0E-01	5.0E-01	5.0E-01	5.0E-01	0	0	0	0	0	0	0	0
1.0E-03	1.0E-03	1.0E-03	1.0E-03	0	0	0	0	0	0	0	0

Key: I=IRIS H=HEAST n=NCEA x=WITHDRAWN e=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ce=DANGER PRG ne=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT * (where: nc < 100X ca) ** (where: nc < 10X ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

Sfo	RfDo	SFI	RDH	V	skin	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)
1/(mg/kg-d)	(mg/kg-d)	1/(mg/kg-d)	(mg/kg-d)	O abs.	C soils							
2.5E-02	2.5E-02	r	1	0.10	16732-77-5	Methomyl	4.4E+01	nc	1.5E+02	nc	1.5E+02	nc
5.0E-03	5.0E-03	r	0	0.10	72-43-5	Methoxychlor	2.7E+02	nc	1.8E+01	nc	1.8E+02	nc
1.0E-03	5.7E-03	i	0	0.10	109-96-4	2-Methoxyethanol	5.5E+01	nc	2.1E+01	nc	3.7E+01	nc
4.8E-02	2.0E-03	h	0	0.10	110-49-6	2-Methoxyethanol acetate	1.1E+02	nc	7.3E+00	nc	7.3E+01	nc
1.0E+00	1.0E+00	h	1	0.10	99-59-2	2-Methoxy-5-nitroaniline	9.7E+00	ca	1.5E+01	ca	1.5E+00	ca
3.0E-02	3.0E-02	r	1	0.10	96-33-3	Methyl acetate	2.0E+04	nc	2.3E+02	nc	6.1E+03	nc
2.4E-01	2.4E-01	r	0	0.10	96-53-4	2-Methylaniline (o-toluidine)	1.9E+00	ca	1.2E+01	ca	2.8E-02	ca
1.8E-01	1.8E-01	r	0	0.10	695-21-5	2-Methylaniline hydrochloride	2.5E+00	ca	1.7E+01	ca	3.7E-02	ca
1.0E+00	1.0E+00	x	0	0.10	79-22-1	Methyl chloroacetate	5.5E+04	nc	1.0E+05	nc	3.7E+04	nc
3.0E-04	3.0E-04	r	0	0.10	94-74-6	2-Methyl-4-chlorophenoxyacetic acid	2.7E+01	nc	5.3E+02	nc	1.8E+00	nc
1.0E-02	1.0E-02	r	0	0.10	94-51-5	4-(2-Methyl-4-chlorophenoxy) butyric acid	5.5E+02	nc	1.1E+04	nc	3.7E+01	nc
1.0E-03	1.0E-03	r	0	0.10	93-65-2	2-(2-Methyl-4-chlorophenoxy) propionic acid	5.5E+01	nc	3.7E+00	nc	3.7E+01	nc
1.0E-03	1.0E-03	r	0	0.10	16484-77-8	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	5.5E+01	nc	1.1E+03	nc	3.7E+00	nc
8.9E-01	8.9E-01	r	0	0.10	108-87-2	Methylcyclohexane	4.7E+04	nc	1.0E+05	nc	3.1E+04	nc
2.5E-01	2.5E-01	r	0	0.10	101-77-9	1,4-Methylenebisbenzamide	1.8E+00	ca	1.2E+01	ca	2.7E-02	ca
1.3E-01	1.3E-01	h	0	0.10	101-14-4	4,4'-Methylene bis(2-chloroaniline)	3.4E+00	ca*	2.3E+01	ca*	5.2E-02	ca*
4.8E-02	4.8E-02	r	0	0.10	101-81-1	4,4'-Methylene bis(N,N-dimethylaniline)	9.7E+00	ca	6.5E+01	ca	1.5E-01	ca
1.0E-02	1.0E-02	r	0	0.10	74-95-3	Methylene bromide	5.5E+02	nc	1.1E+04	nc	3.7E+01	nc
9.0E-02	9.0E-02	h	1	0.10	75-09-2	Methylene chloride	8.5E+00	ca	2.0E+01	ca	4.1E+00	ca
1.7E-04	1.7E-04	r	0	0.10	101-66-8	4,4'-Methylene diphenyl diisocyanate	9.3E+00	nc	1.8E+02	nc	6.2E-01	nc
6.0E-01	2.9E-01	i	1	0.10	78-93-3	Methyl ethyl ketone	6.9E+03	nc	2.7E+04	nc	1.0E+03	nc
3.0E-02	3.0E-02	h	0	0.10	60-34-4	Methyl hydrazine	4.0E-01	ca	2.7E+00	ca	6.1E-03	ca
5.7E-04	5.7E-04	r	0	0.10	109-10-1	Methyl isobutyl ketone	7.5E+02	nc	2.8E+03	nc	8.3E+01	nc
1.4E+00	1.4E+00	r	1	0.10	74-83-1	Methyl Mercaptan	3.1E+01	nc	6.1E+02	nc	2.1E+00	nc
3.3E-02	3.3E-02	r	0	0.10	98-55-8	Methyl methacrylate	2.2E+03	nc	7.3E+02	nc	1.4E+03	nc
2.5E-04	2.5E-04	r	0	0.10	298-00-0	Methyl parathion	1.4E+01	ca	2.7E+02	ca	2.0E-01	ca
5.0E-02	5.0E-02	r	0	0.10	95-48-7	2-Methylphenol	2.7E+03	nc	5.3E+04	nc	1.8E+02	nc
5.0E-02	5.0E-02	x	0	0.10	108-39-4	3-Methylphenol	2.7E+03	nc	5.3E+04	nc	1.8E+02	nc
5.0E-03	5.0E-03	h	0	0.10	105-44-5	4-Methylphenol	2.7E+02	nc	1.8E+01	nc	1.8E+02	nc
5.0E-03	2.0E-02	r	0	0.10	993-13-5	Methyl phosphonic acid	1.1E+03	nc	2.1E+04	nc	7.3E+01	nc
7.0E-02	1.1E-02	h	1	0.10	25013-15-1	Methyl styrene (mixture)	1.2E+02	nc	5.4E+02	nc	4.2E+01	nc
1.5E-01	7.0E-02	r	1	0.10	99-53-9	Methyl styrene (alpha)	6.8E+02	sat	2.6E+02	nc	4.3E+02	nc
2.5E-02	8.6E-01	r	1	0.10	1694-04-4	Methyl tertbutyl ether (MTBE)	n/a	n/a	3.1E+03	nc	2.0E+01	nc
2.0E-04	1.5E-01	r	0	0.10	51218-45-2	Metolador (Dual)	8.2E+03	nc	1.0E+05	nc	5.5E+03	nc
2.0E-03	2.5E-02	r	0	0.10	21087-64-9	Metribuzin	1.4E+03	nc	2.7E+04	nc	9.1E+01	nc
1.8E-00	2.0E-04	r	0	0.10	2385-95-5	Mirex	2.5E-01	ca*	1.7E+00	ca	3.7E-03	ca
5.0E-03	2.0E-03	r	0	0.10	2212-67-1	Molinate	1.1E-02	nc	2.1E+03	nc	7.3E+00	nc
1.0E-01	5.0E-03	h	0	0.01	7439-98-7	Molybdenum	3.7E+02	nc	9.4E+05	nc	1.8E+02	nc
2.0E-03	1.0E-01	h	0	0.10	10599-90-3	Monochloramine	5.5E+03	nc	1.1E+05	nc	3.7E+02	nc
1.0E-01	2.0E-03	r	0	0.10	300-76-5	Naled	1.1E+02	nc	2.1E+03	nc	7.3E+00	nc
2.0E-02	1.0E-01	r	0	0.10	15299-99-7	Napropamide	5.5E+03	nc	1.1E+05	nc	3.7E+02	nc
2.0E-02	2.0E-02	i	0	0.01	7440-02-0	Nickel (soluble salts)	1.5E+03	nc	3.7E+04	nc	7.3E+02	nc
						"CAL-Modified PRG" (PEA, 1994)	1.5E+02				1.3E+02	7.0E+00

Key: I=IRIS I=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS =ROUTE EXTRAPOLATION e=CANCER PRG ne=NONCANCER PRG sa=SOIL SATURATION m=CeILING LIMIT * (where: ne < 100X ca) ** (where: ne < 10X ca)

FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO 1/(mg/kg-d)	RfDo (mg/kg-d)	SFI 1/(mg/kg-d)	RfDI (mg/kg-d)	V skin O abs. C soils	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF-20 (mg/kg)	DAF-1 (mg/kg)
1.5E-03 x	1.7E+00 i	1.5E-03 r	1.5E-03 r	0 0 0	n/a	8.2E+01 nc	1.1E+04 ca	8.0E-03 ca	5.5E+01 nc		
Nickel refinery dust											
Nickel subsulfide											
Nitrapyrin											
Nitrate											
Nitric Oxide											
Nitrite											
2-Nitroaniline											
3-Nitroaniline											
4-Nitroaniline											
Nitrobenzene											
Nitrofurantoin											
Nitrofurazone											
Nitrogen dioxide											
Nitroguanidine											
4-Nitrophenol											
2-Nitropropane											
N-Nitrosodi-n-butylamine											
N-Nitrosodiphenylamine											
N-Nitrosodimethylamine											
N-Nitrosodiphenylamine											
N-Nitroso di-n-propylamine											
N-Nitroso-N-methylethylamine											
N-Nitrosopyrrolidine											
m-Nitrotoluene											
o-Nitrotoluene											
p-Nitrotoluene											
Norflurazon											
NuStar											
Octabromodiphenyl ether											
Octahydro-1,3,5,7-tetraazirino-1,3,5,7-tetrazocine (HMx)											
Octamethylpyrophosphoramide											
Oryzalin											
Oxadiazon											
Oxamyl											
Oxyfluorfen											
Paclobutrazol											
Paracetamol											
Parathion											
Pebutate											
Pendimethalin											
Pentabromo-6-chloro cyclohexane											
Pentabromodiphenyl ether											
Pentachlorobenzene											
Pentachloronitrobenzene											

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FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RfDo	SFI	RfDI	V skin	CAS No.	Soil (mg/kg)		Ambient Air (ug/m ³)		Tap Water (ug/l)		Migration to Ground Water		
						1/(mg/kg-d)	1/(mg/kg-d)	Residential	Industrial	Soil (mg/kg)	Ambient Air (ug/m ³)	DAF 20 (mg/kg)	DAF 1 (mg/kg)	
1.2E-01	i	3.0E-02	r	0 0.25	87-86-5	3.0E-02	r	0 0.10	5.6E-02	ca	5.6E-01	ca	3.0E-02	1.0E+03
5.0E-04	n	5.0E-02	r	0 0.10	7601-90-3	5.0E-02	r	0 0.10	9.4E+02	nc	1.8E+01	nc		
5.0E-02	i	5.0E-02	r	0 0.10	52845-53-1	5.0E-02	r	0 0.10	5.3E+04	nc	1.8E+03	nc		
2.5E-01	i	2.5E-01	r	0 0.10	13824-53-4	2.5E-01	r	0 0.10	1.0E+05	max	9.1E+02	nc	1.0E+02	5.0E+00
6.0E-01	i	6.0E-01	r	0 0.10	109-95-2	6.0E-01	r	0 0.10	1.0E+05	max	2.2E+03	nc		
2.0E-03	n	2.0E-03	r	0 0.10	92-84-2	2.0E-03	r	0 0.10	2.1E+03	nc	7.3E+00	nc		
6.0E-03	i	6.0E-03	r	0 0.10	108-45-2	6.0E-03	r	0 0.10	6.4E+03	nc	2.2E+01	nc		
1.9E-01	h	1.9E-01	r	0 0.10	106-50-3	1.9E-01	r	0 0.10	1.0E+05	max	6.9E+02	nc		
3.0E-05	i	3.0E-05	r	0 0.10	62-33-4	3.0E-05	r	0 0.10	8.6E+01	nc	2.9E-01	nc		
1.9E-03	h	1.9E-03	r	0 0.10	90-43-7	1.9E-03	r	0 0.10	1.5E+03	ca	3.5E+00	ca		
2.0E-04	h	2.0E-04	r	0 0.10	298-02-2	2.0E-04	r	0 0.10	2.1E+02	nc	7.3E-01	nc		
2.0E-02	i	2.0E-02	r	0 0.10	732-11-6	2.0E-02	r	0 0.10	2.1E+04	nc	7.3E+01	nc		
3.0E-04	h	3.0E-04	r	0 0.10	7803-51-2	3.0E-04	r	0 0.10	3.2E+02	nc	3.1E-01	nc		
2.0E-05	i	2.0E-05	r	0 0.01	7723-14-0	2.0E-05	r	0 0.01	3.7E+01	nc	1.0E+01	nc		
1.0E+00	h	1.0E+00	r	0 0.10	100-21-0	1.0E+00	r	0 0.10	1.0E+05	max	3.7E+03	nc		
2.0E+00	i	2.0E+00	r	0 0.10	85-44-9	2.0E+00	r	0 0.10	1.0E+05	max	2.2E+02	nc		
7.0E-02	i	7.0E-02	r	0 0.10	1918-02-1	7.0E-02	r	0 0.10	7.5E+04	nc	2.6E+02	nc		
1.0E-02	i	1.0E-02	r	0 0.10	23305-41-1	1.0E-02	r	0 0.10	1.1E+04	nc	3.7E+01	nc		
8.9E+00	h	8.9E+00	r	0 0.10		8.9E+00	r	0 0.10	3.4E-01	ca*	7.6E-04	ca*		
2.0E+00	i	2.0E+00	r	0 0.14	1336-36-3	2.0E+00	r	0 0.14	1.3E+00	ca*	3.4E-03	ca*		
7.0E-05	i	7.0E-05	r	0 0.14	12674-11-2	7.0E-05	r	0 0.14	6.3E+01	nc	2.6E-01	nc		
2.0E-05	i	2.0E-05	r	0 0.14	11097-58-1	2.0E-05	r	0 0.14	1.8E+01	nc	7.3E-02	nc		
6.0E-02	i	6.0E-02	r	0 0.13	53-32-9	6.0E-02	r	0 0.13	2.8E+04	nc	2.2E+02	nc		
3.0E-01	i	3.0E-01	r	0 0.13	120-12-7	3.0E-01	r	0 0.13	2.2E+05	nc	1.1E+03	nc		
7.9E-01	n	3.1E-01	n	0 0.13	58-55-3	3.1E-01	n	0 0.13	3.6E+00	ca	9.2E-02	ca		
7.9E-01	n	3.1E-01	n	0 0.13	205-99-2	3.1E-01	n	0 0.13	3.6E+00	ca	9.2E-02	ca		
7.9E-02	n	3.1E-02	n	0 0.13	207-08-9	3.1E-02	n	0 0.13	3.6E+01	ca	2.2E-01	ca		
7.9E+00	i	3.1E+00	n	0 0.13	50-32-8	3.1E+00	n	0 0.13	3.6E-01	ca	2.2E-03	ca		
7.9E-03	n	3.1E-03	n	0 0.13	216-01-9	3.1E-03	n	0 0.13	3.6E+02	ca	2.2E+00	ca		
7.9E+00	n	3.1E+00	n	0 0.13	53-70-3	3.1E+00	n	0 0.13	3.6E-01	ca	2.2E-03	ca		
4.0E-02	i	4.0E-02	r	0 0.13	206-44-0	4.0E-02	r	0 0.13	3.7E+04	nc	1.5E+02	nc		
4.0E-02	i	4.0E-02	r	0 0.13	86-73-7	4.0E-02	r	0 0.13	2.2E+04	nc	2.4E+02	nc		
7.9E-01	n	3.1E-01	n	0 0.13	193-39-5	3.1E-01	n	0 0.13	3.6E+00	ca	2.2E-02	ca		
2.0E-02	i	8.6E-04	i	1 0.13	91-20-3	8.6E-04	i	1 0.13	1.9E+02	nc	3.1E+00	nc		
3.0E-02	i	3.0E-02	r	1 0.13	129-00-0	3.0E-02	r	1 0.13	2.6E+04	nc	1.1E+02	nc		
1.9E-01	i	9.0E-03	r	0 0.10	67747-09-6	9.0E-03	r	0 0.10	2.0E+01	ca	4.5E-02	ca		
6.0E-03	h	6.0E-03	r	0 0.10	26599-36-0	6.0E-03	r	0 0.10	6.4E+03	nc	2.2E+01	nc		
1.9E-02	i	1.9E-02	r	0 0.10	1510-18-0	1.9E-02	r	0 0.10	1.6E+04	nc	5.5E+01	nc		
4.0E-03	i	4.0E-03	r	0 0.10	7287-19-5	4.0E-03	r	0 0.10	4.3E+03	nc	1.5E+01	nc		

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FOR PLANNING PURPOSES

TOXICITY INFORMATION

CONTAMINANT

PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO	RfDo	SFI	RfDI	V skin	CAS No.	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m ³)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)
7.5E-02	I	1.3E-02	I	0	23950-50-5	4.1E+03	8.0E+04	nc	2.7E+03	nc	nc
1.3E-02	I	1.3E-02	I	0	1918-16-7	7.1E+02	1.4E+04	nc	4.7E+01	nc	4.7E+02
5.0E-03	I	5.0E-03	I	0	709-98-3	2.7E+02	5.3E+03	nc	1.8E+01	nc	1.8E+02
2.0E-02	I	2.0E-02	I	0	2312-35-3	1.1E+03	2.1E+04	nc	7.3E+01	nc	7.3E+02
2.0E-03	I	2.0E-03	I	0	107-19-7	1.1E+02	2.1E+03	nc	7.3E+00	nc	7.3E+01
2.0E-02	I	2.0E-02	I	0	139-40-2	1.1E+03	2.1E+04	nc	7.3E+01	nc	7.3E+02
2.0E-02	I	2.0E-02	I	0	122-42-9	1.1E+03	2.1E+04	nc	7.3E+01	nc	7.3E+02
1.3E-02	I	1.3E-02	I	0	60207-80-1	7.1E+02	1.4E+04	nc	4.7E+01	nc	4.7E+02
1.0E-02	N	1.0E-02	I	0	104-5-18	1.2E+02	4.9E+02	nc	3.7E+01	nc	6.1E+01
1.0E-02	N	1.0E-02	I	0	104-51-3	1.3E+02	5.5E+02	nc	3.7E+01	nc	6.1E+01
2.0E+01	H	2.0E+01	I	0	57-55-6	1.0E+05	max 1.0E+05	max 7.3E+04	nc	7.3E+05	nc
7.0E-01	H	7.0E-01	I	0	111-35-3	3.8E+04	1.0E+05	max 2.6E+03	nc	2.6E+04	nc
7.0E-01	I	7.0E-01	I	0	107-98-2	3.8E+04	1.0E+05	max 2.1E+03	nc	2.6E+04	nc
8.6E-03	I	1.3E-02	I	1	76-86-9	1.5E+00	ca 6.8E+00	ca 5.2E-01	ca*	2.2E-01	ca
2.5E-01	I	2.5E-01	I	0	81335-77-5	1.4E+04	1.0E+05	max 9.1E+02	nc	9.1E+03	nc
2.5E-02	I	2.5E-02	I	0	51630-58-1	1.4E+03	2.7E+04	nc	9.1E+01	nc	9.1E+02
1.0E-03	I	1.0E-03	I	0	110-86-1	5.5E+01	1.1E+03	nc	3.7E+00	nc	3.7E+01
5.0E-04	I	5.0E-04	I	0	13553-03-8	2.7E+01	5.3E+02	nc	1.8E+00	nc	1.8E+01
1.2E-01	H	1.2E+01	I	0	91-22-5	3.7E+02	ca 2.5E-01	ca 5.6E-04	ca	5.6E-03	ca
1.1E-01	I	1.1E-01	I	0	121-82-4	4.0E+00	ca* 2.7E+01	ca 6.1E-02	ca	6.1E-01	ca
3.0E-02	I	3.0E-02	I	0	10-63-86-8	1.6E+03	3.2E+04	nc	1.1E+02	nc	1.1E+03
5.0E-02	H	5.0E-02	I	0	289-84-3	2.7E+03	5.3E+04	nc	1.8E+02	nc	1.8E+03
4.0E-03	H	4.0E-03	I	0	83-79-4	2.2E+02	4.3E+03	nc	1.5E+01	nc	1.5E+02
2.5E-02	I	2.5E-02	I	0	76587-05-0	1.4E+03	2.7E+04	nc	9.1E+01	nc	9.1E+02
5.0E-03	I	5.0E-03	I	0	7783-00-8	2.7E+02	5.3E+03	nc	1.8E+02	nc	1.8E+03
5.0E-03	I	5.0E-03	I	0	7782-49-2	3.7E+02	9.4E+03	nc	1.8E+02	nc	1.8E+03
5.0E-03	H	5.0E-03	I	0	593-10-4	2.7E+02	5.3E+03	nc	1.8E+02	nc	1.8E+03
9.0E-02	I	9.0E-02	I	0	74051-80-2	4.9E+03	9.6E+04	nc	3.3E+02	nc	3.3E+03
5.0E-03	I	5.0E-03	I	0	7440-22-4	3.7E+02	9.4E+03	nc	1.8E+02	nc	1.8E+03
1.2E-01	H	1.2E-01	I	0	123-34-9	3.7E+00	ca* 2.5E+01	ca 5.6E-02	ca	5.6E-01	ca
4.0E-03	I	4.0E-03	I	0	25528-52-8	2.2E+02	4.3E+03	nc	1.5E+01	nc	1.5E+02
3.0E-02	I	2.7E-01	I	0	148-18-5	1.6E+00	1.1E+01	ca 2.5E-02	ca	2.5E-01	ca
2.0E-05	I	2.0E-05	I	0	52-74-8	1.1E+00	2.1E+01	nc	7.3E-02	nc	7.3E-01
1.0E-03	H	1.0E-03	I	0	13718-26-8	5.5E+01	1.1E+03	nc	3.7E+00	nc	3.7E+01
6.0E-01	I	6.0E-01	I	0	7440-24-8	4.5E+04	nc 1.0E+05	max	2.2E+04	nc	2.2E+05
3.0E-04	I	3.0E-04	I	0	57-24-9	1.6E+01	3.2E+02	nc	1.1E+00	nc	1.1E+01
2.5E-02	I	2.5E-02	I	1	100-42-5	1.7E+03	1.7E+03	est 1.1E+03	nc	1.6E+03	nc
1.5E-05	H	1.5E-05	H	0	8671-88-0	1.4E+03	2.7E+04	nc	9.1E+01	nc	9.1E+02
7.0E-02	I	7.0E-02	I	0	1748-01-6	3.8E+06	ca 3.0E+05	ca 4.5E-08	ca	4.5E-07	ca
2.0E-02	H	2.0E-02	I	0	34014-18-1	3.8E+03	7.5E+04	nc 2.6E+02	nc	2.6E+03	nc
1.3E-02	I	1.3E-02	I	0	3383-96-8	1.1E+03	2.1E+04	nc	7.3E+01	nc	7.3E+02
1.3E-02	I	1.3E-02	I	0	5902-51-2	7.1E+02	1.4E+04	nc	4.7E+01	nc	4.7E+02
2.5E-05	H	2.5E-05	I	0	13071-75-9	1.4E+00	2.7E+01	nc	9.1E-02	nc	9.1E-01
1.0E-03	I	1.0E-03	I	0	895-60-0	5.5E+01	1.1E+03	nc	3.7E+00	nc	3.7E+01
3.0E-04	I	3.0E-04	I	0	85-54-3	1.6E+01	3.2E+02	nc	1.1E+00	nc	1.1E+01

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PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFO 1/(mg/kg-d)	RfDo (mg/kg-d)	SFI 1/(mg/kg-d)	RfDI (mg/kg-d)	V skin O abs. C soils	CAS No.	Residential Soil (mg/kg)				Industrial Soil (mg/kg)				Ambient Air (ug/m ³)		Tap Water (ug/l)		Migration to Ground Water									
						1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	DAF 20 (mg/kg)	DAF 1 (mg/kg)
7.0E-00 h	5.0E-03 i	7.0E+00 r	5.0E-03 r	1 0 10	598-77-5	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
5.0E-03 h	5.0E-03 i	7.0E+00 r	5.0E-03 r	1 0 10	96-18-4	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	ca	ca
3.0E+01 i	3.0E-03 i	7.0E+00 r	5.0E-03 r	1 0 10	75-18-1	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
3.0E-03 i	3.0E-03 i	7.0E+00 r	5.0E-03 r	1 0 10	59193-08-2	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
2.0E-03 r	2.0E-03 i	7.0E+00 r	5.0E-03 r	1 0 10	121-44-8	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
7.7E-03 i	7.5E-03 i	7.7E-03 r	7.5E-03 r	0 0 10	1592-09-9	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	ca*	ca*
5.0E-02 a	5.0E-02 a	7.0E+00 r	5.0E-03 r	1 0 10	95-63-6	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
5.0E-02 n	5.0E-02 n	7.0E+00 r	5.0E-03 r	1 0 10	198-67-9	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
3.7E-02 h	3.0E-02 i	7.0E+00 r	5.0E-03 r	0 0 10	512-65-1	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	ca	ca
3.0E-02 i	3.0E-02 i	7.0E+00 r	5.0E-03 r	0 0 10	99-35-4	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
1.0E-02 b	1.0E-02 b	7.0E+00 r	5.0E-03 r	0 0 10	479-45-8	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
5.0E-02 i	5.0E-04 i	3.0E-02 r	5.0E-04 r	0 0 10	118-98-7	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	ca**	ca**
7.0E-03 h	7.0E-03 h	7.0E+00 r	5.0E-03 r	0 0 10	7440-62-2	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
9.0E-03 i	9.0E-03 i	7.0E+00 r	5.0E-03 r	0 0 10	1314-62-1	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
2.0E-02 h	2.0E-02 h	7.0E+00 r	5.0E-03 r	0 0 10	13701-70-7	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
1.0E-03 i	1.0E-03 i	7.0E+00 r	5.0E-03 r	0 0 10	1925-77-7	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
2.5E-02 i	2.5E-02 i	7.0E+00 r	5.0E-03 r	0 0 10	50471-44-3	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
1.0E+00 h	1.0E+00 h	7.0E+00 r	5.0E-03 r	1 0 10	108-05-4	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
1.1E-01 f	8.6E-04 f	1.1E-01 h	8.6E-04 i	1 0 10	593-80-2	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	ca*	ca*
1.9E+00 h	3.0E-01 h	3.0E-01 h	3.0E-01 h	1 0 10	75-01-4	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	ca*	ca*
3.0E-04 i	3.0E-04 i	7.0E+00 r	5.0E-03 r	0 0 10	81-81-2	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
2.0E+00 i	2.0E+00 i	7.0E+00 r	5.0E-03 r	1 0 10	108-98-3	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
2.0E+00 i	2.0E+00 i	7.0E+00 r	5.0E-03 r	1 0 10	95-47-5	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
3.0E-01 i	3.0E-01 i	7.0E+00 r	5.0E-03 r	1 0 10	105-42-3	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	sat	sat
3.0E-04 i	3.0E-04 i	7.0E+00 r	5.0E-03 r	0 0 10	7440-66-6	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
3.0E-04 i	3.0E-04 i	7.0E+00 r	5.0E-03 r	0 0 10	1314-54-7	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc
5.0E-02 i	5.0E-02 i	7.0E+00 r	5.0E-03 r	0 0 10	12122-67-7	1.5E+01	1.4E-03	1.1E+01	5.6E+03	1.6E+02	2.2E+01	5.8E+01	5.1E+01	3.1E-03	3.8E+01	5.6E+03	3.2E+03	8.6E+01	3.9E+02	1.7E+02	7.0E+01	1.8E+01	9.6E-04	1.8E+01	3.0E+01	nc	nc

EXHIBIT G

**COMPLETE SUMMARY OF
ANALYTICAL LABORATORY RESULTS
(1998)**

TABLE G-1
SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



SAMPLE ID.	SAMPLE DATE / RWQCB REMEDIATION GOALS	TPH (EPA 8015)				BTEX (EPA 8020)			
		C ₁ TO C ₁₂ (mg/kg)	C ₁₃ TO C ₂₂ (mg/kg)	C ₂₃₊ (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	
		1,000	10,000	50,000	0.1	unregulated	68	175	
S2-T4D-4.5A	8/11/98	ND<1.0	150	1,090	-	-	-	-	
S2-T4D-3.5A	8/11/98	ND<1.0	ND<10	59	-	-	-	-	
S2-T4-SP1	8/11/98	ND<1.0	430	475	-	-	-	-	
S2-T4-SP2	8/11/98	-	-	-	-	-	-	-	
S2-T4-DRUM	8/11/98	ND<1.0	16,300	ND<10	-	-	-	-	
S3-DC	8/13/98	ND<1.0	48,900	84,100	-	-	-	-	
S3-DB-2	8/13/98	ND<1.0	ND<10	1,940	-	-	-	-	
S4-HP1-5	8/12/98	-	-	-	-	-	-	-	
S4-HP1-10	8/12/98	-	-	-	-	-	-	-	
S4-HP1-15	8/12/98	-	-	-	-	-	-	-	
S4-HP1-21	8/12/98	-	-	-	-	-	-	-	
FF-PH6-1	8/11/98	ND<1.0	ND<10	25	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-PH6-1.8	8/11/98	2.1	13,900	7,800	ND<0.005	ND<0.005	0.0078	0.062	
FF-PH6-3	8/11/98	19	5,160	2,250	0.025	0.400	0.728	2.2	
FF-PH6-4	8/11/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-PH7-3.5	8/11/98	ND<1.0	6,210	3,470	ND<0.005	ND<0.005	ND<0.005	0.014	
FF-PH10-7	8/11/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-PH10-10	8/11/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-PH10-13	8/11/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-B1-5	8/12/98	ND<1.0	98	26	ND<0.005	ND<0.005	ND<0.005	0.011	
FF-B1-10	8/12/98	ND<1.0	110	72	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-B1-15	8/12/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-B1-20	8/12/98	ND<1.0	100	60	ND<0.005	ND<0.005	0.0057	0.022	
FF-B2-3.5	8/12/98	ND<1.0	22	30	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
FF-B2-5	8/12/98	ND<1.0	ND<10	24	ND<0.005	ND<0.005	ND<0.005	ND<0.010	

QA/QC: JL
 DATE: 10/5/98
 FILE: ENVDOCCS/CGT20-NRTHV/98tab-ds2a

TABLE G-1
SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



SAMPLE ID.	SAMPLE DATE / RWQCB REMEDIATION GOALS	TPH (EPA 8015)				BTEX (EPA 8020)				
		C ₁ TO C ₂ (mg/kg)	C ₃ TO C ₇ (mg/kg)	C ₈ (mg/kg)	C ₉ (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	
		1,000	10,000	50,000	0.1	unregulated	68	175		
FF-B2-10	8/12/98	ND<1.0	24	51	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B2-15	8/12/98	ND<1.0	101	74	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B2-20	8/12/98	ND<1.0	26	55	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B2-25	8/12/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B3-2	8/12/98	1.1	1,230	910	ND<0.005	ND<0.005	0.0057	0.035	0.035	
FF-B3-5	8/12/98	ND<1.0	1,120	670	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B3-10	8/12/98	2.1	1,990	1,030	ND<0.005	ND<0.005	0.011	0.064	0.064	
FF-B3-15	8/12/98	ND<1.0	1,160	580	ND<0.005	ND<0.005	ND<0.005	0.016	0.016	
FF-B3-20	8/12/98	5.4	1,200	540	0.019	0.038	0.033	0.064	0.064	
FF-B3-25	8/12/98	ND<1.0	341	150	ND<0.005	ND<0.005	ND<0.005	0.013	0.013	
FF-B3-30	8/12/98	ND<1.0	353	158	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B4-3	8/12/98	ND<1.0	1,040	610	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	
FF-B4-5	8/12/98	ND<1.0	740	280	ND<0.005	ND<0.005	0.058	0.057	0.057	
FF-B4-10	8/12/98	ND<1.0	280	53	0.042	ND<0.005	0.083	0.137	0.137	
FF-B4-15	8/12/98	5.5	1,620	910	0.578	0.055	0.136	0.271	0.271	
FF-B4-20	8/12/98	20	1,990	1,250	1.790	0.601	0.385	1.10	1.10	
FF-B4-25	8/12/98	12	1,770	1,210	0.874	0.858	0.227	0.776	0.776	
FF-B4-30	8/12/98	14	1,360	850	0.995	0.936	0.221	0.734	0.734	
FF-B4-35	8/12/98	332	1,710	640	15.900	20.20	5.28	20.30	20.30	
FF-B4-40	8/12/98	20	3,270	1,680	1.630	1.190	0.25	1.21	1.21	
FF-B4-45	8/12/98	11	1,750	840	0.629	0.28	0.069	0.607	0.607	
FF-B4-50	8/12/98	9.3	1,910	1,100	0.252	0.082	0.016	0.172	0.172	
FF-B4-55	8/12/98	5.9	1,110	500	0.049	0.045	ND<0.005	0.158	0.158	

TABLE G-1
 SUMMARY OF HYDROCARBON CHAIN AND BTEX ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



SAMPLE ID.	SAMPLE DATE / RWQCB REMEDICATION GOALS	TPH (EPA 8015)				BTEX (EPA 8020)			
		C ₁ TO C ₁₂ (mg/kg)	C ₁₃ TO C ₂₂ (mg/kg)	C ₂₃₊ (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	
		1,000	10,000	50,000	0.1	unregulated	68	175	
FF-B4-60	8/12/98	4.3	560	204	0.015	0.03	0.01	0.114	
FF-B4-63	8/12/98	1.2	1,660	860	0.019	ND<0.005	0.0096	0.022	
MA-NT-BI-2.5	8/13/98	-	-	-	-	-	-	-	
MA-NT-BI-5.5	8/13/98	ND<1.0	1,630	3,460	-	-	-	-	
MA-NT-BI-8	8/14/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-ST-BI-2.5	8/13/98	-	-	-	-	-	-	-	
MA-ST-BI-5	8/13/98	ND<1.0	427	488	-	-	-	-	
MA-ST-BI-9	8/14/98	ND<1.0	ND<10	48	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-S-BI-2.5	8/14/98	ND<1.0	101	168	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-S-BI-5	8/14/98	ND<1.0	1,010	1,310	-	-	-	-	
MA-S-BI-10	8/14/98	ND<1.0	445	635	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-N-2.5	8/14/98	ND<1.0	ND<10	ND<10	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-N-BI-5	8/14/98	ND<1.0	ND<10	48	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-CP-S-BI-1.5	8/14/98	ND<1.0	133	136	-	-	-	-	
MA-CP-S-BI-4	8/14/98	ND<1.0	510	620	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-SW-BI-5	8/14/98	ND<1.0	129	295	ND<0.005	ND<0.005	ND<0.005	ND<0.010	
MA-SW-BI-8	8/14/98	ND<1.0	242	338	ND<0.005	ND<0.005	ND<0.005	ND<0.010	

NOTES:
 BTEX = benzene, toluene, ethylbenzene, total xylenes
 TPH = total petroleum hydrocarbons
 mg/kg = milligrams per kilogram
 ND<1.0 = not detected at the indicated laboratory detection limit
 - = not analyzed

TABLE G-2
SUMMARY OF DETECTED METALS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



SAMPLE ID. / PRG, 1998	Metals (EPA Method: 6000-7000) milligrams per kilogram (mg/kg)											
	Arsenic 480	Barium 100,000	Cadmium 930	Chromium 64	Cobalt 29,000	Copper 70,000	Lead 1,000	Molybdenum 9,400	Nickel 37,000	Vanadium 13,000	Zinc 100,000	Other Metals 0.2 to 10
S2-T4D-4.5A	2	223	ND<2.5	14.7	5.3	30.3	19.4	8.4	22.8	36.4	74	ND
S2-T4D-3.5A	1	165	ND<2.5	10.6	ND<5	14.7	8.8	ND<5	14	23.9	43.6	ND
S2-T4-SP1	3.8	133	3	17.4	5	24.2	18	8.4	34.2	52.5	72	ND
S2-T4-SP2	-	-	-	-	-	-	-	-	-	-	-	-
S2-T4-DRUM	4.3	143	ND<2.5	11.7	ND<5	68	36.3	ND<5	19.7	27.5	77	ND
S3-DC	ND<1	86	ND<2.5	ND<5	6	31.8	28.2	ND<0.2	26	13.6	78.5	ND
S3-DB-2	3.3	206	2.5	22.6	7	28.5	35.3	7	35.8	47.8	131	ND
S4-HP1-5	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-10	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-15	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-21	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH6-1	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH6-1.8	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH6-3	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH6-4	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH7-3.5	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH10-7	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH10-10	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH10-13	-	-	-	-	-	-	-	-	-	-	-	-
FF-B1-5	-	-	-	-	-	-	-	-	-	-	-	-
FF-B1-10	-	-	-	-	-	-	-	-	-	-	-	-
FF-B1-15	-	-	-	-	-	-	-	-	-	-	-	-
FF-B1-20	-	-	-	-	-	-	-	-	-	-	-	-
FF-B2-3.5	-	-	-	-	-	-	-	-	-	-	-	-
FF-B2-5	-	-	-	-	-	-	-	-	-	-	-	-
FF-B2-10	-	-	-	-	-	-	-	-	-	-	-	-
FF-B2-15	-	-	-	-	-	-	-	-	-	-	-	-

TABLE G-2
SUMMARY OF DETECTED METALS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



SAMPLE ID. / PRG, 1998	Metals (EPA Method 6000-7000) milligrams per kilogram (mg/kg)											
	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Vanadium	Zinc	Other Metals
	480	100,000	930	64	29,000	70,000	1,000	9,400	37,000	13,000	100,000	0.2 to 10
FF-B2-20	-	-	-	-	-	-	-	-	-	-	-	-
FF-B2-25	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-2	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-5	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-10	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-15	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-20	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-25	-	-	-	-	-	-	-	-	-	-	-	-
FF-B3-30	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-3	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-5	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-10	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-15	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-20	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-25	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-30	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-35	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-40	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-45	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-50	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-55	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-60	-	-	-	-	-	-	-	-	-	-	-	-
FF-B4-63	-	-	-	-	-	-	-	-	-	-	-	-
MA-NT-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-NT-B1-5.5	2.8	155	3.6	24.1	6.9	45.1	7.1	27.1	64.5	59	115	ND<10
MA-NT-B1-8	-	-	-	-	-	-	-	-	-	-	-	-
MA-ST-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-

TABLE G-2
SUMMARY OF DETECTED METALS ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



SAMPLE ID. / PRG, 1998	Metals (EPA Method 6000-7000) milligrams per kilogram (mg/kg)											
	Arsenic 480	Barium 100,000	Cadmium 930	Chromium 64	Cobalt 29,000	Copper 70,000	Lead 1,000	Molybdenum 9,400	Nickel 37,000	Vanadium 15,000	Zinc 100,000	Other Metals 0.2 to 10
MA-ST-B1-5	2.5	268	4.7	39.5	7.5	50	6.2	22.9	75.5	84	133	ND<10
MA-ST-B1-9	-	-	-	-	-	-	-	-	-	-	-	-
MA-S-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-S-B1-5	3	163	4.1	37.8	7.3	47.7	6.2	26.1	73	82	127	ND<10
MA-S-B1-10	-	-	-	-	-	-	-	-	-	-	-	-
MA-N-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-N-B1-5	-	-	-	-	-	-	-	-	-	-	-	-
MA-CP-S-B1-1	3.3	145	6.9	28.3	7.2	37.4	8	28.4	62.5	72	98.5	ND<10
MA-CP-S-B1-4	-	-	-	-	-	-	-	-	-	-	-	-
MA-SW-B1-5	-	-	-	-	-	-	-	-	-	-	-	-
MA-SW-B1-8	-	-	-	-	-	-	-	-	-	-	-	-

NOTES:
 All results reported in milligrams per kilogram (mg/kg)
 ND<1 - not detected at the indicated laboratory detection limit
 - - not analyzed

TABLE G-3
SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



Sample ID / PRG 1998	PAHS (EPA 8310) milligrams per kilogram (mg/kg)													
	Acenaph- thene	Anthracene	Benzo (a) pyrene	Benzo (h) fluor- anthene	Benzo (ghi) perylene	Benzo (k) fluor- anthene	Dibenz (a,h) anthracene	Fluoran- thene	Fluorene	Indeno (1,2,3- cd) pyrene	Naphthalene	Phenan- threne	Pyrene	Others
	28,000	220,000	0.56	3.6	un-regulated	56	0.56	57,000	22,000	3.6	190	un-regulated	26,000	
S2-T4D-4.5A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S2-T4D-3.5A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S2-T4-SP1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S2-T4-SP2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S2-T4-DRUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S3-DC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S3-DB-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S4-HP1-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FF-PH6-1	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-PH6-1.8	ND<0.02	ND<0.02	ND<0.02	0.647	ND<0.02	ND<0.02	ND<0.02	0.089	1.13	ND<0.02	6.97	1.62	0.209	ND
FF-PH6-3	ND<0.02	ND<0.02	ND<0.02	0.261	ND<0.02	ND<0.02	ND<0.02	0.082	1.1	ND<0.02	8.65	2.12	0.124	ND
FF-PH6-4	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-PH7-3.5	ND<0.02	ND<0.02	ND<0.02	0.812	ND<0.02	ND<0.02	0.355	0.09	1.17	ND<0.02	ND<0.02	0.85	0.136	ND
FF-PH10-7	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-PH10-10	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-PH10-13	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B1-5	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.043	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.025	ND<0.02	ND
FF-B1-10	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.024	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B1-15	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B1-20	ND<0.02	ND<0.02	ND<0.02	0.025	ND<0.02	ND<0.02	0.037	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B2-3.5	ND<0.02	ND<0.02	ND<0.02	0.035	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B2-5	ND<0.02	ND<0.02	ND<0.02	0.024	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B2-10	ND<0.02	ND<0.02	ND<0.02	0.036	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND

TABLE G-3
 SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



Sample ID / PRG, 1998	PAHS (EPA 8310) milligrams per kilogram (mg/kg)													
	Acenaphthene	Anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (ghi) perylene	Benzo (k) fluoranthene	Dibenzo (ah) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	Others
	28,000	220,000	0.36	3.6	un-regulated	36	0.36	37,000	22,000	3.6	190	un-regulated	26,000	
FF-B2-15	ND<0.02	ND<0.02	ND<0.02	0.021	0.029	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B2-20	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.095	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B2-25	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B3-2	ND<0.02	ND<0.02	ND<0.02	1.53	0.044	ND<0.02	0.074	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
FF-B3-5	ND<0.02	ND<0.02	ND<0.02	4	0.117	ND<0.02	0.163	0.041	ND<0.02	ND<0.02	ND<0.02	0.239	0.057	ND
FF-B3-10	ND<0.02	ND<0.02	ND<0.02	4.57	0.809	ND<0.02	0.478	0.173	ND<0.02	ND<0.02	ND<0.02	3.27	0.203	ND
FF-B3-15	ND<0.02	0.022	0.023	2.93	ND<0.02	ND<0.02	ND<0.02	0.079	1.48	ND<0.02	0.177	2.13	0.097	ND
FF-B3-20	ND<0.02	ND<0.02	ND<0.02	2.29	ND<0.02	ND<0.02	0.13	0.122	0.664	ND<0.02	0.432	1.91	0.071	ND
FF-B3-25	ND<0.02	ND<0.02	ND<0.02	0.03	ND<0.02	ND<0.02	0.036	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.103	ND<0.02	ND
FF-B3-30	ND<0.02	ND<0.02	ND<0.02	0.049	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.115	ND<0.02	ND
FF-B4-3	0.355	ND<0.02	0.096	3.92	0.221	0.042	0.203	0.226	0.285	ND<0.02	ND<0.02	1.16	0.504	ND
FF-B4-5	ND<0.02	ND<0.02	ND<0.02	2.14	ND<0.02	ND<0.02	0.1	0.085	0.39	ND<0.02	3.5	0.912	0.189	ND
FF-B4-10	ND<0.02	ND<0.02	ND<0.02	0.592	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.378	0.1	ND<0.02	ND
FF-B4-15	ND<0.02	ND<0.02	ND<0.02	1.1	0.059	ND<0.02	0.091	0.025	0.238	ND<0.02	1.77	0.514	0.033	ND
FF-B4-20	ND<0.02	ND<0.02	0.029	1.48	ND<0.02	ND<0.02	0.116	0.069	0.289	ND<0.02	2.29	0.911	0.114	ND
FF-B4-25	ND<0.02	ND<0.02	0.02	0.589	ND<0.02	ND<0.02	0.095	0.038	0.077	ND<0.02	0.764	0.298	0.045	ND
FF-B4-30	ND<0.02	ND<0.02	0.023	0.573	ND<0.02	ND<0.02	0.096	0.032	0.03	ND<0.02	0.714	0.261	0.04	ND
FF-B4-35	ND<0.02	0.037	ND<0.02	5.88	ND<0.02	ND<0.02	0.134	0.109	1.11	ND<0.02	5.87	3.19	0.116	ND
FF-B4-40	ND<0.02	0.034	ND<0.02	4.62	ND<0.02	ND<0.02	ND<0.02	0.339	1.23	ND<0.02	6.02	5.13	0.227	ND
FF-B4-45	ND<0.02	ND<0.02	0.035	2.04	ND<0.02	ND<0.02	ND<0.02	0.086	0.49	ND<0.02	2.65	2.21	0.105	ND
FF-B4-50	ND<0.02	ND<0.02	0.028	1.71	ND<0.02	ND<0.02	ND<0.02	0.081	0.443	ND<0.02	0.59	1.91	0.068	ND
FF-B4-55	0.053	ND<0.02	0.024	1.5	ND<0.02	ND<0.02	ND<0.02	0.083	ND<0.02	ND<0.02	ND<0.02	1.07	0.061	ND
FF-B4-60	ND<0.02	ND<0.02	ND<0.02	0.79	ND<0.02	ND<0.02	0.081	0.063	0.246	ND<0.02	ND<0.02	0.694	0.052	ND
FF-B4-63	0.023	ND<0.02	ND<0.02	6.09	ND<0.02	ND<0.02	0.136	0.058	ND<0.02	0.055	0.164	0.447	0.027	ND
MA-NI-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-NI-B1-5.5	ND<0.02	ND<0.02	ND<0.02	0.913	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	0.35	ND<0.02	ND

TABLE G-3
SUMMARY OF DETECTED POLYCYCLIC AROMATIC HYDROCARBON ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



Sample ID./PRG, 1998	PAHS (EPA 8310) milligrams per kilogram (mg/kg)													
	Acenaph- thene	Anthracene	Benzo (a) pyrene	Benzo (b) fluor- anthene	Benzo (g,h,i) perylene	Benzo (k) fluor- anthene	Dibenzo (a,h) anthracene	Fluoran- thene	Fluorene	Indeno (1,2,3- cd) pyrene	Naphthalene	Phenan- threne	Pyrene	Others
MA-NT-B1-8	28,000	220,000	0.36	3.6	un-regulated	36	0.36	37,000	22,000	3.6	190	un-regulated	26,000	-
MA-ST-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-ST-B1-5	ND<0.02	ND<0.02	ND<0.02	0.613	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
MA-ST-B1-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-S-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-S-B1-5	ND<0.02	ND<0.02	ND<0.02	0.338	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
MA-S-B1-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-N-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-N-B1-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-CP-S-B1-1.5	ND<0.02	ND<0.02	ND<0.02	0.051	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND
MA-CP-S-B1-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-SW-B1-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MA-SW-B1-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES:
 PAHs = polycyclic aromatic hydrocarbons
 All results reported in milligrams per kilogram (mg/kg)
 ND<0.02 = not detected at the indicated laboratory detection limit
 - = not analyzed

TABLE G-4
 SUMMARY OF DETECTED VOLATILE ORGANIC COMPOUNDS
 SEMI-VOLATILE ORGANIC COMPOUNDS AND PCBs ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



Sample ID. / PRG, 1998	VOCS (EPA 8240)						SVOCS (EPA 8270)						PCBS (EPA 8080)	
	Acetone	2-Butanone	Toluene	MTBE	Others	Fluoranthene	Pyrene	Benzo (g,h,i) perylene	Chrysene	Others	PCBs	PCBs		
	6.100	un-regulated	520	un-regulated		37,000	26,000	un-regulated	360			13		
S2-T4D-4.5A	ND<0.050	ND<0.050	0.011	0.0116	ND	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.1		
S2-T4D-3.5A	ND<0.050	ND<0.050	ND<0.01	0.0163	ND	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.1		
S2-T4-SP1	ND<0.050	ND<0.050	ND<0.01	ND<0.01	ND	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.1		
S2-T4-SP2	-	-	-	-	-	-	-	-	-	-	-	-		
S2-T4-DRUM	ND<0.050	ND<0.050	ND<0.01	0.0324	ND	2.0	5.0	1.0	2.0	ND<0.5	ND<0.5	ND<0.1		
S3-DC	0.184	ND<0.050	0.0193	ND<0.01	ND	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.1		
S3-DB-2	ND<0.050	ND<0.050	0.0109	ND<0.01	ND	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.1		
S4-HP1-5	-	-	-	-	-	-	-	-	-	-	-	-		
S4-HP1-10	-	-	-	-	-	-	-	-	-	-	-	-		
S4-HP1-15	-	-	-	-	-	-	-	-	-	-	-	-		
S4-HP1-21	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH6-1	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH6-1.8	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH6-3	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH6-4	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH7-3.5	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH10-7	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH10-10	-	-	-	-	-	-	-	-	-	-	-	-		
FF-PH10-13	-	-	-	-	-	-	-	-	-	-	-	-		
FF-B1-5	-	-	-	-	-	-	-	-	-	-	-	-		
FF-B1-10	-	-	-	-	-	-	-	-	-	-	-	-		
FF-B1-15	-	-	-	-	-	-	-	-	-	-	-	-		
FF-B1-20	-	-	-	-	-	-	-	-	-	-	-	-		
FF-B2-3.5	-	-	-	-	-	-	-	-	-	-	-	-		
FF-B2-5	-	-	-	-	-	-	-	-	-	-	-	-		

QA/QC: JL
 DATE: 1/5/18
 F:\ENVOC\SIS\CGT-20\NRTH1986\ab-data

TABLE G-4
 SUMMARY OF DETECTED VOLATILE ORGANIC COMPOUNDS
 SEMI-VOLATILE ORGANIC COMPOUNDS AND PCBs ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



Sample ID, / PRG, 1998	VOCS (EPA 8240)				SVOCs (EPA 8270)				PCBS (EPA 8080)		
	Acetone	2-Butanone	Toluene	MIBL	Others	Fluoranthene	Pyrene	Benzo (g,h,i) perylene		Chrysene	Others
	6,100	un-regulated	520	un-regulated		37,000	26,000	un-regulated	360		13
FF-B2-10	-	-	-	-	-	-	-	-	-	-	-
FF-B2-15	-	-	-	-	-	-	-	-	-	-	-
FF-B2-20	-	-	-	-	-	-	-	-	-	-	-
FF-B2-25	-	-	-	-	-	-	-	-	-	-	-
FF-B3-2	-	-	-	-	-	-	-	-	-	-	-
FF-B3-5	-	-	-	-	-	-	-	-	-	-	-
FF-B3-10	-	-	-	-	-	-	-	-	-	-	-
FF-B3-15	-	-	-	-	-	-	-	-	-	-	-
FF-B3-20	-	-	-	-	-	-	-	-	-	-	-
FF-B3-25	-	-	-	-	-	-	-	-	-	-	-
FF-B3-30	-	-	-	-	-	-	-	-	-	-	-
FF-B4-3	-	-	-	-	-	-	-	-	-	-	-
FF-B4-5	-	-	-	-	-	-	-	-	-	-	-
FF-B4-10	-	-	-	-	-	-	-	-	-	-	-
FF-B4-15	-	-	-	-	-	-	-	-	-	-	-
FF-B4-20	-	-	-	-	-	-	-	-	-	-	-
FF-B4-25	-	-	-	-	-	-	-	-	-	-	-
FF-B4-30	-	-	-	-	-	-	-	-	-	-	-
FF-B4-35	-	-	-	-	-	-	-	-	-	-	-
FF-B4-40	-	-	-	-	-	-	-	-	-	-	-
FF-B4-45	-	-	-	-	-	-	-	-	-	-	-
FF-B4-50	-	-	-	-	-	-	-	-	-	-	-
FF-B4-55	-	-	-	-	-	-	-	-	-	-	-
FF-B4-60	-	-	-	-	-	-	-	-	-	-	-
FF-B4-63	-	-	-	-	-	-	-	-	-	-	-

QA/QC: JL
 DATE: 10/5/98
 F:\ENVDOCS\SGIT-2\NTR\1199\lab-data

TABLE G-4
 SUMMARY OF DETECTED VOLATILE ORGANIC COMPOUNDS
 SEMI-VOLATILE ORGANIC COMPOUNDS AND PCBs ANALYTICAL RESULTS
 Southern California Gas Company
 Aliso Canyon Storage Facility
 Northridge, California



Sample ID. / PRG, 1998	VOCS (EPA 8240)					SVOCS (EPA 8270)					PCBS (EPA 8080)	
	Acetone 6.100	2-Butanone un-regulated	Toluene 520	MIBE un-regulated	Others	Fluoranthene 37,000	Pyrene 26,000	Benzo (g,h,i) perylene un-regulated	Chrysene 360	Others	PCBs	
MA-NT-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-NT-B1-5.5	ND<0.050	ND<0.050	ND<0.01	ND<0.01	ND	-	-	-	-	-	-	-
MA-NT-B1-8	-	-	-	-	-	-	-	-	-	-	-	-
MA-ST-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-ST-B1-5	ND<0.050	ND<0.050	ND<0.01	ND<0.01	ND	-	-	-	-	-	-	-
MA-ST-B1-9	-	-	-	-	-	-	-	-	-	-	-	-
MA-S-B1-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-S-B1-5	ND<0.050	ND<0.050	ND<0.01	ND<0.01	ND	-	-	-	-	-	-	-
MA-S-B1-10	-	-	-	-	-	-	-	-	-	-	-	-
MA-N-2.5	-	-	-	-	-	-	-	-	-	-	-	-
MA-N-B1-5	-	-	-	-	-	-	-	-	-	-	-	-
MA-CP-S-B1-1.5	0.385	0.059	ND<0.01	ND<0.01	ND	-	-	-	-	-	-	-
MA-CP-S-B1-4	-	-	-	-	-	-	-	-	-	-	-	-
MA-SW-B1-5	-	-	-	-	-	-	-	-	-	-	-	-
MA-SW-B1-8	-	-	-	-	-	-	-	-	-	-	-	-

NOTES:
 VOCs = volatile organic compounds
 SVOCS = semi-volatile organic compounds
 PCBs = polychlorinated biphenyls
 All results reported in milligrams per kilogram (mg/kg)
 ND<0.050 = not detected at the indicated laboratory detection limit
 - = not analyzed

EXHIBIT H

EXHIBIT H

LABORATORY REPORTS
(1998)



American Environmental Testing Laboratory Inc.
 2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
 Fax (818) 845-8840

AETL JOB# 10464

PAGE 1 OF 3

CHAIN OF CUSTODY RECORD

CLIENT: John Prince
 Southern California Gas Company
 ADDRESS: Box 3249, ML 2033, Los Angeles, CA 90057-1249
 SITE: Aliso Canyon
 CONTACT PERSON: Max Pechenik, Env America
 PROJECT NAME: Aliso Canyon
 PROJECT NUMBER:
 TELEPHONE: (213) 244-5517
 FAX:

ANALYSIS REQUESTED

ARCHIVE
 TPH Carbon check
 BTEX-8020
 PAH-8310

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	LIQUID WASTE	OTHER		
S4-HP1-5		8/12/98	0835	6" / 10" / 10"	X			X	
S4-HP1-10			0840		X			X	
S4-HP1-15			0845		X			X	
S4-HP1-21			0930		X			X	
FF-B1-5	AE50979		1035		X			X	
FF-B1-10	AE50980		1038		X			X	
FF-B1-15	AE50981		1043		X			X	
FF-B1-20	AE50982		1045		X			X	
FF-B2-35	AE50983		1120		X			X	
FF-B2-5	AE50984		1125		X			X	
FF-B2-10	AE50985		1130		X			X	
FF-B2-15	AE50986		1135		X			X	

Collected By: D.G.M. Date 8/12/98 Time 1135
 Relinquished By: D.G.M. Date 8/13/98 Time 0745
 Delivered By: Axel G. Hume Date 8/13/98 Time 745
 Received For Laboratory: [Signature] Date 8/13/98 Time 8:30

Turn Around Time Normal Rush



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 Fax (818) 845-8840

AETL JOB# 10464 PAGE 2 OF 3

CHAIN OF CUSTODY RECORD

CLIENT: John Prince TELEPHONE: (213) 244-5577

Southern California Gas Company FAX:

ADDRESS: Box 3249, ML 2083, Los Angeles, CA 90057-1249

SITE: Aliso Canyon

CONTACT PERSON: Max Reyhani - Env America PROJECT NAME: Aliso Canyon PROJECT NUMBER:

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	SOLID LIQUID WASTE OTHER		
FF-B2-20	AES0987	8/12/98	1140	6" / SS	X				
FF-B3-2	AES0988		1205		X				
FF-B3-5	AES0989		1225		X				
FF-B3-10	AES0990		1229		X				
FF-B3-15	AES0991		1234		X				
FF-B3-20	AES0992		1237		X				
FF-B4-3	AES0993		1345		X				
FF-B4-5	AES0994		1350		X				
FF-B4-10	AES0995		1355		X				
FF-B4-15	AES0996		1400		X				
FF-B4-20	AES0997		1410		X				
FF-B4-25	AES0998		1415		X				

ANALYSIS REQUESTED

TRH carbon check
 BTEX
 PAH-8310

Collected By: [Signature] Date 8/12/98 Time 1415 Delivered By: APL Guter Date 8/13/98 Time 7:45

Relinquished By: [Signature] Date 8/13/98 Time 7:15 Received For Laboratory: [Signature] Date 8/13/98 Time 8:30

Turn Around Time Normal Rush



American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10464

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-18-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020
DETECTION LIMIT		5	5	5	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS
AE50979	FF-B1-5	ND	ND	ND	11
AE50980	FF-B1-10	ND	ND	ND	ND
AE50981	FF-B1-15	ND	ND	ND	ND
AE50982	FF-B1-20	ND	ND	5.7	22
AE50983	FF-B2-3.5	ND	ND	ND	ND
AE50984	FF-B2-5	ND	ND	ND	ND
AE50985	FF-B2-10	ND	ND	ND	ND
AE50986	FF-B2-15	ND	ND	ND	ND
AE50987	FF-B2-20	ND	ND	ND	ND
AE50988	FF-B3-2	ND	ND	5.7	35
AE50989	FF-B3-5	ND	ND	ND	ND
AE50990	FF-B3-10	ND	ND	11	64
AE50991	FF-B3-15	ND	ND	ND	16
AE50992	FF-B3-20	19	38	33	64
AE50993	FF-B4-3	ND	ND	ND	ND
AE50994	FF-B4-5	ND	ND	58	57
AE50995	FF-B4-10	42	ND	83	137
AE50996	FF-B4-15	578	55	136	271
AE50997	FF-B4-20	1,790	601	385	1,100
AE50998	FF-B4-25	874	858	227	776
AE50999	M. Blank	ND	ND	ND	ND

ND = Not Detected at the detection limit.

CR
Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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3

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10464

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-19-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		GASOLINE C ₁ - C ₁₂	DIESEL C ₁₃ - C ₂₂	HEAVY HC C ₂₃₊
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS
AE50979	FF-B1-5	ND	98	26
AE50980	FF-B1-10	ND	110	72
AE50981	FF-B1-15	ND	ND	ND
AE50982	FF-B1-20	ND	100	60
AE50983	FF-B2-3.5	ND	22	30
AE50984	FF-B2-5	ND	ND	24
AE50985	FF-B2-10	ND	24	51
AE50986	FF-B2-15	ND	101	74
AE50987	FF-B2-20	ND	26	55
AE50988	FF-B3-2	1.1	1,230	910
AE50989	FF-B3-5	ND	1,120	670
AE50990	FF-B3-10	2.1	1,990	1,030
AE50991	FF-B3-15	ND	1,160	580
AE50992	FF-B3-20	5.4	1,200	540
AE50993	FF-B4-3	ND	1,040	610
AE50994	FF-B4-5	ND	740	280
AE50995	FF-B4-10	ND	280	53
AE50996	FF-B4-15	5.5	1,620	910
AE50997	FF-B4-20	20	1,990	1,250
AE50998	FF-B4-25	12	1,770	1,210
AE50999	M. Blank	ND	ND	ND

ND = Not Detected at the detection limit


 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10464

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-18-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8310

Lab ID	AE50979	AE50980	AE50981	AE50982	AE50983	AE50984	AE50985
Client Sample ID	FF-B1-5	FF-B1-10	FF-B1-15	FF-B1-20	FF-B2-3.5	FF-B2-5	FF-B2-10
Date Sampled	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Date Analyzed	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	ND	ND	0.025	0.035	0.024
Benzo (g,h,i) perylene	0.020	ND	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	0.043	0.024	ND	0.037	ND	ND
Fluoranthene	0.020	ND	ND	ND	ND	ND	ND
Fluorene	0.020	ND	ND	ND	ND	ND	ND
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND	ND	ND
Phenanthrene	0.020	0.025	ND	ND	ND	ND	ND
Pyrene	0.020	ND	ND	ND	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit

Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10464

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-18-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8310

Lab ID	AE50986	AE50987	AE50988	AE50989	AE50990	AE50991	AE50992
Client Sample ID	FF-B2-15	FF-B2-20	FF-B3-2	FF-B3-5	FF-B3-10	FF-B3-15	FF-B3-20
Date Sampled	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Date Analyzed	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	2#	4#	1	2#
Analyte	DL	Results	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	0.022	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND	0.023	ND
Benzo (b) fluoranthene	0.020	0.021	ND	1.53*	4.00*	4.57*	2.93*
Benzo (g,h,i) perylene	0.020	0.029	ND	0.044	0.117	0.809	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	ND	0.095	0.074	0.163	0.478	0.130
Fluoranthene	0.020	ND	ND	ND	0.041	0.173	0.079
Fluorene	0.020	ND	ND	ND	ND	1.18	1.48*
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND	0.177	0.432
Phenanthrene	0.020	ND	ND	ND	0.239	3.27*	2.13*
Pyrene	0.020	ND	ND	ND	0.057	0.203	0.097

ND = Not Detected at the detection limit

DL = Detection Limit

#Detection limit should be increased by the same factor.

*Detection Limit Multiplier is 10.

ca
Cyrus Razmara, Ph.D.
Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10464

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-20-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8310

Lab ID	AE50993	AE50994	AE50995	AE50996	AE50997	AE50998	AE50999
Client Sample ID	FF-B4-3	FF-B4-5	FF-B4-10	FF-B4-15	FF-B4-20	FF-B4-25	M. Blank
Date Sampled	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Date Analyzed	08-18-98	08-18-98	08-20-98	08-20-98	08-20-98	08-20-98	08-20-98
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	2#	2#	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results	Results
Acenaphthene	0.020	0.355	ND	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	0.096	ND	ND	ND	0.029	0.020
Benzo (b) fluoranthene	0.020	3.92*	2.14*	0.592	1.10*	1.48*	0.589
Benzo (g,h,i) perylene	0.020	0.221	ND	ND	0.059	ND	ND
Benzo (k) fluoranthene	0.020	0.042	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	0.203	0.100	ND	0.091	0.116	0.095
Fluoranthene	0.020	0.226	0.085	ND	0.025	0.069	0.038
Fluorene	0.020	0.285	0.390	ND	0.238	0.289	0.077
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND	ND	ND
Naphthalene	0.020	ND	3.50*	0.378	1.77*	2.29*	0.764**
Phenanthrene	0.020	1.16	0.912	0.100	0.514	0.911	0.298
Pyrene	0.020	0.504	0.189	ND	0.033	0.114	0.045

ND = Not Detected at the detection limit

DL = Detection Limit

#Detection limit should be increased by the same factor.

*Detection Limit Multiplier is 10.

**Detection Limit Multiplier is 5.

ca
 Cyrus Razmara, Ph.D.
 Laboratory Director



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 7

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50979	AE50980	AE50981	AE50982	Detection Limit
Sample No:	FF-B1-5	FF-B1-10	FF-B1-15	FF-B1-20	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	5.7	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	11	ND	ND	22	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50979	AE50980	AE50981	AE50982
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	64	60	60	72
Trifluorotoluene	70	76	78	78
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	102	100	2	
Ethylbenzene	98	96	2.1	
Toluene	102	100	2	
M- Xylene	97	95	2.1	
O- Xylene	106	104	1.9	

Comment to Sample(s)

AE50979: AE50980, AE50981: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit

AC_RWQCB_0001041



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50983	AE50984	AE50985	AE50986	
Sample No:	FF-B2-3.5	FF-B2-5	FF-B2-10	FF-B2-15	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Detection Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50983	AE50984	AE50985	AE50986
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	47	56	57	61
Trifluorotoluene	63	67	70	70
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	102	100	2	
Ethylbenzene	98	96	2.1	
Toluene	102	100	2	
M- Xylene	97	95	2.1	
O- Xylene	106	104	1.9	

Comment to Sample(s)

AE50983: AE50984; Low surrogate recovery due to matrix interference.
AE50985: AE50986: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50987	AE50988	AE50989	AE50990	
Sample No:	FF-B2-20	FF-B3-2	FF-B3-5	FF-B3-10	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	5.7	ND	11	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	35	ND	64	10
TPH as Gasoline or Light HCs	ND	1.1	ND	2.1	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50987	AE50988	AE50989	AE50990
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	52	44	16	53
Trifluorotoluene	69	62	40	53
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	102	100	2	
Ethylbenzene	98	96	2.1	
Toluene	102	100	2	
M- Xylene	97	95	2.1	
O- Xylene	106	104	1.9	

Comment to Sample(s)

AE50987: AE50988: Low surrogate recovery due to matrix interference.
AE50989: AE50990: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 10

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50991	AE50992	AE50993	AE50994	Detection Limit
Sample No:	FF-B3-15	FF-B3-20	FF-B4-3	FF-B4-5	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	
Benzene	ND	19	ND	ND	5
Ethylbenzene	ND	33	ND	58	5
Toluene	ND	38	ND	ND	5
Xylenes (Total)	16	64	ND	57	10
TPH as Gasoline or Light HCs	ND	5.4	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50991	AE50992	AE50993	AE50994
Surrogate Percent Recovery				
Bromofluorobenzene	34	61	22	47
Trifluorotoluene	43	60	45	54
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	90	98	8.5	
Ethylbenzene	91	97	6.4	
Toluene	97	102	5	
M- Xylene	91	97	6.4	
O- Xylene	102	108	5.7	

Comment to Sample(s)

AE50991: AE50992: Low surrogate recovery due to matrix interference.
AE50993: AE50994: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50995	AE50996	AE50997	AE50998	
Sample No:	FF-B4-10	FF-B4-15	FF-B4-20	FRF-B4-25	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Detection Limit
Benzene	42	578	1790	874	5
Ethylbenzene	83	136	385	227	5
Toluene	ND	55	601	858	5
Xylenes (Total)	137	271	1100	776	10
TPH as Gasoline or Light HCs	ND	5.5	20	12	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50995	AE50996	AE50997	AE50998
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	45	66	82	76
Trifluorotoluene	52	60	64	62
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	90	98	8.5	
Ethylbenzene	91	97	6.4	
Toluene	97	102	5	
M- Xylene	91	97	6.4	
O- Xylene	102	108	5.7	

Comment to Sample(s)

AE50995: AE50996: Low surrogate recovery due to matrix interference.
AE50997: AE50998: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 12

AETL Job No: 10464
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50999	
Sample No:	METHOD BLANK	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE50999

Surrogate Percent Recovery

Bromofluorobenzene	81
Trifluorotoluene	90

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	90	98	8.5
Ethylbenzene	91	97	6.4
Toluene	97	102	5
M- Xylene	91	97	6.4
O- Xylene	102	108	5.7

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

Job No: 10464
Client Name: Aliso Canyon

Page: 13 .4

To: (SC/G)
Southern California Gas Company
55 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

John Prince
Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

No:	AE50999		
Sampled:	METHOD BLANK		
Extracted:	08/12/98		
Analyzed:	08/18/98	Detection Limit	Detection Limit
Gasoline or Light HCs	ND	5	10
Benzene	ND	5	
Toluene	ND	5	
Xylenes (Total)	ND	10	
Gasoline or Light HCs	ND	1.0 (mg/Kg)	

QUALITY CONTROL SUMMARY

Job No: AE50999

Spiked Percent Recovery
Fluorobenzene
o-x-toluene

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Fluorobenzene	102	100	2
o-x-toluene	98	96	2.1
m-x-toluene	102	100	2
p-x-toluene	97	95	2.1
o-x-toluene	106	104	1.9

Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50983	AE50984	AE50985	AE50986	
Sample No:	FF-B2-3.5	FF-B2-5	FF-B2-10	FF-B2-15	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Limit
TPH as Diesel and Heavier HC	52	24	75	175	10

QUALITY CONTROL SUMMARY

Lab ID:	AE50983	AE50984	AE50985	AE50986
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	103	76	81	88
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Diesel	100	105	5	

Comment to Sample(s)

AE50983: (C12-C23) = 22mg/Kg; (C23+) = 30mg/Kg.
AE50984: (C12-C23) = ND; (C23+) = 24mg/Kg.
AE50985: (C12-C23) = 24mg/Kg; (C23+) = 51mg/Kg.
AE50986: (C12-C23) = 101mg/Kg; (C23+) = 74mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50991	AE50992	AE50993	AE50994	
Sample No:	FF-B3-15	FF-B3-20	FF-B4-3	FF-B4-5	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Limit
TPH as Diesel and Heavier HC	1740	1740	1650	1020	10

QUALITY CONTROL SUMMARY

Lab ID:	AE50991	AE50992	AE50993	AE50994
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	94	94	102	92
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Diesel	100	105	5	

Comment to Sample(s)

AE50991: (C12-C23) = 1160mg/Kg; (C23+) = 580mg/Kg.
AE50992: (C12-C23) = 1200mg/Kg; (C23+) = 540mg/Kg.
AE50993: (C12-C23) = 1040mg/Kg; (C23+) = 610mg/Kg.
AE50994: (C12-C23) = 740mg/Kg; (C23+) = 280mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50995	AE50996	AE50997	AE50998	
Sample No:	FF-B4-10	FF-B4-15	FF-B4-20	FF-B4-25	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/19/98	08/19/98	08/19/98	08/19/98	Detection Limit
TPH as Diesel and Heavier HC	333	2530	3240	2980	10

QUALITY CONTROL SUMMARY

Lab ID:	AE50995	AE50996	AE50997	AE50998
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	84	88	91	91
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
Diesel	110	102	7.5	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	

Comment to Sample(s)

AE50995: (C12-C23) = 280mg/Kg; (C23+) = 53mg/Kg.
AE50996: (C12-C23) = 1620mg/Kg; (C23+) = 910mg/Kg.
AE50997: (C12-C23) = 1990mg/Kg; (C23+) = 1250mg/Kg.
AE50998: (C12-C23) = 1770mg/Kg; (C23+) = 1210mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50999	
Sample No:	METHOD BLANK	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/19/98	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE50999		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	108		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	102	7.5

ND - Not Detected at The Detection Limit

AC_RWQCB_0001051



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50999	
Sample No:	METHOD BLANK	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE50999		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	107		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	100	105	5

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50979	AE50980	AE50981	AE50982	Detection Limit
Sample No:	FF-B1-5	FF-B1-10	FF-B1-15	FF-B1-20	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	
Benzo(a)anthracene	ND	ND	ND	ND	0.020
Benzo(a)pyrene	ND	ND	ND	ND	0.020
Benzo(b)fluoranthene	ND	ND	ND	0.025	0.020
Benzo(k)fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo(a,h)anthracene	0.043	0.024	ND	0.037	0.020
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo(ghi)perylene	ND	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	0.025	ND	ND	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE50979	AE50980	AE50981	AE50982
<u>Surrogate Percent Recovery</u>				
P- Terphenyl-d14	116	95	101	103
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzo(a)anthracene	104	92	12.2	
Benzo(a)pyrene	97	91	6.4	
Naphthalene	106	101	4.8	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50983	AE50984	AE50985	AE50986	
Sample No:	FF-B2-3.5	FF-B2-5	FF-B2-10	FF-B2-15	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Detection Limit
Benzo (a) anthracene	ND	ND	ND	ND	0.020
Benzo (a) pyrene	ND	ND	ND	ND	0.020
Benzo (b) fluoranthene	0.035	0.024	0.036	0.021	0.020
Benzo (k) fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	0.029	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE50983	AE50984	AE50985	AE50986
<u>Surrogate Percent Recovery</u>				
P- Terphenyl-d14	99	101	99	109
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzo (a) anthracene	104	92	12.2	
Benzo (a) pyrene	97	91	6.4	
Naphthalene	106	101	4.8	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50987	
Sample No:	FF-B2-20	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	ND	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	0.095	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50987

Surrogate Percent Recovery
P- Terphenyl-d14 109

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50988		
Sample No:	FF-B3-2		
Date Sampled:	08/12/98		
Date Extracted:	08/18/98	Detection	
Date Analyzed:	08/18/98	Limit	

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	1.53	0.200
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	0.074	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	0.044	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50988

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50988: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50989	
Sample No:	FF-B3-5	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzo (a) anthracene	ND	0.040
Benzo (a) pyrene	ND	0.040
Benzo (b) fluoranthene	4.00	0.200
Benzo (k) fluoranthene	ND	0.040
Chrysene	ND	0.040
Dibenzo (a, h) anthracene	0.163	0.040
Indeno (1, 2, 3-cd) pyrene	ND	0.040
Acenaphthene	ND	0.040
Acenaphthylene	ND	0.040
Anthracene	ND	0.040
Benzo (ghi) perylene	0.117	0.040
Fluoranthene	0.041	0.040
Fluorene	ND	0.040
Naphthalene	ND	0.040
Phenanthrene	0.239	0.040
Pyrene	0.057	0.040

QUALITY CONTROL SUMMARY

Lab ID: AE50989

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50989: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 26

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50990	
Sample No:	FF-B3-10	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzo (a) anthracene	ND	0.080
Benzo (a) pyrene	ND	0.080
Benzo (b) fluoranthene	4.57	0.200
Benzo (k) fluoranthene	ND	0.080
Chrysene	ND	0.080
Dibenzo (a, h) anthracene	0.478	0.080
Indeno (1, 2, 3-cd) pyrene	ND	0.080
Acenaphthene	ND	0.080
Acenaphthylene	ND	0.080
Anthracene	ND	0.080
Benzo (ghi) perylene	0.809	0.080
Fluoranthene	0.173	0.080
Fluorene	1.18	0.080
Naphthalene	ND	0.080
Phenanthrene	3.27	0.200
Pyrene	0.203	0.080

QUALITY CONTROL SUMMARY

Lab ID: AE50990

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50990: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 27

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50991	
Sample No:	FF-B3-15	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	0.023	0.020
Benzo (b) fluoranthene	2.93	0.200
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	0.022	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.079	0.020
Fluorene	1.48	0.200
Naphthalene	0.177	0.020
Phenanthrene	2.13	0.200
Pyrene	0.097	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50991

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50991: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50992	
Sample No:	FF-B3-20	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzo (a) anthracene	ND	0.040
Benzo (a) pyrene	ND	0.040
Benzo (b) fluoranthene	2.29	0.200
Benzo (k) fluoranthene	ND	0.040
Chrysene	ND	0.040
Dibenzo (a, h) anthracene	0.130	0.040
Indeno (1, 2, 3-cd) pyrene	ND	0.040
Acenaphthene	ND	0.040
Acenaphthylene	ND	0.040
Anthracene	ND	0.040
Benzo (ghi) perylene	ND	0.040
Fluoranthene	0.122	0.040
Fluorene	0.664	0.040
Naphthalene	0.432	0.040
Phenanthrene	1.91	0.200
Pyrene	0.071	0.040

QUALITY CONTROL SUMMARY

Lab ID: AE50992

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50992: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID: AE50993
Sample No: PF-B4-3
Date Sampled: 08/12/98
Date Extracted: 08/18/98
Date Analyzed: 08/18/98
Detection Limit

Benzo (a) anthracene	ND	0.040
Benzo (a) pyrene	0.096	0.040
Benzo (b) fluoranthene	3.92	0.200
Benzo (k) fluoranthene	0.042	0.040
Chrysene	ND	0.040
Dibenzo (a, h) anthracene	0.203	0.040
Indeno (1, 2, 3-cd) pyrene	ND	0.040
Acenaphthene	0.355	0.040
Acenaphthylene	ND	0.040
Anthracene	ND	0.040
Benzo (ghi) perylene	0.221	0.040
Fluoranthene	0.226	0.040
Fluorene	0.285	0.040
Naphthalene	ND	0.040
Phenanthrene	1.16	0.040
Pyrene	0.504	0.040

QUALITY CONTROL SUMMARY

Lab ID: AE50993

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50993: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID: AE50994
Sample No: FF-B4-5
Date Sampled: 08/12/98
Date Extracted: 08/18/98
Date Analyzed: 08/18/98
Detection Limit

Benzo (a) anthracene	ND	0.040
Benzo (a) pyrene	ND	0.040
Benzo (b) fluoranthene	2.14	0.200
Benzo (k) fluoranthene	ND	0.040
Chrysene	ND	0.040
Dibenzo (a, h) anthracene	0.100	0.040
Indeno (1, 2, 3-cd) pyrene	ND	0.040
Acenaphthene	ND	0.040
Acenaphthylene	ND	0.040
Anthracene	ND	0.040
Benzo (ghi) perylene	ND	0.040
Fluoranthene	0.085	0.040
Fluorene	0.390	0.040
Naphthalene	3.50	0.200
Phenanthrene	0.912	0.040
Pyrene	0.189	0.040

QUALITY CONTROL SUMMARY

Lab ID: AE50994

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

Comment to Sample(s)
AE50994: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50995	
Sample No:	FF-B4-10	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/20/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	0.592	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	0.378	0.020
Phenanthrene	0.100	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50995

Surrogate Percent Recovery
P- Terphenyl-d14 108

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 32

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50996	AE50997	
Sample No:	FF-B4-15	FF-B4-20	
Date Sampled:	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	Detection
Date Analyzed:	08/20/98	08/20/98	Limit
Benzo (a) anthracene	ND	ND	0.020
Benzo (a) pyrene	ND	0.029	0.020
Benzo (b) fluoranthene	1.10	1.48	0.200
Benzo (k) fluoranthene	ND	ND	0.020
Chrysene	ND	ND	0.020
Dibenzo (a, h) anthracene	0.091	0.116	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	0.020
Acenaphthene	ND	ND	0.020
Acenaphthylene	ND	ND	0.020
Anthracene	ND	ND	0.020
Benzo (ghi) perylene	0.059	ND	0.020
Fluoranthene	0.025	0.069	0.020
Fluorene	0.238	0.289	0.020
Naphthalene	1.77	2.29	0.200
Phenanthrene	0.514	0.911	0.020
Pyrene	0.033	0.114	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE50996	AE50997	
<u>Surrogate Percent Recovery</u>			
P- Terphenyl-d14			
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)
AE50996: AE50997: NO surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50998	
Sample No:	FRF-B4-25	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/20/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	0.020	0.020
Benzo (b) fluoranthene	0.589	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	0.095	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.038	0.020
Fluorene	0.077	0.020
Naphthalene	0.764	0.100
Phenanthrene	0.298	0.020
Pyrene	0.045	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50998

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)
AE50998: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 34

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50999	
Sample No:	METHOD BLANK	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/20/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	ND	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50999

Surrogate Percent Recovery
P- Terphenyl-d14 98

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10464
Project Name: Aliso Canyon

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John-Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50999	
Sample No:	METHOD BLANK	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/18/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	ND	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50999

Surrogate Percent Recovery
P- Terphenyl-d14 96

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	104	92	12.2
Benzo (a) pyrene	97	91	6.4
Naphthalene	106	101	4.8

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.
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 Fax (818) 845-8840

CHAIN OF CUSTODY RECORD

CLIENT: John Prince
 Southern California Gas Company
 TELEPHONE: (213) 244-5517
 FAX:

ADDRESS: BOX 3249, ML 20B3, Los Angeles, CA 90051-1219

SITE: Aliso Cyn

PROJECT NAME: MAY REYHANI - ENV AMERISNAME: Aliso Cyn
 PROJECT NUMBER:

ANALYSIS REQUESTED

TPH Carbon Check
VOCs - 8240
SVOCs - 8270
PCBs - 8080
CAM metals
PH
PAH - 8310
BTEX - 8020
Airline

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	SOLID WASTE	LIQUID WASTE OTHER		
S2-T4D-45A	AES0961	8/11/92	0940	4oz Glass	X				
S2-T4D-35A	AES0962	"	0945	"	Y				
S2-T4-SP1	AES0963	"	0950	"	X				
S2-T4-SP2	AES0964	"	"	"	X				
S2-T4-DRUM	AES0965	"	1030	"	X				X
FF-PH6-1	AES0966	"	1240	"	Y				X
FF-PH6-1B	AES0967	"	1242	"	Y				X
FF-PH6-3	AES0968	"	1244	"	Y				X
FF-PH6-4	AES0969	"	1250	"	Y				X
FF-PH7-3S	AES0970	"	1310	"	Y				X
FF-PH10-7	AES0971	"	1425	"	X				X
FF-PH10-10	AES0972	"	1430	"	X				X
FF-PH10-7B	AES0973	"	1440	"	X				X

Collected By: D. Goffin Date 8/11/92 Time 1440
 Delivered By: Axel Gutierrez Date 8/13/92 Time 7:45
 Relinquished By: D. Goffin Date 8/13/92 Time 0805
 Received For Laboratory: [Signature] Date 8/13/92 Time 8:30
 Turn Around Time: Normal Rush



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SUMMARY OF RESULTS


CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-17-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020
DETECTION LIMIT		5	5	5	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS
AE50966	FF-PH6-1	ND	ND	ND	ND
AE50967	FF-PH6-1.8	ND	ND	7.8	62
AE50968	FF-PH6-3	25	400	728	2,200
AE50969	FF-PH6-4	ND	ND	ND	ND
AE50970	FF-PH7-3.5	ND	ND	ND	14
AE50971	FF-PH10-7	ND	ND	ND	ND
AE50972	FF-PH10-10	ND	ND	ND	ND
AE50973	FF-PH10-13	ND	ND	ND	ND
AE50974	M. Blank	ND	ND	ND	ND

ND = Not Detected at the detection limit


Cyrus Razmara, Ph.D.
Laboratory Director



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SUMMARY OF RESULTS


CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-17-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		GASOLINE C ₁ -C ₉	DIESEL C ₁₀ -C ₂₈	HEAVY HC C ₂₉
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS
AE50961	S2-T4D-4.5A	ND	150	1,090
AE50962	S2-T4D-3.5A	ND	ND	59
AE50963	S2-T4D-SP1	ND	430	475
AE50965	S2-T4-DRUM	ND	16,300	ND
AE50966	FF-PH6-1	ND	ND	25
AE50967	FF-PH6-1.8	2.1	13,900	7,800
AE50968	FF-PH6-3	19	5,160	2,250
AE50969	FF-PH6-4	ND	ND	ND
AE50970	FF-PH7-3.5	ND	6,210	3,470
AE50971	FF-PH10-7	ND	ND	ND
AE50972	FF-PH10-10	ND	ND	ND
AE50973	FF-PH10-13	ND	ND	ND
AE50974	METHOD BLANK	ND	ND	ND

ND = Not Detected at the detection limit


Cyrus Razmara, Ph.D.
Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-18-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 6000/7000

				Lab ID	AE50961	AE50962	AE50963	AE50965	AE50974
				Client ID	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-Drum	M. Blank
				Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
				Matrix	Soil	Soil	Soil	Soil	Soil
Analyte	Method	Units	DL	Date Analyzed	Results	Results	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	08-14-98	ND	ND	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	08-14-98	2.0	1.0	3.8	4.3	ND
Barium (Ba)	6010	mg/Kg	5.0	08-14-98	223	165	133	143	ND
Beryllium (Be)	6010	mg/Kg	2.5	08-14-98	ND	ND	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	08-14-98	ND	ND	3.0	ND	ND
Chromium (Cr)	6010	mg/Kg	5.0	08-14-98	14.7	10.6	17.4	11.7	ND
Cobalt (Co)	6010	Mg/Kg	5.0	08-14-98	5.3	ND	5.0	ND	ND
Copper (Cu)	6010	mg/Kg	5.0	08-14-98	30.3	14.7	24.2	68.0	ND
Lead (Pb)	6010	mg/Kg	5.0	08-14-98	19.4	8.8	18.0	36.3	ND
Mercury (Hg)	7471	mg/Kg	0.2	08-14-98	ND	ND	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	08-14-98	8.4	ND	8.4	ND	ND
Nickel (Ni)	6010	mg/Kg	5.0	08-14-98	22.8	14.0	34.2	19.7	ND
Selenium (Se)	7740	mg/Kg	0.5	08-14-98	ND	ND	ND	ND	ND
Silver (Ag)	6010	mg/Kg	5.0	08-14-98	ND	ND	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	08-14-98	ND	ND	ND	ND	ND
Vanadium (V)	6010	mg/Kg	5.0	08-14-98	36.4	23.9	52.5	27.5	ND
Zinc (Zn)	6010	mg/Kg	5.0	08-14-98	74.0	43.6	72.0	77.0	ND
pH	9045	pH unit	1	08-13-98	7.15	7.26	7.29	6.99	NA

ND = Not Detected at the Detection Limit
 NA = Not Applicable
 DL = Detection Limit

CR
 Cyrus Razmara, Ph.D.
 Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-17-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8310

Lab ID	AE50966	AE50967	AE50968	AE50969	AE50970
Client Sample ID	FF-PH6-1	FF-PH6-1.8	FF-PH6-3	FF-PH6-4	FF-PH7-3.5
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
Date Extracted	08-17-98	08-17-98	08-17-98	08-17-98	08-17-98
Date Analyzed	08-17-98	08-17-98	08-17-98	08-17-98	08-17-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	4#
Analyte	DL	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	0.647	0.261	ND
Benzo (g,h,i) perylene	0.020	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	0.355
Fluoranthene	0.020	ND	0.089	0.082	0.090
Fluorene	0.020	ND	1.13	1.10	1.17
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND
Naphthalene	0.020	ND	6.97	8.65	ND
Phenanthrene	0.020	ND	1.62	2.12	0.850
Pyrene	0.020	ND	0.209	0.124	0.136

ND = Not Detected at the detection limit
 DL = Detection Limit
 #Detection Limit should be increased by the same factor.


 Cyrus Razmara, Ph.D.
 Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461


PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-17-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8310

Lab ID	AE50971	AE50972	AE50973	AE50974	
Client Sample ID	FF-PH10-7	FF-PH10-10	FF-PH10-13	M. Blank	
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	
Date Extracted	08-17-98	08-17-98	08-17-98	08-17-98	
Date Analyzed	08-17-98	08-17-98	08-17-98	08-17-98	
Matrix	Soil	Soil	Soil	Soil	
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Dilution Factor	1	1	1	1	
Analyte	DL	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	ND	ND	ND	ND
Benzo (g,h,i) perylene	0.020	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	ND
Fluoranthene	0.020	ND	ND	ND	ND
Fluorene	0.020	ND	ND	ND	ND
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND
Phenanthrene	0.020	ND	ND	ND	ND
Pyrene	0.020	ND	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit


 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011


AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-24-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8080

Lab ID	AE50961	AE50962	AE50963	AE50965	AE50974
Client Sample ID	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-Drum	M. Blank
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-24-98	08-24-98
Date Analyzed	08-24-98	08-24-98	08-24-98	08-24-98	08-24-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results
PCB-1016	0.1	ND	ND	ND	ND
PCB-1221	0.1	ND	ND	ND	ND
PCB-1232	0.1	ND	ND	ND	ND
PCB-1242	0.1	ND	ND	ND	ND
PCB-1248	0.1	ND	ND	ND	ND
PCB-1254	0.1	ND	ND	ND	ND
PCB-1260	0.1	ND	ND	ND	ND

ND = Not Detected at the detection limit.


Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-21-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8240

Lab ID	AE50961	AE50962	AE50963	AE50965	AE50974
Client Sample ID	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-Drum	M. Blank
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
Date Extracted	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Date Analyzed	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results
Acetone	50	ND	ND	ND	ND
Benzene	10	ND	ND	ND	ND
Bromodichloromethane	10	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND
Carbon Disulfide	10	ND	ND	ND	ND
Carbon Tetrachloride	10	ND	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND
2-Chloroethyl Vinylether	50	ND	ND	ND	ND
Chloroform	10	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND
Dibromochloromethane	10	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND
1,1-Dichloroethane	10	ND	ND	ND	ND
1,2-Dichloroethane	10	ND	ND	ND	ND
1,1-Dichloroethene	10	ND	ND	ND	ND
cis-1,2 Dichloroethene	10	ND	ND	ND	ND
trans-1,2 Dichloroethene	10	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND
cis-1,3 Dichloropropene	10	ND	ND	ND	ND
trans-1,3 Dichloropropene	10	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND
MTBE	10	11.6	16.3	ND	32.4
4-Methyl-2-Pentanone	50	ND	ND	ND	ND

ND = Not Detected at the detection limit

Cont'd...



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SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461

EPA Method 8240 (Cont..)

Lab ID	AE50961	AE50962	AE50963	AE50965	AE50974
Client Sample ID	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-Drum	M. Blank
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
Date Extracted	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Date Analyzed	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results
Methylene Chloride	50	ND	ND	ND	ND
Styrene	10	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	10	ND	ND	ND	ND
Tetrachloroethene	10	ND	ND	ND	ND
Toluene	10	11.0	ND	ND	ND
1,1,1-Trichloroethane	10	ND	ND	ND	ND
1,1,2-Trichloroethane	10	ND	ND	ND	ND
Trichloroethene	10	ND	ND	ND	ND
Trichlorofluoromethane	10	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND
Xylenes (Total)	20	ND	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit

CR
 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-11-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-24-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8270

Lab ID	AE50961	AE50962	AE50963	AE50965	AE50974
Client Sample ID	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-Drum	M. Blank
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-24-98	08-18-98
Date Analyzed	08-19-98	08-19-98	08-19-98	08-24-98	08-24-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	20#	20#	20#	1	1
Analyte	DL	Results	Results	Results	Results
Acenaphthene	0.50	ND	ND	ND	ND
Acenaphthylene	0.50	ND	ND	ND	ND
Anthracene	0.50	ND	ND	ND	ND
Benzyl Alcohol	0.50	ND	ND	ND	ND
Benzoic Acid	0.50	ND	ND	ND	ND
Benzo (a) anthracene	0.50	ND	ND	ND	ND
Benzo (a) pyrene	0.50	ND	ND	ND	ND
Benzo (b) fluoranthene	0.50	ND	ND	ND	ND
Benzo (g,h,i) perylene	0.50	ND	ND	ND	1.0
Benzo (k) fluoranthene	0.50	ND	ND	ND	ND
Bis-(2-chloroethoxy)methane	0.50	ND	ND	ND	ND
Bis-(2-chloroethyl)ether	0.50	ND	ND	ND	ND
Bis-(2-chloroisopropyl)ether	0.50	ND	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate	0.50	ND	ND	ND	ND
4-Bromophenyl Phenyl Ether	0.50	ND	ND	ND	ND
Butyl Benzyl Phthalate	0.50	ND	ND	ND	ND
4-Chloroaniline	0.50	ND	ND	ND	ND
4-Chloro-3-methylphenol	0.50	ND	ND	ND	ND
2-Chloronaphthalene	0.50	ND	ND	ND	ND
2-Chlorophenol	0.50	ND	ND	ND	ND
4-Chlorophenyl Phenyl Ether	0.50	ND	ND	ND	ND
Chrysene	0.50	ND	ND	ND	2.0
Di-n-butyl Phthalate	0.50	ND	ND	ND	ND
Di-n-octyl Phthalate	0.50	ND	ND	ND	ND
Dibenzo (a,h) anthracene	0.50	ND	ND	ND	ND
Dibenzofuran	0.50	ND	ND	ND	ND
1,2-Dichlorobenzene	0.50	ND	ND	ND	ND
1,3-Dichlorobenzene	0.50	ND	ND	ND	ND
1,4-Dichlorobenzene	0.50	ND	ND	ND	ND
3,3-Dichlorobenzidine	0.50	ND	ND	ND	ND
2,4-Dichlorophenol	0.50	ND	ND	ND	ND
Diethyl Phthalate	0.50	ND	ND	ND	ND
Dimethyl Phthalate	0.50	ND	ND	ND	ND

ND = Not Detected at the detection limit
 DL = Detection Limit

Cont'd...



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SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10461


EPA Method 8270

Lab ID	AE50961	AE50962	AE50963	AE50965	AE50974
Client Sample ID	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-Drum	M. Blank
Date Sampled	08-11-98	08-11-98	08-11-98	08-11-98	08-11-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-24-98	08-18-98
Date Analyzed	08-19-98	08-19-98	08-19-98	08-24-98	08-24-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	20#	20#	20#	1	1
Analyte	DL	Results	Results	Results	Results
2,4-Dimethylphenol	0.50	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	0.50	ND	ND	ND	ND
2,4-Dinitrophenol	0.50	ND	ND	ND	ND
2,4-Dinitrotoluene	0.50	ND	ND	ND	ND
2,6-Dinitrotoluene	0.50	ND	ND	ND	ND
Fluoranthene	0.50	ND	ND	ND	2.0
Fluorene	0.50	ND	ND	ND	ND
Hexachlorobenzene	0.50	ND	ND	ND	ND
Hexachlorobutadiene	0.50	ND	ND	ND	ND
Hexachlorocyclopentadiene	0.50	ND	ND	ND	ND
Hexachloroethane	0.50	ND	ND	ND	ND
Indeno-(1,2,3-cd) pyrene	0.50	ND	ND	ND	ND
Isophorone	0.50	ND	ND	ND	ND
2-Methylnaphthalene	0.50	ND	ND	ND	ND
2-Methylphenol	0.50	ND	ND	ND	ND
3-Methylphenol	0.50	ND	ND	ND	ND
4-Methylphenol	0.50	ND	ND	ND	ND
Naphthalene	0.50	ND	ND	ND	ND
2-Nitroaniline	0.50	ND	ND	ND	ND
3-Nitroaniline	0.50	ND	ND	ND	ND
4-Nitroaniline	0.50	ND	ND	ND	ND
Nitrobenzene	0.50	ND	ND	ND	ND
2-Nitrophenol	0.50	ND	ND	ND	ND
4-Nitrophenol	0.50	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	0.50	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.50	ND	ND	ND	ND
Pentachlorophenol	0.50	ND	ND	ND	ND
Phenanthrene	0.50	ND	ND	ND	ND
Phenol	0.50	ND	ND	ND	ND
Pyrene	0.50	ND	ND	ND	5.0
1,2,4-Trichlorobenzene	0.50	ND	ND	ND	ND
2,4,5-Trichlorophenol	0.50	ND	ND	ND	ND
2,4,6-Trichlorophenol	0.50	ND	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit

#Detection Limit should be increased by the same factor


 Cyrus Razmara, Ph.D.
 Laboratory Director



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 12

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (6000/7000`S)
CAC Title 22 Metals
Units: mg/kg

Lab ID:	AE50961	AE50962	AE50963	AE50965	
Sample No:	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-DRUM	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/13/98	08/13/98	08/13/98	08/13/98	Detection
Date Analyzed:	08/14/98	08/14/98	08/14/98	08/14/98	Limit
Antimony (Sb)	ND	ND	ND	ND	10
Arsenic (As)	2.0	1.0	3.8	4.3	1.0
Barium (Ba)	223	165	133	143	5.0
Beryllium (Be)	ND	ND	ND	ND	2.5
Cadmium (Cd)	ND	ND	3.0	ND	2.5
Chromium (Cr)	14.7	10.6	17.4	11.7	5.0
Cobalt (Co)	5.3	ND	5.0	ND	5.0
Copper (Cu)	30.3	14.7	24.2	68.0	5.0
Lead (Pb)	19.4	8.8	18.0	36.3	5.0
Mercury (Hg)	ND	ND	ND	ND	0.2
Molybdenum (Mo)	8.4	ND	8.4	ND	5.0
Nickel (Ni)	22.8	14.0	34.2	19.7	5.0
Selenium (Se)	ND	ND	ND	ND	0.5
Silver (Ag)	ND	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	ND	10
Vanadium (V)	36.4	23.9	52.5	27.5	5.0
Zinc (Zn)	74.0	43.6	72.0	77.0	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	97
Arsenic (As)	100
Barium (Ba)	103
Beryllium (Be)	101
Cadmium (Cd)	106
Chromium (Cr)	107
Cobalt (Co)	106
Copper (Cu)	105
Lead (Pb)	104
Mercury (Hg)	89
Molybdenum (Mo)	103
Nickel (Ni)	106
Selenium (Se)	110
Silver (Ag)	104
Thallium (Tl)	106
Vanadium (V)	106
Zinc (Zn)	106

ND - Not Detected at The Detection Limit

AC_RWQCB_0001081



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 13

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (6000/7000`S)
CAC Title 22 Metals
Units: mg/kg

Lab ID:	AE50974	
Sample No:	METHOD BLANK	
Date Sampled:	08/11/98	
Date Extracted:	08/13/98	Detection
Date Analyzed:	08/14/98	Limit

Antimony (Sb)	ND	10
Arsenic (As)	ND	1.0
Barium (Ba)	ND	5.0
Beryllium (Be)	ND	2.5
Cadmium (Cd)	ND	2.5
Chromium (Cr)	ND	5.0
Cobalt (Co)	ND	5.0
Copper (Cu)	ND	5.0
Lead (Pb)	ND	5.0
Mercury (Hg)	ND	0.2
Molybdenum (Mo)	ND	5.0
Nickel (Ni)	ND	5.0
Selenium (Se)	ND	0.5
Silver (Ag)	ND	5.0
Thallium (Tl)	ND	10
Vanadium (V)	ND	5.0
Zinc (Zn)	ND	5.0

QUALITY CONTROL SUMMARY

	LCS
	%REC.
Antimony (Sb)	97
Arsenic (As)	100
Barium (Ba)	103
Beryllium (Be)	101
Cadmium (Cd)	106
Chromium (Cr)	107
Cobalt (Co)	106
Copper (Cu)	105
Lead (Pb)	104
Mercury (Hg)	89
Molybdenum (Mo)	103
Nickel (Ni)	106
Selenium (Se)	110
Silver (Ag)	104
Thallium (Tl)	106
Vanadium (V)	106
Zinc (Zn)	106

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE50961	AE50962	AE50963	
Sample No:	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	
Date Sampled:	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/24/98	08/24/98	08/24/98	Limit

PCB-1016	ND	ND	ND	0.1
PCB-1221	ND	ND	ND	0.1
PCB-1232	ND	ND	ND	0.1
PCB-1242	ND	ND	ND	0.1
PCB-1248	ND	ND	ND	0.1
PCB-1254	ND	ND	ND	0.1
PCB-1260	ND	ND	ND	0.1

QUALITY CONTROL SUMMARY

Lab ID:	AE50961	AE50962	AE50963
<u>Surrogate Percent Recovery</u>			
Tetrachloro M-Xylene	132	127	104
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
PCB-1260	96	107	11

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE50965	
Sample No:	S2-T4-DRUM	
Date Sampled:	08/11/98	
Date Extracted:	08/24/98	Detection
Date Analyzed:	08/24/98	Limit

PCB-1016	ND	0.1
PCB-1221	ND	0.1
PCB-1232	ND	0.1
PCB-1242	ND	0.1
PCB-1248	ND	0.1
PCB-1254	ND	0.1
PCB-1260	ND	0.1

QUALITY CONTROL SUMMARY

Lab ID: AE50965

Surrogate Percent Recovery
Tetrachloro M-Xylene 67

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
PCB-1260	90	93	3

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 16

AETL Job No: 10461
Project Name: Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE50974	
Sample No:	METHOD BLANK	
Date Sampled:	08/11/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/24/98	Limit

PCB-1016	ND	0.1
PCB-1221	ND	0.1
PCB-1232	ND	0.1
PCB-1242	ND	0.1
PCB-1248	ND	0.1
PCB-1254	ND	0.1
PCB-1260	ND	0.1

QUALITY CONTROL SUMMARY

Lab ID:	AE50974		
<u>Surrogate Percent Recovery</u>			
Tetrachloro M-Xylene	103		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
PCB-1260	96	107	11

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE50974		
Sample No:	METHOD BLANK		
Date Sampled:	08/11/98		
Date Extracted:	08/24/98	Detection	
Date Analyzed:	08/24/98	Limit	

PCB-1016	ND	0.1
PCB-1221	ND	0.1
PCB-1232	ND	0.1
PCB-1242	ND	0.1
PCB-1248	ND	0.1
PCB-1254	ND	0.1
PCB-1260	ND	0.1

QUALITY CONTROL SUMMARY

Lab ID: AE50974

Surrogate Percent Recovery
Tetrachloro M-Xylene 77

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
PCB-1260	90	93	3

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50966	
Sample No:	FF-PHG-1	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	ND	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50966

Surrogate Percent Recovery

P- Terphenyl-d14 93

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	96	98	2.1
Benzo (a) pyrene	93	95	2.1
Naphthalene	89	87	2.3

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID: AE50967
Sample No: FF-PH6-1.8
Date Sampled: 08/11/98
Date Extracted: 08/17/98
Date Analyzed: 08/17/98
Detection Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	0.647	0.080
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.089	0.080
Fluorene	1.13	0.020
Naphthalene	6.97	0.200
Phenanthrene	1.62	0.080
Pyrene	0.209	0.080

QUALITY CONTROL SUMMARY

Lab ID: AE50967

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	96	98	2.1
Benzo (a) pyrene	93	95	2.1
Naphthalene	89	87	2.3

Comment to Sample(s)
AE50967: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50968	
Sample No:	FF-PH6-3	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	0.261	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.082	0.020
Fluorene	1.10	0.200
Naphthalene	8.65	0.200
Phenanthrene	2.12	0.200
Pyrene	0.124	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50968

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	96	98	2.1
Benzo (a) pyrene	93	95	2.1
Naphthalene	89	87	2.3

Comment to Sample(s)
AE50968: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 21

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50969	
Sample No:	FF-PH6-4	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	
Date Analyzed:	08/17/98	Detection Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	ND	0.020
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	ND	0.020
Fluorene	ND	0.020
Naphthalene	ND	0.020
Phenanthrene	ND	0.020
Pyrene	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE50969

Surrogate Percent Recovery
P- Terphenyl-d14 92

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	96	98	2.1
Benzo (a) pyrene	93	95	2.1
Naphthalene	89	87	2.3

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50970	
Sample No:	FF-PH7-3.5	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

Benzo (a) anthracene	ND	0.080
Benzo (a) pyrene	ND	0.080
Benzo (b) fluoranthene	0.812	0.080
Benzo (k) fluoranthene	ND	0.080
Chrysene	ND	0.080
Dibenzo (a, h) anthracene	0.355	0.080
Indeno (1, 2, 3-cd) pyrene	ND	0.080
Acenaphthene	ND	0.080
Acenaphthylene	ND	0.080
Anthracene	ND	0.080
Benzo (ghi) perylene	ND	0.080
Fluoranthene	0.090	0.080
Fluorene	1.17	0.080
Naphthalene	ND	0.080
Phenanthrene	0.850	0.080
Pyrene	0.136	0.080

QUALITY CONTROL SUMMARY

Lab ID: AE50970

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	96	98	2.1
Benzo (a) pyrene	93	95	2.1
Naphthalene	89	87	2.3

Comment to Sample(s)
AE50970: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detecti



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE50971	AE50972	AE50973	AE50974	
Sample No:	FF-PH10-7	FF-PH10-10	FF-PH10-13	METHOD BLANK	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	08/17/98	Detection
Date Analyzed:	08/17/98	08/17/98	08/17/98	08/17/98	Limit

Benzo (a) anthracene	ND	ND	ND	ND	0.020
Benzo (a) pyrene	ND	ND	ND	ND	0.020
Benzo (b) fluoranthene	ND	ND	ND	ND	0.020
Benzo (k) fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE50971	AE50972	AE50973	AE50974
<u>Surrogate Percent Recovery</u>				
P- Terphenyl-d14	91	89	91	101
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzo (a) anthracene	96	98	2.1	
Benzo (a) pyrene	93	95	2.1	
Naphthalene	89	87	2.3	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 24

Report To: (SC/G)
Southern California Gas Company
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Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/Kg

Lab ID:	AE50961	AE50962	AE50963	AE50965	
Sample No:	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-DRUM	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	08/17/98	Detection
Date Analyzed:	08/17/98	08/17/98	08/17/98	08/17/98	Limit
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE50961	AE50962	AE50963	AE50965
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	51	51	104	69
Trifluorotoluene	71	63	144	100
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	87	94	7.7	
Ethylbenzene	87	93	6.7	
Toluene	90	97	7.5	
M- Xylene	92	98	6.3	
O- Xylene	93	99	6.3	

Comment to Sample(s)

AE50961: Low surrogate recovery due to matrix interference.
AE50962: Low surrogate recovery due to matrix interference.
AE50963: High surrogate recovery due to matrix interference.
AE50965: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50966	AE50967	AE50968	AE50969	
Sample No:	FF-PH6-1	FF-PH6-1.8	FF-PH6-3	FF-PH6-4	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	08/17/98	
Date Analyzed:	08/17/98	08/17/98	08/17/98	08/17/98	Detection Limit
Benzene	ND	ND	25	ND	5
Ethylbenzene	ND	7.8	728	ND	5
Toluene	ND	ND	400	ND	5
Xylenes (Total)	ND	62	2200	ND	10
TPH as Gasoline or Light HCs	ND	2.1	19	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50966	AE50967	AE50968	AE50969
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	61	63	65	77
Trifluorotoluene	75	49	185	82
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	87	94	7.7	
Ethylbenzene	87	93	6.7	
Toluene	90	97	7.5	
M- Xylene	92	98	6.3	
O- Xylene	93	99	6.3	

Comment to Sample(s)

AE50966: Low surrogate recovery due to matrix interference.
AE50967: Low surrogate recovery due to matrix interferenc.
AE50968: High surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 26

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50970	AE50971	AE50972	AE50973	
Sample No:	FF-PH7-3.5	FF-PH10-7	FF-PH10-10	FF-PH10-13	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	08/17/98	
Date Analyzed:	08/17/98	08/17/98	08/17/98	08/17/98	Detection Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	14	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE50970	AE50971	AE50972	AE50973
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	37	60	65	66
Trifluorotoluene	55	72	76	76
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	87	94	7.7	
Ethylbenzene	87	93	6.7	
Toluene	90	97	7.5	
M- Xylene	92	98	6.3	
O- Xylene	93	99	6.3	

Comment to Sample(s)

AE50970: Low surrogate recovery due to matrix interference.
AE50971: Low surrogate recovery due to matrix interference.
AE50972: Low surrogate recovery due to matrix interference.
AE50973: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 27

AETL Job No: 10461
Project Name: Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John-Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE50974	
Sample No:	METHOD BLANK	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

Benzene	ND	5
Ethylbenzene	ND	5
Toluene	ND	5
Xylenes (Total)	ND	10
TPH as Gasoline or Light HCs	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE50974

Surrogate Percent Recovery

Bromofluorobenzene	79
Trifluorotoluene	85

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	87	94	7.7
Ethylbenzene	87	93	6.7
Toluene	90	97	7.5
M- Xylene	92	98	6.3
O- Xylene	93	99	6.3

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50961	
Sample No:	S2-T4D-4.5A	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

TPH as Diesel and Heavier HC	1240	50
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QUALITY CONTROL SUMMARY

Lab ID:	AE50961		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	78		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	110	109	1

Comment to Sample(s)
AE50961: (C12-C23) = 150mg/Kg; (C23+) = 1090mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50962	AE50963	
Sample No:	S2-T4D-3.5A	S2-T4-SP1	
Date Sampled:	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	Detection
Date Analyzed:	08/17/98	08/17/98	Limit
TPH as Diesel and Heavier HC	59	905	10

QUALITY CONTROL SUMMARY

Lab ID:	AE50962	AE50963	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	96	86	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	109	1

Comment to Sample(s)

AE50962: (C12-C23) = ND; (C23+) = 59mg/Kg.
AE50963: (C12-C23) = 430mg/Kg; (C23+) = 475mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 30

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50965	
Sample No:	S2-T4-DRUM	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

TPH as Diesel and Heavier HC	16300	100
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QUALITY CONTROL SUMMARY

Lab ID:	AE50965		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	126		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	110	109	1

Comment to Sample(s)
AE50965: (C12-C23) = 16,300mg/Kg; (C23+) = ND.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50966	
Sample No:	FF-PH6-1	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

TPH as Diesel and Heavier HC	25	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE50966		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	81		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	109	1

Comment to Sample(s)
AE50966: (C12-C23) = ND; (C23+) = 25mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 32

AETL Job No: 10461
Project Name: Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50967	
Sample No:	PF-PH6-1.8	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

TPH as Diesel and Heavier HC	21700	50
------------------------------	-------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE50967		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	98		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	110	109	1

Comment to Sample(s)
AE50967: (C12-C23) = 13,900mg/Kg; (C23+) = 7,800mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 33

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50968	AE50969	
Sample No:	FF-PH6-3	FF-PH6-4	
Date Sampled:	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	Detection
Date Analyzed:	08/17/98	08/17/98	Limit

TPH as Diesel and Heavier HC	7410	ND	10
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QUALITY CONTROL SUMMARY

Lab ID:	AE50968	AE50969	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	96	60	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	109	1

Comment to Sample(s)

AE50968: (C12-C23) = 5,160mg/Kg; (C23+) = 2,250mg/Kg.
AE50969: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 34

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50970	
Sample No:	FF-PH7-3.5	
Date Sampled:	08/11/98	
Date Extracted:	08/17/98	Detection
Date Analyzed:	08/17/98	Limit

TPH as Diesel and Heavier HC	9680	50
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE50970		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	105		
	Spike	Spike DUP.	AVG.
	%REC.	%REC.	RPD
Diesel	110	109	1

Comment to Sample(s)
AE50970: (C12-C23) = 6,210mg/Kg; (C23+) = 3,470mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 35

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE50971	AE50972	AE50973	AE50974	
Sample No:	FF-PH10-7	FF-PH10-10	FF-PH10-13	METHOD BLANK	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	08/17/98	Detection
Date Analyzed:	08/17/98	08/17/98	08/17/98	08/17/98	Limit
TPH as Diesel and Heavier HC	ND	ND	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE50971	AE50972	AE50973	AE50974
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	97	103	99	100
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Diesel	110	109	1	

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 36

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE50961	AE50962	AE50963	AE50965	
Sample No:	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-DRUM	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/21/98	08/21/98	08/21/98	08/21/98	Detection
Date Analyzed:	08/21/98	08/21/98	08/21/98	08/21/98	Limit
Acetone	ND	ND	ND	ND	50
Benzene	ND	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	ND	10
Bromoform	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	50
2 Butanone	ND	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	ND	50
Chloroform	ND	ND	ND	ND	10
Chloromethane	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	10
2 Hexanone	ND	ND	ND	ND	50
MTBE	11.6	16.3	ND	32.4	10
4 Methyl-2-Pentanone	ND	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	ND	50
Styrene	ND	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	ND	10
Toluene	11.0	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	ND	10
Trichloroethene	ND	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 37

QUALITY CONTROL SUMMARY

Lab ID:	AE50961	AE50962	AE50963	AE50965
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	116	104	116	116
1,2 Dichloroethane-d4	126	108	128	121
Toluene-d8	108	98	108	90
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	94	103	9	
Chlorobenzene	86	94	9	
1,1 Dichloroethene	89	90	1	
Toluene	67	77	14	
Trichloroethene	77	90	15	

Comment to Sample(s)

AE50961: AE50963: AE50965: High surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 38

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE50974	
Sample No:	METHOD BLANK	
Date Sampled:	08/11/98	
Date Extracted:	08/21/98	Detection
Date Analyzed:	08/21/98	Limit

Acetone	ND	50
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	50
Bromomethane	ND	50
2 Butanone	ND	50
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
2 Chloroethyl Vinylether	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
1,2 Dichlorobenzene	ND	10
1,3 Dichlorobenzene	ND	10
1,4 Dichlorobenzene	ND	10
1,1 Dichloroethane	ND	10
1,2 Dichloroethane	ND	10
1,1 Dichloroethene	ND	10
CIS 1,2 Dichloroethene	ND	10
TRNS 1,2 Dichloroethene	ND	10
1,2 Dichloropropane	ND	10
CIS 1,3 Dichloropropene	ND	10
TRNS 1,3 Dichloropropene	ND	10
Ethylbenzene	ND	10
2 Hexanone	ND	50
MTBE	ND	10
4 Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	50
Styrene	ND	10
1,1,2,2 Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1 Trichloroethane	ND	10
1,1,2 Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylenes (Total)	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 39

QUALITY CONTROL SUMMARY

Lab ID: AE50974

Surrogate Percent Recovery

Bromofluorobenzene	97
1,2 Dichloroethane-d4	100
Toluene-d8	102

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	94	103	9
Chlorobenzene	86	94	9
1,1 Dichloroethene	89	90	1
Toluene	67	77	14
Trichloroethene	77	90	15

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8270
Semivolatile Organics by GC/MS
Units: mg/Kg

Table with 5 columns: Lab ID, Sample No, Date Sampled, Date Extracted, Date Analyzed, and Detection Limit. Rows include AE50961, AE50962, and AE50963.

Main data table listing chemical compounds (e.g., Acenaphthene, Anthracene, Benzo(a)anthracene) and their detection status (ND) across three samples (AE50961, AE50962, AE50963) with a detection limit of 10.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 41

Units: mg/Kg

Lab ID: Sample No:	AE50961 S2-T4D-4.5A	AE50962 S2-T4D-3.5A	AE50963 S2-T4-SP1	Detection Limit
Hexachloroethane	ND	ND	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	10
Isophorone	ND	ND	ND	10
2 Methyl naphthalene	ND	ND	ND	10
2 Methylphenol	ND	ND	ND	10
3 Methylphenol	ND	ND	ND	10
4 Methylphenol	ND	ND	ND	10
Naphthalene	ND	ND	ND	10
2 Nitroaniline	ND	ND	ND	10
3 Nitroaniline	ND	ND	ND	10
4 Nitroaniline	ND	ND	ND	10
Nitrobenzene	ND	ND	ND	10
2 Nitrophenol	ND	ND	ND	10
4 Nitrophenol	ND	ND	ND	10
N Nitrosodi-n-propylamine	ND	ND	ND	10
N Nitrosodiphenylamine	ND	ND	ND	10
Pentachlorophenol	ND	ND	ND	10
Phenanthrene	ND	ND	ND	10
Phenol	ND	ND	ND	10
Pyrene	ND	ND	ND	10
1,2,4 Trichlorobenzene	ND	ND	ND	10
2,4,5 Trichlorophenol	ND	ND	ND	10
2,4,6 Trichlorophenol	ND	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE50961	AE50962	AE50963
Surrogate Percent Recovery			
2 Fluorobiphenyl	52	53	53
Fluorophenol	97	102	99
Nitrobenzene-d5	52	54	54
Phenol-d6	98	101	99
Terphenyl-d14	89	92	89
2,4,6 Tribromophenol	95	94	101
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Phenol	83	78	7
Pyrene	84	92	10

Comment to Sample(s)

AE50961: AE50962: AE50963: Raised detection limit due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 42

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8270
Semivolatiles Organics by GC/MS
Units: mg/Kg

Lab ID:	AE50965	
Sample No:	S2-T4-DRUM	
Date Sampled:	08/11/98	
Date Extracted:	08/24/98	Detection
Date Analyzed:	08/24/98	Limit

Acenaphthene	ND	0.50
Acenaphthylene	ND	0.50
Anthracene	ND	0.50
Benzo(a)anthracene	ND	0.50
Benzo(a)pyrene	ND	0.50
Benzo(b)fluoranthene	ND	0.50
Benzo(ghi)perylene	1.0	0.50
Benzo(k)fluoranthene	ND	0.50
Benzoic Acid	ND	0.50
Benzyl Alcohol	ND	0.50
Bis(2-chloroethoxy)methane	ND	0.50
Bis(2-chloroethyl)ether	ND	0.50
Bis(2-chloroisopropyl)ether	ND	0.50
Bis(2-ethylhexyl) Phthalate	ND	0.50
4 Bromophenyl Phenyl Ether	ND	0.50
Butyl Benzyl Phthalate	ND	0.50
4 Chloro-3-methylphenol	ND	0.50
4 Chloroaniline	ND	0.50
2 Chloronaphthalene	ND	0.50
2 Chlorophenol	ND	0.50
4 Chlorophenyl Phenyl Ether	ND	0.50
Chrysene	2.0	0.50
Di-n-butylphthalate	ND	0.50
Di-n-octylphthalate	ND	0.50
Dibenzo(a,h)anthracene	ND	0.50
Dibenzofuran	ND	0.50
1,2 Dichlorobenzene	ND	0.50
1,3 Dichlorobenzene	ND	0.50
1,4 Dichlorobenzene	ND	0.50
3,3' Dichlorobenzidine	ND	0.50
2,4 Dichlorophenol	ND	0.50
Diethyl Phthalate	ND	0.50
Dimethyl Phthalate	ND	0.50
2,4 Dimethylphenol	ND	0.50
4,6 Dinitro-2-methylphenol	ND	0.50
2,4 Dinitrophenol	ND	0.50
2,4 Dinitrotoluene	ND	0.50
2,6 Dinitrotoluene	ND	0.50
Fluoranthene	2.0	0.50
Fluorene	ND	0.50
Hexachlorobenzene	ND	0.50
Hexachlorobutadiene	ND	0.50
Hexachlorocyclopentadiene	ND	0.50

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 43

Units: mg/Kg

Lab ID: Sample No:	AE50965 S2-T4-DRUM	Detection Limit
Hexachloroethane	ND	0.50
Indeno(1,2,3-cd)pyrene	ND	0.50
Isophorone	ND	0.50
2 Methylnaphthalene	ND	0.50
2 Methylphenol	ND	0.50
3 Methylphenol	ND	0.50
4 Methylphenol	ND	0.50
Naphthalene	ND	0.50
2 Nitroaniline	ND	0.50
3 Nitroaniline	ND	0.50
4 Nitroaniline	ND	0.50
Nitrobenzene	ND	0.50
2 Nitrophenol	ND	0.50
4 Nitrophenol	ND	0.50
N Nitrosodi-n-propylamine	ND	0.50
N Nitrosodiphenylamine	ND	0.50
Pentachlorophenol	ND	0.50
Phenanthrene	ND	0.50
Phenol	ND	0.50
Pyrene	5.0	0.50
1,2,4 Trichlorobenzene	ND	0.50
2,4,5 Trichlorophenol	ND	0.50
2,4,6 Trichlorophenol	ND	0.50

QUALITY CONTROL SUMMARY

Lab ID: AE50965

Surrogate Percent Recovery

2 Fluorobiphenyl	61
Fluorophenol	106
Nitrobenzene-d5	57
Phenol-d6	80
Terphenyl-d14	123
2,4,6 Tribromophenol	29

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Phenol	80	76	5
Pyrene	93	84	10

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 44

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John-Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8270
Semivolatile Organics by GC/MS
Units: mg/Kg

Lab ID:	AE50974	
Sample No:	METHOD BLANK	
Date Sampled:	08/11/98	
Date Extracted:	08/24/98	Detection
Date Analyzed:	08/24/98	Limit

Acenaphthene	ND	0.50
Acenaphthylene	ND	0.50
Anthracene	ND	0.50
Benzo (a) anthracene	ND	0.50
Benzo (a) pyrene	ND	0.50
Benzo (b) fluoranthene	ND	0.50
Benzo (ghi) perylene	ND	0.50
Benzo (k) fluoranthene	ND	0.50
Benzoic Acid	ND	0.50
Benzyl Alcohol	ND	0.50
Bis (2-chloroethoxy) methane	ND	0.50
Bis (2-chloroethyl) ether	ND	0.50
Bis (2-chloroisopropyl) ether	ND	0.50
Bis (2-ethylhexyl) Phthalate	ND	0.50
4 Bromophenyl Phenyl Ether	ND	0.50
Butyl Benzyl Phthalate	ND	0.50
4 Chloro-3-methylphenol	ND	0.50
4 Chloroaniline	ND	0.50
2 Chloronaphthalene	ND	0.50
2 Chlorophenol	ND	0.50
4 Chlorophenyl Phenyl Ether	ND	0.50
Chrysene	ND	0.50
Di-n-butylphthalate	ND	0.50
Di-n-octylphthalate	ND	0.50
Dibenzo (a, h) anthracene	ND	0.50
Dibenzofuran	ND	0.50
1,2 Dichlorobenzene	ND	0.50
1,3 Dichlorobenzene	ND	0.50
1,4 Dichlorobenzene	ND	0.50
3,3' Dichlorobenzidine	ND	0.50
2,4 Dichlorophenol	ND	0.50
Diethyl Phthalate	ND	0.50
Dimethyl Phthalate	ND	0.50
2,4 Dimethylphenol	ND	0.50
4,6 Dinitro-2-methylphenol	ND	0.50
2,4 Dinitrophenol	ND	0.50
2,4 Dinitrotoluene	ND	0.50
2,6 Dinitrotoluene	ND	0.50
Fluoranthene	ND	0.50
Fluorene	ND	0.50
Hexachlorobenzene	ND	0.50
Hexachlorobutadiene	ND	0.50
Hexachlorocyclopentadiene	ND	0.50
(Continued)		

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 45

Units: mg/Kg

Lab ID: Sample No:	AE50974 METHOD BLANK	Detection Limit
Hexachloroethane	ND	0.50
Indeno (1,2,3-cd) pyrene	ND	0.50
Isophorone	ND	0.50
2 Methylnaphthalene	ND	0.50
2 Methylphenol	ND	0.50
3 Methylphenol	ND	0.50
4 Methylphenol	ND	0.50
Naphthalene	ND	0.50
2 Nitroaniline	ND	0.50
3 Nitroaniline	ND	0.50
4 Nitroaniline	ND	0.50
Nitrobenzene	ND	0.50
2 Nitrophenol	ND	0.50
4 Nitrophenol	ND	0.50
N Nitrosodi-n-propylamine	ND	0.50
N Nitrosodiphenylamine	ND	0.50
Pentachlorophenol	ND	0.50
Phenanthrene	ND	0.50
Phenol	ND	0.50
Pyrene	ND	0.50
1,2,4 Trichlorobenzene	ND	0.50
2,4,5 Trichlorophenol	ND	0.50
2,4,6 Trichlorophenol	ND	0.50

QUALITY CONTROL SUMMARY

Lab ID:	AE50974
<u>Surrogate Percent Recovery</u>	
2 Fluorobiphenyl	57
Fluorophenol	86
Nitrobenzene-d5	59
Phenol-d6	85
Terphenyl-d14	65
2,4,6 Tribromophenol	84

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Phenol	80	76	5
Pyrene	93	84	10

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 46

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8270
Semivolatiles Organics by GC/MS
Units: mg/Kg

Lab ID: AE50974
Sample No: METHOD BLANK
Date Sampled: 08/11/98
Date Extracted: 08/18/98
Date Analyzed: 08/19/98

Detection Limit

Acenaphthene	ND	0.50
Acenaphthylene	ND	0.50
Anthracene	ND	0.50
Benzo (a) anthracene	ND	0.50
Benzo (a) pyrene	ND	0.50
Benzo (b) fluoranthene	ND	0.50
Benzo (ghi) perylene	ND	0.50
Benzo (k) fluoranthene	ND	0.50
Benzoic Acid	ND	0.50
Benzyl Alcohol	ND	0.50
Bis (2-chloroethoxy) methane	ND	0.50
Bis (2-chloroethyl) ether	ND	0.50
Bis (2-chloroisopropyl) ether	ND	0.50
Bis (2-ethylhexyl) Phthalate	ND	0.50
4 Bromophenyl Phenyl Ether	ND	0.50
Butyl Benzyl Phthalate	ND	0.50
4 Chloro-3-methylphenol	ND	0.50
4 Chloroaniline	ND	0.50
2 Chloronaphthalene	ND	0.50
2 Chlorophenol	ND	0.50
4 Chlorophenyl Phenyl Ether	ND	0.50
Chrysene	ND	0.50
Di-n-butylphthalate	ND	0.50
Di-n-octylphthalate	ND	0.50
Dibenzo (a, h) anthracene	ND	0.50
Dibenzofuran	ND	0.50
1,2 Dichlorobenzene	ND	0.50
1,3 Dichlorobenzene	ND	0.50
1,4 Dichlorobenzene	ND	0.50
3,3' Dichlorobenzidine	ND	0.50
2,4 Dichlorophenol	ND	0.50
Diethyl Phthalate	ND	0.50
Dimethyl Phthalate	ND	0.50
2,4 Dimethylphenol	ND	0.50
4,6 Dinitro-2-methylphenol	ND	0.50
2,4 Dinitrophenol	ND	0.50
2,4 Dinitrotoluene	ND	0.50
2,6 Dinitrotoluene	ND	0.50
Fluoranthene	ND	0.50
Fluorene	ND	0.50
Hexachlorobenzene	ND	0.50
Hexachlorobutadiene	ND	0.50
Hexachlorocyclopentadiene	ND	0.50

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10461
Project Name: Aliso Cyn

Page: 47

Units: mg/Kg

Lab ID: Sample No:	AE50974 METHOD BLANK	Detection Limit
Hexachloroethane	ND	0.50
Indeno (1,2,3-cd)pyrene	ND	0.50
Isophorone	ND	0.50
2 Methylnaphthalene	ND	0.50
2 Methylphenol	ND	0.50
3 Methylphenol	ND	0.50
4 Methylphenol	ND	0.50
Naphthalene	ND	0.50
2 Nitroaniline	ND	0.50
3 Nitroaniline	ND	0.50
4 Nitroaniline	ND	0.50
Nitrobenzene	ND	0.50
2 Nitrophenol	ND	0.50
4 Nitrophenol	ND	0.50
N Nitrosodi-n-propylamine	ND	0.50
N Nitrosodiphenylamine	ND	0.50
Pentachlorophenol	ND	0.50
Phenanthrene	ND	0.50
Phenol	ND	0.50
Pyrene	ND	0.50
1,2,4 Trichlorobenzene	ND	0.50
2,4,5 Trichlorophenol	ND	0.50
2,4,6 Trichlorophenol	ND	0.50

QUALITY CONTROL SUMMARY

Lab ID: AE50974

Surrogate Percent Recovery

2 Fluorobiphenyl	59
Fluorophenol	84
Nitrobenzene-d5	66
Phenol-d6	84
Terphenyl-d14	76
2,4,6 Tribromophenol	96

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Phenol	83	78	7
Pyrene	84	92	10

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 48

AETL Job No: 10461
Project Name: Aliso Cyn

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE50961	AE50962	AE50963	AE50965	
Sample No:	S2-T4D-4.5A	S2-T4D-3.5A	S2-T4-SP1	S2-T4-DRUM	
Date Sampled:	08/11/98	08/11/98	08/11/98	08/11/98	
Date Extracted:	08/13/98	08/13/98	08/13/98	08/13/98	Detection
Date Analyzed:	08/13/98	08/13/98	08/13/98	08/13/98	Limit
PH	7.15	7.26	7.29	6.99	1.00

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.15	7.15	<1

ND - Not Detected at The Detection Limit



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AETL JOB# 104827 PAGE 1 OF 2

CHAIN OF CUSTODY RECORD

CLIENT: John Prince
 Southern California Gas Company
 ADDRESS: Box 3249, ML 20B3, LA, CA 90051-1249
 SITE: A.R.S. Co.

TELEPHONE: (213) 244-5517
 FAX:

CONTACT PERSON: Max Reyheri - ENV America
 PROJECT NAME: Atiso Co
 PROJECT NUMBER:

ANALYSIS REQUESTED
 TPH Carboid (Chain)
 VOCs 8440
 PCBs 8470
 PCBs 8080
 Cam Metals
 pH
 BTEX - 8030
 Archive
 RAH 8310

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	LIQUID WASTE OTHER		
S3-DC	AES1089	8/13/98	1340	4oz Glass	X				
S3-DB-2	AES1090	"	1330	"	X				
MA-NT-BI-2.5	AES1091	8/13/98	0950	"	X				
MA-NT-BI-5.5	AES1091	"	1120	"	X				
MA-NT-BI-8	AES1092	8/14/98	1030	"	X				
MA-ST-BI-2.5	AES1093	8/13/98	1000	"	X				
MA-ST-BI-5	AES1093	"	1010	"	X				
MA-ST-BI-9	AES1094	8/14/98	1015	"	X				
MA-S-BI-2.5	AES1095	"	1045	"	X				
MA-S-BI-5	AES1096	"	1100	"	X				
MA-S-BI-10	AES1097	"	1145	"	X				
MA-N-2.5	AES1098	"	1050	"	X				

Collected By: *D. C. [Signature]* Date 8/14/98 Time 1620 Delivered By: *[Signature]* Date 8-14-98 Time 1625
 Relinquished By: *D. C. [Signature]* Date 8/14/98 Time 1620 Received For Laboratory: *[Signature]* Date 8-14-98 Time 1710
 Turn Around Time Normal Rush



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13/14-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-24-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020
DETECTION LIMIT		5	5	5	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS
AE51092	MA-NT-B1-8	ND	ND	ND	ND
AE51094	MA-ST-B1-9	ND	ND	ND	ND
AE51095	MA-S-B1-2.5	ND	ND	ND	ND
AE51097	MA-S-B1-10	ND	ND	ND	ND
AE51098	MA-N-2.5	ND	ND	ND	ND
AE51099	MA-N-B1-5	ND	ND	ND	ND
AE51101	MA-CP-S-B1-4	ND	ND	ND	ND
AE51102	MA-SW-B1-5	ND	ND	ND	ND
AE51103	MA-SW-B1-8	ND	ND	ND	ND
AE51104	M. Blank	ND	ND	ND	ND

ND = Not Detected at the detection limit

CR
Cyrus Razmara, Ph.D.
Laboratory Director



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SUMMARY OF RESULTS


CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13/14-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-24-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		GASOLINE C ₁ - C ₁₁	DIESEL C ₁₁ - C ₂₁	HEAVY HC C ₂₁
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS
AE51089	S3-DC	ND	48,900	84,100
AE51090	S3-DB-2	ND	ND	1,940
AE51091	MA-NT-B1-5.5	ND	1,630	3,460
AE51092	MA-NT-B1-8	ND	ND	ND
AE51093	MA-ST-B1-5	ND	427	488
AE51094	MA-ST-B1-9	ND	ND	48
AE51095	MA-S-B1-2.5	ND	101	168
AE51096	MA-S-B1-5	ND	1,010	1,310
AE51097	MA-S-B1-10	ND	445	635
AE51098	MA-N-2.5	ND	ND	ND
AE51099	MA-N-B1-5	ND	ND	48
AE51100	MACPS-B1-1.5	ND	133	136
AE51101	MA-CP-S-B1-4	ND	510	620
AE51102	MA-SW-B1-5	ND	129	295
AE51103	MA-SW-B1-8	ND	242	338
AE51104	Method Blank	ND	ND	ND

ND = Not Detected at the detection limit


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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

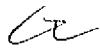
AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-18-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 6000/7000

				Lab ID	AE51089	AE51090	AE51091	AE51093
				Client ID	S3-DC	S3-DB-2	MA-NT-B1-5.5	MA-ST-B1-5
				Date Sampled	08-13-98	08-13-98	08-13-98	08-13-98
				Matrix	Soil	Soil	Soil	Soil
Analyte	Method	Units	DL	Date Analyzed	Results	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	08-18-98	ND	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	08-18-98	ND	3.3	2.8	2.5
Barium (Ba)	6010	mg/Kg	5.0	08-18-98	86.0	206	155	268
Beryllium (Be)	6010	mg/Kg	2.5	08-18-98	ND	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	08-18-98	ND	2.5	3.6	4.7
Chromium (Cr)	6010	mg/Kg	5.0	08-18-98	ND	22.6	24.1	39.5
Cobalt (Co)	6010	Mg/Kg	5.0	08-18-98	6.0	7.0	6.9	7.5
Copper (Cu)	6010	mg/Kg	5.0	08-18-98	31.8	28.5	45.1	50.0
Lead (Pb)	6010	mg/Kg	5.0	08-18-98	28.2	35.3	7.1	6.2
Mercury (Hg)	7471	mg/Kg	0.2	08-18-98	ND	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	08-18-98	ND	7.0	27.1	22.9
Nickel (Ni)	6010	mg/Kg	5.0	08-18-98	26.0	35.8	64.5	75.5
Selenium (Se)	7740	mg/Kg	0.5	08-18-98	ND	ND	ND	ND
Silver (Ag)	6010	mg/Kg	5.0	08-18-98	ND	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	08-18-98	ND	ND	ND	ND
Vanadium (V)	6010	mg/Kg	5.0	08-18-98	13.6	47.8	59.0	84.0
Zinc (Zn)	6010	mg/Kg	5.0	08-18-98	78.5	131	115	133
pH	9045	pH unit	1	08-14-98	7.05	7.08	NA	NA

ND = Not Detected at the Detection Limit
NA = Not Applicable
DL = Detection Limit


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Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-14-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-18-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 6000/7000

				Lab ID	AE51096	AE51100	AE51103
				Client ID	MA-S-B1-5	MACPS-B1-1.5	M. Blank
				Date Sampled	08-14-98	08-14-98	08-14-98
				Matrix	Soil	Soil	Soil
Analyte	Method	Units	DL	Date Analyzed	Results	Results	Results
Antimony (Sb)	6010	mg/Kg	10	08-18-98	ND	ND	ND
Arsenic (As)	7060	mg/Kg	1.0	08-18-98	3.0	3.3	ND
Barium (Ba)	6010	mg/Kg	5.0	08-18-98	163	145	ND
Beryllium (Be)	6010	mg/Kg	2.5	08-18-98	ND	ND	ND
Cadmium (Cd)	6010	mg/Kg	2.5	08-18-98	4.1	6.9	ND
Chromium (Cr)	6010	mg/Kg	5.0	08-18-98	37.8	28.3	ND
Cobalt (Co)	6010	Mg/Kg	5.0	08-18-98	7.3	7.2	ND
Copper (Cu)	6010	mg/Kg	5.0	08-18-98	47.7	37.4	ND
Lead (Pb)	6010	mg/Kg	5.0	08-18-98	6.2	8.0	ND
Mercury (Hg)	7471	mg/Kg	0.2	08-18-98	ND	ND	ND
Molybdenum (Mo)	6010	mg/Kg	5.0	08-18-98	26.1	28.4	ND
Nickel (Ni)	6010	mg/Kg	5.0	08-18-98	73.0	62.5	ND
Selenium (Se)	7740	mg/Kg	0.5	08-18-98	ND	ND	ND
Silver (Ag)	6010	mg/Kg	5.0	08-18-98	ND	ND	ND
Thallium (Tl)	6010	mg/Kg	10	08-18-98	ND	ND	ND
Vanadium (V)	6010	mg/Kg	5.0	08-18-98	82.0	72.0	ND
Zinc (Zn)	6010	mg/Kg	5.0	08-18-98	127	98.5	ND

ND = Not Detected at the Detection Limit
NA = Not Applicable
DL = Detection Limit


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Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13/14-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-24-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.


EPA Method 8310

Lab ID	AE51091	AE51093	AE51096	AE51100	AE51104
Client Sample ID	MA-NT-B1-5.5	MA-ST-B1-5	MA-S-B1-5	MACPS-B1-1.5	M. Blank
Date Sampled	08-13-98	08-13-98	08-14-98	08-14-98	08-14-98
Date Extracted	08-19-98	08-19-98	08-19-98	08-19-98	08-19-98
Date Analyzed	08-24-98	08-24-98	08-24-98	08-24-98	08-24-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	10*	1	1	1	1
Analyte	DL	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	0.913	0.613	0.338	0.051
Benzo (g,h,i) perylene	0.020	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	ND	ND	ND	ND
Fluoranthene	0.020	ND	ND	ND	ND
Fluorene	0.020	ND	ND	ND	ND
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND
Naphthalene	0.020	ND	ND	ND	ND
Phenanthrene	0.020	0.350	ND	ND	ND
Pyrene	0.020	ND	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit

*Detection limit should be increased by the same factor.


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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011


AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-24-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8080

Lab ID	AE51089	AE51090	AE51103		
Client Sample ID	S3-DC	S3-DB-2	M. Blank		
Date Sampled	08-13-98	08-13-98	08-13-98		
Date Extracted	08-18-98	08-18-98	08-18-98		
Date Analyzed	08-24-98	08-24-98	08-24-98		
Matrix	Soil	Soil	Soil		
Units	mg/Kg	mg/Kg	mg/Kg		
Dilution Factor	1	1	1		
Analyte	DL	Results	Results	Results	
PCB-1016	0.1	ND	ND	ND	
PCB-1221	0.1	ND	ND	ND	
PCB-1232	0.1	ND	ND	ND	
PCB-1242	0.1	ND	ND	ND	
PCB-1248	0.1	ND	ND	ND	
PCB-1254	0.1	ND	ND	ND	
PCB-1260	0.1	ND	ND	ND	

ND = Not Detected at the detection limit.


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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13/14-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-21-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8240

Lab ID	AE51089	AE51090	AE51091	AE51093	AE51096
Client Sample ID	S3-DC	S3-DB-2	MA-NT-B1-5.5	MA-ST-B1-5	MA-S-B1-5
Date Sampled	08-13-98	08-13-98	08-13-98	08-13-98	08-14-98
Date Extracted	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Date Analyzed	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results
Acetone	50	184	ND	ND	ND
Benzene	10	ND	ND	ND	ND
Bromodichloromethane	10	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND
Carbon Disulfide	10	ND	ND	ND	ND
Carbon Tetrachloride	10	ND	ND	ND	ND
Chlorobenzene	10	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND
2-Chloroethyl Vineylether	50	ND	ND	ND	ND
Chloroform	10	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND
Dibromochloromethane	10	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND
1,1-Dichloroethane	10	ND	ND	ND	ND
1,2-Dichloroethane	10	ND	ND	ND	ND
1,1-Dichloroethene	10	ND	ND	ND	ND
cis-1,2 Dichloroethene	10	ND	ND	ND	ND
trans-1,2 Dichloroethene	10	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND
cis-1,3 Dichloropropene	10	ND	ND	ND	ND
trans-1,3 Dichloropropene	10	ND	ND	ND	ND
Ethylbenzene	10	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND
MTBE	10	ND	ND	ND	ND
4-Methyl-2-Pentanone	50	ND	ND	ND	ND

ND = Not Detected at the detection limit
 DL = Detection Limit



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SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011


AETL JOB NO: 10484

EPA Method 8240 (Cont..)

Lab ID	AE51089	AE51090	AE51091	AE51093	AE51096
Client Sample ID	S3-DC	S3-DB-2	MA-NT-B1-5.5	MA-ST-B1-5	MA-S-B1-5
Date Sampled	08-13-98	08-13-98	08-13-98	08-13-98	08-14-98
Date Extracted	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Date Analyzed	08-21-98	08-21-98	08-21-98	08-21-98	08-21-98
Matrix	Soil	Soil	Soil	Soil	Soil
Units	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Dilution Factor	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results
Methylene Chloride	50	ND	ND	ND	ND
Styrene	10	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	10	ND	ND	ND	ND
Tetrachloroethene	10	ND	ND	ND	ND
Toluene	10	19.3	10.9	ND	ND
1,1,1-Trichloroethane	10	ND	ND	ND	ND
1,1,2-Trichloroethane	10	ND	ND	ND	ND
Trichloroethene	10	ND	ND	ND	ND
Trichlorofluoromethane	10	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND
Xylenes (Total)	20	ND	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit


Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-14-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-21-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8240

Lab ID	AE51100	AE51104			
Client Sample ID	MACPS-BI-1.5	Method Blank			
Date Sampled	08-14-98	08-14-98			
Date Extracted	08-21-98	08-21-98			
Date Analyzed	08-21-98	08-21-98			
Matrix	Soil	Soil			
Units	µg/Kg	µg/Kg			
Dilution Factor	1	1			
Analyte	DL	Results	Results		
Acetone	50	385	ND		
Benzene	10	ND	ND		
Bromodichloromethane	10	ND	ND		
Bromoform	50	ND	ND		
Bromomethane	50	ND	ND		
2-Butanone	50	59	ND		
Carbon Disulfide	10	ND	ND		
Carbon Tetrachloride	10	ND	ND		
Chlorobenzene	10	ND	ND		
Chloroethane	50	ND	ND		
2-Chloroethyl Vinylether	50	ND	ND		
Chloroform	10	ND	ND		
Chloromethane	50	ND	ND		
Dibromochloromethane	10	ND	ND		
1,2-Dichlorobenzene	10	ND	ND		
1,3-Dichlorobenzene	10	ND	ND		
1,4-Dichlorobenzene	10	ND	ND		
1,1-Dichloroethane	10	ND	ND		
1,2-Dichloroethane	10	ND	ND		
1,1-Dichloroethene	10	ND	ND		
cis-1,2 Dichloroethene	10	ND	ND		
trans-1,2 Dichloroethene	10	ND	ND		
1,2-Dichloropropane	10	ND	ND		
cis-1,3 Dichloropropene	10	ND	ND		
trans-1,3 Dichloropropene	10	ND	ND		
Ethylbenzene	10	ND	ND		
2-Hexanone	50	ND	ND		
MTBE	10	ND	ND		
4-Methyl-2-Pentanone	50	ND	ND		

ND = Not Detected at the detection limit

DL = Detection Limit



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SUMMARY OF RESULTS (Cont..)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10484

EPA Method 8240 (Cont...)

Lab ID	AE51100	AE51104			
Client Sample ID	MACPS-B1-1.5	Method Blank			
Date Sampled	08-14-98	08-14-98			
Date Extracted	08-21-98	08-21-98			
Date Analyzed	08-21-98	08-21-98			
Matrix	Soil	Soil			
Units	µg/Kg	µg/Kg			
Dilution Factor	1	1			
Analyte	DL	Results	Results		
Methylene Chloride	50	ND	ND		
Styrene	10	ND	ND		
1,1,2,2-Tetrachloroethane	10	ND	ND		
Tetrachloroethene	10	ND	ND		
Toluene	10	ND	ND		
1,1,1-Trichloroethane	10	ND	ND		
1,1,2-Trichloroethane	10	ND	ND		
Trichloroethene	10	ND	ND		
Trichlorofluoromethane	10	ND	ND		
Vinyl Acetate	50	ND	ND		
Vinyl Chloride	50	ND	ND		
Xylenes (Total)	20	ND	ND		

ND = Not Detected at the detection limit

DL = Detection Limit

CR
 Cyrus Razmara, Ph.D.
 Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10484

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-13-98
DATE SUBMITTED: 08-14-98
DATE ANALYSIS COMPLETED: 08-19-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8270

Lab ID	AE51089	AE51090	AE51104		
Client Sample ID	S3-DC	S3-DB-2	M. Blank		
Date Sampled	08-13-98	08-13-98	08-13-98		
Date Extracted	08-18-98	08-18-98	08-18-98		
Date Analyzed	08-19-98	08-19-98	08-19-98		
Matrix	Soil	Soil	Soil		
Units	mg/Kg	mg/Kg	mg/Kg		
Dilution Factor	20*	20*	1		
Analyte	DL	Results	Results	Results	
Acenaphthene	0.50	ND	ND	ND	
Acenaphthylene	0.50	ND	ND	ND	
Anthracene	0.50	ND	ND	ND	
Benzyl Alcohol	0.50	ND	ND	ND	
Benzoic Acid	0.50	ND	ND	ND	
Benzo (a) anthracene	0.50	ND	ND	ND	
Benzo (a) pyrene	0.50	ND	ND	ND	
Benzo (b) fluoranthene	0.50	ND	ND	ND	
Benzo (g,h,i) perylene	0.50	ND	ND	ND	
Benzo (k) fluoranthene	0.50	ND	ND	ND	
Bis-(2-chloroethoxy)methane	0.50	ND	ND	ND	
Bis-(2-chloroethyl)ether	0.50	ND	ND	ND	
Bis-(2-chloroisopropyl)ether	0.50	ND	ND	ND	
Bis-(2-ethylhexyl) Phthalate	0.50	ND	ND	ND	
4-Bromophenyl Phenyl Ether	0.50	ND	ND	ND	
Butyl Benzyl Phthalate	0.50	ND	ND	ND	
4-Chloroaniline	0.50	ND	ND	ND	
4-Chloro-3-methylphenol	0.50	ND	ND	ND	
2-Chloronaphthalene	0.50	ND	ND	ND	
2-Chlorophenol	0.50	ND	ND	ND	
4-Chlorophenyl Phenyl Ether	0.50	ND	ND	ND	
Chrysene	0.50	ND	ND	ND	
Di-n-butyl Phthalate	0.50	ND	ND	ND	
Di-n-octyl Phthalate	0.50	ND	ND	ND	
Dibenzo (a,h) anthracene	0.50	ND	ND	ND	
Dibenzofuran	0.50	ND	ND	ND	
1,2-Dichlorobenzene	0.50	ND	ND	ND	
1,3-Dichlorobenzene	0.50	ND	ND	ND	
1,4-Dichlorobenzene	0.50	ND	ND	ND	
3,3-Dichlorobenzidine	0.50	ND	ND	ND	
2,4-Dichlorophenol	0.50	ND	ND	ND	
Diethyl Phthalate	0.50	ND	ND	ND	
Dimethyl Phthalate	0.50	ND	ND	ND	

ND = Not Detected at the detection limit
 DL = Detection Limit



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SUMMARY OF RESULTS (Cont.)

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10484

EPA Method 8270

Lab ID	AE51089	AE51090	AE51104		
Client Sample ID	S3-DC	S3-DB-2	M. Blank		
Date Sampled	08-13-98	08-13-98	08-13-98		
Date Extracted	08-18-98	08-18-98	08-18-98		
Date Analyzed	08-19-98	08-19-98	08-19-98		
Matrix	Soil	Soil	Soil		
Units	mg/Kg	mg/Kg	mg/Kg		
Dilution Factor	20*	20*	1		
Analyte	DL	Results	Results	Results	
2,4-Dimethylphenol	0.50	ND	ND	ND	
4,6-Dinitro-2-methylphenol	0.50	ND	ND	ND	
2,4-Dinitrophenol	0.50	ND	ND	ND	
2,4-Dinitrotoluene	0.50	ND	ND	ND	
2,6-Dinitrotoluene	0.50	ND	ND	ND	
Fluoranthene	0.50	ND	ND	ND	
Fluorene	0.50	ND	ND	ND	
Hexachlorobenzene	0.50	ND	ND	ND	
Hexachlorobutadiene	0.50	ND	ND	ND	
Hexachlorocyclopentadiene	0.50	ND	ND	ND	
Hexachloroethane	0.50	ND	ND	ND	
Indeno-(1,2,3-cd) pyrene	0.50	ND	ND	ND	
Isophorone	0.50	ND	ND	ND	
2-Methylnaphthalene	0.50	ND	ND	ND	
2-Methylphenol	0.50	ND	ND	ND	
3-Methylphenol	0.50	ND	ND	ND	
4-Methylphenol	0.50	ND	ND	ND	
Naphthalene	0.50	ND	ND	ND	
2-Nitroaniline	0.50	ND	ND	ND	
3-Nitroaniline	0.50	ND	ND	ND	
4-Nitroaniline	0.50	ND	ND	ND	
Nitrobenzene	0.50	ND	ND	ND	
2-Nitrophenol	0.50	ND	ND	ND	
4-Nitrophenol	0.50	ND	ND	ND	
N-Nitrosodi-n-propylamine	0.50	ND	ND	ND	
N-Nitrosodiphenylamine	0.50	ND	ND	ND	
Pentachlorophenol	0.50	ND	ND	ND	
Phenanthrene	0.50	ND	ND	ND	
Phenol	0.50	ND	ND	ND	
Pyrene	0.50	ND	ND	ND	
1,2,4-Trichlorobenzene	0.50	ND	ND	ND	
2,4,5-Trichlorophenol	0.50	ND	ND	ND	
2,4,6-Trichlorophenol	0.50	ND	ND	ND	

ND = Not Detected at the detection limit

DL = Detection Limit

*Detection limit should be increased by the same factor.

Cyrus Razmara, Ph.D.
 Laboratory Director



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 14

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/Kg

Lab ID:	AE51089	AE51090	AE51091	AE51093	
Sample No:	S3-DC	S3-DB-2	MA-NT-B1-5.5	MA-ST-B1-5	
Date Sampled:	08/13/98	08/13/98	08/13/98	08/13/98	
Date Extracted:	08/24/98	08/24/98	08/24/98	08/24/98	
Date Analyzed:	08/24/98	08/24/98	08/24/98	08/24/98	Detection Limit
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE51089	AE51090	AE51091	AE51093
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	58	36	53	41
Trifluorotoluene	69	54	68	65
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzene	88	87	1.1	
Ethylbenzene	90	88	2.2	
Toluene	91	89	2.2	
M- Xylene	89	87	2.3	
O- Xylene	100	99	1	

Comment to Sample(s)

AE51089: AE51090: Low surrogate recovery due to matrix interference.
AE51091: AE51093: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 15

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD.
TPH as Gasoline
Units: mg/Kg

Lab ID:	AE51096	AE51100	
Sample No:	MA-S-B1-5	MACPS-B1-1.5	
Date Sampled:	08/14/98	08/14/98	
Date Extracted:	08/24/98	08/24/98	Detection
Date Analyzed:	08/24/98	08/24/98	Limit
TPH as Gasoline or Light HCs	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE51096	AE51100	
<u>Surrogate Percent Recovery</u>			
Bromofluorobenzene	36	53	
Trifluorotoluene	58	74	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	88	87	1.1
Ethylbenzene	90	88	2.2
Toluene	91	89	2.2
M- Xylene	89	87	2.3
O- Xylene	100	99	1

Comment to Sample(s)
AE51096; AE51100: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51092	AE51094	AE51095	AE51097	
Sample No:	MA-NT-B1-8	MA-ST-B1-9	MA-S-B1-2.5	MA-S-B1-10	
Date Sampled:	08/14/98	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/24/98	08/24/98	08/24/98	08/24/98	
Date Analyzed:	08/24/98	08/24/98	08/24/98	08/24/98	Detection Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE51092	AE51094	AE51095	AE51097
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	73	74	44	44
Trifluorotoluene	82	81	69	64

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	88	87	1.1
Ethylbenzene	90	88	2.2
Toluene	91	89	2.2
M- Xylene	89	87	2.3
O- Xylene	100	99	1

Comment to Sample(s)

AE51095: AE51097: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 17

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51098	AE51099	AE51101	AE51102	
Sample No:	MA-N-2.5	MA-N-B1-5	MA-CP-S-B1-4	MA-SW-B1-5	
Date Sampled:	08/14/98	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/24/98	08/24/98	08/24/98	08/24/98	Detection
Date Analyzed:	08/24/98	08/24/98	08/24/98	08/24/98	Limit
Benzene	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	5
Xylenes (Total)	ND	ND	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE51098	AE51099	AE51101	AE51102
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	63	63	48	51
Trifluorotoluene	75	73	70	68
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzene	88	87	1.1	
Ethylbenzene	90	88	2.2	
Toluene	91	89	2.2	
M- Xylene	89	87	2.3	
O- Xylene	100	99	1	

Comment to Sample(s)

AE51098: AE51099: Low surrogate recovery due to matrix interference.
AE51101: AE51102: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51103	AE51104	
Sample No:	MA-SW-B1-8	METHOD BLANK	
Date Sampled:	08/14/98	08/14/98	
Date Extracted:	08/24/98	08/24/98	Detection
Date Analyzed:	08/24/98	08/24/98	Limit
Benzene	ND	ND	5
Ethylbenzene	ND	ND	5
Toluene	ND	ND	5
Xylenes (Total)	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE51103	AE51104	
<u>Surrogate Percent Recovery</u>			
Bromofluorobenzene	42	90	
Trifluorotoluene	62	98	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	88	87	1.1
Ethylbenzene	90	88	2.2
Toluene	91	89	2.2
M- Xylene	89	87	2.3
O- Xylene	100	99	1

Comment to Sample(s)
AE51103: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51089	
Sample No:	S3-DC	
Date Sampled:	08/13/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/20/98	Limit

TPH as Diesel and Heavier HC	133000	200
------------------------------	--------	-----

QUALITY CONTROL SUMMARY

Lab ID:	AE51089		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	99		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	110	105	4.7

Comment to Sample(s)
AE51089: (C12-C23) = 48,900mg/Kg; (C23+) = 84,100mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51090	AE51091	
Sample No:	S3-DB-2	MA-NT-B1-5.5	
Date Sampled:	08/13/98	08/13/98	
Date Extracted:	08/19/98	08/19/98	Detection
Date Analyzed:	08/20/98	08/20/98	Limit.
TPH as Diesel and Heavier HC	1940	5090	20

QUALITY CONTROL SUMMARY

Lab ID:	AE51090	AE51091	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	106	110	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	105	4.7

Comment to Sample(s)
AE51090: (C12-C23) = ND; (C23+) = 1940mg/Kg.
AE51091: (C12-C23) = 1630mg/Kg; (C23+) = 3460mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 21

Report To: (SC/G)
Southern California Gas Company
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Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51092	
Sample No:	MA-NT-B1-8	
Date Sampled:	08/14/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/20/98	Limit

TPH as Diesel and Heavier HC	ND	10
------------------------------	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE51092		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	80		
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Diesel	110	105	4.7

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 22

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51093	
Sample No:	MA-ST-B1-5	
Date Sampled:	08/13/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/20/98	Limit

TPH as Diesel and Heavier HC	915	20
------------------------------	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE51093		
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	103		
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	105	4.7

Comment to Sample(s)
AE51093: (C12-C23) = 427mg/Kg; (C23+) = 488mg/Kg.

ND - Not Detected at The Detection Limit

AC_RWQCB_0001143



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 23

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51094	AE51095	
Sample No:	MA-ST-B1-9	MA-S-B1-2.5	
Date Sampled:	08/14/98	08/14/98	
Date Extracted:	08/19/98	08/19/98	Detection
Date Analyzed:	08/20/98	08/20/98	Limit

TPH as Diesel and Heavier HC	48	269	10
------------------------------	----	-----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE51094	AE51095	
<u>Surrogate Percent Recovery</u>			
Chlorobenzene	101	101	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Diesel	110	105	4.7

Comment to Sample(s)

AE51094: (C12-C23) = ND; (C23+) = 48mg/Kg.
AE51095: (C12-C23) = 101mg/Kg; (C23+) = 168mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 24

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51096	
Sample No:	MA-S-B1-5	
Date Sampled:	08/14/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/20/98	Limit

TPH as Diesel and Heavier HC	2320	20
------------------------------	------	----

QUALITY CONTROL SUMMARY

Lab ID:	AE51096		
<u>Surrogate Percent Recovery</u> Chlorobenzene	106		
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>
Diesel	110	105	4.7

Comment to Sample(s)
AE51096: (C12-C23) = 1010mg/Kg; (C23+) = 1310mg/Kg.

ND - Not Detected at The Detection Limit

AC_RWQCB_0001145



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 25

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51097	AE51098	AE51099	AE51100	
Sample No:	MA-S-B1-10	MA-N-2.5	MA-N-B1-5	MACPS-B1-1.5	
Date Sampled:	08/14/98	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/19/98	08/19/98	08/19/98	08/19/98	Detection
Date Analyzed:	08/20/98	08/20/98	08/20/98	08/20/98	Limit
TPH as Diesel and Heavier HC	1080	ND	48	269	10

QUALITY CONTROL SUMMARY

Lab ID:	AE51097	AE51098	AE51099	AE51100
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	109	107	95	95
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Diesel	110	105	4.7	

Comment to Sample(s)

AE51097: (C12-C12) = 445mg/Kg; (C23+) = 635mg/Kg.
AE51099: (C12-C23) = ND; (C23+) = 48mg/Kg.
AE51100: (C12-C23) = 133mg/Kg; (C23+) = 136mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 26

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51101	AE51102	AE51103	AE51104	
Sample No:	MA-CP-S-B1-4	MA-SW-B1-5	MA-SW-B1-8	METHOD BLANK	
Date Sampled:	08/14/98	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/19/98	08/19/98	08/19/98	08/19/98	Detection
Date Analyzed:	08/20/98	08/20/98	08/20/98	08/20/98	Limit
TPH as Diesel and Heavier HC	1130	424	580	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE51101	AE51102	AE51103	AE51104
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	105	101	99	89
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Diesel	110	105	4.7	

Comment to Sample(s)

AE51101: (C12-C23) = 510mg/Kg; (C23+) = 620mg/Kg.
AE51102: (C12-C23) = 129mg/Kg; (C23+) = 295mg/Kg.
AE51103: (C12-C23) = 242mg/Kg; (C23+) = 338mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 27

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (6000/7000`S)
CAC Title 22 Metals
Units: mg/kg

Lab ID:	AE51089	AE51090	AE51091	AE51093	
Sample No:	S3-DC	S3-DB-2	MA-NT-B1-5.5	MA-ST-B1-5	
Date Sampled:	08/13/98	08/13/98	08/13/98	08/13/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	08/17/98	Detection
Date Analyzed:	08/18/98	08/18/98	08/18/98	08/18/98	Limit
Antimony (Sb)	ND	ND	ND	ND	10
Arsenic (As)	ND	3.3	2.8	2.5	1.0
Barium (Ba)	86.0	206	155	268	5.0
Beryllium (Be)	ND	ND	ND	ND	2.5
Cadmium (Cd)	ND	2.5	3.6	4.7	2.5
Chromium (Cr)	ND	22.6	24.1	39.5	5.0
Cobalt (Co)	6.0	7.0	6.9	7.5	5.0
Copper (Cu)	31.8	28.5	45.1	50.0	5.0
Lead (Pb)	28.2	35.3	7.1	6.2	5.0
Mercury (Hg)	ND	ND	ND	ND	0.2
Molybdenum (Mo)	ND	7.0	27.1	22.9	5.0
Nickel (Ni)	26.0	35.8	64.5	75.5	5.0
Selenium (Se)	ND	ND	ND	ND	0.5
Silver (Ag)	ND	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	ND	10
Vanadium (V)	13.6	47.8	59.0	84.0	5.0
Zinc (Zn)	78.5	131	115	133	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	96
Arsenic (As)	93
Barium (Ba)	92
Beryllium (Be)	93
Cadmium (Cd)	100
Chromium (Cr)	102
Cobalt (Co)	100
Copper (Cu)	100
Lead (Pb)	103
Mercury (Hg)	93
Molybdenum (Mo)	98
Nickel (Ni)	98
Selenium (Se)	106
Silver (Ag)	97
Thallium (Tl)	101
Vanadium (V)	99
Zinc (Zn)	101

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 28

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (6000/7000`S)
CAC Title 22 Metals
Units: mg/kg

Lab ID:	AE51096	AE51100	AE51104	
Sample No:	MA-S-B1-5	MACPS-B1-1.5	METHOD BLANK	
Date Sampled:	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/17/98	08/17/98	08/17/98	Detection
Date Analyzed:	08/18/98	08/18/98	08/18/98	Limit

Antimony (Sb)	ND	ND	ND	10
Arsenic (As)	3.0	3.3	ND	1.0
Barium (Ba)	163	145	ND	5.0
Beryllium (Be)	ND	ND	ND	2.5
Cadmium (Cd)	4.1	6.9	ND	2.5
Chromium (Cr)	37.8	28.3	ND	5.0
Cobalt (Co)	7.3	7.2	ND	5.0
Copper (Cu)	47.7	37.4	ND	5.0
Lead (Pb)	6.2	8.0	ND	5.0
Mercury (Hg)	ND	ND	ND	0.2
Molybdenum (Mo)	26.1	28.4	ND	5.0
Nickel (Ni)	73.0	62.5	ND	5.0
Selenium (Se)	ND	ND	ND	0.5
Silver (Ag)	ND	ND	ND	5.0
Thallium (Tl)	ND	ND	ND	10
Vanadium (V)	82.0	72.0	ND	5.0
Zinc (Zn)	127	98.5	ND	5.0

QUALITY CONTROL SUMMARY

	LCS %REC.
Antimony (Sb)	96
Arsenic (As)	93
Barium (Ba)	92
Beryllium (Be)	93
Cadmium (Cd)	100
Chromium (Cr)	102
Cobalt (Co)	100
Copper (Cu)	100
Lead (Pb)	103
Mercury (Hg)	93
Molybdenum (Mo)	98
Nickel (Ni)	98
Selenium (Se)	106
Silver (Ag)	97
Thallium (Tl)	101
Vanadium (V)	99
Zinc (Zn)	101

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 29

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51091	
Sample No:	MA-NT-B1-5.5	
Date Sampled:	08/13/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/24/98	Limit

Benzo (a) anthracene	ND	0.200
Benzo (a) pyrene	ND	0.200
Benzo (b) fluoranthene	0.913	0.200
Benzo (k) fluoranthene	ND	0.200
Chrysene	ND	0.200
Dibenzo (a, h) anthracene	ND	0.200
Indeno (1, 2, 3-cd) pyrene	ND	0.200
Acenaphthene	ND	0.200
Acenaphthylene	ND	0.200
Anthracene	ND	0.200
Benzo (ghi) perylene	ND	0.200
Fluoranthene	ND	0.200
Fluorene	ND	0.200
Naphthalene	ND	0.200
Phenanthrene	0.350	0.200
Pyrene	ND	0.200

QUALITY CONTROL SUMMARY

Lab ID: AE51091

Surrogate Percent Recovery
P- Terphenyl-d14 179

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	98	101	3.1
Benzo (a) pyrene	97	105	7.9
Naphthalene	104	97	7

Comment to Sample(s)
AE51091: High surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 30

Report To: (SC/G)
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Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51093	AE51096	AE51100	AE51104	
Sample No:	MA-ST-B1-5	MA-S-B1-5	MACPS-B1-1.5	METHOD BLANK	
Date Sampled:	08/13/98	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/19/98	08/19/98	08/19/98	08/19/98	
Date Analyzed:	08/24/98	08/24/98	08/24/98	08/24/98	Detection Limit
Benzo (a) anthracene	ND	ND	ND	ND	0.020
Benzo (a) pyrene	ND	ND	ND	ND	0.020
Benzo (b) fluoranthene	0.613	0.338	0.051	ND	0.020
Benzo (k) fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	ND	ND	ND	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE51093	AE51096	AE51100	AE51104
<u>Surrogate Percent Recovery</u>				
P- Terphenyl-d14	94	95	111	75
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzo (a) anthracene	98	101	3.1	
Benzo (a) pyrene	97	105	7.9	
Naphthalene	104	97	7	

ND - Not Detected at The Detection Limit

AC_RWQCB_0001151



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 31

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8080)
Poly Chlorinated Biphenyls (PCBs)
Units: mg/Kg

Lab ID:	AE51089	AE51090	AE51104	
Sample No:	S3-DC	S3-DB-2	METHOD BLANK	
Date Sampled:	08/13/98	08/13/98	08/14/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/24/98	08/24/98	08/24/98	Limit

PCB-1016	ND	ND	ND	0.1
PCB-1221	ND	ND	ND	0.1
PCB-1232	ND	ND	ND	0.1
PCB-1242	ND	ND	ND	0.1
PCB-1248	ND	ND	ND	0.1
PCB-1254	ND	ND	ND	0.1
PCB-1260	ND	ND	ND	0.1

QUALITY CONTROL SUMMARY

Lab ID:	AE51089	AE51090	AE51104
<u>Surrogate Percent Recovery</u>			
<u>Tetrachloro M-Xylene</u>	75	88	103
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
PCB-1260	96	107	11

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 32

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE51089	AE51090	AE51091	AE51093	Detection Limit
Sample No:	S3-DC	S3-DB-2	MA-NT-B1-5.5	MA-ST-B1-5	
Date Sampled:	08/13/98	08/13/98	08/13/98	08/13/98	
Date Extracted:	08/21/98	08/21/98	08/21/98	08/21/98	
Date Analyzed:	08/21/98	08/21/98	08/21/98	08/21/98	
Acetone	184	ND	ND	ND	50
Benzene	ND	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	ND	10
Bromoform	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	50
2 Butanone	ND	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	ND	50
Chloroform	ND	ND	ND	ND	10
Chloromethane	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	10
2 Hexanone	ND	ND	ND	ND	50
MTBE	ND	ND	ND	ND	10
4 Methyl-2-Pentanone	ND	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	ND	50
Styrene	ND	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	ND	10
Toluene	19.3	10.9	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	ND	10
Trichloroethene	ND	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 33

QUALITY CONTROL SUMMARY

Lab ID:	AE51089	AE51090	AE51091	AE51093
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	115	127	129	134
1,2 Dichloroethane-d4	135	128	122	127
Toluene-d8	83	89	99	92
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	94	103	9	
Chlorobenzene	86	94	9	
1,1 Dichloroethene	89	90	1	
Toluene	67	77	14	
Trichloroethene	77	90	15	

Comment to Sample(s)

AE51089: AE51090: High surrogate recovery due to matrix interference.
AE51091: AE51093: High surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit

AC_RWQCB_0001154



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 34

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8240
Purgeable Volatile Organics by GC/MS
Units: ug/kg

Lab ID:	AE51096	AE51100	AE51104	
Sample No:	MA-S-B1-5	MACPS-B1-1.5	METHOD BLANK	
Date Sampled:	08/14/98	08/14/98	08/14/98	
Date Extracted:	08/21/98	08/21/98	08/21/98	Detection
Date Analyzed:	08/21/98	08/21/98	08/21/98	Limit

Acetone	ND	385	ND	50
Benzene	ND	ND	ND	10
Bromodichloromethane	ND	ND	ND	10
Bromoform	ND	ND	ND	50
Bromomethane	ND	ND	ND	50
2 Butanone	ND	59	ND	50
Carbon Disulfide	ND	ND	ND	10
Carbon Tetrachloride	ND	ND	ND	10
Chlorobenzene	ND	ND	ND	10
Chloroethane	ND	ND	ND	50
2 Chloroethyl Vinylether	ND	ND	ND	50
Chloroform	ND	ND	ND	10
Chloromethane	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	10
1,2 Dichlorobenzene	ND	ND	ND	10
1,3 Dichlorobenzene	ND	ND	ND	10
1,4 Dichlorobenzene	ND	ND	ND	10
1,1 Dichloroethane	ND	ND	ND	10
1,2 Dichloroethane	ND	ND	ND	10
1,1 Dichloroethene	ND	ND	ND	10
CIS 1,2 Dichloroethene	ND	ND	ND	10
TRNS 1,2 Dichloroethene	ND	ND	ND	10
1,2 Dichloropropane	ND	ND	ND	10
CIS 1,3 Dichloropropene	ND	ND	ND	10
TRNS 1,3 Dichloropropene	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	10
2 Hexanone	ND	ND	ND	50
MTBE	ND	ND	ND	10
4 Methyl-2-Pentanone	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	50
Styrene	ND	ND	ND	10
1,1,2,2 Tetrachloroethane	ND	ND	ND	10
Tetrachloroethene	ND	ND	ND	10
Toluene	ND	ND	ND	10
1,1,1 Trichloroethane	ND	ND	ND	10
1,1,2 Trichloroethane	ND	ND	ND	10
Trichloroethene	ND	ND	ND	10
Trichlorofluoromethane	ND	ND	ND	10
Vinyl Acetate	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	50
Xylenes (Total)	ND	ND	ND	20

(Continued)

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 35

QUALITY CONTROL SUMMARY

Lab ID:	AE51096	AE51100	AE51104
<u>Surrogate Percent Recovery</u>			
Bromofluorobenzene	141	130	97
1,2 Dichloroethane-d4	126	120	109
Toluene-d8	92	93	102
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	94	103	9
Chlorobenzene	86	94	9
1,1 Dichloroethene	89	90	1
Toluene	67	77	14
Trichloroethene	77	90	15

Comment to Sample(s)

AE51096: AE51100: High surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit

AC_RWQCB_0001156



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 36

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8270
Semivolatile Organics by GC/MS
Units: mg/Kg

Lab ID:	AE51089	AE51090	
Sample No:	S3-DC	S3-DB-2	
Date Sampled:	08/13/98	08/13/98	
Date Extracted:	08/18/98	08/18/98	Detection
Date Analyzed:	08/19/98	08/19/98	Limit

Acenaphthene	ND	ND	10
Acenaphthylene	ND	ND	10
Anthracene	ND	ND	10
Benzo (a) anthracene	ND	ND	10
Benzo (a) pyrene	ND	ND	10
Benzo (b) fluoranthene	ND	ND	10
Benzo (ghi) perylene	ND	ND	10
Benzo (k) fluoranthene	ND	ND	10
Benzoic Acid	ND	ND	10
Benzyl Alcohol	ND	ND	10
Bis (2-chloroethoxy) methane	ND	ND	10
Bis (2-chloroethyl) ether	ND	ND	10
Bis (2-chloroisopropyl) ether	ND	ND	10
Bis (2-ethylhexyl) Phthalate	ND	ND	10
4 Bromophenyl Phenyl Ether	ND	ND	10
Butyl Benzyl Phthalate	ND	ND	10
4 Chloro-3-methylphenol	ND	ND	10
4 Chloroaniline	ND	ND	10
2 Chloronaphthalene	ND	ND	10
2 Chlorophenol	ND	ND	10
4 Chlorophenyl Phenyl Ether	ND	ND	10
Chrysene	ND	ND	10
Di-n-butylphthalate	ND	ND	10
Di-n-octylphthalate	ND	ND	10
Dibenzo (a, h) anthracene	ND	ND	10
Dibenzofuran	ND	ND	10
1,2 Dichlorobenzene	ND	ND	10
1,3 Dichlorobenzene	ND	ND	10
1,4 Dichlorobenzene	ND	ND	10
3,3' Dichlorobenzidine	ND	ND	10
2,4 Dichlorophenol	ND	ND	10
Diethyl Phthalate	ND	ND	10
Dimethyl Phthalate	ND	ND	10
2,4 Dimethylphenol	ND	ND	10
4,6 Dinitro-2-methylphenol	ND	ND	10
2,4 Dinitrophenol	ND	ND	10
2,4 Dinitrotoluene	ND	ND	10
2,6 Dinitrotoluene	ND	ND	10
Fluoranthene	ND	ND	10
Fluorene	ND	ND	10
Hexachlorobenzene	ND	ND	10
Hexachlorobutadiene	ND	ND	10
Hexachlorocyclopentadiene	ND	ND	10
(Continued)			

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 37

Units: mg/Kg

Lab ID: Sample No:	AE51089 S3-DC	AE51090 S3-DB-2	Detection Limit
Hexachloroethane	ND	ND	10
Indeno (1,2,3-cd) pyrene	ND	ND	10
Isophorone	ND	ND	10
2 Methyl naphthalene	ND	ND	10
2 Methylphenol	ND	ND	10
3 Methylphenol	ND	ND	10
4 Methylphenol	ND	ND	10
Naphthalene	ND	ND	10
2 Nitroaniline	ND	ND	10
3 Nitroaniline	ND	ND	10
4 Nitroaniline	ND	ND	10
Nitrobenzene	ND	ND	10
2 Nitrophenol	ND	ND	10
4 Nitrophenol	ND	ND	10
N Nitrosodi-n-propylamine	ND	ND	10
N Nitrosodiphenylamine	ND	ND	10
Pentachlorophenol	ND	ND	10
Phenanthrene	ND	ND	10
Phenol	ND	ND	10
Pyrene	ND	ND	10
1,2,4 Trichlorobenzene	ND	ND	10
2,4,5 Trichlorophenol	ND	ND	10
2,4,6 Trichlorophenol	ND	ND	10

QUALITY CONTROL SUMMARY

Lab ID:	AE51089	AE51090	
<u>Surrogate Percent Recovery</u>			
2 Fluorobiphenyl	48	61	
Fluorophenol	81	106	
Nitrobenzene-d5	48	57	
Phenol-d6	87	80	
Terphenyl-d14	100	123	
2,4,6 Tribromophenol	36	29	
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Phenol	83	78	7
Pyrene	84	92	10

Comment to Sample(s)

AE51089: AE51090: Raised detection limit due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 38

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8270
Semivolatile Organics by GC/MS
Units: mg/Kg

Lab ID: AE51104
Sample No: METHOD BLANK
Date Sampled: 08/14/98
Date Extracted: 08/18/98
Date Analyzed: 08/19/98
Detection Limit

Acenaphthene	ND	0.50
Acenaphthylene	ND	0.50
Anthracene	ND	0.50
Benzo (a) anthracene	ND	0.50
Benzo (a) pyrene	ND	0.50
Benzo (b) fluoranthene	ND	0.50
Benzo (ghi) perylene	ND	0.50
Benzo (k) fluoranthene	ND	0.50
Benzoic Acid	ND	0.50
Benzyl Alcohol	ND	0.50
Bis (2-chloroethoxy) methane	ND	0.50
Bis (2-chloroethyl) ether	ND	0.50
Bis (2-chloroisopropyl) ether	ND	0.50
Bis (2-ethylhexyl) Phthalate	ND	0.50
4 Bromophenyl Phenyl Ether	ND	0.50
Butyl Benzyl Phthalate	ND	0.50
4 Chloro-3-methylphenol	ND	0.50
4 Chloroaniline	ND	0.50
2 Chloronaphthalene	ND	0.50
2 Chlorophenol	ND	0.50
4 Chlorophenyl Phenyl Ether	ND	0.50
Chrysene	ND	0.50
Di-n-butylphthalate	ND	0.50
Di-n-octylphthalate	ND	0.50
Dibenzo (a, h) anthracene	ND	0.50
Dibenzofuran	ND	0.50
1,2 Dichlorobenzene	ND	0.50
1,3 Dichlorobenzene	ND	0.50
1,4 Dichlorobenzene	ND	0.50
3,3' Dichlorobenzidine	ND	0.50
2,4 Dichlorophenol	ND	0.50
Diethyl Phthalate	ND	0.50
Dimethyl Phthalate	ND	0.50
2,4 Dimethylphenol	ND	0.50
4,6 Dinitro-2-methylphenol	ND	0.50
2,4 Dinitrophenol	ND	0.50
2,4 Dinitrotoluene	ND	0.50
2,6 Dinitrotoluene	ND	0.50
Fluoranthene	ND	0.50
Fluorene	ND	0.50
Hexachlorobenzene	ND	0.50
Hexachlorobutadiene	ND	0.50
Hexachlorocyclopentadiene	ND	0.50
(Continued)		

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 39

Units: mg/Kg

Lab ID: Sample No:	AE51104 METHOD BLANK	Detection Limit
Hexachloroethane	ND	0.50
Indeno (1,2,3-cd)pyrene	ND	0.50
Isophorone	ND	0.50
2 Methylnaphthalene	ND	0.50
2 Methylphenol	ND	0.50
3 Methylphenol	ND	0.50
4 Methylphenol	ND	0.50
Naphthalene	ND	0.50
2 Nitroaniline	ND	0.50
3 Nitroaniline	ND	0.50
4 Nitroaniline	ND	0.50
Nitrobenzene	ND	0.50
2 Nitrophenol	ND	0.50
4 Nitrophenol	ND	0.50
N Nitrosodi-n-propylamine	ND	0.50
N Nitrosodiphenylamine	ND	0.50
Pentachlorophenol	ND	0.50
Phenanthrene	ND	0.50
Phenol	ND	0.50
Pyrene	ND	0.50
1,2,4 Trichlorobenzene	ND	0.50
2,4,5 Trichlorophenol	ND	0.50
2,4,6 Trichlorophenol	ND	0.50

QUALITY CONTROL SUMMARY

Lab ID: AE51104

Surrogate Percent Recovery

2 Fluorobiphenyl	57
Fluorophenol	86
Nitrobenzene-d5	59
Phenol-d6	85
Terphenyl-d14	65
2,4,6 Tribromophenol	84

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Phenol	83	78	7
Pyrene	84	92	10

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10484
Project Name: Aliso Canyon

Page: 40

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 9045
PH
Units: PH units

Lab ID:	AE51089	AE51090	
Sample No:	S3-DC	S3-DB-2	
Date Sampled:	08/13/98	08/13/98	
Date Extracted:	08/14/98	08/14/98	Detection
Date Analyzed:	08/14/98	08/14/98	Limit

PH	7.05	7.08	1.00
----	------	------	------

QUALITY CONTROL SUMMARY

	Sample Result	Sample DUP. Result	AVG. RPD
PH	7.15	7.15	<1

ND - Not Detected at The Detection Limit

AC_RWQCB_0001161



American Environmental Testing Laboratory Inc.
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 Fax (818) 845-8940

CHAIN OF CUSTODY RECORD

CLIENT: John Prince TELEPHONE: (213) 244-5517

ADDRESS: Southern California Gas Company FAX:

SITE: Box 3249, ML2083, Los Angeles, CA 90051-1249

CONTACT PERSON: Max Raghani-ENV America PROJECT NAME: Aliso Canyon PROJECT NUMBER:

ANALYSIS REQUESTED

TRH Carbon Chg
 BTEX-8020
 PAH-8310

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE			PRES.	REMARKS
					SOIL	WATER	LIQUID WASTE		
-	FF-B4-30	8/12/98	1420	6"/55	X			AE51015	X
-	FF-B4-35		1435		X			AE51016	X
-	FF-B4-40		1445		X			AE51017	X
-	FF-B4-45		1510		X			AE51018	X
-	FF-B4-50		1515		X			AE51019	X
-	FF-B4-55		1535		X			AE51020	X
-	FF-B4-60		1550		X			AE51021	X
-	FF-B4-63		1600		X			AE51022	X
-	FF-B2-25		1145		X			AE51023	X
-	FF-B3-25		1250		X			AE51024	X
-	FF-B3-30		1255		X			AE51025	X

Collected By: D. G. [Signature] Date 8/12/98 Time 1600 Delivered By: Axel Gutierrez Date 8/13/98 Time 7:45

Relinquished By: D. G. [Signature] Date 9/13/98 Time 0800 Received For Laboratory: [Signature] Date 8/13/98 Time 8:30

Turn Around Time Normal Rush



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SUMMARY OF RESULTS


CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10466

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-19-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		BENZENE	TOLUENE	ETHYL BENZENE	XYLENES
UNITS		µg/Kg	µg/Kg	µg/Kg	µg/Kg
METHOD OF ANALYSIS		8020	8020	8020	8020
DETECTION LIMIT		5	5	5	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS	RESULTS
AE51015	FF-B4-30	995	936	221	734
AE51016	FF-B4-35	15,900	20,200	5,280	20,300
AE51017	FF-B4-40	1,630	1,190	250	1,210
AE51018	FF-B4-45	629	280	69	607
AE51019	FF-B4-50	252	82	16	172
AE51020	FF-B4-55	49	45	ND	158
AE51021	FF-B4-60	15	30	10	114
AE51022	FF-B4-63	19	ND	9.6	22
AE51023	FF-B2-25	ND	ND	ND	ND
AE51024	FF-B3-25	ND	ND	ND	13
AE51025	FF-B3-30	ND	ND	ND	ND
AE51026	M. Blank	ND	ND	ND	ND

ND = Not Detected at the detection limit


Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10466

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-19-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

ANALYTE		GASOLINE C ₁ - C ₁₁	DIESEL C ₁₂ - C ₂₁	HEAVY HC C ₂₂ -
UNITS		mg/Kg	mg/Kg	mg/Kg
METHOD OF ANALYSIS		M8015G	M8015D	M8015D
DETECTION LIMIT		1.0	10	10
LAB ID	FIELD ID	RESULTS	RESULTS	RESULTS
AE51015	FF-B4-30	14	1,360	850
AE51016	FF-B4-35	332	1,710	640
AE51017	FF-B4-40	20	3,270	1,680
AE51018	FF-B4-45	11	1,750	840
AE51019	FF-B4-50	9.3	1,910	1,100
AE51020	FF-B4-55	5.9	1,110	500
AE51021	FF-B4-60	4.3	560	204
AE51022	FF-B4-63	1.2	1,660	860
AE51023	FF-B2-25	ND	ND	ND
AE51024	FF-B3-25	ND	341	150
AE51025	FF-B3-30	ND	353	158
AE51026	M. Blank	ND	ND	ND

ND = Not Detected at the detection limit

CR
Cyrus Razmara, Ph.D.
Laboratory Director



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SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
 555 W. 5th St. -ML20B
 Los Angeles, CA 90013-1011

AETL JOB NO: 10466

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-20-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.


EPA Method 8310

Lab ID	AE51015	AE51016	AE51017	AE51018	AE51019	AE51020
Client Sample ID	FF-B4-30	FF-B4-35	FF-B4-40	FF-B4-45	FF-B4-50	FF-B4-55
Date Sampled	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Date Analyzed	08-20-98	08-20-98	08-20-98	08-20-98	08-20-98	08-20-98
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	ND	ND	ND	0.053
Acenaphthylene	0.020	ND	ND	ND	ND	ND
Anthracene	0.020	ND	0.037	0.034	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	0.023	ND	ND	0.035	0.028
Benzo (b) fluoranthene	0.020	0.573	5.88*	4.62*	2.04*	1.71*
Benzo (g,h,i) perylene	0.020	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	0.096	0.134	ND	ND	ND
Fluoranthene	0.020	0.032	0.109	0.339	0.086	0.081
Fluorene	0.020	0.030	1.11*	1.23*	0.490	0.443
Indeno (1,2,3-cd) pyrene	0.020	ND	ND	ND	ND	ND
Naphthalene	0.020	0.714	5.87*	6.02*	2.65*	0.590
Phenanthrene	0.020	0.261	3.19*	5.13*	2.21*	1.91*
Pyrene	0.020	0.040	0.116	0.227	0.105	0.068

ND = Not Detected at the detection limit

DL = Detection Limit

*Dilution factor is 10.


 Cyrus Razmara, Ph.D.
 Laboratory Director



American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

AETL JOB NO: 10466

PROJECT: Aliso Cyn
SITE: Aliso Canyon
DATE SAMPLED: 08-12-98
DATE SUBMITTED: 08-13-98
DATE ANALYSIS COMPLETED: 08-20-98
SAMPLE DESCRIPTION: Grab soil samples (For details, please see COC)
SAMPLE MATRIX: Soil
NOTE: Samples were collected by ENV America.

EPA Method 8310


Lab ID	AE51021	AE51022	AE51023	AE51024	AE51025	AE51026
Client Sample ID	FF-B4-60	FF-B4-63	FF-B2-25	FF-B3-25	FF-B3-30	M. Blank
Date Sampled	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98	08-12-98
Date Extracted	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98	08-18-98
Date Analyzed	08-20-98	08-20-98	08-20-98	08-20-98	08-20-98	08-20-98
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor	1	1	1	1	1	1
Analyte	DL	Results	Results	Results	Results	Results
Acenaphthene	0.020	ND	0.023	ND	ND	ND
Acenaphthylene	0.020	ND	ND	ND	ND	ND
Anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.020	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.020	ND	ND	ND	ND	ND
Benzo (b) fluoranthene	0.020	0.790**	6.09*	ND	0.030	0.049
Benzo (g,h,i) perylene	0.020	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.020	ND	ND	ND	ND	ND
Chrysene	0.020	ND	ND	ND	ND	ND
Dibenzo (a, h) anthracene	0.020	0.081	0.136	ND	0.036	ND
Fluoranthene	0.020	0.063	0.038	ND	ND	ND
Fluorene	0.020	0.246	ND	ND	ND	ND
Indeno (1,2,3-cd) pyrene	0.020	ND	0.055	ND	ND	ND
Naphthalene	0.020	ND	0.164	ND	ND	ND
Phenanthrene	0.020	0.694**	0.447	ND	0.103	0.115
Pyrene	0.020	0.052	0.027	ND	ND	ND

ND = Not Detected at the detection limit

DL = Detection Limit

*Dilution factor is 10.

**Dilution factor is 5.


Cyrus Razmara, Ph.D.
Laboratory Director



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 6

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51015	
Sample No:	FF-B4-30	
Date Sampled:	08/12/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/19/98	Limit

Benzene	995	5
Ethylbenzene	221	5
Toluene	936	5
Xylenes(Total)	734	10
TPH as Gasoline or Light HCs	14	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE51015

Surrogate Percent Recovery

Bromofluorobenzene	77
Trifluorotoluene	68

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	102	2
Ethylbenzene	95	97	2.1
Toluene	102	104	1.9
M- Xylene	95	97	2.1
O- Xylene	106	109	2.8

Comment to Sample(s)

AE51015: Low surrogate recovery due to matrix interference.

ND - NOT Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 7

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51016	
Sample No:	FF-B4-35	
Date Sampled:	08/12/98	
Date Extracted:	08/19/98	Detection
Date Analyzed:	08/19/98	Limit

Benzene	15900	50
Ethylbenzene	5280	50
Toluene	20200	50
Xylenes (Total)	20300	100
TPH as Gasoline or Light HCs	332	10 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID: AE51016

Surrogate Percent Recovery

Bromofluorobenzene	145
Trifluorotoluene	95

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzene	100	102	2
Ethylbenzene	95	97	2.1
Toluene	102	104	1.9
M- Xylene	95	97	2.1
O- Xylene	106	109	2.8

Comment to Sample(s)

AE51016: High surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 8

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51017	AE51018	AE51019	AE51020	
Sample No:	FF-B4-40	FF-B4-45	FF-B4-50	FF-B4-55	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/19/98	08/19/98	08/19/98	08/19/98	Detection
Date Analyzed:	08/19/98	08/19/98	08/19/98	08/19/98	Limit
Benzene	1630	629	252	49	5
Ethylbenzene	250	69	16	ND	5
Toluene	1190	280	82	45	5
Xylenes (Total)	1210	607	172	158	10
TPH as Gasoline or Light HCs	20	11	9.3	5.9	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE51017	AE51018	AE51019	AE51020
<u>Surrogate Percent Recovery</u>				
Bromofluorobenzene	70	90	86	75
Trifluorotoluene	51	62	59	53
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>	
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>	
Benzene	100	102	2	
Ethylbenzene	95	97	2.1	
Toluene	102	104	1.9	
M- Xylene	95	97	2.1	
O- Xylene	106	109	2.8	

Comment to Sample(s)

AE51017: Low surrogate recovery due to matrix interference.
AE51018: Low surrogate recovery due to matrix interference.
AE51019: Low surrogate recovery due to matrix interference.
AE51020: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 9

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51021	AE51022	AE51023	AE51024	Detection Limit
Sample No:	FF-B4-60	FF-B4-63	FF-B2-25	FF-B3-25	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/19/98	08/19/98	08/19/98	08/19/98	
Date Analyzed:	08/19/98	08/19/98	08/19/98	08/19/98	
Benzene	15	19	ND	ND	5
Ethylbenzene	10	9.6	ND	ND	5
Toluene	30	ND	ND	ND	5
Xylenes (Total)	114	22	ND	13	10
TPH as Gasoline or Light HCs	4.3	1.2	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE51021	AE51022	AE51023	AE51024
Surrogate Percent Recovery				
Bromofluorobenzene	58	39	59	91
Trifluorotoluene	56	44	73	76
	Spike %REC.	Spike DUP. %REC.	AVG. RPD	
Benzene	100	102	2	
Ethylbenzene	95	97	2.1	
Toluene	102	104	1.9	
M- Xylene	95	97	2.1	
O- Xylene	106	109	2.8	

Comment to Sample(s)

AE51021: Low surrogate recovery due to matrix interference.
AE51022: Low surrogate recovery due to matrix interference.
AE51023: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 10

AETL Job No: 10466
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015MOD/8020
TPH as Gasoline and BTXE
Units: ug/kg

Lab ID:	AE51025	AE51026	
Sample No:	FF-B3-30	METHOD BLANK	
Date Sampled:	08/12/98	08/12/98	
Date Extracted:	08/19/98	08/19/98	Detection
Date Analyzed:	08/19/98	08/19/98	Limit

	AE51025	AE51026	
Benzene	ND	ND	5
Ethylbenzene	ND	ND	5
Toluene	ND	ND	5
Xylenes (Total)	ND	ND	10
TPH as Gasoline or Light HCs	ND	ND	1.0 (mg/Kg)

QUALITY CONTROL SUMMARY

Lab ID:	AE51025	AE51026	
<u>Surrogate Percent Recovery</u>			
Bromofluorobenzene	63	86	
Trifluorotoluene	70	96	
	<u>Spike</u>	<u>Spike DUP.</u>	<u>AVG.</u>
	<u>%REC.</u>	<u>%REC.</u>	<u>RPD</u>
Benzene	100	102	2
Ethylbenzene	95	97	2.1
Toluene	102	104	1.9
M- Xylene	95	97	2.1
O- Xylene	106	109	2.8

Comment to Sample(s)
AE51025: Low surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 11

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M(DHS-LUFT)
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Table with 5 columns: Lab ID, Sample No, Date Sampled, Date Extracted, Date Analyzed, and Detection Limit. Rows include sample IDs AE51015 through AE51018 and TPH as Diesel and Heavier HC values.

QUALITY CONTROL SUMMARY

Table with 5 columns: Lab ID, Surrogate Percent Recovery Chlorobenzene, Spike %REC., Spike DUP. %REC., and AVG. RPD. Includes data for Diesel samples.

Comment to Sample(s)

AE51015: (C12-C23) = 1360 mg/Kg; (C23+) = 850 mg/Kg.
AE51016: (C12-C23) = 1710 mg/Kg; (C23+) = 640 mg/Kg.
AE51017: (C12-C23) = 3270 mg/Kg; (C23+) = 1680 mg/Kg.
AE51018: (C12-C23) = 1750 mg/Kg; (C23+) = 840 mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 12

AETL Job No: 10466
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St. -ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51019	AE51020	AE51021	AE51022	Detection Limit
Sample No:	FF-B4-50	FF-B4-55	FF-B4-60	FF-B4-63	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	
Date Analyzed:	08/19/98	08/19/98	08/19/98	08/19/98	
TPH as Diesel and Heavier HC	3010	1610	764	2520	10

QUALITY CONTROL SUMMARY

Lab ID:	AE51019	AE51020	AE51021	AE51022
<u>Surrogate Percent Recovery</u>				
Chlorobenzene	96	89	91	96
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Diesel	110	102	7.5	

Comment to Sample(s)

AE51019: (C12-C23) = 1910 mg/Kg; (C23+) = 1100 mg/Kg.
AE51020: (C12-C23) = 1110 mg/Kg; (C23+) = 500 mg/Kg.
AE51021: (C12-C23) = 560 mg/Kg; (C23+) = 204 mg/Kg.
AE51022: (C12-C23) = 1660 mg/Kg; (C23+) = 860 mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 13

AETL Job No: 10466
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: 8015M{DHS-LUFT}
TPH as Diesel and Heavier HCs (Extended Run)
Units: mg/kg

Lab ID:	AE51023	AE51024	AE51025	AE51026	
Sample No:	FF-B2-25	FF-B3-25	FF-B3-30	METHOD BLANK	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/19/98	08/19/98	08/19/98	08/19/98	Limit

TPH as Diesel and Heavier HC	ND	491	511	ND	10
------------------------------	----	-----	-----	----	----

QUALITY CONTROL SUMMARY

Lab ID:	AE51023	AE51024	AE51025	AE51026
<u>Surrogate Percent Recovery</u> Chlorobenzene	102	102	101	108
	<u>Spike</u> <u>%REC.</u>	<u>Spike DUP.</u> <u>%REC.</u>	<u>AVG.</u> <u>RPD</u>	
Diesel	110	102	7.5	

Comment to Sample(s)

AE51024: (C12-C23) = 341 mg/Kg; (C23+) = 150 mg/Kg.
AE51025: (C12-C23) = 353 mg/Kg; (C23+) = 158 mg/Kg.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 14

AETL Job No: 10466
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51015		
Sample No:	FF-B4-30		
Date Sampled:	08/12/98		
Date Extracted:	08/18/98	Detection	
Date Analyzed:	08/20/98	Limit	
Benzo (a)anthracene	ND		0.020
Benzo (a)pyrene	0.023		0.020
Benzo (b)fluoranthene	0.573		0.020
Benzo (k)fluoranthene	ND		0.020
Chrysene	ND		0.020
Dibenzo (a, h)anthracene	0.096		0.020
Indeno (1, 2, 3-cd)pyrene	ND		0.020
Acenaphthene	ND		0.020
Acenaphthylene	ND		0.020
Anthracene	ND		0.020
Benzo (ghi)perylene	ND		0.020
Fluoranthene	0.032		0.020
Fluorene	0.030		0.020
Naphthalene	0.714		0.020
Phenanthrene	0.261		0.020
Pyrene	0.040		0.020

QUALITY CONTROL SUMMARY

Lab ID: AE51015

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a)anthracene	102	104	2
Benzo (a)pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)
AE51015: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 15

AETL Job No: 10466
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site: Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310)
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51016	AE51017	Detection Limit
Sample No:	FF-B4-35	FF-B4-40	
Date Sampled:	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	
Date Analyzed:	08/20/98	08/20/98	
Benzo (a) anthracene	ND	ND	0.020
Benzo (a) pyrene	ND	ND	0.020
Benzo (b) fluoranthene	5.88	4.62	0.20
Benzo (k) fluoranthene	ND	ND	0.020
Chrysene	ND	ND	0.020
Dibenzo (a, h) anthracene	0.134	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	0.020
Acenaphthene	ND	ND	0.020
Acenaphthylene	ND	ND	0.020
Anthracene	0.037	0.034	0.020
Benzo (ghi) perylene	ND	ND	0.020
Fluoranthene	0.109	0.339	0.020
Fluorene	1.11	1.23	0.20
Naphthalene	5.87	6.02	0.20
Phenanthrene	3.19	5.13	0.20
Pyrene	0.116	0.227	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE51016	AE51017	
<u>Surrogate Percent Recovery</u>			
P- Terphenyl-d14			
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)

AE51016: No surrogate recovery due to matrix interference.
AE51017: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 16

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51018	
Sample No:	FF-B4-45	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/20/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	0.35	0.020
Benzo (b) fluoranthene	2.04	0.20
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.086	0.020
Fluorene	0.490	0.020
Naphthalene	2.65	0.20
Phenanthrene	2.21	0.20
Pyrene	0.105	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE51018

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)

AE51018: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

Page: 17

AETL Job No: 10466
Project Name: Aliso Canyon

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51019	AE51020	Detection Limit
Sample No:	FF-B4-50	FF-B4-55	
Date Sampled:	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	
Date Analyzed:	08/20/98	08/20/98	
Benzo (a) anthracene	ND	ND	0.020
Benzo (a) pyrene	0.028	0.024	0.020
Benzo (b) fluoranthene	1.71	1.50	0.20
Benzo (k) fluoranthene	ND	ND	0.020
Chrysene	ND	ND	0.020
Dibenzo (a, h) anthracene	ND	ND	0.020
Indeno (1, 2, 3-cd) pyrene	ND	ND	0.020
Acenaphthene	ND	0.053	0.020
Acenaphthylene	ND	ND	0.020
Anthracene	ND	ND	0.020
Benzo (ghi) perylene	ND	ND	0.020
Fluoranthene	0.081	0.083	0.020
Fluorene	0.443	ND	0.020
Naphthalene	0.590	ND	0.020
Phenanthrene	1.91	1.07	0.20
Pyrene	0.068	0.061	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE51019	AE51020	
<u>Surrogate Percent Recovery</u>			
P- Terphenyl-d14			
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)

AE51019: No surrogate recovery due to matrix interference.
AE51020: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 18

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51021	
Sample No:	FF-B4-60	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/20/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	0.790	0.100
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	0.081	0.020
Indeno (1, 2, 3 -cd) pyrene	ND	0.020
Acenaphthene	ND	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.063	0.020
Fluorene	0.246	0.020
Naphthalene	ND	0.020
Phenanthrene	0.694	0.100
Pyrene	0.052	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE51021

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)
AE51021: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 19

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51022	
Sample No:	FF-B4-63	
Date Sampled:	08/12/98	
Date Extracted:	08/18/98	Detection
Date Analyzed:	08/20/98	Limit

Benzo (a) anthracene	ND	0.020
Benzo (a) pyrene	ND	0.020
Benzo (b) fluoranthene	6.09	0.20
Benzo (k) fluoranthene	ND	0.020
Chrysene	ND	0.020
Dibenzo (a, h) anthracene	0.136	0.020
Indeno (1, 2, 3-cd) pyrene	0.055	0.020
Acenaphthene	0.023	0.020
Acenaphthylene	ND	0.020
Anthracene	ND	0.020
Benzo (ghi) perylene	ND	0.020
Fluoranthene	0.038	0.020
Fluorene	ND	0.020
Naphthalene	0.164	0.020
Phenanthrene	0.447	0.020
Pyrene	0.027	0.020

QUALITY CONTROL SUMMARY

Lab ID: AE51022

Surrogate Percent Recovery
P- Terphenyl-d14

	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Benzo (a) anthracene	102	104	2
Benzo (a) pyrene	96	98	2.1
Naphthalene	107	110	2.8

Comment to Sample(s)

AE51022: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit



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ANALYTICAL RESULTS

AETL Job No: 10466
Project Name: Aliso Canyon

Page: 20

Report To: (SC/G)
Southern California Gas Company
555 W. 5th St.-ML20B
Los Angeles, CA 90013-1011

Site:
Aliso Canyon

Attn: John Prince

Phone: 213/244-5517

Matrix: Soil
Method: (8310).
Polynuclear Aromatic Hydrocarbons
Units: mg/Kg

Lab ID:	AE51023	AE51024	AE51025	AE51026	
Sample No:	FF-B2-25	FF-B3-25	FF-B3-30	METHOD BLANK	
Date Sampled:	08/12/98	08/12/98	08/12/98	08/12/98	
Date Extracted:	08/18/98	08/18/98	08/18/98	08/18/98	Detection
Date Analyzed:	08/20/98	08/20/98	08/20/98	08/20/98	Limit
Benzo(a)anthracene	ND	ND	ND	ND	0.020
Benzo(a)pyrene	ND	ND	ND	ND	0.020
Benzo(b)fluoranthene	ND	0.030	0.049	ND	0.020
Benzo(k)fluoranthene	ND	ND	ND	ND	0.020
Chrysene	ND	ND	ND	ND	0.020
Dibenzo(a,h)anthracene	ND	0.036	ND	ND	0.020
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	0.020
Acenaphthene	ND	ND	ND	ND	0.020
Acenaphthylene	ND	ND	ND	ND	0.020
Anthracene	ND	ND	ND	ND	0.020
Benzo(ghi)perylene	ND	ND	ND	ND	0.020
Fluoranthene	ND	ND	ND	ND	0.020
Fluorene	ND	ND	ND	ND	0.020
Naphthalene	ND	ND	ND	ND	0.020
Phenanthrene	ND	0.103	0.115	ND	0.020
Pyrene	ND	ND	ND	ND	0.020

QUALITY CONTROL SUMMARY

Lab ID:	AE51023	AE51024	AE51025	AE51026
<u>Surrogate Percent Recovery</u>				
P- Terphenyl-d14	101			100
	<u>Spike %REC.</u>	<u>Spike DUP. %REC.</u>	<u>AVG. RPD</u>	
Benzo(a)anthracene	102	104	2	
Benzo(a)pyrene	96	98	2.1	
Naphthalene	107	110	2.8	

Comment to Sample(s)

AE51024: No surrogate recovery due to matrix interference.
AE51025: No surrogate recovery due to matrix interference.
AE51026: No surrogate recovery due to matrix interference.

ND - Not Detected at The Detection Limit