

**PHASE I
ENVIRONMENTAL ASSESSMENT
REPORT
ISLAND CITY GUN CLUB
500 MAITLAND DRIVE
ALAMEDA, CALIFORNIA**

May 17, 1990

Report Prepared for:

Harbor Bay Isle Associates
1141 Harbor Bay Parkway
Alameda, California 94501

PHASE I ENVIRONMENTAL ASSESSMENT REPORT WITH SOIL AND ASBESTOS
SAMPLING
ISLAND CITY GUN CLUB
500 MATTLAND DRIVE
ALAMEDA, CALIFORNIA

Kleinfelder Job No. 10-2081-01

by


Cheryl Bly Chester, P.E., REA
Senior Engineer

KLEINFELDER, INC.
California Plaza, Suite 570
2121 North California Boulevard
Walnut Creek, California 94596
(415) 938-5610

May 17, 1990

TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
1. INTRODUCTION	1
2. SCOPE OF SERVICES	2
3. SITE DESCRIPTION	3
4. REGULATORY AGENCY REVIEW	7
5. CURRENT SITE CONDITIONS	11
6. EVALUATION OF GEOLOGIC AND HYDROGEOLOGIC CONDITIONS	13
7. LIMITED SOIL SAMPLING AND ANALYSES PROGRAM	14
8. LIMITED ASBESTOS SAMPLING AND ANALYSIS PROGRAM	17
9. CONCLUSIONS	18
10. LIMITATIONS	20
11. REFERENCES	21
PLATES	
TABLE	
APPENDICES	
LABORATORY REPORTS	

1 INTRODUCTION

This report summarizes the results of a Phase 1 Environmental Assessment with asbestos and surface soil sampling for the Island City Gun Club, 500 Maitland Drive, on Bay Farm Island in Alameda, California. The site is located at the intersection of Maitland Drive and Harbor Bay Parkway (Plate 1).

It is our understanding that Harbor Bay Isle Associates has leased the property from the City of Alameda. As part of an agreement to develop several large parcels of land on Bay Farm Island, Harbor Bay Isle Associates proposes to develop the Island City Gun Club Site as a recreational vehicle and public storage facility. The right of way off Maitland Drive may be adjusted in the future.

The purpose of the environmental site assessment was to evaluate general environmental factors that might have impacted the soil and groundwater quality at the subject site. The Phase I Assessment included a review of available literature and a reconnaissance-level site walk to screen the site and evaluate the potential for subsurface impact by hazardous materials.

This literature review and site reconnaissance was supplemented by a limited surface soil sampling and analysis program for metals and organochlorine pesticides. In addition, a limited asbestos sampling of bulk floor tile material in the buildings on the site was conducted at the time of the site visit.

2 SCOPE OF SERVICES

In order to develop information on the likelihood of potential surface or subsurface environmental concerns at the subject site, the following services were performed:

1. A site reconnaissance by Kleinfelder staff was conducted to evaluate the site for current conditions and visual indications of hazardous materials that might impact the site.
2. A review of historical aerial photographs and discussions with people knowledgeable about the site to evaluate the land use history.
3. A review of federal and state regulatory lists of sites located within a one-mile radius that are known to have caused a subsurface environmental impact.
4. A review of state and local regulatory agency files to obtain additional information of known contamination problems at or near the site.
5. An evaluation of the geologic and hydrogeologic conditions at the subject site based on a literature review.
6. Surface level soil sampling and analysis. Six soil samples were analyzed for CAM-17 metals and three of these soil samples were also analyzed for organochloride pesticides.
7. A limited bulk sampling of material suspected of containing asbestos in the small buildings on the site.
8. Preparation of this report summarizing our findings.

3 SITE DESCRIPTION

LOCATION

The site consists of approximately 4.99 acres located at the northwest corner of the intersection of Maitland Drive and Harbor Bay Parkway on Bay Farm Island in Alameda, California (Plate 1). An adjacent small parcel across Maitland Drive was also investigated in conjunction with this study and is addressed in Kleinfelder report 10-2081-02 dated March 26, 1990. The site is bordered to the north by a residential neighborhood, to the west by a business park, to the south by Harbor Bay Parkway and to the east by the Alameda Municipal Golf Course. The site is located on Bay Farm Island in Alameda. It is located approximately one mile east of the San Francisco Bay, one and a half miles south of the San Leandro Channel and one mile west of Airport Channel in San Leandro Bay.

The immediate neighborhood can be described as a mixture of uses. To the west is a residential area, to the north is a municipal golf course, to the east is the Metropolitan Oakland International Airport, and to the south is a Business Park of offices, research and development, and commercial uses. There is no separation by water of the airport and the subject site.

HISTORY

The following historical profile of the site and surrounding area is based on information from aerial photographs, discussions with people knowledgeable about the site, and Sanborn Fire Insurance Maps.

The site is currently owned by the City of Alameda. According to Norm Lynds, former president of the Island City Gun Club, the land was privately owned at the time the gun club was formed in 1926. The Port of Oakland reportedly purchased the property and later traded it to the City of Alameda at some time prior to 1960.

Mr. Lynds provided historical information regarding the site. He reports the gun club was originally named the Island City Revolver Club and was founded in 1926. From 1926 until the early 1980s the gun club was in full operation at the current location with the exception of 18 months when it was moved to Mecartney Point during World War II. It was

reportedly open only during the summer months the first few years because it was under water the remainder of the year.

The gun club was a private club but was open to public usage. Mr. Lynds said that it served as the California State pilot program for hunter safety training, claiming that one instructor alone trained over 6,000 people at that course. This did not include the thousands of others who were trained by other instructors. Law enforcement agencies used the range too. Agencies that used the gun club over the years, according to Mr. Lynds, included the Alameda Police Department (before they had their own range), the District Attorney's Office, the FBI, the Oakland Police Department and others.

The gun club began adding fill material to the property at their own expense before or during the 1960's. He said that fill was added to the site at irregular intervals until just prior to 1980. The fill was supplied primarily by builders who wanted to dispose of excess soil from their construction sites. The last locations filled were the trap field and rifle range. According to Mr. Lynds, the club was a draw for people from all over the world. The last four to five years, the largest group of visitors from foreign countries to use the range were Japanese tourists.

A review of aerial photographs provided additional information regarding development history and land use of the site and surrounding area. The aerial photograph review was conducted at the library maintained by Pacific Aerial Surveys of Oakland, California. The following aerial photographs were evaluated:

<u>Date</u>	<u>I.D. Number</u>	<u>Scale</u>
3-24-47	AV-11-07-12	N/A
1950	AV28-17-27	N/A
5-3-57	AV253-10-38	1:12,000
7-2-68	AV858-01-33	N/A
5-19-75	AV-1193-04-14	N/A
9-14-79	AV1750-04-12	N/A
6-21-83	AV-2300-04-14	N/A
3-30-88	AV-3268-4-14	N/A

In the March 24, 1947 photograph, the project site was undeveloped land covered with what appears to be native vegetation. Harbor Bay Parkway did not exist. North of the site were row crops. Adjacent property to the east and south was covered with the same vegetation as the site. San Francisco Bay was located immediately west and south of the

site. The boundary delineating the site and the San Francisco Bay was sharply defined indicating fill material.

In the 1950 photograph, the site was still undeveloped, except there were dirt roads crossing the premises. The properties bordering the site remained unchanged from the 1947 photograph.

In the May 3, 1957 photograph, the site appeared unchanged from the 1950 photograph, as did the properties located to the north and south. The Alameda Municipal Golf Course had been constructed directly northeast of the property. The San Francisco Bay was now several hundred feet from the site due to fill being added to the west and southwest of the site.

In the July 2, 1968 photograph, construction at the site had begun on the pistol/rifle range's retaining walls. A building was situated on the west side of Maitland Drive approximately half-way up the property line. Parallel to Maitland Drive were three "fan-shaped" areas marked on the soil for the people firing at the clay pigeons. There was one white bunker, used to launch clay pigeons, located in front of each of the shooting areas. On the east side of Maitland Drive, there were trees lining the road and some areas beside Maitland Drive were devoid of vegetation. The property to the north had been developed as a residential area. Filling of the bay continued to the west. The property to the south remained unchanged from the 1957 photograph.

Four ponds were noted approximately one-half mile northeast of the site. Upon further investigation, it was found that the ponds are operated by the Alameda Municipal Golf Course. Fred Framsted of the golf course reported that two of the ponds held potable and well water that was used to irrigate the golf course at night. The other ponds accumulate drainage from the homes behind the golf course. This water is eventually pumped into the bay.

By May 19, 1971, the pistol/rifle range had been completed. The properties to the north, east, west and south remained the same.

On May 29, 1975, there were four distinct areas at the north end of the target range enclosure where the soil appeared very dark. Construction of the fourth fan-shaped firing

range had begun south of the existing firing ranges. The surrounding areas had not changed.

In September 14, 1979, the site remained unchanged, with the exception of an additional building constructed to the east of the target range. No change was evident in the surrounding areas. Harbor Bay Parkway extended to, but not west of, Maitland Drive.

On June 21, 1983, the fourth trap range appeared complete. The surrounding areas had not changed except there was an outdoor fenced-in enclosure containing stacked material to the west. Mr. Lynds reported that the operation in the enclosure was a second-hand dealer of pallets, used equipment and other miscellaneous merchandise.

In the June 30, 1988 photograph, the areas surrounding the subject site remained unchanged with the exception of the property to the west. The storage yard to the west that was evident in the 1983 photograph was no longer evident. In its place was a large business park.

Sanborn Fire Insurance Maps for Alameda dating from 1897 to 1959 were examined; however, the site was not shown on any of the maps. This is not unexpected as Sanborn Fire Insurance Maps are typically maintained only for urban properties.

A number of sunken ships underlie the fill on parts of Bay Farm Island. Mr. Lynds indicated that the ships were originally used as a seawall and later were covered with fill material. Harbor Bay Isle Associates has indicated that the fill material around the gun site is engineered fill and that the work was done by Utah Construction Company.

Norm Lynds also indicated that the area occupied by the golf course was at one time a dump. He said it was used as a dump from the late 1800s until the late 1940s. The portion of the site located adjacent to the golf course, across Maitland Drive from the gun club, was used as a dumping ground for trees and other vegetative matter from the 1950s until the past few years according to Mr. Lynds. The original island area was also used for agricultural purposes. Mr. Lynds said that radishes and lettuce were extensively grown.

4 REGULATORY AGENCY REVIEW

Our investigation included a review of records maintained by the Environmental Protection Agency (EPA), the San Francisco Bay Regional Water Quality Control Board (RWQCB), the Department of Health Services (DHS), the Alameda County Agricultural Commission, and the California Waste Management Board (CWMB).

Examination of the "U.S. EPA Region 9 CERCLIS Listing - Proposed and Final National Priority List (NPL)", issued April 15, 1989 did not reveal a Superfund site located within one mile of the subject site.

A search of "Underground Storage Tank Leak List" issued by the RWQCB November 29, 1989 indicated the presence of three fuel leak case incidents within one mile of the site. The locations of all three sites is shown on Plate 3.

ALAMEDA COUNTY MUNICIPAL GOLF COURSE, Clubhouse Memorial Road, Alameda

Approximately three-fourths of a mile north of the site
During the removal of a 550 gallon underground waste oil storage tank, 595 ppm of waste oil in the soil was reported by the golf course in July, 1986. Contaminated soils were excavated and soil samples were taken. A contamination level of 0.82 ppm of motor oil was reported. No actions by the RWQCB was noted.

NATIONAL AIRMOTIVE, 7200 Lockheed Street, Oakland Airport, Oakland

Approximately one mile northeast of the site
A 10,000 gallon jet fuel tank was removed as National Airmotive was discontinuing on-site jet fuel storage. Soil and water samples analyzed by a lab on April 8, 1986 revealed contamination of both the soil and groundwater. Soil sample concentrations were as follows: petroleum hydrocarbons as jet fuel, 47 parts per million (ppm); benzene, toluene, xylene less than 1 ppm each. Water samples showed petroleum hydrocarbons as jet fuel to be 37 ppm, and benzene, toluene, and xylenes less than 1 ppm each. No further information was available in the file.

PORT OF OAKLAND, BUILDING L-615, Oakland, Airport, Oakland,

Approximately one mile northeast of the site
On May 11, 1989, a 3,000-gallon underground storage tank was removed. Contamination concentrations for the soil samples taken are as follow: Total Petroleum Hydrocarbons (TPH), 6.8 mg/kg; benzene, 0.26 mg/kg; toluene, 0.18 mg/kg; xylenes, 0.11 mg/kg; ethyl benzene, 0.024 mg/kg. The water samples taken had the following contamination levels: TPH, 35 mg/l; benzene, 0.9 mg/l; toluene, 2.8 mg/l; xylenes, 3.5 mg/l; ethyl benzene, 0.56 mg/l. The Port of Oakland reported these findings to the Alameda County Department of Health, Hazardous Materials

Division. To date there has been no response from the agency. No further information was available in the RWQCB file.

Review of "North Bay Counties Unauthorized Chemical Releases List" issued by the RWQCB January 23, 1990, revealed two toxic releases within a one-mile radius of the site. The location of both toxic release points is shown on Plate 3.

PORT OF OAKLAND - KING INTERESTS SITE, Oakland Airport, Oakland

Approximately one mile northeast of the site

On February 13, 1989, the following chemicals and corresponding concentrations were found in soil samples taken from this location: total volatiles and heavy hydrocarbons, 1600 mg/kg; barium, 160 mg/kg; chromium, 80 mg/kg; cobalt, 20 mg/kg; copper, 55 mg/kg; nickel, 89 mg/kg; vanadium, 140 mg/kg; zinc, 360 mg/kg; lead, 27 mg/kg and mercury, 0.21 mg/kg. In the groundwater samples taken the following concentrations of chemicals were found: barium, 100 mg/l; chromium, 560 mg/l; cobalt, 80 mg/l; copper, 25 mg/l; nickel, 20 mg/l; vanadium, 24 mg/l; and zinc, 250 mg/l. The purpose of this sampling was to look for contaminants that may have been caused by prior activities at the site. There was no further information in the RWQCB file.

PORT OF OAKLAND - NORTH FIELD HANGAR 6, Oakland Airport, Oakland

Approximately one mile northeast of the site

Soil and water samples were taken at this location to determine if the soil and groundwater had been contaminated by chemical cleansers used to wash and clean airplanes at Hangar 6. The samples were taken from three feet below ground level near the wash rack and from a well installed in this area. On May 1, 1986, the lab doing the analyses reported the following contamination figures for both soil and water at the site. Soil samples are as follow: methylchloride, 4.4 mg/kg; 1,1-dichloroethylene, 0.17 mg/kg; chlorobenzene, 5.20 mg/kg; total dichlorobenzene, 8.3 mg/kg and 1,2-dichloropropane, 7.0 mg/kg. Water samples revealed the following contamination: chlorobenzene, 0.0099 mg/kg; 1,1-dichloroethane, 0.0019 mg/kg; and 1,1-trichloroethane, 0.0016 mg/kg. No further information was available in the RWQCB file.

A review of records maintained by the Department of Health Services included the Bond Expenditure Plan (BEP), the Hazardous Waste and Substance Site List (aka Cortese List), the Abandoned Sites Program Information System (ASPIS) database, and the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database. No additional sites within a one-mile radius were found on these lists.

One additional site was reported within one mile of the subject site on the Resource Conservation and Recovery Act (RCRA) list dated November 16, 1988. The RCRA lists generators and transporters of hazardous waste. This list does not implicate the companies

listed as having an unauthorized release of toxic materials. Kleinfelder is currently awaiting a response from the DHS regarding information on this site.

TRITON BIOSCIENCES, INC. - 1501 Harbor Bay Parkway, Alameda

This site is located a half mile west of the site. This business is classified as a "Regular Quantity Generator" which means that more than 1,000 kilograms of waste are produced each month.

Mr. Robert Weston of the Alameda County Agricultural Commission was contacted regarding the possible application of pesticides to the subject site. His review of the records and interviews with staff personnel familiar with the site revealed no history of the use of pesticides at the site. The Agricultural Commission does not maintain records for more than three to four years.

Restricted use has been granted to the Alameda Municipal Golf Course for the use of the herbicides Dicamba (tradename Banvel) and 2,4-D. Both of these herbicides are considered to be mobile in soil. The golf course also holds a "possession only" permit for mercury and arsenic-containing pesticides.

The Port of Oakland holds a "possession and use" permit for 2,4-D and Dicamba. They also have a "possession only" permit for carbaryl and oxydemeton-methyl, (tradename Metasystox-R). They have reported the use of non-restricted herbicides and a plant growth regulator.

According to the Alameda Public Works Department, there have been no permits issued for underground storage tanks at the site.

A letter was sent to the Alameda County Health Department, Hazardous Materials Department regarding information on leaking underground storage tanks and toxic releases within a one-mile radius of the site. Information from those files was not readily accessible.

Examination of the Solid Waste Information System (aka SWIS list) issued by the California Integrated Waste Management Board September 20, 1989, did not reveal any transfer stations or active or inactive landfills within a one-mile radius of the site. It should be noted that the garbage dump Mr. Lynds referred to is located within one mile of the site and was not listed on the SWIS list.

5 CURRENT SITE CONDITIONS

A Kleinfelder representative visited the site on February 22, 1990 to observe current conditions. In general, the site is overgrown with trees and shrubs and has a few boarded-up, wood frame buildings. A retaining wall constructed with railroad ties fences the area used for target practice on the northern border of the site. Plate 2 presents a site plan.

TRAP RANGE

The trap range was well vegetated with grass and trees. There were no signs of distressed vegetation. Household, construction and landscaping debris had been dumped in the area located between the rifle range and the trap field (Photo 2); however, there did not appear to be any hazardous waste among this debris. A small swale was present just beyond the trap shelters. The surface of the trap range was littered with several inches of broken clay pigeons.

BUILDINGS

The southernmost building is of concrete slab and wooden frame construction. Located in a small room in the building was a one gallon container of "Ansar 529" which is used for selective, post-emergent weed control. The active ingredient listed on the label was monosodium acid methanearsonate 34.8%, inert ingredients were 65.2%. Total arsenic, in water soluble form, was expressed as elemental 16.1%. Also found was a one gallon can of green paint. A large bag of "Spike" pre-emergent and post emergent herbicide was also in storage; however, the ingredients could not be read on the label. A loose, green floor tile was collected from this room for asbestos analysis. It appeared that the tile had never been used on the floor. The room facing south in this building contained a counter, bare concrete slab floor, assorted furniture, and an electric stove. Common household cleaning materials were present. A small storage room containing office supplies opened off this room. The room located to the rear of the building had green floor tile and the walls were sheetrock. This room appeared to be larger than 300 square feet. The green tile appeared similar to the loose sample collected in the storage room. Furniture and magazines were scattered about the room. The slab foundation appeared to be in good condition with no major cracks. The bathrooms contained no cleaning chemicals.

The large rectangular building located closest to Maitland Drive contained five rooms and appeared to be used primarily for air rifle shooting. There were a few old trophies, furniture and litter scattered throughout the building. The only item of note was a small room that contained approximately 20 to 25 gallons of paint and a 5-gallon can of "Chevron Shingle and Floor Oil" (Photo 1). No ingredients were listed on the front label. The floor of this building was a raised, wooden floor. There was no evidence of staining on either the floor or the shelves under the paint cans.

The northernmost and smallest building appeared to be a sales/registration office. Four 5-pound bags of lead shot and three bottles of household cleaning materials were the only relevant items in the room. The walls and ceiling were finished. The floor was wood.

TARGET RANGE

The pistol/rifle target range was clear of debris and well vegetated with grass. Three ranges of approximately 25, 50 and 100 yards were noted. At the end of each range was an earthen berm into which the bullets were fired. The soil of each berm was sandy in texture. The berms were approximately eight feet in height (Photo 3). Facing the rifle range was a covered concrete walkway (Photo 4). Numerous ammunition casings were noted on the gravel area east of the walkway.

SITE VICINITY

A drive-by survey of the area was made to identify potential businesses and operations that typically store and handle hazardous materials. Located northeast of the site was North Field for the Oakland International Airport. This is a heavy industrialized area with numerous businesses that deal with airplane maintenance. Airports are known to store and use hazardous materials. Located to the south and southeasterly direction was undeveloped land. A residential development bordered the site to the north and a business park bordered the property to the west.

6 EVALUATION OF GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The study site is located in the northern portion of the Alameda Bay Plain Basin. The geologic structure of the Bay Plain is divided by northwest oriented faults such as the Hayward fault. The Hayward fault separates the older non-waterbearing bedrocks in the hills from younger quarternary age alluvium nearer the Bay and also serves as a groundwater divide.

Because the site is located in such close proximity to the Bay, minor tidal influences may have bearing on the direction of groundwater flow. However, due to adjacent incremental dikes and underground appurtenances, it is likely that ground water gradient is flat and does not fluctuate significantly. The depth to groundwater is probably in the range of 5 to 10 feet from the ground surface, based on Kleinfelder experience in the area. The site, and the land located within a one-mile radius from the site, appeared to be at the same elevation, which is just a few feet above sea level. (USGS San Leandro Quadrangle Topographic Map, 1973)

7 LIMITED SOIL SAMPLING AND ANALYSIS PROGRAM

The primary purpose of the soil sampling and analysis program was to look for lead and other metal contamination. Because the property was used as a gun club for well over 50 years, the concern of lead contamination due to the leaching of lead from bullets and shot on the site is the primary concern. In addition, a spot screening for the more persistent pesticides was also performed. The samples were collected on February 22, 1990.

7.1 Soil Sampling Program

Six surface soil samples were collected for this limited site screening program. The sampling location is as follows:

Sample Number	Sampling Location
43181	Trap Range
43182	25 yd. Target Range Berm
43183	100 yd. Target Range Berm
43184	Target Range
43185	50 yd. Target Range Berm
43186	Off-site location on Maitland Drive

The decision was made to collect samples from the berms because they were believed to contain a high concentration of lead bullets and shot. The sample in the trap field was collected because this was another location where there probably was a high concentration of lead. The sample taken from the center of the target range was collected to see if the lead levels were as high in an area which did not receive shot directly. The sample taken from the roadway across Maitland Drive served as a control, as no shooting had occurred at this site.

All samples were collected by pressing a 6-inch long brass tube into the surface of the soil. Once the sample was collected, Teflon-lined plastic caps were placed over the ends of the tube, the tubes were labeled and then placed in an iced cooler until they could be released under chain-of-custody procedures to Med-Tox Laboratory.

While collecting the samples, a large amount of lead shot and slugs were noted in the berms. The gravel on the west side of the concrete walkway also contained numerous brass casings.

7.2 Soil Analysis Program

The purpose of this analysis was to look for organochlorine pesticides and PCBs using EPA Method 8080, as the site contained fill from unknown areas, and to look for lead using CAM-17 Metal Analysis due to the high volume of lead slugs and shot known to be at the site because of its use as a gun club. Med-Tox Laboratory performed the following analyses on the samples as noted below:

Sample Number	CAM-17 Metals	EPA Method 8080
→ 43181	X	X
43182	X	
43183	X	
→ 43184	X	X
43185	X	
→ 43186	X	X

7.3 Chemical Analysis Results

The results of the six soil samples analyzed for CAM-17 metals can be found in Table 1. In two of the samples analyzed, 43182 and 43183, the levels of lead exceeded the Total Threshold Limit Concentration (TTLC) value. In one of the two samples, 43183, the level of copper also exceeded the TTLC value. The TTLC value is defined as the concentration at which a substance is classified as hazardous by Title 22 of the California Administrative Code. See Appendix B for the laboratory analyses and chain-of-custody documents for the soil sample analyses. It should be noted that both of the samples that tested high for lead were taken from berms in the pistol/rifle target range (Plate 2).

As indicated on the table, one of the samples analyzed using EPA method 8080 for organochlorine pesticides and polychlorinated biphenyls (PCBs) revealed the presence of 2,4'-DDD, 4,4'-DDE and 4,4'-DDT in sample 43186. This sample was collected adjacent to Maitland Drive across the street from the gun club (See Plate 2). The total concentration of these compounds was 50 ug/kg which is well below the level identified as hazardous under Title 22 of the California Administrative Code. Neither of the remaining two samples analyzed from the Gun Club site revealed the presence of organochlorine pesticides or PCBs. See Appendix B for the laboratory results.

Mike Bodisco from the Bureau of Alcohol, Tobacco and Firearms was consulted regarding the metal composition of bullets and shot. He said that most bullets have a lead core with a copper coating. This could account for the high levels of lead and copper detected in the metals analyses. He also said that armor-piercing ammunition have projectile cores constructed of tungsten alloys, steel, iron, brass, bronze, beryllium copper and depleted uranium.

A discussion was held with Jack Sheets at Med-Tox Associates about the methods used to analyze the samples for metal content. He said that the effort was made to remove everything except the soil from the samples analyzed. In effect, all the lead shot and bullets that were evident in the samples were removed before one-third of the collected sample was analyzed. He indicated that the high levels of lead may be attributed to bullets and shot that may have broken into fine particles upon impacting the berms in the target range. In that case, small fragments of lead may have inadvertently been combined with the soil being analyzed thus giving artificially high results. Further testing would need to be performed on the soil samples to determine if the levels of lead are hazardous or not.

8 LIMITED ASBESTOS SAMPLING AND ANALYSIS PROGRAM

A bulk asbestos sample was collected from the southernmost building during an asbestos survey of the site on December 6, 1989. This survey was conducted because the buildings on the property were apparently built during the 1960s and 1970s, when asbestos was widely used in building materials.

8.1 Asbestos Sampling Program

A reconnaissance level evaluation of the buildings revealed one material that was suspected of containing asbestos. A bulk sample of green floor tile, taken from the southernmost building on the site was collected to be analyzed for the presence of asbestos and fire retardant. The decision was made to analyze the floor tile because asbestos was commonly used in floor tile as a strengthener. A survey was made of the other buildings on the property and nothing else suspected of containing asbestos was noted.

8.2 Asbestos Analysis Program

The bulk sample was transferred to Forensic Analytical Specialties, Inc. under chain-of-custody procedures for an asbestos analysis. The analytical method used was 40 CFR 763, Subpart F, Appendix A (Ahera). This is polarized light microscopy with dispersion staining.

8.3 Chemical Analysis Results

The results of the analysis show that 1% - 5% Chrysotile Asbestos is present in the tile (See Appendix A). The State of California requires that a licensed asbestos removal contractor be utilized to remove all friable asbestos floor tiles in excess of 100 square feet prior to the demolition of a building. Although it is the responsibility of the building owner, the contractor will typically contact the EPA, Cal OSHA, and any other agencies that must be notified of the removal of asbestos.

9 CONCLUSIONS

CONCLUSIONS

The environmental site assessment revealed evidence that indicates that soil conditions of the site have been adversely impacted by onsite activities. This may have implications with regard to groundwater quality under the site as well. The historical review, site visit and laboratory findings support these conclusions.

Although it is also possible that the offsite toxic releases listed in the agency review have had an impact, it is unlikely as they are located nearly a mile away from the site and apparently none are upgradient from the subject site.

The site reconnaissance revealed numerous lead slugs in the target range berms during the collection of the soil samples. Casings for ammunition were also noted to be plentiful in the gravel located east of the concrete covered walkway.

The historical review indicated that there may be lead slugs and shot, as well as brass casings located vertically throughout the site fill material from ground level to a depth below groundwater. This distribution would be attributed to the addition of fill over several decades while the site was being used as a gun club.

Soil that contained pesticides was found in one sample analyzed; however, as the origin of the fill placed on the property is unknown, it is also possible that soil containing pesticides may also be found several feet deep below the ground surface level. The pesticide analysis performed on the samples mentioned in this report was for organochlorine pesticides only. Additional tests to analyze for other pesticides and herbicides were not performed.

The sample of green tile analyzed contained 1-5% asbestos and indicates that asbestos may be present throughout the tile flooring in the buildings. According to Mr. Norm Lynds, at least one of the buildings was built in the early 1960's. Asbestos was widely used in building materials during that time.

Kleinfelder will prepare a workplan to address these concerns at your request.

10 LIMITATIONS

This report was prepared in general accordance with the accepted standard of practice which exists in Northern California at the time the investigation was performed. It should be recognized that definition and evaluation of environmental conditions is a difficult and inexact art. Judgements leading to conclusions and recommendations are generally made with an incomplete knowledge of the conditions present. More extensive studies, including additional environmental investigations, can tend to reduce the inherent uncertainties associated with such studies. If the Client wishes to reduce the uncertainty beyond the level associated with this study, Kleinfelder should be notified for additional consultation.

Our firm has prepared this report for the Client's exclusive use for this particular project and in accordance with generally accepted engineering practices within the area at the time of our investigation. No other representations, expressed or implied, and no warranty or guarantee is included or intended.

11 REFERENCES

- Bodisco, Mike, ATF Special Inspector with Compliance Operations, Federal Alcohol, Tobacco and Firearm Branch of the Food and Drug Administration, 1401 Lakeside Drive, Suite 1101, Oakland, CA 94612
- California Department of Health Services, "Abandoned Sites Program Information System List". October 26, 1989.
- California Department of Health Services, "Bond Expenditure Plan for Hazardous Substance Cleanup Bond Act of 1984 List of Sites", January 1989.
- California Office of Planning and Research, "Hazardous Waste and Substances Site List", June 1989.
- California Regional Water Quality Control Board, San Francisco Bay Region, "Fuel Leaks Case List", November 3, 1989.
- California Regional Water Quality Control Board, San Francisco Bay Region, "North Bay Toxics List", January 23, 1989.
- California Waste Management Board, "Active Landfills, Closed and Inactive Landfills, and Transfer Stations", September 20, 1989.
- Framsted, Fred, Alameda Municipal Golf Course, Clubhouse Memorial Road, Alameda, California.
- Alameda County Flood Control and Water Conservation District, "Groundwater in the San Leandro and San Lorenzo Alluvial Cone of the East Bay Plain of Alameda County, 1984."
- Lopez, Theresa, Alameda Public Works Department, 22063 Santa Clara Avenue, Alameda, California 94501
- Lynds, Norm, Siegles Guns, 508 W. MacArthur Boulevard, Oakland, California.
- Pacific Aerial Surveys, Historical Aerial Photographs. Oakland, California.
- Reimche, Tom, Inspector, Federal Alcohol, Tobacco and Firearm Branch of the Food and Drug Administration, 280 South First Street, Room 2180, San Jose, California 95113
- Sanborn Fire Insurance Maps for Alameda. University of California at Berkeley, Main Library.
- Sheets, Jack, Inorganic Laboratory Manager, Med-Tox Associates, Inc. 3440 Vincent Road, Pleasant Hill, California 94523.
- United States Environmental Protection Agency, "EPA Region (CERCLIS Listing Proposed and Final National Priority List." April 1989.

United States Environmental Protection Agency. "EPA Region 9 Proposed and Final Priority List." April 1989.

United States Environmental Protection Agency. "Resource Conservation and Recovery Act List of Hazardous Waste Generators and Transporters." November 16, 1988.

United States Geological Survey. San Leandro quadrangle topographic map. 1973.

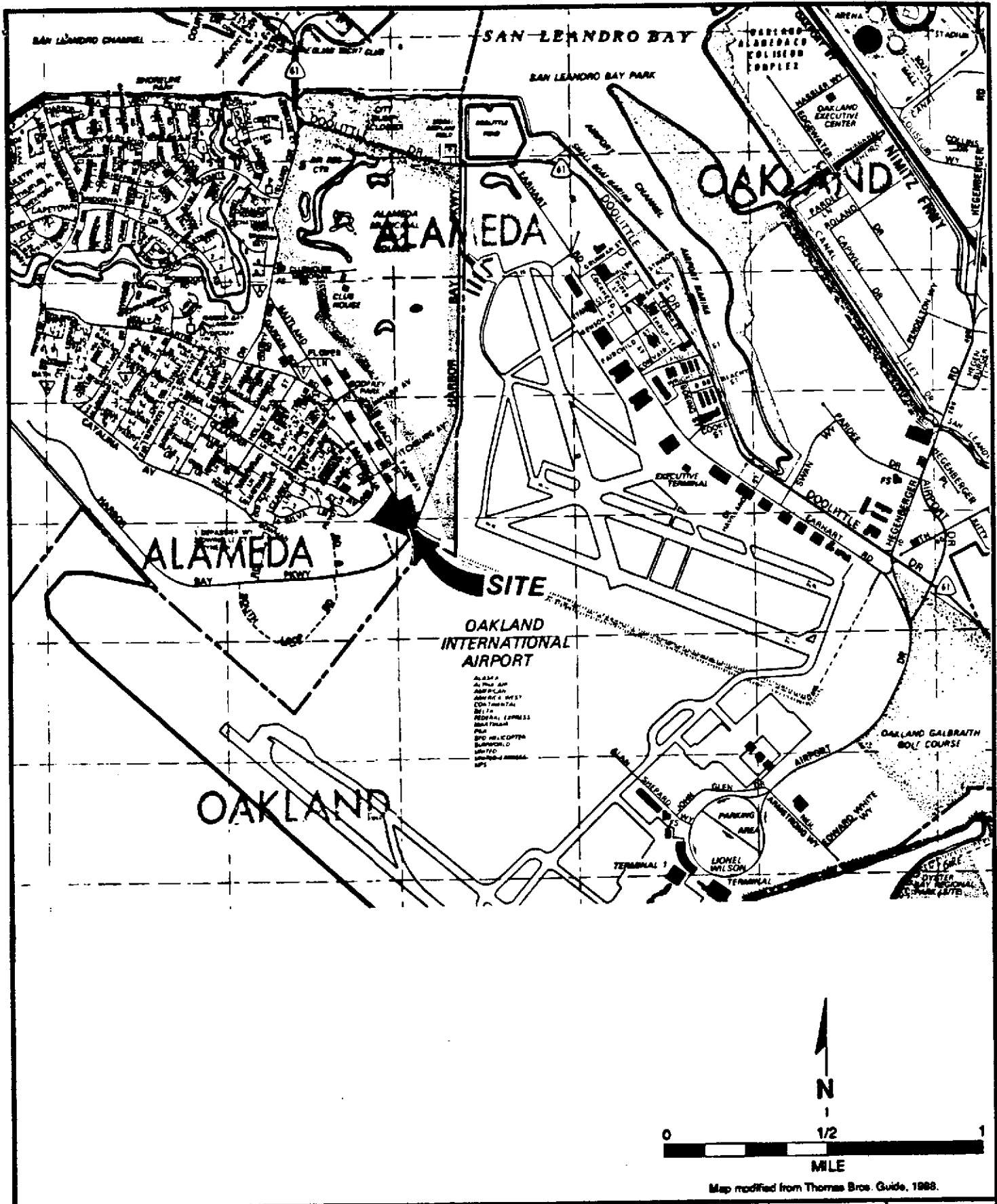
Weston, Robert, Senior Agricultural Biologist, Alameda County Office of the Agricultural Commissioner, 224 West Winton Avenue, Hayward, California 94544.

TABLE 1
LABORATORY ANALYSES OF HEAVY METALS
(mg/kg)

METAL	TTLIC*	S-43181	S-43182	S-43183	S-43184	S-43185	S-43186
Antimony	500	ND	30	210	ND	ND	ND
Arsenic	500	3	20	10	6	1	4
Barium	10,000	<u>130</u>	39	31	70	32	55 55
Beryllium	75	0.3	ND	ND	ND	ND	ND
Cadmium	100	ND	0.2	ND	ND	ND	ND
Chromium	2,500	<u>68</u>	34	21	43	27	30
Cobalt	8,000	<u>11</u>	5	4	9	3	3
Copper	2,500	33	170	10,000 **	21	6	10
Lead	1,000	33	15,000 **	88,000 **	150	98	37
Mercury	20	ND	ND	ND	ND	ND	ND
Molybdenum	3,500	ND	ND	ND	ND	ND	ND
Nickel	2,000	<u>98</u>	28	25	42	21	16
Selenium	100	ND	ND	ND	ND	ND	ND
Silver	500	ND	<u>0.5</u>	<u>1.0</u>	ND	ND	ND
Thallium	700	ND	ND	ND	ND	ND	ND
Vanadium	2,400	47	23	9	42	19	22
Zinc	5,000	74	56	<u>740</u>	62	16	58

* Total Threshold Limit Concentration.

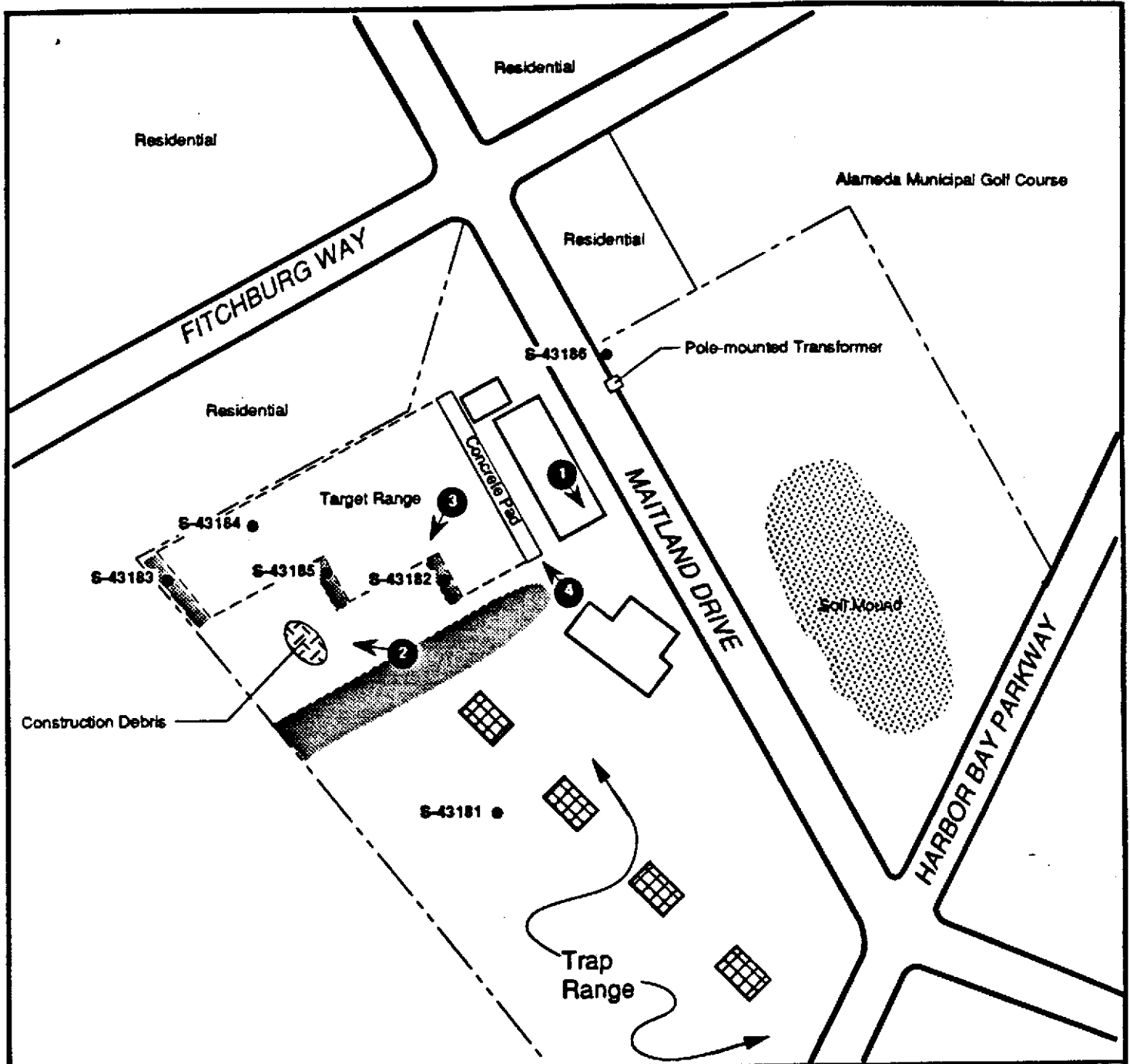
** Exceeds TTLIC level identified in Title 22 of the California Administrative Code.







KLEINFELDER
 PROJECT NO. 10-2081-01


SITE LOCATION MAP
 HARBOR BAY ISLE ASSOCIATES
 MAITLAND DRIVE AT HARBOR BAY PARKWAY
 ALAMEDA, CALIFORNIA


PLATE
 1

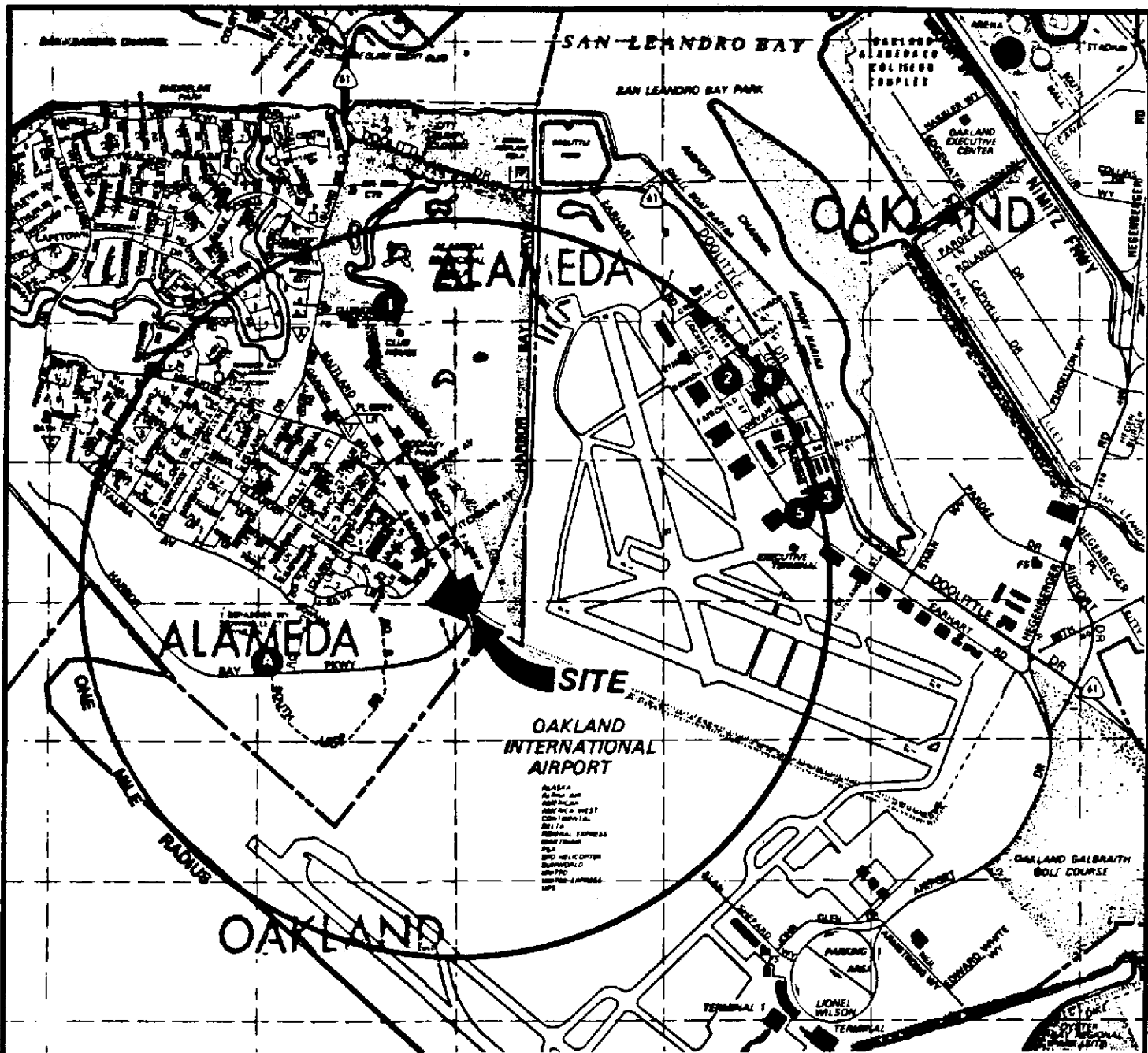


LEGEND

-  BERM
-  TRAP SHELTER
-  S-43181 SOIL SAMPLES
-  LOCATION AND VIEW DIRECTION OF PHOTO


 N
 NOT TO SCALE

 KLEINFELDER	SITE PLAN HARBOR BAY ASSOCIATES MAITLAND DRIVE AT HARBOR BAY PARKWAY, ALAMEDA, CALIFORNIA	PLATE 2
DRAFTED BY: L. Sue DATE: 5-21-90		
CHECKED BY: J. Friedman DATE: 5-21-90	PROJECT NO. 10-2081-01	

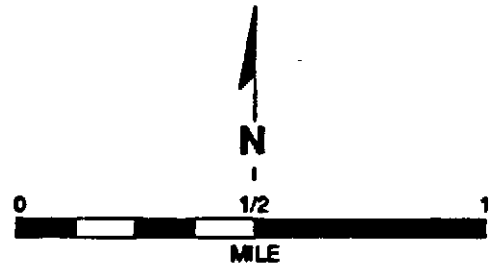


RCRA DOCUMENTED LOCATION

● TRITON BIOSCIENCES, INC., 1901 Harbor Bay Parkway, Alameda

UNDERGROUND STORAGE TANK AND TOXIC RELEASE INVESTIGATION SITES

- ALAMEDA MUNICIPAL GOLF COURSE, Clubhouse Memorial Road, Alameda
- NATIONAL AIRMOTIVE, 7200 Lockheed Street, Oakland
- PORT OF OAKLAND—BLDG. L-815, 8300 Earhardt Street, Oakland
- PORT OF OAKLAND—KING INTERESTS, Oakland Airport
- PORT OF OAKLAND—WANGAR 6, Oakland Airport



Map modified from Thomas Bros. Guide, 1988.

KLEINFELDER

DOCUMENTED RCRA AND UNDERGROUND STORAGE/TOXIC RELEASE SITES

HARBOR BAY ISLE ASSOCIATES
 MAITLAND DRIVE AT HARBOR BAY PARKWAY
 ALAMEDA, CALIFORNIA

PLATE

3

PROJECT NO. 10-2081-01



Photo 1. Paint cans stored on shelves and floor in storage room.



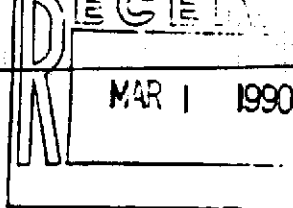
Photo 2. Construction and landscaping debris located behind target range.



Photo 3. View showing berm and wooden backing at 25-yard target range.



Photo 4. View of concrete walkway facing the rifle range.



MAR 1 1990



Bulk Material Analysis

Client:
Kleinfelder

2121 North California Boulevard
Walnut Creek, CA 94596

Client Number: 488
Report Number: 42015
Date Received: 02/27/90
Date Examined: 02/28/90

Lab Number: 9009836
Sample Number: 30096
Site: Old Gun Club.

Analyst: NH

Location: Green floor tile.

P.O./Job ID: 10-2081-02/Old Gun Club.

Gross Description: Green tile with black backing.

Comments: Asbestos in tile (1-5%) and in backing (5-10%). Composite reported.

Microscopic Description

TOTAL ASBESTOS PRESENT:		1-5	%
Chrysotile	1-5	%	
Amosite	Non-Det.	%	
Crocidolite	Non-Det.	%	
		%	
TOTAL NON-ASBESTOS FIBROUS MATERIAL PRESENT:		40-45	%
Cellulose	20-25	%	
Fibrous Glass	Non-Det.	%	
Wollastonite	15-20	%	
		%	
TOTAL NON-ASBESTOS NON-FIBROUS MATERIAL PRESENT:		50-55	%
Unspecified Particulates	50-55	%	
		%	
		%	
		%	

Director: Janis Teichman
Janis Teichman

Analytical method: 40 CFR 763, Subpart F, Appendix A (AEEPA)

See Reverse for Explanation of Terms and Reporting Practices.

3777 Depot Road, Suite 409, Hayward, California 94545 Telephone: 415/887-8828 800/827-FASI Fax: 415/887-4218

Accredited by the National Bureau of Standards National Voluntary Laboratory Accreditation Program for selected test methods for asbestos

PROJ. NO.
 10-2081-02
 PROJECT NAME
 Old Gen Club

NO OF CONTAINERS

ANALYSIS
 Asbestos I.D.

DATE
MM/DD/YY

SAMPLE TIME
 HH MM SS

SAMPLE ID.

NO OF CONTAINERS

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

REMARKS

12/6/99

0

30096

1

X

green floor blk.

Relinquished by: (Signature)
Guy Jett

Date/Time
2/26/90

Received by: (Signature)

Remarks
Sign + return chain of custody

Send Results To
 KLEINFELDER
 2121 N. CALIFORNIA BLVD.
 SUITE 570
 WALNUT CREEK, CA 94598
 (415) 938-5610

Relinquished by: (Signature)
Guy Jett

Date/Time
2/27/90

Received by: (Signature)
Grada E. Clark

Send results + invoice to
Guy Jett, c/o Kleinfelder →

Relinquished by: (Signature)

Date/Time

Received for Laboratory by (Signature)

KLEINFELDER, INC.

CLIENT ID: 43181
 CLIENT JOB NO: 10-2081-02
 DATE SAMPLED: 02/22/90
 DATE RECEIVED: 02/22/90
 REPORT DATE: 03/20/90

MED-TOX LAB NO: 9002162-02A
 MED-TOX JOB NO: 9002162
 DATE EXTRACTED: 03/07/90
 DATE ANALYZED: 03/14/90
 INSTRUMENT: 2

EPA METHOD 8080
 ORGANOCHLORINE PESTICIDES AND PCBs

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Aldrin	309-00-2	ND	5
alpha-BHC	319-84-6	ND	5
beta-BHC	319-85-7	ND	5
delta-BHC	319-86-8	ND	5
gamma-BHC (Lindane)	58-89-9	ND	5
Chlordane	57-74-9	ND	50
4,4'-DDD	72-54-8	ND	10
2,4'-DDD	53-19-0	ND	10
4,4'-DDE	72-55-9	ND	10
2,4'-DDE	3424-82-6	ND	10
4,4'-DDT	50-29-3	ND	10
2,4'-DDT	789-02-6	ND	10
Dieldrin	60-57-1	ND	10
Endosulfan I	959-98-8	ND	5
Endosulfan II	33212-65-9	ND	10
Endosulfan sulfate	1031-07-8	ND	10
Endrin	72-20-8	ND	10
Endrin aldehyde	7421-93-4	ND	10
Heptachlor	76-44-8	ND	5
Heptachlor epoxide	1024-57-3	ND	5
Methoxychlor	72-43-5	ND	10
Toxaphene	8001-35-2	ND	50
PCB-1016	12674-11-2	ND	50
PCB-1221	11104-28-2	ND	50
PCB-1232	11141-16-5	ND	50
PCB-1242	53469-21-9	ND	50
PCB-1248	12672-29-6	ND	50
PCB-1254	11097-69-1	ND	50
PCB-1260	11096-82-5	ND	50

ND = Not Detected

KLEINFELDER, INC.

CLIENT ID: 43184
 CLIENT JOB NO: 10-2081-02
 DATE SAMPLED: 02/22/90
 DATE RECEIVED: 02/22/90
 REPORT DATE: 03/20/90

MED-TOX LAB NO: 9002162-05A
 MED-TOX JOB NO: 9002162
 DATE EXTRACTED: 03/07/90
 DATE ANALYZED: 03/09/90
 INSTRUMENT: 2

EPA METHOD 8080
 ORGANOCHLORINE PESTICIDES AND PCBs

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Aldrin	309-00-2	ND	5
alpha-BHC	319-84-6	ND	5
beta-BHC	319-85-7	ND	5
delta-BHC	319-86-8	ND	5
gamma-BHC (Lindane)	58-89-9	ND	5
Chlordane	57-74-9	ND	50
4,4'-DDD	72-54-8	ND	10
2,4'-DDD	53-19-0	ND	10
4,4'-DDE	72-55-9	ND	10
2,4'-DDE	3424-82-6	ND	10
4,4'-DDT	50-29-3	ND	10
2,4'-DDT	789-02-6	ND	10
Dieldrin	60-57-1	ND	10
Endosulfan I	959-98-8	ND	5
Endosulfan II	33212-65-9	ND	10
Endosulfan sulfate	1031-07-8	ND	10
Endrin	72-20-8	ND	10
Endrin aldehyde	7421-93-4	ND	10
Heptachlor	76-44-8	ND	5
Heptachlor epoxide	1024-57-3	ND	5
Methoxychlor	72-43-5	ND	10
Toxaphene	8001-35-2	ND	50
PCB-1016	12674-11-2	ND	50
PCB-1221	11104-28-2	ND	50
PCB-1232	11141-16-5	ND	50
PCB-1242	53469-21-9	ND	50
PCB-1248	12672-29-6	ND	50
PCB-1254	11097-69-1	ND	50
PCB-1260	11096-82-5	ND	50

ND = Not Detected

KLEINFELDER, INC.

CLIENT ID: 43186
 CLIENT JOB NO: 10-2081-02
 DATE SAMPLED: 02/22/90
 DATE RECEIVED: 02/22/90
 REPORT DATE: 03/20/90

MED-TOX LAB NO: 9002162-07A
 MED-TOX JOB NO: 9002162
 DATE EXTRACTED: 03/07/90
 DATE ANALYZED: 03/14/90
 INSTRUMENT: 2

EPA METHOD 8080
 ORGANOCHLORINE PESTICIDES AND PCBs

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Aldrin	309-00-2	ND	5
alpha-BHC	319-84-6	ND	5
beta-BHC	319-85-7	ND	5
delta-BHC	319-86-8	ND	5
gamma-BHC (Lindane)	58-89-9	ND	5
Chlordane	57-74-9	ND	50
4,4'-DDD	72-54-8	10	10
2,4'-DDD	53-19-0	ND	10
4,4'-DDE	72-55-9	20	10
2,4'-DDE	3424-82-6	ND	10
4,4'-DDT	50-29-3	20	10
2,4'-DDT	789-02-6	ND	10
Dieldrin	60-57-1	ND	10
Endosulfan I	959-98-8	ND	5
Endosulfan II	33212-65-9	ND	10
Endosulfan sulfate	1031-07-8	ND	10
Endrin	72-20-8	ND	10
Endrin aldehyde	7421-93-4	ND	10
Heptachlor	76-44-8	ND	5
Heptachlor epoxide	1024-57-3	ND	5
Methoxychlor	72-43-5	ND	10
Toxaphene	8001-35-2	ND	50
PCB-1016	12674-11-2	ND	50
PCB-1221	11104-28-2	ND	50
PCB-1232	11141-16-5	ND	50
PCB-1242	53469-21-9	ND	50
PCB-1248	12672-29-6	ND	50
PCB-1254	11097-69-1	ND	50
PCB-1260	11096-82-5	ND	50

ND = Not Detected

KLEINFELDER, INC.

CLIENT ID: 43181
CLIENT JOB NO: 10-2081-02
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002162-02A
MED-TOX JOB NO: 9002162
REPORT DATE: 03/20/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	3	500	1	7060	V12
Ba	Barium	130	10,000	5	7080	V22
Be	Beryllium	0.3	75	0.2	7090	V22
Cd	Cadmium	ND	100	0.2	7130	V22
Cr	Chromium	68	2,500	1	7190	V22
Co	Cobalt	11	8,000	1	7200	V22
Cu	Copper	33	2,500	1	7210	V22
Pb	Lead	33	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	98	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	47	2,400	5	7910	V22
Zn	Zinc	74	5,000	2	7950	V22

ND = Not Detected

* INST. = Instrument Number

KLEINFELDER, INC.

CLIENT ID: 43182
CLIENT JOB NO: 10-2081-02
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002162-03A
MED-TOX JOB NO: 9002162
REPORT DATE: 03/20/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTL (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	30	500	5	7040	V22
As	Arsenic	20	500	1	7060	V12
Ba	Barium	39	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	0.2	100	0.2	7130	V22
Cr	Chromium	34	2,500	1	7190	V22
Co	Cobalt	5	8,000	1	7200	V22
Cu	Copper	170	2,500	1	7210	V22
Pb	Lead	15,000	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	28	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	0.5	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	23	2,400	5	7910	V22
Zn	Zinc	56	5,000	2	7950	V22

ND = Not Detected

* INST. = Instrument Number

KLEINFELDER, INC.

CLIENT ID: 43183
CLIENT JOB NO: 10-2081-02
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002162-04A
MED-TOX JOB NO: 9002162
REPORT DATE: 03/20/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	210	500	5	7040	V22
As	Arsenic	10	500	1	7060	V12
Ba	Barium	31	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	ND	100	0.2	7130	V22
Cr	Chromium	21	2,500	1	7190	V22
Co	Cobalt	4	8,000	1	7200	V22
Cu	Copper	10,000	2,500	1	7210	V22
Pb	Lead	88,000	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	25	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	1.0	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	9	2,400	5	7910	V22
Zn	Zinc	740	5,000	2	7950	V22

ND = Not Detected

* INST. = Instrument Number

KLEINFELDER, INC.

CLIENT ID: 43184
CLIENT JOB NO: 10-2081-02
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002162-05A
MED-TOX JOB NO: 9002162
REPORT DATE: 03/20/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	6	500	1	7060	V12
Ba	Barium	70	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	ND	100	0.2	7130	V22
Cr	Chromium	43	2,500	1	7190	V22
Co	Cobalt	9	8,000	1	7200	V22
Cu	Copper	21	2,500	1	7210	V22
Pb	Lead	150	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	42	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	42	2,400	5	7910	V22
Zn	Zinc	62	5,000	2	7950	V22

ND = Not Detected

* INST. = Instrument Number

KLEINFELDER, INC.

CLIENT ID: 43185
CLIENT JOB NO: 10-2081-02
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002162-06A
MED-TOX JOB NO: 9002162
REPORT DATE: 03/20/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	1	500	1	7060	V12
Ba	Barium	32	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	ND	100	0.2	7130	V22
Cr	Chromium	27	2,500	1	7190	V22
Co	Cobalt	3	8,000	1	7200	V22
Cu	Copper	6	2,500	1	7210	V22
Pb	Lead	98	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	21	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	19	2,400	5	7910	V22
Zn	Zinc	16	5,000	2	7950	V22

ND = Not Detected

* INST. = Instrument Number

KLEINFELDER, INC.

CLIENT ID: 43186
CLIENT JOB NO: 10-2081-02
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002162-07A
MED-TOX JOB NO: 9002162
REPORT DATE: 03/20/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTL (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	4	500	1	7060	V12
Ba	Barium	55	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	ND	100	0.2	7130	V22
Cr	Chromium	30	2,500	1	7190	V22
Co	Cobalt	3	8,000	1	7200	V22
Cu	Copper	10	2,500	1	7210	V22
Pb	Lead	37	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	16	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	22	2,400	5	7910	V22
Zn	Zinc	58	5,000	2	7950	V22

ND = Not Detected

* INST. = Instrument Number

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS	ANALYSIS							REMARKS
L.P. NO. (P.O. NO.)		SAMPLERS: (Signature/Number)			CAN 17	EPA 8086	EPA 8240	EPA 8270	EPA 8015 (Pb)	EPA 8015 (Cd)	EPA 8015 (Cu)	
DATE	SAMPLE I.D. TIME	SAMPLE I.D.										
10/27/90		43180	1A	1	X	X	X	X	X	X	PIT #3 (location 1) Location #6 #2 #5 #4 #3 #7	
		43181	2A	1	X	X	X	X	X	X		
		43182	3A	1	X	X	X	X	X	X		
		43183	4A	1	X	X	X	X	X	X		
		43184	5A	1	X	X	X	X	X	X		
		43185	6A	1	X	X	X	X	X	X		
		43186	7A	1	X	X	X	X	X	X		
Correction 3/2 -												
10-2081-01												

Relinquished by: (Signature) <i>J. Friedman</i>	Date/Time 7/2/90 5 pm	Received by: (Signature)	Remarks Ann: Jeff Friedman Informed client it might be 3 weeks before we have results
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time 2/21/90 11:00	Received for Laboratory by: (Signature) <i>S. Van Vleet</i>	

Send Results To
KLEINFELDER
 2121 N. CALIFORNIA BLVD.
 SUITE 570
 WALNUT CREEK, CA 94596
 (415) 938-5810