LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

Phase I and Phase II
Environmental Site Assessment

Fanoe Ranch

Gonzales, California

This report has been prepared for:

McPharlin, Sprinkles & Thomas, LLP

Ten Almaden Boulevard, Suite 1460, San Jose, California 95113

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Charles C. Mettler
Senior Staff Geologist

Thomas F. McCloskey, R.G., C.E.G.
Principal Geologist

Ron L. Helm, C.E.G., R.E.A.II
Senior Principal Geologist

CERTIFIED ENGINEERING GEOLOGIST
THOMAS F. McCLOSKEY
No. 1861
OF CALIFORNIA

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1.0 INTRODUCTION

1.1 Purpose

This Phase I and Phase II environmental site assessment was performed for McPharlin, Sprinkles & Thomas, LLP and Wellington Corporation. The Wellington Corporation is considering the purchase and redevelopment of the Fanoe Ranch (Site) shown on Figures 1 and 2. The planned development is mixed-use, including single-family homes.

The purpose of this study was to strive to document environmental conditions at the Site related to current and historic use of hazardous substances and petroleum products. The term "environmental conditions" means the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate a significant release or significant threat of a release into the ground, ground water, or surface water.

1.2 Scope of Work

As requested, the scope of work for the Phase I assessment was performed in general accordance with the American Society for Testing and Materials (ASTM) Designation E 1527-00 as outlined in our agreement dated November 11, 2003. The scope of work for the Phase I site assessment included the following tasks.

- Reconnaissance of the Site and limited drive-by survey of adjacent properties for readily observable indications of current or historic activities that have or could significantly impact the Site.
- Review of readily available topographic maps and reports to evaluate local hydrogeologic conditions including anticipated ground water depth and flow direction.
- Review of readily available documents, maps, and aerial photographs, and interviews with knowledgeable persons to evaluate past land uses.
- Acquisition and review of a regulatory agency database report to evaluate potential impacts to the Site from reported contamination incidents at nearby facilities.
- Review of available regulatory agency files to obtain information about the use and storage of hazardous materials at the Site.

The scope of work for the preliminary Phase II investigations was discussed and presented to McPharlin, Sprinkles & Thomas, LLP and Wellington Corporation in our Phase I and Phase II environmental Site assessment of the Fanoe Ranch property dated November 11, 2003, and our agreement for supplemental Phase II environmental consulting services dated December 30, 2003. The scope of work for the Phase II investigations included the following tasks.

- Collection of surface soil samples from the agricultural fields.
- Collection of soil samples from the main drainage ditches.
- Collection of soil samples from the duck pond area.
- Excavation and logging of 16 exploratory test pits and collection of soil samples from buried debris areas across the site.
- Collection of soil sample from the former dairy farm site with potential hazardous materials concerns.
- Completion of geophysical surveys to locate buried metallic debris, including underground fuel tanks (USTs).
- Drilling and logging of seven exploratory borings.
- Drilling and logging of two exploratory borings near underground storage tanks at the Mike Fanoe Parcel.

The limitations of this Phase I and Phase II site assessment are presented in Section 8.0; the terms and conditions of our agreement are presented in Appendix A.

2.0 SITE RECONNAISSANCE

2.1 Site Location and Ownership

The Site is located between Fanoe Road and Iverson Road, just north of Johnson Canyon Road, in Gonzales, California. The Site is located in a rural agricultural area and is bounded by drainage ditches and agricultural fields to the north and south; Fanoe Road, single-family homes and agricultural fields to the west; and Iverson Road, agricultural fields, and a feed lot to the east. The Site is owned by the Fanoe family, who reportedly has owned the property for more than 100 years. The Site location and ownership information is shown in Table 1. Three parcels of land located within the boundaries of the Site reportedly are not included in the proposed transaction (Figure 2): the 5-acre parcel containing the home and associated buildings of Mr. and Mrs. Michael Fanoe (APN 223-031-026); the approximately 2-acre parcel containing the home of Mrs. Anita Fanoe (APN 223-031-012); and the 1-acre parcel containing the former home of Mrs. Midge Fanoe (APN 223-031-014).

Table 1. Site Information

Site Addresses	APNs	Acreage	Site Owner
27405 Fanoe Road (other addresses include 27351 and 27813 Fanoe Road*)	223-031-024, -025, and -027	776	Fanoe Family

* Addresses of residential parcels within Site boundaries but not included in the Site investigation.

2.2 Topographic Features and Hydrogeology

Based on U.S. Geological Survey (USGS) topographic maps, the site elevation ranges from approximately 150 to 270 feet above mean sea level. Topography in the vicinity of the Site slopes gently to the southwest, following the slope of the local hills. During subsurface investigations shallow ground water was encountered at a depth of approximately 80 feet. Ground water beneath the site likely flows to the southwest, following the local topography.

2.3 Site Visit

To observe current Site conditions, our representative, environmental engineer Belinda Blackie, visited the Site on December 4, 2003, and was accompanied by Mr. Michael Fanoe. Mr. Fanoe is a member of the Fanoe family who reportedly has owned the Site for more than 100 years; Mr. Fanoe reportedly farmed the Site for 36 years.

At the time of our Site visit, the subject property was primarily agriculturally cultivated with row crops. Anthony Costa Farming was the current lessee of the Site, using the property for row crop farming. Costa Farming reportedly has a five-year lease for the Site, beginning in 2002. Portions of the agricultural fields contained crops that were in the process of being harvested, and portions had either been recently seeded or were prepared for seeding. Tractors were observed performing farming operations at several areas across the Site; a harvesting crew and their associated machinery were also observed in the fields. Unpaved roads traversed the Site. The agricultural fields were observed from these roads as well as the paved City streets bordering the Site.

In addition to the fields observed on-Site, several other areas/structures were observed and descriptions of these are presented below.

2.3.1 Retention Basins/Catch Ponds

Four retention basins/catch ponds were located on-Site; one retention basins /catch pond appeared to be partially located on-Site. The catch pond in the northwest corner of Parcel 4, adjacent to the 90 degree bend in Fanoe Road (Figure 2), was fenced and empty, and according to Mr. Fanoe, received runoff (tail water) from the up-slope agricultural fields. The catch ponds present on Parcel 1 and Parcel 2 were unfenced and also reportedly received agricultural tail water. The catch pond on Parcel 1 held a small amount of water; the catch pond on Parcel 2 was dry. The retention basins located on the eastern portion of Parcel 4 reportedly did not receive agricultural tail water; water from the retention basins was piped for use as irrigation water. Finally, the retention basins that may be partially present on-Site, located at the northeastern corner of Parcel 2 adjacent to Iverson Road, was fenced-off and contained water. According to Mr. Fanoe, this retention basin was associated with the vineyards on the adjacent property, and he had no further information on its use.

One former catch pond was present along the northern boundary of Parcel 4. According to Mr. Fanoe, within the past 10 to 15 years this catch pond had been filled with soil from the up-slope fields and has not been cleared out. At the time of our reconnaissance, this pond was being used for storage of old concrete irrigation pipe and tractor parking.

2.3.2 Drainage Ditches

Drainage ditches were observed to run from east to west along the northern and southern property lines, as well as between Parcel 1/Parcel 2 and Parcel 4. A drainage ditch was also observed running from north to south along the Iverson Road property line on Parcel 4 (Figure 2). The ditches were mostly dry at the time of our reconnaissance. According to Mr. Fanoe, the ditch that runs from east to west through the middle of the property receives runoff from the Fat City feed lot located across Iverson Road, immediately east of the Site. Mr. Fanoe stated that the runoff from Fat City contains cattle waste products.

2.3.3 Wells

Three on-Site wells are currently used for agricultural purposes (Figure 2). These wells reportedly are all at least 900 feet deep and have above-ground pump motors on top of the wellheads. The well on Parcel 4 northwest of the Midge Fanoe parcel was observed to have a "permanent" 1,000-gallon, plastic fertilizer, above-ground storage tanks (AST) and a portable 200-gallon plastic fertilizer AST near the wellhead. According to Mr. Fanoe, nitrogen is injected into the water at the wellhead before it is distributed to the irrigation system. The well on Parcel 1 was observed to have a "permanent" 1,000-gallon fertilizer AST for the same purpose. Adjacent to this well, a small diesel AST was also observed, to fuel the pump for the well. Pesticide mixed was reportedly done at the well located east of the Mike Fanoe parcel.

Two additional wells were observed on-Site; one west of the Mike Fanoe Parcel (Figure 2) and one in the Former Dairy Farm Area (Figure 4). These wells reportedly were deep agricultural wells, but the deep portions of the casings apparently have collapsed. These wells reportedly are currently used for domestic purposes by Mr. Fanoe's residence and the three residences on Parcel 2 in the Former Dairy Form area.

2.3.4 Debris Area 2

Adjacent to the drainage ditch along the southern property boundary (Figure 2, Figure 6), a debris and garbage dumping area for residents of the Site and other Fanoe properties was present (Debris Area 2). According to Mr. Fanoe, this area was approximately 150 feet long by 15 feet wide. Debris placed into the pit reportedly included disk blades, cans, garbage, an old car, junk, and assorted steel and iron pieces. Some debris (tires and concrete rubble) was visible protruding from the ground along the current drainage ditch. Mr. Fanoe closed the dumping area by filling it in with soil several years ago when the nearby Johnson Canyon landfill opened and because unknown entities reportedly began dumping their garbage in the pit. This area was investigated in the Phase II investigation and the results are included later in this report.

2.3.5 Duck Pond

A marshy area known as the duck pond was observed on the upper portion of Parcel 4 (Figure 2). Duck hunting has reportedly been done in this area for many years. The pond may receive agricultural tail water and runoff from the Fat City feed lot.

2.3.6 Debris Area 3

Approximately 80 to 90 years ago, the current drainage ditch trending east to west between Parcels 1/Parcel 2 and Parcel 4 reportedly did not bisect the entire Site. It reportedly was located further south, near the middle of Parcel 4. To facilitate crop placement, the drainage ditch was moved to its current location and the old ditch was filled with debris. The approximate location of the reported filled area is shown on Figure 2 and Figure 7 (Debris Area 3). This area was investigated in the Phase II investigation and is included later in this report.

2.3.7 Soil Treatment Area

According to information in the disclosure statement prepared for the Site (Fanoe Ranch 2003) and discussions with Mr. Fanoe, gasoline- and diesel-impacted soil from Sturdy Oil Company, which owned and operated service stations in the south valley area, was transported to a 15-acre area of the Site located at the northeastern corner of Parcel 2 (Figure 2 and Figure 8). A further discussion of the soil remediation activities is presented in Sections 2.5 and 3.4 below. At the time of our reconnaissance, wheat seed was being planted in the soil to provide habitat in which to hunt Mourning Doves. According to Mr. Fanoe, crops planted in this portion of the Site cannot be used for human or animal consumption by order of the Monterey County Department of Environmental Health (MCDH). Documented evidence of this requirement could not be found in the county files.

2.3.8 Burn Areas

One burn area was observed on-Site; Mr. Fanoe disclosed an additional area where burning historically and currently is performed. A small burn area was observed adjacent to the three residences on the former dairy area on Parcel 2. Black soil and burn debris were observed in this area (Figure 2 and Figure 9). According to Mr. Fanoe, burning also occurred at the western end of the soil treatment area on Parcel 2. Currently, organic clippings are burned in this area, but historically other materials, possibly including tires, may also have been burned on this portion of the Site. This area was sampled and is included in the Phase II portion of this report.

2.3.9 Structures for Adjacent Vineyard

According to Mr. Fanoe, the property boundary at the northeastern corner of Parcel 2 extends approximately 45 degrees to the northeast, rather than extending directly east to Iverson Road (Figure 2). If the Site does include this triangular piece of land, a fenced storage area, concrete ramp, and a portion of a reservoir for the adjacent vineyard property are present. The reservoir was fenced, appearing similar to the fenced reservoir on the northwestern corner of Parcel 4. A series of filters associated with the reservoir were also present in this area. According to Mr. Fanoe, the concrete ramp may have led to a pesticide AST. No AST was present at the time of our reconnaissance. A metal pole was present at each end of the ramp and a cable extended between the two poles, but their purpose could not be determined. One pole was similar in appearance to a vent pipe for an underground storage tank (UST). Mr. Fanoe was unaware of the presence of underground storage tanks (USTs) on-Site. The fenced storage area on this portion of the Site was observed to contain wood and wire cages, pipes, and buckets for the vineyards.

2.3.10 Former Dairy

A dairy reportedly was present on-Site from approximately 1938 until 1970, located on a 6-acre parcel near the center of Parcel 2 (Figure 2, Figure 9). Currently, the dairy area is developed with several structures, as described below.

2.3.11 Residences

Three-small dilapidated residences are located on the eastern end of the former dairy. Fanoe Ranch operators and their families occupy the residences, but historically were the homes of the dairy owner and milkers. The residences and associated yards were observed only from the adjacent dirt road.

2.3.12 Costa Farming Fuel ASTs

One approximately 1,000-gallon unleaded gasoline aboveground storage tank (AST) present within a metal secondary containment structure was present near the southern boundary of the former dairy (Figure 2, Figure 9). The containment area appeared dry and free from significant staining on the concrete pad.

Two additional ASTs owned by Sturdy Oil Company and used by Costa Farming were located adjacent to the residences. The ASTs, one 10,000-gallon and one 5,000-gallon, contained diesel and were located on a concrete pad formerly part of the dairy barn. Cow feeding troughs were visible adjacent to the ASTs. No secondary containment was present for the ASTs, and moderate staining of the concrete beneath the dispenser of the 10,000-gallon AST was observed. These ASTs were investigated and the results are described later in this report.

2.3.13 Costa Farming Fertilizer ASTs

Two 5,000-gallon fertilizer ASTs, one containing nitrogen and one containing a nitrogen/sulfur mixture, were present near the northern boundary of Parcel 2. One smaller AST, reportedly containing an anti-crustant, was also present in this area. The ASTs were located on a concrete pad.

2.3.14 Buried Diesel Tanks

Two diesel tanks reportedly were buried near the western boundary of the former dairy (Figure 9). According to Mr. Fanoe, the tanks were empty and similar in size to the tanks on a railroad car. Farm equipment and vehicles were parked on top of the reported area of the buried tanks at the time of our reconnaissance. Two leveler trailers, four tank trailers, a tractor, three trucks, and stacks of steel irrigation pipe were parked in this area; a steel tank trailer and a Ford petroleum truck were parked directly over the location of the buried tanks. Minor oil staining of the soil was observed in the area where the vehicles were parked. Several one-gallon cans of green paint were being used to paint the connections on the irrigation piping; green paint was observed spilled on the soil beneath the pipes. These USTs were investigated and the results are described later in this report.

2.3.15 Sturdy Oil Bulk Fuel ASTs

Sturdy Oil Company was a Site tenant at the time of our reconnaissance, occupying a portion of the former dairy (Figure 9) for bulk storage of diesel and gasoline in ASTs. Five steel ASTs were observed within a concrete secondary containment area and covered with a metal roof; two 10,000-gallon gasoline tanks, one 10,000-gallon diesel tank, and two unlabeled approximately 8,000-gallon tanks were present within the containment, as were four 5-gallon buckets of oil. No significant stains were observed on the concrete slab beneath the AST. Moderate oil staining was observed on the concrete beneath the buckets of oil. A significant build up of oil was observed on the platform housing the pump for the fuel; heavy staining was observed beneath the pump hoses within the secondary containment area. The pump hoses extended outside the secondary containment area and terminated on a steel drum; minor staining was observed on the soil around the drum. These USTs were investigated and the results are described later in this report.

2.3.16 Huntington Farms Storage Area

An additional structure within the former dairy area was a storage area for previous Site tenant Huntington Farms, who ceased their lease of a portion of the Site in November 2003 after three years of occupancy and left their materials behind. The storage area was located on a concrete slab. Heavy staining of the concrete in the vicinity of the former storage area was observed. Additional observed Site features are listed in Table 2. These USTs were investigated and the results are described later in this report.

Table 2. Additional Readily Observable Site Features

Site Features		Comments
Heating/Ventilation/Air Conditioning System	☒ Natural Gas and/or Electrical ☐ Fuel Oil	For three on-Site residences in former dairy area
Potable Water Supply	☐ Municipal ☒ On-Site Wells	Two wells used for domestic purposes.
Sewage Disposal Syst.	☐ POTW ☒ On-Site Septic	For three on-Site residences. Leach fields for the other three residential parcels not included in the project Site may extend onto Site.
	Transformers ☐ Present ☒ Not Observed ☐ PG&E ☐ Privately Owned	
Other Features	☒ Aboveground Storage Tanks ☒ Wells ☐ Air Emission Control Systems ☒ Vehicle Servicing Areas ☐ Boilers ☒ Burning Areas ☐ Chemical Mixing Areas ☐ Chemical Storage Areas ☐ Clean Rooms ☒ Drainage ditches ☐ Elevators ☐ Emergency Generators ☐ Equipment Maintenance Areas ☒ Garbage Disposal Areas ☐ High Power Transmission Lines ☐ Hoods and Ducting ☐ Hydraulic Lifts ☐ Petroleum Pipelines ☐ Petroleum Wells ☒ Ponds or Streams ☐ Railroad Lines ☒ Row crops or orchards ☒ Stockpiles of soil or debris ☐ Sumps or clarifiers ☐ Underground Storage Tanks ☐ Vehicle Wash Areas ☐ Waste Water Neutralization Systems	See descriptions of these areas in Section 2.3 above.

Note: An unchecked box does not warrant that these features are not present on-Site; it only states that these features were not readily observed during our Site visit.

2.4 Site Vicinity Drive-By Survey

To evaluate adjacent land use, we performed a limited drive-by survey. Our observations are presented in Table 3.

Table 3. Adjacent Properties

Property Use	Direction from Site	Property Owner/Tenant
Vineyards Row Crops	North	Unknown
Row Crops and Residence	South	D'Arrigo Farms and Amaral Farms House is owned by Amaral
Single-family Residences	West	Various
Row Crops Cattle Feed Lot	East	D'Arrigo Farms Fat City

2.5 Interview with Site Co-Owner

At the time of our reconnaissance, we interviewed Mr. Michael Fanoe, a representative of the Fanoe family (the owners of the Site), for general information regarding past and current Site usage. The information obtained from Mr. Fanoe is summarized below.

Mr. Fanoe stated that the Fanoe family has owned and farmed the 776-acre Site for more than 100 years; Mr. Fanoe farmed the Site for the last 36 years and recently retired. Following the retirement of Mr. Fanoe, Anthony Costa Farming became the tenant of the Site, farming the majority of the property. The Costa Farming lease began in 2002 and is a five-year lease unless the property is sold.

Crops historically grown on-Site reportedly included: sugar beets (stopped growing ten years ago), beans (stopped growing 20 years ago), alfalfa, green-leaf lettuce, red-leaf lettuce, romaine lettuce, Boston lettuce, broccoli, cauliflower, celery, and seed crops. Crop rotation was practiced, with different crops being planted in different areas at different times. Current crops being grown include lettuce and celery. Mr. Fanoe stated that the Site has always been cultivated with row crops, and that orchards never were present.

Herbicides, fungicides, insecticides, and pesticides (referred to in bulk as agricultural chemicals) currently and historically were used on-Site. Historically, agricultural chemicals were applied to the crops by a contractor, Soilserv, using a helicopter. According to Mr. Fanoe, the helicopter occasionally would land in the fields at the Site to refill with agricultural chemicals and water. The landing locations were reportedly random, and a truck containing water and agricultural chemicals would meet the helicopter to refill. For the last six years, the Fanoe's applied the chemicals to the crops themselves, using tractor equipment to apply the chemicals at the same time as planting the seeds. For the tractor application, the Fanoe's purchased the chemicals pre-mixed from SoilServ, poured them into the tractors in the area adjacent to the well just east of the Michael Fanoe parcel (Figure 2) reportedly and added water from the well. The agricultural chemical containers were returned to Soilserv for disposal. Agricultural chemical storage for at least the last 43 years was in a wooden structure located on the Michael Fanoe parcel, not on-Site. Mr. Fanoe was unaware of pesticide storage ever occurring elsewhere on-Site.

Current agricultural chemicals used on-Site include Dacthal W-75 75 Wetable, Kerb 50 Wetable, Lorsban 4E-HF, Round Up, Rodeo, Goal, Bromotyrene, and Diazanon. Historical use of agricultural chemicals (primarily applied by Soilserv) included Paraquat, Dinitro, Diazinon, Metasystox-R Spray Concentrate (a restricted use pesticide), Lanate, Success,

Pyriman, Nortron, Temik 15, Sulfur, Eptam, Sulfur Wetable, Chlordane, and Phosdran. Mr. Fanoe did not believe that DDT was ever used on-Site.

According to Mr. Fanoe, fixed-wing airplanes used for pesticide application previously landed on the Site to reload with agricultural chemicals and water. Mr. Fanoe stated that the landing/reloading area was to the north and south of the current on-Site duck pond. Airplanes landed on this area of the Site for approximately three to four years around 1954.

The Fanoe family installed a drip irrigation system for the on-Site crops approximately five years ago. Previous irrigation used steel and concrete pipes.

A dairy farm reportedly was present near the middle of Parcel 2 from approximately 1938 until 1970. Tony Rodriquez reportedly operated the dairy. Mr. Rodriquez owned the cows, the equipment and the milk contract, and the Fanoe family owned the buildings and property and supplied the cattle feed. When the dairy ceased operation, the barn and associated structures were demolished. According to Mr. Fanoe, pesticides were not used on the dairy cows. The milking barn reportedly had a concrete floor and the dairy cows were corralled in a fenced area between the barn and the adjacent residences. Occasionally, the cows were turned out into a fenced field of clover elsewhere on the Site.

Mr. Fanoe believed that any vehicle maintenance activities performed on-Site would have been/be performed in the former dairy area. He believed that Huntington Farms, a former Site tenant, performed vehicle maintenance near their two cargo containers and oil drums on the former dairy area. He also believed that Costa Farming might also perform vehicle maintenance on this portion of the Site.

As described above, two petroleum tanks reportedly were buried on-Site in the vicinity of the former dairy. According to Mr. Fanoe, one tank is 10,000 gallons in volume, and the second tank is 2,500 gallons in volume.

Three drainage ditches flow from east to west across the Site; one ditch runs in a north to south direction across the eastern property boundary. According to Mr. Fanoe, agricultural runoff (tail water) as well as runoff from the nearby mountains and upslope properties, flows across the Site in these ditches as well as flowing across the fields and into the several on-Site catch ponds. Mr. Fanoe stated that runoff containing large quantities of manure flows onto the Site from the Fat City feed lot located immediately east of the Site, across Iverson Road.

Three agricultural wells remain in use on-Site. These wells range in depth from 900 to 960 feet. Two additional agricultural wells are present on-Site, but the bottom portions of these wells reportedly collapsed so they are currently used for domestic water supply.

Sturdy Oil Company is a second tenant of the Site and has reportedly leased a portion of the former dairy for bulk storage of gasoline and diesel since 1972. Sturdy Oil also uses an approximately 15-acre area at the northeastern corner of the Site for treatment/disposal of hydrocarbon-impacted soil excavated from Sturdy Oil service stations operated in the South County area. According to Mr. Fanoe, Sturdy Oil and the Fanoe family have an agreement with the Monterey County Department of Health. (MCDH). Reportedly, project manager Walter Wong stated that impacted soil from service station and farm cleanups can be spread in this area. According to Mr. Fanoe,

approximately 95 percent of the soil on the 15-acre parcel is from service station remediation and 5 percent is from "farm cleanups." Mr. Fanoe stated that farm cleanups involved less than a pickup load of soil on several occasions. Following aeration of the impacted soil, it apparently remains on that portion of the Site. Mr. Fanoe stated that the most impacted soil was located on the portion of the 15-acre parcel located closer to Iverson Road, near the middle. Further information on the soil import on this area of the Site is presented in Section 3.4 below.

Mr. Fanoe was not aware of the placement of any fill soil on-Site, other than the impacted soil described above.

Dumping previously was performed in an approximately 15-foot by 150-foot pit of unknown depth near the southern property boundary. Metal pieces, machinery, a car, and assorted garbage, debris, and tires reportedly from Site tenants were buried in this area. The dumping pit was closed approximately 15 years ago when the nearby Johnson Canyon Landfill was opened and because garbage reportedly began being dumped in the pit by unknown entities.

Agricultural and yard clippings currently are dumped on the ground surface on the 15-acre impacted soil parcel at the western corner of Parcel 2. This material reportedly is periodically burned at that location. Mr. Fanoe stated that historically other materials, possibly including tires, might have been burned in that location. A second burning area was present adjacent to the residences on the former dairy.

The barn previously present on the dairy reportedly was whitewashed. The three residences were painted with what potentially could have been lead-based paint.

Additional information obtained from Mr. Fanoe was presented in Section 2.3 above.

2.6 Environmental Questionnaire

An environmental questionnaire was sent to another representative of the Fanoe family, Mr. Neil Fanoe, to obtain additional general information regarding past and current Site usage. Mr. Neil Fanoe stated that he obtained many of the answers to the questions from Mr. Michael Fanoe. Mr. Neil Fanoe's responses were clarified in a telephone conversation and information obtained is summarized below. The completed questionnaire is presented in Appendix B.

Mr. Neil Fanoe stated that bags and other containers have been burned at dump areas on the northeast and southeast portions of the ranch. Other wastes were disposed at Johnson Canyon public dump or taken off-Site by Soilserv.

Agricultural chemicals were stored on Michael Fanoe's property (not on-Site). Agricultural chemicals were mixed with water on Michael Fanoe's property and at the well pump area 200 yards east of Michael Fanoe's property. The chemicals reportedly were mixed in 5-gallon containers. Agricultural chemicals were applied consistent with labeling instructions using a crop duster, helicopter, and tractor.

Agricultural chemicals currently used on-Site reportedly include Dacthal W-75, Kerb, Admire, Lorsgan, Roundup, Goal 2E, Botran 5F, Metasystox-R, Sulphin, and Lorox.

Agricultural chemicals historically used reportedly included Eptan, Chlordane, Dinitrol, Tok 50W, Phosdrin, 2-4-D, Lannate SP Insecticide, Ridomil, Pyrimin, Nortron, Temik 15G, Diazinon, Tenoran 80W, Nemacur, and Telone.

The on-Site buildings currently are heated by propane and historically may have been heated by stove oil. Aboveground storage tanks for diesel and fuels are present at the former dairy parcel, four agricultural wells are present, and burning areas are present at two-dump area. An equipment and vehicle maintenance area is present on Michael Fanoe's property (not on-Site) as are USTs for gasoline. Two garbage disposal areas are present, two ponds are present, and septic systems are present for each home. Stockpiles of soil or debris are present at two dump area and on the 15 acres in the northeast corner of the Site.

The dates of Fanoe family ownership of the Site were unknown to Neil Fanoe. All interests reportedly were inherited or gifted by Alice and Anker Fanoe to their four children prior to 1970. Fanoe Brothers, Inc. received its interest by capital contribution from Neil H. Fanoe and Anker P. Fanoe, Jr.

According to Mr. Neil Fanoe, crops currently grown on-Site include lettuce, celery, kale, romaine lettuce, Boston lettuce, green leaf and red leaf lettuce, and broccoli. Historic crops have included sugar beets, alfalfa, potatoes, corn, tomatoes, beans, lettuce, celery, onions, carrots, seed crops, cauliflower, and broccoli.

3.0 HISTORICAL REVIEW

3.1 Photograph and Map Review

To evaluate the Site history, we reviewed the following:

- Stereo-paired aerial photographs (dated 1956, 1967, and 1988) from Environmental Data Resources, Inc. in Southport, Connecticut and Pacific Aerial Surveys in Oakland, California.
- USGS 15-minute and 7.5-minute topographic maps (1921, 1941, 1955, and 1957).
- Historic Sanborn fire insurance maps were requested from Sanborn Mapping and Geographic Information Service (Sanborn GIS) in Pelham, New York. However, no Sanborn maps were available.

The above maps and photographs commonly provide historical information regarding a Site including land uses and changes in development over time. Copies of these maps and photographs are presented in Appendix C. The following is a summary of our observations for the Site and Site vicinity.

3.1 Site

1921: The 1921 topographic map showed the Site to be largely undeveloped. Several small structures were depicted on or near the Site. The intended use of these structures could not be determined from these photos. Dirt roads and several small creeks were also shown on or near the Site. Farming activity typically was not depicted on topographic maps from this time period.

1941: On the 1941 topographic map, the Site also appeared to be largely undeveloped. Additional small structures were depicted on or near the Site, and the configuration of dirt roads shown was different than the configuration shown on the 1921 map. Farming activity was not depicted on topographic maps from this time period.

1955 through 1957: The majority of the Site was cultivated with row crops on the 1956 aerial photograph. Numerous fields of different crops were apparent. Five dark rows were present near the middle of the southern half of the Site. The Michael Fanoe, Midge Fanoe, and Anita Fanoe residences are depicted on the 1955 and 1957 topographic maps and the 1956 aerial photograph. One other structure is also present near the Michael Fanoe residence on the topographic maps, as is the well east of the Michael Fanoe parcel. Three current east-to-west flowing drainage channels are depicted and the duck pond is shown. None of the catch ponds/reservoirs appear present. Five structures were shown in the dairy area on the topographic map; the three residences and other indiscernible structures were shown on the aerial photograph. An irregularly shaped area, appearing similar in shape to the current contaminated soil parcel at the northeastern corner of Parcel 1, was visible. Dirt roads were present in several on-Site locations.

1967: The Site was similarly cultivated with row crops on the 1967 aerial photograph, with the same residences shown. The five dark rows apparent on the 1956 aerial photograph were no longer present. The catch pond at the northwestern corner of Parcel 4 was visible, as were the catch pond near the dairy and the catch pond previously present just south of the dairy catch pond. The catch pond near the dairy appeared positioned to capture runoff from the dairy area. The three dairy residences as well as at least three other large structures and six or more smaller structures were visible in the dairy area. The contaminated soil area at the northeastern corner of Parcel 1 appeared in a shape similar to its current configuration.

1988: The Site remained primarily cultivated with row crops. The Michael Fanoe, Midge Fanoe, and Anita Fanoe residences remained present. What appeared to be a cleared area with small structures or vehicles was present immediately north of the Michael Fanoe residence; this area appeared to be part of the Michael Fanoe parcel. Five catch ponds (including the one currently filled in) and the duck pond was shown on the photograph; two of the agricultural wells were faintly present. The impacted soil parcel at the northeastern corner of the Site was visible; small unidentifiable items appeared present at the western boundary of the parcel. Several structures, including the three residences, were visible on the former dairy parcel. It appeared that the Sturdy Oil Company bulk storage area was present.

3.2 Site Vicinity

1921 through 1957: The Site vicinity was sparsely developed on the 1921 and 1941 topographic maps. Small structures were depicted in the vicinity, as were dirt roads and small creeks. The vicinity was almost completely cultivated with row crops on the 1956 aerial photograph. Interstate 101 was not yet present. By 1955, Johnson Canyon Road, Fanoe Road, and Iverson Road were present; Highway 101 still was not present.

1967: The Site vicinity appeared cultivated with row crops on the 1967 photograph. Highway 101 was present.

1988: The Site vicinity appeared generally similar to the 1967 aerial photograph. A residential development was under construction adjacent to and southwest of the Site.

3.2 City Directories

Environmental Data Resources, Inc. (EDR) searched selected national repositories of business directions; Site information was not deemed reasonably ascertainable (Appendix D).

3.3 Preliminary Title Report

Preliminary title report information, prepared by Chicago Title Company, was provided by McPharlin, Sprinkles, and Thomas, LLC. This information was reviewed in an attempt to identify past owners and/or occupants of the Site whose corporate names suggest activities typically associated with the significant use, generation, storage, or disposal of hazardous materials. Current property owners appeared to include numerous individuals from the Fanoe, Richardson, Bengston, Wilson, Costa, and McCarthy families, as well as Fanoe Brothers, Inc. (a corporation) and Fanoe Properties, L.P. A copy of the title report reviewed is presented in Appendix D.

3.4 Summary of Previous Environmental Reports

To further evaluate the Site history, we reviewed and relied upon the information presented in the following reports that were obtained from McPharlin, Sprinkles, and Thomas, LLC. Copies of key documents are presented in Appendix F.

Soil Sampling at the Fanoe Ranch in Gonzales, California. Hageman-Aguiar, Inc., September 5, 1997.

Soil Aeration Project Completion Report, Hageman-Aguiar, Inc., June 15, 1999.

Sampling Report for Fanoe Ranch in Gonzales, Hydro Analysis, Inc., July 28, 2003.

3.4.1 Salinas Truck Terminal, 1020 Terven Street, Salinas, California

In their letter dated April 27, 1993, Hageman Aguiar, Inc. (HA) requested that the Monterey County Health Department (MCHD) approve the transport of 1600 cubic yards of impacted soil generated from the over-excavation of the product line trench at the Salinas Truck Terminal to "the location in Gonzales". The MCHD approved the transport of this soil "for remediation to the Gonzales Site" on April 29, 1993. The approval letter indicated that diesel concentrations in the soil ranged from 920 to 6,100 ppm.

In their letter dated May 10, 1993, Sturdy Oil Company requested that the MCDH approve the stockpiling of an undisclosed volume of soil at the Fanoe Ranch "for bioremediation at a later date." No official approval from the MCDH was obtained during our review.

The MCDH did confirm the "verbal orders for mitigation/removal of soil" at the Salinas Truck Terminal (MCDH, June 8, 1995). The soil "was to be removed to another Site as non-hazardous waste." The MCDH also stated, "soil analyses has not been received to confirm final mitigation."

A figure was obtained that appeared to designate sampling locations of a stockpile stored at the Fanoe Ranch; sampling appeared to be performed on August 22, 1995. Based on the laboratory data, diesel ranged petroleum hydrocarbons ranged from non-detect to up to 13,000 parts per million (ppm).

The HA September 5, 1997 soil sampling report described the removal of six fuel USTs from a fueling facility owned by Sturdy Oil Company, located on Terven Street in Salinas, California in March 1993. Approximately 10,000 cubic yards of hydrocarbon-impacted soil were reported as excavated from March through May 1993 and transported to "another Sturdy Oil facility in order that this soil could be spread for aeration and then land farmed so that further intrinsic bioremediation processes could take place. All of the approximately 10,000 cubic yards of soil were transported to the Sturdy Oil facility located at 27351 Fanoe Road in Gonzales, CA". Between June 1993 and September 1997, soil reportedly remained on the Site and reportedly was disked occasionally by Fanoe Ranch personnel. Eighteen discrete soil samples were collected from approximately ½- to 1-foot depths from the aerated soil in August 1997. Gasoline, benzene, toluene, ethylbenzene, total xylenes, and methyl tertiary butyl ether (MTBE) reportedly were not detected in the samples; residual diesel was detected in three of the samples at 2 parts per million (ppm), 11 ppm and 550 ppm.

3.4.2 Exxon Service Station, 2347 San Miguel Canyon Road, Prunedale, California

The Monterey Bay Unified Air Pollution Control District (APCD) permitted the aeration of "1,300 cubic yards of gasoline contaminated soil at the Fanoe Ranch, located at Iverson Road, Gonzales." The soil appeared to have been generated at the Exxon Service Station located at 2347 San Miguel Canyon Road in Prunedale, California. The permit allowed the aeration of up to 434-cubic yards of gasoline-impacted soil per day.

A June 15, 1999 soil aeration report prepared by an unknown consultant described the excavation of 1,300 cubic yards of impacted soil during June and July 1998 from the Exxon Service Station on San Miguel Canyon Road. The report stated, "The soil was immediately transported under appropriate bill of lading to a specific area at the northernmost corner of the Fanoe Ranch in Gonzales, California." The average concentration of hydrocarbons in the soil imported to the Site included 320 ppm gasoline, 66 parts per billion (ppb) benzene, 250 ppb toluene, 180 ppb ethylbenzene, and 440 ppb xylenes; MTBE was not detected. The soil was reportedly spread and disked occasionally by Fanoe Ranch personnel. On May 6, 1999, eight composite soil samples of this material were collected. No detectable concentrations of gasoline ranged petroleum hydrocarbons, benzene, ethylbenzene or MTBE were reported; residual toluene (0.0063 ppm to 0.043 ppm) and total xylenes (0.0051 ppm) were detected. No analyses for petroleum hydrocarbons as diesel were performed.

4.0 REGULATORY RECORDS

4.1 City and County Agencies File Review

To obtain information on hazardous materials usage and storage, we requested readily available information at the Monterey County Building Department (MCBD), Gonzales Fire Department (GFD), Monterey County Health Department (MCHD), and Monterey County Agricultural Commissioner's Office (MCACO) pertaining to 27405, 27351, and 27813 Fanoe Road, as well as APNs 223-031-024, -025, and –027 and any other addresses on Fanoe Road, Rhone Way, Johnson Canyon Road, and Iverson Road in

Gonzales. According to the GFD, they did not maintain hazardous materials files for rural addresses. The information made available to us by the MCHD and the MCBD is summarized in Table 4; key documents are included in Appendix F. The information made available to us by the MCACO is summarized below the table; key documents also are included in Appendix E.

Table 4. Available File Review Information

Agency	Date	Entity	Remarks
MCHD	Undated (appearing to be around 1986)	Fanoe Brothers, Inc.	Application for permit to operate four USTs for a gas station at "Old 101" in Gonzales. According to Mr. Fanoe, this gas station was in downtown Gonzales and not on-Site.
MCHD	Undated (appearing to be around 1986)	Fanoe Brothers, Inc.	Notice from MCEHD to Fanoe Brothers, Inc. indicating County was collecting a UST surcharge for one UST. According to Mr. Fanoe, the UST referenced was on his personal parcel, not on-Site.
MCHD	2/19/91, 12/15/94, 12/29/95, 12/30/96, 12/30/97, and 12/1/98	Costa Farms/Fanoe Ranch	Hazardous materials inventory certification form; no further information available.
MCHD	2/25/91, 4/23/92, 2/16/93, 12/15/94, and 2/11/94	Fanoe Brothers, Inc.	Hazardous materials certification form. No further information available.
MCHD	6/30/99	Costa Farms, Inc./Fanoe Ranch	Environmental health permit. No further information available.
MCHD	6/30/99	Fanoe Brothers, Inc. - Shop	Environmental health permit. No further information available.
MCHD	11/17/99, 2/12/02, and 2/14/03	Costa Farms, Inc.	Hazardous materials inventory certification form; no USTs present. No further information available.
MCHD	7/1/00	Costa Farms, Inc./Fanoe Ranch	Environmental health permit. Site used hazardous materials and was a waste generator Site. No further information available.
MCHD	11/20/01	Costa Family Farms	Hazardous materials control branch computer change form indicating "no hazardous materials on this Site".
MCHD	2/12/02	Costa Farms, Inc.	Unified program consolidated form for business activities. No hazardous materials greater than 55 gallons liquid, 500 pounds solid, or 200 cubic feet compressed gas present on-Site. No USTs present. ASTs present on-Site; AST greater than 660 gallons per tank or 1,230 gallons total capacity. Facility didn't generate hazardous waste, treat waste on-Site, or consolidate generated waste at a remote Site.

Table 4. Available File Review Information

Agency	Date	Entity	Remarks
MCBD	11/09/1983	APN 223-031-027 Fanoe Family	11,000 cu. Yards for tail water recovery system
MCBD	01/30/1984	APN 223-031-027 Fanoe Family	Electric service for 20 H.P. sump pump
MCBD	01/06/1987	APN 223-031-027 Fanoe Family	200 Amp. Service to upgrade SFD
MCBD	04/12/1994	APN 223-031-027 Fanoe Family	New 100 Amp. Service for ag. Reservoir pump
MCBD	06/10/1996	APN 223-031-027 Fanoe Family	400 Amp. Service for 150 H.P. motor
MCBD	1/24/01	APN 223-031-027 Fanoe Family	250 H.P. motor/comm
MCBD	02/08/93	APN 223-031-025 Fanoe Family	Roof over containment area
MCBD	09/24/1999	APN 223-031-025 Fanoe Family	200 Amp. U.G. service for Fertilizer at 5 H.P., 7pumps "Fuel" at 5 H.P.
MCBD	02/05/1981	APN 223-031-024 Fanoe Family	Re-route wire to service panel
MCBD	06/18/1981	APN 223-031-024 Fanoe Family	New Well Service

4.1.1 MCACO Records for Huntington Farms

The MCACO provided records for pesticide usage for Huntington Farms (previous lessee of the Site) for the period of January 2001 through June 2003. During 2001, Huntington Farms reportedly applied Goal 1.6E Herbicide (cauliflower), Kerb 50-V (head lettuce, romaine), Admire 2 (head lettuce, romaine), Maned 75 DF Dry Flowable Fun (head lettuce, romaine), Rovral 4 Flowable (head lettuce), Valent Orthene 75 S Soluble (head lettuce), Metasystox-R Spray Concentrate (head lettuce, cauliflower, broccoli), Wilbur-Ellis Diazinon 4 Spray (head lettuce), Warrior T Insecticide (head lettuce, romaine), R-11 Spreader-Activator (head lettuce, cauliflower, broccoli), Digon 4000 (cauliflower, broccoli), DuPont Avaunt Insecticide and/or Vydate L and/or Asana Xl Insecticide (cauliflower, broccoli), Lorsban 4E-HF (cauliflower, broccoli), Agri-mek 0.15 EC miticide/insecticide (head lettuce), Provade 1.6 Flowable (cauliflower), Botran 5F (leaf lettuce, romaine), Agroneem (head lettuce), Success (broccoli, leaf lettuce), Pounce 25 WP (leaf lettuce), Clean Crop Malathion 8 Aquamul (leaf lettuce), Dacthal W-75 (broccoli), Diazinon (romaine), and Gowan Diazinon 4E (romaine).

During 2002, Huntington Farms reportedly applied Lorsban 4E-HF (broccoli), Dacthal W-75 (broccoli), Metasystox-R Spray Concentrate (broccoli, head lettuce, cauliflower), DuPont Avaunt Insecticide and/or Vydate L and/or Asana Xl Insecticide (broccoli, head lettuce), R-11 Spreader-Activator (head lettuce, broccoli, cauliflower), Wilbur-Ellis Diazinon 4 Spray (head lettuce), Success (head lettuce, cauliflower, celery), Pounce 25 WP (head lettuce), Manex (head lettuce), Neemix 4 (head lettuce), Drexel Dimethoate 4EC (broccoli), Confirm 2F Agricultural Insecticide (head lettuce, celery), Digon 4000 (cauliflower), Warrior T Insecticide (head lettuce), Botran 5F (head lettuce), Valent Orthene 75 S Soluble (head lettuce, celery), Maned 75 DF Dry Flowable Fun (head lettuce), Caparol 4L (celery), Placement (celery), Digon 400X (celery), Sylgard (celery),

Agri-mek 0.15 EC miticide/insecticide (celery), Trigard (celery), Confirm 2F Agricultural Insecticide (celery), Clean Crop Malathion 8 Aquamul (head lettuce), K-90 Knap Non-Ionic Adjuvant Spreader (head lettuce), Blockade (head lettuce), Aliette WDG (head lettuce), Provade 1.6 Flowable (broccoli), Kerb 50-V (head lettuce), Admire 2 (head lettuce), Goal 1.6E Herbicide (cauliflower),

During 2003, Huntington Farms reportedly applied Metasystox-R Spray Concentrate (broccoli and head lettuce), Drexel Dimethoate 4EC (broccoli), Success (broccoli and head lettuce), K-90 Knap Non-Ionic Adjuvant Spreader (broccoli), Placement (broccoli), Wilbur-Ellis Diazinon 4 Spray (head and leaf lettuce), Warrior T Insecticide (head and leaf lettuce), Maned 75 DF Dry Flowable Fun (head and leaf lettuce), R-11 Spreader-Activator (head lettuce), Pounce (leaf and head lettuce), Provade 1.6 Flowable (leaf lettuce), and Aliette WDG (head and leaf lettuce) to on-Site crops.

Pesticide quantity usage by Huntington Farms in 2001 and 2002 was significantly higher than in 2003.

4.1.2 MCACO Records for Fanoe Brothers, Inc.

The MCACO provided records for pesticide usage for Fanoe Brothers, Inc. for the period of January 2000 through October 2002. During 2000, Fanoe Brothers, Inc. reportedly applied Dacthal W-75 (broccoli), Lorsban 4E-HF (broccoli), Metasystox-R Spray Concentrate (broccoli), Drexel Dimethoate 4EC (broccoli), Provade 1.6 Flowable (broccoli, kale, leaf lettuce), Success (broccoli, kale), R-11 Spreader-Activator (broccoli, kale, celery), Goal 2XL Herbicide (broccoli), Placement (broccoli), Digon 4000 (broccoli, celery), DuPont Avaunt Insecticide and/or Vydate L and/or Asana Xl Insecticide (broccoli, celery), Pounce 25 WP (leaf lettuce, head lettuce, celery), Wilbur-Ellis Diazinon 4 Spray (leaf lettuce, head lettuce, broccoli), Maned 75 DF Dry Flowable Fun (leaf lettuce, head lettuce), Rovral 4 Flowable 4 (head lettuce, leaf lettuce), Valent Orthene 75 S Soluble (head lettuce, leaf lettuce, celery), Gramoxone Extra Herbicide (broccoli, leaf lettuce), Caparol 4L (celery), Soilserv Crop Oil (celery), Lannate SP Insecticide (celery), Trigard (celery), Bravo Weather Stik V (celery), Agri-mek 0.15 EC miticide/insecticide (celery), and Tilt Si (celery).

During 2001, Fanoe Brothers, Inc. reportedly applied Metasystox-R Spray Concentrate (broccoli), Provade 1.6 Flowable (broccoli, kale), Digon 400X (broccoli), DuPont Avaunt Insecticide and/or Vydate L and/or Asana Xl Insecticide (broccoli, celery), Success (broccoli, celery), R-11 Spreader-Activator (broccoli, celery, kale), Dacthal W-75 (broccoli, kale), Drexel Dimethoate 4EC (broccoli), K-90 Knap Non-Ionic Adjuvant Spreader (leaf lettuce), Warrior T Insecticide (leaf lettuce, broccoli), Pounce (leaf lettuce, celery), Manex (leaf lettuce), Maned 75 DF Dry Flowable Fun (leaf lettuce), Lannate SP Insecticide (broccoli, celery, kale), Dibrom 8 (broccoli), Clean Crop Malathion 8 Aquamul (broccoli, kale), Agri-mek 0.15 EC miticide/insecticide (celery), Valent Orthene 75 S Soluble (celery), Larvin Brand Thiodicarb Insecticide (celery), Prometryne 4L Herbicide (celery), Soilserv Crop Oil (celery), Tilt Si (celery), Tilt (celery), Confirm 2F Agricultural Insecticide (celery), No Foam B (celery, kale, leaf lettuce), Javelin VG Biological Insecticide (celery), Kocide 10 (celery), Kerb 50-V (leaf lettuce), Ambush (leaf lettuce), Ridomil G (broccoli), K-90 Knap Non-Ionic Adjuvant Spreader (broccoli), Rovral 4 Flowable 4 (broccoli), Neemix B (kale), Butacide (kale), Gowan N (kale), and Quadris (leaf lettuce).

During 2002, Fanoe Brothers, Inc. reportedly applied Goal 2XL Herbicide (broccoli, uncultivated ag), Metasystox-R Spray Concentrate (broccoli), Drexel Dimethoate 4EC (broccoli), DuPont Avaunt Insecticide and/or Vydate L and/or Asana XI Insecticide (broccoli), Sylgard (broccoli), Success (broccoli, leaf lettuce, head lettuce), Botran 5F 5 (leaf lettuce), Maned 75 DF Dry Flowable Fun (leaf lettuce), Pounce 25 WP (leaf lettuce, head lettuce), Warrior T Insecticide (leaf lettuce), Kerb 50-V (leaf lettuce), Admire 2 (leaf lettuce), Provade 1.6 Flowable (leaf lettuce, kale), Gramoxone Extra Herbicide (uncultivated ag), Placement (uncultivated ag), Clean Crop Malathion 8 Aquamul (kale),

Assail Brand 70 WP Insecticide (kale), Dibrom 8 (kale), Lorsban 4E-HF (kale), Diazinon (kale), Digon 400 (kale), Ridomil (kale), Roundup (uncultivated ag), and Placement (uncultivated ag).

Pesticide quantity usage by Fanoe Brothers, Inc. appeared relatively consistent over the three-year period reported.

4.2 Regulatory Agency Database Report

During this study, a regulatory agency database report was obtained and reviewed to help establish whether contamination incidents have been reported in the Site vicinity. A list of the database sources reviewed, a detailed description of the sources, and a radius map indicating the location of the reported facilities relative to the Site are presented in Appendix G.

The Fanoe Ranch was listed on the Haznet database as a generator/user of hazardous materials.

There were no reported nearby hazardous materials spills or releases with a potential to significantly impact the Site. The potential for Site impact was evaluated based on information in the database records regarding the type of release, current case status, and distance and direction from the Site.

5.0 REGULATORY THRESHOLD GUIDELINES

For the purpose of this investigation, contaminants detected in soil were compared to residential and industrial Preliminary Remediation Goals (PRGs) published by the United States Environmental Protection Agency (USEPA), Region 9. Contaminants detected in soils collected from developed areas with residences were compared to residential PRGs. Contaminants detected in soils collected from the agricultural fields and the developed areas were also compared to industrial PRGs. PRGs were developed USEPA as initial screening tools for criteria for the protection of human health. The presence of chemicals at concentrations above the PRGs does not necessarily indicate that adverse impacts to human health are occurring, but that the potential for impacts may exist and that additional evaluation is needed. A summary of the USEPA regulatory threshold concentrations is included in Table 5.

5.1 Arsenic

Based on limited data, naturally occurring background concentrations of arsenic in soils in the Salinas Valley are reported at approximately 5 parts per million (ppm) (Majmundar, 1980, Boerngen et al, 1981, and Bradford 1996). This concentration exceeds the USEPA residential and industrial PRGs of 0.39 and 1.6 ppm, respectively,

which corresponds to a cancer risk of one in one million (1×10^{-6}). Naturally occurring arsenic concentrations in this area typically exceed USEPA residential PRGs. For this reason, regional background concentrations are typically accepted by overseeing regulatory agencies as a remediation goal concentration. In addition, a concentration of 5 ppm falls within the USEPAs acceptable cancer risk range of 1×10^{-4} to 1×10^{-6}, which corresponds to concentrations of 0.39 to 160 ppm depending on the site use (residential or industrial).

5.2 Lead

In addition to being compared to USEPA residential (150 ppm) and industrial PRGs (750 ppm), lead concentrations in soil were compared to California's Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) hazardous waste criteria. If the concentration of total lead exceeded its TTLC of 1,000 ppm, the material is considered a California hazardous waste. The results of soluble lead analyses performed in this investigation are included in Section 6.5. Based on our experience soil with total lead concentrations of greater than 90 ppm likely will exceed the STLC's criteria of 5 ppm, and therefore would also be considered a California hazardous waste.

5.3 Pesticides

Total DDT, which consists of the sum of three compounds (Dichloro-diphenyl trichloroethane (DDT), dichloro-diphenyl-dichloroethylene (DDE) and 1,1-dichloro-2,2-bis(p-chlorophenyl) ethane (DDD)), dieldrin, endrin, and toxaphene were also compared to residential and industrial PRGs and California's TTLC and STLC hazardous waste criteria as shown on Table 5.

5.4 Dioxins

To compare dioxins to USEPA PRGs, each of the 17 reported dioxin compounds was multiplied by its respective toxic equivalency factor (TEF) to equilibrate the result to 2,3,7,8 TCDD. Total dioxin (in terms of 2,3,7,8-TCDD) is reported as the sum of the 17 reported equivalents.

5.5 Petroleum Hydrocarbons

No PRGs have been established for petroleum hydrocarbons in soil. Therefore, we contacted the Central Coast Regional Water Quality Control Board (CCRWQCB) regarding cleanup guidelines for total petroleum hydrocarbons in soil. Based on the discussion with Mr. Mike LeBrun with the Central Coast branch of site cleanup for the CCRWQCB, no written or published guidelines are available; however, in general, total petroleum hydrocarbons exceeding 1,000 parts per million require cleanup. The development of this guideline is based on the protection of ground water. The Monterey County Environmental Health Department established a cleanup action level for total hydrocarbon concentrations at 100 ppm.

Table 5. Regulatory Threshold Concentrations in Soil
(concentrations in ppm)

Chemicals	Residential PRG[1]	Industrial PRG[1]	Typical Background	Central Coast RWQCB	TTLC (the maximum total concentration of a chemical allowed in a non-hazardous waste)	STLC (the maximum leachable concentration of a chemical allowed in a non-hazardous waste)
Arsenic	22/0.39	26/1.6	5	--	500	5.0
Lead	150	750	--	--	1,000	5.0
Dieldrin	0.03	0.11	--	--	8.0	0.8
Endrin	18.0	100				
Total DDT	1.7	7.0	--	--	1.0	0.1
Toxaphene	0.44	1.6	--	--	5.0	0.5
TPH	--	--	--	1,000[2]	--	--
Dioxins[3]	3.9	16	--	--	10,000	1,000

1 Preliminary Remediation Goal – EPA, Region 9, October 1, 2002
2 Threshold concentration based on protection of ground water
3 Concentrations in parts per trillion
22/0.39 Non-cancer endpoint/cancer endpoint

6.0 SOIL QUALITY EVALUATION

On December 10 and 11, 2003, and on February 4 through February 12, 2004, under the supervision of Principal Tom McCloskey, R.G., C.E.G., our environmental geologists collected 113 soil samples from the surface to an approximate depth of 1 foot in areas of potential concern (see Figures 2 and 3) observed during the Phase I site visit. These areas included agricultural fields, drainage ditches, water runoff catch basins, areas of discolored or stained soil, areas of buried debris along the southern property boundary and near the northeast property corner, selected storage areas near each side of the on-Site buildings to evaluate the soil for potential impacts from lead-based paint.

A description of soil sampling activities in each of the suspect areas is described below. Soil sampling protocol is presented in Appendix H.

6.1 Agricultural Fields

6.1.1 Sample Collection

To evaluate the extent of potentially impacted soil due to historic agricultural use of the Site and the application of pesticides, we collected a total of 20 soil samples (approximately one per every 40 acres) from randomly selected locations across the site in December 2003. This initial phase of sampling was intended as a preliminary investigation to evaluate the suitability of the Site for residential use.

Based on our review of historic aerial photographs and our discussions with Michael Fanoe, a crop rotation strategy apparently had been implemented at the ranch. Crop rotation reduces fertilizer needs as some crops replace nitrogen that other crops remove. Pesticide costs may also be reduced by natural degradation by sunlight, bacteria, and plant growth. Because of crop rotation, the historic use of pesticides and herbicides may have varied across different areas of the ranch, which can be responsible for locally

elevated concentrations of pesticides. A cursory review of historical crop patterns was conducted to evaluate the approximate number of additional samples that appeared to be required to provide coverage in areas where the initial, random sampling may have missed a historical crop area. Based on the results of the review, an additional 19 soil samples were collected in February 2004, in the agricultural fields. All samples were collected from the surface to an approximate depth of ½ foot.

The combined sampling density across the Site amounted to one sample for every approximately 20 acres (see Figure 3). Based on the analytical results of the initial sampling phase completed in December, an additional 11 soil follow-up samples were collected in the vicinity of soil sample AG-11 (see Figure 4). All soil samples were submitted to a state-certified laboratory and analyzed for organochlorine pesticides (EPA Test Method 8081). In addition, 20 soil samples were selected for pesticide-related metals (lead, arsenic, and mercury) (EPA Test Method 6010/7000).

6.1.2 Analytical Results

Analytical results are presented in Table 6 and 7. Copies of the analytical reports and chain of custody documentation are presented in Appendix I. Soil sampling conducted on the agricultural fields of the property revealed concentrations of total DDT ranging in concentrations from nondectable to 0.77 ppm in the agricultural fields in the upper foot of soil. Other pesticides detected include Dieldrin, Belta-BHC, Toxaphene, and Endosulfan. Only Toxaphene and Dieldrin, however, exceeded the residential PRG concentration of 0.440 ppm and 0.030 ppm, respectively. Dieldrin exceeded the residential PRG in one soil sample, AG-11, with a concentration of 0.061 ppm. Samples with Toxaphene concentrations exceeding the residential PRG included AG-23 (0.560 ppm), AG-33 (0.640 ppm), and AG-34 (0.700 ppm). Only sample, AG-11, had Toxaphene (concentrations at 2.200 ppm) that exceeded both residential and industrial PRG concentrations; none of samples exceeded the TTLC limit (California's hazardous waste threshold) of 5 ppm. Metal concentrations appeared to be consistent with natural background values.

Table 6. Analytical Results Selected Soil Samples
(Agricultural Areas)
(concentrations in parts per million)

Sample Number	Depth (feet)	Dieldrin[1]	Total DDT*	Toxaphene	Endosulfan Sulfate
AG-1	0- ½	0.003	0.005	0.130	0.003
AG-2	0- ½	<0.010	0.112	<0.200	<0.010
AG-3	0- ½	<0.002	0.003	<0.100	<0.002
AG-4	0- ½	<0.002	0.010	<0.100	0.003
AG-5	0- ½	<0.010	0.015	<0.200	<0.010
AG-6	0- ½	<0.010	<0.010	<0.200	<0.010
AG-7	0- ½	<0.002	0.004	<0.100	<0.002
AG-8	0- ½	<0.010	<0.010	<0.200	<0.010
AG-9	0- ½	<0.002	<0.002	<0.100	<0.002
AG-10	0- ½	<0.010	0.031	<0.200	<0.010
AG-11	0- ½	**0.061**	0.770	**2.200**	0.026
AG-11A	0- ½	0.010	0.081	0.390	<0.002
AG-11B	0- ½	0.008	0.075	0.360	<0.002
AG-11C	0- ½	<0.020	0.155	**0.770**	<0.020

(continued)

Table 6. Analytical Results Selected Soil Samples (Agricultural Areas)

(concentrations in parts per million)

Sample Number	Depth (feet)	Dieldrin[1]	Total DDT*	Toxaphene	Endosulfan Sulfate
AG-11D	0- ½	0.021	0.155	0.400	<0.020
AG-11E	0- ½	<0.020	0.178	**0.670**	<0.020
AG-11F	0- ½	0.005	0.113	<0.200	<0.004
AG-11G	0- ½	0.004	0.093	<0.100	<0.002
AG-11H	0- ½	0.011	0.120	<0.200	<0.004
AG-11I	0- ½	0.005	0.085	<0.100	<0.002
AG-11J	0- ½	0.009	0.079	0.250	<0.002
AG-11K	0- ½	0.003	0.081	<0.100	<0.002
AG-12	0- ½	0.005	0.043	0.270	0.002
AG-13	0- ½	<0.010	0.022	<0.200	<0.010
AG-14	0- ½	<0.010	0.011	<0.200	<0.010
AG-15	0- ½	<0.002	0.016	<0.100	0.002
AG-16	0- ½	<0.002	0.004	<0.100	0.004
AG-17	0- ½	<0.002	0.012	<0.100	0.003
AG-18	0- ½	<0.010	<0.010	<0.200	<0.010
AG-19	0- ½	0.007	0.067	0.320	0.003
AG-20	0- ½	<0.010	0.097	<0.200	<0.010
AG-21	0- ½	<0.020	0.232	<0.400	<0.020
AG-22	0- ½	0.003	0.004	<0.100	<0.002
AG-23	0- ½	<0.020	0.230	**0.560**	<0.020
AG-24	0- ½	<0.002	0.017	<0.100	<0.002
AG-25	0- ½	0.029	0.219	**0.750**	<0.020
AG-26	0- ½	0.003	0.051	<0.100	<0.002
AG-27	0- ½	0.002	0.042	<0.100	<0.002
AG-28	0- ½	<0.002	0.023	<0.100	<0.002
AG-29	0- ½	<0.002	0.004	<0.100	<0.002
AG-30	0- ½	<0.002	0.005	<0.100	<0.002
AG-31	0- ½	<0.002	<0.002	<0.100	<0.002
AG-32	0- ½	<0.002	0.004	<0.100	0.002
AG-33	0- ½	<0.010	0.102	**0.640**	<0.010
AG-34	0- ½	<0.020	0.136	**0.700**	<0.020
AG-35	0- ½	<0.002	0.039	<0.100	0.004
AG-36	0- ½	<0.002	0.005	<0.100	0.003
AG-37	0- ½	<0.002	0.056	<0.100	<0.002
AG-38	0- ½	<0.002	0.044	<0.100	<0.002
AG-39	0- ½	<0.002	0.026	<0.100	<0.002
Residential PRG**		0.030	1.7	0.44	370
Industrial PRG**		0.110	7.0	1.6	3,700

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits with exception to, Endosulfan II detected at 0.0036 PPM in sample AG-11J

< Indicates that the compound was not detected at or above the stated laboratory reporting limit

* Total DDT = DDT + DDE + DDD.

** Preliminary Remediation Goal–EPA Region 9, October 2002

NE Not established

Bold Indicates that compound was detected at or above the residential PRG.

Table 7. Analytical Results of Selected Soil Samples (Agricultural Areas – Pesticide Related Metals)
(concentrations in parts per million)

Sample Number	Depth (feet)	Arsenic	Lead	Mercury
AG-1	0- ½	1.1	3.9	<0.050
AG-2	0- ½	1.1	4.1	<0.050
AG-3	0- ½	1.3	5.3	<0.050
AG-4	0- ½	<1.0	4.1	<0.050
AG-5	0- ½	<1.0	3.3	<0.050
AG-6	0- ½	<1.0	3.9	<0.050
AG-7	0- ½	<1.0	4.0	<0.050
AG-8	0- ½	<1.0	3.1	<0.050
AG-9	0- ½	<1.0	4.2	<0.050
AG-10	0- ½	<1.0	4.4	<0.050
AG-11	0- ½	1.6	5.5	<0.050
AG-12	0- ½	<1.0	4.1	<0.050
AG-13	0- ½	<1.0	4.1	<0.050
AG-14	0- ½	<1.0	3.4	<0.050
AG-15	0- ½	<1.0	3.2	<0.050
AG-16	0- ½	<1.0	4.6	<0.050
AG-17	0- ½	1.1	5.7	<0.050
AG-18	0- ½	<1.0	3.5	<0.050
AG-19	0- ½	<1.0	3.7	<0.050
AG-20	0- ½	<1.0	3.4	<0.050
Residential PRG*		0.39/ 22**	150	23
Industrial PRG*		1.6/260**	750	310

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Preliminary Remediation Goal–EPA Region 9, October 2002
** Cancer/ non-cancer endpoint
NE Not established
Bold Indicates that compound was detected at or above regulatory guidelines; for arsenic this guideline is natural background levels

6.1.3 Follow-up Soil Sampling

The follow-up sampling program was conducted to further evaluate the extent of Toxaphene contaminated soil in the western part of Parcel 4 (APN 223-031-027) and all of Parcel 1 (APN 223-031-024). Sampling conducted in December, 2003 and in January, 2004 has identified an area of elevated Toxaphene concentrations, covering approximately 115 acres. Based on conversations with the Mike Fanoe, the owner and former farmer of the property, it appears that similar farming practices and crop patterns that occurred on the 115 acres had been conducted in a much wider area, to the North and South of the 115 acres area. The total area of similar farming practices covers approximately 280 acres. The objective of the additional sampling was to better define the extent and distribution of potentially elevated Toxaphene, which would also provide for a more comprehensible health risk assessment and an updated estimate of potential costs to remediate areas of Toxaphene contamination.

6.1.3.1 Agricultural Field Sampling

On May 10 and 11, 2004 and under the supervision of Principal Tom McCloskey, R.G., C.E.G., our environmental geologists randomly collected 53 soil samples from the

surface to an approximate depth of 1/2 foot in the agricultural fields of the property. Including the previously collected samples within this area, the resulting sampling density amounted to approximately one soil sample for every 5 acres. Soil sampling protocol is presented in Appendix H.

6.1.3.2 Analytical Results

Fifity-three soil samples were analyzed for organochlorine pesticides (EPA Test Method 8081). These analyses were selected to further help evaluate the extent of residual pesticides in the western area of the property.

Analytical results are presented in Table 7A and on Figure 4. Copies of the analytical reports and chain of custody documentation are presented in Appendix I.

Table 7A. Analytical Results of Agricultural Soil Samples Organochlorine Pesticides and Associated Metals

(concentrations in parts per billion)

Sample Number	Depth	Dieldrin	Endosulfan Sulfate	Toxaphene	Total DDT
AG-40	0- ½	<10	<10	<180	122
AG-41	0- ½	2.8	5.0	<35	64
AG-42	0- ½	10.0	<10	<180	153
AG-43	0- ½	<10	<10	350	134
AG-44	0- ½	11.0	<10	630.0	295
AG-45	0- ½	3.1	2.6	170	64
AG-46	0- ½	<10	<10	370.0	121
AG-47	0- ½	4.6	2.4	160	26.4
AG-48	0- ½	3.6	3.0	93.0	8.1
AG-49	0- ½	3.3	<2.0	60	5.7
AG-50	0- ½	2.1	4.5	99.0	35.7
AG-51	0- ½	3.9	3.5	82	22
AG-52	0- ½	4.7	4.7	67.0	14.1
AG-53	0- ½	2.6	4.8	100	25
AG-54	0- ½	<10	<10	590.0	221
AG-55	0- ½	2.9	3.4	110	28.1
AG-56	0- ½	3.6	<2.0	120	27.9
AG-57	0- ½	<2.0	<2.0	<50	4.4
AG-58	0- ½	12.0	<10	660	290
AG-59	0- ½	11.0	<10	**820**	350
AG-60	0- ½	<2.0	4.6	120	17.3
AG-61	0- ½	<2.0	9.2	140	20.4
AG-62	0- ½	<2.0	2.9	52	7.8
AG-63	0- ½	12.0	<10	870	323
AG-64	0- ½	11.0	<10	**870**	282
AG-65	0- ½	<10	<10	**690**	246

(continued)

Table 7A. Analytical Results of Agricultural Soil Samples
Organochlorine Pesticides and Associated Metals
(concentrations in parts per billion)

Sample Number	Depth	Dieldrin	Endosulfan Sulfate	Toxaphene	Total DDT
AG-66	0- ½	<10	<10	430	132
AG-67	0- ½	<10	<10	440	103
AG-68	0- ½	7.7	<2.0	350	87.7
AG-69	0- ½	<2.0	7.0	77	12.4
AG-70	0- ½	15.0	<10	450	129
AG-71	0- ½	31.0	<10	**840**	257
AG-72	0- ½	25.0	<10	**590**	166
AG-73	0- ½	3.4	10.0	160	27.9
AG-74	0- ½	2.5	8.2	98	13
AG-75	0- ½	15.0	<10	<180	212
AG-76	0- ½	<10	<10	340	151
AG-77	0- ½	26.0	15.0	600	197
AG-78	0- ½	18.0	16.0	**460**	138
AG-79	0- ½	13.0	<2.0	320	71
AG-80	0- ½	24.0	<10	710	274
AG-81	0- ½	3.3	<2.0	150	56
AG-82	0- ½	37.0	<10	740	239
AG-83	0- ½	18.0	<10	**430**	118
AG-84	0- ½	11.0	<10	**560**	142
AG-85	0- ½	2.9	<2.0	130	42
AG-86	0- ½	14.0	<2.0	570	167
AG-87	0- ½	4.2	<2.0	210	68
AG-89	0- ½	5.2	<2.0	290	67
AG-90	0- ½	4.6	<2.0	240	75.5
AG-91	0- ½	<10	<10	390	130
AG-92	0- ½	5.1	<2.0	290	79
AG-93	0- ½	<10	<10	530	150
Residenital PRG*				440	1,700
Industrial PRG*				1,600	7,000

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Preliminary Remediation Goal–EPA Region 9, 1999
Total DDT = DDD + DDE + DDT

6.2 Duck Pond

6.2.1 Sample Collection

On December 11, 2003, our environmental technician randomly collected 12 soil samples from the surface to an approximate depth of ½ feet (DP-1 through DP-12) in the Duck Pond area (see Figure 2). These locations were selectively located around the duck pond

to better evaluate the extent of impacted soil due to lead shot. Sampling locations are shown on Figure 4. A description of soil sampling protocol is presented in Appendix H.

6.2.2 Analytical Results

The analytical results for the metals analyses are presented below in Table 8. Metals concentrations appear to be consistent with natural background values. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 8. Analytical Results of Selected Soil Samples
(Duck Pond)
(concentrations in parts per million)

Sample Number	Depth (feet)	Arsenic	Lead	Mercury
DP-1	0- ½	1.1	4.3	<0.050
DP-2	0- ½	1.3	5.3	<0.050
DP-3	0- ½	<1.0	4.7	<0.050
DP-4	0- ½	1.1	4.9	<0.050
DP-5	0- ½	<1.0	4.1	<0.050
DP-6	0- ½	<1.0	7	<0.050
DP-7	0- ½	<1.0	3.9	<0.050
DP-8	0- ½	<1.0	3.9	<0.050
DP-9	0- ½	<1.0	3.8	<0.050
DP-10	0- ½	1.5	4.7	<0.050
DP-11	0- ½	<1.0	3.7	<0.050
DP-12	0- ½	<1.0	4.1	<0.050
Residential PRG*		0.39/ 22**	150	23
Industrial PRG*		1.6/260**	750	310

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Preliminary Remediation Goal–EPA Region 9, October 2002
** Cancer/ non-cancer endpoint

6.3 Drainage Ditches

6.3.1 Sample Collection

Three drainage ditches were observed trending northeast to southwest along the northern and southern property lines, as well as between Parcel 1/Parcel 2 and Parcel 4. The drainage ditches represent diverted natural creeks with intermittent water flow. The banks of the drainage ditches reportedly were historically treated with pesticides for weed control purposes. To evaluate the soil quality along the drainage ditches, 12 soil samples were collected from the surface to an approximate depth of ½ feet (DD-1 through DD-9, and DD-13 through DD-15). All soil samples were submitted to a state-certified laboratory and samples DD-1 through DD-3 were analyzed for organochlorine pesticides (EPA Test Method 8081) and for pesticide-related metals (lead, arsenic, and mercury) (EPA Test Method 6010/7000). Samples DD-4 through DD-9 and DD-13 through DD-15 were analyzed for Paraquat (Test Method: Chevron RM8-10).

Two areas of debris were observed along the southern drainage ditch. It appeared that part of the debris was used to support the north bank of the ditch. The debris appeared to consist of construction debris, including painted sheetrock, painted corrugated and plain sheet metal, tires, tire rims, wood, concrete debris, motor vehicle parts, including entire car chassis, and electrical appliances, including dryers and washers. Five soil samples were collected from the debris areas (DD-16 through DD-20) and analyzed for total lead (EPA Test Method 6010B) and asbestos (EPA Test Method 600/R-93-116).

Sampling locations are shown on Figure 3. A description of soil sampling protocol is presented in Appendix H.

6.3.2 Analytical Results

The analytical results from the drainage ditch sampling are presented in Tables 9, 10, and 11. None of the analyzed pesticide compounds exceeded the applicable regulatory threshold guidelines. Metals concentrations appeared to be consistent with natural background values, except one lead sample, DD-20 with a concentration of 120 ppm, which could fail the hazardous waste threshold limit for soluble lead. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 9. Analytical Results of Selected Soil Samples
(Pesticides and Pesticides related Metals)
(concentrations in parts per million)

Sample Number	Depth (feet)	Dieldrin[1]	Total DDT[1*]	Arsenic	Lead	Mercury
DD-1	0- ½	0.0023	0.0133	<1.0	2.7	<0.050
DD-2	0- ½	<0.002	0.0021	<1.0	2	<0.050
DD-3	0- ½	<0.002	0.0123	<1.0	1.8	<0.050
Residential PRG**		0.030	1.7	0.39/ 22***	150	23
Industrial PRG**		0.110	7.0	1.6/260***	750	310

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits.
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Total DDT = DDT + DDE + DDD.
** Preliminary Remediation Goal–EPA Region 9, October 2002
*** Cancer/ non-cancer endpoint

Table 10. Analytical Results of Drainage Ditch Soil Samples (Paraquat)
(concentrations in parts per million)

Sample Number	Depth (feet)	Paraquat
DD-4	0 – ½	<1.0
DD-5	0 – ½	2.6
DD-6	0 – ½	2.6
DD-7	0 – ½	<1.0
DD-8	0 – ½	<1.0
DD-9	0 – ½	<1.0
DD-13	0 – ½	4.2
DD-14	0 – ½	<1.0
DD-15	0 – ½	53
Residential PRG*		270
Industrial PRG*		2800

- Preliminary Remediation Goal–EPA Region 9, October 2002

Table 11. Analytical Results of Drainage Ditch Debris Soil Samples (Lead and Asbestos)
(concentrations in parts per million)

Sample Number	Depth (feet)	Lead	Asbestos
DD-16	0 – ½	6.2	ND
DD-17	0 – ½	3.1	ND
DD-18	0 – ½	2.3	ND
DD-19	0 – ½	3.5	ND
DD-20	0 – ½	140	ND
Residential PRG*		270	
Industrial PRG*		2800	

* Preliminary Remediation Goal–EPA Region 9, October 2002
ND Below Laboratory analytical detection level

6.4 Retention Basins/Catch Ponds

6.4.1 Sample Collection

Four retention basins/catch ponds were located on-Site. Three of the four catch ponds received runoff (tail water) from the up-slope agricultural fields. The retention basins located on the eastern portion of Parcel 4 reportedly did not receive agricultural tail water; water from this retention basin was piped for use as irrigation water.
To evaluate the soil quality of the retention basins and catch ponds, on December 10, 2003, four soil samples were collected from the surface to an approximate depth of ½ feet (P-1 through P-3 and P-5). All soil samples were submitted to a state-certified laboratory analyzed for organochlorine pesticides (EPA Test Method 8081) and for pesticide-related metals (lead, arsenic, and mercury) (EPA Test Method 6010/7000). Sampling locations are shown on Figure 3. A description of soil sampling protocol is presented in Appendix H.

6.4.2 Analytical Results

The analytical results are presented below in Table 12. None of the analyzed compounds exceeded the applicable regulatory threshold guidelines. Metal concentrations appear to be consistent with natural background values. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 12. Analytical Results of Selected Soil Samples (Catch Ponds and Retention Basins)
(concentrations in parts per million)

Sample Number	Depth (feet)	Dieldrin[1]	Total DDT[1*]	Toxaphene	Arsenic	Lead	Mercury
P-1	0- ½	<0.002	<0.002	<0.100	1.4	3.2	<0.050
P-2	0- ½	<0.002	<0.002	<0.100	1.2	2.8	<0.050
P-4	0- ½	<0.002	<0.002	<0.100	<1.0	2.7	<0.050
P-5	0- ½	0.0046	0.042	0.240	1	8.2	<0.050
Residential PRG**		0.030	1.7	0.440	0.39/ 22***	150	23
Industrial PRG**		0.110	7.0	1.600	1.6/260***	750	310

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Total DDT = DDT + DDE + DDD.
** Preliminary Remediation Goal–EPA Region 9, October 2002
*** Cancer/ non-cancer endpoint

6.5 Lead-based paint

6.5.1 Sample Collection

To evaluate if lead-based paint residues exist in the soil adjacent to the three on-Site buildings and the former dairy barn, we collected one soil sample from each accessible side of the buildings (PB-1 through PB-16). The samples were collected from an approximate depth of surface to ½ foot. Sixteen soil samples were submitted to a state-certified laboratory and analyzed for total lead. In addition, four soil samples were selected for soluble lead analysis to evaluate if the soil could be classified as a California hazardous waste. Sampling locations are shown on Figure 9. A description of soil sampling protocol is presented in Appendix H.

6.5.2 Analytical Results

Analytical results are presented in Table 13. Copies of the analytical reports and chain of custody documentation are presented in Appendix B. Five soil samples (PB-1 through PB-5) exceeded the residential PRG. Soluble lead analysis on selected samples detected lead concentrations above the California hazardous waste limit in samples PB-1, PB-2, and PB-5.

Table 13. Analytical Results of Selected Paint Soil Samples
(Lead-based Paint)
(concentrations in parts per million)

Sample Number	Depth (feet)	Total Lead	Lead STLC
PB-1	0 – ½	**1400**	**170**
PB-2	0 – ½	**400**	**63**
PB-3	0 – ½	**1900**	n.a.
PB-4	0 – ½	**330**	n.a.
PB-5	0 – ½	**210**	**21**
PB-6	0 – ½	15	n.a.
PB-7	0 – ½	120	n.a.
PB-8	0 – ½	4.0	n.a.
PB-9	0 – ½	16	n.a.
PB-10	0 – ½	11	n.a.
PB-11	0 – ½	27	n.a.
PB-12	0 – ½	11	n.a.
PB-13	0 – ½	73	1.6
PB-14	0 – ½	7	n.a.
PB-15	0 – ½	49	n.a.
PB-16	0 – ½	44	n.a.
Residential PRG*		150	
Industrial PRG*		750	
Lead STLC		5	5
Lead TTLC		1,000	

* Preliminary Remediation Goal–EPA Region 9, October 2002
n.a. Not analyzed
** STLC the maximum leachable concentration of a chemical allowed in a non-hazardous waste
*** TTLC: the maximum total concentration of a chemical allowed in a non-hazardous waste
Bold Indicates that compound was detected at or above residential PRG or California's hazardous waste criteria

6.6 Former Dairy Barn

6.6.1 Sample Collection

A dairy farm reportedly was present on Parcel 2 from approximately 1938 until 1970. When the dairy ceased operation, the barn and associated structures were demolished. The milking barn had a concrete floor, which remains, and the dairy cows were reportedly corralled in a fenced area between the barn and the adjacent residences.

On December 10, 2004, to evaluate the soil quality in the vicinity of the former dairy barn, four samples were collected and composited into one four-point composite sample (FD-1) and analyzed at a state-certified laboratory for organochlorine pesticides (EPA Test Method 8081) and for pesticide-related metals (lead, arsenic, and mercury) (EPA Test Method 6010/7000). Elevated concentrations of Total DDT near but not exceeding California's hazardous waste limit of 1 ppm were detected in one sample (FD-1). On February 12, 2004, to further evaluate the extent of Total DDT in this area, six discrete soil samples (DB-1 through DB-6) were collected from the ground surface to a depth of ½ foot. Two of the follow-up soil samples (DB-1 and DB-2) were collected beneath the foundation of the former dairy barn. The follow-up soil samples were analyzed at a state-certified laboratory for organochlorine pesticides (EPA Test Method 8081). Sampling

locations are shown on Figure 9. A description of soil sampling protocol is presented in Appendix H.

6.6.2 Analytical Results

The analytical results are presented below in Table 14. None of the analyzed compounds exceeded the applicable regulatory threshold guidelines. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 14. Analytical Results of Selected Soil Samples
(Former Dairy Barn Area)
(concentrations in parts per million)

Sample Number	Depth (feet)	Endosulfan[1]	Total DDT[1*]	Arsenic	Lead	Mercury
FD-1	0- ½	<0.002	0.908	4.8	36	0.051
DB-1****	0- ½	<0.002	<0.002	n.a.	n.a.	n.a.
DB-2****	0- ½	<0.002	<0.002	n.a.	n.a.	n.a.
DB-3	0- ½	<0.002	0.080	n.a.	n.a.	n.a.
DB-4	0- ½	<0.002	0.026	n.a.	n.a.	n.a.
DB-5	0- ½	0.072	0.159	n.a.	n.a.	n.a.
DB-6	0- ½	<0.002	0.360	n.a.	n.a.	n.a.
Residential PRG**		370	1.7	0.39/ 22***	150	23
Industrial PRG**		370	7.0	1.6/260***	750	310

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits with exception to beta-BHC detected at 0.021 PPM in sample FD-1.
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Total DDT = DDT + DDE + DDD.
** Preliminary Remediation Goal–EPA Region 9, October 2002
*** Cancer/ non-cancer endpoint
**** Collected beneath concrete foundation of former dairy barn
n.a. Not analyzed

6.7 Burn Areas

6.7.1 Sample Collection

Two waste burning areas were observed on-Site. Vegetation clippings and other materials, potentially including tires, historically have been burned on the western portion of the 15-acre parcel where the petroleum hydrocarbon affected soil was land treated. A second burning area was observed near the front of the three residences located on the former dairy. Blackened soil and burned debris were observed in these areas at the time of our reconnaissance. One four-point composite sample was collected at each burn site (BU-1A, B,C,D, and BU-2A, B, C, D,) and analyzed for oil range petroleum hydrocarbons (EPA Test Method 8015M); organochlorine pesticides (EPA Test Method 8081); CAM 17 metals (EPA Test Method 6010/7000); polyaromatic hydrocarbons (PAHs) (EPA Test Method 8310), polychlorinated biphenyls (PCBs) (EPA Test Method 8082) and dioxins (EPA Method 1613). Sampling locations are shown on Figure 5 and Figure 9.

6.7.2 Analytical Results

The analytical results are presented below in Table 15 and 16. Analysis of the two composite soil samples detected concentrations for hydrocarbons in the diesel and motor oil range in sample BU-1 (120 ppm diesel and 440 ppm motor oil). These concentrations exceed the MCEHD threshold levels of concern for the protection of ground water. Lead also exceed the MCEHD Action levels.. However, none of the detected analyzed compounds exceeded the residential PRG threshold values, except for total dioxins, which exceeded the residential PRG limit of 3.9 part per trillion (ppt) in both burn areas (BU-1: 25.5 ppt, BU-2: 10.7 ppt). Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 15. Analytical Results of Selected Soil Samples
(Burn Areas)
(concentrations in parts per million, Dioxins in parts per trillion)

Sample Number	Depth (feet)	TPHd	TPHmo	PAHs	PCBs	Total Dioxins***
BU-1A-1D	0- ½	**120**	**440**	ND	<0.05	25.5
BU-2A-2D	0- ½	3.2	<50	ND	<0.05	10.7
Residential PRG*		NE	NE	--	--	3.9
Industrial PRG*		NE	NE	--	--	16
MCEHD**		100	100	NE	NE	NE

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Preliminary Remediation Goal–EPA Region 9, October 2002
** Monterey County Department of Environmental Health Action Levels
*** Total Dioxins: 2,3,7,8-TCDD reported as the sum of the 17 reported equivalents in ppt.
ND Not detected
NE Not established
Bold Indicates compound detected at or above MCEHD action levels

Table 16. Analytical Results of Selected Soil Samples
(Burn Areas, Selected Metals)
(concentrations in parts per million)

Sample Number	Depth (feet)	Arsenic[1]	Cadmium[1]	Lead[1]	Mercury[1]
BU-1A-1D	0- ½	2.4	0.53	**79**	<0.050
BU-2A-2D	0- ½	3.7	0.62	**61**	<0.050
Residential PRG*		0.39/ 22***	1.7	150	23
Industrial PRG*		1.6/260***	7.4	750	310
MCEDH***				1.5	

1 Other CAM 17 metals were not detected at or above their respective laboratory reporting limits or were detected at levels significantly below their respective residential and industrial PRGs
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Preliminary Remediation Goal–EPA Region 9, October 2002
** Monterey County Environmental Health Department Action Levels
*** Cancer/ non-cancer endpoint

6.8 Soil Treatment Area

6.8.1 Sample Collection

Petroleum hydrocarbon impacted soil from two off-Site Sturdy Oil Company service stations as well as from small cleanups on the Fanoe Ranch has been spread over an approximately 15-acre area near the northeastern property boundary (Figure 2). To evaluate the soil quality in this area, soil samples were colleted at the surface and 2 foot depth at ten randomly selected locations (ST–1 through ST-10, see Figure 8). The two soil samples were collected at each location and were analyzed for gasoline, diesel, and oil range petroleum hydrocarbons (EPA Test Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE (EPA Test Method 8020). In addition, fuel related metals (LUFT metals: Leaking Underground Fuel Tank metals cadmium, chromium, lead, nickel and zinc; EPA Test Method 6010B) were analyzed on the near-surface samples. Pesticide and polychlorinated biphenyls (PCBs) (EPA Test Method 8082) analysis was also performed on the near surface samples because soil reportedly imported from "ranch cleanups" may have contained agricultural chemicals (EPA Test Method 8081).

6.8.2 Analytical Results

The analytical results are presented below in Table 17 and 18. None of the analyzed compounds exceeded the applicable regulatory threshold guidelines. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 17. Analytical Results of Selected Soil Samples (Soil Treatment Area)
(concentrations in parts per million)

Sample Number	Depth (feet)	Cadmium[1]	Chromium***	Lead[1]	Nickel[1]	Zinc[1]	PCB's	Total DDT*
ST-1	0- ½	<0.50	23	3.6	28	26	<0.05	<0.002
ST-2	0- ½	0.53	24	11	30	39	<0.05	0.0021
ST-3	0- ½	<0.50	32	8.0	47	51	<0.05	0.0144
ST-4	0- ½	<0.50	14	4.1	8.0	25	<0.05	0.0032
ST-5	0- ½	<0.50	17	4.4	12	31	<0.05	0.0037
ST-6	0- ½	<0.50	14	4.1	7.9	22	<0.05	0.01
ST-7	0- ½	<0.50	20	4.5	13	43	<0.05	<0.002
ST-8	0- ½	<0.50	12	3.5	6.6	20	<0.05	<0.002
ST-9	0- ½	0.51	27	6.8	38	33	<0.05	<0.002
ST-10	0- ½	<0.50	27	6.7	15	57	<0.05	0.0075
Residential PRG*		1.7	210	150	1,600	23,000	--	1.7
Industrial PRG*		7.4	450	750	20,000	100,000	--	7.0

1 LUFT 5 metals
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Total DDT = DDT + DDE + DDD
** Preliminary Remediation Goal–EPA Region 9, October 2002
*** Total Chromium (1:6 ratio Cr VI : Cr III)

Table 18. Analytical Results of Selected Soil Samples (Soil Treatment Area)
(concentrations in parts per million)

Sample Number	Depth (feet)	TPHg	TPHd	TPHmo
ST-1	0- ½	<1.0	1.6	<50
ST-1	2- 2½	<1.0	15	83
ST-2	0- ½	<1.0	16	75
ST-2	2- 2½	<1.0	1.3	<50
ST-3	0- ½	<1.0	24	110
ST-3	2- 2½	<1.0	3.4	<50
ST-4	0- ½	<1.0	2.4	<50
ST-4	2- 2½	<1.0	1.3	<50
ST-5	0- ½	<1.0	1.9	<50
ST-5	2- 2½	<1.0	1.3	<50
ST-6	0- ½	<1.0	1.6	<50
ST-6	2- 2½	<1.0	1.0	<50
ST-7	0- ½	<1.0	3.6	<50
ST-7	2- 2½	<1.0	1.4	<50
ST-8	0- ½	<1.0	<1.0	<50
ST-8	2- 2½	<1.0	1.7	<50
ST-9	0- ½	<1.0	9.7	<50
ST-9	2- 2½	<1.0	1.1	<50
ST-10	0- ½	<1.0	3.8	<50
ST-10	2- 2½	<1.0	2.2	<50
Residential PRG*		NE	NE	NE
Industrial PRG*		NE	NE	NE
MCEHD**		100	100	100

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Preliminary Remediation Goal–EPA Region 9, October 2002
** Monterey County Environmental Health Department Action Level
NE Not established

6.9 SoilServ Storage Area

6.9.1 Sample Collection

Historically, agricultural chemicals were applied to the crops by a contractor, SoilServ, using a helicopter. Reportedly, SoilServ used an area in the southwestern part of the former dairy farm to land their helicopter and store equipment and chemicals used for aerial pesticide application. One four-point composited soil sample (SERV-1A, B,C,D) was collected in this general area and analyzed for organochlorine pesticides (EPA Test Method 8081), and pesticide-related metals (arsenic, lead, and mercury) (EPA Test Method 6010/7000). Sampling locations are shown on Figure 9.

6.9.2 Analytical Results

The analytical results are presented below in Table 19. None of the analyzed compounds exceeded the applicable regulatory threshold guidelines. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 19. Analytical Results of Selected Soil Samples (SoilServ Storage Area)
(concentrations in parts per million)

Sample Number	Depth (feet)	Total DDT[1*]	Arsenic	Lead	Mercury
SERV-1A,B,C,D	0- ½	0.0087	2.7	4.5	<0.050
Residential PRG**		1.7	0.39/ 22***	150	23
Industrial PRG**		7.0	1.6/260***	750	310

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits.
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Total DDT = DDT + DDE + DDD.
** Preliminary Remediation Goal–EPA Region 9, October 2002
*** Cancer/ non-cancer endpoint

6.10 Airstrips and Pesticide Mixing Area

6.10.1 Sample Collection

Reportedly, fixed-wing airplanes used for pesticide application previously landed on the Site to reload with agricultural chemicals and water. Based on a review of historic aerial photographs, field observations and conversations with Mike Fanoe, the approximate location of the former airstrips were identified at the southeastern property boundary, adjacent to Iverson Road, as shown on Figure 2. Four near-surface soil samples were collected at potential reloading sites of each airstrip and composited for two analyses (AS-1 and AS-2) for organochlorine pesticides (EPA Test Method 8081), and pesticide-related metals (arsenic, lead, and mercury) (EPA Test Method 6010/7000). Sampling location is shown on Figure 3.

A potential pesticide mixing area reportedly was associated with an agricultural well located near the northern boundary of parcel APN # 223-031-027, approximately 500 feet east of the Mike Fanoe Ranch Parcel. Two near-surface soil samples were collected and composited to one soil sample (PFA-1) and analyzed for organochlorine pesticides (EPA Test Method 8081), and pesticide-related metals (arsenic, lead, and mercury) (EPA Test Method 6010/7000). Sampling location is shown on Figure 3.

6.10.2 Analytical Results

The analytical results are presented below in Table 20. None of the analyzed compounds exceeded the applicable regulatory threshold guidelines. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 20. Analytical Results of Selected Soil Samples (Potential Pesticide Mixing Areas)
(concentrations in parts per million)

Sample Number	Depth (feet)	Total DDT[1*]	Endosulfan Sulfate	Arsenic	Lead	Mercury
AS-1	0- ½	0.057	0.014	1.1	4.4	<0.050
AS-2	0- ½	0.056	0.002	1.9	5.0	<0.050
PFA-1	0- ½	0.057	<0.002	<1.0	4.5	<0.050
Residential PRG**		1.7	370	0.39/ 22***	150	23
Industrial PRG**		7.0	3,700	1.6/260***	750	310

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits.
< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* Total DDT = DDT + DDE + DDD.
** Preliminary Remediation Goal–EPA Region 9, October 2002
*** Cancer/ non-cancer endpoint

6.11 Debris and Fill Quality Evaluation

Areas of fill and buried debris were observed at three locations on the property (Figures 2 and 3). On February 5 and 6, 2004, Lowney Associates performed a backhoe investigation to help evaluate the lateral and vertical extent of the fill and establish if special handling and disposal requirements would be necessary. To better define the areas of buried debris, geophysical surveys were conducted across the suspect areas prior to the backhoe trenching. Approximately 34 test pits and trenches were excavated, of which 16 were logged and sampled in detail. A description of soil sampling activities in each of the suspect areas is described below. Soil sampling protocol is presented in Appendix A, and the trench logs are included in Appendix H.

6.11.1 Sample Collection

6.11.1.1 Debris Area 1

Debris Area 1 was located along the southern boundary of the soil treatment area where historical debris was disposed and partly buried (Figure 2). To better define the extent of the buried debris, a geophysical survey was conducted covering an area of approximately 600 by 120 feet. Based on the geophysical results, 21 exploratory test-pits and trenches were excavated with a backhoe. Logging and soil sampling was performed in five trenches (TP-1 through TP-5). To evaluate the fill quality, one two-point composite soil sample was collected in trench TP-1 and one two-point composite soil sample was collected and submitted for analysis from trench TP-3. One discrete soil samples was collected from trench TP-4, and one additional soil sample was obtained from TP-5. All soil samples were analyzed at a state-certified laboratory for gasoline, diesel, and oil range petroleum hydrocarbons (EPA Test Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE (EPA Test Method 8020); halogenated volatile organic compounds (VOCs) (EPA Test Method 8021); organochlorine pesticides (EPA Test Method 8081); cam 17 metals (EPA Test Method 6010/7000); polyaromatic hydrocarbons (PAHs) (EPA Test Method 8310) and polychlorinated biphenyls (PCBs) (EPA Test Method 8082).

6.11.1.2 Debris Area 2

Debris Area 2 was identified along the southern property boundary. A geophysical survey was conducted covering an area of approximately 400 by 50 feet. The geophysical surveying detected two separate, parallel-running debris pits. Based on these results, ten exploratory test pits and trenches were excavated using a backhoe. Logging and sampling was conducted on five of the trenches (TP-7 through TP-11). To evaluate the fill quality, five discrete samples were collected from the exposed debris layer. All soil samples were analyzed at a state-certified laboratory for gasoline, diesel, and oil range petroleum hydrocarbons (EPA Test Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE (EPA Test Method 8020); halogenated volatile organic compounds (VOCs) (EPA Test Method 8021) organochlorine pesticides (EPA Test Method 8081); CAM 17 metals (EPA Test Method 6010/7000); polyaromatic hydrocarbons (PAHs) (EPA Test Method 8310) and polychlorinated biphenyls (PCBs) (EPA Test Method 8082). Since burned debris, including plastics, was encountered in most trenches, two samples were selected (TP-9 and TP-11) and analyzed for dioxins (EPA Test Method 1613).

6.11.1.3 Debris Area 3

An intermittent creek was present on the south side of the property, flowing into the duck pond. To facilitate crop placement the westward continuation of the creek between the duck pond and the Mike Fanoe Parcel reportedly had been backfilled with native soil and debris. To better define the extent of the buried debris a geophysical survey was conducted covering an area of approximately 450 by 450 feet. Based on the geophysical results, eight exploratory test pits and trenches were excavated with a backhoe. Detailed logging was performed in five trenches (TP-12 through TP-16). To evaluate the fill quality, one discrete sample was collected in TP-12 and TP-13 respectively, and analyzed at a state-certified laboratory for gasoline, diesel, and oil range petroleum hydrocarbons (EPA Test Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE (EPA Test Method 8020); halogenated volatile organic compounds (VOCs) (EPA Test Method 8021) organochlorine pesticides (EPA Test Method 8081); cam 17 metals (EPA Test Method 6010/7000); polyaromatic hydrocarbons (PAHs) (EPA Test Method 8310) and polychlorinated biphenyls (PCBs) (EPA Test Method 8082).

6.11.2 Analytical Results

The analytical results are presented below in Tables 21, and 22. Dieldrin concentrations in soil samples from Debris Area 1, TP-1 and TP-4-2, exceeded the residential PRG of 0.030 ppm. Although none of the lead concentrations exceeded residential PRG limits, soil samples TP-1, TP-5-2, and TP-7B had lead concentrations exceeding 90 ppm. Based on our experience with lead impacted soil, soil samples with total lead concentrations exceeding 90 ppm likely will also exceed the soluble hazardous waste limit (STLC), or California's hazardous waste criteria of 5 ppm. Cadmium concentration in soil samples TP-7B and TP-10B, collected from Debris Area 2, exceeded the residential PRG of 1.7 ppm, but are consistent with background concentrations (Majmundar, 1980). One sample (TP-11B) also contained Dioxin exceeding the USEPA Residential PRG. Dioxin is a combustion product from the burning of plastics. All other compounds were detected below applicable regulatory threshold guidelines. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 21. Analytical Results of Selected Soil Samples
(Test Pit Areas)
(concentrations in parts per million)

Sample Number	Depth (feet)	Dieldrin[1]	Endrin[1]	Total DDT[1*]	Arsenic[2]	Cadmium[2]	Lead[2]	Mercury[2]
TP-1	0- ½	**0.150**	<0.010	<0.010	3.9	0.52	110	<0.050
TP-3	0- ½	0.006	<0.002	0.039	2.5	0.53	24	<0.050
TP-4-2	0- ½	**0.035**	<0.010	0.014	3.6	<0.50	18	<0.050
TP-5-2	0- ½	0.002	<0.002	<0.002	2.4	<0.50	120	<0.050
TP-7B	0- ½	<0.004	0.009	0.032	8.6	**2.6**	94	<0.050
TP-8B	0- ½	<0.002	0.007	<0.002	2.3	<0.50	4.0	<0.050
TP-9B	0- ½	0.023	**0.260**	<0.020	3.4	0.53	20	<0.050
TP-10B	0- ½	<0.01	<0.010	<0.010	3.2	**3.6**	60	0.260
TP-11B	0- ½	0.002	<0.002	0.005	2.6	<0.50	7.0	<0.050
TP-12B	0- ½	<0.002	<0.002	<0.002	3.0	<0.50	19	<0.050
TP-13B	0- ½	<0.002	<0.002	0.002	2.0	<0.50	21	<0.050
Residential PRG**		0.030	18	1.7	0.39/ 22***	1.7	150	23
Industrial PRG**		0.110	180	7.0	1.6/260***	7.4	750	310

1 Other organochlorine pesticides were not detected at or above their respective laboratory reporting limits with exception to, delta-BHC detected at 0.026 PPM in sample TP-9B and gamma-Chlordane detected at 0.0022 PPM in sample TP-3-1,3-2

2 Other CAM 17 metals were not detected at or above their respective laboratory reporting limits or were detected at levels significantly below their respective residential and industrial PRGs; total lead concentrations at 90ppm or higher may fail California's hazardous waste criteria

* Total DDT = DDT + DDE + DDD

** Preliminary Remediation Goal–EPA Region 9, October 2002

*** Cancer/ non-cancer endpoint

< Indicates that the compound was not detected at or above the stated laboratory reporting limit

Bold Indicates Compound detected at or above residential PRGs

Table 22. Analytical Results of Selected Soil Samples
(Test Pit Areas)
(concentrations in parts per million, Dioxin in parts per trillion)

Sample Number	Depth (feet)	TPHg	BTEX	MTBE	TPHd	TPHmo	PAHs	Total Dioxin***
TP-1-1,1-2	0- ½	<1.0	<0.005	<0.005	19	56	ND	-
TP-3-1,3-2	0- ½	<1.0	<0.005	<0.005	3.1	<50	ND	-
TP-4-2	0- ½	<1.0	<0.005	<0.005	15	<50	ND	-
TP-5-2	0- ½	<1.0	<0.005	<0.005	<1.0	<50	ND	-
TP-7B	0- ½	<1.0	<0.005	<0.005	6.0	<50	ND	-
TP-8B	0- ½	<1.0	<0.005	<0.005	5.8	<50	ND	-
TP-9B	0- ½	<1.0	<0.005	<0.005	29	320	ND	1.428
TP-10B	0- ½	<1.0	<0.005	<0.005	12	53	ND	-
TP-11B	0- ½	<1.0	<0.005	<0.005	45	460	ND	**11.209**
TP-12B	0- ½	<1.0	<0.005	<0.005	<1.0	<50	ND	-
TP-13B	0- ½	<1.0	<0.005	<0.005	1.2	<50	ND	-
Residential PRG*		NE	--	--	NE	NE	--	3.9
Industrial PRG*		NE	--	--	NE	NE	--	16
MCEHD**		100			100	100	--	

< Indicates that the compound was not detected at or above the stated laboratory reporting limit

* Preliminary Remediation Goal–EPA Region 9, October 2002

** Monterey County Environmental Health Department established Action Levels

*** Total Dioxins: 2,3,7,8-TCDD reported as the sum of the 17 reported equivalents in parts per million.

ND Not detected

NE Not established

Bold Indicates compound detected at or above the residential PRG

6.12 Fuel Storage Tanks

6.12.1 Drilling and Sample Collection

On February 10 and 11, 2004, Lowney Associates performed a subsurface exploration program, involving the drilling and logging of seven exploratory borings (EB-1 through EB-7). All borings were completed on the former dairy farm. The drilling was intended to evaluate soil quality in the vicinity of fuel storage tanks, both, above (ASTs) and underground storage tanks (USTs). In addition several borings were completed in the vicinity where significant soil staining had been observed. Boring locations are shown on Figure 9.

Borings EB-1 and EB-2 were drilled to an approximate depth of 50 feet and were located approximately 6 feet from two buried USTs in the area of the former dairy farm. To locate the buried USTs, a geophysical survey was conducted prior to drilling. Ground water was not encountered during drilling. Three soil samples were collected and submitted for analysis. None of the compounds analyzed exceeded the laboratory reporting limits.

Borings EB-3 and EB-4 were drilled to an approximate depth of 50 feet and were located at an approximate distance of 4 feet from the containment structure of the Sturdy Oil Bulk Fuel ASTs. Boring EB-5 was completed to an approximate depth of 10 feet and was located a 1,000 gallon AST near the southern boundary of the former dairy farm. EB-6 was drilled to approximately 10 feet and located within an area of heavily stained soil near the center of the former dairy farm, and EB-7 was completed to an approximate depth of 10 feet with the intent to evaluate the subsurface soil quality in the vicinity of two ASTs located near the three residential buildings of the former dairy farm.
A total of 16 soil samples were collected and submitted to state-certified laboratory and analyzed for diesel, motor oil and gasoline range petroleum hydrocarbons (EPA Test Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE (EPA Test Method 8020.

On March 26, 2004, Lowney Associates drilled two exploratory borings (EB-8 and EB-9) near the southern boundary of the Mike Fanoe parcel where two USTs are present but reportedly not being used. To locate the buried USTs, a geophysical survey was conducted prior to drilling. The borings were intended to evaluate soil and ground water quality in the vicinity of two former fuel-storage tanks and to evaluate if potential releases may have adversely impacted the adjoining Fanoe Ranch.

Boring EB-8 was completed near a former 5,000-gallon gasoline UST and was drilled to an approximate depth of 85 feet. Ground water was encountered at an approximate depth of 79 feet. EB-9 was completed approximately 10 feet south of a former 10,000-gallon diesel UST and was drilled to an approximate depth of 85 feet. Ground water was encountered at an approximate depth of 80 feet. During the drilling no staining or petroleum odors were observed.

Two soil samples and one ground water sample were collected from each boring and submitted to state-certified laboratory and analyzed for diesel, motor oil and gasoline range petroleum hydrocarbons (EPA Test Method 8015M); benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE (EPA Test Method 8020). No compounds were detected exceeding the laboratory reporting limits.

6.12.2 Analytical Results

The analytical results are presented below in Table 23. Analysis of the near surface samples collected from the borings in the vicinity of the Sturdy Oil Bulk Fuel ASTs and areas showing significant soil staining, detected elevated diesel and motor oil concentrations. Analysis of several near surface samples detected hydrocarbon levels exceeding the MCEHD guidelines for the protection of ground water. Copies of the analytical data reports and chain of custody documentation are presented in Appendix I.

Table 23. Analytical Results of Selected Soil and Ground Water Samples (Dairy Farm Borings)
(concentrations in parts per million)

Boring Number	Date	TPHd	TPHmo	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
EB-1 4-4.½	2/10/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-1 45-45½	2/10/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-2 3½-4	2/10/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-2 44½-45	2/10/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-3 0-½	2/10/2004	58	**190**	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-3 3½-4	2/10/2004	4.3	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-3 44½-45	2/10/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-4 ½-1	2/11/2004	81	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-4 3½-4	2/11/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-4 44½-45	2/11/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-5 0-½	2/11/2004	56	52	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-5 2½-3	2/11/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-6 0-½	2/11/2004	69	**380**	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-6 2½-3	2/11/2004	1.1	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-7 0-½	2/11/2004	**120**	**140**	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-7 2-2½	2/11/2004	4.6	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-8 (Water)	3/26/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-8 5½-6	3/26/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-8 11-11½	3/26/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-9 (Water)	3/26/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-9 5-5½	3/26/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EB-9 11-11½	3/26/2004	<1.0	<50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Residential PRG*		NE	NE	NE	0.600	520	520	270	62
Industrial PRG*		NE	NE	NE	1.3	520	520	270	160
MCEHD**		100	100	100	0.100	0.100	1.0	1.0	0.050

* Preliminary Remediation Goal–EPA Region 9, October 2002
** Monterey County Environmental Health Department established Action Levels
ND Not detected
NE Not established
Bold Indicates compound detected at or above the MCEHD action levels

7.0 CONCLUSIONS

7.1 Historical Summary

The Fanoe family reportedly has owned the Site for more than 100 years. The first use of the site appeared to have been a farm with related buildings as early as 1956, likely as early as 1921, but row crop agriculture generally was not depicted on topographic maps from that time period. Row crops were the reported method of on-Site farming. The Site is currently being farmed. The Fanoe family historically has farmed the Site, as have

lessees Huntington Farms (2001 through 2003) and Costa Farming (2002 to present). In addition to agricultural use of the Site, a dairy was also previously located on-Site from approximately 1938 until 1970. A barn, three residences, and associated cattle pens were present during the dairy's tenure on-Site. Currently, only the three residences remain present.

Sturdy Oil Company has leased a portion of the former dairy parcel for bulk storage of fuel in ASTs since 1972.

7.2 Agricultural Use

The Site has been agriculturally cultivated for at least 80 years and is currently cultivated with a variety of row crops. A contractor has applied agricultural chemicals with a crop dusting plane or helicopter; the most recent contractor used reportedly was SoilServ. For the last six years, some agricultural chemical application reportedly has been performed by Fanoe Brothers, Inc. using tractors. Agricultural chemical storage reportedly was at an off-Site location on the Michael Fanoe property. Agricultural chemicals reportedly were purchased in a pre-mixed form from SoilServ, and SoilServ was responsible for disposal of the chemical containers following their use. With the exception of the addition of water, mixing of agricultural chemicals reportedly was not performed on-Site. However, according to Mike Fanoe, SoilServ used a certain area within the former dairy farm to park their helicopter and store pesticides and related chemicals. Fixed-wing airplanes used for pesticide application prior to Soilserv, landed on the Site to reload with agricultural chemicals and water. Mr. Fanoe stated that the landing/reloading area was to the north and south of the current on-Site duck pond. Airplanes landed on this area of the Site for approximately three to four years around 1954. Records regarding pesticide use, storage and applications were not available prior to this date.

Crops and agricultural chemicals currently and historically used on-Site are summarized in Tables 24 and 25 below. Crops reportedly were rotated during the duration of farming activities.

Table 24. Crops Grown On-Site

Crops Currently Grown	Crops Historically Grown
Green Leaf Lettuce	Sugar Beets
Red Leaf Lettuce	Alfalfa
Celery	Potatoes
Kale	Corn
Romaine	Tomatoes
Boston Lettuce	Beans
Broccoli	Lettuce
	Celery
	Onions
	Carrots
	Seed Crops
	Cauliflower
	Broccoli
	Green Leaf Lettuce
	Red Leaf Lettuce
	Boston Lettuce
	Romaine

Table 25. Agricultural Chemicals Used On-Site

Chemicals Currently Used (2003)	Chemicals Historically Used
Dacthal W-75 75W	Paraquat
Kerb 50W	Dinitrol
Lorsban 4E-HF (or Lorsgan)	Diazinon
Roundup	Metasystox-R Spray Concentrate
Rodeo	Lanate
Goal 2E	Success
Bromotyrene	Pyrimin
Diazinon	Nortron
Admire	Temik 15G
Botran 5F	Sulfur
Tetrasystox-R	Eptam (or Eptan)
Sulphin	Sulfur Wetable
Lorox	Chlordane
Metacystox	Phosdrin
Dimethoate	Tok 50W
Success	2-4-D
Non-Ionic Adjuvant Spreader	Ridomil
Placement	Tenoran 80W
Diazinon	Nemacur
Warrior T Insecticide	Telone
Maned 75	Goal
R-11 Spreader-Activator	Kerb
Pounce	Admire
Provade	Maned 75
Aliette WDG	Rovral
	Valent Orthene
	Diazinon
	Warrior T Insecticide
	R-11 Spreader-Activator
	DuPont Asana Insecticide
	Digon 4000
	DuPont Avaunt
	DuPont Vydate
	Lorsban
	Agri-mek
	Provade
	Botran
	Agroneem
	Success
	Pounce
	Malathion
	Dacthal
	Manex
	Neemix
	Dimethoate
	Confirm
	Caparol
	Placement
	Digon 4000
	Sylgard
	Gramoxone

(continued)

Table 25. Agricultural Chemicals Used On-Site

Chemicals Currently Used (2003)	Chemicals Historically Used
	Trigard
	Non-Ionic Adjuvant Spreader
	Blockade
	Aliette
	Soilserv Crop Oil
	Bravo Weather Stik
	Tilt Si
	Dibrom 8
	Thiodicarb
	Prometryne
	No Foam B
	Javelin VG
	Kocide 10
	Ambush
	Butacide
	Quadris
	Roundup
	Assail Brand Insecticide
	Disyston

Fertilizers are likely used on these crops which could result in elevated nitrate concentrations in shallow ground water. Likewise, runoff from the Fat City feedlot could also contribute nitrate to ground water. Since nitrates can cause adverse health problems in infants, we recommend that current users of ground water be advised of this potential. We understand that ground water will not be used for drinking purposes in the planned development.

7.2.1 Pesticides

To evaluate the presence of residual organochlorine pesticides and selected metals (lead, mercury and arsenic), 93 soil samples were randomly collected across the agricultural fields for laboratory analysis. In addition, 25 additional soil samples were collected in the ponds, ditches, former dairy farm, former airstrips, and pesticide mixing/well pump areas.

7.2.2 Agricultural Fields

Soil sampling conducted during December, 2003 and January, 2004 on the agricultural fields of the property revealed levels of total DDT ranging in concentrations from nondectable to 0.77 ppm in the agricultural fields and up to 0.908 ppm near the former dairy barn in the upper foot of soil. Other pesticides were detected on-site included Dieldrin, Belta-BHC, Toxaphene, and Endosulfan. Only Toxaphene and Dieldrin, however, exceeded the USEPA residential PRG concentration of 0.440 ppm and 0.030 ppm, respectively. Dieldrin exceeded residential PRG only in one soil sample, AG-11, having a Dieldrin concentration of 0.061 ppm. Samples with a Toxaphene concentration exceeding residential PRG included AG-23 (0.560 ppm), AG-33 (0.640 ppm), AG-34 (0.700 ppm), AG-11C (0.770ppm) and AG-11E (0.670ppm). These samples were collected in the southern portion of the Site in the same general area as indicated in Figure 3

(approximately 115 acres). Only sample (AG-11) had Toxaphene concentrations (2.2) ppm that exceeded both residential and industrial PRG concentrations.

Based on the results of this sampling an area of elevated Toxaphene concentrations has been identified, covering approximately 115 acres. Based on conversations with the Mike Fanoe, the owner and former farmer of the property, it appears that similar farming practices and crop patterns that occurred on the 115 acres had been conducted in a much wider area, to the North and South of the 115 acres area. The total area of similar farming practices covers approximately 280 acres. In May, 2004 an additional 53 soil samples were collected in the 280 acre portion of the Fanoe Ranch with the objective to better define the extent and distribution of potentially elevated Toxaphene. The resulting sampling density within the 280 acre area of concern amounted to approximately one soil sample for every 5 acres.

The follow-up soil sampling conducted within the 280 acre area of concern revealed levels of toxaphene ranging in concentrations from non-detect to 2.2 parts per million (ppm) in the agricultural fields in the upper 1½ feet of soil. Other pesticides were detected on-site (Dieldrin, DDT compounds and Endosulfan); only toxaphene, however, exceeded the residential PRG concentration in the on-site soil. Despite its toxicity, toxaphene is relatively immobile and almost insoluble in water; it appears generally limited to the top 2 feet of soil.

7.2.2.1 Statistical Evaluation of Toxaphene in the Soil

The results for toxaphene were statistically evaluated to establish the sample mean and 95 percent upper confidence level (UCL) of the sample mean. Only samples collected within the 280 acre area of concern were selected in the statistical evaluation. This statistical evaluation indicated that the 95 percent UCL of the sample mean for Toxaphene was 0.403 ppm. This level is below the residential PRG of 0.440 ppm and below the TTLC of 5 ppm; the soil, therefore, would not appear to be classified as a hazardous waste based on this sampling data. In addition, due to the relative immobility of toxaphene, it is unlikely that the pesticides detected will significantly impact ground water. Toxaphene tends to be relatively immobile and will likely stay adsorbed onto soil particles, particularly in clays, which are present at the project site (Klaasen 1986). The residual pesticides detected likely will degrade over time. However, if this area is to be redeveloped for residential use, we recommend that remedial actions be taken to prevent exposure to the residents.

7.2.3 Pesticide Mixing Areas

Agricultural chemicals for tractor application reportedly were mixed with water and poured into tractors adjacent to the agricultural well east of the Michael Fanoe parcel (Figure 2). Analysis of one two-point composite soil sample collected in the vicinity of the well did not detect compounds above the residential PRG concentration limit.

Agricultural chemicals also were reportedly loaded onto crop dusting planes in the areas north and south of the duck pond. Analysis of two four-point composite samples collected in the vicinity of the former crop dusting plane landing/loading areas did not detect pesticides and related metals above the residential PRG concentration limit.

7.3 Chemical Storage and Use

7.3.1 Agricultural Chemicals

As described in Section 7.2 above, most agricultural chemical storage reportedly was not performed on-Site, except in an area reserved for SoilServ's helicopter landing and parking site and temporary storage of agricultural chemicals within the former dairy farm. One four-point composite sample was collected and analyzed in the vicinity of the former SoilServ site. No elevated concentrations of pesticides were identified in this sample.

7.3.2 Petroleum Hydrocarbons

Five steel ASTs used for bulk fuel storage by Sturdy Oil Company were present on a concrete pad within a covered, secondarily contained structure (Figure 9). Two 10,000-gallon gasoline ASTs, one 10,000-gallon diesel AST, and two 8,000-gallon unlabeled ASTs were observed. A fuel dispenser was also present. A significant build up of oil was observed on the platform housing the fuel pump and heavy staining was observed beneath the pump hoses within the secondary containment area; minor staining was observed beneath the pump hose termination outside the secondary containment area. Four 5-gallon buckets of oil were also observed within the bulk fuel storage area. Moderate staining of the concrete beneath the oil buckets was observed.

Borings EB-3 and EB-4 were drilled to an approximate depth of 50 feet in the vicinity of the Sturdy Oil Bulk Fuel ASTs. Laboratory analysis of the near surface samples collected from these borings detected moderate concentrations of hydrocarbons in the diesel and motor oil range (EB-3, 0-0.5 TPHd: 58 ppm, TPHmo: 190 ppm, EB-4, 0.5-1 TPHd: 81 ppm, TPHmo: <50 ppm). Concentrations in soil samples collected between depths of 3½ to 4 feet were significantly lower (EB-3, 3.5-4 TPHd: 4.3 ppm, TPHmo: <50 ppm, EB-4, 3.5-4 TPHd: <1.0 ppm, TPHmo: <50 ppm). Analysis of soil samples collected at depths of approximately 45 feet did not detect hydrocarbons above the laboratory reporting limit.

Costa Farming, the current Site lessee, maintained one approximately 1,000-gallon unleaded gasoline AST within a metal secondary containment structure near the southern boundary of the former dairy. The containment area appeared dry and free from significant staining on the concrete pad.

Boring EB-5 completed in the vicinity of this AST detected low concentrations for hydrocarbons in the motor oil and diesel range in the near surface sample (EB-5, 0-0.5, TPHd: 56 ppm, TPHmo: 52 ppm). Analysis of soil collected at depths between 2½ to 3 feet did not detect hydrocarbons above the laboratory-reporting limit.

An additional concrete slab within the former dairy was used for storage of vehicle maintenance and farming supplies for former Site lessee Huntington Farms. Five 55-gallon drums were observed on the slab; at least two of the five drums appeared full of what appeared to be oil. Significant staining of the concrete beneath the drums was observed. Boring EB-6 was completed in the vicinity of the concrete pad. Analysis of samples collected from the approximately 10 foot boring detected moderate concentration of hydrocarbons in the diesel and motor oil range in the near surface sample (EB-6, 0-0.5, TPHd: 69 ppm, TPHmo: 380 ppm), and significant lower

concentrations in soil collected between depths of 2½ to 3 feet (EB-6, 2.5-3, TPHd : 4.6 ppm, TPHmo: <50 ppm).

One 10,000-gallon AST and one 5,000-gallon AST owned by Sturdy Oil Company and used by Costa Farming also were located on the former dairy. The ASTs contained diesel and were located on a concrete pad with no secondary containment. Moderate staining of the concrete beneath the dispenser of the 10,000-gallon AST was observed. Boring EB-7 was completed near the dispenser to a depth of approximately 10 feet. Moderate concentrations of hydrocarbons in the motor oil and diesel range were detected in the near surface soil sample (EB-7, 0-0.5, TPHd: 120 ppm, TPHmo: 140 ppm. Analysis of soil collected at depths between 2½-3 feet detected very weak diesel concentration (TPHd: 4.6 ppm) and motor oil was below the laboratory reporting limit.

A reduction in petroleum hydrocarbon concentrations was observed with depth in all boring locations. The source of the detected petroleum hydrocarbons appears to be minor surface spills during fueling of vehicles from the aboveground tanks. Thus, the vertical and horizontal extents of the impacted soil would be expected to be relatively limited. If a further degree of confidence is desired, additional sampling could be performed to better establish the extent of impacted soil in this area.

Two additional exploratory borings (EB-8 and EB-9) were drilled near the southern boundary of the Mike Fanoe Parcel near the reported location of two buried USTs. The borings were completed to evaluate soil and ground water quality in the vicinity of two former fuel-storage tanks and to evaluate if potential releases may have adversely affected the adjoining Fanoe Ranch. Analysis of two soil samples and one ground water sample from each boring did not detect petroleum hydrocarbons exceeding the laboratory reporting limits.

Total extractable petroleum hydrocarbons exceeding 100 ppm exceed the MCEHD threshold levels of concern for the protection of ground water. Several of the areas investigated exceed this threshold. Given the relatively deep ground water (80 feet), and the sampling results, it is very unlikely that ground water is affected by the hydrocarbon releases in the former Dairy Farm area.

7.3.3 Fertilizer

Costa Farming maintained three fertilizer ASTs, containing nitrogen, nitrogen/sulfur, and anti-crustant, respectively, on the soil surface of the former dairy. Additional fertilizer ASTs containing nitrogen were observed adjacent to the wells on Parcel 1 and Parcel 4.

We recommend that Fanoe Ranch be responsible for the removal and disposal of all hazardous materials, hazardous waste, AST's, UST's drums and dispensers described above and any subsequent remediation that is required, prior to property transfer.

7.3.4 Recommendations for Continued Chemical Storage and Use

To help mitigate potential environmental issues that may arise from the ongoing agricultural activities and practices related to chemical and storage and use at the site, we recommend the following:

- Areas with existing soil contamination be over-excavated and removed from the site.

- All hazardous materials should be consolidated in one area. Secondary containment should be used for outdoor containers and ASTs that store hazardous materials. This secondary containment may consist of a berm or dike with an impervious surface, but it must be large enough to hold 10 percent of the volume of all containers or 110 percent of the volume of the largest container, whichever is larger. The floor of the containment area must be an impervious surface that does not show any cracks or gaps. This area must be kept neat. Storage of hazardous materials must comply with the regulations established in California.

- Containers must be kept closed, in good condition and compatible with the waste or material accumulated, and be properly labeled. The containers must be handled in a manner to avoid ruptures. Containers must be inspected weekly to make sure containers are in good condition, free of cracks, punctures and leaks, with little or no rust. Containers that are leaking or deteriorating must be replaced.

- Tanks must be properly labeled, in good condition and free from leaks. Tanks and ancillary equipment must be compatible with the hazardous materials they contain. Tanks must be operated in a manner to prevent spills and overflows. Weekly inspections of the tanks must be conducted to evaluate corrosion and signs of releases. Leaking or corroding tanks must be repaired or replaced.

- The amount of hazardous waste accumulated must not exceed 55 gallons or 500 pounds.

- Leaks or spills of hazardous materials must be immediately cleaned to comply with California regulations.

- The storage area must be secure against unauthorized entry. Clearly post a sign reading "HAZARDOUS MATERIALS" in capital letters at least 1-inch high, no smoking signs in English and Spanish, and a NFPA fire diamond.

- Maintain Material Safety Data Sheets for each chemical product and must be stored in a central file location; this file must be updated quarterly. All chemicals must be pre-approved by Wellington Corporation before they are stored or used on-site.

- Stored pesticides must be removed and appropriately disposed from the property. On-Site commercial-scale pesticide mixing must not be allowed. Only premixed pesticides may be used on Site. All agricultural chemicals, including pesticides and fertilizers must be pre-approved by Wellington Corporation before they are stored or used on-site.

- Periodic site visits must be conducted by an independent professional to ensure proper implementation of above recommendations.

7.4 Retention Basins/Catch Ponds

Four retention basins/catch ponds, one former catch pond, and one duck pond were located on-Site. In addition, a portion of a catch pond/retention basin for the vineyard adjacent to the north may be present on-Site. With the exception of the retention basins on the eastern portion of Parcel 4 that reportedly are used only to supply irrigation

water, these catch ponds receive agricultural tail water from irrigation and precipitation from the surrounding and up-slope fields. The catch pond located southwest of the former dairy likely also received runoff from historical and current activities located on the dairy parcel. Soil sampling at the base of the four catch ponds, the former catch pond, and the duck pond was performed to evaluate whether the agricultural tail water has impacted soil.

Four soil samples were collected from the surface to an approximate depth of ½ feet and analyzed for organochlorine pesticides and for pesticide-related metals. None of the soil samples contained contaminants that exceeded the applicable regulatory threshold guidelines. Metal concentrations appear to be consistent with natural background values.

7.5 Drainage Ditches

Four drainage ditches were observed on-Site. These drainage ditches receive agricultural runoff from irrigation and precipitation on the surrounding and up-slope fields, as well as from up-slope developments. The east to west running drainage ditch extending down the middle of the Site also reportedly receives runoff from the Fat City feed lot located immediately east of the Site across Iverson Road. Sampling of soil at the base of three selected drainage ditches was performed to evaluate if soil has been impacted by the agricultural tail water and runoff from up-slope properties. Twelve soil samples were collected from the surface to an approximate depth of ½ feet. None of the soil samples contained contaminants that exceeded applicable regulatory threshold guidelines. Metal concentrations appear to be consistent with natural background values.

Two areas of debris were observed along the southern drainage ditch. It appeared that part of the debris was used to support the northern bank of the ditch. The debris consisted of construction debris, including painted sheetrock, painted corrugated and plain sheet metal, tires, tire rims, wood, concrete debris, motor vehicle parts, including entire car chassis, and electrical appliances, including dryers and washers. Soil sampling in this area identified elevated lead concentrations that likely exceed hazardous waste threshold criteria.

We recommend the over excavation and appropriate off-Site disposal of the buried debris from this area. We recommend screening the excavated material to remove solid debris prior to off-haul. We further recommend evaluating soil and possibly ground water quality beneath the debris to evaluate whether hazardous materials contained within the debris have may have impacted the underlying material.

Disposal of debris or waste on-Site must be discontinued. All debris or waste must be appropriately disposed off-Site.

7.6 Dump Areas/Buried Debris

Areas of fill and buried debris were observed at three locations on the property (Figures 2 and 3). Geophysical surveys were conducted across the suspect areas to better define the extent of the buried debris. Subsequently, backhoe investigations were performed at the three suspect debris areas to help evaluate the lateral and vertical extent of the fill and establish if special handling and disposal requirements would be necessary.

Debris Area 1

Debris Area 1 was located along the southern margin of the soil treatment area where historically debris was disposed and partly buried. Based on the results of the geophysical survey and the backhoe investigations, three separate areas of buried debris were outlined. The debris encountered in the western two areas (TP-1, TP-2, and TP-3, see Figure 5) included miscellaneous metal debris, mattress springs, bicycle parts, tire rims, plastic matter including empty plastic pesticide containers, glass, and concrete debris. The debris is confined to a near surface layer with an average thickness of approximately 1½ feet, covering a combined area of approximately 10,000 square feet. A second debris pit was encountered in the eastern part of Debris Area 1. The debris encountered included electrical appliances, car parts, car batteries, glass, general construction debris, and wood. The debris extended from the surface to a depth of approximately 12 feet covering an area of approximately 1500 square feet.

Dieldrin was detected in soil samples collected from Debris Area 1 (TP-1, TP-2, and TP-4-2), exceeding the residential PRG of 0.030 ppm. Although none of the lead concentrations exceeded residential PRG limits, soil samples (TP-1, 1-2 and TP-5-2) had elevated lead concentrations exceeding 90 ppm. Based on our experience with lead impacted soil, soil samples with total lead concentrations exceeding 90 ppm may exceed the soluble threshold limit concentration (STLC), California's hazardous waste criteria.

Debris Area 2

Debris Area 2 was identified along the southern property boundary (Figure 6). The geophysical survey and backhoe investigation detected two separate, parallel-running debris pits. The northern pit measured approximately 150 by 30 feet. The approximately 2 feet thick debris layer was overlain by an approximately 2 to 3 foot thick soil fill containing only minor (less than 5 to 10%) debris. The debris in the main debris layer consisted predominantly of general household garbage, including tin cans, glass, plastics, and larger debris items, including a water heater, electric appliances, batteries, and burned matter, ash, and molten plastic matter.

The second debris pit measured approximately 120 by 30 feet and was approximately 2 to 4 feet thick. It was overlain by up to 6 feet of soil fill. The debris layer consisted largely of construction debris, including corrugated metal, wood, bricks, plasterboard, PVC and metal piping, glass, and other miscellaneous debris and fill matter, including burned and molten matter, and ash. From the backhoe investigations it appeared that the debris layer possibly extended into the north bank of the drainage ditch.

Analytical results detected Cadmium concentration in soil samples TP-7B and TP-10B exceeding the residential PRG of 1.7 ppm and Dioxin concentrations detected in soil sample TP-11 (11.2 ppt) exceeded the residential PRG of 3.9 ppt. All other compounds were detected below applicable regulatory threshold guidelines

Debris Area 3

Based on the geophysical survey and backhoe investigation, a debris area covering approximately 90 by 40 feet was encountered underneath approximately 3 to 4 feet of soil fill (Figure 7). The debris layer was approximately 2 feet thick and included old farming equipment, metal cables, other miscellaneous metal debris, wood, and minor

glass. Laboratory results of soil samples obtained from Debris Area 3 did not detect any analyzed compounds exceeding the applicable regulatory threshold guidelines.

We recommend the over excavation and appropriate off-Site disposal of the buried debris from all three areas. For Debris Areas 1 and 2, which appear to contain over 10 percent solid debris, we recommend screening the excavated material prior to off-haul. We further recommend evaluating soil and possibly ground water quality beneath the debris to evaluate whether hazardous materials contained within the debris have may have impacted the underlying material.

Disposal of debris or waste on-Site must be discontinued. All debris or waste must be appropriately disposed off-Site.

7.7 Duck Pond

A pond located near the southern property boundary has reportedly been used for duck hunting. To evaluate soil quality for the presence of residual lead due to lead-shot, 12 soil samples were collected for laboratory analysis for total lead. The analytical results showed that metal concentrations appear to be consistent with natural background concentrations.

7.8 Soil Treatment Area

Petroleum hydrocarbon impacted soil from two off-Site Sturdy Oil Company service stations and from small cleanups on the Fanoe Ranch has been spread over an approximately 15-acre area near the northeastern property boundary. The treatment of impacted soil generated by on-Site activities reportedly has been performed under permit by the Monterey County Environmental Health Department or the Monterey Bay Unified Air Pollution Control District (APCD). However, available permits to treat the off-Site impacted soil at the Fanoe Ranch appear to approve only 2,600 cubic yards of soil. At least 10,000 to 13,000 cubic yards of soil appear to have been placed on the 15-acre area since 1993.

To evaluate the soil quality in this area, soil samples were colleted at the surface and 2 foot depths at 10 randomly selected locations (ST–1 through ST-10). Analysis of the soil samples detected low concentrations of diesel and motor oil range hydrocarbons. The highest concentrations were detected in near surface soil sample ST-3(24 ppm diesel and 110 ppm motor oil), which just exceeds the MCEHD guideline of 100 ppm for the protection of ground water.

The residual and sporadically occurring, low concentrations of hydrocarbons present would be expected to naturally degrade over time. Given the relatively deep ground water (80 feet and relatively low concentrations present, there does not appear to be pose a significant threat to human health or to ground water.

None of the remaining analyzed compounds, including fuel related metals (LUFT metals) exceeded the applicable regulatory threshold guidelines and appear to be consistent with natural background values.

We recommend that impacted soil no longer be treated on-Site.

7.9 Burn Areas

Two waste burning areas were observed on-Site. Vegetation clippings and other materials, potentially including tires, historically have been burned on the western portion of the 15-acre parcel where the petroleum hydrocarbon soil was aerated. Vegetation clippings were stockpiled for burning on that parcel at the time of our reconnaissance.

A second burning area was observed near the front of the three residences located on the former dairy. Two new burning pits were observed at the former dairy, near the three residences. Blackened soil and burned debris were observed in this area at the time of our reconnaissance.

One four-point composite sample was collected at each burn area (BU-1, and BU-2). Analysis of the two composite soil samples detected elevated concentrations of hydrocarbons in the diesel and motor oil range in sample BU-1 (120 ppm diesel and 440 ppm motor oil), and elevated concentration for lead (concentrations above typical background levels) in both samples (BU-1: 79 ppm, BU-2 61 ppm). These lead concentrations do not exceed the residential PRGs but are likely to exceed the soluble lead concentration threshold for hazardous waste. Total dioxins exceeded the residential PRG limit of 3.9 ppt in both burn areas (BU-1: 25.5 ppt, BU-2: 10.7 ppt).

Based on the analytical results, we recommend over-excavation and appropriate disposal of all burned debris and impacted soil. We further recommend, prohibiting continued use of the burn areas. All waste should be appropriately disposed off-Site.

7.10 Adjacent Vineyard

The location of the property boundary at the northeastern corner of the Site should be confirmed. Mr. Michael Fanoe reported that some structures from the vineyard property adjacent to and north of the Fanoe Ranch are present on Site. These structures include a portion of a reservoir, a fenced storage area, a series of water filters, and a concrete ramp that reportedly previously supported an agricultural chemical AST.
One metal pole was observed extending from each end of the concrete ramp on this portion of the Site. One of the pipes appeared similar in appearance to a vent pipe for a UST. If the concrete ramp is determined to be on the Site, we recommend that the purpose of these pipes be determined.

7.11 Buried Diesel Tanks

Two steel diesel tanks, one 10,000-gallon and one 2,500-gallon in size, reportedly were buried adjacent to the Sturdy Oil Company bulk fuel storage facility on the former dairy parcel (Figure 2). To ascertain soil quality in the vicinity of the buried tanks, two borings were drilled to depths of approximately 50 feet near the approximate position of the buried tanks. Three soil samples were collected and submitted for analysis of total petroleum hydrocarbons. None of the compounds analyzed exceeded the laboratory reporting limits.

We recommend that the buried tanks be removed and appropriately disposed. Impacted soil, if any, must also be over-excavated and appropriately disposed. Depending upon conditions encountered during the tank removal, ground water sampling and analytical testing may be required.

7.12 Former Dairy

A dairy barn and associated cattle pens previously were located on the former dairy parcel near the northern property boundary (Figure 2). Pesticides reportedly were not used on the dairy cattle. For further degree of confidence, we collected four soil samples from the surface to a depth of ½ foot from random locations in this area. The four samples were composited into one sample by the analytical laboratory and analyzed for organochlorine pesticides and lead, mercury, and arsenic. Analysis of the composited soil sample, FD-1, detected elevated concentrations of Total DDT near (but not exceeding) California's hazardous waste limit of 1 part per million in the area of the former milking barn. To evaluate the extent of Total DDT in this area, an additional six discrete soil samples (DB-1 through DB-6) were collected from the ground surface to a depth of ½ foot, including two soil samples obtained form beneath the concrete floor of the former dairy barn. Analytical results revealed significantly less DDT concentrations than the original composite sample. None of the compounds analyzed exceeded the applicable regulatory threshold guidelines.

Additionally, one four-point composited soil sample (SERV-1A,B,C,D) was collected and analyzed within the former Dairy Farm, where reportedly agricultural chemicals were stored by a contractor, SoilServ, for aerial pesticide application. None of the compounds analyzed exceeded the applicable regulatory threshold guidelines.

7.13 Water Supply Wells

Three agricultural wells (extending to depths of approximately 900 feet) and two domestic supply wells are present on-Site. The domestic supply wells were historically agricultural wells. The lower portion of the casing in one of these wells was reportedly collapsed. These wells should be properly abandoned in accordance with applicable regulations if continued use is no longer intended. In additional, we recommend these wells be tested by the users for the presence of nitrates and other contaminants. Nitrates can cause adverse health affects in infants.

7.14 Septic Systems

The three residences located on the former dairy portion of the Site are reportedly connected to a septic system. The septic system should be properly abandoned in accordance with applicable regulations prior to site redevelopment.

7.15 Asbestos

Due to the age of the on-Site buildings, asbestos-containing materials (ACMs) may be present. Since demolition of the buildings is under consideration, an asbestos survey must be conducted under National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines. In addition, NESHAP guidelines require that all potentially friable ACM be removed prior to building demolition or renovation that may disturb the ACM.

7.16 Lead-Based Paint

Analysis of 16 soil samples collected near the three on-site residential buildings and the former dairy barn detected concentrations of lead ranging from 4 to 1,900 ppm. The highest concentrations (1,900 ppm and 1,400 ppm) were detected in soil samples PB-1 and PB-3 collected near the southern-most residential building. Based on the results of

the soil sampling, total lead exceeded the residential PRG limit (150 ppm) in 5 of 16 soil samples analyzed. Two of the samples analyzed exceeded California's hazardous waste criteria of 1,000 ppm.

In addition four of the sixteen samples were selected for California's soluble hazardous waste limit concentration (STLC)-analysis. The STLC analytical results indicate that samples exceeding 100 ppm likely will also exceed the STLC limit, or California's hazardous waste criteria. Six of the 16 samples had total lead concentrations exceeding 100 ppm.

We recommend over-excavation and appropriate off-site disposal of soil around the perimeter of the two on-site structures.

In 1978, the Consumer Product Safety Commission banned the use of lead as an additive in paint. Currently, the U.S. EPA and U.S. Department of Housing and Urban Development are proposing additional lead-based paint regulations. Based on the age of the building, lead-based paint may be present. If lead-based paint is still bonded to the building materials, its removal is not required prior to demolition. It will be necessary, however, to follow the requirements outlined by Cal/OSHA Lead in Construction Standard, Title 8, California Code of Regulations (CCR) 1532.1 during demolition activities; these requirements include employee training, employee air monitoring, and dust control. If lead based paint is peeling, flaking or blistered, it should be removed prior to demolition. It is assumed that such paint will become separated from the building components during demolition activities; thus, it must be managed and disposed as a separate waste steam. Any debris or soil containing lead paint or coating must be disposed at landfills that are permitted to accept the waste being disposed.

7.17 Urban Runoff Pollution Prevention Program

The Urban Runoff Pollution Prevention Program, also called the Non-Point Source Program, was developed in accordance with the requirements of the 1986 San Francisco Bay Basin Water Quality Control Plan to reduce water pollution associated with urban storm water runoff. This program was also designed to fulfill the requirements of the Federal Clean Water Act, which mandated that the EPA develop National Pollution Discharge Elimination system (NPDES) Permit application requirements for various storm water discharges, including those from municipal storm drain systems and construction Sites.

Construction activity resulting in a land disturbance of 1 acre or more, or less than 1 acre but part of a larger common plan of development or sale, must obtain a Construction Activities Storm Water General Permit. A Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to commencement of construction.

7.18 Potential Environmental Concerns Within the Site Vicinity

Based on the information obtained during this study, no hazardous material incidents have been reported in the Site vicinity that would be likely to significantly impact the Site.

7.19 Soil Management Plan

Based on the long agricultural history of the site, buried structures, debris or impacted soil may be encountered during Site development activities; these materials may require special handling and disposal. To limit construction delays, we recommend that a Soil Management Plan (SMP) be developed to establish management practices for handling these materials/structures if encountered.

7.20 Environmental Insurance

Due to the lengthy industrial use of the site, contaminated materials may be encountered during site development. Consideration should be given to purchasing insurance to help protect against these liabilities. There are two primary insurance policies that provide significant protection against environmental liability risks:

- Pollution Legal Liability protects against third party claims for personal injury and property damage, and related risks;
- Cleanup Cost-Cap protects against increases in cleanup costs due to unknown or changing conditions, including more stringent requirements than currently exist.

Other environmental insurance coverages are available to protect financial institutions lending money for the purchase of distressed assets, contractors working on environmental projects, and underground storage tank closure liability. Generally, if the risk is related to environmental conditions, it is likely that an insurance product can be adapted to protect against risk.

7.21 Reporting

We recommend that this report be send to the Monterey County Environmental Health Department for review.

8.0 LIMITATIONS

As with all Site assessments, the extent of information obtained is a function of client demands, time limitations, and budgetary constraints. Our conclusions and recommendations regarding the Site are based on readily observable Site conditions, review of readily available documents, maps, aerial photographs, and data collected and/or reported by others. Due to poor or inadequate address information, the regulatory agency database report listed several Sites that may be inaccurately mapped or could not be mapped; leaks or spills from these or other facilities, if nearby, could impact the Site. As directed by you, we are relying on information presented in reports provided to us by you or your representative. We are not responsible for the accuracy of information or data presented by others.

The accuracy and reliability of geo- or hydrochemical studies are a reflection of the number and type of samples taken and extent of the analyses conducted, and are thus inherently limited and dependent upon the resources expended. Chemical analyses were performed for specific parameters during this investigation, as detailed in the scope of services. Please note that additional constituents not analyzed for during this evaluation may be present in soil and ground water at the site. Our sampling and analytical plan was designed using accepted environmental principles and our judgment for the

performance of a soil and ground water quality evaluation and was based on the degree of investigation approved by you. It is possible to obtain a greater degree of certainty, if desired, by implementing a more rigorous soil and ground water sampling program or evaluating the risk posed by the contaminants detected, if any.

Magnetic geophysical survey methods locate ferrous objects from the anomalies they produce in the earth's magnetic field. Some ferrous objects may not produce an anomaly. Some possible reasons are that the object is buried too deep, the object is too small, the object is buried under or near another ferrous object, or an object is buried near a utility. The anomalies from metal on the ground surface can mask the anomalies from objects buried below them.

This report was prepared for the sole use of Wellington Corporation and McPharlin, Sprinkles & Thomas, LLP. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location.

9.0 REFERENCES

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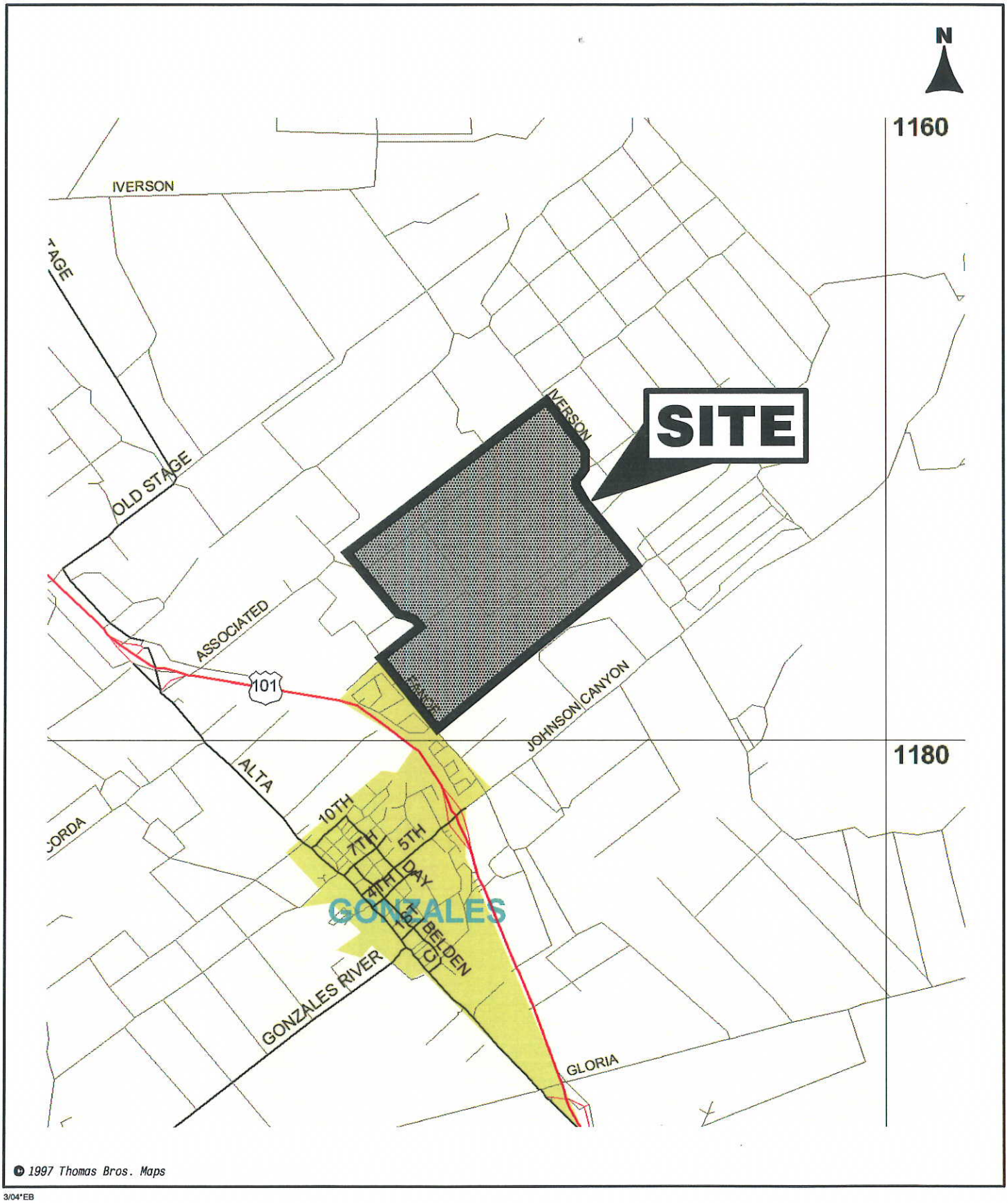

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VICINITY MAP

FANOE RANCH

Gonzales, California

LOVNEY ASSOCIATES

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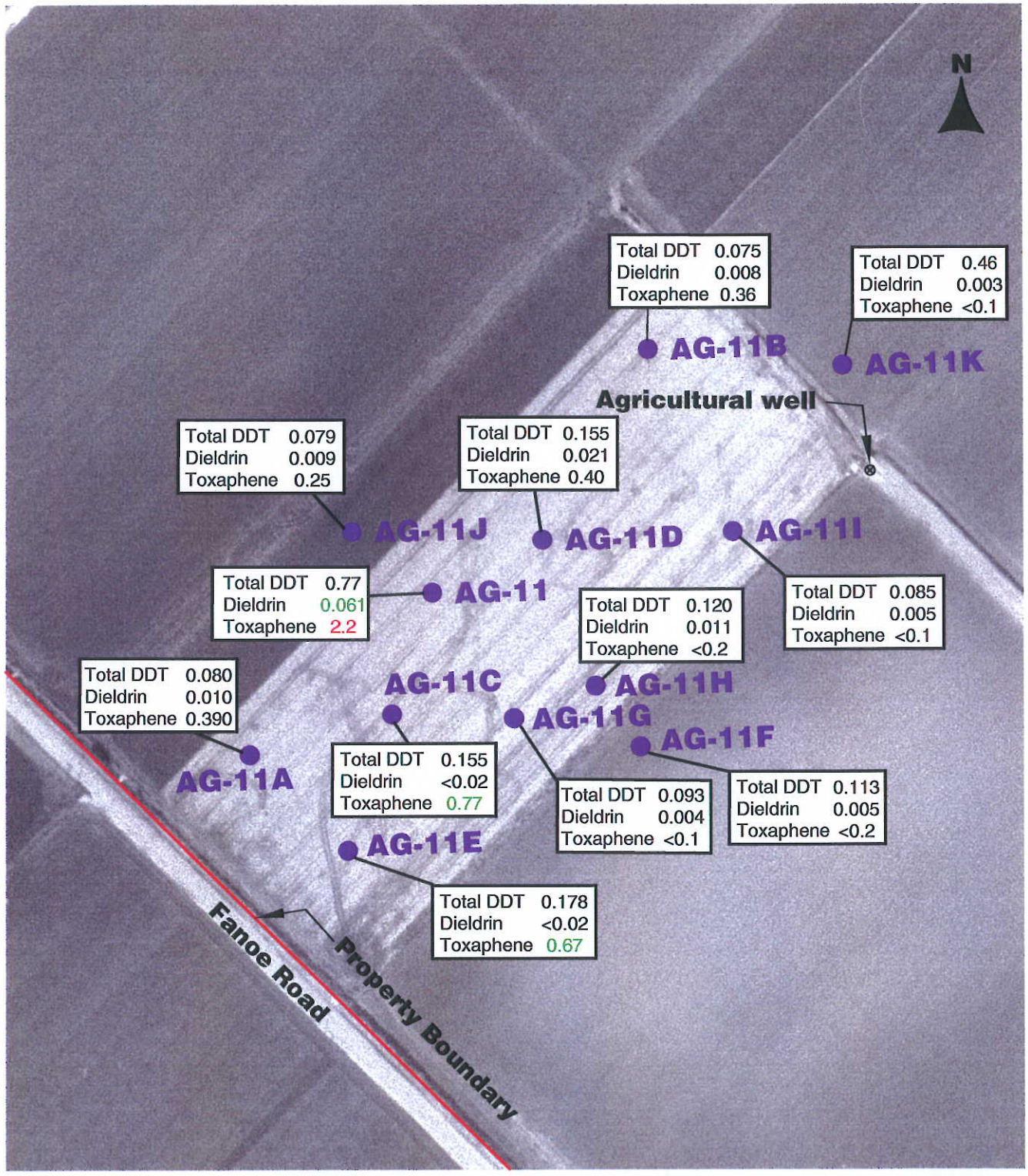
FIGURE 1

1989-1B



LEGEND

- ● - Approximate soil sample location

PRG - USEPA preliminary remediation goal

	Res. PRG	Indus. PRG
Total DDT	1.700	7.000
Dieldrin	0.030	0.110
Toxaphene	0.440	1.600

Note:

Concentrations in color indicate exceedance of PRG's.

Concentrations in ppm.

Approximate Scale:

0 200

Scale feet

SAMPLING RESULTS AG-11 AND VICINITY

FANOE RANCH

Gonzales, California

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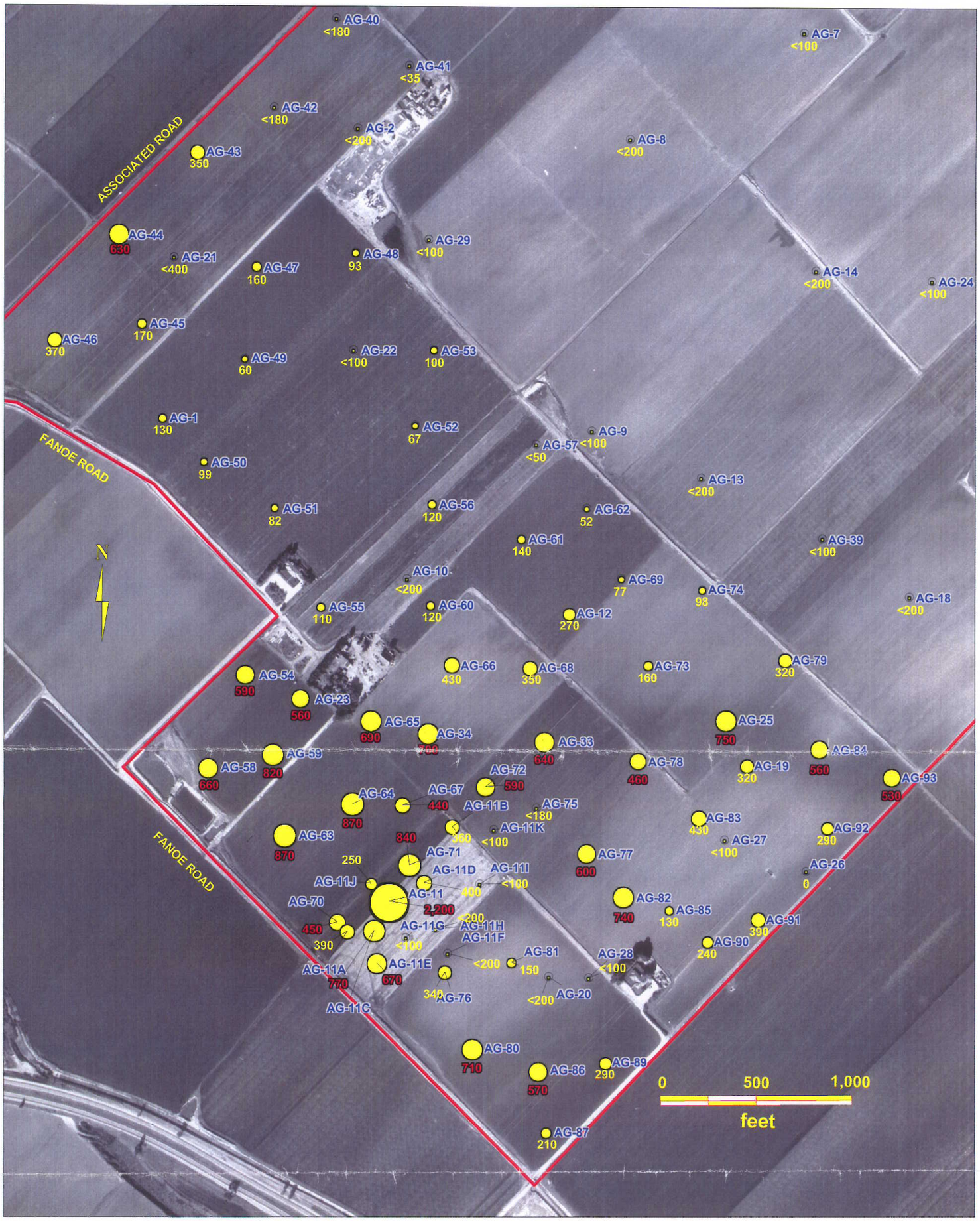
FIGURE 4

1989-1B



Agricultural Soil Samples
Toxaphene in ppb

2,200

1,100

220

Concentrations above residential PRG are labeled in red

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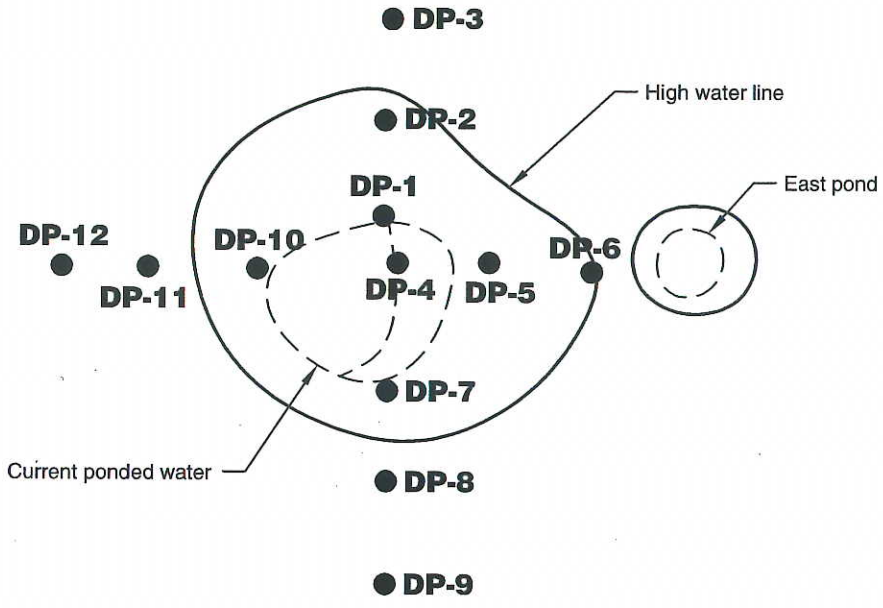
TOXAPHENE RESULTS OF FOLLOW-UP SOIL SAMPLING
FANOE RANCH
Gonzales, California

1989-1B
Figure 5



LEGEND

● - Approximate location of soil sample

0 100

Scale feet

Base approximated from Lowney Associates field notes.

10/04*EB

DUCK POND SAMPLING

FANOE RANCH
Gonzales, California

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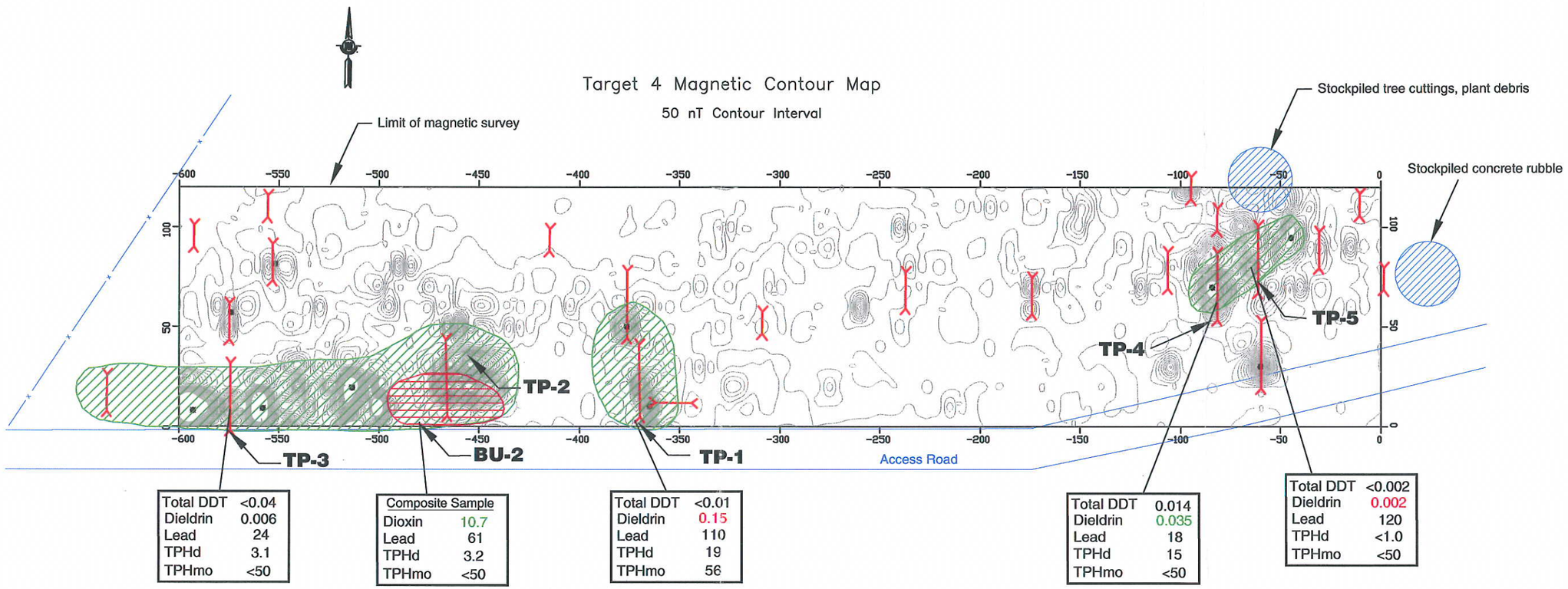
FIGURE 6
1989-1

Target 4 Magnetic Contour Map

50 nT Contour Interval



TP-3	
Total DDT	<0.04
Dieldrin	0.006
Lead	24
TPHd	3.1
TPHmo	<50

Composite Sample	
Dioxin	10.7
Lead	61
TPHd	3.2
TPHmo	<50

TP-1	
Total DDT	<0.01
Dieldrin	0.15
Lead	110
TPHd	19
TPHmo	56

TP-4	
Total DDT	0.014
Dieldrin	0.035
Lead	18
TPHd	15
TPHmo	<50

TP-5	
Total DDT	<0.002
Dieldrin	0.002
Lead	120
TPHd	<1.0
TPHmo	<50

LEGEND

- Approximate location of exploratory trench (See Appendix H)
- Approximate extent of buried debris
- Approximate extent of burn area

PRG - USEPA preliminary remedtiation goal

	Res. PRG	Indus. PRG
Total DDT	1.700	7.000
Dieldrin	0.030	0.110
Lead	150	750
Diesel	1,000*	1,000*
Motor Oil	1,000*	1,000*
Dioxin	3.9	16

*Hazardous waste threshold concentrations

Note:

Concentrations in color indicate exceedance of PRG's.

Dioxin concentrations in ppt, all other concentrations in ppm.

Approximate Scale:

0 60

Scale feet

GEOMAGNETICS AND BURIED DEBRIS
DEBRIS AREA 1
FANOE RANCH
Gonzales, California

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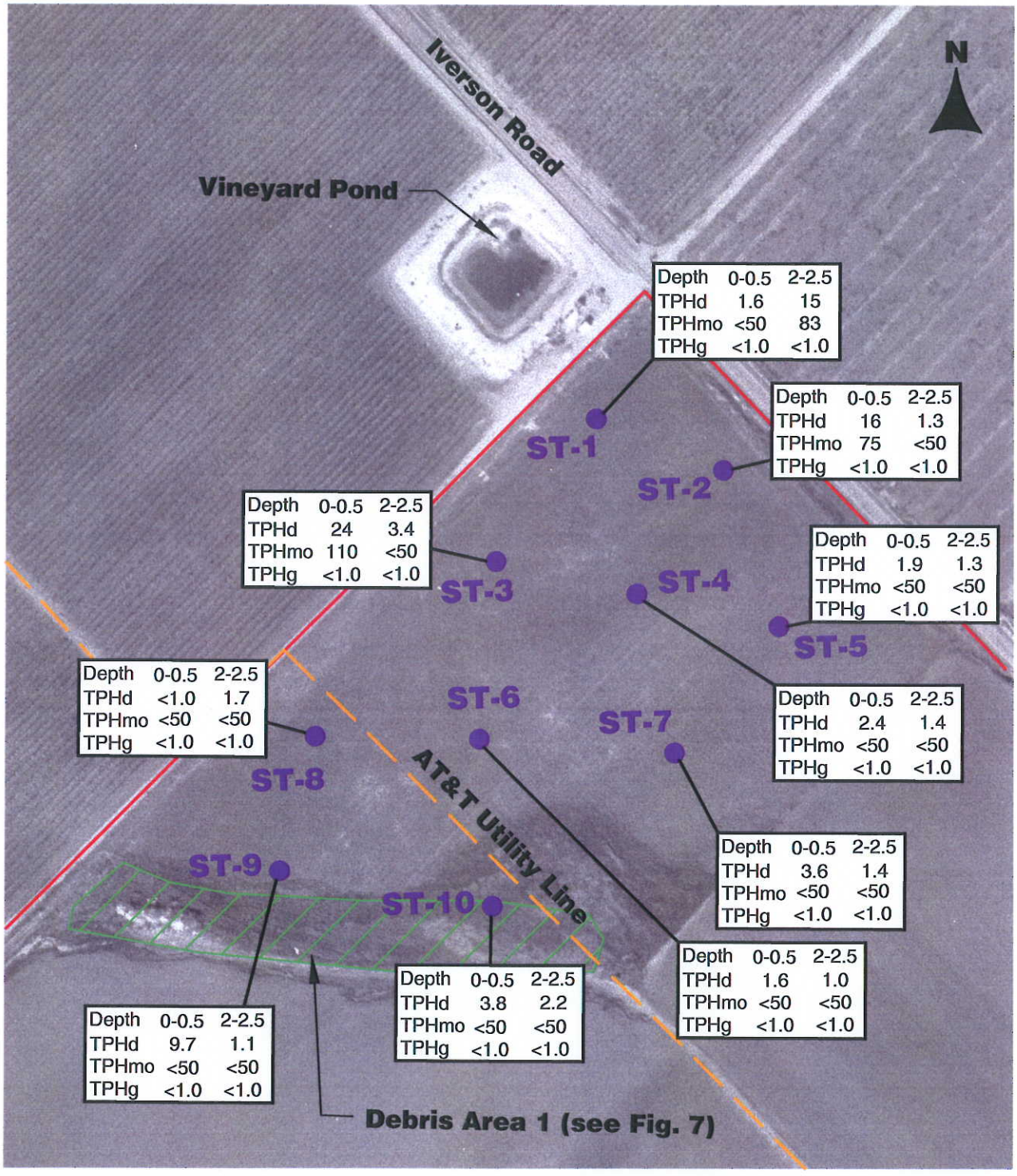
FIGURE 7
1989-1B



Approximate Scale:
0 200
Scale feet

LEGEND

- ● - Approximate soil sample location
- — - Property line

Concentrations in ppm

SAMPLING RESULTS
SOIL TREATMENT AREA
FANOE RANCH
Gonzales, California

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FIGURE 11
1989-1B