# PREPARED FOR

*SNOW CLEANERS, INC.*
*2678 Coolidge Avenue*
*Oakland, California*

*INTERIM REPORT ON UNDERGROUND TANK RELEASE INVESTIGATION*
*SNOW CLEANERS, INC.*
*2678 COOLIDGE AVENUE*
*OAKLAND CALIFORNIA*
*PROJECT 220 MAY 20, 1994*


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CIVIL, SOIL, GEOLOGICAL & MINING
ENGINEERING CONSULTANTS
MATERIALS TESTING SERVICES

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Project 220

**SNOW CLEANERS, INC.**
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# INTERIM REPORT ON UNDERGROUND TANK RELEASE INVESTIGATION

## INTRODUCTION

### Purpose and Scope

The purpose of this report is to describe geological and chemical investigation methods used and monitoring well installation efforts taken to-date on the titled project, and to propose future actions to be used to continue to study an unauthorized hazardous materials release.

### Site Location and Description

The site location is in the City of Oakland at 2768 Coolidge Avenue in a predominately residential neighborhood. This location is at the corner of Coolidge Avenue and Davis Street. Elevation of the site is approximately 60 feet. The site is nearly level and improvements cover approximately 95 to 97 percent of the property surface. This location is in the Oakland foothills and the overall slope is down to the south-southeast. Three buildings are located on the property, connected by covered work areas. The primary building is a two-story, wood-framed building that occupies the west end of the property. This structure is connected by a covered work area to a one-story building consisting of concrete walls, floor and ceiling. This building contains the actual dry cleaning equipment used by Snow Cleaners. This structure is connected, again by a covered work area, to a one-story, wood-framed building on the east side of the site. The work areas located between the buildings are covered by metal roofs. Buildings at the site were constructed at different times dating back to 1907. Mr. Harold

Turner, the present owner, has been operating the site since the 1970's. An underground tank field serving the business was located both on-property and under the sidewalk at the north side of the buildings, along the north side of Davis Street.

**Underground Tank Background**

In the summer of 1990,six underground tanks were removed from the site. Two of these tanks, with capacities of about 1000 gallons each, were in use up to the time of tank field removal. These two tanks were visually examined by C.M. Chambers and Associates at the time of removal and were noted to be intact. Four additional tanks of differing sizes, from about 100 to 400 gallon capacity, were also removed. Holes were observed in two of these tanks. These four tanks had not been used by Mr. Turner during his operation of the site.

Contents and use of the additional four tanks was not determined at time of removal. Date stamps on one of the tanks indicated a manufacturing date of 1927.

**Site History**

Snow Cleaners is a dry cleaning firm situated in a series of relatively old buildings. Dry cleaning businesses have continually operated at this location since about 1907 ±. The operation is a wholesale dry cleaning business processing primarily fur and leather products from northern California and northern Nevada. Minor local walk-in dry cleaning is also processed.

Mr. Harold Turner became owner-operator of the business in the 1970's. At, and apparently before, he became involved with this operation, only two underground tanks were being used for cleaning fluid storage. Stoddard Solvent has reportedly been the only cleaning agent stored on-site, at least during the time period Mr. Turner is familiar with the business since about the mid-1970s.

Stoddard was supplied into the two larger tanks removed in 1990, and Mr. Turner was reportedly not aware of the additional tanks. At least some of the six tanks found in 1990 extended beneath or very near the sidewalks, and openings into the four "extra" tanks were evidently sealed with concrete covers.

**Future Plans and Access Limitations**

Since the building occupies a very large portion of the lot, there is little to essentially almost no access on-property for drilling holes. It is the intent of Mr. Turner to move his business to another county and demolish the existing cleaning building in the moderate future - next two to three years or so. Attempts were made by Mr. Turner and representatives of Joslin Geotechnical to obtain permission from the presumed upgradient property owner to access a VERY NARROW private driveway for a monitor well installation location. This request was reportedly denied. Review of the location with the drilling company also indicated great difficulty would be experienced with trying to place a rig suitable for drilling to 25 or more feet, possibly in heavy clay, in the limited space available.

Overhead power lines and buried utilities limited to the point of preclusion drilling access at the north side of the property adjacent the site. After considerable discussion, two wells were agreed to with Alameda County Environmental personnel as a "starting point" for exploration of this site. Both of these were to be placed in Davis Street, near it's east side. Overhead power lines limit drill access at the west side of Davis Street. Residential developments and access problems at least temporarily inhibit potential well installation locations. Monitor wells were drilled in Davis Street. This was done with eventual approval via issued permits from the City of Oakland, but this was found to be a very slow and difficult process, at least for the wells drilled to-date.

It has been agreed to with Alameda County personnel, at least verbally, and now via this report, that it is the intent of Mr. Turner to provide at least one additional monitor well near the east side, probably near the center (north-south) of the property upon demolition of the structure.

**General Subsurface Conditions and Soils**

The project location, as is the entire Bay Area, is in the Coast Ranges geologic province. This province is noted for various types of structural instabilities such as landslides, faults, and similar features. It also is associated with generally poor or low engineering quality soil and rock material. The California Division of Mines and Geology Geologic Map of the Sand Francisco-San Jose Quadrangle, 1990 edition, shows the area including Snow Cleaners to be sited on a unit referred to as "Older Quaternary Alluvium", meaning the soils at this site are alluvial materials, and are probably between about 50,000 and two million years old. Alluvium is defined in the "Dictionary of Geologic Terms (Doubleday, 1974 edition) as " A general term for all detrital deposits resulting from the operations of modern rivers, thus including the sediments laid down in river beds, flood plains, lakes, fans at the foot of mountain slopes, and estuaries."

Some of the soils at this site differ significantly between the two borings, even though they are only about 60 feet apart. Research of fault maps by California Division of Mines and Geology indicate there is no faulting in the immediate site area. Closest faulting is shown in their 1990 San Francisco Quadrangle geological report as being branches of the active Hayward fault zone, located in approximately the Highway 580 corridor about one mile east of the site. We have therefore concluded that the difference in material types between the two borings probably represents a difference in depositional characteristics, such as where higher energy deposits (such as the gravelly material in boring 2) enter into lower energy

features (old estuaries, etcetera). Clayey materials with some sand, as typically found in boring 1, generally represent moderately low energy depositional areas such as relatively quiet estuary areas subject to some currents, or flatter "runout" areas on fans, somewhat distant from main channels or source areas.

## FIELD WORK AND ANALYSIS

### Field Exploration and Investigation Work to Date

On January 4, 1994, two monitoring wells were installed in Davis Street approximately five feet south of the tank field excavation area. A Mobile B-61, truck mounted drill rig using 7½ inch diameter, hollow stem continuous flight auger was used to drill the wells in Davis Street. Soil samples were obtained by using as 140 pound hammer falling 18 inches, driving a modified California split spoon sampler using brass tube liners. Cuttings were nearly continuously checked for contamination during drilling. Split spoon soil samples from above the ground water were taken at five foot maximum intervals. These were examined in the field for contamination indications, and at least one sample from each sample interval was capped with a plastic cap, the cap sealed, and the sample placed in an iced cooler. Our classification of the boring logs showing specific information, material types, blow counts, etcetera is shown on the attached boring logs, Figures 4 and 5. Soils were visually field classified using the Unified Soil Classification System (approximately equivalent to ASTM D 2487) and the Description of Soil (Visual-Manual Procedure (ASTM D 2488)). The Unified Soil Classification System is attached at the Key to Logs, Figure 3. It should be noted that the stratification lines on the test pits are approximate, representing interpretation between samples and other factors. Variations in soil conditions may occur in locations not explored or as a result of time and indeterminate factors.

Monitor well number 1 was drilled to an approximate depth of 46.1 feet below the surface of Davis Street. This well is located near the northwest end of the old tank field. No contamination was detected in the soil or ground water at this location. Soils found in this boring generally consisted of clayey materials with some sand and gravel. Relative consistency was generally noted as very stiff to hard. These soils appear to be rather "tight". Soil moisture above the water table was generally in the moist range, with minor "wet" zones. Definitions of "moist and wet " are "moist" being judged as in the general range of near "optimum" soil moisture content as would be determined by the ASTM D 1557-91 test method. "Wet" soils are those that would be estimated to be several percent over "optimum" moisture content using this method. Color of the soil was generally more or less light brown. Some blue-gray soil was observed in the interval between about 8½ and 11 feet below the surface of Davis Street. This strata was also in the "wet" range. Gleying is the reduction of iron compound to a reduced state (as opposed to a rust or red color due to oxidation). Gleying is one INDICATOR of long-term moisture presence. Gleying is also associated with hydrocarbon contamination of some soils as microbe activity uses the free oxygen in the soils and creates and "artificial" reduction zone. Field indications and subsequent chemical tests indicate no contamination was present in this strata of well 1. Gleying and the presence of wet soils indicates a possible long-term water-bearing strata, however no free water was observed in this material. Occasional, generally black, mottles were also observed in some samples. Boring 2 first found free water in the hole and samples at a depth of 42.1 feet, and the boring was drilled to a depth of 46.1 feet. Two inch diameter PVC pipe and slotted well screen was installed in well 1 for monitor well construction. Screen was installed from 25 to 45 feet, having a 0.020 inch slot size. Number 3 sand was used to backfill the annular space around the well to a depth of 23 feet below street level. A bentonite plug was placed from 20.7 to 23 feet, and

portland cement grout was placed from 20.7 feet to essentially ground surface. Portland cement concrete and a galvanized lid were place at the top two feet of this boring. As will be discussed, boring 1 was clean chemically and no contamination of water was found.

Boring 2 was drilled near the southwest end of the now-removed tank field. This well was also located approximately five feet west of the previous field. This well was drilled to a depth of about 26½ feet below Davis Street. Soils found in this exploration were somewhat different than those in monitor well 1. Well 2 soils tended to be more sandy, such as clayey sand and sandy clay materials. Gravel was also found in significantly greater quantities, especially in the range from about 16 to 21 feet deep. "Gravelly" soils still tended to be rather clayey to claybound. A chemical odor was noted below about nine feet and subsequent tests show chemical contamination indicating Stoddard solvent or cleaning fluid. Generally the soil was often blue-gray to blue green-gray. This color is similar to the gleyed soil conditions resulting from reduction of iron. This color is one indicator of soil contamination. Very stiff clay materials underlaid the gravel from about 21 feet to the depths explored, about 26½ feet. Water was found in cutting at a depth of about 19½ feet and this was where the water table stabilized at the termination of drilling. Four inch PVC pipe was used for the well at this location. Screen slotted at 0.020 inch was used from 26.0 to 11.0 feet, and solid wall pipe was used for the remainder of the well. Number 3 sand was placed from 26.1 feet to about 9 feet, and a two foot thick bentonite plug was placed from 9 to 7 feet. Portland cement grout was used from 7 to about 1 to 1½ feet, and portland cement concrete was used in the upper portion to anchor a galvanized steel cap.

**Ground Water and Well Development**

Both monitor wells were drilled into ground water, as required. Ground water occurs at this site in at least two apparent forms. As stated earlier, boring 1 found a wet strata but with no free-flowing water at a depth of about 8½ to 11 feet, and minor free water was observed on fracture surfaces at about 16½ feet. No measurable free water was found until a depth of 42 feet was reached. A moderate amount of water was found as boring 1 drilled through the 42 foot depth. Drilling continued to a depth of slightly over 46 feet, and the water table stabilized at a depth of 29 feet below 19th Street, indicating the water bearing strata at 42 feet is under slight pressure. Sampling and testing of this water showed "non-detect" conditions for BTEX and TPH.

Boring 2 showed some free water on particle surfaces at depths of about 16½ feet below street elevation. Cuttings from below 18 to 18½ feet showed that water was likely at that depth. This hole was drilled to a depth of 26.5 feet,, and ground water was recorded at 18.5 feet below the street surface approximately two hours after drilling. This was the same depth as existed at the start of well development.

Joslin Geotechnical did some pre-development cleaning of the wells on January 4, the day the wells were drilled. This was via a bailer, and about 45 gallons of water and sediment were removed from well 1 as rapidly as possible. Very little impact on the stabilized water level was noted. Wells were developed on January 18, 1994. Development was via surging a block through the screened area, bailing the suspended solids and water, and when most of the solids were removed, pumping was done. This was the procedure on Well 2. Well 1 used a similar procedure, but without pumping. Bailing was continued until mostly clear fluid was obtained, with minor suspended solids still present.

Water levels show that there are apparently at least two aquifers at this site. Well 2 appears to have intersected a perched table of some type. Subsequent development and pumping show this well will recharge but at moderately slow rates estimated to be less than five gallons per minute. Joslin Geotechnical personnel consulted with Mr. Barney Chan of Alameda County Environmental Health at the time of drilling regarding this well. After discussion, Joslin Geotechnical decided to NOT drill this hole deeper than 24 feet due to concerns regarding potentially cross-contaminating a deeper aquifer.

Well 1 did not intersect the apparent perched water found at well 2. Minor moisture was found at about similar elevations as the perched moisture. These were grouted solid during well construction. It is possible that well 1 is located relatively close to the edge of the perched source found in well 2. Well 1 did penetrate to what, in our opinion, is probably a semi-regional table. This water table probably varies some with location, but is probably not an isolated "perched" table. Development operations including rapid bailing do not appear to form significant draw-down cones of depression in well 1. It is our estimate that this aquifer is capable of flowing several 10's or more gallons per minute. Water from well 1 was tested non-detect for TPH and BTEX chemicals.

It should be noted that ground water elevations may fluctuate and vary due to a variety of conditions such as changes in seasons, rainfall, changes in infiltration conditions, and other conditions not readily apparent at this time.

**Vandalism**

On January 24, 1994, monitoring well number 2 was found with the steel lid tampered, the plastic plug at the pipe surface pried loose, the lock broken, and the upper portion of the pipe broken.

A chemical odor similar to gasoline was noted in the vicinity of the well. Water samples from this well were taken by Joslin Geotechnical personnel and analyzed by a certified laboratory. Additional water samples were taken from the development water that was removed from monitoring well number 2 on January 19. This development water had been stored in a sealed metal drum on the site behind a secure fence. The sample taken from the development water of January 19 had a much lower "odor level" than that taken from the monitor well after the damage was observed. The only chemicals found in the development water were xylenes at 11 ppb. The sample taken from monitoring well 2 after vandalism indicted the presence of all BTEX chemicals and a level of xylenes at 200 ppb. We have therefore concluded that well 2 was tampered with and probably a gasoline-type substance poured into this well. We tentatively estimate this was probably a rather small quantity, on the order of one to five gallons.

The company that performed well development was immediately contacted and returned to the site. Well 2 was again pumped, bailed, and cleaned. This was performed on a day-long basis, and it is our opinion that essentially all readily recoverable "tamper/contaminate" was removed. It is probable that traces of the tamper-contaminate remain in the well, and will show up in future testing.

Well number 1 was not vandalized. A decision was made to replace both monitor well caps with stronger, more tamper-resistant caps. This work was done on January 31, 1994.

## Laboratory Testing

During field classification, samples of soil that we consider to be representative of those found in the field were collected in brass tubes, placed in an iced container, and delivered to a California

State Certified laboratory in sealed brass tubes. After well development, within the description provided in the previous paragraphs, water samples were taken in amber jars. At the laboratory, selected samples were analyzed to assist for TPH and BTEX chemicals. These tests were done in the Stoddard solvent range (C8-C12) Volatile Hydrocarbons as Stoddard Solvent, with BTEX; EPA methods 5030, modified 8015, and 8020, California RWQCB SF Bay region method GCFID (5030). Test sheets from the laboratory are attached to this report. Table 1 shows these results. Note that the levels provided in the attached table are in parts per MILLION for the soil samples and parts per BILLION for water samples. Also, the water sample taken on January 28, 1994 was of the water removed from monitoring well number 2 during development and prior to vandalism of the well.

Based upon the data obtained, we have concluded that there has been an unauthorized release of product from now-removed underground tanks at this site. Based upon the samples, we have also concluded that this material consisted of Stoddard solvent. Amount of materials released is undetermined at this time.

## TABLE 1

## Results from Monitoring Well Installation

### SOIL SAMPLES

| Date | Sample Number | TPH (~~Diesel~~) Stoddard | Benzene | Toluene | Ethyl Benzene | Xylenes |
|---|---|---|---|---|---|---|
| 1-4-94 5 | B1;113 | ND | ND | ND | ND | ND |
| 6.5 | B1;123 | ND | ND | ND | ND | ND |
| 11 | B1;133 | ND | ND | ND | ND | ND |
| 12.5 | B1;142 | ND | ND | ND | ND | ND |
| 16 | B1;153 | ND | ND | ND | ND | ND |
| 21 | B1;163 | ND | ND | ND | ND | ND |
| 26 | B1:172 | ND | ND | ND | ND | ND |
| 31 | B1;182 | ND | ND | ND | ND | ND |
| 36 | B1;193 | ND | ND | ND | ND | ND |
| 41 | B1;1102 | ND | ND | ND | ND | ND |
| | B1:1113 | ND | ND | ND | ND | ND |
| | B2;212 | ND | ND | ND | ND | ND |
| 10.5 | B2;222 | 446 | ND | .36 | 5.5 | |
| 16.5 | [illegible] | [illegible] | ND | .59 | 1.0 | 28 |
| 20.5 | [illegible] | 2106 | ND | .60 | ND | 25 |
| | B2;253 | ND | ND | ND | ND | ND |

NOTE: LEVELS IN PARTS PER MILLION

Sample number B2;241 was sampled for Volatile Halocarbons and was non-detect.

### WATER SAMPLES

Stoddard

| Date | Sample Number | TPH (~~Diesel~~) | Benzene | Toluene | Ethyl Benzene | Xylenes |
|---|---|---|---|---|---|---|
| 1-24-94 | MW1A | ND | ND | ND | ND | ND |
| | MW2A | 3400 | 15 | 180 | 39 | 200 |
| 1-28-94 | MW2-DWA | 2800 | ND | ND | ND | 43 |

## RECOMMENDED FUTURE WORK

Additional monitoring wells are needed to determine extent of the contamination. One major problem is that the plume of contamination appears to be almost entirely off-site from Snow Cleaners. Limited research has indicated that property owners of nearby properties are not interested (understatement in some cases) in having monitor wells installed on their property. The owner of Patton College (located several blocks north of the site) is willing to cooperate in an investigation on lots he owns south of the site. These sites are not in the best of location if our predictions of plume movement prove to be accurate - i.e.: to the southeast from the site.

At this time the extent of the shallow or perched aquifer that is contaminated is our main priority. Therefore, we are proposing that a vapor probe survey be conducted at the site. By the time the vapor probe survey is completed, additional monitoring well sites may be identified. Two vacant lots are located on 34th Street and we understand the City of Oakland may now be the owner of the lots. We are aware of the limitations of soil probe surveys. These limitations may be increased by lack of access to private property near the site. We do think we may be more successful in obtaining at least some cooperation from nearby property owners using a relatively small vapor probe instead of a drill rig access and monitor wells. Drill targets at the south side of Davis Street are limited by overhead power lines and boom-line clearance limits. Targets for drilling at the north side of Davis Street, further southeast of well 2, may be available, and similarly, targets at the northwest side of 34th street may be available, if the plume extends that far. [redacted] are at least 300 feet distant from the release site.

Richards Corporation of Utah has been contacted and are willing to attempt a vapor probe survey at the site if the survey is approved

by regulating authorities. Richards Corporation has reportedly been successful with in situ bioremediation of sites and is currently undergoing the permitting process in California. Results we have reviewed provided by Richards Corporation on successful bioremediation in other states are encouraging for this site.

We will continue to check for sites for additional monitoring wells. At this time, we are considering sites near and in 34th Street. As stated, this is at least a couple of hundred feet from Snow Cleaners. Our present proposal is to use Richards Corporation to conduct a vapor probe survey, attempt to define some plume limits, eventually drill and CONFIRM the vapor probe survey at available locations (if any), (as phase 3) and base further work upon the vapor probe findings. Other work will include drilling in the area of the buildings after these structures are demolished, probable in the mid-future.

## LIMITATIONS AND UNIFORMITY OF CONDITIONS

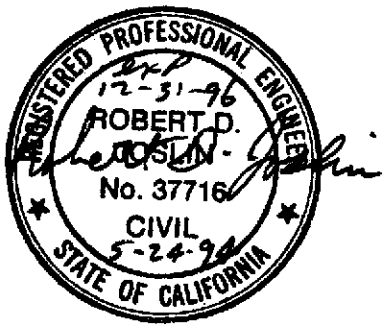
Our work has been performed in accordance with generally accepted standards of environmental engineering practices. We offer no other guarantees or warranties, either expressed or implied.

Conclusions presented by Joslin Geotechnical in this report are qualitative judgements based on a limited amount of quantitative testing at the sample locations selected. Future subsurface investigation or chemical analyses could reveal conditions different than those inferred by the limited sampling and testing performed for this investigation. Subsurface conditions may vary from those found at the locations where borings or explorations done by our firm were carried out; and the data, interpretations and recommendations of Joslin Geotechnical are based solely on the information available. Our firm will be responsible for those data, interpretations and recommendations, but shall not be

responsible for the interpretations by others of the information developed.

We also want to advise that the attached Test Pit (Boring) Logs represent a pictorial presentation of the soil or rock types found. The grain, particle or rock dimensions shown are for artistic illustrative purposes only, and are not intended to be truly representative of particle size as found in the field.

Submitted by:




**JOSLIN GEOTECHNICAL**

Robert D. Joslin

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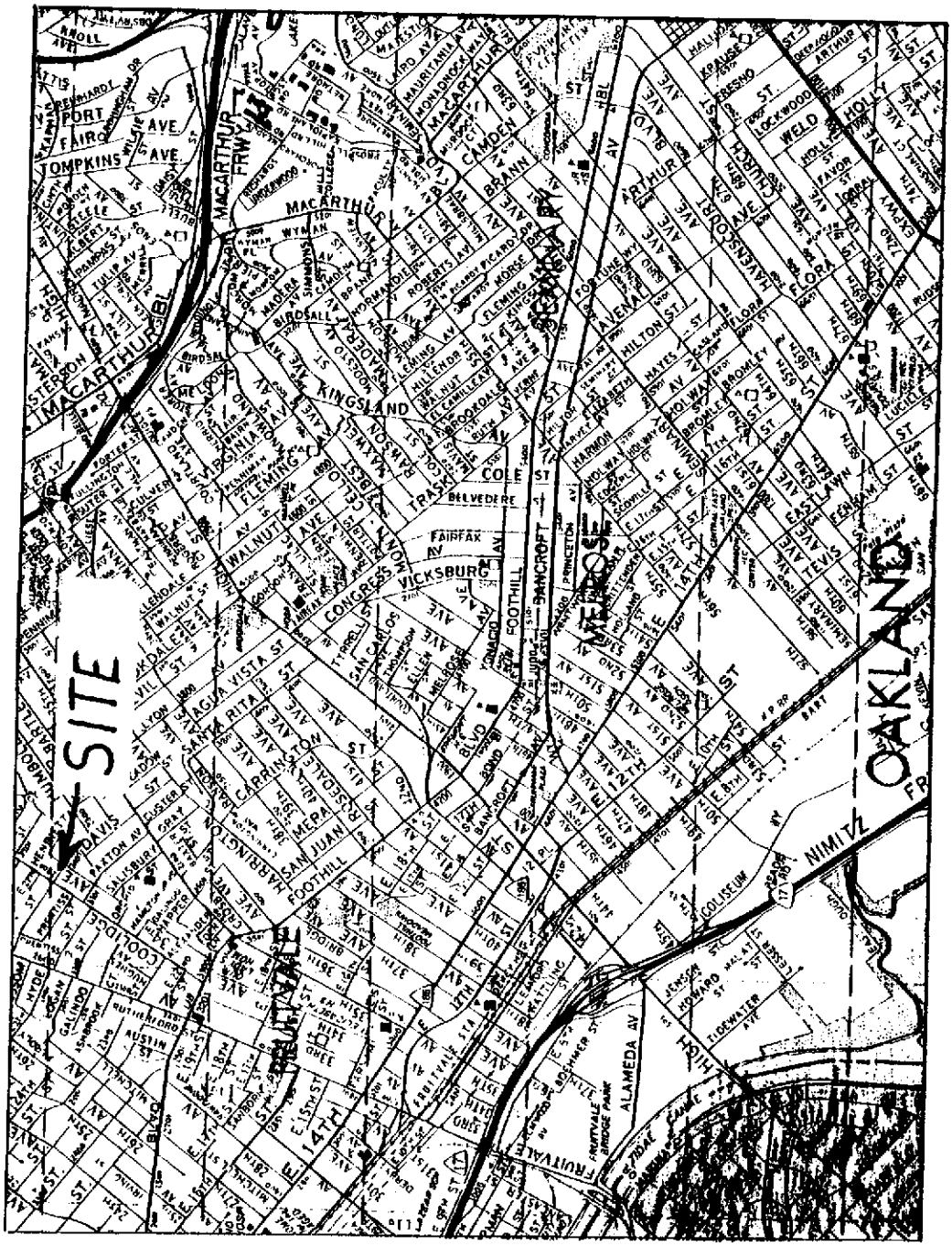
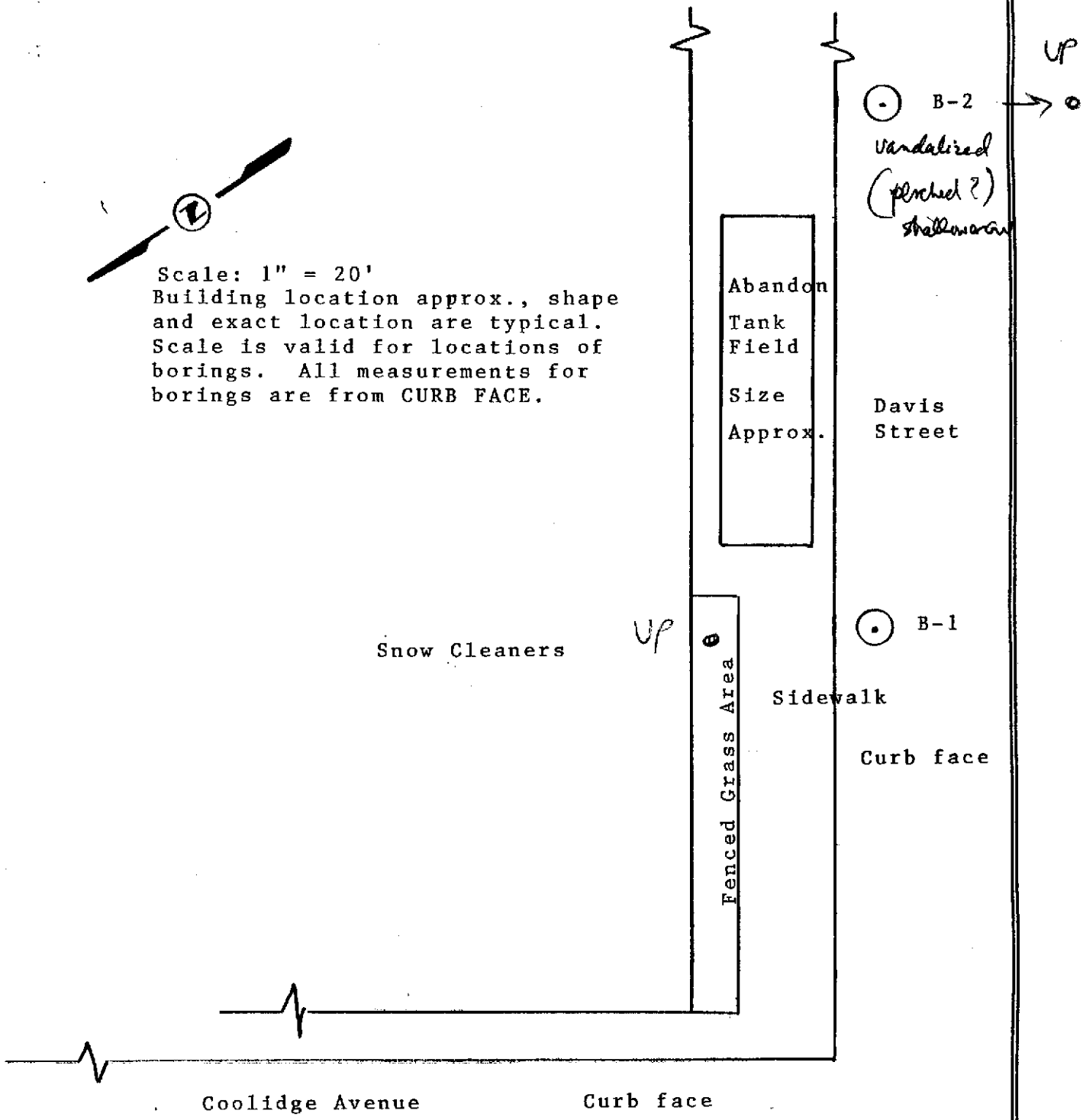



VICINITY MAP

| | | | |
|---|---|---|---|
| JOSLIN GEOTECHNICAL<br><br>(916)389-2581<br>924 Stockton St.<br>P.O. Box 193<br>Dutch Flat, CA. 95714 | VICINITY MAP<br>Snow Cleaners, Oakland, California | | |
| | Project No. | Date | Figure No. |
| | 220 | 5-20-94 | 1 |




SITE PLAN

| Joslin Geotechnical | Project No.220 | Date 5-20-94 | Fig. No. 2 |
|---|---|---|---|

| PRIMARY DIVISIONS | | | Group Symbol | SECONDARY DIVISIONS |
|---|---|---|---|---|
| COARSE GRAINED SOILS more than half of material is larger than No. 200 sieve size | GRAVELS more than half of coarse fraction is larger than No. 4 sieve | Clean Gravels (less than 5% fines) | GW | well graded gravels, gravel-sand mixtures, little or no fines. |
| | | | GP | poorly graded gravels or gravel-sand mixtures, little or no fines. |
| | | Gravel with fines | GM | silty gravels, gravel-sand-silt mixtures, non-plastic fines. |
| | | | GC | clayey gravels, gravel-sand-clay mixtures, plastic fines. |
| | SANDS more than half of coarse fraction is smaller than No. 4 sieve | Clean Sands (less than 5% fines) | SW | well graded sands, gravelly sands, little or no fines. |
| | | | SP | poorly graded sands or gravelly sands, little or no fines. |
| | | Sands with fines | SM | silty sands, sand-silt mixtures, non-plastic fines. |
| | | | SC | clayey sands, sand-clay mixtures, plastic fines. |
| FINE GRAINED SOILS more than half of material is smaller than No. 200 sieve size | SILTS AND CLAYS liquid limit is less than 50% | | ML | inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity. |
| | | | CL | inorganic clays of low to medium plasticity gravelly clays, sandy clays, silty clays, lean clays. |
| | | | OL | organic silts and organic clays of low plasticity. |
| | SILTS AND CLAYS liquid limits is greater than 50% | | MH | inorganic silts, micaceous or disomaceous fine sandy or silty soils, elastic. |
| | | | CH | inorganic clays of high plasticity, fat clays. |
| HIGHLY ORGANIC SOILS | | | PT | peat and other highly organic soils. |

## DEFINITION OF TERMS

U.S. Standard Series Sieve: 200 | 40 | 10 | 4 — Clear Square Sieve Openings: 3/4" | 3" | 12"

| SILTS & CLAYS | SAND | | | GRAVEL | | COBBLE | BOULDER |
|---|---|---|---|---|---|---|---|
| | fine | medium | coarse | fine | coarse | | |

GRAIN SIZES

| SANDS, GRAVELS, AND NON-PLASTIC SILTS | STANDARD PENETRATION Blows/Ft. |
|---|---|
| very loose | 0- 4 |
| loose | 4-10 |
| medium dense | 10-30 |
| dense | 30-50 |
| very dense | over 50 |

RELATIVE DENSITY

| PLASTIC SILTS AND CLAYS | Unconfined Compressive Strength tons/sq. ft. | STANDARD PENETRATION Blows/ft. |
|---|---|---|
| very soft | 0 - 1/4 | 0 - 2 |
| soft | 1/4 - 1/2 | 2 - 4 |
| firm | 1/2 - 1 | 4 - 8 |
| stiff | 1 - 2 | 8-16 |
| very stiff | 2 - 4 | 16-32 |
| hard | over 4 | over 32 |

CONSISTENCY

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KEY TO EXPLORATORY BORING LOGS
Unified Soil Classification System (ASTM D-2487)

Snow Cleaners; Oakland, CA
Interim Contamination Study

| Project No. | Date | FIGURE |
|---|---|---|
| 220 | 5-20-94 | 3 |

# Joslin Geotechnical

**PROJECT NAME:** Snow Cleaners **PROJECT NO.** 220

**Logged by:** RDJ **Date:** 1-4-94 **Equipment:** Mobile B 61/7½" HSA **Log of:** B1

| Depth ft. | Sample No. and Type | Symbols | MATERIAL DESCRIPTION | Unified Soil Classification | Blows/foot 350 ft-lbs. | Qu - t.s.f. Penetrometer | Dry Density p.c.f. | Moisture % dry wt. | Misc. Lab Results |
|---|---|---|---|---|---|---|---|---|---|
| | | | Asphalt Concrete - 5" | | | | | | |
| 1 | | | Fill: Aggregate Base; Brown, sl, silty, SANDY GRAVEL; dense, moist | GW | | | | | |
| 2 | 111 | | Blue-gray CLAY, soft, wet | CL | 8 | | | | |
| 3 | 112 | | | | | | | | |
| 4 | 113 | | | | | | | | |
| 5 | | | Tan CLAY, stiff, moist to wet | CL | | | | | |
| 6 | 121 | | | | 18 | | | | |
| 7 | 122 | | | | | | | | |
| 8 | 123 | | | | | | | | |
| 9 | | | Blue-gray GRAVELLY SANDY CLAY to SANDY CLAYEY GRAVEL, hard, moist to wet | GC | 48 | | | | |
| 10 | 131 | | | | | | | | |
| 11 | 132 | | | | | | | | |
| 12 | 133 | | | | | | | | |
| 13 | 141 | | Lt. brown CLAY, very stiff, moist | CL | | | | | |
| 14 | 142 | | | | | | | | |
| 15 | | | occ. small black to dk. brown mottles | | | | | | |
| 16 | 151 | | "Free" water (very minor) on particle joint surfaces, "dry" "inside" particles. | | 39 | | | | |
| 17 | 152 | | | | | | | | |
| 18 | 153 | | | | | | | | |
| 19 | | | | | | | | | |
| 20 | 161 | | | | 39 | | | | |
| 21 | 162 | | | | | | | | |
| 22 | 163 | | | | | | | | |
| 23 | | | | | | | | | |
| 24 | | | | | | | | | |

Stratification lines represent the approximate boundary between the engineer's descriptions of material types and the actual translation may be gradual and vary with time or location.

FIGURE No. 4

# JOSLIN GEOTECHNICAL

PROJECT NAME: Snow Cleaners , PROJECT NO.: 220

Logged by: RDJ Date: 1-3-94 Equipment: Mobile B61/7½" HSA Log of: B-1, cont.

| Depth, ft. | Sample No. and Type | Symbol | MATERIAL DESCRIPTION | Unified Soil Classification | Blows/foot 350 ft-lbs. | Qu - t.s.f. Penetrometer | Dry Density p.c.f. | Moisture % dry wt. | MISC. LAB RESULTS |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 171 | | Lt. brown CLAY, stiff, moist occ. black mottles | CL | | | | | |
| 26 | 172 | | | | 26 | | | | |
| | 173 | | | | | | | | |
| 27 | | | Lt. olive brown SILTY DLAY, stiff, moist | | | | | | |
| 28 | | | | CL | | | | | |
| 29 | | | GRADES back to : | | | | | | |
| 30 | | | | | | | | | |
| | 181 | | | | | | | | |
| 31 | 182 | | Lt. brown CLAY, stiff, moist | CL | 25 | | | | |
| | 183 | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |
| 34 | | | | | | | | | |
| 35 | 191 | | | | | | | | |
| | 192 | | | | | | | | |
| 36 | 193 | | | | 26 | | | | |
| 37 | | | | | | | | | |
| 38 | | | | | | | | | |
| 39 | | | | | | | | | |
| 40 | | | | | | | | | |
| | 1101 | | | | | | | | |
| 41 | 1102 | | Tan CLAYEY FINE SAND (smears to fine SANDY CLAY with light pressure); hard to very hard, moist | SC/CL | 50/ 6" | 4.5 | | | |
| 42 | | | | | | | | | |
| 43 | | | FREE WATER @ 42.0' Brown, sl. clayey fine GRAVELLY SAND, dense, wet | | | | | | |
| 44 | | | Lt. brown CLAY, very stiff, wet occ. black mottles | | | | | | |
| 45 | 1111 | | | | | | | | |
| 46 | 1112 | | | | 50 | | | | |
| 47 | | | End of Hole @ 46.1' First free water @ 42.0', stabilized water @ 29.0', Monitor well: 45-25' - 0.020 slotted, 2" dia. | | | | | | |

Stratification lines represent the approximate boundary between the engineer's description of material types and the actual transitions may be gradual and vary with time or location.

FIGURE No. 4A

# Joslin Geotechnical

**PROJECT NAME:** Snow Cleaners **PROJECT NO.** 220

**Logged by:** RDJ **Date:** 1-4-94 **Equipment:** Mobile B61/7¼" HSA **Log of:** B2

| Depth ft. | Sample No. and Type | Symbol | MATERIAL DESCRIPTION | Unified Soil Classification | Blows/foot 350 ft-lbs. | Qu - t.s.f. Penetrometer | Dry Density p.c.f. | Moisture % dry wt. | Misc. Lab Results |
|---|---|---|---|---|---|---|---|---|---|
| | | | Asphalt Concrete; 5.5" typ. | | | | | | |
| 1 | | | FILL: AB; Brown sl. silty SANDY GRAVEL, dense, sl. moist | GW | | | | | |
| 2 | | | Very lt. brown CLAY, stiff, moist | CL | | | | | |
| 3 | | | GRADES to: | | | | | | |
| 4 | 211 | | Lt. brown CLAY, very stiff, moist | CL | | | | | |
| | 212 | | | | 24 | | | | |
| 5 | 213 | | Blue gray/green CLAY to sl. sandy CLAY, very stiff, moist | CL | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | **CHEMICAL ODOR IN CUTTINGS** | | | | | | |
| 10 | 221 | | | | | | | | |
| 11 | 222 | | Bluegreen/gray fine SANDY CLAY to CLAYEY fine SAND, dense, moist | SC | 43 | | | | |
| | 223 | | **STODDARD SOLVENT ODOR** | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | 231 | | | | | | | | |
| 16 | 232 | | | | 37 | | | | |
| | 233 | | Blue green/gray GRAVELLY CLAYEY SAND, dense, moist | GC | | | | | |
| 17 | | | | | | | | | |
| 18 | | | Water in cuttings from 18.5± **GROUND WATER @ 18.5', 2 hrs. after drilling** | | | | | | |
| 19 | | | | | | | | | |
| 20 | 241 | | | | | | | | |
| 21 | 242 | | | | 50/ 0.45' | | | | |
| 22 | | | Brown CLAY, hard, wet, occ. black mottles | CL | | | | | |
| 23 | | | | | | | | | |
| 24 | | | | | | | | | |

Stratification lines represent the approximate boundary between the engineer's description of material types and the actual translation may be gradual and vary with time or location.

**FIGURE No.** 5A

# JOSLIN GEOTECHNICAL

PROJECT NAME: Snow Cleaners , PROJECT NO.: 220

Logged by: RDJ Date: 1-4-94 Equipment: Mobile B61/7½" HSA Log of: B-2, cont.

| Depth, ft. | Sample No. and Type | Symbol | MATERIAL DESCRIPTION | Unified Soil Classification | Blows/foot 350 ft-lbs. | Qu - t.s.f. Penetrometer | Dry Density p.c.f. | Moisture % dry wt. | MISC. LAB RESULTS |
|---|---|---|---|---|---|---|---|---|---|
| 24 | | | | | | | | | |
| 25 | 251 | | Brown CLAY, hard, moist | CL | 61 | | | | |
| | 252 | | | | | | | | |
| 26 | 253 | | | | | | | | |
| | | | End of Hole @ 26.5' | | | | | | |
| 27 | | | Ground Water Surface @ 18.5' below Davis Street, 1-4-94 | | | | | | |
| | | | Installed Monitor Well: 4" dia. PVC pipe, 0.020 slotted from 26.0 to 11.0', solid from 11.0 to surface. #3 sand, 26.0 to 9.0', bentonite plug 9.0 to 7.0', grout from 7.0 to surface. | | | | | | |

Stratification lines represent the approximate boundary between the engineer's description of material types and the actual transitions may be gradual and vary with time or location.

FIGURE No. 5B

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

| | | |
|---|---|---|
| Joslin Geotechnical | Client Project ID:# 220; Snow Cleaners | Date Sampled: 01/03-01/04/94 |
| P.O. Box 793 | | Date Received: 01/04/94 |
| Dutch Flat, CA 95714 | Client Contact: Bob Joslin | Date Extracted: 01/04/94 |
| | Client P.O: | Date Analyzed: 01/04-01/05/94 |

**Stoddard Solvent Range (C8-C12) Volatile Hydrocarbons as Stoddard Solvent*, with BTEX***

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

| Lab ID | Client ID | Matrix | TPH(ss)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 33708 | B-1;113 | S | ND | ND | ND | ND | ND | 101 |
| 33709 | B-1;123 | S | ND | ND | ND | ND | ND | 101 |
| 33710 | B-1;133 | S | ND | ND | ND | ND | ND | 103 |
| 33711 | B-1;142 | S | ND | ND | ND | ND | ND | 102 |
| 33712 | B-1;153 | S | ND | ND | ND | ND | ND | 105 |
| 33713 | B-1;163 | S | ND | ND | ND | ND | ND | 101 |
| 33714 | B-1;172 | S | ND | ND | ND | ND | ND | 98 |
| 33715 | B-1;182 | S | ND | ND | ND | ND | ND | 100 |
| 33716 | B-1;193 | S | ND | ND | ND | ND | ND | 102 |
| 33717 | B-1;1102 | S | ND | ND | ND | ND | ND | 103 |
| 33718 | B-4;1113 | S | ND | ND | ND | ND | ND | 105 |
| 33719 | B-2;212 | S | ND | ND | ND | ND | ND | 105 |
| 33720 | **B-2;222** | **S** | **440,e** | ND< 0.05 | ND< 0.05 | 0.36 | 5.5 | 100 |
| 33721 | **B-2;233** | **S** | **2000,e** | ND< 0.05 | 0.59 | 1.0 | 28 | 102 |
| 33722 | **B-2;241** | **S** | **2100,e** | ND< 0.05 | 0.60 | ND< 0.05 | 25 | 102 |
| 33723 | B-2;253 | S | ND | ND | ND | ND | ND | 95 |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

Assume 1 5 10 15 20 25

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

# cluttered chromatogram; sample peak co-elutes with surrogate peak

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

DHS Certification No. 1644 Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Joslin Geotechnical<br>P.O. Box 793<br>Dutch Flat, CA 95714 | Client Project ID:# 220; Snow Cleaners | Date Sampled: 01/03-01/04/94 |
| | | Date Received: 01/04/94 |
| | Client Contact: Bob Joslin | Date Extracted: 01/09/94 |
| | Client P.O: | Date Analyzed: 01/09/94 |

**Volatile Halocarbons**

EPA method 601 or 8010

| Lab ID | 33722 | | | |
|---|---|---|---|---|
| Client ID | B-2;241 | | | |
| Matrix | S | | | |
| Compound[1] | Concentration* | Concentration* | Concentration* | Concentration* |
| Bromodichloromethane | ND | | | |
| Bromoform[2] | ND | | | |
| Bromomethane | ND | | | |
| Carbon Tetrachloride[3] | ND | | | |
| Chlorobenzene | ND | | | |
| Chloroethane | ND | | | |
| 2-Chloroethyl Vinyl Ether[4] | ND | | | |
| Chloroform[5] | ND | | | |
| Chloromethane | ND | | | |
| Dibromochloromethane | ND | | | |
| 1,2-Dichlorobenzene | ND | | | |
| 1,3-Dichlorobenzene | ND | | | |
| 1,4-Dichlorobenzene | ND | | | |
| 1,1-Dichloroethane | ND | | | |
| 1,2-Dichloroethane | ND | | | |
| 1,1-Dichloroethene | ND | | | |
| cis 1,2-Dichloroethene | ND | | | |
| trans 1,2-Dichloroethene | ND | | | |
| 1,2-Dichloropropane | ND | | | |
| cis 1,3-Dichloropropene | ND | | | |
| trans 1,3-Dichloropropene | ND | | | |
| Methylene Chloride[6] | ND | | | |
| 1,1,2,2-Tetrachloroethane | ND | | | |
| Tetrachloroethene[7] | ND | | | |
| 1,1,1-Trichloroethane | ND | | | |
| 1,1,2-Trichloroethane | ND | | | |
| Trichloroethene | ND | | | |
| Trichlorofluoromethane | ND | | | |
| Vinyl Chloride[8] | ND | | | |
| % Recovery Surrogate | 89 | | | |
| Comments | | | | |

Detection limit unless otherwise stated: water, ND< 0.5ug/L; soil, ND< 100ug/kg.

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

(1) IUPAC allows "ylene" or "ene"; ex. ethylene or ethene; (2) tribromomethane; (3) tetrachloromethane; (4) (2-chloroethoxy) ethene; (5) trichlormethane; (6) dichloromethane; (7) perchlorethylene, PCE or perclor; (8) chloroethene; (9) unidentified peak(s) present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

# QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/04-01/05/94 Matrix: Soil

| Analyte | Concentration (mg/kg) | | | Amount Spiked | % Recovery | | RPD |
|---|---|---|---|---|---|---|---|
| | Sample | MS | MSD | | MS | MSD | |
| TPH (gas) | 0.000 | 2.230 | 2.046 | 2.03 | 110 | 101 | 8.6 |
| Benzene | 0.000 | 0.194 | 0.190 | 0.2 | 97 | 95 | 2.1 |
| Toluene | 0.000 | 0.196 | 0.192 | 0.2 | 98 | 96 | 2.1 |
| Ethylbenzene | 0.000 | 0.196 | 0.192 | 0.2 | 98 | 96 | 2.1 |
| Xylenes | 0.000 | 0.596 | 0.584 | 0.6 | 99 | 97 | 2.0 |
| TPH (diesel) | 0 | 294 | 301 | 300 | 98 | 100 | 2.4 |
| TRPH (oil & grease) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

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

# QC REPORT FOR EPA 8010/8020/EDB

Date: 01/09/94 Matrix: Soil

| Analyte | Concentration (ug/kg) | | | | % Recovery | | |
|---|---|---|---|---|---|---|---|
| | Sample | MS | MSD | Amount Spiked | MS | MSD | RPD |
| 1,1-DCE | 0 | 78 | 90 | 100 | 78 | 90 | 14.3 |
| Trichloroethene | 0 | 86 | 96 | 100 | 86 | 96 | 11.0 |
| EDB | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobenzene | 0 | 94 | 100 | 100 | 94 | 100 | 6.2 |
| Benzene | 0 | 90 | 108 | 100 | 90 | 108 | 18.2 |
| Toluene | 0 | 92 | 104 | 100 | 92 | 104 | 12.2 |
| Chlorobz (PID) | 0 | 90 | 98 | 100 | 90 | 98 | 8.5 |

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

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

1954 ASOS76

# McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7
PACHECO, CA 94553
(510) 798-1620 FAX (510) 798-1622

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

REPORT TO: Bob Joslin BILL TO: C. M. Chambers

COMPANY: Joslin Geotechnical
P. O. Box 193
Dutch Flat, CA 95714

TELE: (916) 389-2581 FAX #: (916) 389-8933

PROJECT NUMBER: 220 PROJECT NAME: Snow Cleaners

PROJECT LOCATION: Coolidge + Davis St; Oakland SAMPLER SIGNATURE: Robert D. Joslin

| SAMPLE ID | LOCATION | SAMPLING DATE | SAMPLING TIME | # CONTAINERS | TYPE CONTAINERS | MATRIX: WATER | SOIL | AIR | SLUDGE | OTHER | METHOD PRESERVED: HCL | HNO3 | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-1; 113 | | 1-3-94 | | | Brass Tube | | ✓ | | | | | | |
| B-1; 123 | | " | | | " | | ✓ | | | | | | |
| B-1; 133 | | " | | | " | | ✓ | | | | | | |
| B-1; 142 | | " | | | " | | ✓ | | | | | | |
| B-1; 153 | | " | | | " | | ✓ | | | | | | |
| B-1; 163 | | " | | | " | | ✓ | | | | | | |
| B-1; 172 | | " | | | " | | ✓ | | | | | | |
| B-1; 182 | | " | | | " | | ✓ | | | | | | |
| B-1; 193 | | " | | | " | | ✓ | | | | | | |
| B-1; 1102 | | " | | | " | | ✓ | | | | | | |
| B-1; 1113 | | " | | | " | | ✓ | | | | | | |
| B-2; 212 | | 1-4-94 | | | | | ✓ | | | | | | |
| B-2 222 | | " | | | | | ✓ | | | | | | |
| B-2 | | " | | | | | ✓ | | | | | | |

ANALYSIS REQUEST

| 33706 | 33709 | 33710 | 33711 | 33717 | 33718 | 33719 | 33720 | 33716 |
|---|---|---|---|---|---|---|---|---|
| BTEX & TPH as Gasoline (602/8020 & 8015) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| TPH as Diesel (8015) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Total Petroleum Oil & Grease (5520 E&F/B&F) | | | | | | | | |
| Total Petroleum Hydrocarbons (418.1) | | | | | | | | |
| EPA 601/8010 | | | | | | | | |
| EPA 602/8020 | | | | | | | | |
| EPA 608/8080 | | | | | | | | |
| EPA 608/8080 - PCBs Only | | | | | | | | |
| EPA 624/8240/8260 | | | | | | | | |
| EPA 625/8270 | | | | | | | | |
| CAM - 17 Metals | | | | | | | | |
| EPA - Priority Pollutant Metals | | | | | | | | |
| LEAD (7240/7421/239.2/6010) | | | | | | | | |
| ORGANIC LEAD | | | | | | | | |
| RCI | | | | | | | | |

OTHER

COMMENTS

| RELINQUISHED BY | DATE | TIME | RECEIVED BY |
|---|---|---|---|
| Robert D. Joslin | 1-4-94 | 1625 | Ed Kolb |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY LABORATORY |

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

REMARKS: Test highest TPH / Stoddard

VOAS | O&G | METALS | OTHER

F454 A505 76

# McCAMPBELL ANALYTICAL

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PACHECO, CA 94553
(510) 798-1620 FAX (510) 798-1622

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☑ 5 DAY

REPORT TO: Bob JOSLIN BILL TO: C.M. Chambers

COMPANY: JOSLIN Geotechnical

P.O. BOX 193
DUTCH FLAT, CA 95714

TELE: (916) 389-2581 FAX #: (916) 389-8833

PROJECT NUMBER: 220 PROJECT NAME: SNOW Cleaners

PROJECT LOCATION: Coolidge & Davis St. Oakland SAMPLER SIGNATURE: Robert D. Joslin

| SAMPLE ID | LOCATION | SAMPLING DATE | SAMPLING TIME | # CONTAINERS | TYPE CONTAINERS | MATRIX: WATER | MATRIX: SOIL | MATRIX: AIR | MATRIX: SLUDGE | MATRIX: OTHER | METHOD PRESERVED: HCL | METHOD PRESERVED: $HNO_3$ | METHOD PRESERVED: OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-2; 233 | | 1-4-94 | | | Brass Tube | | ✓ | | | | | | |
| B-2; 241 | | " | | | " | | ✓ | | | | | | |
| B-2; 253 | | " | | | " | | ✓ | | | | | | |

ANALYSIS REQUEST

| BTEX & TPH as Gasoline (602/8020 & 8015) | TPH as Diesel (8015) | Total Petroleum Oil & Grease (5520 E&F/5520 B&F) | Total Petroleum Hydrocarbons (418.1) | EPA 501/8010 | EPA 502/8020 | EPA 608/8080 | EPA 608/8080 - PCBs Only | EPA 624/8240/8260 | EPA 625/8270 | CAM - 17 Metals | EPA - Priority Pollutant Metals | LEAD (7240/7421/239.2/6010) | ORGANIC LEAD | RCI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | | | | | | | | | | | | | | |
| ✓ | | | | | | | | | | | | | | |
| ✓ | | | | | | | | | | | | | | |

OTHER: 33721 33722 33723

COMMENTS

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

PRESERVATIVE: VOAS O&G METALS OTHER
APPROPRIATE ✓
CONTAINERS ✓

| RELINQUISHED BY | DATE | TIME | RECEIVED BY |
|---|---|---|---|
| Robert D Joslin | 1-4-94 | 1625 | |
| RELINQUISHED BY | DATE | TIME | RECEIVED BY |
| RELINQUISHED BY | DATE | TIME | RECEIVED BY LABORATORY |

REMARKS:

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

| | | |
|---|---|---|
| Joslin Geotechnical | Client Project ID: Snow Cleaning, Oakland | Date Sampled: 01/24/94 |
| P.O. Box 793 | | Date Received: 01/24/94 |
| Dutch Flat, CA 95714 | Client Contact: Bob Joslin/Mike Chambers | Date Extracted: 01/26/94 |
| | Client P.O: | Date Analyzed: 01/26/94 |

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

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

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 33980 | MW-1A | W | ND | ND | ND | ND | ND | 104 |
| 33983 | MW-2A | W | 3400,b,a | 15 | 180 | 39 | 200 | 91 |
| | | | could be Stoddard | | | | | Contaminated sple ? |
| | | | | | | | | |
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| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

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

# cluttered chromatogram; sample peak co-elutes with surrogate peak

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

DHS Certification No. 1644

Edward Hamilton, Lab Director

Dup.

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

| | | |
|---|---|---|
| Joslin Geotechnical<br>P.O. Box 793<br>Dutch Flat, CA 95714 | Client Project ID: Snow Cleaning, Oakland | Date Sampled: 01/24/94 |
| | | Date Received: 01/24/94 |
| | Client Contact: Bob Joslin/Mike Chambers | Date Extracted: 01/26/94 |
| | Client P.O: | Date Analyzed: 01/26/94 |

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

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

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 33980 | MW-1A | W | ND | ND | ND | ND | ND | 104 |
| 33983 | MW-2A | W | 3400,e,a | 15 | 180 | 39 | 200 | 91 |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

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

# cluttered chromatogram; sample peak co-elutes with surrogate peak

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

DHS Certification No. 1644

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

# QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/26/94 Matrix: Water

| Analyte | Concentration (ug/L) | | | Amount | % Recovery | | |
|---|---|---|---|---|---|---|---|
| | Sample | MS | MSD | Spiked | MS | MSD | RPD |
| TPH (gas) | 0.0 | 103.7 | 108.3 | 100 | 103.7 | 108.3 | 4.3 |
| Benzene | 0 | 9.8 | 10 | 10 | 98.0 | 100.0 | 2.0 |
| Toluene | 0 | 9.8 | 10.2 | 10 | 98.0 | 102.0 | 4.0 |
| Ethyl Benzene | 0 | 9.8 | 10.2 | 10 | 98.0 | 102.0 | 4.0 |
| Xylenes | 0 | 30 | 31 | 30 | 100.0 | 103.3 | 3.3 |
| TPH (diesel) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| TRPH (oil & grease) | 0 | 24800 | 25800 | 23700 | 105 | 109 | 4.0 |

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

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

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# McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7
PACHECO, CA 94553
(510) 798-1620 FAX (510) 798-1622

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☑ 5 DAY

REPORT TO: BOB JOSLIN BILL TO: JOSLIN

COMPANY: JOSLIN GEOTECHNICAL

TELE: 916 · 372-2551 · FAX #:

PROJECT NUMBER: PROJECT NAME: SNOW CLEANING

PROJECT LOCATION: OAKLAND SAMPLER SIGNATURE: C Chamberlain

| SAMPLE ID | LOCATION | SAMPLING DATE | SAMPLING TIME | # CONTAINERS | TYPE CONTAINERS | MATRIX: WATER | SOIL | AIR | SLUDGE | OTHER | METHOD PRESERVED: HCL | $HNO_3$ | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | OAKLAND | 1-24-94 | 1750 | 1 | AG | X | | | | | | | |
| MW-1A | " | " | | | VO | X | | | | | | | |
| MW-1B | " | " | | | VO | X | | | | | | | |
| MW-2 | " | " | 1800 | | AG | X | | | | | | | |
| MW-2A | " | " | | | VO | X | | | | | | | |
| MW-2B | " | " | | | VO | X | | | | | | | |

ANALYSIS REQUEST

| 33979 |
|---|
| 33980 |
| 33981 |
| 33982 |
| 33983 |
| 33984 |

OTHER

COMMENTS: STODDARD SOLV; Tempered Lock 2

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: |
|---|---|---|---|
| C Chamberlain | 1-24-94 | 1830 | |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY LABORATORY: |

REMARKS:

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

VOAS ✓ O&G METALS OTHER

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# QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/31/94 Matrix: Water

| Analyte | Concentration (ug/L) | | | Amount Spiked | % Recovery | | RPD |
|---|---|---|---|---|---|---|---|
| | Sample | MS | MSD | | MS | MSD | |
| TPH (gas) | 0.0 | 111.0 | 104.2 | 100 | 111.0 | 104.2 | 6.3 |
| Benzene | 0 | 11 | 10.4 | 10 | 110.0 | 104.0 | 5.6 |
| Toluene | 0 | 11.3 | 10.8 | 10 | 113.0 | 108.0 | 4.5 |
| Ethyl Benzene | 0 | 11.1 | 10.6 | 10 | 111.0 | 106.0 | 4.6 |
| Xylenes | 0 | 33.4 | 31.9 | 30 | 111.3 | 106.3 | 4.6 |
| TPH (diesel) | 0 | 149 | 146 | 150 | 100 | 97 | 2.3 |
| TRPH (oil & grease) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

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# McCAMPBELL ANALYTICAL

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# CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☐ 5 DAY

REPORT TO: Bob Joslin BILL TO: Joslin

COMPANY: Joslin Geotechnical

TELE: 916 389-2581 FAX #:

PROJECT NUMBER: PROJECT NAME: Snow

PROJECT LOCATION: Oakland SAMPLER SIGNATURE: C Clark

| SAMPLE ID | LOCATION | SAMPLING DATE | SAMPLING TIME | # CONTAINERS | TYPE CONTAINERS | MATRIX: WATER | SOIL | AIR | SLUDGE | OTHER | METHOD PRESERVED: HCL | $HNO_3$ | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW2-DW | Oakland | 1-28-97 | 1510 | 1 | AG | X | | | | | | | |
| MW2-DW A | " | " | ~~1510~~ | 4+1 | 40 | X | | | | | | | |
| MW2-DW B | " | " | 1510 | 40 | 40 | X | | | | | | | |

ANALYSIS REQUEST

| BTEX & TPH as Gasoline (602/8020 & 8015) | TPH as Diesel (8015) | Total Petroleum Oil & Grease (5520 E&F/5520 B&F) | Total Petroleum Hydrocarbons (418.1) | EPA 601/8010 | EPA 602/8020 | EPA 608/8080 | EPA 608/8080 - PCBs Only | EPA 624/8240/8260 | EPA 625/8270 | CAM - 17 Metals | EPA - Priority Pollutant Metals | LEAD (7240/7421/239.2/6010) | ORGANIC LEAD | RCI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X | X | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | |

OTHER

34042
34043
34044

COMMENTS

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE APPROPRIATE ✓
CONTAINERS ✓
VOA's 0's

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: |
|---|---|---|---|
| C Clark | 1-28 | 1540 | Heidi Ricca |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY LABORATORY: |

REMARKS:

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| | | |
|---|---|---|
| Joslin Geotechnical<br>P.O. Box 793<br>Dutch Flat, CA 95714 | Client Project ID: Snow Cleaners | Date Sampled: 01/28/94 |
| | | Date Received: 01/28/94 |
| | Client Contact: Bob Joslin | Date Extracted: 01/31/94 |
| | Client P.O: | Date Analyzed: 01/31/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 34042 | MW2-DW | W | 12,000,e | 100 |
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| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

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

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($c_L$) or heavy($c_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(Stoddards solvent + unidentified pattern heavier than diesel ?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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| | | |
|---|---|---|
| Joslin Geotechnical<br>P.O. Box 793<br>Dutch Flat, CA 95714 | Client Project ID: Snow Cleaners | Date Sampled: 01/28/94 |
| | | Date Received: 01/28/94 |
| | Client Contact: Bob Joslin | Date Extracted: 01/31-02/02/94 |
| | Client P.O: | Date Analyzed: 01/31-02/02/94 |

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

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

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 34043 | MW2-DWA | W | 2800,e | ND< 5 | ND< 5 | ND< 5 | 43 | 88 |
| | | | | | | | | |
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| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

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11 Spike after purged clean

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

# cluttered chromatogram; sample peak co-elutes with surrogate peak

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

DHS Certification No. 1644

Edward Hamilton, Lab Director