Environmental Assessment of Soil and Soil Gas

Beverly Hills High School
241 South Moreno Drive,
Beverly Hills, California 90212

August 22, 2003

Prepared by:

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The information contained in this Preliminary Summary of Findings has received appropriate technical review and approval. The approach and methodology are based upon professional judgments founded upon review and interpretation of available data and upon our professional experience and background.

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Summary of Findings of Soil and Soil Gas Investigation

Conclusion

Results of a soil and soil gas investigation performed by Camp Dresser & McKee Inc. (CDM) in June and July 2003 establish that soil and soil gas at Beverly Hills High School pose no unusual risk to students or staff. No basis exists for believing that students or staff at the Beverly Hills High School (the High School) would show any adverse health effects from exposure to chemicals in soil or soil gas. While methane, a non-toxic chemical, was detected in some soil gas samples collected in the upper field area, it was not detected near any buildings and does not pose a hazard in its present location. Some additional monitoring of methane is recommended.

Discussion

CDM performed an environmental assessment for the High School. The objective of this assessment was to determine which any chemicals were present in soil and soil gas at the High School and, if present, whether they might pose a threat to the health of students or staff at the High School. The environmental assessment was conducted in accordance with California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC) guidance (DTSC 1999) and CalEPA Office of Environmental Health Hazard Assessment (OEHHA) (OEHHA 2002).

Soil and soil gas sampling was conducted during the months of June and July 2003. Sampling was performed to evaluate whether oil well operations, abandoned oil wells, or other potential sources have resulted in soil or soil gas conditions at the High School that could pose a threat to the health of students or staff. This report summarizes the findings of the environmental assessment of soil and soil gas sampling performed at the High School.

Soil samples were collected at 20 locations on the High School, as well as one location that represented background conditions. Soil gas samples were collected at 35 locations and from two depths (i.e., 5 feet below ground surface and 13 or 15 feet below ground surface) at each location. Sampling locations are presented in Figures 1, 2, and 3. Tables 1, 2 and 3 present results of the sampling performed at the High School.

Soil samples were analyzed for 1) total petroleum hydrocarbons (TPH) as a measure of petroleum related chemicals or hydrocarbons naturally occurring in the subsurface, 2) over 60 semi-volatile organic chemicals (SVOCs), and 3) 17 metals. The sample collected from a background location was analyzed for metals to provide an indication of naturally occurring levels in the vicinity of the High School.

TPH was detected in all 22 samples (20 locations and 2 duplicates) collected; however, all concentrations were below regulatory agency threshold levels and do not require

any cleanup or other remedial action. Based on the low concentrations, no further action is recommended.

One SVOC, bis(2-ethylhexyl)phthalate, was detected in soil at the High School. This compound was detected in only three out of 22 samples and at very low concentrations. Bis(2-ethylhexyl)phthalate is a common laboratory contaminant because it is present in plastics used in labware. The detection in a few samples may reflect laboratory conditions rather than site conditions. Nevertheless, to be conservative, this chemical was evaluated to determine whether it presents any potential health threat to students or staff.

Metals are naturally occurring compounds present in all soils and, therefore, are expected to be present in soil at the High School. In accordance with DTSC guidance, metals were evaluated to see whether they were present at concentrations greater than naturally occurring (i.e., "background") levels. Maximum detected concentrations were compared to levels detected in the background sample. In addition, maximum concentrations were compared to the range of naturally occurring concentrations within the State of California. The range and variability of concentrations found at the site were considered in determining which metals would require further evaluation. Results of this evaluation are shown in Table 2. Based on this analysis, fourteen metals were determined to be of no health concern and were not further evaluated. Further evaluation was performed on three metals: mercury, selenium and arsenic.

Mercury and selenium were present at low concentrations that could be considered naturally occurring. However, to be conservative, mercury and selenium were evaluated to determine whether they present any potential health threat to students or staff.

During the initial sampling, arsenic was found at one location in the upper field at a concentration above the background level. Further sampling was then performed at and near the initial sampling location. That further sampling found no elevated concentrations of arsenic, suggesting that the isolated detection above background was an anomaly and not representative of the site conditions. For this reason, arsenic was eliminated from further consideration.

Soil gas samples were analyzed for over 50 volatile organic chemicals (VOCs). As shown in Table 3, a number of VOCs were detected at low levels in the soil gas. All VOCs detected in soil gas were evaluated to determine whether they pose a health risk to the students or staff.

Methane and other light hydrocarbons (including ethane, propane, butane, and isobutene) were detected in several soil gas samples collected in the upper field. Though methane does not present a health threat, it can create an explosion hazard if allowed to accumulate in enclosed areas (i.e., buildings). In this case, methane detected in the upper field area does not pose a hazard in its present location because it was not detected near any buildings.

Following the collection of data for this environmental assessment, another contractor for the District performed a geotechnical study in the open parking lot north of Building A. This work was performed to obtain data for the design of a proposed new science and technology building and it included the drilling of five borings spaced throughout the parking area. While drilling in the southeast corner of the lot, an oily material was encountered between a depth of approximately 10 feet and 15 feet below grade surface. Consistent with CDM's recommendation, methane monitoring was performed and no other unusual conditions were found in the parking lot during the geotechnical study. The geotechnical drilling was halted and CDM was asked to perform additional sampling in this area.

Subsurface samples were collected by CDM to a depth of 25 or 30 feet at four locations near where the oily material was encountered. The chemicals detected in this material were evaluated to determine whether they pose a health risk to students or staff. Results of this evaluation are discussed below.

Potential Health Risks

Health effects are evaluated in terms of theoretical cancer risk and non-cancer impacts. Theoretical cancer risk is typically described in terms of the number of additional cases of cancer projected to occur in a population due to exposure to a cancer-causing substance over a lifetime. For example, a cancer risk of one in one million means that not more than one person out of one million would be expected to develop cancer as a result of exposure to the cancer-causing substance. Estimations of cancer risks are generated using conservative assumptions that are intended to purposefully overestimate risk, so as to not underestimate potential public health impacts. A person's actual risk of cancer from exposure to a chemical is often less than the theoretical risk calculated in the risk assessment (OEHHA, 2001) and could even be zero. Theoretical cancer risk is calculated by combining estimates of chemical exposure with chemical toxicity criteria developed by the State of California or U.S. Environmental Protection Agency (U.S. EPA).

The potential for non-cancer health effects is calculated by dividing the amount of exposure a person might receive by a "safe" exposure or "reference level". Reference levels are developed by the State of California or U.S. EPA. When this ratio is less than one, no adverse affects are anticipated. When exposure to more than one chemical may occur, an adverse effect is not expected if the sum of ratios for individual chemicals, the Hazard Index, is less than one (1.0).

Potential health risks and hazards were evaluated for students, staff, and hypothetical residents. The following exposure pathways were considered:

- Incidental ingestion of soil;
- Direct contact with soil (i.e., dermal contact);
- Inhalation of particulates in outdoor air that have been released from soil through wind erosion (non-volatile chemicals only);

- Inhalation of vapors in indoor air (VOCs only).

U.S. EPA mathematical models were used to provide a conservative estimate of the amount of soil gas that could migrate to indoor air. The amount of chemical potentially taken into the body was estimated using chemical concentrations in soil or modeled concentrations in indoor air. Conservative exposure assumptions describing the frequency, duration, and intake rate of exposure provided by CalEPA DTSC and OEHHA guidance (DTSC 1999 and OEHHA 2002) were used in this evaluation.

Potential Cancer Risk

As required by DTSC guidance, potential cancer risks were estimated using maximum chemical concentrations detected at the High School. Risks were estimated based on the worst-case residential scenario of people living at the High School twenty-four hours per day for 30 years. As shown in Table 4, total estimated cancer risk for this worst-case residential scenario is 0.1 additional cases in a population of one million people. This risk is far below the risk considered acceptable by the U.S. EPA and the State. The use of more representative assumptions (e.g., actual exposure durations and average exposure concentrations) would result in lower estimates of risk. Based on this low level of risk, the State of California would not require any type of cleanup or action at the High School.

In addition, potential cancer risks were estimated for the area of oily material encountered during a geotechnical study in the open parking lot north of Building A. The material is located approximately 10 feet below the surface and the area is covered by asphalt; therefore, there is no current exposure to the material. Potential cancer risks were estimated assuming that VOCs in the material could migrate through the soil into indoor air. Risks based on the worst-case residential scenario were 0.006 additional cancer cases in a population of one million people. This is much less than the risk considered acceptable by the U.S. EPA and the State.

While the oily material found in Parking Lot A poses no current health risk, it is anticipated it will be removed during construction of the new science and technology building. CDM recommends that additional sampling be performed to determine the volume of material to be removed.

Given that the risk was calculated using conservative assumptions and maximum detected chemical concentrations for modeling estimates, cancer risks for students and staff are likely to be much lower than the risk estimated above.

Potential Non-Cancer Hazards

Non-cancer health effects were also estimated using maximum detected chemical concentrations and the worst-case residential scenario. As shown in Table 5, the Hazard Index for non-cancer effects is 0.038. This is significantly less than 1.0, indicating that no adverse health effects are expected. The Hazard Index for non-cancer effects for the oily material in the parking lot north of Building A is 0.0009, which is also significantly less than 1.0.

As noted previously, non-cancer health effects were calculated based on conservative assumptions and maximum chemical concentrations and are likely to overestimate the potential for non-cancer health effects. Given the conservative nature of the calculation, it is extremely unlikely that students or staff experience non-cancer health effects based on potential exposures at the High School.

Potential Non-Health Risks

Methane

Methane and other light hydrocarbons are naturally occurring and are formed by the breakdown of hydrocarbons located beneath the earth's surface (thermogenic sources) or the biologic decomposition of organic material (biogenic sources). Methane is a colorless, odorless gas that is lighter than air. It is flammable or explosive at concentrations between 5 and 15% by volume in air [50,000 parts per million by volume (ppmv) and 150,000 ppmv, respectively]. A concentration of 5% by volume represents the lower explosive limit (LEL) for methane.

With the exception of methane, concentrations of light hydrocarbons in soil gas samples were low, with concentrations less than 27 ppmv. Methane concentrations were typically less than 1,000 ppmv (0.1% by volume) with the exception of five locations in the vicinity of the upper field basketball courts. Methane was not detected near any buildings.

Data collected in the upper field indicates that the methane detected is associated with historic oil exploration and production (i.e., a thermogenic source). According to field instrument readings, methane concentrations in this area ranged from "not detected" (<1,000 ppmv or 0.1% by volume) to 227,000 ppmv (22.7% by volume). For samples submitted to a fixed laboratory, methane concentrations in the area ranged from 4.5 ppmv (0.00045% by volume) to 100,000 ppmv (10% by volume). Methane concentrations were typically much higher in the deeper samples (those collected at 13 or 15 feet) as compared to the shallow samples (those collected at 5 feet) indicating that methane is not migrating to the surface.

Based on data collected at the site, installation of a methane mitigation system is not necessary at this time. Additional monitoring is recommended, however, to ensure methane concentrations are not increasing in the area near the basketball courts.

Methane was also detected in one sample collected in Parking Lot A at a concentration of 1,000 ppmv (0.1% by volume). Because this concentration is not above any established action levels for methane, no further investigation was recommended. CDM recommends, however, that additional methane monitoring be performed prior to any future construction in this area.

Next Steps

Results of the environmental assessment indicate that chemicals in soil and soil gas do not pose a cancer or non-cancer health threat to students or staff. Based on this risk evaluation, no remedial actions are necessary.

Based on the concentrations of methane detected, the following actions are recommended.

- Perform periodic monitoring of the upper field area and the nearest buildings to determine if methane concentrations are increasing over time.
- Install a methane sensor in the bathroom building to the east of the upper field basketball courts.
- If, in the future, the School District chooses to construct any new building in the upper field area, an additional methane assessment should be undertaken and mitigation measures taken if necessary. Monitoring protocols should also be established for any excavations performed in the upper field area.

References

DTSC. 1999. *Preliminary Endangerment Assessment Guidance Manual.*

OEHHA. California Environmental Protection Agency Office of Environmental Health Hazard Assessment. 2001. A Guide to Health Risk Assessment.

OEHHA. 2002. Guidance for Assessing Exposures and Health Risks at Existing and Proposed School Sites.

Table 1
Soil Summary Statistics
Beverly Hills High School
Beverly Hills, California

Soil SVOC, Metal, and TPH Concentrations (mg/kg)						
Analyte	**Detection Frequency**	**Minimum Reporting Limit**	**Maximum Reporting Limit**	**Minimum Detected**	**Maximum Detected**	**Mean[a]**
SVOCs						
Bis(2-Ethylhexyl)Phthalate (ug/kg)	3/22	330	330	250	420	188.41
METALS						
Mercury	20/22	0.1	0.1	0.024	0.67	0.15
Antimony	17/22	6	6	0.62	1.2	1.3
Arsenic	22/22	NA	NA	2.4	40.6	7.9
Barium	22/22	NA	NA	84.3	205	121
Beryllium	22/22	NA	NA	0.3	0.75	0.50
Cadmium	19/22	0.5	0.5	0.069	1.3	0.62
Chromium	22/22	NA	NA	7.1	33.6	23
Cobalt	22/22	NA	NA	3	10.6	5.8
Copper	22/22	NA	NA	7.5	42.3	24
Lead	22/22	NA	NA	4.2	63.4	23
Molybdenum	21/22	4	4	0.67	2	1.3
Nickel	22/22	NA	NA	4.2	27.8	16
Selenium	22/22	NA	NA	0.65	1.9	1.2
Silver	8/22	NA	NA	0.24	0.96	0.52
Vanadium	22/22	NA	NA	20.6	64.4	40
Zinc	22/22	NA	NA	27.5	146	92
TPH						
Total TPH (C6 to C40+)	22/22	10	10	5.2	340	116
C6 to C8	ND	1	1	ND	ND	ND
C8 to C9	ND	10	10	ND	ND	ND
C10 to C11	ND	10	10	ND	ND	ND
C12 to C13	ND	10	10	ND	ND	ND
C14 to C15	ND	10	10	ND	ND	ND
C16 to C17	ND	10	10	ND	ND	ND
C18 to C19	7/22	10	10	4.1	9.6	5.7
C20 to C23	11/22	10	10	4.2	38	14
C24 to C27	16/22	10	10	4.5	61	21
C28 to C31	22/22	10	10	4.8	80	31
C32 to C35	21/22	10	10	4.1	92	35
C36 to C39	13/22	10	10	5.8	48	18
C40+	4/22	10	10	4.1	9.2	5.5

Notes:

a - Values of one-half the reporting limit are used in the calculation of arithmetic average for all non-detected values. Arithmetic averages are higher than the maximum detected concentration in some instances due to the detection of low, estimated values below the reporting limit.

ug/Kg = micrograms per kilogram

mg/Kg = milligrams per kilogram

Table 2
Metal Background Evaluation
Beverly Hills High School
Beverly Hills, California

Metals	Background Concentration (mg/kg)	Criteria for Elimination of Metals as COPC						COPC
		Site Maximum Detected (mg/kg)	Criteria 1	Review of Range of Detections, Coefficient of Variation, and Data Plots	Criteria 2	Background Ranges Across California[a] (mg/kg)	Criteria 3	
Arsenic	6.1	40.6	Retained	COV < 1, less than 2 OOM, stepouts based on plot	Step outs performed. Not retained, refer to text.	0.6 to 11	Refer to Criteria 2 and text discussion	No
Antimony	0.68	1.2	Retained	COV < 1, less than 1 OOM	Not retained	0.15 to 1.95	Not retained	No
Barium	121	205	Retained	COV < 1, less than 1 OOM	Not retained	133 to 1,400	Not retained	No
Beryllium	0.58	0.75	Retained	COV < 1, less than 1 OOM	Not retained	0.25 to 2.7	Not retained	No
Cadmium	1	1.3	Retained	COV < 1, less than 2 OOM	Not retained	0.05 to 1.7	Not retained	No
Chromium	29.2	33.6	Retained	COV < 1, less than 1 OOM	Not retained	23 to 1,579	Not retained	No
Cobalt	7.8	10.6	Retained	COV < 1, less than 1 OOM	Not retained	2.7 to 46.9	Not retained	No
Copper	19.8	42.3	Retained	COV < 1, less than 1 OOM	Not retained	9.1 to 96.4	Not retained	No
Lead	50.8	63.4	Retained	COV < 1, less than 2 OOM	Not retained	12.4 to 97.1	Not retained	No
Mercury	0.032	0.67	Retained	COV > 1, less than 2 OOM	Retained based on COV	0.05 to 0.9	Retained based on Criteria 2	**Yes**
Molybdenum	2	2	Not retained	COV < 1, less than 1 OOM	Not retained	0.1 to 9.6	Not retained	No
Nickel	23.3	27.8	Retained	COV < 1, less than 1 OOM	Not retained	9 to 509	Not retained	No
Selenium	1.8	1.9	Retained	COV < 1, less than 1 OOM	Not retained	0.015 to 0.43	Retained	**Yes**
Silver	ND	0.96	Retained	COV < 1, less than 1 OOM	Not retained	0.1 to 8.3	Not retained	No
Thallium	ND	ND	Not retained	Not retained	Not retained	0.17 to 1.1	Not retained	No
Vanadium	48.6	64.4	Retained	COV < 1, less than 1 OOM	Not retained	39 to 288	Not retained	No
Zinc	84	146	Retained	COV < 1, less than 1 OOM	Not retained	88 to 236	Not retained	No

Notes:

a Reference: University of California. 1996. Background Concentrations of Trace and Major Elements in California Soils.

Criteria 1 A metal is eliminated as a COPC if the site maximum detected concentration is less than the concentration detected in the background sample.

Criteria 2 A metal is eliminated as a COPC if the coefficient of variation, range of detections, and visual review of the data indicate that the entire data set appears to belong to one population (i.e., background population).

Criteria 3 Provides an additional check of the data set. A metal is retained as a COPC if the site maximum detection is greater than California background ranges. This comparison does not overturn results of the Criteria 2 evaluation.

COPC Chemical of potential concern

mg/kg Milligram per kilogram

ND Not detected above the analyzed detection limits

COV Coefficient of variation

OOM Order of magnitude

Table 3
Soil Gas Summary Statistics
Beverly Hills High School
Beverly Hills, California

Analyte	Detection Frequency	Soil Gas VOC Concentrations (ppb v/v) Minimum Reporting Limit	Maximum Reporting Limit	Minimum Detected	Maximum Detected	Mean[a]
1,1,1-Trichloroethane	3/86	41	240	0.12	0.71	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	3/86	0.4	240	0.071	0.11	20
1,1-Dichloroethane	1/86	0.2	240	0.18	0.18	20
1,1-Dichloroethene	1/86	0.2	97	2	2	7
1,2,4-Trimethylbenzene	11/13	98	240	0.34	81	27
1,3,5-Trimethylbenzene	10/13	43	240	0.11	45	22
1,3-Butadiene	6/13	0.4	490	0.54	6.1	42
1,4-Dichlorobenzene	2/13	0.2	240	0.097	0.88	20
2-Butanone	8/86	210	1200	1.3	9.3	103
2-Hexanone	4/86	0.4	1200	0.26	2	101
2-Propanone (Acetone)	12/16	210	490	7.5	1140	250
4-Methyl-2-Pentanone (MIBK)	4/13	0.4	1200	0.93	3.1	101
Benzene	12/86	240	240	0.66	840	133
Bromodichloromethane	3/13	0.2	240	0.34	17	21
Carbon Disulfide	9/13	210	490	0.26	270	77
Carbon Tetrachloride	8/86	0.2	240	0.058	190	42
Chloroform	6/86	0.2	240	0.086	58	30
Chloromethane	5/86	0.4	190	0.1	0.54	14
Dichlorodifluoromethane	7/86	0.2	240	0.33	0.57	20
Ethylbenzene	12/86	115	240	0.25	461	65
Hexane (n-Hexane)	21/22	240	240	0.56	7600	885
m,p-Xylene	14/86	230	240	1	2300	143
Methyl Tert-Butyl Ether	6/86	1	240	0.17	130	31
Methylene Chloride	5/86	0.2	240	0.11	0.76	20
o-Xylene	14/86	115	240	0.41	783	67
Propylene	8/86	100	610	0.76	29	56
Styrene	7/13	0.2	240	0.11	1	20
Tetrachloroethene	8/86	41	240	0.39	25	23
Toluene	21/86	133	240	1.6	1500	110
Trichloroethene	3/86	0.2	240	0.2	0.64	20
Trichlorofluoromethane	7/86	0.4	240	0.22	0.77	20

Analyte	Detection Frequency	Soil Gas VOC Concentrations (ppm v/v) Minimum Reporting Limit	Maximum Reporting Limit	Minimum Detected	Maximum Detected	Mean[a]
Methane	61/79	2	4.5	0.64	100000	7729
Ethane	33/79	0.5	1.9	0.17	27	2.0
Ethene	19/79	0.5	1.9	0.28	3.8	0.58
Propane	64/79	0.04	0.087	0.02	15	1.1
Butane	43/79	0.04	0.09	0.022	12	0.83
Isobutane	28/79	0.04	0.09	0.02	15	0.78
Pentane	46/79	0.04	0.09	0.022	13	0.43

Notes:
a - Values of one-half the reporting limit are used in the calculation of arithmetic average for all non-detected values. Arithmetic averages are higher than the maximum detected concentration in some instances due to the detection of low, estimated values below the reporting limit.
ppb v/v = parts per billion by volume
ppm v/v = parts per million by volume

Table 4
Total Estimated Cancer Risk for all Exposure Pathways
Worst-Case Residential Scenario
Beverly Hills High School
Beverly Hills, California

Exposure Pathways	**Cancer Risk (unitless)**
Soils: Ingestion, Inhalation of Particulates, and Dermal Contact	4.3E-09
Soil Gas: Inhalation of VOCs	1.0E-07
Total Carcinogenic Risk =	**1.0E-07**

Exposure Point Concentration is maximum detected concentration.
VOCs = volatile organic compound

Table 5
Total Non-Cancer Hazard for all Exposure Pathways
Worst-Case Residential Scenario
Beverly Hills High School
Beverly Hills, California

Exposure Pathways	**Non-Cancer Hazard (unitless)**
Soils: Ingestion, Inhalation of Particulates, and Dermal Contact	3.7E-02
Soil Gas: Inhalation of VOCs	6.0E-04
Total Hazard Index =	**0.038**

Exposure Point Concentration is maximum detected concentration.
VOCs = volatile organic compound

APPROXIMATE LOCATION OF CHEVRON "TWENTIETH CENTURY FOX" DRILL SITE I ABANDONED WELLS (25 TOTAL)

"WOLFSKILL" WELL #36

"WOLFSKILL" WELL #23

"WOLFSKILL" WELL #1

SEE FIGURE 3

APPROX. LOCATION OF FORMER DIESEL UST

HEATH AVENUE

SEE FIGURE 2

"RODEO" WELL #105

OLYMPIC BLVD

VENOCO FACILTY (EXIST DERRICK AND FACILITIES)

HISTORICAL AREA OF OIL EXPLORATION/ PRODUCTION (APPROX)

"RODEO" WELL #107

"RODEO" WELL #106

SURVEY WELL #2

WELL #2

SURVEY WELL #1

WELL #1

S. MORENO DRIVE

"RODEO" WELL #112

"RODEO" WELL #114

"RODEO" WELL #116

"RODEO" WELL #115

SPALDING DRIVE

YOUNG DRIVE

S. LASKY DRIVE

LEGEND

- COMPLETED ABANDONED OIL WELL BASED ON SURVEYOR MAP
- COMPLETED ABANDONED OIL WELL (APPROXIMATE LOCATIONS ARE BASED ON MUNGER AND DOGGR MAPS)
- BURIED IDLE OIL WELL (APPROXIMATE LOCATIONS ARE BASED ON MUNGER AND DOGGR MAPS)
- SURFICIAL SOIL SAMPLES
- STEP OUT SOIL SAMPLES
- SOIL GAS SAMPLES
- CONTINUOUS CORED BORING (15 FEET BGS)
- BACKGROUND SAMPLE LOCATION
- SOIL BORING LOCATIONS
- APPROXIMATE SITE BOUNDARY

N

1" = 160'

80 0 160

BEVERLY HILLS HIGH SCHOOL
241 S. MORENO DRIVE

SOILGAS AND SOIL MATRIX SAMPLE LOCATIONS

Figure 1

CDM

DATE: Aug 22, 2003 3:35pm XREFS: BEVHLS-MF-GENSITEwUtils 2115
DWG: P:\22293_Bev Hills\38613\0_Cad\Env Assess Summary\BEVHLS-SF-Fig1-SafeUse.dwg USER: negretegd

VENOCO FACILTY
(EXIST DERRICK
AND FACILITIES)

(E) FIELD

PRODUCTION (APPROX)
HISTORICAL AREA OF OIL
EXPLORATION/

(E) BLEACHERS

BUILDING "J"

(E) TRACK

SURVEY WELL #2

SURVEY WELL #1

WELL #2

WELL #1

"RODEO" WELL #106

N

1" = 30'

15 0 30

LEGEND

- COMPLETED ABANDONED OIL WELL BASED ON SURVEYOR MAP
- COMPLETED ABANDONED OIL WELL (APPROXIMATE LOCATIONS ARE BASED ON MUNGER AND DOGGR MAPS)
- BURIED IDLE OIL WELL (APPROXIMATE LOCATIONS ARE BASED ON MUNGER AND DOGGR MAPS)
- SURFICIAL SOIL SAMPLES
- STEP OUT SOIL SAMPLES
- SOIL GAS SAMPLES
- CONTINUOUS CORED BORING (15 FEET BGS)
- BACKGROUND SAMPLE LOCATION
- SOIL BORING LOCATIONS
- APPROXIMATE SITE BOUNDARY

DATE: Aug 22, 2003 3:37pm
DWG: P:\2293_Bev Hills\38131\0_Cad\Env Assess Summary\BEVHLS-SF-Fig2-SafeUse.dwg
XREFS: BEVHLS-MF-GENSITEwUtils 2115
USER: negretegd

CDM

BEVERLY HILLS HIGH SCHOOL
241 S. MORENO DRIVE

SOILGAS AND SOIL MATRIX SAMPLE LOCATIONS

Figure 2

TRAILOR

PARKING

BATHROOMS

BUILDING A

SB–26

SB–27

URS–B4

SB–24

SB–25

N

1" = 10'

5 0 10

LEGEND

- COMPLETED ABANDONED OIL WELL BASED ON SURVEYOR MAP
- COMPLETED ABANDONED OIL WELL (APPROXIMATE LOCATIONS ARE BASED ON MUNGER AND DOGGR MAPS)
- BURIED IDLE OIL WELL (APPROXIMATE LOCATIONS ARE BASED ON MUNGER AND DOGGR MAPS)
- SURFICIAL SOIL SAMPLES
- STEP OUT SOIL SAMPLES
- SOIL GAS SAMPLES
- CONTINUOUS CORED BORING (15 FEET BGS)
- BACKGROUND SAMPLE LOCATION
- SOIL BORING LOCATIONS
- APPROXIMATE SITE BOUNDARY

BEVERLY HILLS HIGH SCHOOL
241 S. MORENO DRIVE

SOILGAS AND SOIL MATRIX SAMPLE LOCATIONS

Figure 3

CDM

DATE: Aug. 22, 2003 3:40pm XREFS: BEVHLS-MF-GENSITEwUtils 2115
DWG: P:\22293_Bev Hills\38613\0_Cad\Env Assess Summary\BEVHLS-SF-Fig3-SafeUse.dwg USER: negretegd