Summary of Findings
Ambient Air Investigation

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

August 22, 2003

Prepared by:

CDM
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The information contained in this 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

Conclusion

Ambient air data from sampling conducted in July are consistent with previous CDM and SCAQMD studies, which have shown that airborne chemicals at the High School are well below the health limits established by the State of California. As with earlier studies, the data provide no basis for believing that ambient air at the High School is adversely impacted by oil well operations or that air at the High School is substantively different than air elsewhere in the Los Angeles area.

Discussion

CDM collected ambient air samples on July 10, 2003 at Beverly Hills High School (the High School) located at 241 South Moreno Drive, Beverly Hills, California. The purpose of this sampling was to gather additional data to determine if seasonal changes in temperature or weather conditions might cause impacts to ambient air different from those observed in previous investigations. At the time of the July 10 sampling, Venoco wells were operating and producing gas. This report summarizes the findings of ambient air sampling conducted in July 2003 and evaluates and compares the results to previous investigations of ambient air at the High School.

The sampling program followed standard US EPA methods of collection and analysis for volatile organic chemicals in ambient air. Samples were collected over an 8-hour period during representative school and after-school activity hours (generally from about 7 a.m. in the morning until about 5 p.m. in the afternoon). Samples were collected at the same 11 locations used in CDM's previous ambient air investigation, as shown in Figure 1. Table 1 summarizes results of ambient air sampling and analysis from July 2003 and compares these data to previous sampling results and health limits established by the State of California.

Ambient air samples were collected from a height equivalent to the breathing zone (about 5 feet above the ground). In addition, samples were collected from the ground surface at three locations. No noticeable difference in chemicals or their concentrations between ambient air samples collected at the breathing height or at the ground surface was observed.

Results of the ambient air sampling performed in July 2003 are comparable to ambient air data collected in previous investigations by SCAQMD and CDM. While several additional chemicals were detected, these chemicals and the air concentrations at which they were detected are not out of the ordinary for the Los Angeles area. As shown in Table 1, chemicals detected in air at the High School are well below the health limits established by the State of California.

Monitoring of air quality in the Los Angeles basin routinely reports a variety of chemicals, including those detected in the current sampling at the High School.

Vehicle emissions and emissions from refueling are responsible for a large percentage of the chemicals detected in Los Angeles Basin air (SCAQMD 1999).

Benzene, a known human carcinogen, has been a focus of previous investigations due to concerns that it may be released from oil well operations. This chemical was found in the ambient air at levels that are consistent with those commonly reported by SCAQMD for all routine monitoring stations throughout the basin. Therefore, the investigations conducted by SCAQMD and CDM continue to indicate that no unusual source of benzene exists at or near the High School.

Based on available data, we conclude that ambient air on the campus is not adversely affected by oil well operations and that air at the campus is not notably different from air throughout the Los Angeles basin.

Next Steps

- Additional ambient air sampling will be scheduled to evaluate potential changes in airborne concentrations due to seasonal changes in temperature and other weather conditions.

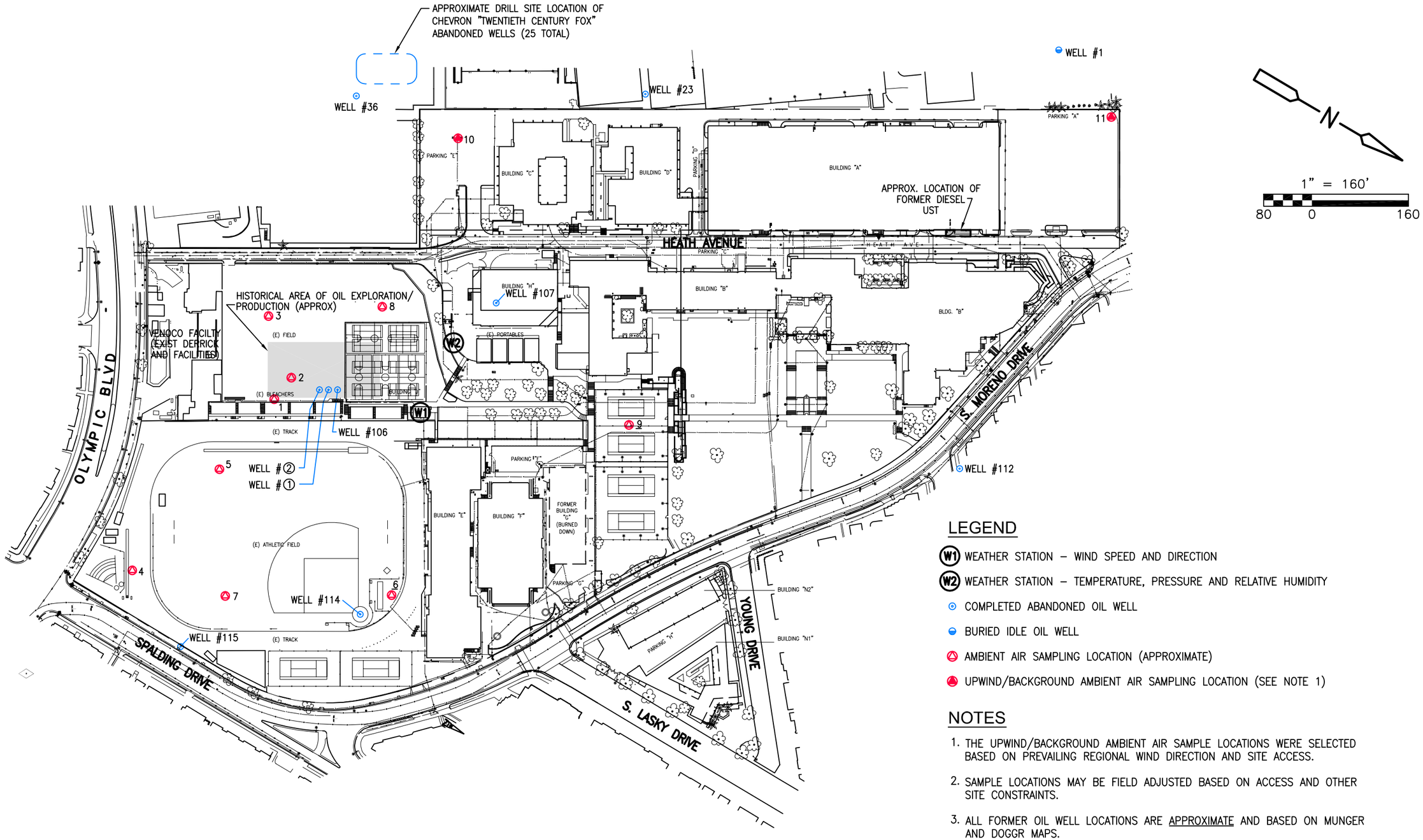
References:

South Coast Air Quality Management District (SCAQMD). 1999. Multiple Air Toxics Exposure Study (MATES-II).

Table 1
Summary Statistics for July 2003
Ambient Air Sampling
Beverly Hills High School
Beverly Hills, California

Volatile Organic Compounds	CDM July 2003 Sampling Event				Maximum Detected in Previous SCAQMD and CDM Investigations	OEHHA Acute REL	OEHHA Chronic REL	Units
	Number of Detections	Number of Samples Collected	Minimum Concentration Detected	Maximum Concentration Detected				
Acetone	16	17	4.8	6.4	200	NA	NA	ppbv
Benzene	16	17	0.47	0.71	1.4	400	18	ppbv
n-Butane	ND	17	ND	ND	56.6	NA	NA	ppbv
iso-Butane	ND	17	ND	ND	19	NA	NA	ppbv
2-Butanone (MEK)	16	17	0.49	0.82	46	4337	NA	ppbv
Carbon disulfide	7	17	0.14	1.1	ND	1958	252	ppbv
Carbon tetrachloride	16	17	0.053	0.058	ND	297	6	ppbv
Chloromethane	16	17	0.55	0.65	1.2	NA	NA	ppbv
n-Decane	NA	NA	NA	NA	0.2	NA	NA	ppbv
1,4-Dichlorobenzene	2	17	0.095	0.79	ND	NA	130	ppbv
Dichlorodifluoromethane	16	17	0.51	0.58	1	NA	NA	ppbv
n-Dodecane	NA	NA	NA	NA	0.1	NA	NA	ppbv
Ethane	ND	17	ND	ND	61.7	NA	NA	ppbv
Ethene	ND	17	ND	ND	12.8	NA	NA	ppbv
Ethylbenzene	16	17	0.12	0.95	0.6	NA	453	ppbv
n-Heptane	NA	NA	NA	NA	1.6	NA	NA	ppbv
n-Hexane	16	17	0.2	0.5	3.8	NA	1954	ppbv
2-Hexanone (MiBK)	0	17	ND	ND	7.5	NA	NA	ppbv
Methane	8	8	2	2.5	3.9	NA	NA	ppbv
Methylene chloride	16	17	0.43	0.5	ND	396	113	ppbv
Methyl tert-Butyl Ether	1	17	0.21	0.21	0.5	NA	2183	ppbv
n-Octane	NA	NA	NA	NA	1.4	NA	NA	ppbv
n-Nonane	NA	NA	NA	NA	0.5	NA	NA	ppbv
n-Pentane	ND	17	ND	ND	16.3	NA	NA	ppbv
iso-Pentane	NA	NA	NA	NA	16.9	NA	NA	ppbv
Propane	ND	17	ND	ND	105.2	NA	NA	ppbv
Propene	NA	NA	NA	NA	1.9	NA	1714	ppbv
Propylene	16	17	1.1	2	ND	NA	1714	ppbv
Tetrachloroethene (PCE)	16	17	0.1	0.17	1	2900	5	ppbv
Toluene	16	17	1.4	2.3	2.5	9660	78	ppbv
Trichlorofluoromethane	10	17	0.2	0.21	ND	NA	NA	ppbv
1,2,4-Trimethylbenzene	7	17	0.089	1	ND	NA	NA	ppbv
1,3,5-Trimethylbenzene	1	17	0.32	0.32	ND	NA	NA	ppbv
n-Undecane	NA	NA	NA	NA	0.1	NA	NA	ppbv
m,p-Xylenes	16	17	0.37	3	2	4964	158	ppbv
o-Xylene	16	17	0.12	1.2	1	4964	158	ppbv

OEHHA: Office of Environmental Health Hazard Assessment
REL: Reference Exposure Level
NA: not analyzed
ND: not detected
ppbv = parts per billion by volume



LEGEND

- (W1) WEATHER STATION – WIND SPEED AND DIRECTION
- (W2) WEATHER STATION – TEMPERATURE, PRESSURE AND RELATIVE HUMIDITY
- COMPLETED ABANDONED OIL WELL
- BURIED IDLE OIL WELL
- AMBIENT AIR SAMPLING LOCATION (APPROXIMATE)
- UPWIND/BACKGROUND AMBIENT AIR SAMPLING LOCATION (SEE NOTE 1)

NOTES

1. THE UPWIND/BACKGROUND AMBIENT AIR SAMPLE LOCATIONS WERE SELECTED BASED ON PREVAILING REGIONAL WIND DIRECTION AND SITE ACCESS.
2. SAMPLE LOCATIONS MAY BE FIELD ADJUSTED BASED ON ACCESS AND OTHER SITE CONSTRAINTS.
3. ALL FORMER OIL WELL LOCATIONS ARE APPROXIMATE AND BASED ON MUNGER AND DOGGR MAPS.

BEVERLY HILLS HIGH SCHOOL
241 S. MORENO DRIVE

Ambient Air Sample Locations

Figure 1

CDM

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DWG: P:\22293_Bev Hills\38613\0_Cad\Sheet\BEVHLS-SF-Fig1-AmbAirSampLocs.dwg USER: negretegd