BSK & Associates
1181 Quarry Lane
Building 300
Pleasanton, CA 94566
(510) 462-4000
(510) 462-6283 FAX

May 17, 1995

**BSK JOB NO. P92057.3**

R. T. Nahas Company/Eden Managements
20630 Patio Drive
Castro Valley, CA 94546

Attention: Mr. Randy T. Nahas

Subject: Nineteenth Quarterly Groundwater Monitoring Report
Unocal 76 Service Station
20405 and 20629 Redwood Road
Castro Valley, California

Gentlemen:

As requested and authorized, we have performed groundwater monitoring well quarterly sampling at the above-referenced facility. This quarterly report presents the project background, groundwater data obtained during this sampling event, conclusions based on this quarter's data, and recommendations for further action. The site location is shown on Figure 1, Vicinity Map.

## BACKGROUND

BSK & Associates installed three groundwater monitoring wells (MW-2, MW-3 and MW-4) in December 1989 at the Unocal 76 Service Station located at 20405 Redwood Road, Castro Valley, California. The service station location is shown on Figure 1, Vicinity Map. The monitoring facilities were installed in order to comply with the California UST Monitoring requirements of Alternative 6, Subchapter 16, Title 23, California Code of Regulations. The results of well installations, soil sampling and chemical testing of the soil and water samples were summarized in our Report P89134, dated February 5, 1990. The groundwater monitoring well locations are shown on Figure 2, Site Plan.

BSK performed an assessment of the lateral extent of shallow soil contamination in April 1991 (see our Report P90165, dated April 1991). During the investigation, shallow soil contamination was observed to occur from the pump islands to the south property boundary, and within the east and west property boundaries.

The seventh quarterly monitoring report included the results of additional lateral contamination characterization in the off-site area to the south (BSK Report P92057.3, dated May 29, 1992). This report indicated the extension of a groundwater contaminant plume south of the site, between Wells MW-6 and MW-5, but north of MW-7. Wells MW-5, MW-6 and MW-7 were installed during this

In our Special Sampling Report of December 23, 1992, BSK determined that concentrations of Total Petroleum Hydrocarbons as Gasoline (TPHg) at MW-7 were related to Perchloroethene contamination, possibly emanating from a nearby dry cleaner.

In a letter dated April 13, 1995, Alameda County Health Care Services requested that a corrective action plan (CAP) be prepared for the Site. During the development and implementation of the CAP, the six groundwater monitoring wells located at the Site may be sampled on a semi-annual basis.

**Review of Subsurface Conditions**

The site subsurface soil conditions, as revealed in Borings MW-1A, MW-2, MW-3, and MW-4 of our previous investigation (P89134), consist primarily of silty and sandy clays. Four to five feet of black organic-rich silty clay fill are found immediately below the ground surface, followed by three to five feet of greenish-gray sandy/silty clay native material. In the western portion of the study area, the greenish clay is underlain by seven to eleven feet of yellow-brown sandy clay, grading to a clayey sand with depth. In the eastern portion of the tank area, the sandy clay and clayey sand are split by a six foot layer of silty clay. Light brown silty clay was encountered in each boring from 17 and 24 feet in depth, and continuing to the final depth explored. It is apparent from the boring logs that this lowermost clay layer slopes to the northeast.

In the areas of Wells MW-5 through MW-7, subsurface conditions comprised 10 to 20 feet of dark gray to yellow-gray silty clay, the upper 10 feet of which may be fill. The silty clay is underlain by 4 to 5 feet of orange-brown clayey silt to silty sand. This unit often contains fine, wet to saturated pores. At fifteen to twenty feet in depth, a silty to sandy grayish clay is encountered. This clay is very stiff to hard, often porous, and contains thin saturated lenses of fine sand and silt. At approximately 25 feet, clayey sand to sand was encountered. This unit is soft to firm and contains many fine lenses of sand, silt, and clay. The sand and silt are typically saturated.

Groundwater within the site has been encountered at both 13 to 15 feet and 19 to 23 feet. The lower water levels occur in clayey sands along the east and west boundaries of the site, and likely in its northern one-third. This water horizon is considered the first primary aquifer. A shallow "perched" water is found in clayey sand at 13 to 15 feet, occurring throughout the south-central portion of the site. Hydrostatic pressure in both units results in a piezometric surface 10 to 12 feet below ground surface. The similar piezometric surface suggests that the "perched" water is connected to the underlying aquifer. Additional evidence for this connection is the lack of a confining layer below the upper clayey sand in several borings in the south-central portion of the site.

Groundwater flow direction at the site has been towards the southwest since December 1989. Gradient has varied at the site from 0.4% to 2.0%. Electrical conductivity is a relatively low 300 to 1,000 micromhos/cm, and pH has generally been slightly acidic. Seasonal precipitation appears to result in more southerly flow, a flatter gradient, and 1 to 2 feet higher water levels in early spring.

During soil boring investigations, soil contamination by petroleum hydrocarbons was observed olfactorily and by Photo-Ionization Detector (PID) in 13 borings in the project area. Hydrocarbons

were detected at depths ranging from just below the asphalt pavement to 17 feet (the greatest depth of several borings in the area of greatest contamination). PID values reached 3,600 ppm total ionizable hydrocarbons in soil. The greatest concentrations were observed between 10 feet in depth and first encountered groundwater (where encountered). It was noted that contamination was not always accompanied by soil staining, and volatilization was rapid upon exposure to air.

Groundwater contamination has been encountered at the site in samples obtained quarterly from Wells MW-2 and MW-3, and in Well MW-7. Wells MW-2 and MW-3 are adjacent to, and up- and cross-gradient to what is believed to be the contaminant source area. Well MW-7 is down gradient from the source area; however, it appears that contamination encountered in Well MW-7 is not related to the Unocal contaminant plume.

## NINETEENTH QUARTERLY MONITORING ACTIVITIES

### General

Quarterly monitoring of groundwater Monitoring Wells MW-2, MW-3 and MW-4, semi-annual monitoring of MW-5 and MW-6 and annual monitoring of MW-7 was performed on April 19, 1995. The quarterly and semi-annual sampling schedule is approved by Mr. Scott Seery, case officer for the ACDEH. Further, per letter dated April 13, 1995 from Mr. Seery to R.T. Nahas, future sampling and monitoring may follow a semi-annual schedule after this sampling event. Field procedures and observations are provided in the following text and Tables.

### Field Work

Wells MW-2 through MW-6 were purged by an electric submersible pump. The Well MW-7 was purged with a dedicated bladder pump. Three to four well casing volumes were removed from each well. Purge effluent was field monitored for pH, temperature and conductivity during purging to assess the influx of fresh formation water into the well. Purged water was transferred to 55-gallon DOT-approved steel drums for holding. Each drum was labeled according to its contents, content source, and date of accumulation.

Prior to purging, the depth to water in each well was measured using a Solinst electric sounder, marked in twentieths of a foot. The water depth was then interpolated to the 0.01 foot increment from the tape. Each well, except MW-7, was subsequently examined for floating and sinking immiscible product layers and sheen, using a clear bailer having dual check valves for point-source sampling. The piezometric contour and elevation, and well water elevations, are presented in Figure 3, Potentiometric Surface Map.

Upon purge completion, each well was again measured to confirm a minimum of 80% well recovery prior to sampling. Water sampling was then performed with a Teflon® point-source bailer. The Well MW-7 was sampled with a dedicated bladder pump. Sampling for contaminants was performed in the order of decreasing contaminant volatility. Each water sample was decanted into the appropriate

container with preservative (as necessary), sealed, labeled and refrigerated for delivery to our State-certified laboratory.

A Well Field Log was prepared for each well sampled, recording the water depth, well volume, pH, water temperature, conductivity and other data. The Well Field Logs are presented as Figures 4.1 through 4.6.

## Site Hydrology

Groundwater measurements were made of the six sampled wells on April 19, 1995 in order to assess the flow direction and gradient. On that date, groundwater flow was generally to the south, similar to the previous quarter. The gradient was generally flat at 0.9 percent. Groundwater flow direction and gradient are shown on Figure 3, Potentiometric Surface Map.

## Chemical Analyses

Water samples obtained from Wells MW-2, MW-3, MW-5 and MW-6 were analyzed for constituents related to gasoline, Total Petroleum Hydrocarbons as Gasoline (TPHg) and Benzene, Toluene, Ethylbenzene and Xylene (BTEX). To account for potential PCE interferance water samples obtained from MW-7 were analyzed for BTEX only. Well MW-4 was tested for waste-oil related contaminants: TPHg, TPHd and BTEX.

The contaminants tested for are those specified by the Tri-Regional Water Quality Control Board Recommendations of August 10, 1990, and listed in the ACDEH letter, dated April 26, 1990 and April 13, 1995 to R.T. Nahas Co. Current and former analysis results are presented for comparison in the following tables. The Chemical Test Data Sheets are presented in Appendix A, Figures A-1 through A-6. The Project Chain-of-Custody record is presented in Figures A-7.

**WATER ANALYSES - BTEX**
**TABLE 1**
(Results and Action Levels presented in µg/l)

| Sample Date | Sample Location | Benzene (1)* | Toluene (100)+ | Xylene (1750)* | Ethylbenzene (680)* |
|---|---|---|---|---|---|
| August 1990 | Well MW-2 | 21 | 3.9 | 28 | 7.2 |
| | Well MW-3 | 55 | 3.8 | 59 | 20 |
| | Well MW-4 | ND | ND | ND | ND |
| January 1991 | Well MW-2 | 50 | 33 | 110 | 22 |
| | Well MW-3 | 29 | 3.3 | 34 | 9.7 |
| April 1991 | Well MW-2 | 640 | 520 | 790 | 170 |
| | Well MW-3 | 450 | 270 | 760 | 150 |
| | Well MW-4 | ND | ND | ND | ND |

## WATER ANALYSES - BTEX
## TABLE 1 (Continued)
(Results and Action Levels are presented in µg/l)

| Sampling Date | Sample Location | Benzene (1)* | Toluene (100)+ | Xylene (1750)* | Ethylbenzene (680)* |
|---|---|---|---|---|---|
| July 1991 | Well MW-2 | 14 | 1 | 17 | 8 |
| | Well MW-3 | 14 | 14 | 33 | 8 |
| October 1991 | Well MW-2 | 2.9 | ND | 6 | 2.5 |
| | Well MW-3 | ND | ND | ND | ND |
| | Well MW-4 | ND | ND | ND | ND |
| January 1992 | Well MW-2 | 480 | 870 | 860 | 160 |
| | Well MW-3 | 4 | 10 | 8 | 2 |
| April 1992 | Well MW-2 | 70 | 0.3 | 7.0 | 15 |
| | Well MW-3 | 1.0 | 0.4 | 0.9 | ND |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | 0.3 | ND | ND |
| | Well MW-7 | 0.4 | 0.3 | 0.9 | 0.3 |
| July 1992 | Well MW-2 | 10 | ND | 2.3 | 0.6 |
| | Well MW-3 | 1.3 | 0.4 | 1.3 | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | ND | ND |
| October 1992 | Well MW-2 | 2.3 | ND | 3.0 | 2.3 |
| | Well MW-3 | 2.1 | ND | 0.3 | ND |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | 0.4 | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | ND | ND |
| January 1993 | Well MW-2 | 11 | 5.1 | 6.3 | 1.4 |
| | Well MW-3 | 1.2 | 1.0 | 4.1 | 0.6 |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | ND | ND |
| March 1993 | Well MW-2 | 110 | 32 | 28 | 67 |
| | Well MW-3 | 32 | 0.9 | 13 | 64 |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | ND | ND |

## WATER ANALYSES - BTEX
## TABLE 1 (Continued)
(Results and Action Levels are presented in µg/l)

| Sampling Date | Sample Location | Benzene (1)* | Toluene (100)+ | Xylene (1750)* | Ethylbenzene (680)* |
|---|---|---|---|---|---|
| July 1993 | Well MW-2 | 17 | 1.1 | 12 | 6.0 |
| | Well MW-3 | 24 | 11 | 82 | 14 |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | ND | ND |
| October 1993 | Well MW-2 | 4.0 | ND | 3.1 | 2.3 |
| | Well MW-3 | 5.0 | ND | 1.2 | 0.6 |
| | Well MW-4 | 0.4 | ND | 0.4 | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | 0.7 | ND |
| January 1994 | Well MW-2 | 13 | 3.4 | 9.2 | 4.9 |
| | Well MW-3 | 5.5 | 2.1 | 14 | 2.6 |
| | Well MW-7 | ND | ND | ND | ND |
| April 1994 | Well MW-2 | 23 | 1.1 | 17 | 8.2 |
| | Well MW-3 | 17 | 1.0 | 24 | 4.9 |
| | Well MW-4 | ND | ND | 0.4 | ND |
| | Well MW-5 | ND | 0.4 | 1.0 | ND |
| | Well MW-6 | ND | 0.3 | 0.4 | ND |
| | Well MW-7 | ND | ND | ND | ND |
| July 1994 | Well MW-2 | 14 | 0.7 | 12 | 5.8 |
| | Well MW-3 | 7.2 | 0.4 | 4.6 | 1.6 |
| | Well MW-4 | ND | 0.6 | ND | ND |
| October 1994 | Well MW-2 | 2.8 | ND | 1.8 | 2.9 |
| | Well MW-3 | 0.9 | ND | ND | ND |
| | Well MW-4 | ND | 36 | 1.3 | ND |
| | Well MW-5 | ND | 71 | 1.7 | 0.4 |
| | Well MW-6 | 0.4 | 140 | 2.3 | 0.5 |
| January 1995 | Well MW-2 | 48 | 5.8 | 27 | 15 |
| | Well MW-3 | 24 | ND | 45 | 14 |
| | Well MW-4 | ND | ND | ND | ND |

## WATER ANALYSES - BTEX
## TABLE 1 (Continued)
(Results and Action Levels are presented in µg/l)

| Sampling Date | Sample Location | Benzene (1)* | Toluene (100)+ | Xylene (1750)* | Ethylbenzene (680)* |
|---|---|---|---|---|---|
| April 1995 | Well MW-2 | 72 | 2.8 | 22 | 47 |
| | Well MW-3 | 26 | 0.6 | 19 | 40 |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | ND | ND | ND |
| | Well MW-6 | ND | ND | ND | ND |
| | Well MW-7 | ND | ND | ND | ND |

ND - None Detected
* - DHS: Primary Drinking Water Standard (3/89)
+ - DHS: Action Level

## WATER ANALYSES - TPH and OIL & GREASE
## TABLE 2
(Results and Action Levels are presented in µg/l)

| Sampling Date | Sample Location | TPH as Gasoline (100)* | TPH as Diesel (100)* | Oil and Grease Total (100*) | Hydrocarbon (100*) |
|---|---|---|---|---|---|
| August 1990 | Well MW-2 | 180 | -- | -- | -- |
| | Well MW-3 | 290 | -- | -- | -- |
| | Well MW-4 | ND | ND | ND | -- |
| January 1991 | Well MW-2 | 430 | -- | -- | -- |
| | Well MW-3 | 110 | -- | -- | -- |
| April 1991 | Well MW-2 | 4800 | -- | -- | -- |
| | Well MW-3 | 3600 | -- | -- | -- |
| | Well MW-4 | ND | ND | ND | -- |
| July 1991 | Well MW-2 | 220 | -- | -- | -- |
| | Well MW-3 | 220 | -- | -- | -- |
| October 1991 | Well MW-2 | 170 | -- | -- | -- |
| | Well MW-3 | ND | ND | ND | -- |
| | Well MW-4 | ND | ND | ND | -- |
| January 1992 | Well MW-2 | 5200 | -- | -- | -- |
| | Well MW-3 | 60 | -- | -- | -- |
| April 1992 | Well MW-2 | 300 | -- | -- | -- |
| | Well MW-3 | ND | -- | ND | -- |
| | Well MW-4 | ND | ND | ND | -- |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | 1300, | -- | -- | -- |

## WATER ANALYSES - TPH and OIL & GREASE

**TABLE 2** (Continued)

(Results and Action Levels are presented in µg/l)

| Sampling Date | Sample Location | TPH as Gasoline (100)* | TPH as Diesel (100)* | Oil and Grease Total (100*) | Oil and Grease Hydrocarbon (100*) |
|---|---|---|---|---|---|
| July 1992 | Well MW-2 | 84 | -- | -- | -- |
| | Well MW-3 | ND | -- | -- | -- |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | $830_3$ | -- | -- | -- |
| October 1992 | Well MW-2 | ND | -- | -- | -- |
| | Well MW-3 | ND | -- | -- | -- |
| | Well MW-4 | ND | 120 | ND | -- |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | $3900_3$ | -- | -- | -- |
| January 1993 | Well MW-2 | 170 | -- | -- | -- |
| | Well MW-3 | ND | -- | -- | -- |
| | Well MW-4 | ND | ND | ND | -- |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | $1900_3$ | -- | -- | -- |
| March 1993 | Well MW-2 | 720 | -- | -- | -- |
| | Well MW-3 | 330 | -- | -- | -- |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | $830_3$ | -- | -- | -- |
| July 1993 | Well MW-2 | 220 | -- | -- | -- |
| | Well MW-3 | 330 | -- | -- | -- |
| | Well MW-4 | ND | ND | -- | 1 |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | $680_3$ | -- | -- | -- |
| October 1993 | Well MW-2 | 98 | -- | -- | -- |
| | Well MW-3 | ND | -- | -- | -- |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | $360_3$ | -- | -- | -- |
| January 1994 | Well MW-2 | 130 | -- | -- | -- |
| | Well MW-3 | 69 | -- | -- | -- |
| | Well MW-7 | $330_3$ | -- | -- | -- |

## WATER ANALYSES - TPH and OIL & GREASE
## TABLE 2 (Continued)
(Results and Action Levels are presented in µg/l)

| Sample Date | Sample Location | TPH as Gasoline (*) | TPH as Diesel (100,) | Oil & Grease, Total (*) | Oil & Grease, Hydrocarbon (*) |
|---|---|---|---|---|---|
| April 1994 | Well MW-2 | 270 | -- | -- | -- |
| | Well MW-3 | 62 | -- | -- | -- |
| | Well MW-4 | ND | ND | ND | ND |
| | Well MW-5 | ND | -- | -- | -- |
| | Well MW-6 | ND | -- | -- | -- |
| | Well MW-7 | 360, | -- | -- | -- |
| July 1994 | Well MW-2 | 180 | -- | -- | -- |
| | Well MW-3 | 52 | -- | -- | -- |
| | Well MW-4 | ND | 86 | ND | ND |
| April 1994 | Well MW-2 | 97 | -- | -- | -- |
| | Well MW-3 | ND | -- | -- | -- |
| | Well MW-4 | 70 | ND | ND | ND |
| | Well MW-5 | 87 | -- | -- | -- |
| | Well MW-6 | 160 | -- | -- | -- |
| October 1994 | Well MW-2 | 440 | -- | -- | -- |
| | Well MW-3 | 250 | -- | -- | -- |
| | Well MW-4 | ND | ND | 2 | 2 |
| **April 1995** | **Well MW-2** | **480** | -- | -- | -- |
| | **Well MW-3** | **450** | -- | -- | -- |
| | **Well MW-4** | **ND** | **ND** | **ND** | **ND** |
| | **Well MW-5** | **ND** | -- | -- | -- |
| | **Well MW-6** | **ND** | -- | -- | -- |
| | **Well MW-7** | -- | -- | -- | -- |

-- - Not Tested; ND - None Detected; * - No Drinking Water Action Levels are provided for these compounds
1 - Results in mg/l; 2 - 1980 US EPA 10-Day Suggested No Adverse Response Level (SNARL)
3 - TPHg values have been demonstrated to represent Perchloroethene presence

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Trace contaminant concentrations associated with gasoline (BTEX compounds) have increased slightly this quarter in Wells MW-2 and MW-3. Primary State and Federal Standards for drinking water were exceeded for benzene concentrations at Wells MW-2 and MW-3. Total Petroleum Hydrocarbons as Gasoline (TPHg) was detected at Wells MW-2 and MW-3. Total Petroleum Hydrocarbons as Diesel were not detected in the Well MW-4. Total Petroleum Hydrocarbons as gasoline was not detected in the Wells MW-4, MW-5 and MW-6. BTEX was not detected in Wells MW-4, MW-5, MW-6 and MW-7. Contaminant concentrations detected this quarter at well locations are depicted in Figure 5, Contaminant Concentrations - 4/19/95.

As shown graphically on Figures 6 and 7, the BTEX concentrations in the groundwater samples from Wells MW-2 and MW-3 have demonstrated a slight increase in concentration since the previous quarterly sampling. The general seasonal high concentration shows a general trend of a reduction in concentrations, which typically occur in the winter and spring months.

### Recommendations

Pending completion and implementation of a corrective action plan, the six groundwater monitoring wells located at the Site should be sampled on a semi-annual basis as approved by ACDEH (letter dated April 13, 1995). The next semi-annual sampling event is scheduled for October 1995.

## REPORT DISTRIBUTION

Copies of this report should be submitted to the Alameda County Department of Environmental Health for their review. We are providing you with extra copies for this purpose. We understand that copies of the report may be forwarded by ACDEH to the Regional Water Quality Control Board in Oakland for their review.

Alameda County Department of Environmental Health
1181 Harbor Bay Parkway
Alameda, CA 94502

## LIMITATIONS

The findings and conclusions presented in this report are based on field review and observations, and from the limited testing program described in this report. This report has been prepared in accordance with generally accepted methodologies and standards of practice in the area. No other warranties, expressed or implied, are made as to the findings, conclusions and recommendations included in the report.

The findings of this report are valid as of the present. The passage of time, natural processes or human intervention on the property or adjacent property can cause changed conditions which can invalidate the findings and conclusions presented in this report.

BSK is pleased to continue to be of service to you during this project. If you have questions concerning the contents of the report, please do not hesitate to contact us.

Respectfully submitted,
**BSK & Associates**

Alex Y. Eskandari, P.E.
Project Manager
C.E. No. 038101, R.E.A. No. 01528

Martin B. Cline
Staff Geologist

AYE/MC
(RPTS\ENV\P92057.295)

Distribution:
R.T. Nahas Co. (4 copies)

The following are attached and complete this report:

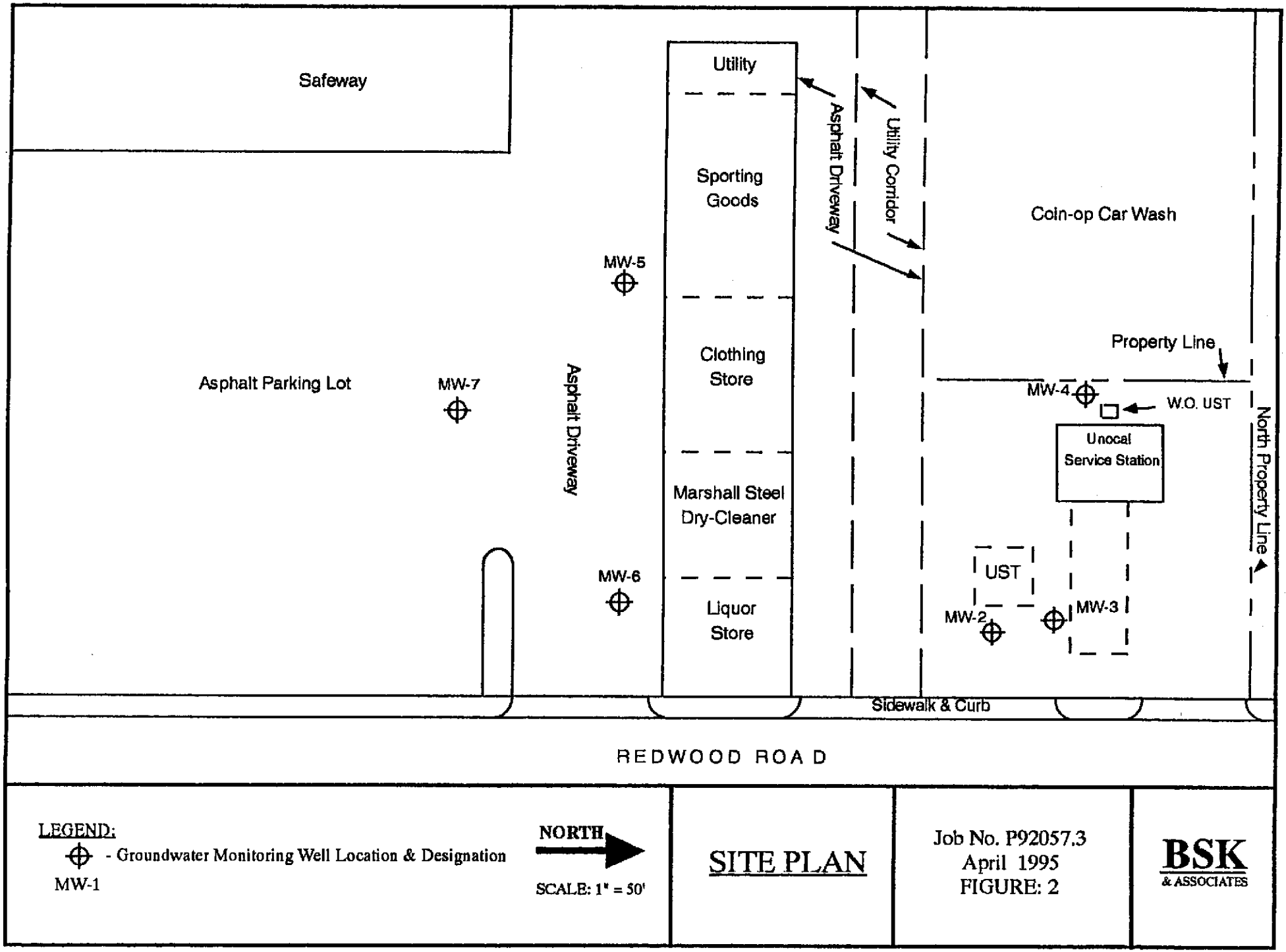
| | | |
|---|---|---|
| FIGURE | 1 | Vicinity Map |
| FIGURE | 2 | Site Plan |
| FIGURE | 3 | Potentiometric Surface Map |
| FIGURES | 4.1 | |
| through | 4.6 | Well Field Logs |
| FIGURE | 5 | Contaminant Concentrations - 4/19/95 |
| FIGURE | 6 | BTEX Concentrations in Groundwater - MW-2 |
| FIGURE | 7 | BTEX Concentrations in Groundwater - MW-3 |

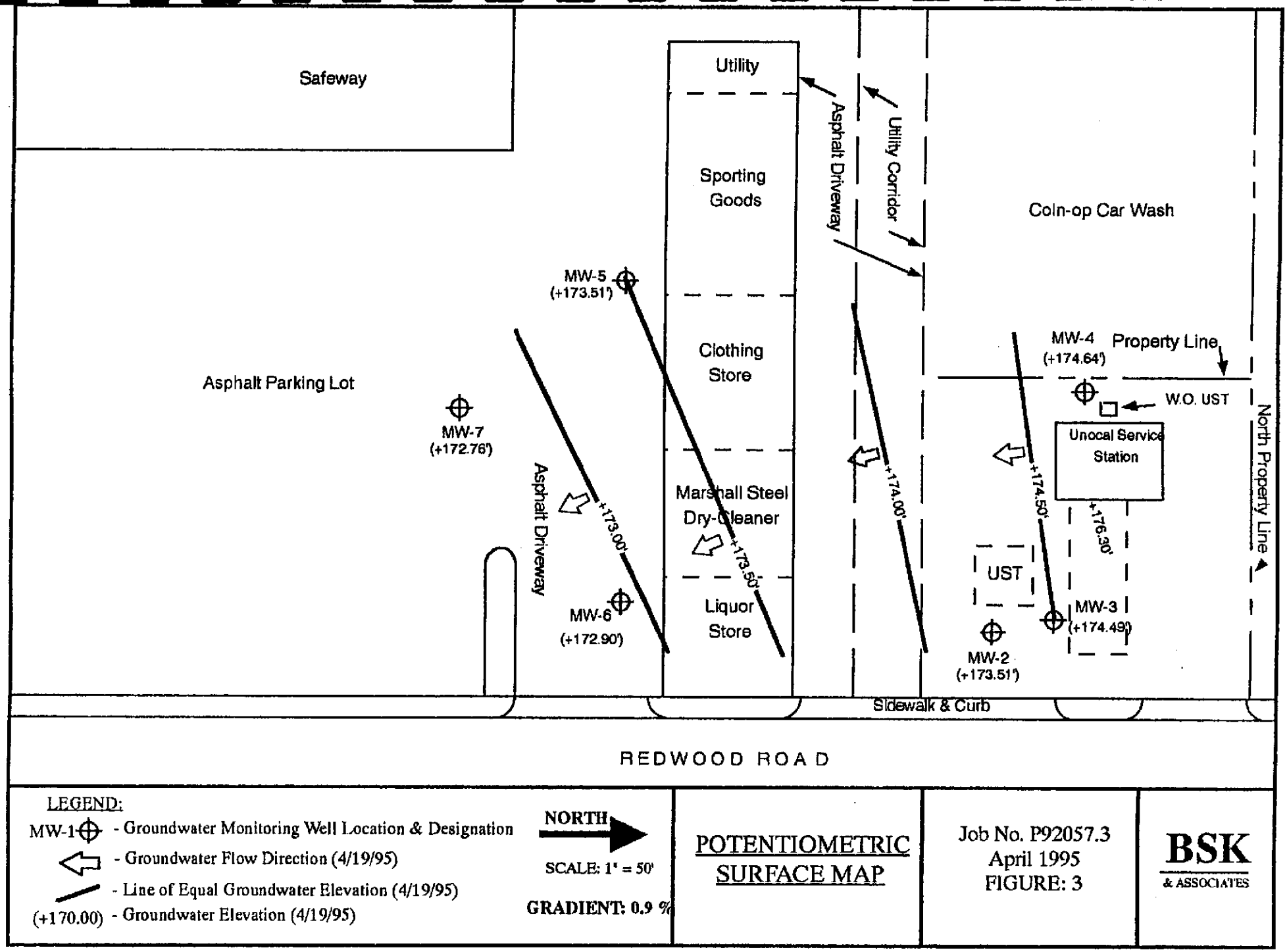
**APPENDIX A**

| | | |
|---|---|---|
| FIGURES | A-1 | |
| through | A-6 | Nineteenth Quarterly Laboratory Chemical Test Data Sheets |
| FIGURE | A-7 | Project Chain-of-Custody Record |


Source: Thomas Guide, 1992, Alameda and Contra Costa Counties

| | | |
|---|---|---|
| **NINETEENTH QUARTERLY GROUNDWATER MONITORING REPORT UNOCAL 76 SERVICE STATION 20405 AND 20629 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA** | **VICINITY MAP**<br>**BSK Job No. P92057.3**<br>**April 1995**<br>**FIGURE: 1** | **BSK**<br>& ASSOCIATES |


Safeway
Utility
Asphalt Driveway
Utility Corridor
Sporting Goods
Coin-op Car Wash
MW-5
Property Line
Clothing Store
Asphalt Parking Lot
MW-7
Asphalt Driveway
MW-4
W.O. UST
Unocal Service Station
North Property Line
Marshall Steel Dry-Cleaner
UST
MW-6
MW-2
MW-3
Liquor Store
Sidewalk & Curb
REDWOOD ROAD
LEGEND:
- Groundwater Monitoring Well Location & Designation
MW-1
NORTH
SCALE: 1" = 50'
SITE PLAN
Job No. P92057.3
April 1995
FIGURE: 2
BSK
& ASSOCIATES




LEGEND:

MW-1 ⊕ - Groundwater Monitoring Well Location & Designation

⇦ - Groundwater Flow Direction (4/19/95)

— - Line of Equal Groundwater Elevation (4/19/95)

(+170.00) - Groundwater Elevation (4/19/95)

NORTH

SCALE: 1" = 50'

**GRADIENT: 0.9 %**

# POTENTIOMETRIC SURFACE MAP

Job No. P92057.3
April 1995
FIGURE: 3

**BSK** & ASSOCIATES

BSK Job No.: P92057.3
Date: April 1995
Figure No.: 4.1

# WELL FIELD LOG

**Well Observation:** x **Date:** 4/19/95
**Sample Collection:** x **Date:** 4/19/95

**Project Name:** Nineteenth Quarterly Sampling
**Location:** Nahas/Union 76
**Personnel:** FRG
**Weather:** Clear, ±50° F.

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-2 | Date Purged | 4/19/95 |
| Depth to Water - feet( TOC) | 9.24 | Purge Method | Submersible Pump |
| Well Depth (feet) | 34.5 | | |
| Water Volume (gallons) | 4.3 | Purge Begin | 10:59 |
| Reference Elevation - feet(TOC) | +183.47 | Purge End | 11:17 |
| Groundwater Elevation (feet) | +174.23 | Purge Rate | 1.0 gal/min. |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None
**Bottom:** None
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (Micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 11:03 | 4.5 | 710 | 7.50 | 65 | |
| 11:07 | 9.0 | 763 | 6.82 | 67 | |
| 11:12 | 13.5 | 788 | 6.80 | 67 | |
| 11:17 | 18.0 | 789 | 6.80 | 67 | |
| | Depth to Water: 9.75 feet | | | | |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 11:20 | BTEX & TPHg | 2-40ml glass VOC with HCl | 9.8-10.8' |

**Field Observations:** None

BSK Job No.: P92057.3
Date: April 1995
Figure No.: 4.2

# WELL FIELD LOG

**Well Observation:** x **Date:** 4/19/95
**Sample Collection:** x **Date:** 4/19/95

**Project Name:** Nineteenth Quarterly Sampling
**Location:** Nahas/Union 76
**Personnel:** FRG
**Weather:** Clear, ±50° F.

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-3 | Date Purged | 4/19/95 |
| Depth to Water - feet(TOC) | 9.54 | Purge Method | Submersible Pump |
| Well Depth (feet) | 30 | | |
| Water Volume (gallons) | 3.5 | Purge Begin | 11:50 |
| Reference Elevation - feet(TOC) | +184.03 | Purge End | 12:00 |
| Groundwater Elevation (feet) | +174.49 | Purge Rate | 1.3 gal/min. |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None
**Bottom:** None
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (Micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 11:54 | 3.5 | 838 | 7.19 | 76 | |
| 11:57 | 9.0 | 810 | 6.92 | 72 | |
| 12:00 | 12.5 | 809 | 6.90 | 71 | |
| | | | | | |
| | Depth to Water: 10 feet | | | | |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 12:10 | BTEX & TPHg | 2-40ml glass VOC with HCl | 10-11' |

**Field Observations:** Six feet from active gas pump island

BSK Job No.: P92057.3
Date: April 1995
Figure No.: 4.3

# WELL FIELD LOG

**Well Observation:** x **Date:** 4/19/95
**Sample Collection:** x **Date:** 4/19/95

**Project Name:** Nineteenth Quarterly Sampling
**Location:** Nahas/Union 76
**Personnel:** FRG
**Weather:** Rain, ±50° F.

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-4 | Date Purged | 4/19/95 |
| Depth to Water - feet(TOC) | 9.97 | Purge Method | Submersible Pump |
| Well Depth (feet) | 25 | | |
| Water Volume (gallons) | 2.6 | Purge Begin | 9:55 |
| Reference Elevation - feet(TOC) | +184.61 | Purge End | 10:09 |
| Groundwater Elevation (feet) | +174.64 | Purge Rate | 0.9 gal/min. |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None clear
**Bottom:** None
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (Micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 9:59 | 3.0 | 680 | -- | 62 | Light brown tint |
| 10:02 | 6.0 | 630 | -- | 64 | Clearing |
| 10:06 | 9.0 | 620 | -- | 64 | |
| 10:09 | 12.0 | 622 | -- | 64 | Clear |
| | Depth to Water: 10.5' | | | | |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 10:15 | BTEX & TPHg | 2-40ml glass VOC with HCl | 10.5-12.5' |
| " | TPHd | 2-250 ml Amber Glass, w/$H_2SO_4$ | " |
| | | | |

**Field Observations:**

BSK Job No.: P92057.3
Date: April 1995
Figure No.: 4.4

# WELL FIELD LOG

**Well Observation:** x **Date:** 4/19/94
**Sample Collection:** x **Date:** 4/19/94

**Project Name:** Nineteenth Quarterly Sampling
**Location:** Nahas/Union 76
**Personnel:** FRG
**Weather:** Clear, ±50° F.

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-5 | Date Purged | 4/19/95 |
| Depth to Water - feet(TOC) | 10.41 | Purge Method | Submersible Pump |
| Well Depth (feet) | 34.5 | | |
| Water Volume (gallons) | 4.1 | Purge Begin | 07:15 |
| Reference Elevation - feet(TOC) | +183.92 | Purge End | 07:30 |
| Groundwater Elevation (feet) | +173.51 | Purge Rate | 1.2 gal/min. |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None, clear
**Bottom:** None, clear
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (Micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 07:19 | 4.5 | 689 | 7.50 | 62.0 | Lt. Brown Tint |
| 07:22 | 9.0 | 826 | 6.85 | 62.0 | |
| 07:26 | 13.5 | 846 | 6.96 | 63.0 | Clear |
| 07:30 | 18.0 | 844 | 6.95 | 63.0 | |
| | Depth to Water: 10.6 | | | | |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 07:40 | BTEX & TPHg | 2-40ml glass VOC with HCl | 10.5' |

**Field Observations:** Well in busy parking lot.

BSK Job No.: P92057.3
Date: April 1995
Figure No.: 4.5

# WELL FIELD LOG

**Well Observation:** x **Date:** 4/19/95
**Sample Collection:** x **Date:** 4/19/95

**Project Name:** Nineteenth Quarterly Sampling
**Location:** Nahas/Union 76
**Personnel:** FRG
**Weather:** Clear, ±50°F.

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-6 | Date Purged | 4/19/95 |
| Depth to Water - feet(TOC) | 10.70 | Purge Method | Submersible Pump |
| Well Depth (feet) | 29.0 | | |
| Water Volume (gallons) | 3.1 | Purge Begin | 08:13 |
| Reference Elevation - feet(TOC) | +183.60 | Purge End | 08:26 |
| Groundwater Elevation (feet) | +172.90 | Purge Rate | 1.1 gal/min. |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None
**Bottom:** Some clay colloids
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (Micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 08:17 | 3.5 | 754 | 7.43 | 61.0 | Slight brown tint |
| 08:20 | 7.0 | 721 | 6.90 | 66.0 | Clearing |
| 08:23 | 10.5 | 735 | 6.83 | 68.0 | Clear |
| 08:26 | 14.0 | 736 | 6.84 | 68.0 | |
| | Depth to Water: 10.8 feet | | | | |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 08:35 | BTEX & TPHg | 2-40ml glass VOC with HCl | 10-11' |

**Field Observations:** Well in busy parking lot.

BSK Job No.: P92057.3
Date: April 1995
Figure No.: 4.6

# WELL FIELD LOG

**Well Observation:** x **Date:** 04/19/95
**Sample Collection:** x **Date:** 04/19/95

**Project Name:** Nineteenth Quarterly Sampling
**Location:** Nahas/Union 76
**Personnel:** FRG
**Weather:** Clear, ±50° F.

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-7 | Date Purged | 04/19/95 |
| Depth to Water - feet(TOC) | 9.66 | Purge Method | Dedicated Bladder Pump |
| Well Depth (feet) | 28.0 | | |
| Water Volume (gallons) | 3.1 | Purge Begin | 09:10 |
| Reference Elevation - feet(TOC) | +182.42 | Purge End | 09:24 |
| Groundwater Elevation (feet) | +172.76 | Purge Rate | 0.8 gal/min. |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** --
**Bottom:** --
**Detection Method:** Inaccessible due to dedicated pump assembly
**Collection Method:** --

## WELL DEVELOPMENT/PURGE DATA:

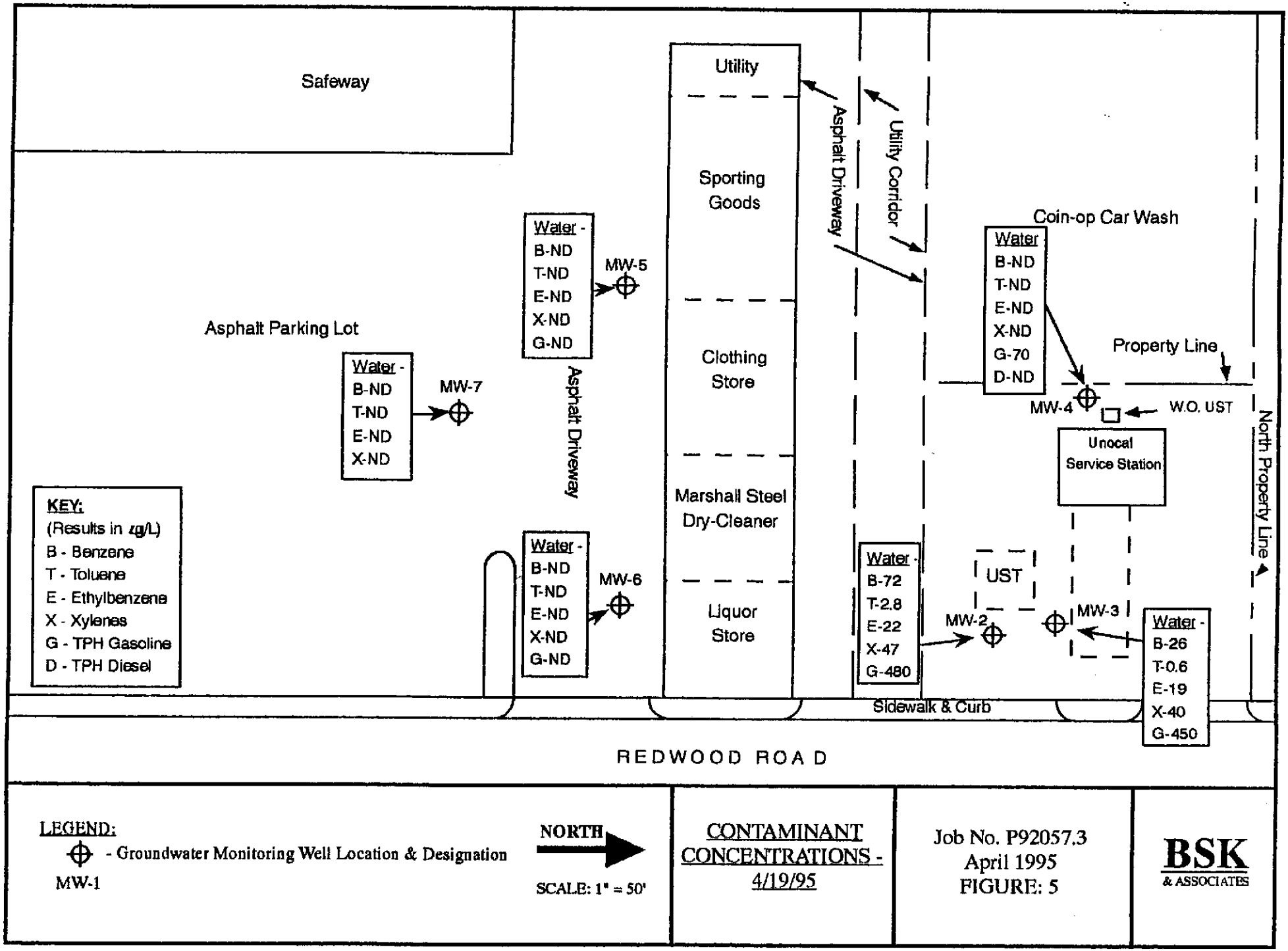
| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (Ec/Range) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 09:15 | 3.5 | 883 | 7.32 | 63 | -- |
| 09:20 | 7.0 | 901 | 6.80 | 67 | -- |
| 09:24 | 10.5 | 902 | 6.80 | 67 | -- |
| | Depth to Water: 10 feet | | | | |

## SAMPLE COLLECTION DATA

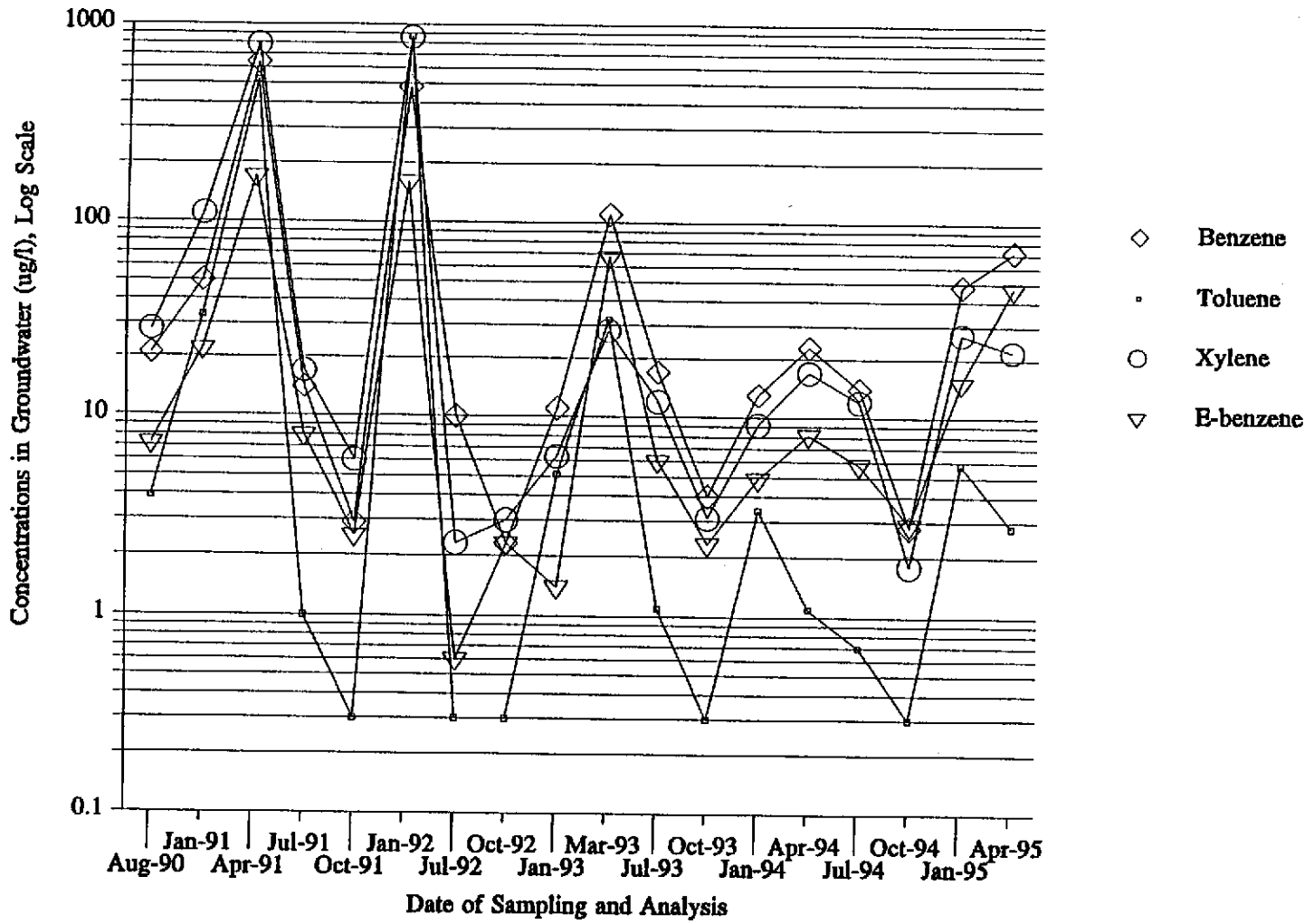
**Sampling Equipment:** Dedicated Bladder Pump

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 09:30 | BTEX | 2-40ml glass VOC with HCl | 14-16' |

**Field Observations:** Well located in busy parking lot

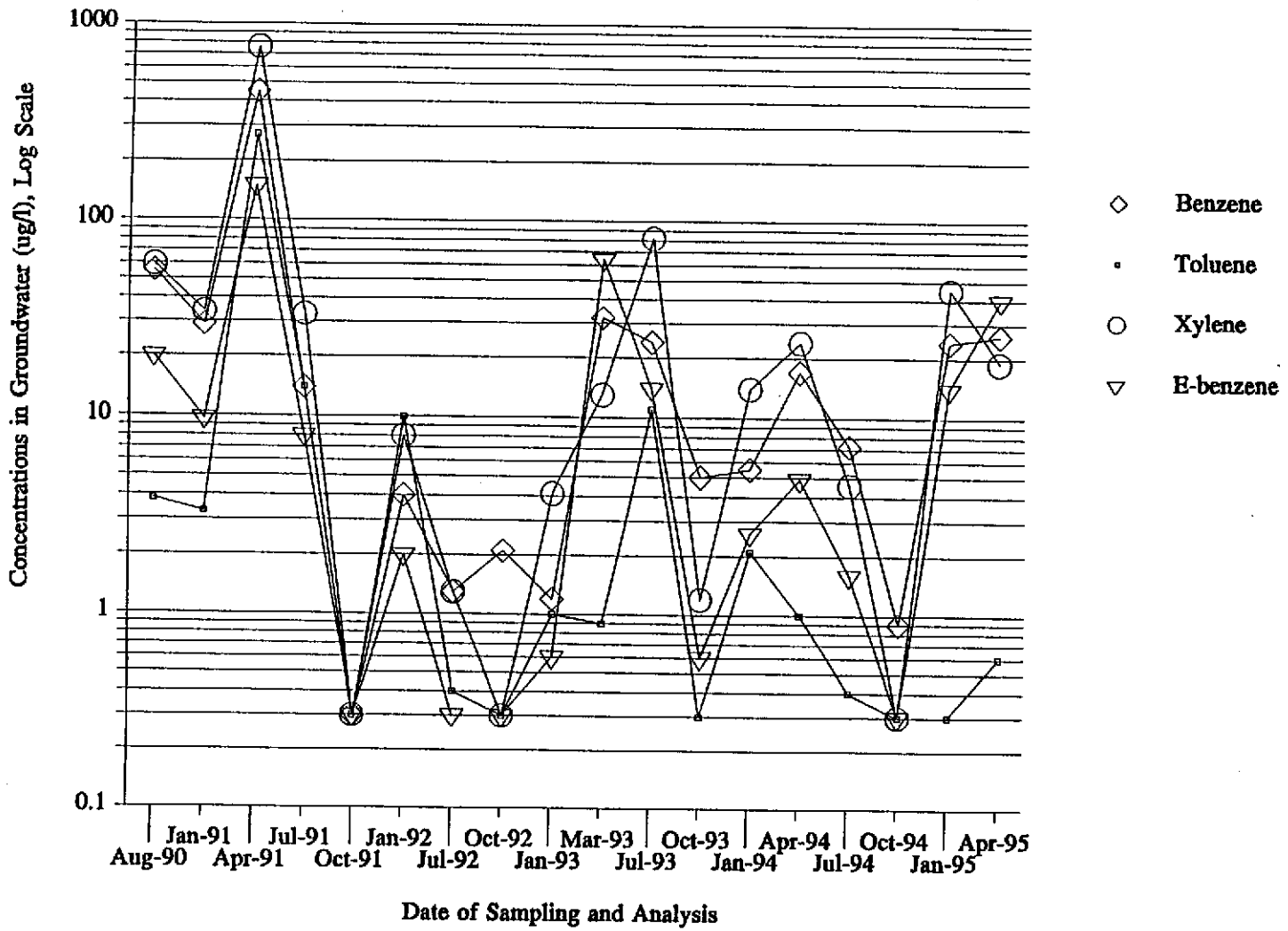

Safeway
Utility
Sporting Goods
Clothing Store
Marshall Steel Dry-Cleaner
Liquor Store
Asphalt Driveway
Utility Corridor
Asphalt Driveway
Asphalt Parking Lot
Water - B-ND T-ND E-ND X-ND G-ND
MW-5
Water - B-ND T-ND E-ND X-ND
MW-7
Water - B-ND T-ND E-ND X-ND G-ND
MW-6
Water - B-72 T-2.8 E-22 X-47 G-480
MW-2
Coin-op Car Wash
Water B-ND T-ND E-ND X-ND G-70 D-ND
MW-4
W.O. UST
Property Line
Unocal Service Station
UST
MW-3
Water - B-26 T-0.6 E-19 X-40 G-450
North Property Line
KEY:
(Results in ug/L)
B - Benzene
T - Toluene
E - Ethylbenzene
X - Xylenes
G - TPH Gasoline
D - TPH Diesel
Sidewalk & Curb
REDWOOD ROAD
LEGEND:
- Groundwater Monitoring Well Location & Designation
MW-1
NORTH
SCALE: 1" = 50'
CONTAMINANT CONCENTRATIONS - 4/19/95
Job No. P92057.3
April 1995
FIGURE: 5
BSK & ASSOCIATES

## BTEX CONCENTRATIONS IN GROUNDWATER (MW-2)




| | | |
|---|---|---|
| NINETEENTH QUARTERLY GROUNDWATER MONITORING REPORT<br>UNOCAL 76 SERVICE STATION<br>20405 AND 20629 REDWOOD ROAD<br>CASTRO VALLEY, CALIFORNIA | BSK Job No. P92057.3<br>April 1995<br>FIGURE 6 | BSK<br>& ASSOCIATES |

## BTEX CONCENTRATIONS IN GROUNDWATER (MW-3)




| | | |
|---|---|---|
| NINETEENTH QUARTERLY GROUNDWATER MONITORING REPORT<br>UNOCAL 76 SERVICE STATION<br>20405 AND 20629 REDWOOD ROAD<br>CASTRO VALLEY, CALIFORNIA | BSK Job No. P92057.3<br>April 1995<br>FIGURE 7 | BSK<br>& ASSOCIATES |

# APPENDIX A

## CHEMICAL TEST DATA SHEETS

## AND

## PROJECT-CHAIN-OF-CUSTODY RECORD

BSK & Associates

BSK ANALYTICAL LABORATORIES

FIGURE: A-1

BSK-Pleasanton
Nahas

Date Sampled : 04/19/95
Time Sampled : 0930
Date Received : 04/20/95
Report Issue Date: 05/04/95
Report Reissue Date: 05/09/95

Case Number : Ch951024
Lab ID Number : 1024-3
Project Number : P92057.3
Sample Description: MW-7

Sample Type: LIQUID

## Analyses for BTEX by EPA Method 8020 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Date of Analysis : 04/24/95

| Compound | Results | DLR |
|---|---|---|
| Benzene ..... | ND | 0.3 |
| Toluene ..... | ND | 0.3 |
| Ethylbenzene ..... | ND | 0.3 |
| Total Xylene Isomers ..... | ND | 0.3 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.

## Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Date of Analysis : N/A

| Analyte | Results | DLR |
|---|---|---|
| Total Petroleum Hydrocarbons (D) | -- | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:
DLR: Detection Limit for the Purposes of Reporting. Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Jeffrey Creager, Organics Manager

94021 BTL.T

1414 Stanislaus Street • Fresno, CA 93706 • Phone 209-497-2888, In CA 800-877-8310 • Fax 209-485-6935

BSK ANALYTICAL LABORATORIES

FIGURE: A-2

BSK-Pleasanton
Nahas

Date Sampled : 04/19/95
Time Sampled : 1120
Date Received : 04/20/95
Report Issue Date: 05/04/95
Report Reissue Date: 05/09/95

Case Number : Ch951024
Lab ID Number : 1024-5
Project Number : P92057.3
Sample Description: MW-2

Sample Type: LIQUID

## Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Date of Analysis : 04/24/95

| Compound | Results | DLR |
|---|---|---|
| Benzene ..... | 72 | 0.3 |
| Toluene ..... | 2.8 | 0.3 |
| Ethylbenzene ..... | 22 | 0.3 |
| Total Xylene Isomers ..... | 47 | 0.3 |
| Total Petroleum Hydrocarbons (G) | 480 | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

OTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.
hromatography for this sample is described as inconsistent with the gasoline standard.

## Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Date of Analysis : N/A

| Analyte | Results | DLR |
|---|---|---|
| Total Petroleum Hydrocarbons (D) | -- | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
ydrocarbons in the diesel boiling point range are reported, in accordance with the method, diesel.

LEGEND:
DLR: Detection Limit for the Purposes of Reporting. ND: None Detected
Exceptional sample conditions or matrix interferences may result in higher detection limits.

Cynthia Pigman, QA/QC Supervisor Jeffrey Creager, Organics Manager

40721 BTL.T

1414 Stanislaus Street • Fresno, CA 93706 • Phone 209-497-2888, In CA 800-877-8310 • Fax 209-485-6935

BSK ANALYTICAL LABORATORIES

FIGURE: A-3

BSK-Pleasanton
Nahas

Date Sampled : 04/19/95
Time Sampled : 1015
Date Received : 04/20/95
Report Issue Date: 05/04/95
Report Reissue Date: 05/09/95

Case Number : Ch951024
Lab ID Number : 1024-4
Project Number : P92057.3
Sample Description: MW-4

Sample Type: LIQUID

## Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Date of Analysis : 04/24/95

| Compound | Results | DLR |
|---|---|---|
| Benzene ..... | ND | 0.3 |
| Toluene ..... | ND | 0.3 |
| Ethylbenzene ..... | ND | 0.3 |
| Total Xylene Isomers ..... | ND | 0.3 |
| Total Petroleum Hydrocarbons (G) | ND | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.

## Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Date of Analysis : 04/26/95

| Analyte | Results | DLR |
|---|---|---|
| Total Petroleum Hydrocarbons (D) | ND | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:
DLR: Detection Limit for the Purposes of Reporting. Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Jeffrey Creager, Organics Manager

940421 BTL.T

1414 Stanislaus Street • Fresno, CA 93706 • Phone 209-497-2888, In CA 800-877-8310 • Fax 209-485-6935

BSK ANALYTICAL LABORATORIES

FIGURE: A-4

BSK-Pleasanton
Nahas

Date Sampled : 04/19/95
Time Sampled : 1210
Date Received : 04/20/95
Report Issue Date: 05/04/95
Report Reissue Date: 05/09/95

Case Number : Ch951024
Lab ID Number : 1024-6
Project Number : P92057.3
Sample Description: MW-3

Sample Type: LIQUID

## Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Date of Analysis : 04/24/95

| Compound | Results | DLR |
|---|---|---|
| Benzene ..... | 26 | 0.3 |
| Toluene ..... | 0.6 | 0.3 |
| Ethylbenzene ..... | 19 | 0.3 |
| Total Xylene Isomers ..... | 40 | 0.3 |
| Total Petroleum Hydrocarbons (G) | 450 | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.
Chromatography for this sample is described as inconsistent with the gasoline standard.

## Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Date of Analysis : N/A

| Analyte | Results | DLR |
|---|---|---|
| Total Petroleum Hydrocarbons (D) | -- | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:
DLR: Detection Limit for the Purposes of Reporting. Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Jeffrey Creager, Organics Manager

94[illegible]21 BTL.T

1414 Stanislaus Street • Fresno, CA 93706 • Phone 209-497-2888, In CA 800-877-8310 • Fax 209-485-6935

BSK ANALYTICAL LABORATORIES

FIGURE: A-5

BSK-Pleasanton
Nahas

Date Sampled : 04/19/95
Time Sampled : 0740
Date Received : 04/20/95
Report Issue Date: 05/04/95
Report Reissue Date: 05/09/95

Case Number : Ch951024
Lab ID Number : 1024-1
Project Number : P92057.3
Sample Description: MW-5

Sample Type: LIQUID

## Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Date of Analysis : 04/24/95

| Compound | Results | DLR |
|---|---|---|
| Benzene ..... | ND | 0.3 |
| Toluene ..... | ND | 0.3 |
| Ethylbenzene ..... | ND | 0.3 |
| Total Xylene Isomers ..... | ND | 0.3 |
| Total Petroleum Hydrocarbons (G) | ND | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.

## Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Date of Analysis : N/A

| Analyte | Results | DLR |
|---|---|---|
| Total Petroleum Hydrocarbons (D) | -- | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:
DLR: Detection Limit for the Purposes of Reporting. Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Jeffrey Creager, Organics Manager

940[illegible]1 BTL.T

1414 Stanislaus Street • Fresno, CA 93706 • Phone 209-497-2888, In CA 800-877-8310 • Fax 209-485-6935

BSK ANALYTICAL LABORATORIES

FIGURE: A-6

BSK-Pleasanton
Nahas

Date Sampled : 04/19/95
Time Sampled : 0835
Date Received : 04/20/95
Report Issue Date: 05/04/95
Report Reissue Date: 05/09/95

Case Number : Ch951024
Lab ID Number : 1024-2
Project Number : P92057.3
Sample Description: MW-6

Sample Type: LIQUID

## Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Date of Analysis : 04/24/95

| Compound | Results | DLR |
|---|---|---|
| Benzene ..... | ND | 0.3 |
| Toluene ..... | ND | 0.3 |
| Ethylbenzene ..... | ND | 0.3 |
| Total Xylene Isomers ..... | ND | 0.3 |
| Total Petroleum Hydrocarbons (G) | ND | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.

## Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Date of Analysis : N/A

| Analyte | Results | DLR |
|---|---|---|
| Total Petroleum Hydrocarbons (D) | -- | 50 |

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:
DLR: Detection Limit for the Purposes of Reporting. Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Jeffrey Creager, Organics Manager

401 BTL.T

1414 Stanislaus Street • Fresno, CA 93706 • Phone 209-497-2888, In CA 800-877-8310 • Fax 209-485-6935

ANALYTICAL
BSK
LABORATORIES
*Environmental Services*

1414 Stanislaus Street
Fresno, CA 93706
(209) 485-8310
(800) 877-8310
*(209) 485-6935 FAX*

# Analyses Request / Chain of Custody

BSK Log Number: 1024

Analytical Due Date: 5/1/95

Shaded areas for LAB use only

Requested Analyses

| | | |
|---|---|---|
| Client Name: Nabas c/o BSK | Report Attention: Marty Cline | Phone #: (510) 462-4000 |
| Address: 1181 Quarry Ln #300 | Project, Quote or PO #: P92057.3 | FAX #: (510) 462-6283 |
| City, State, Zip: Pleasanton CA 94566 | Copy to: | System #: |

| LAB use only Sample # | Type | # Cont. | Date Sampled | Time Sampled | Sampled by: FRG Sample Description/Location | Comment or Station Code | BTXE | TPH-G | TPH-D |
|---|---|---|---|---|---|---|---|---|---|
| 1 | L | 2 | 4/19/95 | 7:40 | MW-5 | | X | X | |
| 2 | | 2 | 4/19/95 | 8:35 | MW-6 | | X | X | |
| 3 | | 2 | 4/19/95 | 9:30 | MW-7 | | X | | |
| 4 | | 2 | 4/19/95 | 10:15 | MW-4 | | X | X | X |
| 5 | | 2 | 4/19/95 | 11:20 | MW-2 | | X | X | |
| 6 | | 2 | 4/19/95 | 12:10 | MW-3 | | X | X | |

ANALYTICAL COPY

Matrix Type: L - Liquid S - Solid G - Gas
Type of Hazards Associated with Samples:

Additional Services:
Rush Priority: [ ] - 2 Day [ ] - 5 Day
[ ] - Formal Chain of Custody [ ] - QC Data package

Additional Services Authorized by:
_____ (Signature)

Payment Received with Delivery
Date: _____ Amount: $ _____
Check # _____ Initials _____
Reciept # _____

| | Signature | Print Name | Company | Date | Time |
|---|---|---|---|---|---|
| Requested / Relinquished by: | Frank F. Frey | E. Robert Gregware | BSK - P | 4/20/95 | 9:00 |
| Received / Relinquished by: | | | | | |
| Received / Relinquished by: | | | | | |
| Received / Relinquished by: | | | | | |
| Received for Laboratory by: | Janice Garcia - BSK labs | | | 4/20/95 | 1441 |

FIGURE: A-7