

73 Digital Drive, Suite 108
Novato, California 94949-5704
Phone: (415) 382-7400
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Status Report
Second Quarter 1992
BP Facility No. 11124
3315 High Street
Oakland, California

STID # 1075

94619

Aug 1992

73 Digital Drive, Suite 108
Novato, California 94949-5704
Phone: (415) 382-7400
FAX: (415) 382-7415

August 17, 1992

Mr. Peter DeSantis
BP Oil Company
2868 Prospect Park Drive
Suite 360
Rancho Cordova, California 95670

Subject:: Status Report, Second Quarter 1992, for BP Facility No. 11124, 3315 High Street, Oakland, California.

Mr. DeSantis:

At the request of BP Oil Company (BP), RESNA Industries, Inc. (RESNA) performed the second quarter 1992 ground-water monitoring event at the subject site. The purpose of the work was to verify concentrations of hydrocarbons remained below detection limits established by the laboratory and below Maximum Contaminant Levels for drinking water established by the California Department of Health Services. This report presents the background of the site, cumulative results of ground-water monitoring including information regarding the analytical results, depth to ground water, and gradient information. This report also presents RESNA's recommendation for closure of the site to further environmental work.

The site is on the northwest corner of High Street and Porter Street in Oakland, California, as shown on the Site Vicinity Map (Plate 1). The work for the ground-water monitoring event included measuring depths to ground water and subjectively analyzing ground-water samples, purging and sampling ground water from monitoring wells MW-1, MW-2, and MW-4, analyzing ground-water samples from the three monitoring wells, evaluating the groundwater flow direction and gradient beneath the site, and making a recommendation based on the results.

BACKGROUND

It is RESNA's understanding, based on conversations with BP personnel, that two 10,000-gallon underground storage tanks (USTs), one 12,000-gallon UST, and a 1,000 gallon waste oil UST are currently at the site. RESNA understands the 10,000- and 12,000-gallon USTs are used to store regular and unleaded gasoline, respectively. The locations of the monitoring wells and site features are shown on the Generalized Site Plan (Plate 2).

BP OIL

BP Oil Company
16400 Southcenter Parkway, Suite 301
Tukwila, Washington 98188
(206) 575-4077

August 19, 1992

Mr. Paul Smith
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Suite 200
Oakland, California 94621

RE: BP Oil Facility No. 11124
3315 High Street
Oakland, California

Mr. Smith:

Attached please find our status report for the ground-water monitoring event performed during the second quarter of 1992 prepared by RESNA Industries Inc. of Novato, California. This report indicates that concentrations of total petroleum hydrocarbons as gasoline (TPHg), total oil and grease (TOG), and benzene have been below detection limits established by the laboratory during four consecutive quarterly sampling events. In addition, concentrations of toluene, ethylbenzene, and total xylene isomers in ground water samples collected from the existing wells have been below the Maximum Contaminant Levels (MCL's) listed in Title 22 of the California Code of Regulations and have decreased to below detection limits during the last four consecutive quarterly sampling events.

The existing wells at the site were installed by Mobil Oil Corporation (Mobil) before acquisition of the property by BP Oil Company (BP Oil). Concentrations of gasoline hydrocarbons were not detected in ground water after installation of the wells and Mobil's consultant recommended no further monitoring at the site. In November 1990, BP Oil began monitoring the wells at the site. However, no ground-water sample could be collected from the well near the waste-oil tank because of an obstruction in the well. In May 1991, RESNA abandoned the well by drilling out the well casing and backfilling the boring with a cement/bentonite slurry. Additionally, RESNA constructed another well approximately 12 feet north and closer to the waste-oil tank in the downgradient direction of ground-water flow and drilled soil borings adjacent to the corners of the waste-oil tank. TOG was reported at a concentration of 120 parts per million (ppm) in a soil sample collected from 10 feet below grade adjacent to the waste-oil tank and station building, however, concentrations of TOG were not detected at 18 feet below grade in the same boring.

Since ground water does not appear to be impacted based on the four quarters of sampling data, and because the proximity of the station building does not allow the soil with oil and grease to be easily excavated at this time, BP Oil requests your authorization to destroy the existing monitoring wells and subsequently requests closure of the site to further environmental work until the waste-oil tank is removed or replaced.

August 17, 1992
BP Facility No. 11124, Oakland, CA

In July 1986, Kaprealian Engineering, Inc. (Kaprealian) of Martinez, California, installed three ground-water monitoring wells (MW-1 through MW-3) at the site for Mobil Oil Corporation (the previous property owner). Samples of ground water collected from each well did not contain detectable concentrations of gasoline hydrocarbons (Kaprealian Engineering, Inc., September 6, 1986, Report No. KEI-J86-042). In addition, in the referenced Kaprealian report, the conclusions stated that a sufficient volume of soil had been removed from the site to significantly reduce adverse environmental impact to the ground water; therefore, Kaprealian recommended no further monitoring at the site.

On November 12, 1990, at the request of BP (the current property owner), a geologist from RESNA collected ground-water samples from wells MW-1 and MW-2. A sample was not obtained from well MW-3 due to an obstruction in the well. Analytical results for water samples collected from wells MW-1 and MW-2 indicated hydrocarbon concentrations were below laboratory detection limits (Applied Geosystems, February 13, 1991, Letter Report No. 30061-1).

On May 13, 1991, monitoring well MW-3 was abandoned by drilling out the well casing and backfilling the boring the boring with a cement/bentonite slurry. This well was abandoned because it could not be sampled due to the presence of a foreign object or bend in the casing. Following the abandonment of monitoring well MW-3, well MW-4 was installed approximately 12 feet north of the abandoned well. In addition to the well installation, soil borings B-2b and B-3 were drilled approximately 15 feet northeast, and approximately 20 feet southeast, respectively, of well MW-4 adjacent to the corners of the waste oil tank (RESNA, January 30, 1992, Report No. 30061-2). Analytic results of soil samples are discussed in Conclusions and Recommendations.

From July 15, 1991, through January 15, 1992 RESNA performed ground-water monitoring and sampling from monitoring wells MW-1, MW-2, and MW-4, at the request of BP, on a quarterly basis. Concentrations of total petroleum hydrocarbons as gasoline (TPHg), total oil and grease (TOG), and benzene were below laboratory detection limits in ground-water samples collected from all three wells during the sampling events. Concentrations of toluene, ethyl-benzene, and total xylene isomers were below maximum contaminant levels (MCLs) or below laboratory detection limits in ground-water samples collected from all three wells during the sampling events.

PRESENT GROUND-WATER SAMPLING

A technician from RESNA visited the site on April 17, 1992, to measure depth to ground water and collect ground-water samples from the three monitoring wells. The technician performed this work following the methods outlined in an attachment to this report.

The depth to ground water in each monitoring well was measured to the nearest 0.01 foot. This information was used in conjunction with the surveyed wellhead data to prepare a Potentiometric Map showing the direction of ground-water flow and gradient (Plate 3). Ground water beneath the site on April 17, 1992 was flowing to the south at a gradient of 0.014.

August 17, 1992
BP Facility No. 11124, Oakland, CA

Samples of the groundwater were collected from each monitoring well for subjective analyses of hydrocarbons using the methods summarized in an attachment to this report. No obvious product sheen was noted in the ground-water samples. The results of the subjective analyses are presented in Table 1.

Following the subjective analyses, monitoring wells MW-1, MW-2, and MW-4 were purged and ground-water samples were collected for laboratory analyses. During purging, the temperature, pH, and conductivity were monitored. These parameters are presented in Table 2. Because the analyte concentrations are below laboratory detection limits, the water will be disposed of on-site.

The ground-water samples were analyzed for TPHg using EPA Method 8015 (modified), for benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) by EPA Method 602, and for TOG by Standard Method 5520 at RESNA Environmental Laboratories (Applied Analytical) in Fremont, California (Hazardous Waste Testing Laboratory Certificate No. 1211). Analyte concentrations in samples collected from wells MW-1, MW-2, and MW-4 were below laboratory detection limits for this sampling event.

CONCLUSIONS AND RECOMMENDATIONS

Concentrations of TPHg, TOG, and benzene in ground-water samples collected from monitoring wells MW-1, MW-2, and MW-4 have been below detection limits during each (four) consecutive quarterly sampling event. Concentrations of toluene, ethylbenzene, and total xylene isomers in ground-water samples collected from monitoring wells MW-1, MW-2, and MW-4 have been below the MCLs listed in Title 22 of the California Code of Regulations and have decreased to below detection limits during the last four consecutive quarterly sampling events.

Total oil and grease was reported at a concentration of 120 parts-per-million (ppm) in the soil sample collected at 10 feet from boring B-2b; however, the absence of oil and grease in the soil sample collected at 18 feet from boring B-2b indicates that the presence of these compounds in soil near the waste oil tank may be limited to a small zone. Concentrations of all other analytes in soil samples collected from boring B-1, B-2b and B-3 (Plate 2) were at or below their respective levels of concerns or below their respective detection limits (RESNA, January 30, 1992, Report No. 30061-2).

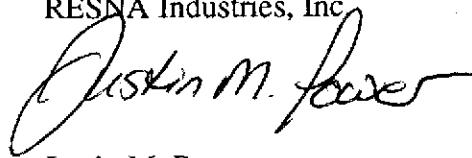
Since ground water does not appear to be impacted based on four quarters of sampling data, and because the proximity of boring B-2b to the waste-oil tank and the station building do not allow the soil with oil and grease compounds to be easily excavated at this time, RESNA recommends destroying monitor wells MW-1, MW-2, and MW-4, and closure of the site to further environmental work until the waste-oil tank is removed or replaced. RESNA recommends that the soil in the area of the waste-oil tank be investigated when the waste-oil tank is removed or replaced.

August 17, 1992
BP Facility No. 11124, Oakland, CA


RESNA also recommends that signed copies of this report be forwarded to Mr. Richard Hiatt of the California Regional Water Quality Control Board, San Francisco Bay Region, 1800 Harrison Street, Suite 700, Oakland, California 94612, to Mr. Paul Smith of the Alameda County Department of Environmental Health, Hazardous Materials Division, 80 Swan Way, Suite 200, Oakland, California 94621, and to Mr. Jerry Blueford of the City of Oakland Fire Department, 1605 Martin Luther King Way, Oakland, California 94612.

Please call if you have any questions regarding this report.

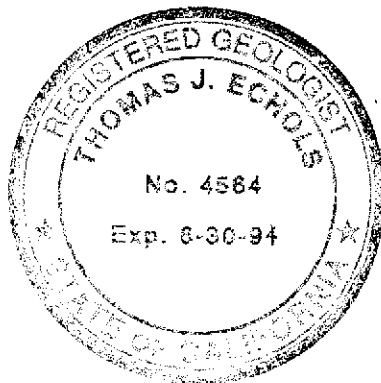
Sincerely,
RESNA Industries, Inc



Justin M. Power
Project Geologist



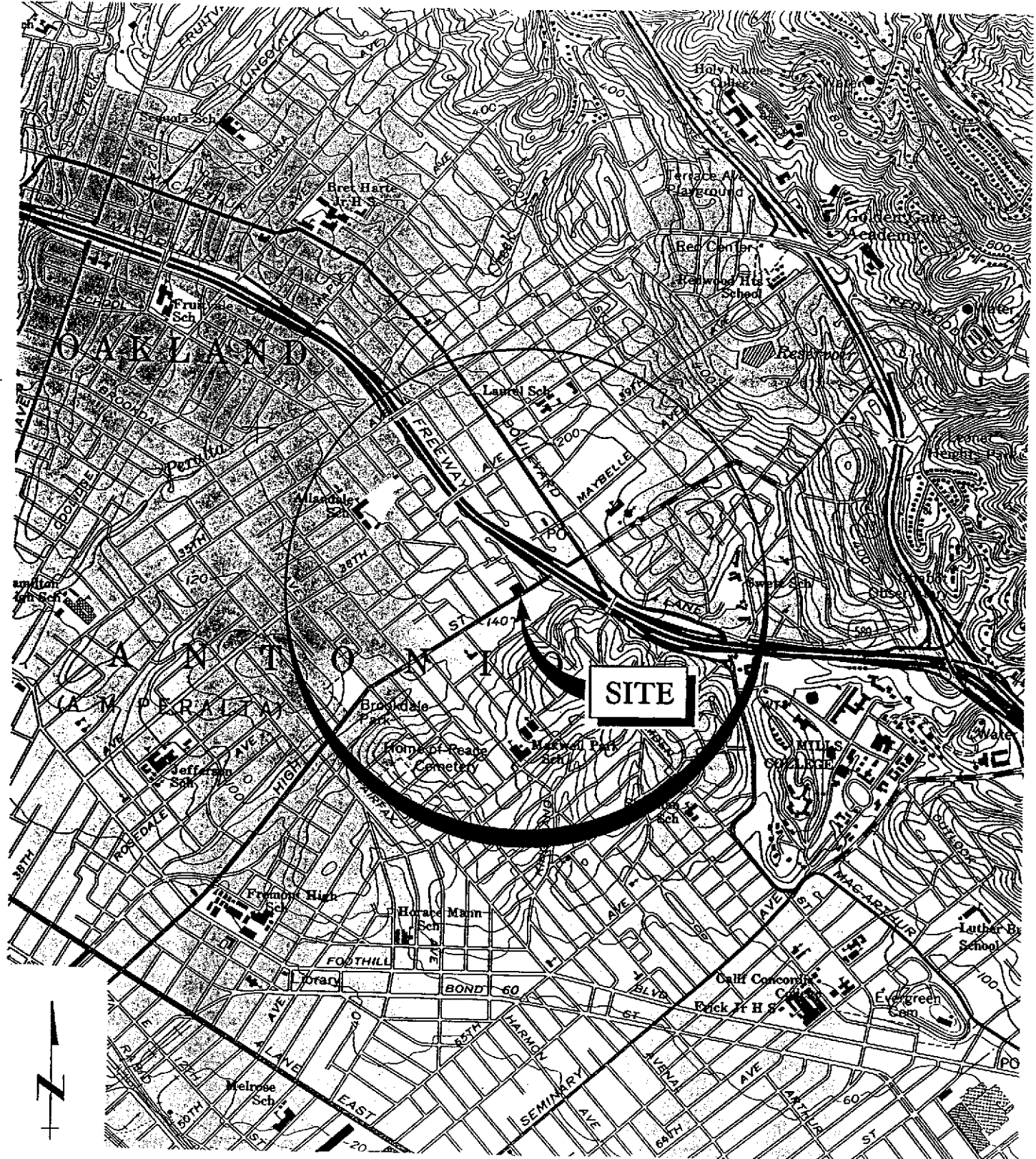
Keith A. Romstad
Project Manager



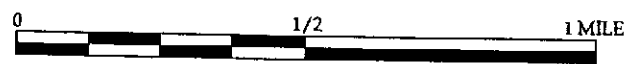
Thomas J. Echols
Senior Geologist
C.R.G. No. 4564

Attachments:

- Plate 1: Site Vicinity Map
- Plate 2: Generalized Site Plan
- Plate 3: Potentiometric Surface of Shallow Groundwater
- Table 1: Depth to Water and Results of Subjective Analyses
- Table 2: Temperature, pH, and Conductivity Results During Purgings
- Table 3: Cumulative Results of Analyses of Water Samples
- Field Methods
- Chain of Custody Records
- Laboratory Analyses Reports



SITE



EXPLANATION

Site Vicinity Map
 BP Facility # 11124
 3315 High Street
 Oakland, California

PLATE

1

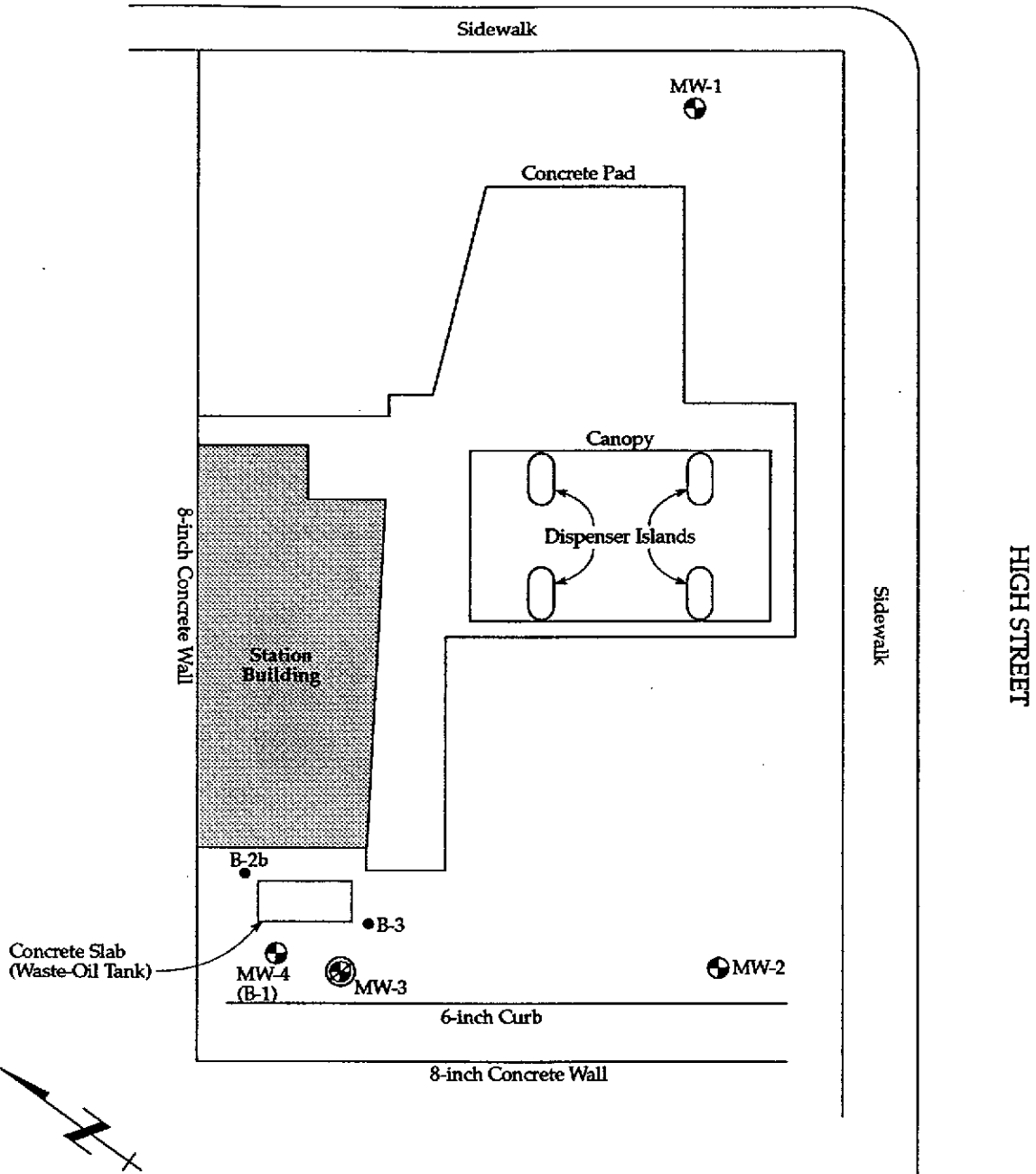
Map Reference: USGS topographic, 7.5 min. series, Oakland East, Calif. quadrangle



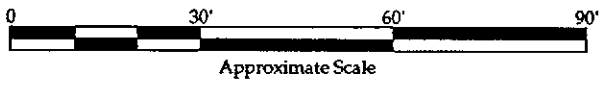
30061.02

6/92

PORTER STREET



Concrete Slab (Waste-Oil Tank)



| EXPLANATION | |
|-------------|--------------------------------------|
| | MW-1 Monitor Well location |
| | MW-3 Abandoned Monitor Well location |
| | B-2b Boring location |

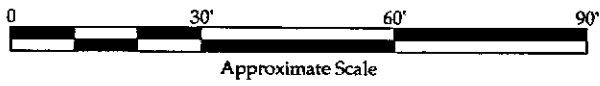
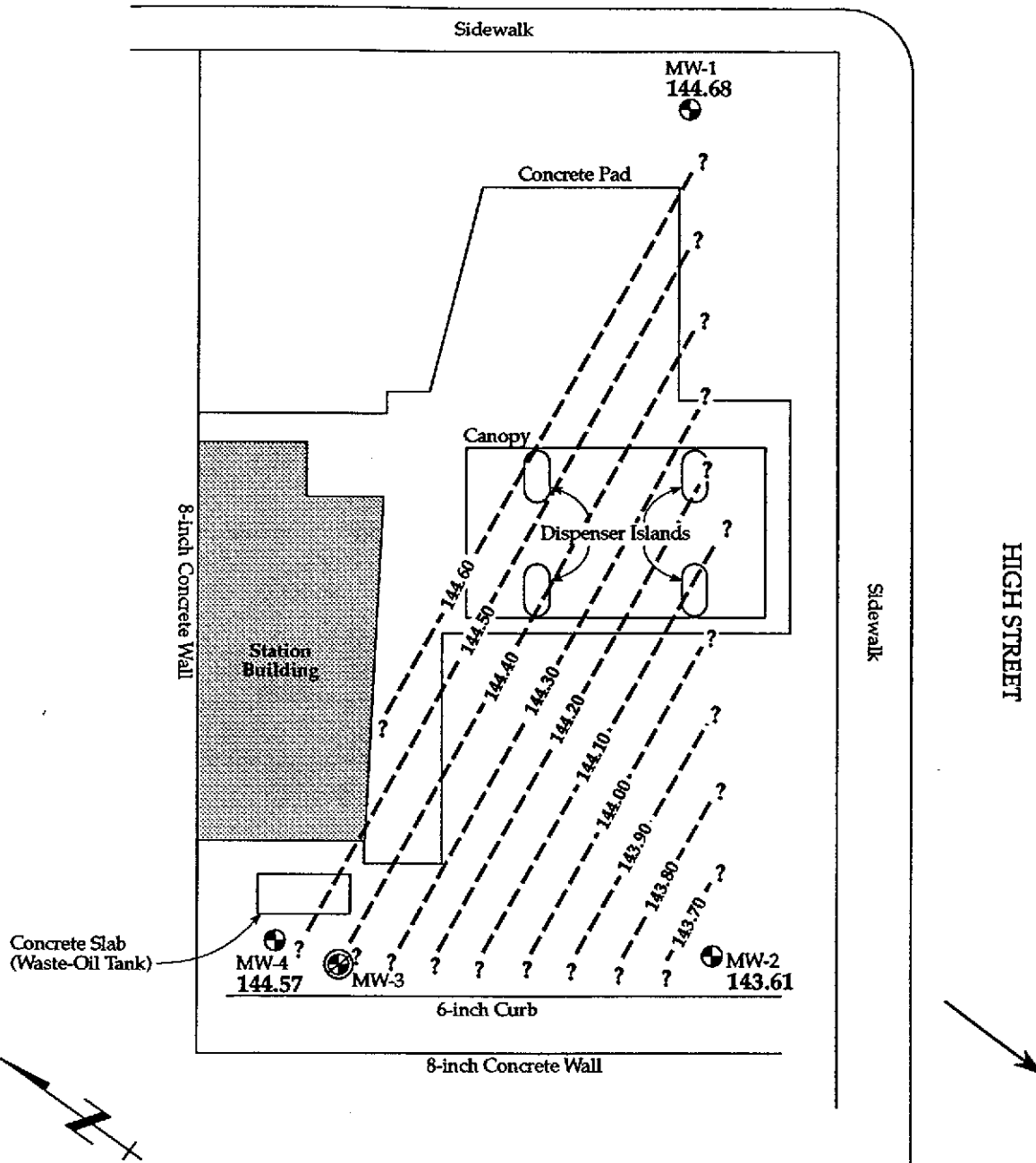
Generalized Site Plan
 BP Facility # 11124
 3315 High Street
 Oakland, California

PLATE
2
 30061.02



6 / 92

PORTER STREET



| EXPLANATION | |
|----------------|--|
| | MW-1 Monitor Well location and groundwater elevation, feet above mean sea level |
| | MW-3 Abandoned Monitor Well location |
| 144.60 - - - ? | Groundwater elevation contour, feet above mean sea level, dashed where inferred, queried where uncertain |
| | Evaluated direction of groundwater flow |

Potentiometric Surface of Shallow Groundwater
 April 17, 1992
 BP Facility # 11124
 3315 High Street
 Oakland, California

PLATE
3
 30061.02



Table 1
DEPTH TO WATER AND
RESULTS OF SUBJECTIVE ANALYSES

BP Facility No. 11124
3315 High Street
Oakland, CA

| Well Number | Sample Date | Depth to Water | TOC Elevation | Water Elevation | Floating Product | Sheen | Emulsion |
|-------------|-------------|----------------|---------------|-----------------|------------------|-------|----------|
| MW-1* | 08/18/86 | 10.10 | 154.99 | 144.89 | None | None | None |
| MW-1 | 11/12/90 | 11.42 | 154.99 | 143.57 | None | None | None |
| MW-1 | 07/15/91 | 10.66 | 154.99 | 144.33 | None | None | None |
| MW-1 | 10/15/91 | 11.67 | 154.99 | 143.32 | None | None | None |
| MW-1 | 01/15/92 | 10.03 | 154.99 | 144.96 | None | None | None |
| MW-1 | 04/17/92 | 10.31 | 154.99 | 144.68 | None | None | None |
| MW-2* | 08/18/86 | 10.00 | 152.02 | 142.02 | None | None | None |
| MW-2 | 11/12/90 | 10.94 | 152.02 | 141.08 | None | None | None |
| MW-2 | 07/15/91 | 9.87 | 152.02 | 142.15 | None | None | None |
| MW-2 | 10/15/91 | 11.16 | 152.02 | 140.86 | None | None | None |
| MW-2 | 01/15/92 | 8.81 | 152.02 | 143.21 | None | None | None |
| MW-2 | 04/17/92 | 8.41 | 152.02 | 143.61 | None | None | None |
| MW-3* | 08/18/86 | 9.60 | NM | --- | None | None | None |
| MW-3 | 11/12/90 | NM | NM | --- | None | None | None |
| MW-3 | 07/15/91 | WA | NM | WA | None | None | None |
| MW-3 | 10/15/91 | WA | NM | WA | None | None | None |
| MW-3 | 01/15/92 | WA | NM | WA | None | None | None |
| MW-3 | 04/17/92 | WA | NM | WA | None | None | None |
| MW-4 | 07/15/91 | 9.62 | 152.77 | 142.85 | None | None | None |
| MW-4 | 10/15/91 | 11.30 | 152.77 | 141.47 | None | None | None |
| MW-4 | 01/15/92 | 8.81 | 152.77 | 143.96 | None | None | None |
| MW-4 | 04/17/92 | 8.20 | 152.77 | 144.57 | None | None | None |

TOC = Top of Casing
 * = Measurement collected by Kaprealian Engineering, Inc.
 NM = Not Measured
 WA = Well Abandoned
 Elevation datum is mean sea level.

TABLE 2
TEMPERATURE, pH, AND CONDUCTIVITY
RESULTS DURING PURGING

BP Facility NO. 11124
Oakland, California
(April 17, 1992)

| Well Number | Time | Cumulative Gallons Purged | Temp. (C°) | pH | Conductivity (µohms) |
|-------------|-------|---------------------------|------------|------|----------------------|
| MW-1 | 11:00 | 0 | NA | NA | NA |
| MW-1 | 12:00 | 26 | 24.3 | 7.58 | 630 |
| MW-1 | 12:55 | 49 | 22.0 | 7.51 | 680 |
| MW-1 | 13:00 | 52 | NA | NA | NA |
| MW-1 | 14:00 | 52 | 21.8 | 7.50 | 650 |
| MW-2 | 11:25 | 0 | NA | NA | NA |
| MW-2 | 11:50 | 21 | 21.9 | 7.40 | 860 |
| MW-2 | 12:00 | 30 | 23.1 | 7.69 | 840 |
| MW-2 | 12:15 | 43 | 23.0 | 7.55 | 840 |
| MW-4 | 14:40 | 0 | NA | NA | NA |
| MW-4 | 14:45 | 7 | 18.70 | 8.00 | 790 |
| MW-4 | 15:00 | 27 | 18.90 | 8.06 | 850 |
| MW-4 | 15:15 | 47 | 18.90 | 8.04 | 830 |
| MW-4 | 15:20 | 53 | NA | NA | NA |

NA = Not Available

Table 3
CUMULATIVE RESULTS
OF WATER SAMPLES

BP Facility No. 11124
3315 High Street
Oakland, CA

| Sample ID | Sample Date | TPHg | Benzene | Toluene | Ethylbenzene | Total Xylenes | Total O&G |
|-----------|-------------|------|---------|---------|--------------|---------------|-----------|
| MW-1* | 08/18/86 | <50 | <1.0 | <1.0 | <1.0 | <1.0 | NA |
| MW-1 | 11/12/90 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-1 | 07/15/91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-1 | 10/15/91 | <50 | <0.5 | 0.8 | 0.6 | 0.8 | <5000 |
| MW-1 | 01/15/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-1 | 04/17/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-2* | 08/18/86 | <50 | <1.0 | <1.0 | <1.0 | <1.0 | NA |
| MW-2 | 11/12/90 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 07/15/91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 10/15/91 | <50 | <0.5 | 0.7 | <0.5 | 1.5 | <5000 |
| MW-2 | 01/15/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-2 | 04/17/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-3* | 08/18/86 | <5 | <1.0 | <1.0 | <1.0 | <1.0 | NA |
| MW-3 | 11/12/90 | NS | NS | NS | NS | NS | NA |
| MW-3 | 07/15/91 | WA | WA | WA | WA | WA | NA |
| MW-3 | 10/15/91 | WA | WA | WA | WA | WA | WA |
| MW-3 | 01/15/92 | WA | WA | WA | WA | WA | WA |
| MW-3 | 04/17/92 | WA | WA | WA | WA | WA | WA |
| MW-4 | 07/15/91 | <50 | <0.5 | 0.5 | <0.5 | 0.8 | NA |
| MW-4 | 10/15/91 | <50 | <0.5 | 0.7 | 0.6 | 1.1 | <5000 |
| MW-4 | 01/15/92 | <50 | <0.5 | 2.7 | <0.5 | <0.5 | <5000 |
| MW-4 | 04/17/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-4D | 04/17/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |

Notes:

TPHg = Total Petroleum Hydrocarbons as gasoline * = Sample collected by Kaprealian Total Engineering, Inc.
O&G = Oil & Grease
WA = Well Abandoned
NA = Not Analyzed
D = Duplicate sample

Results in parts per billion (ppb)

FIELD METHODS

Site Safety Plan

This plan describes the safety requirements for purging and sampling ground-water monitoring wells. The site safety plan was applicable to personnel of RESNA Industries, Inc. who performed work at the site. A copy of the site safety plan was available for reference by appropriate parties during the work. The on-site staff geologist or technician of RESNA acted as the Site Safety Officer. RESNA performed work at the site following our Site Safety Plan No. 30061-1S, dated October 15, 1990.

Sample Handling Protocol

Water samples collected for laboratory analyses were accompanied by a Chain of Custody Record that was initiated by the technician at the site and completed as the samples were collected. Soil samples collected for possible analyses were promptly sealed, labeled, and placed in iced storage for transport to the analytical laboratory. A Chain of Custody Record was initiated by the field technician and accompanied the selected soil samples to the laboratory.

Subjective Observations

The depth to ground water in the monitoring wells was measured to the nearest 0.01-foot with an electronic water-level indicator. Samples of ground water were collected for subjective analysis from the air-fluid interface in each well by lowering approximately half the length of a clear Teflon bailer through the interface. The bailer was retrieved and the water sample examined for free product, sheen, or other subjective evidence of hydrocarbons.

Purging

A minimum of three well volumes of ground water, corresponding to approximately 150 gallons, were purged from wells MW-1, Mw-2, and MW-4 using an electric submersible pump. The ground-water temperature, Ph, and conductivity were monitored to assure that a representative sample was obtained from the aquifer. The purge water was placed into labeled 55-gallon 17-E drums approved for this use by the California Department of Transportation and stored temporarily onsite pending receipt of laboratory analytical results.

Ground-Water Sampling

Ground-water samples were collected after the water in each well recovered to near its original level. The ground-water samples were collected by lowering a clean teflon bailer gently through the air-water interface to a depth approximately 3 feet below the ground-water surface. The bailer was retrieved and the samples were transferred slowly to laboratory-cleaned, 40-milliliter glass vials or other appropriate containers as required by the laboratory. The vials and bottles contained hydrochloric acid and were filled so that no headspace was left in the containers. The field technician initiated a Chain of Custody Record and it accompanied the samples to the analytical laboratory. A copy of that record is attached to this report.

| | | | |
|--|---|--------------------|---------|
| PROJECT NO. NER 86-448.01 AGS 30061.02 | PROJECT NAME/SITE BP OIL Oakland, CA. | ANALYSIS REQUESTED | P.O. #: |
|--|---|--------------------|---------|

| | | |
|---|---------|---------------|
| SAMPLERS (SIGN) <i>Dean K. Osaki</i> | (PRINT) | Dean K. Osaki |
|---|---------|---------------|

| SAMPLE IDENTIFICATION | DATE | TIME | COMP | GRAB | PRES. USED | ICED | NO. CONTAINERS | SAMPLE TYPE | ANALYSIS REQUESTED | | | | | | | | | | REMARKS | | | | |
|-----------------------|---------|-------|------|------|------------|------|----------------|-------------|--------------------|------------|------------|----------------|----------|----------|----------|--|--|--|---------|--|--|--|------------------|
| | | | | | | | | | BTEX (602/8020) | TPH (6015) | TPH (8015) | TOG 418.1/5520 | 601/8010 | 824/8240 | 825/8270 | | | | | | | | |
| MW-1A, B, C, D(2) | 4/17/92 | 14:00 | | | See | X | 5 | N | X | X | X | | | | | | | | | | | | |
| MW-2A, B, C, D(2) | | 12:15 | | | Remarks | | 5 | | | | | | | | | | | | | | | | A, B, C-SAMPLES |
| MW-4A, B, C, D(2) | | 15:20 | | | | | 5 | | | | | | | | | | | | | | | | (602/8015) |
| TB-5A, B | | - | | | | | 2 | | | | | | | | | | | | | | | | HCl preservative |
| DUP-(6A, B, C, D) | ↓ | 15:20 | | | ↓ | ↓ | 4 | ↓ | ↓ | ↓ | X | | | | | | | | | | | | D-samples |
| | | | | | | | | | | | | | | | | | | | | | | | (OIL & Grease) |
| | | | | | | | | | | | | | | | | | | | | | | | no preservative |

| | | | | | |
|--|-----------------|---------------|---|---|---|
| RELINQUISHED BY: <i>Dean K. Osaki</i> | DATE 4/20/92 | TIME 10:30 | RECEIVED BY: <i>[Signature]</i> | LABORATORY: Applied Analytical 42501 Albrae St. Fremont, CA 94538 | PLEASE SEND RESULTS TO: RESNA c/o Mark Frye 73 Digital Dr. Novato 94949 (415) 382-7400 |
| RELINQUISHED BY: <i>Ken B</i> | DATE 4/21/92 | TIME 8:30 | RECEIVED BY: | REQUESTED TURNAROUND TIME: Normal | |
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | | |
| RELINQUISHED BY: | DATE 4/19/92 | TIME 8:30 | RECEIVED BY LABORATORY: <i>[Signature]</i> | RECEIPT CONDITION: good / cool | PROJECT MANAGER: Keith Romstad |

ANALYSIS REPORT

Attention: Mr. Keith Romstad
RESNA
73 Digital Dr.
Novato, CA 94949
Project: AGS 30061.02
BP Oil Co.

Date Sampled: 04-17-92
Date Received: 04-21-92
BTEX Analyzed: 04-22-92
TPHg Analyzed: 04-22-92
TPHd Analyzed: NR
Matrix: Water

1020lab.frm

| | Benzene ppb | Toluene ppb | Ethyl- benzene ppb | Total Xylenes ppb | TPHg ppb | TPHd ppb |
|------------------|----------------|----------------|--------------------------|-------------------------|-------------|-------------|
| Detection Limit: | 0.5 | 0.5 | 0.5 | 0.5 | 50 | 100 |

SAMPLE
Laboratory Identification

| | | | | | | |
|------------------------|----|----|----|----|----|----|
| MW1-(A-D) W1204588 | ND | ND | ND | ND | ND | NR |
| MW2-(A-D) W1204589 | ND | ND | ND | ND | ND | NR |
| MW4-(A-D) W1204590 | ND | ND | ND | ND | ND | NR |
| TB-5AB W1204591 | ND | ND | ND | ND | ND | NR |
| DUP6-(A-D) W1204592 | ND | ND | ND | ND | ND | NR |

ppb = parts per billion = $\mu\text{g/L}$ = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX— Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.
TPHg—Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.
TPHd—Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.



Laboratory Representative

April 24, 1992

Date Reported

RESNA ENVIRONMENTAL LABORATORY IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 1211)

ANALYSIS REPORT

1020lab.frm

| | | | |
|------------|--|------------------|-----------|
| Attention: | Mr. Mark Frye RESNA 73 Digital Dr. Novato, CA 94949 | Date Sampled: | 04-17-92 |
| Project: | AGS 19519-L, Project 30061.02 | Date Received: | 04-21-92 |
| | | TOG Analyzed: | 05-07-92 |
| | | Matrix: | Water |
| | | Detection Limit: | 5000 µg/L |

| SAMPLE | TOG (µg/L) |
|---------------------------|---------------|
| <hr/> | |
| Laboratory Identification | |
| MW-1 W1204588 | ND |
| MW-2 W1204589 | ND |
| MW-4 W1204590 | ND |
| DUP W1204592 | ND |

µg/L = micrograms per liter = ppb = parts per billion
 ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

ANALYTICAL PROCEDURES

TPH as Oil and Grease – Total Oil and Grease (TOG) of mineral or petroleum origin are measured by extraction and gravimetric analysis according to Standard Method 5520 B/F.



 Laboratory Representative

 May 12, 1992
 Date Reported