IRIS ENVIRONMENTAL

Via Hand Delivery

November 19, 2001

Jeffrey Rubin
Port of Oakland, EH&SC
530 Water Street
Oakland, CA 94607

Re: Data Summary Tables and Figures
Third and Brush Street Site
Port of Oakland, Oakland, California
Iris Contract No. 01-172-D

Dear Jeff,

Please find enclosed the data summary tables from the subsurface investigation conducted at the Harbor Facilities Garage, located at 209 Brush Street ("Third and Brush Streets Site"). Also enclosed are two figures containing soil and groundwater chemical compound detections for total petroleum hydrocarbons (TPH) as gas and diesel, BTEX compounds, total lead and MTBE.

Please do not hesitate to contact me at (510) 834-4747, extension 13, with any questions regarding this submittal.

Sincerely,

Abigail R. Posner
Geologist

Iris\Port of Oakland\TSO#5\JeffRubinletter

Enclosures

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-1	B-1	B-1	B-1	B-1
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8021	8021	8260	8021	8260	8021
BEGINNING DEPTH [1]	1.0	2.0	5.0	5.0	7.5	7.5
UNITS	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Acetone	--	--	< 20	--	< 20	--
Bromodichloromethane	--	--	< 5.1	--	< 4.9	--
Bromobenzene	--	--	< 5.1	--	< 4.9	--
Bromochloromethane	--	--	< 5.1	--	< 4.9	--
Bromomethane	--	--	< 10	--	< 9.8	--
n-Butylbenzene	--	--	< 5.1	--	< 4.9	--
sec-Butylbenzene	--	--	< 5.1	--	< 4.9	--
tert-Butylbenzene	--	--	< 5.1	--	< 4.9	--
Benzene	< 4.5	**290**	< 5.1	< 5.1	< 4.9	< 5.4
Toluene	**16**	**23 C**	< 5.1	< 5.1	< 4.9	< 5.4
Carbon Disulfide	--	--	< 5.1	--	< 4.9	--
2-Chloroethylvinylether	--	--	< 10	--	< 9.8	--
Chlorobenzene	--	--	< 5.1	--	< 4.9	--
2-Chlorotoluene	--	--	< 5.1	--	< 4.9	--
4-Chlorotoluene	--	--	< 5.1	--	< 4.9	--
Chloroethane	--	--	< 10	--	< 9.8	--
Chloromethane	--	--	< 10	--	< 9.8	--
Carbon Tetrachloride	--	--	< 5.1	--	< 4.9	--
para-Isopropyl Toluene	--	--	< 5.1	--	< 4.9	--
Dibromochloromethane	--	--	< 5.1	--	< 4.9	--
1,2-Dibromo-3-Chloropropane	--	--	< 5.1	--	< 4.9	--
Dibromomethane	--	--	< 5.1	--	< 4.9	--
1,1-Dichloroethane	--	--	< 5.1	--	< 4.9	--
1,2-Dichloroethane	--	--	< 5.1	--	< 4.9	--
1,2-Dichlorobenzene	--	--	< 5.1	--	< 4.9	--
1,3-Dichlorobenzene	--	--	< 5.1	--	< 4.9	--
1,4-Dichlorobenzene	--	--	< 5.1	--	< 4.9	--
1,1-Dichloroethene	--	--	< 5.1	--	< 4.9	--
cis-1,2-Dichloroethene	--	--	< 5.1	--	< 4.9	--
trans-1,2-Dichloroethene	--	--	< 5.1	--	< 4.9	--
1,1-Dichloropropene	--	--	< 5.1	--	< 4.9	--
cis-1,3-Dichloropropene	--	--	< 5.1	--	< 4.9	--
trans-1,3-Dichloropropene	--	--	< 5.1	--	< 4.9	--
1,2-Dichloropropane	--	--	< 5.1	--	< 4.9	--
1,3-Dichloropropane	--	--	< 5.1	--	< 4.9	--
2,2-Dichloropropane	--	--	< 5.1	--	< 4.9	--
Ethylbenzene	< 4.5	< 5.4	< 5.1	< 5.1	< 4.9	< 5.4
1,2-Dibromoethane	--	--	< 5.1	--	< 4.9	--
Trichlorofluoromethane	--	--	< 5.1	--	< 4.9	--
Freon 113	--	--	< 5.1	--	< 4.9	--
Freon 12	--	--	< 10	--	< 9.8	--
Hexachlorobutadiene	--	--	< 5.1	--	< 4.9	--
2-Hexanone	--	--	< 10	--	< 9.8	--
Isopropylbenzene	--	--	< 5.1	--	< 4.9	--
2-Butanone	--	--	< 10	--	< 9.8	--

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-1	B-1	B-1	B-1	B-1
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8021	8021	8260	8021	8260	8021
BEGINNING DEPTH [1]	1.0	2.0	5.0	5.0	7.5	7.5
UNITS	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
(cont.)						
4-Methyl-2-Pentanone	--	--	< 10	--	< 9.8	--
MTBE	--	--	< 5.1	--	< 4.9	--
Methylene Chloride	--	--	< 20	--	< 20	--
Naphthalene	--	--	< 5.1	--	< 4.9	--
Propylbenzene	--	--	< 5.1	--	< 4.9	--
1,1,2,2-Tetrachloroethane	--	--	< 5.1	--	< 4.9	--
Tetrachloroethene	--	--	< 5.1	--	< 4.9	--
Styrene	--	--	< 5.1	--	< 4.9	--
Bromoform	--	--	< 5.1	--	< 4.9	--
1,1,1,2-Tetrachloroethane	--	--	< 5.1	--	< 4.9	--
1,1,1-Trichloroethane	--	--	< 5.1	--	< 4.9	--
1,1,2-Trichloroethane	--	--	< 5.1	--	< 4.9	--
1,2,3-Trichlorobenzene	--	--	< 5.1	--	< 4.9	--
1,2,4-Trichlorobenzene	--	--	< 5.1	--	< 4.9	--
Trichloroethene	--	--	< 5.1	--	< 4.9	--
Chloroform	--	--	< 5.1	--	< 4.9	--
1,2,3-Trichloropropane	--	--	< 5.1	--	< 4.9	--
1,2,4-Trimethylbenzene	--	--	< 5.1	--	< 4.9	--
1,3,5-Trimethylbenzene	--	--	< 5.1	--	< 4.9	--
Vinyl Acetate	--	--	< 51	--	< 49	--
Vinyl Chloride	--	--	< 10	--	< 9.8	--
m,p-Xylenes	**6.6**	**15**	< 5.1	< 5.1	< 4.9	< 5.4
o-Xylene	< 4.5	**12**	< 5.1	< 5.1	< 4.9	< 5.4

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

C = presence confirmed, but confirmation concentration differed by more than a factor of two.
-- = not analyzed.

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-1	B-1-WI	B-1-WI	B-2	B-2	B-2
MATRIX	Soil	Soil	Aqueous	Aqueous	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8260	8021	8260	8021	8021	8021	8260
BEGINNING DEPTH [1]	9.5	9.5	GW	GW	1.0	2.0	5.0
UNITS	µg/Kg	µg/Kg	µg/L	µg/L	µg/Kg	µg/Kg	µg/Kg
Acetone	< 20	--	< 20	--	--	--	< 20
Bromodichloromethane	< 5	--	< 5	--	--	--	< 5
Bromobenzene	< 5	--	< 5	--	--	--	< 5
Bromochloromethane	< 5	--	< 10	--	--	--	< 5
Bromomethane	< 10	--	< 10	--	--	--	< 10
n-Butylbenzene	< 5	--	< 5	--	--	--	< 5
sec-Butylbenzene	< 5	--	< 5	--	--	--	< 5
tert-Butylbenzene	< 5	--	< 5	--	--	--	< 5
Benzene	< 5	< 5.2	**6.3**	**5.8**	< 5.1	< 5.4	< 5
Toluene	< 5	< 5.2	**34**	**30**	**13**	**35**	< 5
Carbon Disulfide	< 5	--	< 5	--	--	--	< 5
2-Chloroethylvinylether	< 10	--	< 10	--	--	--	< 10
Chlorobenzene	< 5	--	< 5	--	--	--	< 5
2-Chlorotoluene	< 5	--	< 5	--	--	--	< 5
4-Chlorotoluene	< 5	--	< 5	--	--	--	< 5
Chloroethane	< 10	--	< 10	--	--	--	< 10
Chloromethane	< 10	--	< 10	--	--	--	< 10
Carbon Tetrachloride	< 5	--	< 5	--	--	--	< 5
para-Isopropyl Toluene	< 5	--	< 5	--	--	--	< 5
Dibromochloromethane	< 5	--	< 5	--	--	--	< 5
1,2-Dibromo-3-Chloropropane	< 5	--	< 5	--	--	--	< 5
Dibromomethane	< 5	--	< 5	--	--	--	< 5
1,1-Dichloroethane	< 5	--	< 5	--	--	--	< 5
1,2-Dichloroethane	< 5	--	< 5	--	--	--	< 5
1,2-Dichlorobenzene	< 5	--	< 5	--	--	--	< 5
1,3-Dichlorobenzene	< 5	--	< 5	--	--	--	< 5
1,4-Dichlorobenzene	< 5	--	< 5	--	--	--	< 5
1,1-Dichloroethene	< 5	--	< 5	--	--	--	< 5
cis-1,2-Dichloroethene	< 5	--	< 5	--	--	--	< 5
trans-1,2-Dichloroethene	< 5	--	< 5	--	--	--	< 5
1,1-Dichloropropene	< 5	--	< 5	--	--	--	< 5
cis-1,3-Dichloropropene	< 5	--	< 5	--	--	--	< 5
trans-1,3-Dichloropropene	< 5	--	< 5	--	--	--	< 5
1,2-Dichloropropane	< 5	--	< 5	--	--	--	< 5
1,3-Dichloropropane	< 5	--	< 5	--	--	--	< 5
2,2-Dichloropropane	< 5	--	< 5	--	--	--	< 5
Ethylbenzene	< 5	< 5.2	**7.4**	**6.3**	**< 5.1**	**8.3**	**< 5**
1,2-Dibromoethane	< 5	--	< 5	--	--	--	< 5
Trichlorofluoromethane	< 5	--	< 5	--	--	--	< 5
Freon 113	< 5	--	< 5	--	--	--	< 5
Freon 12	< 10	--	< 10	--	--	--	< 10
Hexachlorobutadiene	< 5	--	< 5	--	--	--	< 5
2-Hexanone	< 10	--	< 10	--	--	--	< 10
Isopropylbenzene	< 5	--	< 5	--	--	--	< 5
2-Butanone	< 10	--	< 10	--	--	--	< 10

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-1	B-1-WI	B-1-WI	B-2	B-2	B-2
MATRIX	Soil	Soil	Aqueous	Aqueous	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8260	8021	8260	8021	8021	8021	8260
BEGINNING DEPTH [1]	9.5	9.5	GW	GW	1.0	2.0	5.0
UNITS	µg/Kg	µg/Kg	µg/L	µg/L	µg/Kg	µg/Kg	µg/Kg
(cont.)							
4-Methyl-2-Pentanone	< 10	--	< 10	--	--	--	< 10
MTBE	< 5	--	< 5	--	--	--	< 5
Methylene Chloride	< 20	--	< 20	--	--	--	< 20
Naphthalene	< 5	--	< 5	--	--	--	< 5
Propylbenzene	< 5	--	< 5	--	--	--	< 5
1,1,2,2-Tetrachloroethane	< 5	--	< 5	--	--	--	< 5
Tetrachloroethene	< 5	--	< 5	--	--	--	< 5
Styrene	< 5	--	< 5	--	--	--	< 5
Bromoform	< 5	--	< 5	--	--	--	< 5
1,1,1,2-Tetrachloroethane	< 5	--	< 5	--	--	--	< 5
1,1,1-Trichloroethane	< 5	--	< 5	--	--	--	< 5
1,1,2-Trichloroethane	< 5	--	< 5	--	--	--	< 5
1,2,3-Trichlorobenzene	< 5	--	< 5	--	--	--	< 5
1,2,4-Trichlorobenzene	< 5	--	< 5	--	--	--	< 5
Trichloroethene	< 5	--	< 5	--	--	--	< 5
Chloroform	< 5	--	< 5	--	--	--	< 5
1,2,3-Trichloropropane	< 5	--	< 5	--	--	--	< 5
1,2,4-Trimethylbenzene	< 5	--	**14**	--	--	--	< 5
1,3,5-Trimethylbenzene	< 5	--	< 5	--	--	--	< 5
Vinyl Acetate	< 50	--	< 50	--	--	--	< 50
Vinyl Chloride	< 10	--	< 10	--	--	--	< 10
m,p-Xylenes	< 5	< 5.2	**32**	**26**	**7.9**	**30**	< 5
o-Xylene	< 5	< 5.2	**13**	**12**	< 5.1	**8.5**	< 5

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

C = presence confirmed, but confirmation concentration differed by more than a factor of two.
-- = not analyzed.

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-2	B-2-WI	B-2-WI	B-3	B-3	B-3	B-3
MATRIX	Soil	Aqueous	Aqueous	Soil	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8021	8260	8021	8021	8021	8260	8021
BEGINNING DEPTH [1]	5.0	GW	GW	1.0	3.0	4.5	4.5
UNITS	µg/Kg	µg/L	µg/L	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Acetone	--	< 67	--	--	--	**75**	--
Bromodichloromethane	--	< 17	--	--	--	< 5.1	--
Bromobenzene	--	< 17	--	--	--	< 5.1	--
Bromochloromethane	--	< 33	--	--	--	< 5.1	--
Bromomethane	--	< 33	--	--	--	< 10	--
n-Butylbenzene	--	< 17	--	--	--	**14**	--
sec-Butylbenzene	--	< 17	--	--	--	**6.6**	--
tert-Butylbenzene	--	< 17	--	--	--	< 5.1	--
Benzene	< 4.5	**74**	**78**	< 4.7	**58**	**10**	**9.7**
Toluene	**6.6**	< 17	**4.1 C**	< 4.7	**12**	< 5.1	**1.7**
Carbon Disulfide	--	< 17	--	--	--	< 5.1	--
2-Chloroethylvinylether	--	< 33	--	--	--	< 10	--
Chlorobenzene	--	< 17	--	--	--	< 5.1	--
2-Chlorotoluene	--	< 17	--	--	--	< 5.1	--
4-Chlorotoluene	--	< 17	--	--	--	< 5.1	--
Chloroethane	--	< 33	--	--	--	< 10	--
Chloromethane	--	< 33	--	--	--	< 10	--
Carbon Tetrachloride	--	< 17	--	--	--	< 5.1	--
para-Isopropyl Toluene	--	< 17	--	--	--	< 5.1	--
Dibromochloromethane	--	< 17	--	--	--	< 5.1	--
1,2-Dibromo-3-Chloropropane	--	< 17	--	--	--	< 5.1	--
Dibromomethane	--	< 17	--	--	--	< 5.1	--
1,1-Dichloroethane	--	< 17	--	--	--	< 5.1	--
1,2-Dichloroethane	--	< 17	--	--	--	< 5.1	--
1,2-Dichlorobenzene	--	< 17	--	--	--	< 5.1	--
1,3-Dichlorobenzene	--	< 17	--	--	--	< 5.1	--
1,4-Dichlorobenzene	--	< 17	--	--	--	< 5.1	--
1,1-Dichloroethene	--	< 17	--	--	--	< 5.1	--
cis-1,2-Dichloroethene	--	< 17	--	--	--	< 5.1	--
trans-1,2-Dichloroethene	--	< 17	--	--	--	< 5.1	--
1,1-Dichloropropene	--	< 17	--	--	--	< 5.1	--
cis-1,3-Dichloropropene	--	< 17	--	--	--	< 5.1	--
trans-1,3-Dichloropropene	--	< 17	--	--	--	< 5.1	--
1,2-Dichloropropane	--	< 17	--	--	--	< 5.1	--
1,3-Dichloropropane	--	< 17	--	--	--	< 5.1	--
2,2-Dichloropropane	--	< 17	--	--	--	< 5.1	--
Ethylbenzene	**< 4.5**	**< 17**	**2**	**7 C**	**23**	< 5.1	**2.3**
1,2-Dibromoethane	--	< 17	--	--	--	< 5.1	--
Trichlorofluoromethane	--	< 17	--	--	--	< 5.1	--
Freon 113	--	< 17	--	--	--	< 5.1	--
Freon 12	--	< 33	--	--	--	< 10	--
Hexachlorobutadiene	--	< 17	--	--	--	< 5.1	--
2-Hexanone	--	< 33	--	--	--	< 10	--
Isopropylbenzene	--	< 17	--	--	--	< 5.1	--
2-Butanone	--	< 33	--	--	--	**16**	--

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-2	B-2-WI	B-2-WI	B-3	B-3	B-3	B-3
MATRIX	Soil	Aqueous	Aqueous	Soil	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8021	8260	8021	8021	8021	8260	8021
BEGINNING DEPTH [1]	5.0	GW	GW	1.0	3.0	4.5	4.5
UNITS	µg/Kg	µg/L	µg/L	µg/Kg	µg/Kg	µg/Kg	µg/Kg
(cont.)							
4-Methyl-2-Pentanone	--	< 33	--	--	--	< 10	--
MTBE	--	**590**	--	--	--	< 5.1	--
Methylene Chloride	--	< 67	--	--	--	< 20	--
Naphthalene	--	< 17	--	--	--	**35**	--
Propylbenzene	--	< 17	--	--	--	**12**	--
1,1,2,2-Tetrachloroethane	--	< 17	--	--	--	< 5.1	--
Tetrachloroethene	--	< 17	--	--	--	< 5.1	--
Styrene	--	< 17	--	--	--	< 5.1	--
Bromoform	--	< 17	--	--	--	< 5.1	--
1,1,1,2-Tetrachloroethane	--	< 17	--	--	--	< 5.1	--
1,1,1-Trichloroethane	--	< 17	--	--	--	< 5.1	--
1,1,2-Trichloroethane	--	< 17	--	--	--	< 5.1	--
1,2,3-Trichlorobenzene	--	< 17	--	--	--	< 5.1	--
1,2,4-Trichlorobenzene	--	< 17	--	--	--	< 5.1	--
Trichloroethene	--	< 17	--	--	--	< 5.1	--
Chloroform	--	< 17	--	--	--	< 5.1	--
1,2,3-Trichloropropane	--	< 17	--	--	--	< 5.1	--
1,2,4-Trimethylbenzene	--	< 17	--	--	--	**13**	--
1,3,5-Trimethylbenzene	--	< 17	--	--	--	< 5.1	--
Vinyl Acetate	--	< 170	--	--	--	< 51	--
Vinyl Chloride	--	< 33	--	--	--	< 10	--
m,p-Xylenes	**5.7**	< 17	**5.7**	**8.3**	**30**	< 5.1	**2.2**
o-Xylene	< 4.5	< 17	**2.3**	< 4.7	**18 C**	< 5.1	**1.3 C**

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

C = presence confirmed, but confirmation concentration differed by more than a factor of two.
-- = not analyzed.

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-3	B-3	B-3	B-3	B-3-WI	B-3-WI
MATRIX	Soil	Soil	Soil	Soil	Aqueous	Aqueous
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8260	8021	8260	8021	8260	8021
BEGINNING DEPTH [1]	7.5	7.5	9.5	9.5	GW	GW
UNITS	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/L	µg/L
Acetone	< 40000	--	< 10000	--	< 4000	--
Bromodichloromethane	< 10000	--	< 2500	--	< 1000	--
Bromobenzene	< 10000	--	< 2500	--	< 1000	--
Bromochloromethane	< 10000	--	< 2500	--	< 2000	--
Bromomethane	< 20000	--	< 5000	--	< 2000	--
n-Butylbenzene	**38000**	--	**4100**	--	< 1000	--
sec-Butylbenzene	**12000**	--	< 2500	--	< 1000	--
tert-Butylbenzene	< 10000	--	< 2500	--	< 1000	--
Benzene	**24000**	**40000**	**7800**	**8800**	**9300**	**8000**
Toluene	**40000**	**30000 C**	**79000**	**74000**	**19000**	**15000**
Carbon Disulfide	< 10000	--	< 2500	--	< 1000	--
2-Chloroethylvinylether	< 20000	--	< 5000	--	< 2000	--
Chlorobenzene	< 10000	--	< 2500	--	< 1000	--
2-Chlorotoluene	< 10000	--	< 2500	--	< 1000	--
4-Chlorotoluene	< 10000	--	< 2500	--	< 1000	--
Chloroethane	< 20000	--	< 5000	--	< 2000	--
Chloromethane	< 20000	--	< 5000	--	< 2000	--
Carbon Tetrachloride	< 10000	--	< 2500	--	< 1000	--
para-Isopropyl Toluene	**15000**	--	< 2500	--	< 1000	--
Dibromochloromethane	< 10000	--	< 2500	--	< 1000	--
1,2-Dibromo-3-Chloropropane	< 10000	--	< 2500	--	< 1000	--
Dibromomethane	< 10000	--	< 2500	--	< 1000	--
1,1-Dichloroethane	< 10000	--	< 2500	--	< 1000	--
1,2-Dichloroethane	< 10000	--	< 2500	--	< 1000	--
1,2-Dichlorobenzene	< 10000	--	< 2500	--	< 1000	--
1,3-Dichlorobenzene	< 10000	--	< 2500	--	< 1000	--
1,4-Dichlorobenzene	< 10000	--	< 2500	--	< 1000	--
1,1-Dichloroethene	< 10000	--	< 2500	--	< 1000	--
cis-1,2-Dichloroethene	< 10000	--	< 2500	--	< 1000	--
trans-1,2-Dichloroethene	< 10000	--	< 2500	--	< 1000	--
1,1-Dichloropropene	< 10000	--	< 2500	--	< 1000	--
cis-1,3-Dichloropropene	< 10000	--	< 2500	--	< 1000	--
trans-1,3-Dichloropropene	< 10000	--	< 2500	--	< 1000	--
1,2-Dichloropropane	< 10000	--	< 2500	--	< 1000	--
1,3-Dichloropropane	< 10000	--	< 2500	--	< 1000	--
2,2-Dichloropropane	< 10000	--	< 2500	--	< 1000	--
Ethylbenzene	**120000**	**150000**	**24000**	**23000**	**2700**	**2300**
1,2-Dibromoethane	< 10000	--	< 2500	--	< 1000	--
Trichlorofluoromethane	< 10000	--	< 2500	--	< 1000	--
Freon 113	< 10000	--	< 2500	--	< 1000	--
Freon 12	< 20000	--	< 5000	--	< 2000	--
Hexachlorobutadiene	< 10000	--	< 2500	--	< 1000	--
2-Hexanone	< 20000	--	< 5000	--	< 2000	--
Isopropylbenzene	**15000**	--	< 2500	--	< 1000	--
2-Butanone	< 20000	--	< 5000	--	< 2000	--

TABLE 2: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Volatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-3	B-3	B-3	B-3	B-3-WI	B-3-WI
MATRIX	Soil	Soil	Soil	Soil	Aqueous	Aqueous
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8260	8021	8260	8021	8260	8021
BEGINNING DEPTH [1]	7.5	7.5	9.5	9.5	GW	GW
UNITS	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/L	µg/L
(cont.)						
4-Methyl-2-Pentanone	< 20000	--	< 5000	--	< 2000	--
MTBE	< 10000	--	< 2500	--	< 1000	--
Methylene Chloride	< 40000	--	< 10000	--	< 4000	--
Naphthalene	**86000**	--	**6500**	--	< 1000	--
Propylbenzene	**51000**	--	**7600**	--	< 1000	--
1,1,2,2-Tetrachloroethane	< 10000	--	< 2500	--	< 1000	--
Tetrachloroethene	< 10000	--	< 2500	--	< 1000	--
Styrene	< 10000	--	< 2500	--	< 1000	--
Bromoform	< 10000	--	< 2500	--	< 1000	--
1,1,1,2-Tetrachloroethane	< 10000	--	< 2500	--	< 1000	--
1,1,1-Trichloroethane	< 10000	--	< 2500	--	< 1000	--
1,1,2-Trichloroethane	< 10000	--	< 2500	--	< 1000	--
1,2,3-Trichlorobenzene	< 10000	--	< 2500	--	< 1000	--
1,2,4-Trichlorobenzene	< 10000	--	< 2500	--	< 1000	--
Trichloroethene	< 10000	--	< 2500	--	< 1000	--
Chloroform	< 10000	--	< 2500	--	< 1000	--
1,2,3-Trichloropropane	< 10000	--	< 2500	--	< 1000	--
1,2,4-Trimethylbenzene	**320000**	--	**47000**	--	**1900**	--
1,3,5-Trimethylbenzene	**79000**	--	**15000**	--	< 1000	--
Vinyl Acetate	< 100000	--	< 25000	--	< 10000	--
Vinyl Chloride	< 20000	--	< 5000	--	< 2000	--
m,p-Xylenes	**320000**	**310000**	**96000**	**96000**	**10000**	**8700**
o-Xylene	**84000**	**100000**	**38000**	**37000**	**4300**	**3800**

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

C = presence confirmed, but confirmation concentration differed by more than a factor of two.
-- = not analyzed.

TABLE 3: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Semivolatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-2	B-3
MATRIX	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8270	8270	8270
BEGINNING DEPTH [1]	COMP	COMP	COMP
UNITS	µg/kg	µg/kg	µg/kg
Acenaphthene	< 3300	< 330	< 330
Acenaphthylene	< 3300	< 330	< 330
Anthracene	< 3300	< 330	**340**
Azobenzene	< 3300	< 330	< 330
Butylbenzylphthalate	< 3300	< 330	< 330
bis(2-Chloroethoxy)methane	< 3300	< 330	< 330
bis(2-Chloroethyl)ether	< 3300	< 330	< 330
bis(2-Chloroisopropyl) ether	< 3300	< 330	< 330
bis(2-Ethylhexyl)phthalate	< 3300	< 330	< 330
4-Bromophenyl-phenylether	< 3300	< 330	< 330
Benzo(a)anthracene	< 3300	< 330	**630**
Benzoic acid	< 17000	< 1700	< 1700
Benzo(a)pyrene	< 3300	< 330	**540**
Benzo(b)fluoranthene	< 3300	< 330	**480**
Benzo(g,h,i)perylene	< 3300	< 330	< 330
Benzo(k)fluoranthene	< 3300	< 330	**540**
Benzyl alcohol	< 3300	< 330	< 330
4-Chloro-3-methylphenol	< 3300	< 330	< 330
Chrysene	< 3300	< 330	**620**
4-Chloroaniline	< 3300	< 330	< 330
2-Chlorophenol	< 3300	< 330	< 330
2-Chloronaphthalene	< 3300	< 330	< 330
4-Chlorophenyl-phenylether	< 3300	< 330	< 330
Dibenz(a,h)anthracene	< 3300	< 330	< 330
Dibenzofuran	< 3300	< 330	< 330
3,3'-Dichlorobenzidine	< 17000	< 1700	< 1700
1,2-Dichlorobenzene	< 3300	< 330	< 330
1,3-Dichlorobenzene	< 3300	< 330	< 330
1,4-Dichlorobenzene	< 3300	< 330	< 330
2,4-Dichlorophenol	< 3300	< 330	< 330
Diethylphthalate	< 3300	< 330	< 330
2,4-Dimethylphenol	< 3300	< 330	< 330
Dimethylphthalate	< 3300	< 330	< 330
4,6-Dinitro-2-methylphenol	< 17000	< 1700	< 1700
Di-n-butylphthalate	< 3300	< 330	< 330
Di-n-octylphthalate	< 3300	< 330	< 330
2,4-Dinitrophenol	< 17000	< 1700	< 1700
2,4-Dinitrotoluene	< 3300	< 330	< 330
2,6-Dinitrotoluene	< 3300	< 330	< 330
Fluorene	< 3300	< 330	< 330
Fluoranthene	< 3300	< 330	**1300**
Hexachlorobutadiene	< 3300	< 330	< 330
Hexachlorocyclopentadiene	< 17000	< 1700	< 1700

TABLE 3: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Semivolatile Organic Compounds
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-2	B-3
MATRIX	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8270	8270	8270
BEGINNING DEPTH [1]	COMP	COMP	COMP
UNITS	µg/kg	µg/kg	µg/kg
(cont.)			
Hexachlorobenzene	< 3300	< 330	< 330
Hexachloroethane	< 3300	< 330	< 330
Indeno(1,2,3-cd)pyrene	< 3300	< 330	< 330
Isophorone	< 3300	< 330	< 330
2-Methylphenol	< 3300	< 330	< 330
4-Methylphenol	< 3300	< 330	< 330
2-Methylnaphthalene	< 3300	< 330	**920**
Naphthalene	< 3300	< 330	**1100**
N-Nitrosodimethylamine	< 3300	< 330	< 330
N-Nitrosodiphenylamine	< 3300	< 330	< 330
N-Nitroso-di-n-propylamine	< 3300	< 330	< 330
2-Nitroaniline	< 17000	< 1700	< 1700
3-Nitroaniline	< 17000	< 1700	< 1700
4-Nitroaniline	< 17000	< 1700	< 1700
Nitrobenzene	< 3300	< 330	< 330
2-Nitrophenol	< 17000	< 1700	< 1700
4-Nitrophenol	< 17000	< 1700	< 1700
Pentachlorophenol	< 17000	< 1700	< 1700
Phenanthrene	< 3300	< 330	**1300**
Phenol	< 3300	< 330	< 330
Pyrene	< 3300	< 330	**1700**
1,2,4-Trichlorobenzene	< 3300	< 330	< 330
2,4,5-Trichlorophenol	< 3300	< 330	< 330
2,4,6-Trichlorophenol	< 3300	< 330	< 330
Pentachlorophenol			
Phenanthrene			
Phenol			
Pyrene			

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.
"COMP" = Composite Sample

TABLE 4: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Organochlorine Pesticides
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-2	B-3
MATRIX	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8081/8082	8081/8082	8081/8082
BEGINNING DEPTH (1)	COMP	COMP	COMP
UNITS	µg/kg	µg/kg	µg/kg
4,4'-DDD	< 60	< 60	< 59
4,4'-DDE	**200 b**	< 60	< 59
4,4'-DDT	< 60	< 60	< 59
Aldrin	< 30	< 30	< 30
alpha-BHC	< 30	< 30	< 30
alpha-Chlordane	< 30	< 30	< 30
Aroclor-1016	**210**	< 12	< 12
Aroclor-1221	< 24	< 24	< 48
Aroclor-1232	< 12	< 12	< 12
Aroclor-1242	< 12	< 12	< 12
Aroclor-1248	< 12	< 12	< 12
Aroclor-1254	**4,200**	< 12	**730**
Aroclor-1260	**240**	< 12	**110**
beta-BHC	< 30	< 30	< 30
delta-BHC	< 30	< 30	< 30
Dieldrin	**150 C**	< 60	< 59
Endosulfan I	< 30	< 30	< 30
Endosulfan II	< 60	< 60	< 59
Endosulfan sulfate	< 60	< 60	< 59
Endrin	< 60	< 60	< 59
Endrin aldehyde	< 60	< 60	< 59
gamma-BHC	< 30	< 30	< 30
gamma-Chlordane	< 30	< 30	< 30
Heptachlor	< 30	< 30	< 30
Heptachlor epoxide A	< 30	< 30	< 30
Heptachlor epoxide B	**37 C**	< 30	< 30
Methoxychlor	**< 300**	< 300	**< 300**
Toxaphene	< 600	< 600	< 590

(1) Soil samples collected in six-inch tubes beginning with the depth indicated.
"COMP" = Composite Sample

b = calibration standard failure; does not affect the integrity of the data.

C = presence confirmed, but confirmation concentration differed by more than a factor of two.

TABLE 5: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Total Petroleum Hydrocarbons
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-1	B-1	B-1	B-1	B-1-WI	B-2	B-2	B-2
MATRIX	Soil	Soil	Soil	Soil	Soil	Aqueous	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8015M	8015M	8015M	8015M	8015M	8015M	8015M	8015M	8015M
BEGINNING DEPTH [(1)]	1.0	2.0	5.0	7.5	9.5	GW	1.0	2.0	5.0
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	mg/kg	mg/kg	mg/kg
Gasoline	**1YH**	**14 YL**	< 1	< 1.1	< 1	< 1	< 1	< 1.1	< 0.91
Diesel	**1300 YH**	**5900 YH**	**6900 YH**	**1.8 Y**	< 1	--	**3 Y**	**8.2 Y**	< 1
Motor Oil	**2000 L**	**3400 L**	**4000 L**	< 5	< 5	--	**18**	**22**	< 5
Oil and Grease	--	--	--	--	--	--	--	--	--

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.
Y = Sample exhibits fuel pattern which does not resemble standard.
H = Heavier hydrocarbons contributed to the quantitation.
L= Lighter hydrocarbons contributed to the quantitation.

TABLE 5: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Total Petroleum Hydrocarbons
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-2-WI	B-3	B-3	B-3	B-3	B-3	B-3-WI
MATRIX	Aqueous	Soil	Soil	Soil	Soil	Soil	Aqueous
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	8015M/1664	8015M	8015M	8015M	8015M	8015M	8015M/1664
BEGINNING DEPTH [1]	GW	1.0	3.0	4.5	7.5	9.5	GW
UNITS	µg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L
Gasoline	**860 YL**	**1.5 YH**	**5.4 YH**	**0.99 YH**	**11000 H**	**1400**	**97000**
Diesel	**170**	**6.4 YH**	**16 YL**	**9.8 YL**	**2600 YL**	**210 YL**	**11000 YL**
Motor Oil	< 300	**13**	< 5	< 5	< 200	**35 Y**	< 1500
Oil and Grease	< 5.2 mg/L	--	--	--	--	--	**8.1** mg/L

Notes:

(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

Y = Sample exhibits fuel pattern which does not resemble standard.

H = Heavier hydrocarbons contributed to the quantitation.

L= Lighter hydrocarbons contributed to the quantitation.

TABLE 6: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Metals
Third and Brush Streets
Port of Oakland
Oakland, California

LOCATION	B-1	B-1	B-1	B-1	B-1	B-2	B-2	B-2
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470
BEGINNING DEPTH [1]	1.0	2.0	5.0	7.5	9.5	1.0	2.0	5.0
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Antimony	< 2.7	< 2.7	< 2.8	< 3	< 2.8	< 2.6	< 2.8	< 2.8
Arsenic	1.9	0.95	1.3	1.6	2.1	4.1	1.3	1.8
Barium	79	68	41	50	67	72	35	46
Beryllium	1	0.13	0.15	0.25	0.28	0.19	0.11	0.14
Cadmium	2	0.65	0.8	1.3	1.5	2.8	1.2	1.5
Cobalt	20	19	23	32.0	43.0	18	14	19
Chromium	7	2.6	3.7	6.4	4.4	17	5	5
Copper	22	9.2	8.7	6.7	7.5	25	15	15
Mercury	69	31	2.2	2.2	2.8	13	9.2	16
Molybdenum	0	0.19	0.039	0.019	< 0.017	0.094	0.038	0.032
Nickel	< 0.9	< 0.9	< 0.94	< 0.99	< 0.93	< 0.87	< 0.93	< 0.92
Lead	22	14	16	30	37	27	29	37
Silver	0	0.24	< 0.23	0.31	0.23	0.68	< 0.23	0.33
Selenium	< 0.23	< 0.23	< 0.23	< 0.25	< 0.23	0.32	< 0.23	< 0.23
Thallium	< 0.23	< 0.23	< 0.23	< 0.25	< 0.23	< 0.22	< 0.23	< 0.23
Vanadium	21	11	19	26	24	37	12	14
Zinc	55	36	11	14	19	55	28	29

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

TABLE 6: SOIL AND GROUNDWATER CHEMICAL TEST RESULTS- Metals
Third and Brush Streets
Port of Oakland
Oakland, California

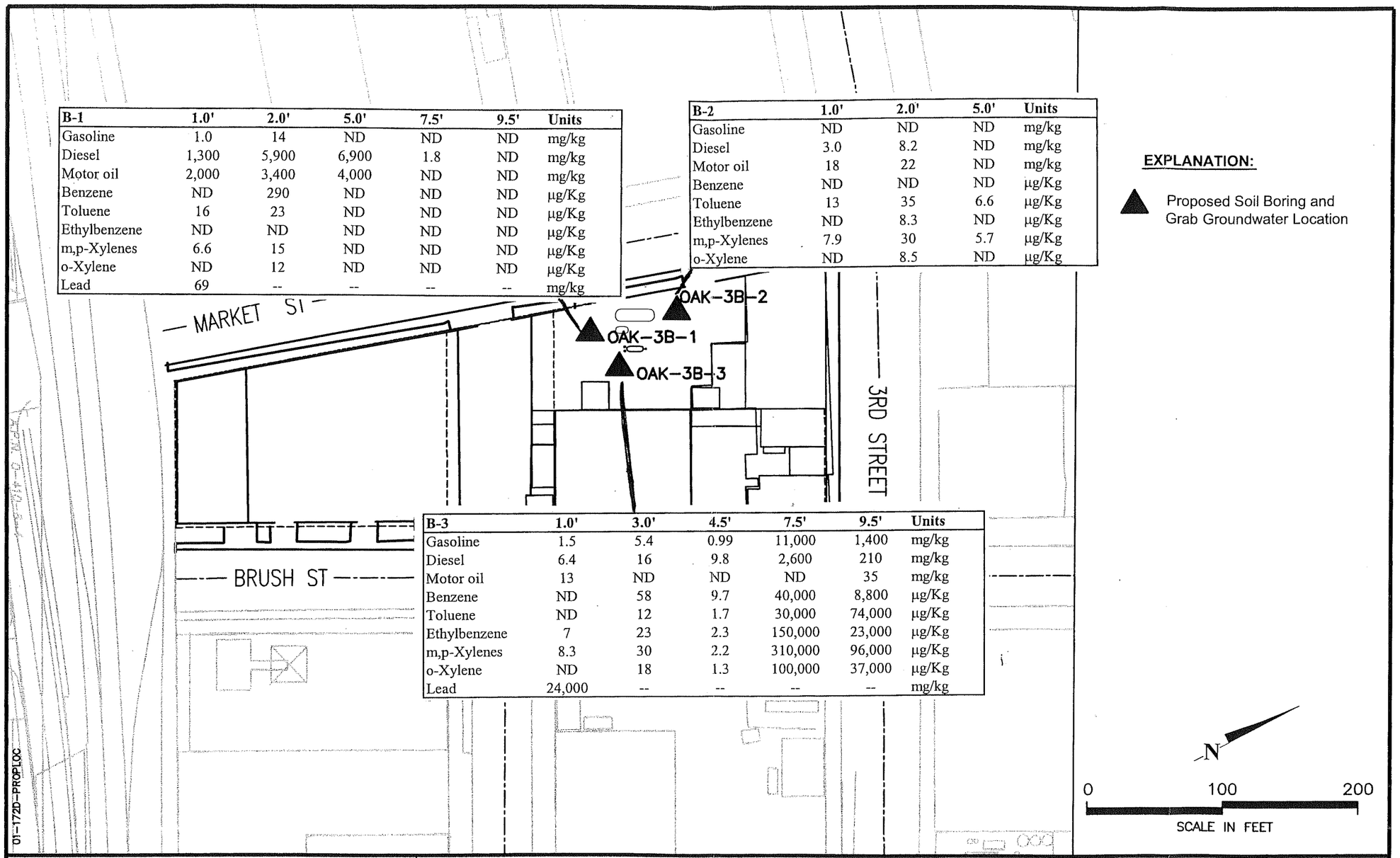
LOCATION	B-2-WI	B-3	B-3	B-3	B-3	B-3	B-3
MATRIX	Aqueous	Soil	Soil	Soil	Soil	Soil	Soil
COLLECTION DATE	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01	10/18/01
ANALYTICAL METHOD	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470	6010/7470
BEGINNING DEPTH [1]	GW	1.0	3.0	4.5	7.5	9.5	9.5
UNITS	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Antimony	< 60	5.3	< 3	< 3	< 2.8		< 3
Arsenic	8.4	7.5	1.8	1	1.20		1.50
Barium	540	480	63	45	37		46
Beryllium	< 2	0.22	0.19	0.17	0		0
Cadmium	< 5	7.0	0.92	0.76	0.9		1
Cobalt	< 10	33	25	22	29		29
Chromium	< 20	6.4	3.5	2.4	2		8
Copper	13	790	13	5.8	6		7
Mercury	19	24000	36	3.4	2		3
Molybdenum	0.21	0.99	0.18	< 0.016	0		0
Nickel	< 20	1.9	< 1	< 0.99	< 0.95		< 1
Lead	< 20	44	19	16	20		32
Silver	5	0.59	0.31	< 0.25	< 0.24		< 0.25
Selenium	< 5	1.8	< 0.25	< 0.25	< 0.24		< 0.25
Thallium	16	< 0.21	< 0.25	< 0.25	< 0.24		< 0.25
Vanadium	< 10	26	16	15	17		24
Zinc	49	2800	44	12	12		15

Notes:
(1) Soil samples collected in six-inch tubes beginning with the depth indicated.

B-1	1.0'	2.0'	5.0'	7.5'	9.5'	Units
Gasoline	1.0	14	ND	ND	ND	mg/kg
Diesel	1,300	5,900	6,900	1.8	ND	mg/kg
Motor oil	2,000	3,400	4,000	ND	ND	mg/kg
Benzene	ND	290	ND	ND	ND	µg/Kg
Toluene	16	23	ND	ND	ND	µg/Kg
Ethylbenzene	ND	ND	ND	ND	ND	µg/Kg
m,p-Xylenes	6.6	15	ND	ND	ND	µg/Kg
o-Xylene	ND	12	ND	ND	ND	µg/Kg
Lead	69	--	--	--	--	mg/kg

B-2	1.0'	2.0'	5.0'	Units
Gasoline	ND	ND	ND	mg/kg
Diesel	3.0	8.2	ND	mg/kg
Motor oil	18	22	ND	mg/kg
Benzene	ND	ND	ND	µg/Kg
Toluene	13	35	6.6	µg/Kg
Ethylbenzene	ND	8.3	ND	µg/Kg
m,p-Xylenes	7.9	30	5.7	µg/Kg
o-Xylene	ND	8.5	ND	µg/Kg

B-3	1.0'	3.0'	4.5'	7.5'	9.5'	Units
Gasoline	1.5	5.4	0.99	11,000	1,400	mg/kg
Diesel	6.4	16	9.8	2,600	210	mg/kg
Motor oil	13	ND	ND	ND	35	mg/kg
Benzene	ND	58	9.7	40,000	8,800	µg/Kg
Toluene	ND	12	1.7	30,000	74,000	µg/Kg
Ethylbenzene	7	23	2.3	150,000	23,000	µg/Kg
m,p-Xylenes	8.3	30	2.2	310,000	96,000	µg/Kg
o-Xylene	ND	18	1.3	100,000	37,000	µg/Kg
Lead	24,000	--	--	--	--	mg/kg



EXPLANATION:

▲ Proposed Soil Boring and Grab Groundwater Location

N

0 100 200

SCALE IN FEET

IRIS ENVIRONMENTAL

1615 Broadway, Suite 1003, Oakland, California 94612

Soil Chemical Compound Detections: TPH, BTEX, and Lead (>50 ppm)

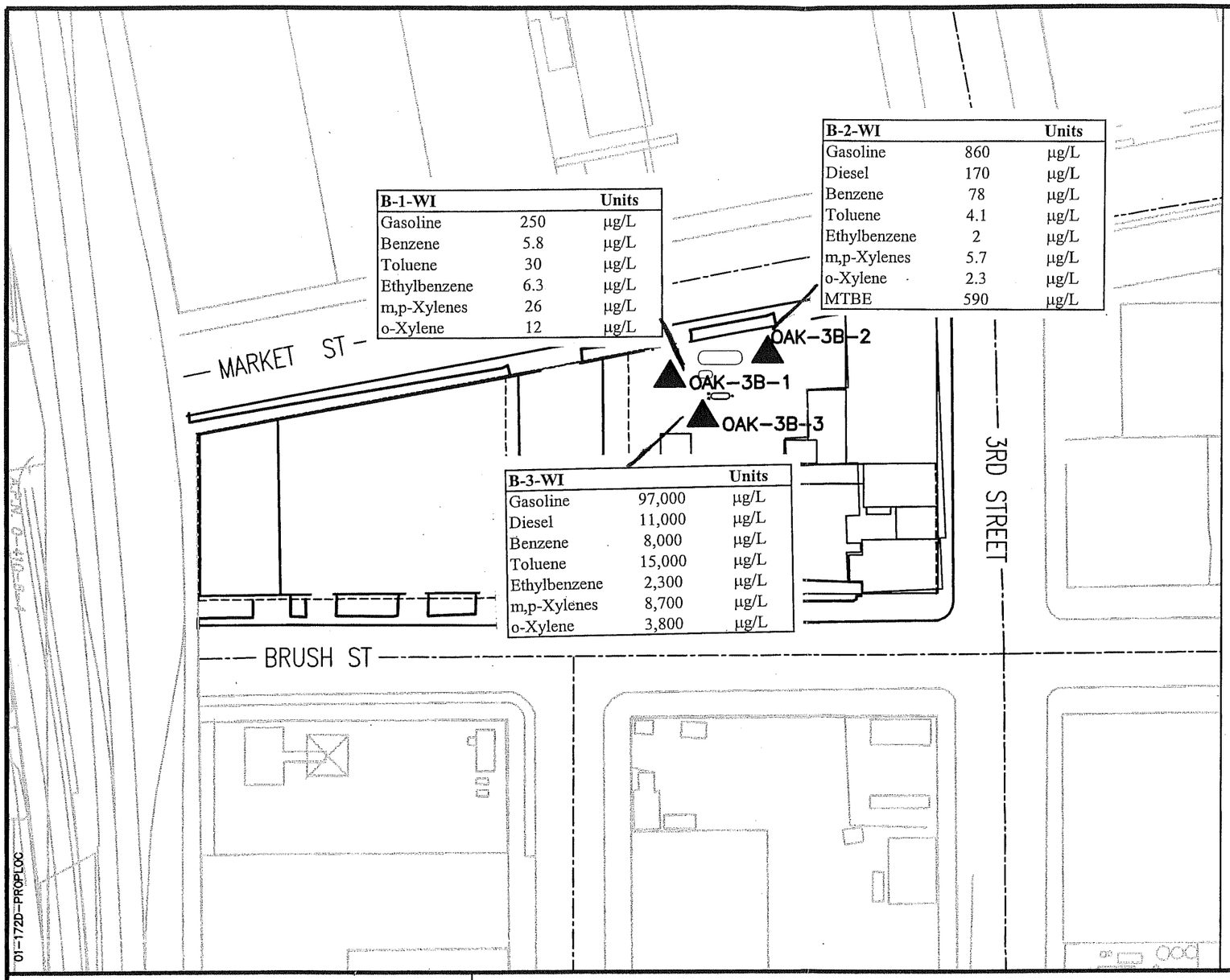
3rd and Brush Streets Facility

Port of Oakland

Oakland, California

Figure

Drafter: MAS Date: 8/24/01 Contract Number: 01-172D Approved: Revised:



EXPLANATION:

▲ Proposed Soil Boring and Grab Groundwater Location

N

0 100 200

SCALE IN FEET

IRIS ENVIRONMENTAL

1615 Broadway, Suite 1003, Oakland, California 94612

Groundwater Chemical Compound Detections: TPH, BTEX, and MTBE

3rd and Brush Streets Facility

Port of Oakland

Oakland, California

Figure

Drafter: MAS Date: 8/24/01 Contract Number: 01-172D Approved: Revised: