OWENS-BROCKWAY
GLASS CONTAINERS
a unit of Owens-Illinois

RO2809

AE

January 30, 2003

Mr. Barney M. Chan
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Annual Groundwater Monitoring Report
Owens-Brockway Glass Plant – Oakland

Dear Mr. Chan:

The annual monitoring report for Owens-Brockway's Oakland plant is enclosed. Results of this monitoring are consistent with results from previous monitoring events. None of the water samples contained detectable concentrations of BETX which is consistent with historic results.

The plant continues to use the static Soakease pads to remove small quantities of product from specified wells. Their continued use is explained in the report. Use of the pads has eliminated free product accumulation in MW-5, MW-7, ME-16 and MW-17. Use of the pads for product recovery will be continued.

An application for the encroachment permit necessary to install MW-19 on the bank of the estuary was submitted to the City of Oakland on December 17, 2002. There has been no action on the application to date. Efforts to get a status report on when it might be processed have been unsuccessful. Plans are in place to install the well upon receipt of the permit.

Sincerely,

Robert C. Neal

Robert C. Neal, P.E.
Environmental Administrator

Cc: Mark Tussing - report attached
Bill Boscacci - report attached
Dwayne Wendler
Darrin Gambelin
Meredith Durant – Kennedy/Jenks
Chris Kennedy – CKG Environmental

Kennedy/Jenks Consultants

622 Folsom Street
San Francisco, California 94107
415-243-2150
415-896-0999 (Fax)

Annual Groundwater Monitoring Report Owens-Brockway Glass Containers

21 January 2003

Prepared for

Owens-Brockway Glass Containers
3600 Alameda Avenue
Oakland, California 94601

K/J 950007.40

Table of Contents

List of Tables

List of Figures

List of Appendices

Section 1: Introduction

Kennedy/Jenks Consultants (Kennedy/Jenks) prepared this Report on behalf of Owens-Brockway Glass Containers (Owens-Brockway). The groundwater monitoring activities described in this Report were performed in accordance with the Work Plan dated 16 February 2000 (Kennedy/Jenks 2000) submitted to the Alameda County Department of Environmental Health (ACDEH). The ACDEH approved the Work Plan in a letter dated 24 February 2000.

Section 2: Background

The Owens-Brockway plant is located at 3600 Alameda Avenue, Oakland, California (the Site). The Site location is shown on Figure 1.

The Oakland plant was constructed in 1936 and occupies a city block that is bounded by Alameda and Fruitvale Avenues, the Inner Harbor Channel, and 37th and 8th Streets. The plant includes a glass manufacturing operation, warehouses, and paved outdoor storage areas. The Site plan is shown on Figure 2.

2.1 Historical Investigation and Remedial Activities

Historically, fuel oil (or furnace fuel) used to operate the plant was stored in large underground storage tanks (USTs) on the west side of the plant until the late 1980s. Soil containing petroleum hydrocarbons (PHCs) was encountered in July 1986 during construction of a forklift ramp to the plant's basement.

As a result of this discovery, sixteen exploratory soil borings were advanced by Exceltech, Inc. during July 1986 in the vicinity of the ramp, the USTs and the former maintenance building. Eighteen groundwater monitoring wells were subsequently installed at the Site from July 1986 through December 1986, the deepest of which was advanced to approximately 32 feet below ground surface (bgs). The well construction details are summarized in Table 1. The soil and groundwater samples collected in the vicinity of the USTs contained low boiling range (purgeable) PHCs and high boiling range (extractable) PHCs. In addition, benzene, toluene, ethylbenzene and total xylenes (BTEX) were detected in soil and groundwater samples. Several groundwater samples in the vicinity of the tanks and the maintenance shop contained detectable levels of halogenated volatile organic compounds (HVOCs). The results of these activities were documented in Exeltech's February 1987 report entitled *Soil and Groundwater Contamination Investigation.*

In September 1986, a 16,000-gallon fuel oil UST was removed, its source pipeline was capped, and 148 cubic yards of petroleum-impacted soil was excavated and disposed at Chemical Waste Management's Kettleman Hills Class I facility. A 36-inch diameter recovery well was installed in the tank excavation and equipped with a product recovery device in 1987. The original recovery well (R-1) was upgraded and a second recovery well (R-2) was installed near Monitoring Well MW-2 in 1989. The two recovery wells were operated for several months without collecting any PHCs. The inoperable pumps, piping and electrical equipment were removed, and these two wells were filled with concrete in July 2001.

Owens-Brockway also operated four USTs (one 350-gallon, two 8,000-gallon and one 12,000-gallon) located adjacent to the power building. These four USTs were removed and replaced with two double-walled fiberglass, monitored USTs (gasoline and diesel) in 1986. According to Exceltech, visual evidence of releases from these tanks was noted during the removal activities. Three of the monitoring wells (MW-16, MW-17 and MW-18) were installed in the vicinity of these tanks. These gas and diesel USTs, installed in 1986, were removed on 9 October 1998 under the oversight of the Oakland Fire Department.

The *September Quarterly Ground-Water Sampling and Analysis for O. I.*, prepared by Ensco Environmental Services in November 1988, reported that the monitoring well network at the Site was sampled six times between April 1987 and September 1988 (Table 2 summarizes the historical groundwater analytical data). The field measurements indicated that several wells contained separate-phase petroleum product.

Since the monitoring wells were initially installed, Wells MW-3 and MW-18 have been destroyed during construction activities at the plant.

2.2 Investigation and Sampling Activities (1997 to Present)

In a letter to Owens-Brockway dated 28 April 1997, ACDEH requested that Owens-Brockway resume groundwater monitoring at the Site. ACDEH requested that Wells MW-1, MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-13, MW-15, and MW-17 be sampled and analyzed for total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd) and motor oil (TPHmo); BTEX; and all wells except MW-13, MW-15, and MW-17 should be analyzed for HVOCs and polychlorinated biphenyls (PCBs).

Prior to conducting groundwater sampling, the groundwater depth and petroleum product thickness in Wells MW-2, MW-5, MW-6, MW-7, MW-8, MW-9 and MW-17 were measured twice during the week of 11 August 1997, and then once per week for three consecutive weeks beginning 26 August 1997. Following the thickness measurement in each well, the recoverable petroleum product from each well was removed with a bailer and contained in a 55-gallon drum for disposal to the oil-water separator associated with the plant. Wells MW-5, MW-6, MW-7, MW-9, and MW-17 were also cleaned by attaching absorbent pads to PVC pipe and swabbing the inside of the casings.

Following the measurement of depth to groundwater and purging operations, groundwater samples were collected on 16 September 1997 from Wells MW-1, MW-5, MW-7, MW-8, MW-9, MW-10, MW-13, MW-15, and MW-17. Wells MW-2 and MW-6 contained separate-phase petroleum product; therefore, groundwater samples were not collected from them, although a product sample was obtained from Well MW-2 and analyzed by gas chromatography techniques in order to compare the product sample to hydrocarbon fuel standards ("fingerprinting").

Samples collected from Wells MW-1, MW-5, MW-7, MW-8, MW-9, MW-10, MW-13, MW-15, and MW-17 were analyzed for purgeable and extractable petroleum hydrocarbons by EPA Method 8015 Modified and for BTEX by EPA Method 8020. The groundwater samples collected from Wells MW-1, MW-5, MW-7, MW-8, MW-9, and MW-10 were also analyzed for HVOCs by EPA Method 8260 and for PCBs by EPA Method 8080.

No HVOCs or PCBs were detected in the samples analyzed. Results of the groundwater analyses for PHCs and BTEX are summarized in Table 2. The chromatogram for the product sample collected from Well MW-2 contained hydrocarbons in the C10 to C22 range; however, the pattern did not match the laboratory's diesel standard. Extractable PHCs (TPHd and TPHmo) were detected in groundwater in all the monitoring wells sampled on 16 September 1997. Purgeable PHCs (TPHg) were detected in the groundwater samples collected from Wells MW-7, MW-9, and MW-17. The analytical results typically did not match the gasoline, diesel, and motor oil standards. The results of this sampling event and the product

thickness monitoring were presented in the 19 November 1997 letter report (Kennedy/Jenks 1997).

A groundwater monitoring event was conducted on 2 November 1998. Groundwater samples were collected from Wells MW-1, MW-8, MW-10, MW-13, MW-15 and MW-17 following depth to groundwater measurements and purging operations. Five wells (MW-2, MW-5, MW-6, MW-7 and MW-9) were not sampled due to the presence of separate-phase petroleum. The analytical results are presented in Table 2. A detailed description of this monitoring event and the results were provided in the 19 November 1998 report entitled *Groundwater Monitoring Event – 2 November 1998* prepared by Kennedy/Jenks.

On 26 and 27 January 1999, Kennedy/Jenks advanced five soil borings to collect reconnaissance groundwater samples to further assess the extent of PHCs in shallow groundwater downgradient of the western portion of the Site. Groundwater samples collected from Borings KB-3, KB-4 and KB-5 contained PHCs measured as total purgeable petroleum hydrocarbons (TPPHs) and total extractable petroleum hydrocarbons (TEPHs) as well as low concentrations of benzene and total xylenes (Kennedy/Jenks 1999).

On 16 February 2000, Owens-Brockway submitted a Work Plan to ACDEH (Kennedy/Jenks 2000). The Work Plan described procedures for installation of two shallow groundwater monitoring wells. The proposed locations were MW-19 near Boring KB-5, located on the bank of the Oakland estuary, offsite and downgradient of the Site, and Monitoring Well MW-20 located at the Site, downgradient of Monitoring Well MW-16.

One groundwater monitoring well was installed at the Site on 1 December 2000. Monitoring Well MW-20 was installed in the driveway to the Site, approximately 125 feet south of Monitoring Well MW-16. The initial water sample was collected from the Monitoring Well MW-20 on 11 December 2000 (Kennedy/Jenks 2001). As requested by the ACDEH, Well MW-20 was subsequently sampled on a quarterly basis for a period of one year.

On behalf of Owens-Brockway, Kennedy/Jenks obtained a permit for destruction of Monitoring Well MW-14 from the ACPW. Monitoring Well MW-14 was destroyed by West Hazmat Drilling under the direction of Kennedy/Jenks on 1 December 2000. Monitoring Well MW-14 was destroyed by pressure grouting. The property on which this well was located is no longer owned by Owens-Brockway.

Annual groundwater monitoring events were conducted on 11 December 2000, and 11 and 12 December 2001. Groundwater samples were collected from accessible wells that did not have separate phase PHCs (Kennedy/Jenks 2001, 2002).

The most recent groundwater monitoring event was conducted on 5 and 6 December 2002. Groundwater samples were collected from Wells MW-1, MW-5, MW-7, MW-8, MW-10, MW-13, MW-15, MW-16, MW-17, and MW-20 following depth to groundwater measurements and purging operations. Wells MW-2 and MW-6 were not sampled due to the presence of separate-phase petroleum. Well MW-9, located in the basement ramp, was not sampled because it was inaccessible. The analytical results from this and previous monitoring events are presented in Table 2.

2.3 Historical Product Removal Activities

As described in Section 2.1, two product recovery wells were placed in service in 1989 and were operated for several months each without recovering any PHCs. These wells are now closed.

During August and September 1997, as discussed in Section 2.2, recoverable petroleum product was removed from Wells MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-17 using a bailer and absorbent pads. This activity did remove small amounts of PHCs, but was labor intensive and was discontinued in October 1997.

On 30 June 1999, Owens-Brockway installed a Petro-Trap™ device in Well MW-2. This device is a static or passive oil skimmer. The Petro-Trap™ was removed several times over the next month to assess its performance. During this time only groundwater was recovered in the device's collection container. The Petro-Trap™ and a sample of the Site's petroleum were sent to the manufacturer, EnviroProducts, for inspection and evaluation. According to EnviroProducts, the filter swells in the presence of the petroleum causing the filter to pop out of the holder. This prevents the petroleum from entering the collection container. Envirotech was unable to provide a satisfactory resolution to this problem and Owens-Brockway rescinded their purchase of the Petro-Trap™.

The Work Plan dated 16 February 2000 addressed the installation of oil absorbent devices in several of the monitoring wells. After the Petro-Trap™ equipment was unsuccessful, other passive/static removal devices were evaluated and Owens-Brockway selected Soakease™ absorbent devices for installation in Wells MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-17. This device has replaceable absorbent pads encased in holders, and it was anticipated these devices would work as promised by absorbing PHCs that enter the well casing through the screened interval. Once used, the pads are removed and replaced. The used absorbent pads are stored onsite in a 55-gallon drum pending appropriate offsite disposal.

The Soakease pads have been replaced on a monthly basis since December 2000, in accordance with the Owens-Illinois Oakland Plant Environmental Procedures, Procedure No. 20-C 300. The amount of product removed depends upon the amount of PHC present at the well. The most productive well for product removal has been Well MW-6, which generally yields up to 500 ml of product per pad change. Most other wells yield only a trace of product, or no product at all. Owens-Brockway has continued to replace all pads regardless of the amount of product present in the pad.

Section 3: Field Activities

3.1 PHC Product Removal Activities

Approximately three weeks prior to the most recent groundwater monitoring event, an Owens Brockway representative removed the Soakease™ devices in each of the wells and replaced each with a new Soakease™ absorbent pad. The used Soakease™ pads were stored onsite in a 55-gallon drum pending appropriate offsite disposal. Prior to the measurement of depth to water, purging and sampling of each well, the Soakease™ devices were removed from each well.

3.2 Groundwater Monitoring

On 5 and 6 December 2002, thirteen monitoring wells (Wells MW-1 MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-13, MW-15, MW-16, MW-17, and MW-20) were monitored in accordance with the procedures described in the Work Plan. The depth to groundwater was measured in each accessible well prior to the collection of groundwater samples.

In accordance with the Work Plan, Wells MW-4, MW-11, and MW-12 were not sampled. Groundwater samples were not collected from three wells (MW-2, MW-6, and MW-9). Samples were not collected from Wells MW-2 and MW-6 because they contained separate-phase PHCs. The product thickness was observed and recorded for these two wells. Samples were not collected from Well MW-9 because it was flooded and its well casing is damaged. Maintenance personnel have previously reported that a Soakease™ device had been dropped to the bottom of Well MW-9 and they had been unable to recover it.

The groundwater samples were stored at about 4 degrees Centigrade in a cooled container until delivery under chain-of-custody procedures to STL San Francisco, a California-certified laboratory in Pleasanton, California.

The groundwater samples were submitted for analysis of TPPH and TEPH using EPA Method 8015 Modified and for benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8020. The analytical results are summarized in Table 2, and the analytical data reports are included in Appendix A. Well purge and sample forms are included in Appendix B.

3.3 Management of Monitoring Well Purge Water

Purge water generated during sampling was discharged to the onsite oil/water separator.

Section 4: Quality Assurance/Quality Control

In order to validate the groundwater sample results, one duplicate groundwater sample was collected and analyzed by EPA Method 8015 Modified for TPPH and TEPH, and for BTEX by EPA Method 8020. Duplicate samples measure consistency in sampling and analysis. The duplicate sample (MW-DUP), collected from Well MW-10, indicated the analytical results for the duplicate sample were consistent with the MW-10 sample results with the exception of TPPH which was detected at 210 mg/l in the primary sample and not detected above the analytical reporting limit in the duplicate sample.

A travel blank accompanied each sample container during both days of the monitoring event and was analyzed for BTEX. No analytes were detected in the travel blank.

The analytical data reports indicate that the samples were analyzed within appropriate holding times. With respect to the laboratory quality control procedures, the surrogate recoveries were within acceptable limits with the exception of samples MW-7 and MW-17, in which the surrogate recovery in the TEPH analysis was not reportable due to sample dilution. Laboratory control spikes and spike duplicates were also within acceptable laboratory control limits.

Section 5: Findings

5.1 Depth to Groundwater and Estimated Gradient

As shown in Table 3, the depth to groundwater measured in the monitoring wells in December 2002 varied in depth from 8.88 feet below top of casing (btoc) in Well MW-20 to 13.96 feet btoc in Well MW-6.

The groundwater elevations are tabulated in Table 3 and presented on Figure 3. On 5 December 2002, the hydraulic gradient was approximately 0.014 feet/foot in a southeasterly to southwesterly direction, toward the Harbor Channel. This is consistent with historical information.

5.2 Groundwater Sample Analytical Results

As shown in Table 2, the analytical results for December 2002 are consistent with results from previous groundwater monitoring events at the Site.

In samples where TEPH was detected, the analytical data reports indicate that the chromatographic patterns do not match the laboratory standard for diesel fuel.

In samples where TPPH was detected, the analytical data reports indicate that the chromatographic patterns do not match the laboratory standard for gasoline.

None of the samples contained detectable concentrations of BTEX. The results from this December 2002 monitoring event are consistent with past results and indicate that BTEX are not constituents of concern in groundwater at the Site.

Section 6: References

Ensco 1988. September Quarterly Groundwater Sampling and Analysis for O.I. Glass Container Division, S.T.S., 3600 Alameda Avenue, Oakland, California. Ensco Environmental Services, Inc. November 1988.

Exceltech 1987. Soil and Groundwater Contamination Investigation, Owens-Illinois Glass Container Division, 3600 Alameda Avenue, Oakland, California. Exceltech, Inc. February 1987.

Kennedy/Jenks 1997. Groundwater Monitoring, Owens-Brockway Oakland Plant, Kennedy/Jenks Consultants. 19 November 1997.

Kennedy/Jenks 1998. Groundwater Monitoring Event – 2 November 1998, Owens-Brockway Oakland Plant. 19 November 1998.

Kennedy/Jenks 1999. Groundwater Investigation Report, Owens-Brockway Glass Containers, 3600 Alameda Avenue, Oakland, California. 22 April 1999.

Kennedy/Jenks 2000. Work Plan, Owens-Brockway Glass Containers, 3600 Alameda Avenue, Oakland, California. 16 February 2000.

Kennedy/Jenks 2001. Report on Well Installation and Groundwater Monitoring, Owens-Brockway Glass Containers, 3600 Alameda Avenue, Oakland, California. 27 March 2001.

Kennedy/Jenks 2002. Groundwater Monitoring Event – 11 December 2001, Owens-Brockway Oakland Plant. 11 February 2002.

Tables

Table 1: Summary of Well Construction Details

Well Number	Date Installed	Measurement Elevation[a]	Top of Screen[b]	Screen Length	Well Depth[c]	Casing Diameter (inches)	Comments
MW-1	9/12/86	16.02	8	21	29	2	
MW-2	9/12/86	17.11	10	20	30	2	
MW-3	9/12/86	15.46	10	20	30	2	Destroyed
MW-4	9/29/86	16.02	8.5	20	28.5	2	TOCE = 18.05 (11/88 report)
MW-5	9/29/96	16.19	8.5	20	28.5	2	
MW-6	9/29/96	17.48	12.5	16	28.5	2	
MW-7	9/30/86	16.11	12.5	11	23.5	2	TOCE = 15.76 (11/88 report)
MW-8	10/22/86	16.57	15	13.5	28.5	2	
MW-9	7/23/86	7.33[d]	5	10	20	2	
MW-10	10/22/86	15.96	10	15	25	2	
MW-11	11/24/86	13.99	10	20	30	2	
MW-12	11/24/86	13.83	11	15	26	2	
MW-13	12/11/86	13.98	9.5	15	24.5	2	
MW-14	11/25/86	14.78	10	15	25	2	Destroyed 12/1/00
MW-15	12/17/86	15.16	9.5	20	29.5	2	
MW-16	12/12/86	13.48	10	14.5	24.5	2	
MW-17	12/15/86	14.17	9.5	15	24.5	2	
MW-18	12/15/86	14.89	9	15	24	2	Destroyed
MW-20	12/1/00	12.74	6.9	15	21.9	2	
R-1	1987	NM[e]	NA[f]	NA	24	36	Closed 7/01
R-2	1989	NM	NA	NA	NA	12	Closed 7/01

(a) Top of casing elevation (TOCE) except where noted; measured in feet above US Coast and Geodetic Datum (mean sea level). Elevations measured by Exceltech in 1986, and by PLS Surveys for MW-20 in 2000.
(b) Depth to top of screened interval (feet below top of casing).
(c) Depth to bottom of screened interval (feet below top of casing).
(d) Well casing elevation was not measured for this well; well is located beneath forklift ramp and this measurement is the ground surface elevation in feet MSL.
(e) NM = Not measured.
(f) NA = Not available.

Table 2: Summary of Groundwater Analytical Results

Well Number	Date Sampled	TPPH[a] (µg/l)[h]	TEPH[b] (mg/l)	O&G[c] (mg/l)	B[d] (µg/l)	T[e] (µg/l)	E[f] (µg/l)	X[g] (µg/l)
MW-1	9/23/86	<0.01[i]	NA[j]	25	<10	<10	NA	<10
	4/9/87	BDL[k]	NA	NA	BDL	BDL	NA	BDL
	9/16/87[l]	–	–	–	–	–	–	–
	12/1/87[l]	–	–	–	–	–	–	–
	3/7/88[l]	–	–	–	–	–	–	–
	6/8/88[l]	–	–	–	–	–	–	–
	9/14/88[l]	–	–	–	–	–	–	–
	9/16/97	<50	0.19[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	0.16[r][u]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01[l]	–	–	–	–	–	–	–
	12/6/02	<50	0.069[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-2	4/9/87[m]	–	–	–	–	–	–	–
	9/16/87[m]	–	–	–	–	–	–	–
	12/1/87[m]	–	–	–	–	–	–	–
	3/7/88[l]	–	–	–	–	–	–	–
	6/8/88[l]	–	–	–	–	–	–	–
	9/14/88[l]	–	–	–	–	–	–	–
	9/16/97[m]	–	–	–	–	–	–	–
	11/2/98[m]	–	–	–	–	–	–	–
	12/11/01[m]	–	–	–	–	–	–	–
	12/5/02[m]	–	–	–	–	–	–	–
MW-3[n]	9/23/86	<10	NA	18	<10	<10	NA	<10
	4/9/87	370	NA	NA	BDL	BDL	NA	BDL
	9/16/87[m]	–	–	–	–	–	–	–
	12/1/87[m]	–	–	–	–	–	–	–
	3/7/88	NA	190	NA	NA	NA	NA	NA
	6/9/88	NA	16	NA	NA	NA	NA	NA
	9/14/88[m]	–	–	–	–	–	–	–
MW-4	10/3/86	20	NA	7.2	<5	<5	NA	<5
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	1.3	0.66	NA	BDL	BDL	NA	BDL
	12/1/87	BDL	0.100	NA	BDL	BDL	NA	8.9
	3/7/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	6/8/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	BDL	0.100	NA	BDL	BDL	NA	BDL
MW-5	10/3/86	1,400	NA	24	<5	<5	NA	6.6
	4/9/87	54	NA	NA	BDL	BDL	NA	BDL
	9/16/87	NA	96	NA	NA	NA	NA	NA
	12/1/87	NA	2	NA	NA	NA	NA	NA
	3/9/88	NA	BDL	NA	NA	NA	NA	NA
	6/9/88	NA	12	NA	NA	NA	NA	NA
	9/14/88	NA	6.3	NA	NA	NA	NA	NA
	9/16/97	<50	11.6[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98[m]	–	–	–	–	–	–	–
	12/6/00	1,000	11.7[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/12/01	360[q]	10[r]	NA	<0.5	<0.5	<0.5	<0.5

Table 2: Summary of Groundwater Analytical Results

Well Number	Date Sampled	TPPH[a] (µg/l)[h]	TEPH[b] (mg/l)	O&G[c] (mg/l)	B[d] (µg/l)	T[e] (µg/l)	E[f] (µg/l)	X[g] (µg/l)
MW-5 Cont'd	12/6/02	150[q]	5.2[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-6	4/9/87[m]	–	–	–	–	–	–	–
	9/16/87	NA	400	NA	NA	NA	NA	NA
	12/1/87	NA	30	NA	NA	NA	NA	NA
	3/9/88	NA	9.8	NA	NA	NA	NA	NA
	6/9/88	NA	63	NA	NA	NA	NA	NA
	9/14/88	NA	140	NA	NA	NA	NA	NA
	9/16/97[m]	–	–	–	–	–	–	–
	11/2/98[m]	–	–	–	–	–	–	–
	12/11/01[m]	–	–	–	–	–	–	–
	12/6/02[m]	–	–	–	–	–	–	–
MW-7	10/3/86	260	NA	8	<5	<5	NA	<5
	4/9/87[m]	–	–	–	–	–	–	–
	9/16/87	NA	790	NA	NA	NA	NA	NA
	12/1/87	NA	5.3	NA	NA	NA	NA	NA
	3/9/88	NA	BDL	NA	NA	NA	NA	NA
	6/9/88	NA	12	NA	NA	NA	NA	NA
	9/14/88	NA	67	NA	NA	NA	NA	NA
	9/16/97	850	37[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98[m]	–	–	–	–	–	–	–
	12/6/00	540	3.58[r]	NA	<0.5	<0.5	<0.5	1.9
	12/12/01	1,200[q]	12.6[r]	NA	<1.0	<1.0	<1.0	<1.0
	12/6/02	480[q]	27.6[r][s]	NA	<0.5	<0.5	<0.5	<0.5
MW-8	10/23/86	1,300	NA	14	<0.2	<0.2	NA	<1
	4/9/87	73	NA	NA	BDL	BDL	NA	BDL
	9/16/87[m]	–	–	–	–	–	–	–
	12/1/87	NA	0.630	NA	NA	NA	NA	NA
	3/9/88	NA	2.6	NA	NA	NA	NA	NA
	6/9/88	NA	1.7	NA	NA	NA	NA	NA
	9/14/88	NA	0.150	NA	NA	NA	NA	NA
	8/12/97[m]	–	–	–	–	–	–	–
	9/16/97	<50	0.29[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	1.3[r][u]	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	<50	0.16[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	<0.05	NA	<0.5	<0.5	<0.5	<0.5
	12/5/02	55[q]	0.17[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-9	4/9/87[m]	–	–	–	–	–	–	–
	9/16/87	NA	1.3	NA	NA	NA	NA	NA
	12/1/87	NA	18	NA	NA	NA	NA	NA
	3/9/88	NA	47	NA	NA	NA	NA	NA
	6/8/88[m]	–	–	–	–	–	–	–
	9/14/88[m]	–	–	–	–	–	–	–
	9/16/97	6,000	28[r]	NA	<13	<13	<13	18
	11/2/98[m]	–	–	–	–	–	–	–
	12/6/00	790	102[r][s]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01[t]	–	–	–	–	–	–	–

Table 2: Summary of Groundwater Analytical Results

Well Number	Date Sampled	TPPH[a] (µg/l)[h]	TEPH[b] (mg/l)	O&G[c] (mg/l)	B[d] (µg/l)	T[e] (µg/l)	E[f] (µg/l)	X[g] (µg/l)
MW-9 Cont'd	12/5/02[i]	–	–	–	–	–	–	–
MW-10	10/23/86	380	NA	7.2	<0.2	<0.2	NA	<0.2
	4/9/87	300	NA	NA	BDL	BDL	NA	BDL
	9/16/87	NA	3.8	NA	NA	NA	NA	NA
	12/1/87	NA	0.59	NA	NA	NA	NA	NA
	3/8/88	NA	BDL	NA	NA	NA	NA	NA
	6/8/88	NA	3.8	NA	NA	NA	NA	NA
	9/14/88	NA	0.57	NA	NA	NA	NA	NA
	9/16/97	<50	1.3[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	1.4[r][u]	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	150	0.73[r]	NA	<0.5	<0.5	<0.5	0.70
	12/6/00(dup)	160	0.81[r]	NA	<0.5	<0.5	<0.5	0.71
	12/11/01	210[q]	0.63[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01 (MW-DUP)	160[q]	0.62[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/5/02	210[q]	0.84[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/5/02 (MW-DUP)	<50	0.75[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-11	12/5/86	<8	NA	1.2	<0.4	<0.4	NA	1.4
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	BDL	NA	NA	BDL	BDL	NA	BDL
	12/1/87	BDL	NA	NA	0.8	BDL	NA	10
	3/7/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	6/8/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	BDL	100	NA	BDL	BDL	NA	BDL
MW-12	12/5/86	100	NA	2.5	0.49	1	NA	1.3
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	BDL	NA	NA	BDL	BDL	NA	BDL
	12/1/87	BDL	NA	NA	BDL	BDL	NA	13
	3/7/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	6/8/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	BDL	0.12	NA	BDL	BDL	NA	BDL
MW-13	12/24/86	<10	NA	57	<0.2	<0.9	NA	<0.9
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	BDL	NA	NA	BDL	BDL	NA	BDL
	12/1/87	BDL	NA	NA	1.6	BDL	NA	12
	3/8/88	7.7	BDL	NA	BDL	BDL	NA	BDL
	6/8/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	BDL	0.13	NA	BDL	BDL	NA	BDL
	9/16/97	<50	0.12[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	0.12[r][u]	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	<50	0.20[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	0.091[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/5/02	<50	0.19[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-14[n]	12/5/86[o]	<8	NA	3.2	<0.4	<0.2	NA	<0.2
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL

Table 2: Summary of Groundwater Analytical Results

Well Number	Date Sampled	TPPH[a] (µg/l)[h]	TEPH[b] (mg/l)	O&G[c] (mg/l)	B[d] (µg/l)	T[e] (µg/l)	E[f] (µg/l)	X[g] (µg/l)
MW-14[n]	9/16/87	1.7	0.056	NA	BDL	BDL	NA	BDL
Cont'd	12/1/87	BDL	0.066	NA	1.2	4	NA	10
	3/7/88	20	BDL	NA	BDL	BDL	NA	BDL
	6/8/88[l]	–	–	–	–	–	–	–
	9/14/88[l]	–	–	–	–	–	–	–
MW-15	12/24/86	120	NA	1.6	<0.2	<0.9	NA	9.2
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	8.4	BDL	NA	BDL	BDL	NA	BDL
	12/1/87	BDL	NA	NA	3.3	0.84	NA	14
	3/8/88	90	BDL	NA	0.8	BDL	NA	BDL
	6/9/88	53	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	NA	0.10	NA	NA	NA	NA	NA
	9/16/97	<50	1.27[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	0.34[r][u]	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	<50	0.40[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	0.29[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/5/02	<50	0.44[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-16	12/24/86	<10	NA	1.2	<0.2	<0.9	NA	<0.9
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	BDL	0.064	NA	BDL	BDL	NA	BDL
	12/1/87	120	0.15	NA	1	0.37	NA	9.1
	3/7/88	10	BDL	NA	0.5	BDL	NA	BDL
	6/8/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	BDL	0.19	NA	BDL	BDL	NA	BDL
	9/16/97[m]	–	–	–	–	–	–	–
	12/6/00	<50	0.097[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	<0.05	NA	<0.5	<0.5	<0.5	<0.5
	12/5/02	<50	0.051[r]	NA	<0.5	<0.5	<0.5	<0.5
MW-17	12/24/86	240	NA	2.4	5	1.2	NA	14
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	44	0.680	NA	BDL	BDL	NA	0.55
	12/1/87	540	1.3	NA	7.8	2.4	NA	28
	3/8/88	4,300	3.8	NA	83	BDL	NA	46
	6/8/88[l]	–	–	–	–	–	–	–
	9/14/88	54,000	64	NA	BDL	BDL	NA	BDL
	9/16/97	1,900	119.6[r]	NA	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	16[r][u]	NA	<0.5	<0.5	<0.5	0.6
	12/6/00[p]	340	47.8[r][s]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	5,300[q]	101[r][s]	NA	<10	<10	<10	<10
	12/5/02	700[q]	71[r][s]	NA	<0.5	<0.5	<0.5	<0.5
MW-18[n]	12/24/86	<20	NA	1.6	<0.3	<0.3	NA	0.99
	4/9/87	BDL	NA	NA	BDL	BDL	NA	BDL
	9/16/87	BDL	0.480	NA	BDL	BDL	NA	BDL
	12/1/87	BDL	0.18	NA	BDL	BDL	NA	6.6
	3/7/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	6/8/88	BDL	BDL	NA	BDL	BDL	NA	BDL
	9/14/88	BDL	0.190	NA	BDL	BDL	NA	BDL

Table 2: Summary of Groundwater Analytical Results

Well Number	Date Sampled	TPPH[a] (µg/l)[h]	TEPH[b] (mg/l)	O&G[c] (mg/l)	B[d] (µg/l)	T[e] (µg/l)	E[f] (µg/l)	X[g] (µg/l)
MW-20	12/11/00	<50	0.11[r]	NA	<0.5	<0.5	<0.5	<0.5
	4/6/01[t]	<50	0.057[r]	NA	<0.5	<0.5	<0.5	<0.5
	7/6/01	<50	0.12[r]	NA	<0.5	<0.5	<0.5	<0.5
	9/19/01	<50	0.16[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	86[q]	0.082[r]	NA	<0.5	<0.5	<0.5	<0.5
	12/6/02	<50	0.085[r]	NA	<0.5	<0.5	<0.5	<0.5

(a) TPPH = Total purgeable petroleum hydrocarbons using EPA Method 8015 modified.
(b) TEPH = Total extractable petroleum hydrocarbons using EPA Method 8015 modified.
(c) O&G = Total oil and grease.
(d) B = Benzene using EPA Method 8020
(e) T = Toluene using EPA Method 8020
(f) E = Ethylbenzene using EPA Method 8020
(g) X = Total xylenes using EPA Method 8020
(h) (µg/l) = Micrograms per liter; (mg/l) = milligrams per liter
(i) < = Analyte not present in the sample at or above the indicated detection limit.
(j) NA = Not analyzed.
(k) BDL = Below detection limit; actual limit not available for compilation of this table.
(l) Not sampled; well inaccessible.
(m) Not sampled; separate-phase petroleum product present.
(n) Well destroyed.
(o) Other volatile organic compounds were detected in the 12/5/86 sample collected from Well MW-14 using EPA Method 8010 (the sum of 1,1,2,2-tetrachloroethane, 1,1,1,2-tetrachloroethane and perchloroethene was 190 µg/l).
(p) Sample collected from MW-17 on 12/6/00 was also analyzed for MtBE. MtBE was not detected, with a detection limit of 25 µg/l (raised due to interference from non-target compounds).
(q) Hydrocarbon reported in the gasoline range does not match laboratory gasoline standard.
(r) Sample chromatographic patterns did not match laboratory standard for diesel.
(s) Sample surrogate recovery not reportable due to required dilution.
(t) Sample collected from MW-20 on 4/6/01 was also analyzed for MtBE. MtBE was not detected, with a detection limit of 5 µg/l.
(u) Value listed for samples collected in November 1998 is reported as extractable petroleum hydrocarbons as diesel only.

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Measuring Point Elevation (feet AMSL)[a]	Date Sampled	Depth to Water[b] (feet)	Groundwater Elevation[c] (feet)
MW-1	16.02	9/23/86	NM[d]	–
		4/9/87	8.98	7.04
		9/16/87	NM	–
		12/1/87	NM	–
		3/7/88	NM	–
		6/8/88	NM	–
		9/14/88	NM	–
		9/16/97	9.35	6.67
		11/2/98	9.16	6.86
		12/11/00	NM	–
		12/11/01	NM	–
		12/6/02[f]	9.16	6.86
MW-2	17.11	4/9/87	NM	–
		9/16/87	NM	–
		12/1/87	20.19	-3.08
		3/7/88	NM	–
		6/8/88	NM	–
		9/14/88	NM	–
		8/12/97	15.15	1.96
		8/14/97	12.58	4.53
		8/26/97	11.58	5.53
		9/2/97	11.29	5.82
		9/9/97	11.50	5.61
		9/16/97	11.83	5.28
		11/2/98	12.10	5.01
		12/11/00	12.55	4.56
		12/11/01	11.25	5.86
		12/5/02	12.45	4.66
MW-3[e]	15.46	9/23/86	NM	–
		4/9/87	10.53	4.93
		9/16/87	11.44	4.02
		12/1/87	12.73	2.73
		3/7/88	15.22	0.24
		6/9/88	14.78	0.68
		9/14/88	NM	–
MW-4	16.02	10/3/86	NM	–
		4/9/87	8.73	7.29
		9/16/87	10.53	5.49
		12/1/87	9.08	6.94
		3/7/88	9.05	6.97
		6/8/88	9.25	6.77
		9/14/88	10.47	5.55
		11/2/98	NM[h]	–
		12/11/00	NM[h]	–
		12/11/01	NM[h]	–
		12/5/02	NM[h]	–

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Measuring Point Elevation (feet AMSL)[a]	Date Sampled	Depth to Water[b] (feet)	Groundwater Elevation[c] (feet)
MW-5	16.19	10/3/86	NM	–
		4/9/87	12.02	4.17
		9/16/87	11.77	4.42
		12/1/87	11.37	4.82
		3/9/88	13.06	3.13
		6/9/88	12.74	3.45
		9/14/88	13.38	2.81
		8/12/97	11.81	4.38
		8/14/97	11.91	4.28
		8/26/97	11.42	4.77
		9/2/97	10.50	5.69
		9/9/97	11.25	4.94
		9/16/97	12.30	3.89
		11/2/98	11.48	4.71
		12/11/00	12.07	4.12
		12/11/01	10.22	5.97
		12/5/02	11.85	4.34
MW-6	17.48	4/9/87	13.28	4.20
		9/16/87	13.40	4.08
		12/1/87	13.04	4.44
		3/9/88	15.00	2.48
		6/9/88	14.56	2.92
		9/14/88	14.90	2.58
		8/12/97	13.96	3.52
		8/14/97	13.91	3.57
		8/26/97	13.58	3.90
		9/2/97	8.91	8.57
		9/9/97	10.91	6.57
		9/16/97	11.96	5.52
		11/2/98	13.20	4.28
		12/11/00	13.86	3.62
		12/11/01	11.38	6.10
		12/5/02	13.96	3.52
MW-7	16.11	10/3/86	NM	–
		4/9/87	12.13	3.98
		9/16/87	12.29	3.82
		12/1/87	11.24	4.87
		3/9/88	11.85	4.26
		6/9/88	12.46	3.65
		9/14/88	12.97	3.14
		8/12/97	11.91	4.20
		8/14/97	11.83	4.28
		8/26/97	11.00	5.11
		9/2/97	10.83	5.28
		9/9/97	11.58	4.53
		9/16/97	12.15	3.96

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Measuring Point Elevation (feet AMSL)[a]	Date Sampled	Depth to Water[b] (feet)	Groundwater Elevation[c] (feet)
MW-7 Cont'd	16.11	11/2/98	12.24	3.87
		12/11/00	12.29	3.82
		12/11/01	11.31	4.80
		12/5/02	12.29	3.82
MW-8	16.57	10/23/86	NM	–
		4/9/87	10.35	6.22
		9/16/87	10.71	5.86
		12/1/87	9.89	6.68
		3/9/88	9.61	6.96
		6/9/88	9.96	6.61
		9/14/88	10.71	5.86
		8/12/97	10.04	6.53
		9/16/97	9.90	6.67
		11/2/98	9.80	6.77
		12/11/00	9.78	6.79
		12/11/01	8.22	8.35
		12/5/02	9.70	6.87
MW-9[f]	7.33[g]	4/9/87	NM	–
		9/16/87	NM	–
		12/1/87	6.83	–
		3/9/88	6.44	–
		6/8/88	NM	–
		9/14/88	7.70	–
		8/12/97	6.83	–
		8/14/97	6.46	–
		8/26/97	6.29	–
		9/2/97	6.33	–
		9/9/97	6.58	–
		9/16/97	6.62	–
		11/2/98	6.90	–
		12/11/00	6.95	–
		12/11/01	NM[f]	–
		12/5/02	NM[f]	–
MW-10	15.96	10/23/86	NM	–
		4/9/87	10.29	5.67
		9/16/87	11.19	4.77
		12/1/87	10.08	5.88
		3/8/88	10.36	5.60
		6/8/88	10.89	5.07
		9/14/88	11.34	4.62
		9/16/97	10.27	5.69
		11/2/98	10.30	5.66
		12/11/00	10.56	5.40
		12/11/01	8.74	7.22
		12/5/02	10.28	5.68
MW-11	13.99	12/5/86	–	–

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Measuring Point Elevation (feet AMSL)[a]	Date Sampled	Depth to Water[b] (feet)	Groundwater Elevation[c] (feet)
MW-11 Cont'd	13.99	4/9/87	9.02	4.97
		9/16/87	9.96	4.03
		12/1/87	9.44	4.55
		3/7/88	9.31	4.68
		6/8/88	9.42	4.57
		9/14/88	9.10	4.89
		11/2/98	NM[h]	–
		12/11/00	NM[h]	–
		12/11/01	NM[h]	–
		12/5/02	NM[h]	–
MW-12	13.83	12/5/86	NM	–
		4/9/87	6.83	7.00
		9/16/87	7.80	6.03
		12/1/87	7.59	6.24
		3/7/88	7.02	6.81
		6/8/88	7.38	6.45
		9/14/88	8.14	5.69
		11/2/98	NM[h]	–
		12/11/00	NM[h]	–
		12/11/01	NM[h]	–
		12/5/02	NM[h]	–
MW-13	13.98	12/24/86	NM	–
		4/9/87	10.79	3.19
		9/16/87	10.98	3.00
		12/1/87	10.21	3.77
		3/8/88	10.51	3.47
		6/8/88	10.85	3.13
		9/14/88	10.93	3.05
		9/16/97	10.55	3.43
		11/2/98	10.98	3.00
		12/11/00	9.67	4.31
		12/11/01	9.69	4.29
		12/5/02	10.43	3.55
MW-14[e]	14.78	12/5/86	NM	–
		4/9/87	7.17	7.61
		9/16/87	8.78	6.00
		12/1/87	8.26	6.52
		3/7/88	7.26	7.52
		6/8/88	NM	–
		9/14/88	NM	–
		11/2/98	NM	–
MW-15	15.16	12/24/86	NM	–
		4/9/87	11.88	3.28
		9/16/87	11.77	3.39
		12/1/87	11.25	3.91
		3/8/88	11.24	3.92

Table 3: Summary of Groundwater Depths and Elevations

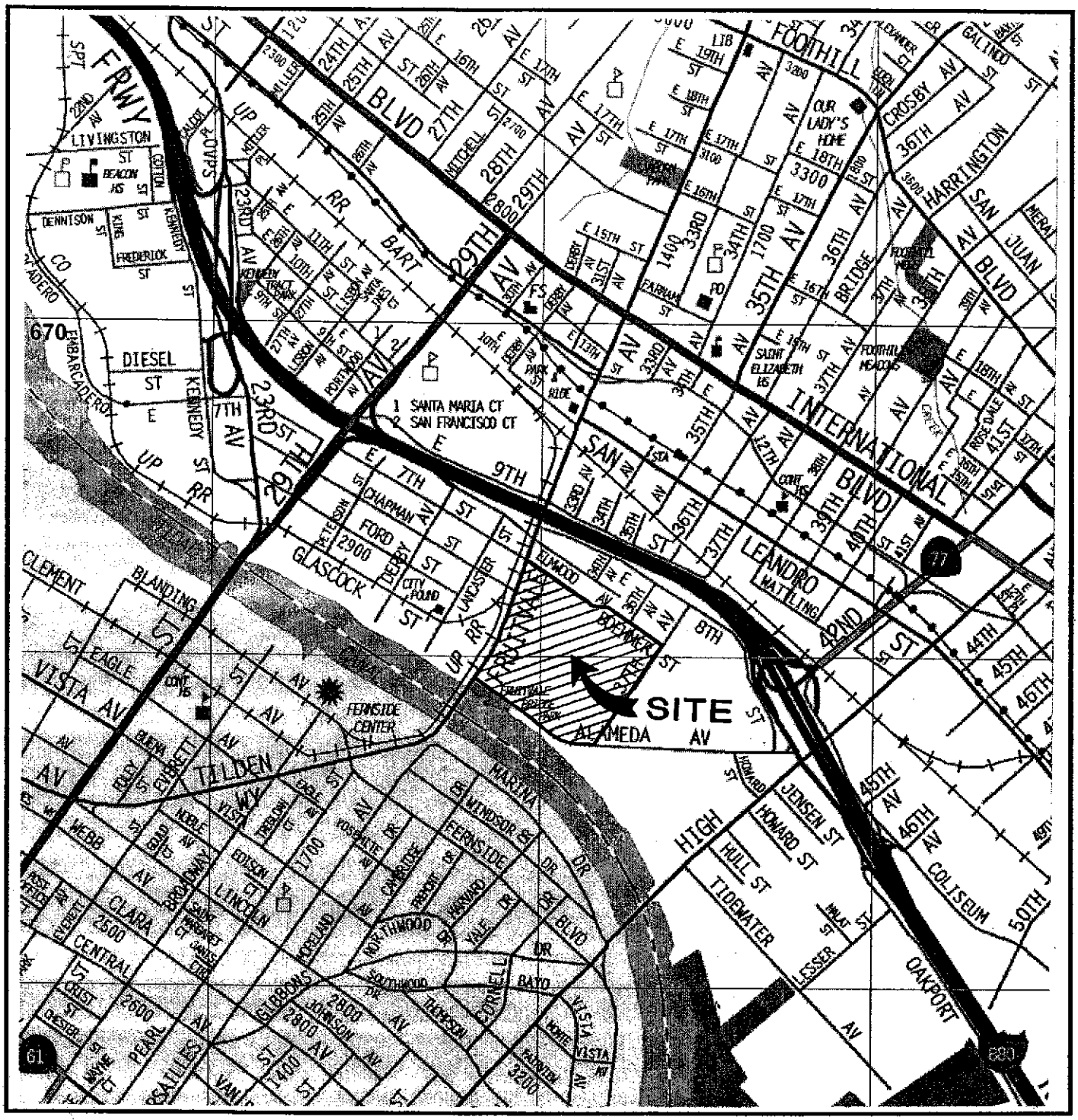
Well Number	Measuring Point Elevation (feet AMSL)[a]	Date Sampled	Depth to Water[b] (feet)	Groundwater Elevation[c] (feet)
MW-15 Cont'd	15.16	6/9/88	12.15	3.01
		9/14/88	12.34	2.82
		9/16/97	11.92	3.24
		11/2/98	11.60	3.56
		12/11/00	11.95	3.21
		12/11/01	10.80	4.36
		12/5/02	11.05	4.11
MW-16	13.48	12/24/86	NM	–
		4/9/87	9.47	4.01
		9/16/87	10.07	3.41
		12/1/87	9.23	4.25
		3/7/88	9.46	4.02
		6/8/88	9.56	3.92
		9/14/88	9.99	3.49
		9/16/97	7.32	6.16
		11/2/98	NM	–
		12/11/00	9.47	4.01
		12/11/01	7.57	5.91
		12/5/02	9.70	3.78
MW-17	14.17	12/24/86	NM	–
		4/9/87	9.95	4.22
		9/16/87	10.59	3.58
		12/1/87	9.87	4.30
		3/8/88	10.10	4.07
		6/8/88	NM	–
		9/14/88	10.58	3.59
		8/12/97	9.54	4.63
		8/14/97	9.58	4.59
		8/26/97	9.25	4.92
		9/2/97	9.50	4.67
		9/9/97	9.58	4.59
		9/16/97	9.74	4.43
		11/2/98	9.96	4.21
		12/11/00	9.84	4.33
		12/11/01	8.74	5.43
		12/5/02	10.26	3.91
MW-18[e]	14.89	12/24/86	NM	–
		4/9/87	9.91	4.98
		9/16/87	10.37	4.52
		12/1/87	10.19	4.7
		3/7/88	9.60	5.29
		6/8/88	10.01	4.88
		9/14/88	10.82	4.07
		12/11/00	NM	–
MW-20	12.74	12/11/00	9.81	2.93
		12/11/01	9.01	3.73

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Measuring Point Elevation (feet AMSL)[a]	Date Sampled	Depth to Water[b] (feet)	Groundwater Elevation[c] (feet)
MW-20 Cont'd	12.74	12/5/02	8.88	3.86

(a) AMSL = Above mean sea level according to the North American Vertical Datum (NAVD) 88
(b) Depth to water measured from the top of the well casing. Not corrected for product thickness.
(c) Groundwater elevations are reported in feet above mean sea level.
(d) NM = Not measured.
(e) Well destroyed.
(f) Casing elevation not measured.
(g) Well casing elevation was not measured for this well; well is located beneath forklift ramp and this measurement is the ground surface elevation in feet MSL.
(h) In accordance with the Work Plan, Wells MW-4, MW-11 and MW-12 were not monitored.
(i) Well is flooded and casing is damaged.
(j) The depth to water measured in Well MW-1 was not used to generate groundwater contours because it was measured a day after the other wells.

Figures



N

Not to Scale

Kennedy/Jenks Consultants

Owens Brockway
Oakland, California

Site Location Map

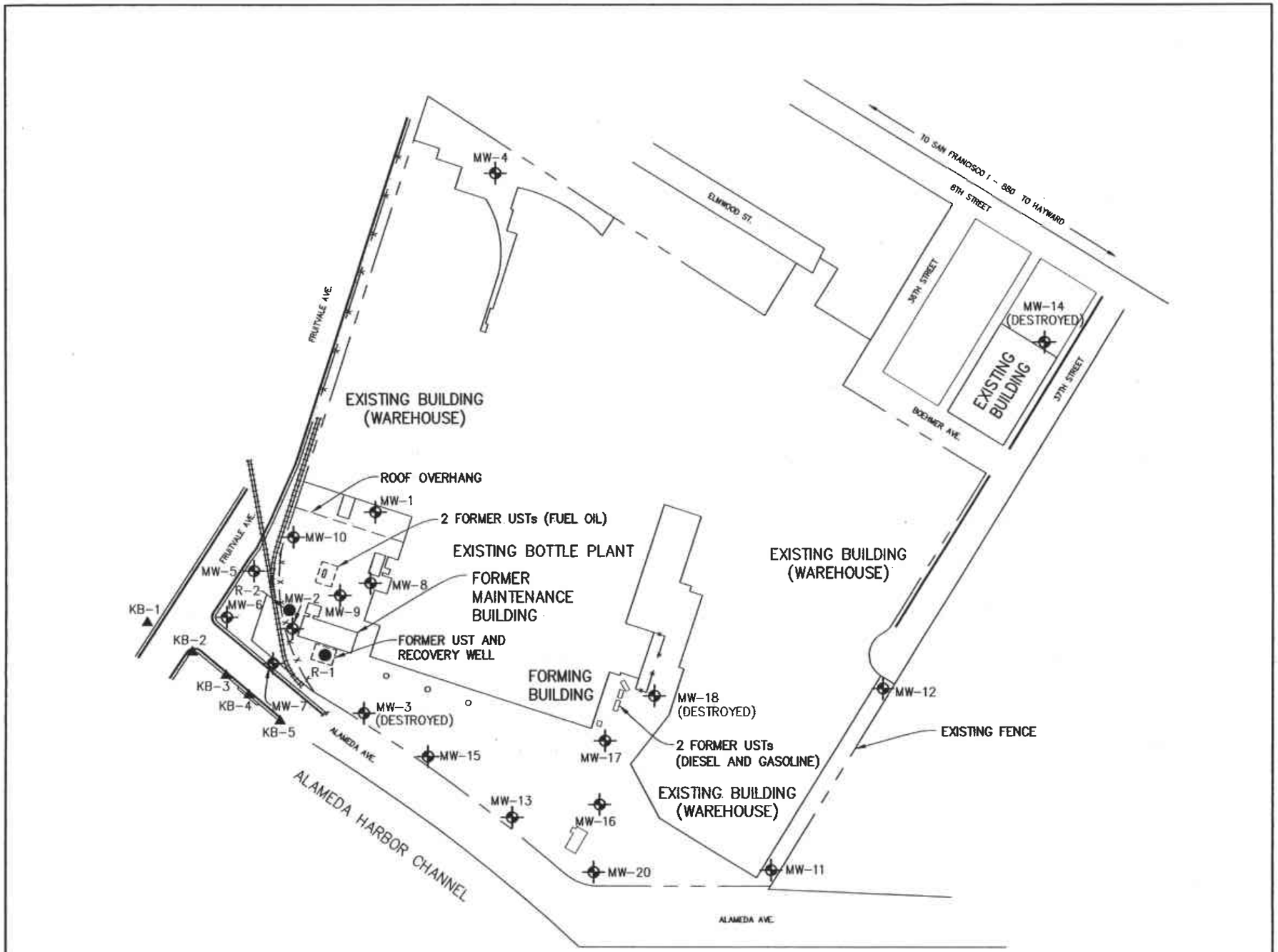
K/J 950007.40
January 2003

Figure 1

SOURCE

The Thomas Guide Digital Edition
1999 Bay Area, Thomas Bros. Maps

FILE: N:\95.isb\950007.40\Jan03f1.dwg



N

0 100 200 400

Approximate Graphic Scale
in Feet

LEGEND

⊕ MW-2	GROUNDWATER MONITORING WELL
● R-1	FORMER PRODUCT RECOVERY WELL
▲ KB-5	SOIL BORING – JANUARY 1999

SOURCE

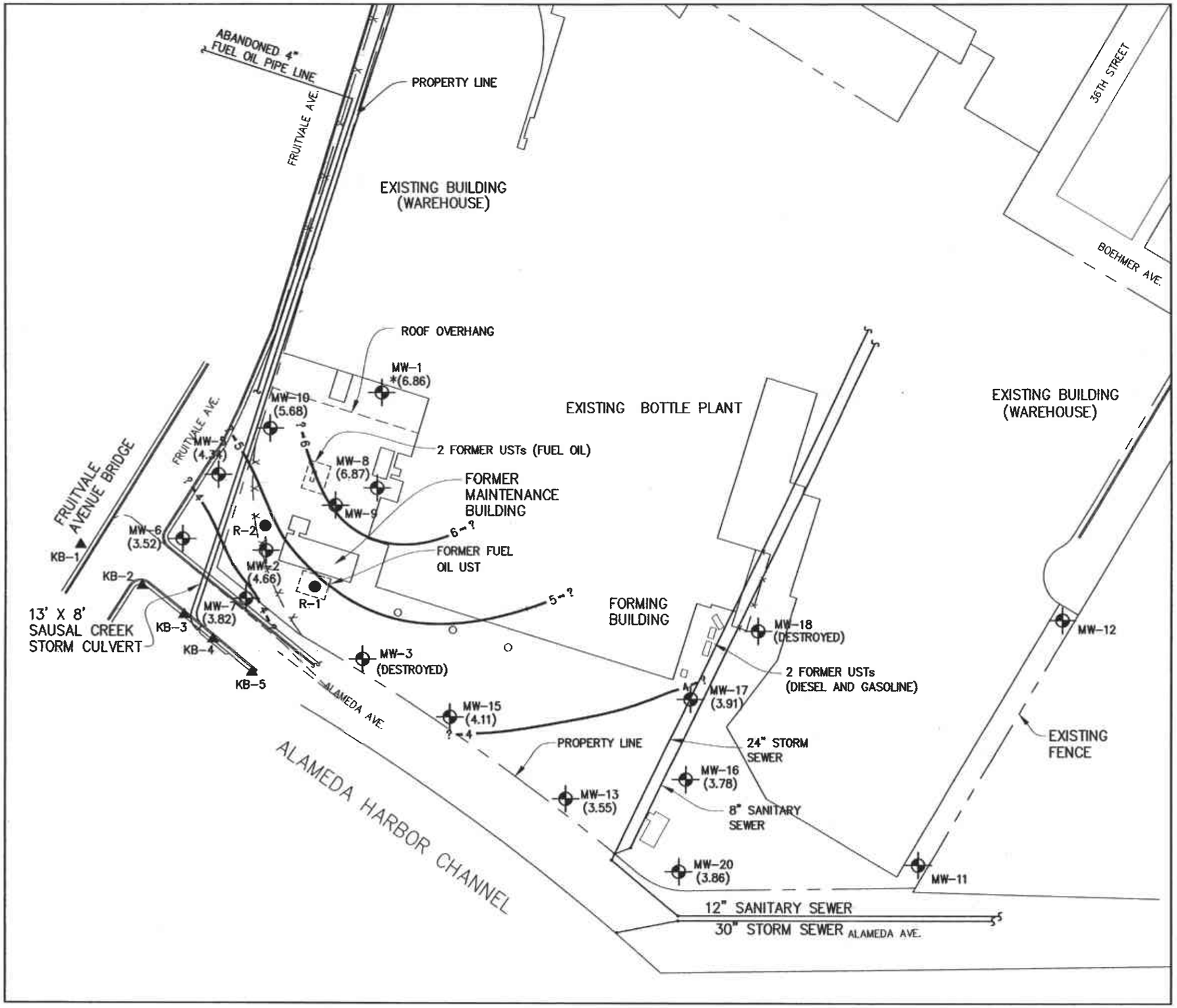
Site Plan for Soil and Groundwater Investigation, Exceltech, February 1987.

Kennedy/Jenks Consultants
Owens Brockway
Oakland, California

Site Plan

K/J 950007.40
January 2003
Figure 2

FILE: N:\95.isb\950007.40\Jan03f2.dwg
XREF: N:\95.isb\950007.40\Siteplan.dwg



N

0 136 272

Approximate Graphic Scale in Feet

LEGEND

MW-2	GROUNDWATER MONITORING WELL
R-1	FORMER PRODUCT RECOVERY WELL
KB-5	SOIL BORING – JANUARY 1999
4 (5.68)	GROUNDWATER ELEVATION ISOCONTOUR LINE GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL, BASED ON 05 DECEMBER 2002 DEPTH TO WATER MEASUREMENTS (NOT CORRECTED FOR PRESENCE OF FREE PRODUCT)
(NM)	NOT MEASURED
*	NOT CONTOURED, DEPTH TO GROUNDWATER WAS MEASURED ON 6 DECEMBER 2002

SOURCE

SITE PLAN FOR SOIL AND GROUNDWATER INVESTIGATION; EXCELTECH, FEBRUARY 1987.

NOTE

GROUNDWATER ELEVATION CONTOURS LINES ARE INFERRED.

Kennedy/Jenks Consultants

Owens Brockway
Oakland, California

Groundwater Elevation Isocontours

K/J 950007.40
January 2003
Figure 3

FILE: N:\95.isb\950007.40\Jan03f3.dwg
XREF: N:\95.isb\950007.40\Siteplan.dwg

Appendix A

Analytical Laboratory Data Reports and Chain of Custody Forms

SEVERN TRENT STL

Submission#: 2002-12-0125

Kennedy/Jenks-San Francisco

December 17, 2002

622 Folsom Street
San Francisco, CA 94107-1366
Attn.: Meredith Durant
Project#: 950007.30
Project: Owens Brockway

Dear Meredith,

Attached is our report for your samples received on 12/05/2002 18:05
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 01/19/2003 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: vvancil@stl-inc.com

Sincerely,

Vincent Vancil
Project Manager

SEVERN TRENT STL

Submission #: 2002-12-0125

Gas/BTEX Compounds by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
TRIP BLANK	12/05/2002 16:00	Water	8

Gas/BTEX Compounds by 8015M/8021

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030	Test(s):	8021B
Sample ID:	TRIP BLANK	Lab ID:	2002-12-0125 - 8
Sampled:	12/05/2002 16:00	Extracted:	12/10/2002 10:55
Matrix:	Water	QC Batch#:	2002/12/10-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	12/10/2002 10:55	
Toluene	ND	0.50	ug/L	1.00	12/10/2002 10:55	
Ethyl benzene	ND	0.50	ug/L	1.00	12/10/2002 10:55	
Xylene(s)	ND	0.50	ug/L	1.00	12/10/2002 10:55	
Surrogates(s)						
Trifluorotoluene	81.7	58-124	%	1.00	12/10/2002 10:55	

Gas/BTEX Compounds by 8015M/8021

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 — Test(s): 8015M

Method Blank — **Water** — **QC Batch # 2002/12/10-01.05**

MB: 2002/12/10-01.05-003 — Date Extracted: 12/10/2002 08:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Benzene	ND	0.5	ug/L	12/10/2002 08:03	
Toluene	ND	0.5	ug/L	12/10/2002 08:03	
Ethyl benzene	ND	0.5	ug/L	12/10/2002 08:03	
Xylene(s)	ND	0.5	ug/L	12/10/2002 08:03	
Surrogates(s)					
Trifluorotoluene	85.4	58-124	%	12/10/2002 08:03	

Gas/BTEX Compounds by 8015M/8021

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/12/10-01.05**

LCS 2002/12/10-01.05-004 Extracted: 12/10/2002 Analyzed: 12/10/2002 08:35

LCSD 2002/12/10-01.05-005 Extracted: 12/10/2002 Analyzed: 12/10/2002 09:07

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	97.6	99.2	100.0	97.6	99.2	1.6	77-123	20		
Toluene	96.4	97.9	100.0	96.4	97.9	1.5	78-122	20		
Ethyl benzene	95.9	96.9	100.0	95.9	96.9	1.0	70-130	20		
Xylene(s)	287	289	300	95.7	96.3	0.6	75-125	20		
Surrogates(s)										
Trifluorotoluene	436	429	500	87.2	85.8		58-124			

SEVERN TRENT STL

Submission #: 2002-12-0125

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-13	12/05/2002 11:10	Water	1
MW-15	12/05/2002 11:30	Water	2
MW-16	12/05/2002 12:20	Water	3
MW-10	12/05/2002 14:50	Water	4
MW-DUP	12/05/2002 15:00	Water	5
MW-8	12/05/2002 14:00	Water	6
MW-17	12/05/2002 15:40	Water	7

SEVERN TRENT STL

Submission #: 2002-12-0125

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-13**	Lab ID:	2002-12-0125 - 1
Sampled:	12/05/2002 11:10	Extracted:	12/9/2002 23:26
Matrix:	Water	QC Batch#:	2002/12/09-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2002 23:26	
Benzene	ND	0.50	ug/L	1.00	12/09/2002 23:26	
Toluene	ND	0.50	ug/L	1.00	12/09/2002 23:26	
Ethyl benzene	ND	0.50	ug/L	1.00	12/09/2002 23:26	
Xylene(s)	ND	0.50	ug/L	1.00	12/09/2002 23:26	
Surrogates(s)						
Trifluorotoluene	97.3	58-124	%	1.00	12/09/2002 23:26	
4-Bromofluorobenzene-FID	93.5	50-150	%	1.00	12/09/2002 23:26	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-15**	Lab ID:	2002-12-0125 - 2
Sampled:	12/05/2002 11:30	Extracted:	12/9/2002 23:50
Matrix:	Water	QC Batch#:	2002/12/09-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2002 23:50	
Benzene	ND	0.50	ug/L	1.00	12/09/2002 23:50	
Toluene	ND	0.50	ug/L	1.00	12/09/2002 23:50	
Ethyl benzene	ND	0.50	ug/L	1.00	12/09/2002 23:50	
Xylene(s)	ND	0.50	ug/L	1.00	12/09/2002 23:50	
Surrogates(s)						
Trifluorotoluene	97.4	58-124	%	1.00	12/09/2002 23:50	
4-Bromofluorobenzene-FID	92.7	50-150	%	1.00	12/09/2002 23:50	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-16**	Lab ID:	2002-12-0125 - 3
Sampled:	12/05/2002 12:20	Extracted:	12/10/2002 00:15
Matrix:	Water	QC Batch#:	2002/12/09-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/10/2002 00:15	
Benzene	ND	0.50	ug/L	1.00	12/10/2002 00:15	
Toluene	ND	0.50	ug/L	1.00	12/10/2002 00:15	
Ethyl benzene	ND	0.50	ug/L	1.00	12/10/2002 00:15	
Xylene(s)	ND	0.50	ug/L	1.00	12/10/2002 00:15	
Surrogates(s)						
Trifluorotoluene	96.6	58-124	%	1.00	12/10/2002 00:15	
4-Bromofluorobenzene-FID	92.2	50-150	%	1.00	12/10/2002 00:15	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-10**	Lab ID:	2002-12-0125 - 4
Sampled:	12/05/2002 14:50	Extracted:	12/10/2002 00:40
Matrix:	Water	QC Batch#:	2002/12/09-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	210	50	ug/L	1.00	12/10/2002 00:40	g
Benzene	ND	0.50	ug/L	1.00	12/10/2002 00:40	
Toluene	ND	0.50	ug/L	1.00	12/10/2002 00:40	
Ethyl benzene	ND	0.50	ug/L	1.00	12/10/2002 00:40	
Xylene(s)	ND	0.50	ug/L	1.00	12/10/2002 00:40	
Surrogates(s)						
Trifluorotoluene	92.2	58-124	%	1.00	12/10/2002 00:40	
4-Bromofluorobenzene-FID	98.3	50-150	%	1.00	12/10/2002 00:40	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-DUP**	Lab ID:	2002-12-0125 - 5
Sampled:	12/05/2002 15:00	Extracted:	12/10/2002 13:41
Matrix:	Water	QC Batch#:	2002/12/10-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/10/2002 13:41	
Benzene	ND	0.50	ug/L	1.00	12/10/2002 13:41	
Toluene	ND	0.50	ug/L	1.00	12/10/2002 13:41	
Ethyl benzene	ND	0.50	ug/L	1.00	12/10/2002 13:41	
Xylene(s)	ND	0.50	ug/L	1.00	12/10/2002 13:41	
Surrogates(s)						
Trifluorotoluene	87.3	58-124	%	1.00	12/10/2002 13:41	
4-Bromofluorobenzene-FID	83.9	50-150	%	1.00	12/10/2002 13:41	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-8**	Lab ID:	2002-12-0125 - 6
Sampled:	12/05/2002 14:00	Extracted:	12/12/2002 10:58
Matrix:	Water	QC Batch#:	2002/12/12-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	55	50	ug/L	1.00	12/12/2002 10:58	g
Benzene	ND	0.50	ug/L	1.00	12/12/2002 10:58	
Toluene	ND	0.50	ug/L	1.00	12/12/2002 10:58	
Ethyl benzene	ND	0.50	ug/L	1.00	12/12/2002 10:58	
Xylene(s)	ND	0.50	ug/L	1.00	12/12/2002 10:58	
Surrogates(s)						
Trifluorotoluene	98.8	58-124	%	1.00	12/12/2002 10:58	
4-Bromofluorobenzene-FID	86.0	50-150	%	1.00	12/12/2002 10:58	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-17**	Lab ID:	2002-12-0125 - 7
Sampled:	12/05/2002 15:40	Extracted:	12/13/2002 14:48
Matrix:	Water	QC Batch#:	2002/12/13-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	700	50	ug/L	1.00	12/13/2002 14:48	g
Benzene	ND	0.50	ug/L	1.00	12/13/2002 14:48	
Toluene	ND	0.50	ug/L	1.00	12/13/2002 14:48	
Ethyl benzene	ND	0.50	ug/L	1.00	12/13/2002 14:48	
Xylene(s)	ND	0.50	ug/L	1.00	12/13/2002 14:48	
Surrogates(s)						
4-Bromofluorobenzene	115.4	50-150	%	1.00	12/13/2002 14:48	
4-Bromofluorobenzene-FID	127.0	50-150	%	1.00	12/13/2002 14:48	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 | Test(s): 8015M
Method Blank | **Water** | **QC Batch # 2002/12/09-01.04**
MB: 2002/12/09-01.04-008 | Date Extracted: 12/09/2002 10:15

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/09/2002 10:15	
Benzene	ND	0.5	ug/L	12/09/2002 10:15	
Toluene	ND	0.5	ug/L	12/09/2002 10:15	
Ethyl benzene	ND	0.5	ug/L	12/09/2002 10:15	
Xylene(s)	ND	0.5	ug/L	12/09/2002 10:15	
Surrogates(s)					
Trifluorotoluene	99.4	58-124	%	12/09/2002 10:15	
4-Bromofluorobenzene-FID	93.6	50-150	%	12/09/2002 10:15	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 | Water | Test(s): 8015M
Method Blank | **QC Batch # 2002/12/10-01.05**
MB: 2002/12/10-01.05-003 | Date Extracted: 12/10/2002 08:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/10/2002 08:03	
Benzene	ND	0.5	ug/L	12/10/2002 08:03	
Toluene	ND	0.5	ug/L	12/10/2002 08:03	
Ethyl benzene	ND	0.5	ug/L	12/10/2002 08:03	
Xylene(s)	ND	0.5	ug/L	12/10/2002 08:03	
Surrogates(s)					
Trifluorotoluene	85.4	58-124	%	12/10/2002 08:03	
4-Bromofluorobenzene-FID	81.6	50-150	%	12/10/2002 08:03	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 | Test(s): 8015M
Method Blank | **Water** | **QC Batch # 2002/12/12-01.05**
MB: 2002/12/12-01.05-001 | Date Extracted: 12/12/2002 08:05

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/12/2002 08:05	
Benzene	ND	0.5	ug/L	12/12/2002 08:05	
Toluene	ND	0.5	ug/L	12/12/2002 08:05	
Ethyl benzene	ND	0.5	ug/L	12/12/2002 08:05	
Xylene(s)	ND	0.5	ug/L	12/12/2002 08:05	
Surrogates(s)					
Trifluorotoluene	71.6	58-124	%	12/12/2002 08:05	
4-Bromofluorobenzene-FID	71.4	50-150	%	12/12/2002 08:05	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 — Test(s): 8015M
Method Blank — **Water** — **QC Batch # 2002/12/13-01.04**
MB: 2002/12/13-01.04-003 — Date Extracted: 12/13/2002 10:33

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/13/2002 10:33	
Benzene	ND	0.5	ug/L	12/13/2002 10:33	
Toluene	ND	0.5	ug/L	12/13/2002 10:33	
Ethyl benzene	ND	0.5	ug/L	12/13/2002 10:33	
Xylene(s)	ND	0.5	ug/L	12/13/2002 10:33	
Surrogates(s)					
4-Bromofluorobenzene	106.9	50-150	%	12/13/2002 10:33	
4-Bromofluorobenzene-FID	107.6	50-150	%	12/13/2002 10:33	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/12/09-01.04**

LCS 2002/12/09-01.04-004 Extracted: 12/09/2002 Analyzed: 12/09/2002 08:38
LCSD 2002/12/09-01.04-005 Extracted: 12/09/2002 Analyzed: 12/09/2002 09:02

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	106	107	100.0	106.0	107.0	0.9	77-123	20		
Toluene	104	105	100.0	104.0	105.0	1.0	78-122	20		
Ethyl benzene	103	104	100.0	103.0	104.0	1.0	70-130	20		
Xylene(s)	302	304	300	100.7	101.3	0.6	75-125	20		
Surrogates(s)										
Trifluorotoluene	502	523	500	100.4	104.6		58-124			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/09-01.04**

LCS 2002/12/09-01.04-006 Extracted: 12/09/2002 Analyzed: 12/09/2002 09:26

LCSD 2002/12/09-01.04-007 Extracted: 12/09/2002 Analyzed: 12/09/2002 09:50

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	539	502	500	107.8	100.4	7.1	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	506	487	500	101.2	97.4		50-150			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/12/10-01.05**

LCS 2002/12/10-01.05-004 Extracted: 12/10/2002 Analyzed: 12/10/2002 08:35

LCSD 2002/12/10-01.05-005 Extracted: 12/10/2002 Analyzed: 12/10/2002 09:07

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	97.6	99.2	100.0	97.6	99.2	1.6	77-123	20		
Toluene	96.4	97.9	100.0	96.4	97.9	1.5	78-122	20		
Ethyl benzene	95.9	96.9	100.0	95.9	96.9	1.0	70-130	20		
Xylene(s)	287	289	300	95.7	96.3	0.6	75-125	20		
Surrogates(s)										
Trifluorotoluene	436	429	500	87.2	85.8		58-124			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/10-01.05**

LCS 2002/12/10-01.05-006 Extracted: 12/10/2002 Analyzed: 12/10/2002 09:39
LCSD 2002/12/10-01.05-007 Extracted: 12/10/2002 Analyzed: 12/10/2002 10:11

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	427	509	500	85.4	101.8	17.5	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	358	431	500	71.6	86.2		50-150			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030 Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/12/12-01.05**

LCS 2002/12/12-01.05-002 Extracted: 12/12/2002 Analyzed: 12/12/2002 08:37
LCSD 2002/12/12-01.05-003 Extracted: 12/12/2002 Analyzed: 12/12/2002 09:09

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	99.5	91.7	100.0	99.5	91.7	8.2	77-123	20		
Toluene	99.0	90.3	100.0	99.0	90.3	9.2	78-122	20		
Ethyl benzene	99.2	90.8	100.0	99.2	90.8	8.8	70-130	20		
Xylene(s)	296	273	300	98.7	91.0	8.1	75-125	20		
Surrogates(s)										
Trifluorotoluene	404	381	500	80.8	76.2		58-124	0		

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike | **Water** | **QC Batch # 2002/12/12-01.05**

LCS 2002/12/12-01.05-004 Extracted: 12/12/2002 Analyzed: 12/12/2002 09:42
LCSD 2002/12/12-01.05-005 Extracted: 12/12/2002 Analyzed: 12/12/2002 10:14

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	520	528	500	104.0	105.6	1.5	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	433	428	500	86.6	85.6		50-150	0		

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/13-01.04**

LCS 2002/12/13-01.04-004 Extracted: 12/13/2002 Analyzed: 12/13/2002 10:57

LCSD 2002/12/13-01.04-005 Extracted: 12/13/2002 Analyzed: 12/13/2002 11:21

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	454	456	500	90.8	91.2	0.4	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	550	553	500	110.0	110.6		50-150			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike | **Water** | **QC Batch # 2002/12/13-01.04**

LCS 2002/12/13-01.04-006 Extracted: 12/13/2002 Analyzed: 12/13/2002 11:45
LCSD 2002/12/13-01.04-007 Extracted: 12/13/2002 Analyzed: 12/13/2002 12:09

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	110	108	100.0	110.0	108.0	1.8	77-123	20		
Toluene	107	105	100.0	107.0	105.0	1.9	78-122	20		
Ethyl benzene	103	102	100.0	103.0	102.0	1.0	70-130	20		
Xylene(s)	304	299	300	101.3	99.7	1.6	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene	577	573	500	115.4	114.6		50-150	0		

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Legend and Notes

Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

SEVERN TRENT STL

Submission #: 2002-12-0125

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-13	12/05/2002 11:10	Water	1
MW-15	12/05/2002 11:30	Water	2
MW-16	12/05/2002 12:20	Water	3
MW-10	12/05/2002 14:50	Water	4
MW-DUP	12/05/2002 15:00	Water	5
MW-8	12/05/2002 14:00	Water	6
MW-17	12/05/2002 15:40	Water	7

SEVERN TRENT STL

Submission #: 2002-12-0125

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-13	Lab ID:	2002-12-0125 - 1
Sampled:	12/05/2002 11:10	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	190	50	ug/L	1.00	12/10/2002 17:29	ndp
Motor Oil	ND	500	ug/L	1.00	12/10/2002 17:29	
Surrogates(s)						
o-Terphenyl	67.8	60-130	%	1.00	12/10/2002 17:29	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-15**	Lab ID:	2002-12-0125 - 2
Sampled:	12/05/2002 11:30	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	440	50	ug/L	1.00	12/10/2002 18:09	ndp
Motor Oil	ND	500	ug/L	1.00	12/10/2002 18:09	
Surrogates(s)						
o-Terphenyl	78.6	60-130	%	1.00	12/10/2002 18:09	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-16**	Lab ID:	2002-12-0125 - 3
Sampled:	12/05/2002 12:20	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	51	50	ug/L	1.00	12/10/2002 18:49	ndp
Motor Oil	ND	500	ug/L	1.00	12/10/2002 18:49	
Surrogates(s)						
o-Terphenyl	74.8	60-130	%	1.00	12/10/2002 18:49	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-10**	Lab ID:	2002-12-0125 - 4
Sampled:	12/05/2002 14:50	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	840	50	ug/L	1.00	12/10/2002 19:28	ndp
Motor Oil	ND	500	ug/L	1.00	12/10/2002 19:28	
Surrogates(s)						
o-Terphenyl	83.1	60-130	%	1.00	12/10/2002 19:28	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-DUP**	Lab ID:	2002-12-0125 - 5
Sampled:	12/05/2002 15:00	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	750	50	ug/L	1.00	12/10/2002 20:08	ndp
Motor Oil	ND	500	ug/L	1.00	12/10/2002 20:08	
Surrogates(s)						
o-Terphenyl	81.7	60-130	%	1.00	12/10/2002 20:08	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-8**	Lab ID:	2002-12-0125 - 6
Sampled:	12/05/2002 14:00	Extracted:	12/6/2002 09:35
Matrix:	Water	QC Batch#:	2002/12/06-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	170	50	ug/L	1.00	12/07/2002 17:59	ndp
Motor Oil	ND	500	ug/L	1.00	12/07/2002 17:59	
Surrogates(s)						
o-Terphenyl	77.4	60-130	%	1.00	12/07/2002 17:59	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-17**	Lab ID:	2002-12-0125 - 7
Sampled:	12/05/2002 15:40	Extracted:	12/6/2002 09:35
Matrix:	Water	QC Batch#:	2002/12/06-01.10

Analysis Flag: o (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	71000	2800	ug/L	56.18	12/10/2002 19:57	ndp
Motor Oil	ND	28000	ug/L	56.18	12/10/2002 19:57	
Surrogates(s)						
o-Terphenyl	NA	60-130	%	56.18	12/10/2002 19:57	sd

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2002/12/06-01.10-001

Water

Test(s): 8015M
QC Batch # 2002/12/06-01.10
Date Extracted: 12/06/2002 09:35

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	12/06/2002 13:13	
Motor Oil	ND	500	ug/L	12/06/2002 13:13	
Surrogates(s)					
o-Terphenyl	77.4	60-130	%	12/06/2002 13:13	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2002/12/09-01.10-001

Water

Test(s): 8015M
QC Batch # 2002/12/09-01.10
Date Extracted: 12/09/2002 06:18

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	12/09/2002 09:53	
Motor Oil	ND	500	ug/L	12/09/2002 09:53	
Surrogates(s)					
o-Terphenyl	91.9	60-130	%	12/09/2002 09:53	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/06-01.10**

LCS 2002/12/06-01.10-002 Extracted: 12/06/2002 Analyzed: 12/06/2002 13:54
LCSD 2002/12/06-01.10-003 Extracted: 12/06/2002 Analyzed: 12/06/2002 14:34

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	1140	1060	1250	91.2	84.8	7.3	60-130	25		
Surrogates(s)										
o-Terphenyl	17.3	16.3	20.0	86.7	81.7		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/09-01.10**

LCS 2002/12/09-01.10-002 Extracted: 12/09/2002 Analyzed: 12/09/2002 10:31
LCSD 2002/12/09-01.10-003 Extracted: 12/09/2002 Analyzed: 12/09/2002 09:16

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	1210	1250	1250	96.8	100.0	3.3	60-130	25		
Surrogates(s)										
o-Terphenyl	19.3	20.1	20.0	96.7	100.7		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens Brockway

Received: 12/05/2002 18:05

Legend and Notes

Analysis Flag

o

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

sd

Surrogate recovery not reportable due to required dilution.

Sample Chain-of-Custody/Analysis Request

2002-12-0125

Kennedy/Jenks Consultants

Possible Hazards: Analytes

Client: Kennedy Jenks | Report to: Meredith Durant

Site: Owens Brackenridge | Company: Kennedy Jenks

Project No.: 9500017.30 | Address: 622 Folsom St

Sampler Name: Farrell | SF, CA 94107

Telephone: 415 243 2506 | Fax: 415 896 0999

Lab Destination: STL San Francisco

Address: Quarry Lane

Pleasanton CA

Telephone: 925 484 1919

Carrier/Way Bill No.:

(1) Lab ID No.	(1) Client ID No.	Collection Date	Collection Time	(2) Type	(3) Depth	(3) Comp	(4) Pres.	Turn-around	(5) Analyses Requested: 8015 Total Purgeable Hydrocarbons	8015 Total Extractable Hydrocarbons	8020 BTEX						Comment/Conditions (container type, container number, etc.)
1	MW-13	12/5/02	1110	W	—	—	HCl/N		X	X	X						3 VOAs, 2 1 Liters Amber
2	MW-15	12/5/02	1170	W	—	—	HCl/N		X	X	X						
3	MW-16	12/5/02	1220	W	—	—	HCl/N		X	X	X						
4	MW-10	12/5/02	1450	W	—	—	HCl/N		X	X	X						
5	MW-DUP	12/5/02	1500	W	—	—	HCl/N		X	X	X						
6	MW-8	12/5/02	1400	W	—	—	HCl/N		X	X	X						
7	MW-17	12/5/02	1540	W	—	—	HCl/N		X	X	X						
8	Trip Blank	12/5/02	1600	W	—	—	HCl				X						2 VOAs
																	3.2°C

(1) Write only one sample number in each space.

(2) Specify type of sample(s): Water (W), Solid (S), or indicate type.

(3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.

(4) Preservation of sample.

(5) Write each analysis requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

Sample Relinquished By: Print Name	Signature	Company	Date	Time	Sample Received By: Print Name	Signature	Company	Date	Time
Jason Farrell	Jason Farrell	Kennedy Jenks	12/5/02	1645	K. Morrison	K. Morrison	STL-SF	12/5/02	1645
K. Harrington	K. Harrington	STL-SF	12/5/02	1805	D. Harrington	D. Harrington	STL-SF	12/5/02	1805

SEVERN TRENT SERVICES

STL San Francisco

Sample Receipt Checklist

Submission #: 2002- 12 - 0125

Checklist completed by: (initials) CR Date: 12/06/02

Courier name: ☑ STL San Francisco ☐ Client _____

Custody seals intact on shipping container/samples	Yes____ No____	Not Present ✓
Chain of custody present?	Yes ✓ No____	
Chain of custody signed when relinquished and received?	Yes ✓ No____	
Chain of custody agrees with sample labels?	Yes ✓ No____	
Samples in proper container/bottle?	Yes ✓ No____	
Sample containers intact?	Yes ✓ No____	
Sufficient sample volume for indicated test?	Yes ✓ No____	
All samples received within holding time?	Yes ✓ No____	
Container/Temp Blank temperature in compliance (4^{o} C ± 2)?	Temp: 3.2 °C	Yes ✓ No____
Water - VOA vials have zero headspace?	No VOA vials submitted____	Yes ✓ No____

(if bubble is present, refer to approximate bubble size and itemize in comments as **S** (small ~O), **M** (medium ~ O) or **L** (large ~ O)

Water - **pH acceptable upon receipt?** ☐ Yes ☐ No

☐ **pH adjusted**– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: _____

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: _____/_____/02

Client contacted: ☐ Yes ☐ No

Summary of discussion: _____

Corrective Action (per PM/Client): _____

SEVERN TRENT STL

Submission#: 2002-12-0164

Kennedy/Jenks-San Francisco

December 16, 2002

622 Folsom Street
San Francisco, CA 94107-1366
Attn.: Meredith Durant
Project#: 950007.30
Project: Owens, Brockway

Dear Meredith,

Attached is our report for your samples received on 12/06/2002 16:06
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 01/20/2003 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: vvancil@stl-inc.com

Sincerely,

Vincent Vancil
Project Manager

SEVERN TRENT STL

Submission #: 2002-12-0164

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	12/06/2002 09:40	Water	1
MW-7	12/06/2002 11:00	Water	2
MW-5	12/06/2002 10:30	Water	3
MW-20	12/06/2002 11:40	Water	4

Severn Trent Laboratories, Inc.
STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566
Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-1**	Lab ID:	2002-12-0164 - 1
Sampled:	12/06/2002 09:40	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	69	50	ug/L	1.00	12/09/2002 18:35	ndp
Motor Oil	ND	500	ug/L	1.00	12/09/2002 18:35	
Surrogates(s)						
o-Terphenyl	97.0	60-130	%	1.00	12/09/2002 18:35	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-7**	Lab ID:	2002-12-0164 - 2
Sampled:	12/06/2002 11:00	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	19000	250	ug/L	5.00	12/12/2002 16:23	ndp
Motor Oil	8600	2500	ug/L	5.00	12/12/2002 16:23	
Surrogates(s)						
o-Terphenyl	NA	60-130	%	5.00	12/12/2002 16:23	sd

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-5**	Lab ID:	2002-12-0164 - 3
Sampled:	12/06/2002 10:30	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Analysis Flag: rl (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	3200	62	ug/L	1.23	12/09/2002 19:13	ndp
Motor Oil	2000	620	ug/L	1.23	12/09/2002 19:13	
Surrogates(s)						
o-Terphenyl	81.5	60-130	%	1.23	12/09/2002 19:13	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-20**	Lab ID:	2002-12-0164 - 4
Sampled:	12/06/2002 11:40	Extracted:	12/9/2002 06:18
Matrix:	Water	QC Batch#:	2002/12/09-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	85	50	ug/L	1.00	12/09/2002 17:58	ndp
Motor Oil	ND	500	ug/L	1.00	12/09/2002 17:58	
Surrogates(s)						
o-Terphenyl	96.8	60-130	%	1.00	12/09/2002 17:58	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2002/12/09-01.10-001

Water

Test(s): 8015M
QC Batch # 2002/12/09-01.10
Date Extracted: 12/09/2002 06:18

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	12/09/2002 09:53	
Motor Oil	ND	500	ug/L	12/09/2002 09:53	
Surrogates(s)					
o-Terphenyl	91.9	60-130	%	12/09/2002 09:53	

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/09-01.10**

LCS 2002/12/09-01.10-002 Extracted: 12/09/2002 Analyzed: 12/09/2002 10:31

LCSD 2002/12/09-01.10-003 Extracted: 12/09/2002 Analyzed: 12/09/2002 09:16

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	1210	1250	1250	96.8	100.0	3.3	60-130	25		
Surrogates(s)										
o-Terphenyl	19.3	20.1	20.0	96.7	100.7		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Legend and Notes

Analysis Flag

rl

Reporting limits raised due to reduced sample size.

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

sd

Surrogate recovery not reportable due to required dilution.

SEVERN TRENT STL

Submission #: 2002-12-0164

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	12/06/2002 09:40	Water	1
MW-7	12/06/2002 11:00	Water	2
MW-5	12/06/2002 10:30	Water	3
MW-20	12/06/2002 11:40	Water	4
TRIP BLANK	12/06/2002	Water	5

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-1**	Lab ID:	2002-12-0164 - 1
Sampled:	12/06/2002 09:40	Extracted:	12/11/2002 01:20
Matrix:	Water	QC Batch#:	2002/12/10-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/11/2002 01:20	
Benzene	ND	0.50	ug/L	1.00	12/11/2002 01:20	
Toluene	ND	0.50	ug/L	1.00	12/11/2002 01:20	
Ethyl benzene	ND	0.50	ug/L	1.00	12/11/2002 01:20	
Xylene(s)	ND	0.50	ug/L	1.00	12/11/2002 01:20	
Surrogates(s)						
Trifluorotoluene	90.7	58-124	%	1.00	12/11/2002 01:20	
4-Bromofluorobenzene-FID	88.7	50-150	%	1.00	12/11/2002 01:20	

SEVERN TRENT STL

Submission #: 2002-12-0164

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-7**	Lab ID:	2002-12-0164 - 2
Sampled:	12/06/2002 11:00	Extracted:	12/11/2002 20:03
Matrix:	Water	QC Batch#:	2002/12/11-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	480	50	ug/L	1.00	12/11/2002 20:03	g
Benzene	ND	0.50	ug/L	1.00	12/11/2002 20:03	
Toluene	ND	0.50	ug/L	1.00	12/11/2002 20:03	
Ethyl benzene	ND	0.50	ug/L	1.00	12/11/2002 20:03	
Xylene(s)	ND	0.50	ug/L	1.00	12/11/2002 20:03	
Surrogates(s)						
Trifluorotoluene	74.1	58-124	%	1.00	12/11/2002 20:03	
4-Bromofluorobenzene-FID	77.8	50-150	%	1.00	12/11/2002 20:03	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-5**	Lab ID:	2002-12-0164 - 3
Sampled:	12/06/2002 10:30	Extracted:	12/11/2002 02:09
Matrix:	Water	QC Batch#:	2002/12/10-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	150	50	ug/L	1.00	12/11/2002 02:09	g
Benzene	ND	0.50	ug/L	1.00	12/11/2002 02:09	
Toluene	ND	0.50	ug/L	1.00	12/11/2002 02:09	
Ethyl benzene	ND	0.50	ug/L	1.00	12/11/2002 02:09	
Xylene(s)	ND	0.50	ug/L	1.00	12/11/2002 02:09	
Surrogates(s)						
Trifluorotoluene	94.2	58-124	%	1.00	12/11/2002 02:09	
4-Bromofluorobenzene-FID	93.3	50-150	%	1.00	12/11/2002 02:09	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-20**	Lab ID:	2002-12-0164 - 4
Sampled:	12/06/2002 11:40	Extracted:	12/11/2002 02:34
Matrix:	Water	QC Batch#:	2002/12/10-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/11/2002 02:34	
Benzene	ND	0.50	ug/L	1.00	12/11/2002 02:34	
Toluene	ND	0.50	ug/L	1.00	12/11/2002 02:34	
Ethyl benzene	ND	0.50	ug/L	1.00	12/11/2002 02:34	
Xylene(s)	ND	0.50	ug/L	1.00	12/11/2002 02:34	
Surrogates(s)						
Trifluorotoluene	91.0	58-124	%	1.00	12/11/2002 02:34	
4-Bromofluorobenzene-FID	90.4	50-150	%	1.00	12/11/2002 02:34	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**TRIP BLANK**	Lab ID:	2002-12-0164 - 5
Sampled:	12/06/2002	Extracted:	12/11/2002 02:59
Matrix:	Water	QC Batch#:	2002/12/10-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/11/2002 02:59	
Benzene	ND	0.50	ug/L	1.00	12/11/2002 02:59	
Toluene	ND	0.50	ug/L	1.00	12/11/2002 02:59	
Ethyl benzene	ND	0.50	ug/L	1.00	12/11/2002 02:59	
Xylene(s)	ND	0.50	ug/L	1.00	12/11/2002 02:59	
Surrogates(s)						
Trifluorotoluene	64.0	58-124	%	1.00	12/11/2002 02:59	
4-Bromofluorobenzene-FID	62.1	50-150	%	1.00	12/11/2002 02:59	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 5030 — Test(s): 8015M

Method Blank — **Water** — **QC Batch # 2002/12/10-01.04**

MB: 2002/12/10-01.04-008 — Date Extracted: 12/10/2002 10:37

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/10/2002 10:37	
Benzene	ND	0.5	ug/L	12/10/2002 10:37	
Toluene	ND	0.5	ug/L	12/10/2002 10:37	
Ethyl benzene	ND	0.5	ug/L	12/10/2002 10:37	
Xylene(s)	ND	0.5	ug/L	12/10/2002 10:37	
Surrogates(s)					
Trifluorotoluene	88.8	58-124	%	12/10/2002 10:37	
4-Bromofluorobenzene-FID	85.0	50-150	%	12/10/2002 10:37	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 5030 — Test(s): 8015M
Method Blank — **Water** — **QC Batch # 2002/12/11-01.05**
MB: 2002/12/11-01.05-001 — Date Extracted: 12/11/2002 08:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/11/2002 08:03	
Benzene	ND	0.5	ug/L	12/11/2002 08:03	
Toluene	ND	0.5	ug/L	12/11/2002 08:03	
Ethyl benzene	ND	0.5	ug/L	12/11/2002 08:03	
Xylene(s)	ND	0.5	ug/L	12/11/2002 08:03	
Surrogates(s)					
Trifluorotoluene	74.0	58-124	%	12/11/2002 08:03	
4-Bromofluorobenzene-FID	78.8	50-150	%	12/11/2002 08:03	

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 5030 Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/10-01.04**

LCS 2002/12/10-01.04-010 Extracted: 12/10/2002 Analyzed: 12/10/2002 15:05
LCSD 2002/12/10-01.04-011 Extracted: 12/10/2002 Analyzed: 12/10/2002 15:29

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	511	504	500	102.2	100.8	1.4	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	439	446	500	87.8	89.2		50-150			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/12/10-01.04**

LCS 2002/12/10-01.04-012 Extracted: 12/10/2002 Analyzed: 12/10/2002 15:53
LCSD 2002/12/10-01.04-013 Extracted: 12/10/2002 Analyzed: 12/10/2002 16:17

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	110	112	100.0	110.0	112.0	1.8	77-123	20		
Toluene	108	110	100.0	108.0	110.0	1.8	78-122	20		
Ethyl benzene	107	108	100.0	107.0	108.0	0.9	70-130	20		
Xylene(s)	310	316	300	103.3	105.3	1.9	75-125	20		
Surrogates(s)										
Trifluorotoluene	449	460	500	89.8	92.0		58-124			

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/12/11-01.05**

LCS 2002/12/11-01.05-002 Extracted: 12/11/2002 Analyzed: 12/11/2002 08:35

LCSD 2002/12/11-01.05-003 Extracted: 12/11/2002 Analyzed: 12/11/2002 09:07

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	94.3	87.1	100.0	94.3	87.1	7.9	77-123	20		
Toluene	92.5	86.2	100.0	92.5	86.2	7.1	78-122	20		
Ethyl benzene	93.8	86.0	100.0	93.8	86.0	8.7	70-130	20		
Xylene(s)	281	259	300	93.7	86.3	8.2	75-125	20		
Surrogates(s)										
Trifluorotoluene	416	380	500	83.2	76.0		58-124	0		

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco

Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/12/11-01.05**

LCS 2002/12/11-01.05-004 Extracted: 12/11/2002 Analyzed: 12/11/2002 09:39

LCSD 2002/12/11-01.05-005 Extracted: 12/11/2002 Analyzed: 12/11/2002 10:11

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	507	441	500	101.4	88.2	13.9	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	414	360	500	82.8	72.0		50-150	0		

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco
Attn.: Meredith Durant

622 Folsom Street
San Francisco, CA 94107-1366
Phone: (415) 243-2534 Fax: (415) 896-0999

Project: 950007.30
Owens, Brockway

Received: 12/06/2002 16:06

Legend and Notes

Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

Sample Chain-of-Custody/Analysis Request

Kennedy/Jenks Consultants

2002-12-0164 70673

Possible Hazards: Analytes

Client: Kennedy Jenks | Report to: Meredith Durant

Site: Owens Brockway | Company: Kennedy Jenks

Project No.: 950007.30 | Address: 622 Folsom St

Sampler Name: Farnell | SF, CA 94107

Telephone: 415 2432506 | Fax: 415 896 0999

Lab Destination: STL San Francisco

Address: Quarry Lane, Pleasanton CA

Telephone: 925 484 1919

Carrier/Way Bill No.:

(1) Lab ID No.	(1) Client ID No.	Collection Date	Collection Time	(2) Type	(3) Depth	(3) Comp.	(4) Pres.	Turn-around	Analyses Requested: EPA 8015 Total Extractable Hydrocarbons	EPA 8015 Total Purgeable Hydrocarbons	EPA 8020 BTEX							Comment/Conditions (container type, container number, etc.)
	MW-1	12/6/02	0940	W	-	-	N/HCl	std	X	X	X							2 VOAs, 2 1 Liter Amber
	MW-7	12/6/02	1100	W	-	-	N/HCl	std	X	X	X							↓
	MW-5	12/6/02	1030	W	-	-	N/HCl	std	X	X	X							
	MW-20	12/6/02	1140	W	-	-	N/HCl	std	X	X	X							
	TRIP BLANK	12/6/02		W	-	-	HCl	std			X							2 VOAs

(1) Write only one sample number in each space.

(2) Specify type of sample(s): Water (W), Solid (S), or indicate type.

(3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.

(4) Preservation of sample.

(5) Write each analysis requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

Sample Relinquished By: Print Name	Signature	Company	Date	Time	Sample Received By: Print Name	Signature	Company	Date	Time
Jason Farnell	J Farnell	Kennedy Jenks	12/6/02	1235	C Morrow	C Morrow	STL - SF	12/6/02	1225
B Murrow	B Murrow	STL-SF	12/6/02	1606	D. Harrington	D. Harrington	STL-SF	12/6/02	1606

SEVERN TRENT SERVICES

STL San Francisco

Sample Receipt Checklist

Submission #: 2002- 12 - 0164

Checklist completed by: (initials) DSH Date: 12 / 06 /02

Courier name: ☑ STL San Francisco ☐ Client _____

Custody seals intact on shipping container/samples	Yes___ No___	Not Present ✓
Chain of custody present?	Yes ✓ No___	
Chain of custody signed when relinquished and received?	Yes ✓ No___	
Chain of custody agrees with sample labels?	Yes ✓ No___	
Samples in proper container/bottle?	Yes ✓ No___	
Sample containers intact?	Yes ✓ No___	
Sufficient sample volume for indicated test?	Yes ✓ No___	
All samples received within holding time?	Yes ✓ No___	
Container/Temp Blank temperature in compliance (4^{o} C ± 2)?	Temp: 5.3 °C	Yes ✓ No___
Water - VOA vials have zero headspace?	No VOA vials submitted___	Yes ✓ No___

(if bubble is present, refer to approximate bubble size and itemize in comments as **S** (small ~O), **M** (medium ~ O) or **L** (large ~ O)

Water - **pH acceptable upon receipt?** ☒ Yes ☐ No

☐ **pH adjusted**– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: _____

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: ____/____/02

Client contacted: ☐ Yes ☐ No

Summary of discussion: _____

Corrective Action (per PM/Client): _____

Appendix B

Monitoring Well Purge and Sample Forms

Groundwater Depth Measurement Log

Kennedy/Jenks Consultants

Project Name: Owens Brockway
Project Number: 950007.40
Project Manager: MGD

Date: 12/5/02
Time Start: 0840
Time End:

Well Number	Time	Groundwater Depth	Total Well Depth	Measuring Point Description	Comments
MW-1		NM		TOC	Covered by Glass pile
MW 2		12.45			Free Product Globules, Not enough to measure
MW 5		11.85			
MW 6		13.96			Free Product Globules, Not enough to measure
MW 7		12.29			
MW 8		9.70			
MW 9		NM			* Well Casing is packed w/ glass (Crushed)
MW 10		10.28			Collect DUP
MW 13		10.43			
MW 15		11.05			
MW 17		10.26			
MW 20		8.88			
MW-16		9.70			

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-1

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 9.16 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: Disposable Bailer

TIME START PURGE: 0905 PURGE DEPTH (FT) 15-20

TIME END PURGE: 0925

TIME SAMPLED: 0940

COMMENTS: Covered by blue pile.

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	29		9.16		19.84		0.16	0.64	1.44		3.17 x 3 = 9

TIME	0905	0912	0916	0925			
VOLUME PURGED (GAL)	0	3	6	9			
PURGE RATE (GPM)	HAND	HAND	HAND	HAND			
TEMPERATURE (°C)	16.1	16.5	17.0	17			
pH	7.35	7.21	7.17	7.14			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1350	1,100	1,000	900			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Clear	Clear	Clear	Clear			
ODOR	None	→	→	→			
DEPTH OF PURGE INTAKE (FT)	NM	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brookway WELL NUMBER: MW-1

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 0940 COMMENTS:

DEPTH SAMPLED (FT): 17

SAMPLING EQUIPMENT: Disposable Bailer

SAMPLE NO.	NO. OF CONTAINERS	CONTAINER TYPE	PRESERVATIVE	FIELD FILTRATION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUSTODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-1	3	Vial	Hcl	N	40	clear	-	Yes		8020 BTEX
MW-1	2	1 L	N	N	1 L	clear	-	Yes		8015 TEPH TPPH

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 9 COMMENTS:

DISPOSAL METHOD: Oil/water separator

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: (YES) NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: YES (NO)

COMMENTS: Cover should be replaced, Top of well box is missing

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Roadway WELL NUMBER: MW-2

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 12.45 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: -

TIME START PURGE: _____ PURGE DEPTH (FT) -

TIME END PURGE: _____

TIME SAMPLED: Not Sampled

COMMENTS: Free product observed in well, Non measureable thickness
Globules of free product observed in bailer from well.
New Soakese device recently installed

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
			12.45				0.16	0.64	1.44		

TIME							
VOLUME PURGED (GAL)							
PURGE RATE (GPM)							
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
eH(MV)Pt-AgCl ref.							
TURBIDITY/COLOR							
ODOR							
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)							
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: _____ **Kennedy/Jenks Consultants**

PROJECT NAME: _____ WELL NUMBER: _____

PROJECT NUMBER: _____ PERSONNEL: _____

SAMPLE DATA:

TIME SAMPLED: _____ COMMENTS: _____

DEPTH SAMPLED (FT): _____ _____

SAMPLING EQUIPMENT: _____ _____

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): _____ COMMENTS: _____

DISPOSAL METHOD: _____ _____

DRUM DESIGNATION(S)/VOLUME PER (GAL): _____

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES NO

WELL CASING OK?: YES NO

COMMENTS: _____

GENERAL:

WEATHER CONDITIONS: _____

TEMPERATURE (SPECIFY °C OR °F): _____

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? _____

cc: Project Manager: _____
Job File: _____
Other: _____

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-5

PROJECT NUMBER: 950007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 11.70 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: GeoTek Pump

TIME START PURGE: 1007 PURGE DEPTH (FT) 20/25

TIME END PURGE: 1024

TIME SAMPLED: 1030

COMMENTS:

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	28.5		11.70		16.80		0.16	0.64	1.44		2.6x3=8

TIME	1007	1010	1016	1024			
VOLUME PURGED (GAL)	0	2	4	8			
PURGE RATE (GPM)		* Change Depth of pump					
TEMPERATURE (°C)	16	17	17	17			
pH	7.24	7.02	6.98	6.98			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1,100	1,600	1,000	1,000			
DISSOLVED OXYGEN (mg/L)	NM	NM	NM	NM			
eH(MV)Pt-AgCl ref.	NM	NM	NM	NM			
TURBIDITY/COLOR	Clear Sheen	Dark Sheen	Dark Sheen	Dark Sheen			
ODOR	~~None~~ Oil	Oil	Oil	Oil			
DEPTH OF PURGE INTAKE (FT)	20	25	25	25			
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM	NM			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Queens Brockway WELL NUMBER: MW-5

PROJECT NUMBER: 950007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 1030 COMMENTS:

DEPTH SAMPLED (FT): 25

SAMPLING EQUIPMENT: GeoTek Pump

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-5	3	VOA	HCl	N	40	turbid	Dark	Yes		8020 BTEX
MW-5	2	1L	N	N	1L	turbid	Dark	Yes		8015 TEPH, TPPH

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 8 COMMENTS:

DISPOSAL METHOD: Oil/water system

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: (YES) NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: (YES) NO

COMMENTS: Soaker Device recently replaced

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-6

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): _____ MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: _____ PURGE METHOD: Disposable Bailer

TIME START PURGE: _____ PURGE DEPTH (FT) _____

TIME END PURGE: _____

TIME SAMPLED: Not Sampled

COMMENTS: Did not Sample. Unmeasurable thickness of oil observed in well w/ bailer

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
							0.16	0.64	1.44		

TIME							
VOLUME PURGED (GAL)							
PURGE RATE (GPM)							
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
eH(MV)Pt-AgCl ref.							
TURBIDITY/COLOR							
ODOR							
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)							
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: _____ **Kennedy/Jenks Consultants**

PROJECT NAME: _____ WELL NUMBER: _____

PROJECT NUMBER: _____ PERSONNEL: _____

SAMPLE DATA:

TIME SAMPLED: _____ COMMENTS: _____

DEPTH SAMPLED (FT): _____ _____

SAMPLING EQUIPMENT: _____ _____

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): _____ COMMENTS: _____

DISPOSAL METHOD: _____ _____

DRUM DESIGNATION(S)/VOLUME PER (GAL): _____

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES NO

WELL CASING OK?: YES NO

COMMENTS: _____

GENERAL:

WEATHER CONDITIONS: _____

TEMPERATURE (SPECIFY °C OR °F): _____

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? _____

cc: Project Manager: _____
Job File: _____
Other: _____

Groundwater Purge and Sample Form Date: 12/16/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-7

PROJECT NUMBER: 950007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 12.15 MEASURING POINT DESCRIPTION: Toc

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Disposable Bailer

TIME START PURGE: 1043 PURGE DEPTH (FT) 18

TIME END PURGE: 1058

TIME SAMPLED: 1100

COMMENTS: ~~Heavy~~ Sheen on purge water

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) ②	4	6	=	CASING VOLUME (GAL)
	23.5		12.15		11.35		0.16	0.64	1.44		1.8 x 3 = 5.4

TIME	1043	1050	1055	1058			
VOLUME PURGED (GAL)	0	2	4	6			
PURGE RATE (GPM)	HAND	HAND	HAND	HAND			
TEMPERATURE (°C)	18	18	18	18			
pH	6.84	6.91	6.95	6.95			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1,150	~~1,115~~ 1,150	1,150	1,150			
DISSOLVED OXYGEN (mg/L)	NM	NM	NM	NM			
eH(MV)Pt-AgCl ref.	NM	NM					
TURBIDITY/COLOR	Dark w/ Sheen	Dark w/ sheen	→	→			
ODOR	0:1	0:1	→	→			
DEPTH OF PURGE INTAKE (FT)	18	18	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM	NM			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-7

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: ~~1058~~ 1100 COMMENTS:

DEPTH SAMPLED (FT): 18

SAMPLING EQUIPMENT: Disposable Bailer

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-7	3	VOA	HCL	N	40	turbid Dark		ICE		8020 BTEX
MW-7	2	1 L	N	N	1 L	turbid Dark		YES		8015 TCPH JPPH

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 6 COMMENTS:

DISPOSAL METHOD: Oil/water system

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: (YES) NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: (YES) NO

COMMENTS: ~~5~~ New Soakease device recently installed

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Oweue Bradley WELL NUMBER: MW-8

PROJECT NUMBER: 950007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 9.70 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer (Disposable)

TIME START PURGE: 1330 PURGE DEPTH (FT) 20

TIME END PURGE: 1355

TIME SAMPLED: 1400

COMMENTS: Flooded, No well box, No lock, Plug is corroded
Area adjacent is exposed to acid conditions, needs a well cover

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	28.5		9.70		15.30		0.16	0.64	1.44		2.4 x 3 = 7.3

TIME	1330	1335	1345	1355			
VOLUME PURGED (GAL)	0	2	4	8			
PURGE RATE (GPM)	HAND	HAND	HAND	HAND			
TEMPERATURE (°C)	22.0	22.0	21.5	21.0			
pH	7.01	7.04	7.06	7.08			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	2,300	2,300	2,100	2,000			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	cloudy	clear/red	clear/red	reddish			
ODOR	None	None	None	None			
DEPTH OF PURGE INTAKE (FT)	20	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM	NM			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-8

PROJECT NUMBER: 950007.410 PERSONNEL: JF

SAMPLE DATA:
TIME SAMPLED: 1400 COMMENTS:

DEPTH SAMPLED (FT): 15

SAMPLING EQUIPMENT: Disposable Bailer

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
mw-8	3	VOA	HCL	N	40	tan turbid		Yes		8010 BTEX
mw-8	2	1 L Amber	N	N	1 L	tan turbid		Yes		8015 TEPH TPPH

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): 8 COMMENTS:

DISPOSAL METHOD: Oil/water System

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES (NO)

INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES (NO)

WELL CASING OK?: YES (NO)

COMMENTS: Needs a cover
replaced well plug

GENERAL:
WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-10

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 10.28 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: Disposable Bailer

TIME START PURGE: 1420 PURGE DEPTH (FT) 18

TIME END PURGE: 1445

TIME SAMPLED: 1450

COMMENTS: Smell of gasoline, MW-DUP collected 1500

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							(2)	4	6		
	25.0		10.28		14.72		0.16	0.64	1.44		2.3x3=6.9

TIME	1420	1430	1435	1445			
VOLUME PURGED (GAL)	0	2	4	7			
PURGE RATE (GPM)	HAND	HAND	HAND	HAND			
TEMPERATURE (°C)	20.5	21.0	21.0	21			
pH	7.13	7.05	6.98	6.98			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1,200	1,190	1,190	1,190			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Clear/gray	gray	gray	gray			
ODOR	Gas	Gas	Gas	Gas			
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM	NM			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	NO	NO	NO	NO			

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Queens Bouleward WELL NUMBER: MW-10

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 1450 COMMENTS:

DEPTH SAMPLED (FT): 18

SAMPLING EQUIPMENT: Disposable Bailer

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-10	3	VOA	HCl	N	40	Grey		Yes		8020 DTEV
MW-10	2	1 L	N	N	1 L					8015 TEPH TPPH
MW-DUP	3	VOA	HCl	N	40					8020
MW-DUP	2	1 L	N	N	1 L					8015

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 7 COMMENTS:

DISPOSAL METHOD: On Location

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: (YES) NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: (YES) NO

COMMENTS:

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens WELL NUMBER: MW-13

PROJECT NUMBER: 950007.30 PERSONNEL: J Fewell

STATIC WATER LEVEL (FT): 10.43 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: GeoTek Pump

TIME START PURGE: 1058 PURGE DEPTH (FT) 24

TIME END PURGE: 1104

TIME SAMPLED: 1110

COMMENTS: PVC Top of Casing is broken

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							(2)	4	6		
	29.50		10.43		14.07		0.16	0.64	1.44		2.3x3=6.6

TIME	~~1058~~ 1058	1108	1102	1104			
VOLUME PURGED (GAL)	0	2	4	6.6			
PURGE RATE (GPM)	~1.5	→	→	→			
TEMPERATURE (°C)	20.0	20.0	20.0	20.0			
pH	7.83	7.69	7.68	7.65			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1,180	1,200	1,250	1,200			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Gray	Clear	clear	Clear			
ODOR	Hydrocarbon	None	None	None			
DEPTH OF PURGE INTAKE (FT)	24	22	22	22			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	NO	No	NO	No			

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-13

PROJECT NUMBER: 950007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 1110 COMMENTS:

DEPTH SAMPLED (FT): 20

SAMPLING EQUIPMENT: GeoTek Pump

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-13	3	VOA	HCL	N	40	Clear		Yes		~~TCP~~ 8020 BTEX
MW-13	2	1 L Amber	N	N	1 L	clear		Yes		TEPH TPPH 8015

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 7 COMMENTS:

DISPOSAL METHOD: oil/water sep

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES (NO)

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: YES (NO)

COMMENTS: Broken Casing, Broken Cover in need of repair.

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens WELL NUMBER: MW-15

PROJECT NUMBER: 95000 PERSONNEL: JF

STATIC WATER LEVEL (FT): 11.05 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: GeoTek Pump

TIME START PURGE: 1034 PURGE DEPTH (FT) 28

TIME END PURGE: 1039

TIME SAMPLED: 1136

COMMENTS: Allowed well to recharge b/fore Sampling

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) ②	4	6	=	CASING VOLUME (GAL)
	28.80		11.05		17.75		0.16	0.64	1.44		2.84 x3=8.52

TIME	1034	1036	1039				
VOLUME PURGED (GAL)	0	2	3.8				
PURGE RATE (GPM)							
TEMPERATURE (°C)	18.0	18.5	20.0				
pH	7.02	7.05	6.98				
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1290	1,360	1,400				
DISSOLVED OXYGEN (mg/L)	NM	→	→				
eH(MV)Pt-AgCl ref.	NM	→	→				
TURBIDITY/COLOR	Light tan	→	→				
ODOR	None	None	None				
DEPTH OF PURGE INTAKE (FT)	28	28	28.8				
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM				
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	Dry				

Groundwater Purge and Sample Form Date: 12/5/07 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-15

PROJECT NUMBER: 950007.40 PERSONNEL: JF

SAMPLE DATA:
TIME SAMPLED: 1130 COMMENTS: Allowed to recharge before sampling with a bailer

DEPTH SAMPLED (FT): ~25

SAMPLING EQUIPMENT: Bailer (Disposable)

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
mw-15	3	VOA	HCl	N	40	clear	tan	Yes		8020 BTEX
mw-15	2	1L	N	N	1L	clear	tan	Yes		8015 TEPH, TPPH

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): ~4 COMMENTS:

DISPOSAL METHOD: Oil/water system

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: (YES) NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: (YES) NO

COMMENTS:

GENERAL:
WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F): 70

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? Dewatered, allowed recharge before sampling

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-16

PROJECT NUMBER: 950007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 9.70 MEASURING POINT DESCRIPTION: Toc

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: Bailer (Disposable)

TIME START PURGE: 1200 PURGE DEPTH (FT) 18.0

TIME END PURGE: 1217

TIME SAMPLED: 1220

COMMENTS:

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							(2)	4	6		
	20.85		9.7		11.15		0.16	0.64	1.44		1.7 x 3 = 5.3

TIME	1200	1207	1213	1217			
VOLUME PURGED (GAL)	1	2	4	5.3			
PURGE RATE (GPM)	HAND	HAND	HAND	HAND			
TEMPERATURE (°C)	20	19	18	18			
pH	7.19	7.21	7.07	7.07			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	850	800	810	800			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Gray	Gray	Gray	Gray			
ODOR	None	None	None	None			
DEPTH OF PURGE INTAKE (FT)	18	18	18	18			
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM	NM			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-16

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 1220 COMMENTS:

DEPTH SAMPLED (FT): 18

SAMPLING EQUIPMENT: Bailer

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-16	3	VOA	HCL	N	40	gray	-	yes		8020 BTEX
MW-16	2	1 L	N	N	1 L	gray		yes		8015 TEPH DPPH

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 5.3 COMMENTS:

DISPOSAL METHOD: oil/water system

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES (NO)

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: YES (NO)

COMMENTS: No lock Broken Cover, Sack in place

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-17

PROJECT NUMBER: 950007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 10.26 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: Disposable Bailer

TIME START PURGE: 1515 PURGE DEPTH (FT) 18

TIME END PURGE: 1535

TIME SAMPLED: 1540

COMMENTS: No Well Cover, Heavy Sheen, Strong oil odor

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							(2)	4	6		
	24.5		10.26		14.24		0.16	0.64	1.44		2.2 x 3 = 6.8

TIME	1515	1520	1526	1535			
VOLUME PURGED (GAL)	0	2	4	7			
PURGE RATE (GPM)	HAND	HAND	HAND	HAND			
TEMPERATURE (°C)	19.5	19.5	19.5	19.5			
pH	6.92	6.85	6.83	6.91			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	920	920	950	950			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Dark Gray	Dark Gray	Dark Gray	Dk Gray			
ODOR	0:1	Oil	0:1	0:1			
DEPTH OF PURGE INTAKE (FT)	18	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date: 12/5/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Queens Brakeway WELL NUMBER: MW-17

PROJECT NUMBER: 950007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 1540 COMMENTS:

DEPTH SAMPLED (FT): 18

SAMPLING EQUIPMENT: Disposable Bailer

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-17	2	1L ~~P~~	N	N	1L	Dark		Yes		8015 TEPH, TPPH
MW-17	3	VOA	HCl	N	40ml	Dark	-	Yes		8020 BTEX

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 7 COMMENTS:

DISPOSAL METHOD: oil/water system

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES NO

WELL CASING OK?: YES NO

COMMENTS: Broken Casing, Broken Cover, Needs repair to keep water out of well box

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F): 70

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? NO

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-20

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

STATIC WATER LEVEL (FT): 8.68 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Disposable Bailer

TIME START PURGE: 1123 PURGE DEPTH (FT) 14

TIME END PURGE: 1135

TIME SAMPLED: 1140

COMMENTS:

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							(2)	4	6		
	22		8.88		13.32		0.16	0.64	1.44		2.1 x 3 = 6.3

TIME	1123	1126	1130	1135			
VOLUME PURGED (GAL)	0	2	4	6			
PURGE RATE (GPM)	HAND	→	→	→			
TEMPERATURE (°C)	18	19	19	19			
pH	7.20	7.31	7.31	7.31			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1,000	1,010	1,010	1,000			
DISSOLVED OXYGEN (mg/L)	NM	NM	NM	NM			
eH(MV)Pt-AgCl ref.	NM	NM	NM	NM			
TURBIDITY/COLOR	Clear	Cloudy	Cloudy	Cloudy			
ODOR	None	None	None	None			
DEPTH OF PURGE INTAKE (FT)	15	15	16	16			
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM	NM			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	No	No			

Groundwater Purge and Sample Form Date: 12/6/02 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-20

PROJECT NUMBER: 950 007.40 PERSONNEL: JF

SAMPLE DATA:

TIME SAMPLED: 1140 COMMENTS:

DEPTH SAMPLED (FT): 15

SAMPLING EQUIPMENT: Disposable Bailer

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW-20	3	VOA	HCl	N	40	Cloudy		Yes		8020 BTEX
MW-20	2	1L	N	N	1L	Cloudy		Yes		8015 TEPH TPPH

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 6 COMMENTS:

DISPOSAL METHOD: Oil/water system

DRUM DESIGNATION(S)/VOLUME PER (GAL):

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: (YES) NO

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: (YES) NO

COMMENTS:

GENERAL:

WEATHER CONDITIONS:

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other: