OWENS-BROCKWAY
GLASS CONTAINERS
a unit of Owens-Illinois

February 15, 2002

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

FEB 21 2002

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. Note consultant findings section 5.2, page 8 of the report. Consequently, I am requesting your approval to discontinue BETX analysis of future samples since they are not constituents of concern in groundwater at this site.

The plant continues to use the static Soakease pads to remove small quantities of product from specified wells. Use of the Soakease pads has eliminated free product from MW-5, MW-7, MW-16 and MW-17. We will continue this recovery activity.

If you have questions regarding the report or product recovery efforts, please give me a call at 510-436-2174.

Sincerely,

Robert C. Neal

Robert C. Neal, P.E.
Environmental Administrator

cc: Mark Tussing
Dwayne Wendler
Jim Hamrick
Merideth Durant - Kennedy/Jenks

FEB 2 1 2002

Kennedy/Jenks Consultants

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Annual Groundwater Monitoring Report Owens-Brockway Glass Containers

11 February 2002

Prepared for

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

K/J 950007.30

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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 Report*, 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, 2, 5, 6, 7, 8, 9, 10, 13, 15, and 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, 15, and 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, 5, 6, 7, 8, 9 and 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, 6, 7, 9, and 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, 5, 7, 8, 9, 10, 13, 15, and 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, 5, 7, 8, 9, 10, 13, 15, and 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, 5, 7, 8, 9, and 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, 9, and 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 prepared by Kennedy/Jenks.

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. 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.

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 annual groundwater monitoring event at the Site was performed in December 2000. As required by the ACDEH, groundwater samples were collected on a quarterly basis from Monitoring Well MW-20 during 2001. The analytical results from these 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 2, 5, 6, 7, 8, 9 and 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™.

A 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 2, 5, 6, 7, 8, 9 and 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.

Section 3: Field Activities

3.1 PHC Product Removal Activities

During the measurement of depth to groundwater in Site wells, Owens-Brockway personnel 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.

3.2 Groundwater Monitoring

On 11 and 12 December 2001, twelve monitoring wells (Wells 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.

In accordance with the Work Plan, Monitoring Wells MW-1, MW-4 and MW-12 were not sampled; Monitoring Wells MW-3 and MW-14 have been destroyed. 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 measured and recorded in these two wells. Monitoring Well MW-9 was observed to be flooded and its well casing is damaged. Maintenance personnel also reported that a Soakease™ device had been dropped to the bottom of Monitoring Well MW-9 and they had been unable to recover it.

The samples were stored at about 4 degrees Centigrade in a cooled container until delivery under chain-of-custody procedures to STL Chromalab, 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 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 those for the sample.

A travel blank accompanied the sample container during 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 sample MW-17, in which the surrogate recovery was not reportable due to 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 2001 varied from 3.73 feet below ground surface (bgs) in Well MW-20 to 8.35 feet bgs in Well MW-8.

The groundwater elevations are tabulated in Table 3 and presented on Figure 3. On 11 December 2001, the hydraulic gradient was approximately 0.020 feet/foot in a south 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 results 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.

None of the samples contained detectable concentrations of BTEX. These results from the December 2001 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.

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
R-2	1989	NM	NA	NA	NA	12	Closed

(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	0.190	<0.300	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	0.160	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01 [l]	–	–	–	–	–	–	–
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]	–	–	–	–	–	–	–
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	7.5	4.1	<0.5	<0.5	<0.5	<0.5
	11/2/98 [m]	–	–	–	–	–	–	–
	12/6/00	1,000	7.7	NA	<0.5	<0.5	<0.5	<0.5
	12/12/01	360 [q]	5.7 [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-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]	–	–	–	–	–	–	–
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	26	11	<0.5	<0.5	<0.5	<0.5
	11/2/98 [m]	–	–	–	–	–	–	–
	12/6/00	540	2.6	NA	<0.5	<0.5	<0.5	1.9
	12/12/01	1,200 [q]	8.1 [r]	NA	<1.0	<1.0	<1.0	<1.0
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	<0.300	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	1.3	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	<50	0.160	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	<0.05	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	19	9	<13	<13	<13	18
	11/2/98 [m]	–	–	–	–	–	–	–
	12/6/00	790	69	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01 [l]	–	–	–	–	–	–	–
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

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-10	6/8/88	NA	3.8	NA	NA	NA	NA	NA
Cont'd	9/14/88	NA	0.570	NA	NA	NA	NA	NA
	9/16/97	<50	1.3	<0.300	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	1.4	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	150	0.730	NA	<0.5	<0.5	<0.5	0.70
	12/6/00 (dup)	160	0.810	NA	<0.5	<0.5	<0.5	0.71
	12/11/01	210 [q]	0.630 [r]	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01 (MW-DUP)	160 [q]	0.620 [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	0.120	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	0.130	NA	BDL	BDL	NA	BDL
	9/16/97	<50	0.120	<0.300	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	0.120	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	<50	0.200	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
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
	9/16/87	1.7	0.056	NA	BDL	BDL	NA	BDL
	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 [i]	–	–	–	–	–	–	–
	9/14/88 [i]	–	–	–	–	–	–	–
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

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-15	9/14/88	NA	0.100	NA	NA	NA	NA	NA
Cont'd	9/16/97	<50	0.890	0.380	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	0.340	NA	<0.5	<0.5	<0.5	<0.5
	12/6/00	<50	0.400	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	0.290 [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	0.150	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	0.190	NA	BDL	BDL	NA	BDL
	9/16/97 [m]	–	–	–	–	–	–	–
	12/6/00	<50	0.097	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	<50	<0.050	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	110	9.6	<0.5	<0.5	<0.5	<0.5
	11/2/98	<50	16	NA	<0.5	<0.5	<0.5	0.6
	12/6/00 [p]	340	42	NA	<0.5	<0.5	<0.5	<0.5
	12/11/01	5,300 [q]	91 [r] [s]	NA	<10	<10	<10	<10
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
MW-20	12/11/00	<50	0.110	NA	<0.5	<0.5	<0.5	<0.5
	4/6/01 [t]	<50	0.057	NA	<0.5	<0.5	<0.5	<0.5
	7/6/01	<50	0.120	NA	<0.5	<0.5	<0.5	<0.5
	9/19/01	<50	0.160	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

Table 2: Summary of Groundwater Analytical Results

(a) TPPH = total purgeable petroleum hydrocarbons using EPA Method 8015 modified.
(b) TEPH = total extractable petroleum hydrocarbons using EPA Method 8015 modified. Value listed for samples collected in December 2000 is value reported by lab as TPH diesel. Sample chromatographic patterns did not match lab standard for diesel.
(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) Value listed for samples collected in December 2001 is value reported by the laboratory as gasoline. Hydrocarbon reported in the gasoline range does not match laboratory gasoline standard.
(r) Value listed for samples collected in December 2001 is value reported by lab as TPH diesel. 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.

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Date Sampled	Depth to Water[a] (feet)	Groundwater Elevation[b] (feet)
MW-1	9/23/86	NM[c]	–
	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	–
MW-2	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
MW-3[d]	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	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	–
	12/11/00	NM	–
	12/11/01	NM	–

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Date Sampled	Depth to Water[a] (feet)	Groundwater Elevation[b] (feet)
MW-5	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
MW-6	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
MW-7	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
	11/2/98	12.24	3.87
	12/11/00	12.29	3.82
	12/11/01	11.31	4.80

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Date Sampled	Depth to Water[a] (feet)	Groundwater Elevation[b] (feet)
MW-8	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
MW-9[e]	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	–
MW-10	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
MW-11	12/5/86	–	–
	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	–

Table 3: Summary of Groundwater Depths and Elevations

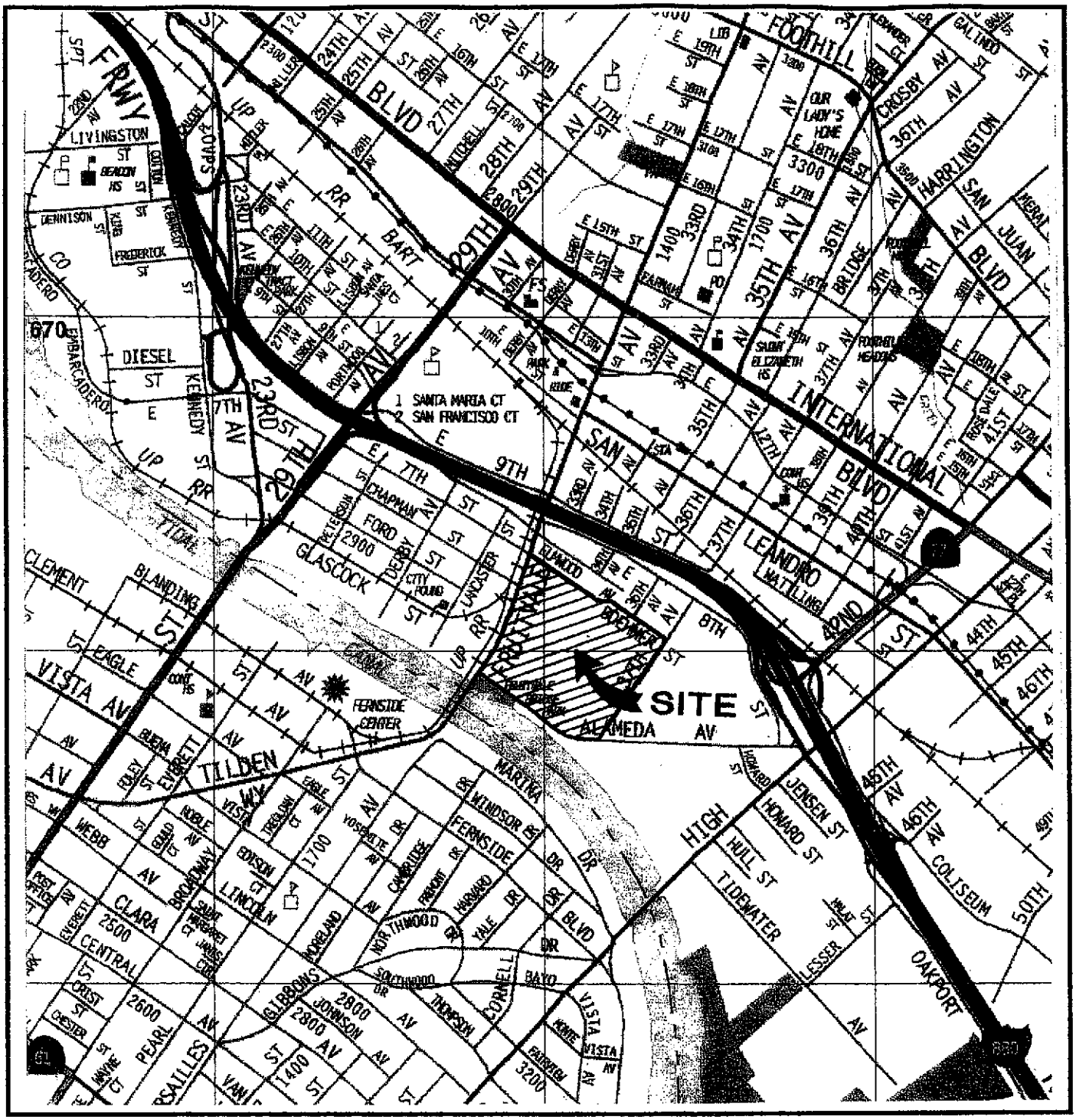
Well Number	Date Sampled	Depth to Water[a] (feet)	Groundwater Elevation[b] (feet)
MW-11	12/11/00	NM	–
Cont'd	12/11/01	NM	–
MW-12	12/5/86	NM	–
	4/9/87	6.83	7.00
	9/16/87	7.80	6.03
	12/1/87	7.59	6.24
	3/7/88	7.02	6.81
	6/8/88	7.38	6.45
	9/14/88	8.14	5.69
	11/2/98	NM	–
	12/11/00	NM	–
	12/11/01	NM	–
MW-13	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
MW-14[d]	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	–
	12/11/00	NM	–
MW-15	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
	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

Table 3: Summary of Groundwater Depths and Elevations

Well Number	Date Sampled	Depth to Water[a] (feet)	Groundwater Elevation[b] (feet)
MW-16	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
MW-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
MW-18[d]	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	12/11/00	9.81	2.93
	12/11/01	9.01	3.73

(a) Depth to water measured from the top of the well casing. Not corrected for product thickness.
(b) Groundwater elevations are reported in feet above mean sea level.
(c) NM = not measured
(d) Well destroyed.
(e) Casing elevation not measured.

Figures



N

Not to Scale

SOURCE

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

Kennedy/Jenks Consultants

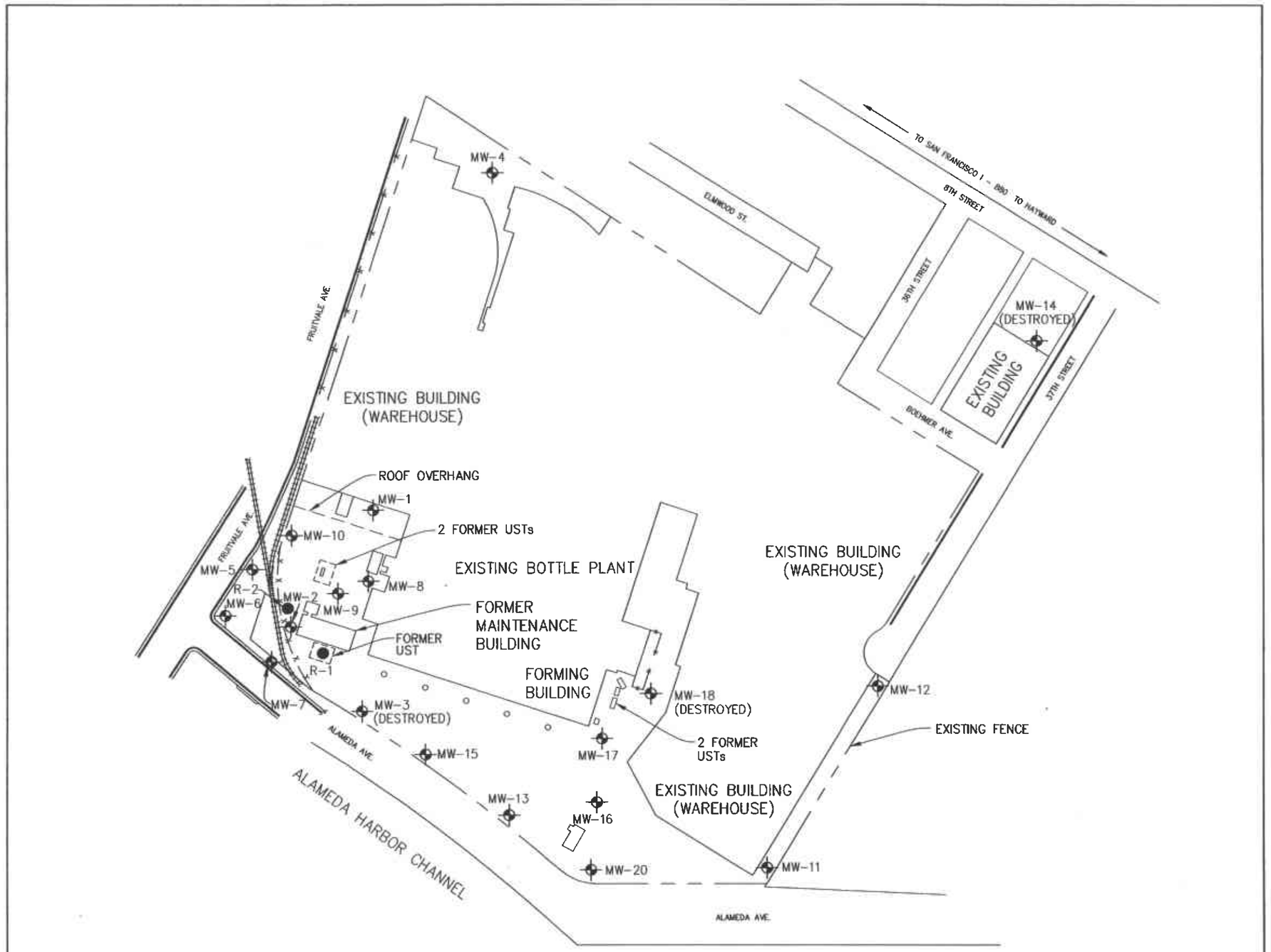
Owens Brockway
Oakland, California

Site Location Map

K/J 950007.30
January 2002

Figure 1

FILE: N:\95.isb\950007.30\Jan02f1.dwg.DWG 01/04/02 at 16:42



N

0 100 200 400

Approximate Graphic Scale
in Feet

LEGEND

MW-2	GROUNDWATER MONITORING WELL
R-1	PRODUCT RECOVERY WELL

SOURCE

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

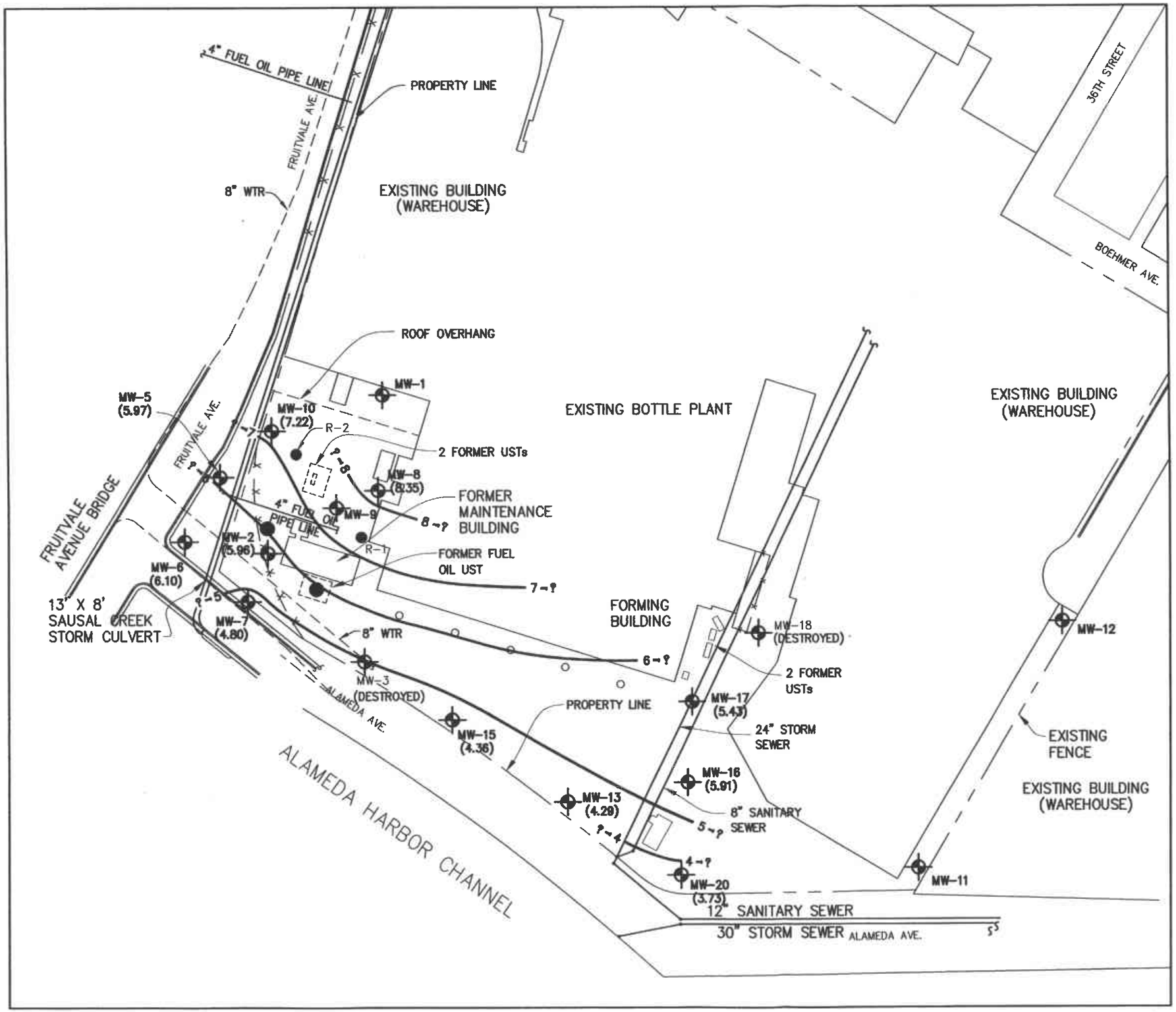
Kennedy/Jenks Consultants

Owens Brockway
Oakland, California

Site Plan

K/J 950007.30
January 2002
Figure 2

FILE: N:\95.isb\950007.30\Jan02f2.dwg.DWG 01/04/02 at 16:40



N

0 50 100 200

Approximate Graphic Scale in Feet

LEGEND

MW-2	GROUNDWATER MONITORING WELL
R-1	PRODUCT RECOVERY WELL
4 (3.62)	GROUNDWATER ELEVATION ISOCONTOUR LINE GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL, BASED ON 11 DECEMBER 2001 DEPTH TO WATER MEASUREMENTS (NOT CORRECTED FOR PRESENCE OF FREE PRODUCT)
(NM)	NOT MEASURED

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 950007.30
January 2002

Figure 3

FILE: N:\95.isb\950007.30\Jan02f3.dwg.DWG 01/04/02 at 16:04
XREF: N:\95.isb\950007.30\Siteplan.dwg

Appendix A

Analytical Data Reports and Chain of Custody Forms

Submission #: 2001-12-0219

Date: December 26, 2001

SEVERN TRENT SERVICES

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Kennedy/Jenks-San Francisco

622 Folsom Street
San Francisco, CA 94107-1366

Ms. Meredith Durant

Project: 950007.30
Owens Brockway

Dear Meredith,

Attached is our report for your samples received on Wednesday December 12, 2001 This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

The report contains a Case Narrative detailing sample receipt and analysis.

Please note that any unused portion of the samples will be discarded after January 26, 2002 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: ssidhu@chromalab.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX by 8015M/8021

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Kennedy/Jenks-San Francisco	✉ 622 Folsom Street San Francisco, CA 94107-1366
Attn: Meredith Durant	Phone: (415) 243-2534 Fax: (415) 896-0999
950007.30	Project: Owens Brockway

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-5	Water	12/12/2001 08:50	1
MW-7	Water	12/12/2001 09:40	2
MW-8	Water	12/11/2001 14:50	3
MW-10	Water	12/11/2001 13:50	4
MW-DUP	Water	12/11/2001	5
MW-13	Water	12/11/2001 12:45	6
MW-15	Water	12/11/2001 14:05	7
MW-16	Water	12/11/2001 12:15	8
MW-17	Water	12/11/2001 11:25	9
MW-20	Water	12/11/2001 15:40	10

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco

Attn: Meredith Durant

Test Method: 8015M
8021B

Prep Method: 5030

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
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CA DHS ELAP#1094

Sample ID:	**MW-5**	Lab Sample ID:	2001-12-0219-001
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 11:04
Sampled:	12/12/2001 08:50	QC-Batch:	2001/12/20-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	360	50	ug/L	1.00	12/20/2001 11:04	g
Benzene	ND	0.50	ug/L	1.00	12/20/2001 11:04	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 11:04	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 11:04	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 11:04	
Surrogate(s)						
Trifluorotoluene	71.9	58-124	%	1.00	12/20/2001 11:04	
4-Bromofluorobenzene-FID	77.7	50-150	%	1.00	12/20/2001 11:04	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX by 8015M/8021

Kennedy/Jenks-San Francisco

Attn: Meredith Durant

Test Method: 8015M 8021B

Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**MW-7**	Lab Sample ID:	2001-12-0219-002
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 11:34
Sampled:	12/12/2001 09:40	QC-Batch:	2001/12/20-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	1200	100	ug/L	2.00	12/20/2001 11:34	g
Benzene	ND	1.0	ug/L	2.00	12/20/2001 11:34	
Toluene	ND	1.0	ug/L	2.00	12/20/2001 11:34	
Ethyl benzene	ND	1.0	ug/L	2.00	12/20/2001 11:34	
Xylene(s)	ND	1.0	ug/L	2.00	12/20/2001 11:34	
Surrogate(s)						
Trifluorotoluene	74.8	58-124	%	2.00	12/20/2001 11:34	
4-Bromofluorobenzene-FID	77.0	50-150	%	2.00	12/20/2001 11:34	

Submission #: 2001-12-0219

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CA DHS ELAP#1094

Test Method: 8015M
8021B

Prep Method: 5030

Sample ID:	**MW-8**	Lab Sample ID:	2001-12-0219-003
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 12:17
Sampled:	12/11/2001 14:50	QC-Batch:	2001/12/20-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/20/2001 12:17	
Benzene	ND	0.50	ug/L	1.00	12/20/2001 12:17	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 12:17	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 12:17	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 12:17	
Surrogate(s)						
Trifluorotoluene	64.2	58-124	%	1.00	12/20/2001 12:17	
4-Bromofluorobenzene-FID	81.0	50-150	%	1.00	12/20/2001 12:17	

Submission #: 2001-12-0219

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Test Method: 8015M 8021B

Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**MW-10**	Lab Sample ID:	2001-12-0219-004
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 12:05
Sampled:	12/11/2001 13:50	QC-Batch:	2001/12/20-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	210	50	ug/L	1.00	12/20/2001 12:05	g
Benzene	ND	0.50	ug/L	1.00	12/20/2001 12:05	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 12:05	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 12:05	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 12:05	
Surrogate(s)						
Trifluorotoluene	74.2	58-124	%	1.00	12/20/2001 12:05	
4-Bromofluorobenzene-FID	79.1	50-150	%	1.00	12/20/2001 12:05	

Submission #: 2001-12-0219

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Test Method: 8015M 8021B

Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**MW-DUP**	Lab Sample ID:	2001-12-0219-005
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 12:34
Sampled:	12/11/2001	QC-Batch:	2001/12/20-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	160	50	ug/L	1.00	12/20/2001 12:34	g
Benzene	ND	0.50	ug/L	1.00	12/20/2001 12:34	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 12:34	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 12:34	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 12:34	
Surrogate(s)						
Trifluorotoluene	78.6	58-124	%	1.00	12/20/2001 12:34	
4-Bromofluorobenzene-FID	74.1	50-150	%	1.00	12/20/2001 12:34	

Submission #: 2001-12-0219

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Test Method: 8015M
8021B

Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**MW-13**	Lab Sample ID:	2001-12-0219-006
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 12:49
Sampled:	12/11/2001 12:45	QC-Batch:	2001/12/20-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/20/2001 12:49	
Benzene	ND	0.50	ug/L	1.00	12/20/2001 12:49	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 12:49	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 12:49	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 12:49	
Surrogate(s)						
Trifluorotoluene	72.4	58-124	%	1.00	12/20/2001 12:49	
4-Bromofluorobenzene-FID	84.0	50-150	%	1.00	12/20/2001 12:49	

Submission #: 2001-12-0219

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Test Method: 8015M 8021B

Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**MW-15**	Lab Sample ID:	2001-12-0219-007
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 13:22
Sampled:	12/11/2001 14:05	QC-Batch:	2001/12/20-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/20/2001 13:22	
Benzene	ND	0.50	ug/L	1.00	12/20/2001 13:22	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 13:22	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 13:22	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 13:22	
Surrogate(s)						
Trifluorotoluene	58.8	58-124	%	1.00	12/20/2001 13:22	
4-Bromofluorobenzene-FID	65.4	50-150	%	1.00	12/20/2001 13:22	

Submission #: 2001-12-0219

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Test Method: 8015M 8021B

Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**MW-16**	Lab Sample ID:	2001-12-0219-008
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 13:54
Sampled:	12/11/2001 12:15	QC-Batch:	2001/12/20-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/20/2001 13:54	
Benzene	ND	0.50	ug/L	1.00	12/20/2001 13:54	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 13:54	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 13:54	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 13:54	
Surrogate(s)						
Trifluorotoluene	72.3	58-124	%	1.00	12/20/2001 13:54	
4-Bromofluorobenzene-FID	86.1	50-150	%	1.00	12/20/2001 13:54	

Submission #: 2001-12-0219

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Prep Method: 5030

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Sample ID:	**MW-17**	Lab Sample ID:	2001-12-0219-009
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 13:03
Sampled:	12/11/2001 11:25	QC-Batch:	2001/12/20-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	5300	1000	ug/L	20.00	12/20/2001 13:03	g
Benzene	ND	10	ug/L	20.00	12/20/2001 13:03	
Toluene	ND	10	ug/L	20.00	12/20/2001 13:03	
Ethyl benzene	ND	10	ug/L	20.00	12/20/2001 13:03	
Xylene(s)	ND	10	ug/L	20.00	12/20/2001 13:03	
Surrogate(s)						
Trifluorotoluene	84.5	58-124	%	1.00	12/20/2001 13:03	
4-Bromofluorobenzene-FID	72.1	50-150	%	1.00	12/20/2001 13:03	

Submission #: 2001-12-0219

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Test Method: 8015M 8021B

Prep Method: 5030

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Sample ID:	**MW-20**	Lab Sample ID:	2001-12-0219-010
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 13:33
Sampled:	12/11/2001 15:40	QC-Batch:	2001/12/20-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	86	50	ug/L	1.00	12/20/2001 13:33	g
Benzene	ND	0.50	ug/L	1.00	12/20/2001 13:33	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 13:33	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 13:33	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 13:33	
Surrogate(s)						
Trifluorotoluene	83.6	58-124	%	1.00	12/20/2001 13:33	
4-Bromofluorobenzene-FID	75.9	50-150	%	1.00	12/20/2001 13:33	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX by 8015M/8021

Batch QC report

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CA DHS ELAP#1094

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank **Water** **QC Batch # 2001/12/20-01.01**

MB: 2001/12/20-01.01-003 Date Extracted: 12/20/2001 08:02

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/20/2001 08:02	
Benzene	ND	0.5	ug/L	12/20/2001 08:02	
Toluene	ND	0.5	ug/L	12/20/2001 08:02	
Ethyl benzene	ND	0.5	ug/L	12/20/2001 08:02	
Xylene(s)	ND	0.5	ug/L	12/20/2001 08:02	
Surrogate(s)					
Trifluorotoluene	90.6	58-124	%	12/20/2001 08:02	
4-Bromofluorobenzene-FID	79.3	50-150	%	12/20/2001 08:02	

SEVERN TRENT SERVICES

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Gas/BTEX by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank | **Water** | **QC Batch # 2001/12/20-01.05**

MB: 2001/12/20-01.05-003 | Date Extracted: 12/20/2001 08:56

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/20/2001 08:56	
Benzene	ND	0.5	ug/L	12/20/2001 08:56	
Toluene	ND	0.5	ug/L	12/20/2001 08:56	
Ethyl benzene	ND	0.5	ug/L	12/20/2001 08:56	
Xylene(s)	ND	0.5	ug/L	12/20/2001 08:56	
Surrogate(s)					
Trifluorotoluene	87.0	58-124	%	12/20/2001 08:56	
4-Bromofluorobenzene-FID	88.5	50-150	%	12/20/2001 08:56	

Submission #: 2001-12-0219

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Gas/BTEX by 8015M/8021

Batch QC report

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CA DHS ELAP#1094

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD)		**Water**		**QC Batch # 2001/12/20-01.01**
LCS:	2001/12/20-01.01-004	Extracted:	12/20/2001 08:32	Analyzed: 12/20/2001 08:32
LCSD:	2001/12/20-01.01-005	Extracted:	12/20/2001 09:01	Analyzed: 12/20/2001 09:01

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Benzene	106	104	100.0	100.0	106.0	104.0	1.9	77-123	20		
Toluene	110	108	100.0	100.0	110.0	108.0	1.8	78-122	20		
Ethyl benzene	106	102	100.0	100.0	106.0	102.0	3.8	70-130	20		
Xylene(s)	320	315	300	300	106.7	105.0	1.6	75-125	20		
Surrogate(s)											
Trifluorotoluene	535	525	500	500	107.0	105.0		58-124			

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CA DHS ELAP#1094

Gas/BTEX by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5030

Laboratory Control Spike (LCS/LCSD)		**Water**		**QC Batch # 2001/12/20-01.01**
LCS:	2001/12/20-01.01-006	Extracted: 12/20/2001 09:31	Analyzed:	12/20/2001 09:31
LCSD:	2001/12/20-01.01-007	Extracted: 12/20/2001 10:00	Analyzed:	12/20/2001 10:00

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	487	495	500	500	97.4	99.0	1.6	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene-	376	374	500	500	75.2	74.8		50-150			

Submission #: 2001-12-0219

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Gas/BTEX by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5030

Laboratory Control Spike (LCS/LCSD)		**Water**		**QC Batch # 2001/12/20-01.05**
LCS:	2001/12/20-01.05-006	Extracted:	12/20/2001 10:33	Analyzed: 12/20/2001 10:33
LCSD:	2001/12/20-01.05-007	Extracted:	12/20/2001 11:05	Analyzed: 12/20/2001 11:05

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	416	458	500	500	83.2	91.6	9.6	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene-	477	522	500	500	95.4	104.4		50-150			

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX by 8015M/8021

Batch QC report

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CA DHS ELAP#1094

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD)		**Water**		**QC Batch # 2001/12/20-01.05**
LCS:	2001/12/20-01.05-025	Extracted:	12/20/2001 09:28	Analyzed: 12/20/2001 09:28
LCSD:	2001/12/20-01.05-026	Extracted:	12/20/2001 10:01	Analyzed: 12/20/2001 10:01

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Benzene	97.0	96.2	100.0	100.0	97.0	96.2	0.8	77-123	20		
Toluene	89.1	88.0	100.0	100.0	89.1	88.0	1.2	78-122	20		
Ethyl benzene	93.0	92.9	100.0	100.0	93.0	92.9	0.1	70-130	20		
Xylene(s)	275	273	300	300	91.7	91.0	0.8	75-125	20		
Surrogate(s)											
Trifluorotoluene	457	476	500	500	91.4	95.2		58-124	0		

SEVERN TRENT SERVICES

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Gas/BTEX by 8015M/8021

Legend & Notes

Test Method: 8021B
8015M

Prep Method: 5030

Analyte Flags

g

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

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

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950007.30	Project: Owens Brockway

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
TRIP BLANK	Water	12/12/2001	11

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

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Test Method: 8021B
Prep Method: 5030

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CA DHS ELAP#1094

Sample ID:	**TRIP BLANK**	Lab Sample ID:	2001-12-0219-011
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/20/2001 11:45
Sampled:	12/12/2001	QC-Batch:	2001/12/20-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	12/20/2001 11:45	
Toluene	ND	0.50	ug/L	1.00	12/20/2001 11:45	
Ethyl benzene	ND	0.50	ug/L	1.00	12/20/2001 11:45	
Xylene(s)	ND	0.50	ug/L	1.00	12/20/2001 11:45	
Surrogate(s)						
Trifluorotoluene	71.9	58-124	%	1.00	12/20/2001 11:45	

Submission #: 2001-12-0219

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CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank | **Water** | **QC Batch # 2001/12/20-01.05**

MB: 2001/12/20-01.05-003

Date Extracted: 12/20/2001 08:56

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Benzene	ND	0.5	ug/L	12/20/2001 08:56	
Toluene	ND	0.5	ug/L	12/20/2001 08:56	
Ethyl benzene	ND	0.5	ug/L	12/20/2001 08:56	
Xylene(s)	ND	0.5	ug/L	12/20/2001 08:56	
Surrogate(s)					
Trifluorotoluene	87.0	58-124	%	12/20/2001 08:56	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD)		**Water**		**QC Batch # 2001/12/20-01.05**
LCS:	2001/12/20-01.05-025	Extracted:	12/20/2001 09:28	Analyzed: 12/20/2001 09:28
LCSD:	2001/12/20-01.05-026	Extracted:	12/20/2001 10:01	Analyzed: 12/20/2001 10:01

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Benzene	97.0	96.2	100.0	100.0	97.0	96.2	0.8	77-123	20		
Toluene	89.1	88.0	100.0	100.0	89.1	88.0	1.2	78-122	20		
Ethyl benzene	93.0	92.9	100.0	100.0	93.0	92.9	0.1	70-130	20		
Xylene(s)	275	273	300	300	91.7	91.0	0.8	75-125	20		
Surrogate(s)											
Trifluorotoluene	457	476	500	500	91.4	95.2		58-124	0		

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
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www.chromalab.com

CA DHS ELAP#1094

Kennedy/Jenks-San Francisco	☒ 622 Folsom Street San Francisco, CA 94107-1366
Attn: Meredith Durant	Phone: (415) 243-2534 Fax: (415) 896-0999
950007.30	Project: Owens Brockway

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-5	Water	12/12/2001 08:50	1
MW-7	Water	12/12/2001 09:40	2
MW-8	Water	12/11/2001 14:50	3
MW-10	Water	12/11/2001 13:50	4
MW-DUP	Water	12/11/2001	5
MW-13	Water	12/11/2001 12:45	6
MW-15	Water	12/11/2001 14:05	7
MW-16	Water	12/11/2001 12:15	8
MW-17	Water	12/11/2001 11:25	9
MW-20	Water	12/11/2001 15:40	10

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
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www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-5**	Lab Sample ID:	2001-12-0219-001
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/12/2001 08:50	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	5700	50	ug/L	1.00	12/14/2001 23:19	ndp
Motor Oil	4300	500	ug/L	1.00	12/14/2001 23:19	
Surrogate(s)						
o-Terphenyl	90.8	60-130	%	1.00	12/14/2001 23:19	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

STL Chromalab
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Pleasanton, CA 94566

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www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-7**	Lab Sample ID:	2001-12-0219-002
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/12/2001 09:40	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	8100	50	ug/L	1.00	12/14/2001 23:56	ndp
Motor Oil	4500	500	ug/L	1.00	12/14/2001 23:56	
Surrogate(s)						
o-Terphenyl	91.1	60-130	%	1.00	12/14/2001 23:56	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

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CA DHS ELAP#1094

Sample ID:	**MW-8**	Lab Sample ID:	2001-12-0219-003
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 14:50	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/14/2001 21:10	
Motor Oil	ND	500	ug/L	1.00	12/14/2001 21:10	
Surrogate(s)						
o-Terphenyl	89.4	60-130	%	1.00	12/14/2001 21:10	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

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www.chromalab.com

CA DHS ELAP#1094

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

Sample ID:	**MW-10**	Lab Sample ID:	2001-12-0219-004
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 13:50	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	630	50	ug/L	1.00	12/14/2001 21:47	ndp
Motor Oil	ND	500	ug/L	1.00	12/14/2001 21:47	
Surrogate(s)						
o-Terphenyl	89.4	60-130	%	1.00	12/14/2001 21:47	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

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CA DHS ELAP#1094

Sample ID:	**MW-DUP**	Lab Sample ID:	2001-12-0219-005
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	620	50	ug/L	1.00	12/14/2001 22:24	ndp
Motor Oil	ND	500	ug/L	1.00	12/14/2001 22:24	
Surrogate(s)						
o-Terphenyl	89.7	60-130	%	1.00	12/14/2001 22:24	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

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www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-13**	Lab Sample ID:	2001-12-0219-006
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 12:45	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	91	50	ug/L	1.00	12/14/2001 23:01	ndp
Motor Oil	ND	500	ug/L	1.00	12/14/2001 23:01	
Surrogate(s)						
o-Terphenyl	92.2	60-130	%	1.00	12/14/2001 23:01	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

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CA DHS ELAP#1094

Sample ID:	**MW-15**	Lab Sample ID:	2001-12-0219-007
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 14:05	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	290	50	ug/L	1.00	12/14/2001 23:39	ndp
Motor Oil	ND	500	ug/L	1.00	12/14/2001 23:39	
Surrogate(s)						
o-Terphenyl	89.4	60-130	%	1.00	12/14/2001 23:39	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco

Attn: Meredith Durant

Test Method: 8015M

Prep Method: 3510/8015M

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www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-16**	Lab Sample ID:	2001-12-0219-008
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 12:15	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/15/2001 00:16	
Motor Oil	ND	500	ug/L	1.00	12/15/2001 00:16	
Surrogate(s)						
o-Terphenyl	91.8	60-130	%	1.00	12/15/2001 00:16	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

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www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-17**	Lab Sample ID:	2001-12-0219-009
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 11:25	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	91000	1000	ug/L	20.00	12/17/2001 11:00	ndp
Motor Oil	10000	10000	ug/L	20.00	12/17/2001 11:00	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	20.00	12/17/2001 11:00	sd

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

Total Extractable Petroleum Hydrocarbons (TEPH)

Kennedy/Jenks-San Francisco
Attn: Meredith Durant

Test Method: 8015M
Prep Method: 3510/8015M

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www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-20**	Lab Sample ID:	2001-12-0219-010
Project:	950007.30 Owens Brockway	Received:	12/12/2001 17:40
		Extracted:	12/14/2001 10:11
Sampled:	12/11/2001 15:40	QC-Batch:	2001/12/14-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	82	50	ug/L	1.00	12/14/2001 23:56	ndp
Motor Oil	ND	500	ug/L	1.00	12/14/2001 23:56	
Surrogate(s)						
o-Terphenyl	107.1	60-130	%	1.00	12/14/2001 23:56	

SEVERN TRENT SERVICES

STL Chromalab
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
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www.chromalab.com

CA DHS ELAP#1094

Total Extractable Petroleum Hydrocarbons (TEPH)

Batch QC report

Test Method: 8015M

Prep Method: 3510/8015 M

Method Blank **Water** **QC Batch # 2001/12/14-01.10**

MB: 2001/12/14-01.10-001

Date Extracted: 12/14/2001 10:11

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	12/14/2001 18:17	
Motor Oil	ND	500	ug/L	12/14/2001 18:17	
Surrogate(s)					
o-Terphenyl	82.4	60-130	%	12/14/2001 18:17	

Submission #: 2001-12-0219

SEVERN TRENT SERVICES

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Pleasanton, CA 94566

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CA DHS ELAP#1094

Total Extractable Petroleum Hydrocarbons (TEPH)

Batch QC report

Test Method: 8015M Prep Method: 3510/8015M

Laboratory Control Spike (LCS/LCSD)		**Water**		**QC Batch # 2001/12/14-01.10**
LCS:	2001/12/14-01.10-002	Extracted:	12/14/2001 10:11	Analyzed: 12/14/2001 18:55
LCSD:	2001/12/14-01.10-003	Extracted:	12/14/2001 10:11	Analyzed: 12/14/2001 19:32

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Diesel	898	897	1250	1250	71.8	71.8	0.0	60-130	25		
Surrogate(s)											
o-Terphenyl	17.5	17.9	20.0	20.0	87.4	89.7		60-130	0		

SEVERN TRENT SERVICES

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CA DHS ELAP#1094

Total Extractable Petroleum Hydrocarbons (TEPH)

Legend & Notes

Test Method: 8015M Prep Method: 3510/8015M

Analyte Flags

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

Analyte Flags

sd

Surrogate recovery not reportable due to required dilution.

63626

Sample Chain-of-Custody/Analysis Request — **Kennedy/Jenks Consultants**

2001-12-0219

Possible Hazards: Analytes

Client: Kennedy Jenks
Site: Owens Brockway
Project No.: 950007.30
Sampler Name: J. Farrell
Telephone: 415 [illegible] 2506

Report to: Meredith Durant
Company: Kennedy Jenks
Address: 622 Folsom St, San Francisco CA 94107
Fax: 415 896 0999

Lab Destination: STL Chrome Lab
Address: Quarry Lane, Pleasanton CA
Telephone: 925 484 1919
Carrier/Way Bill No.:

Lab ID No.	(1) Client ID No.	Collection Date	Collection Time	(2) Type	Depth	(3) Comp.	(4) Pres.	Turn-around	EPA 8020 BTEX	EPA 8015M TEPH extractable	EPA 8015 TPPH purgeable							Comments/Conditions (Container type, container number, etc.)
	mw-5	12/11/01	0850	L			HCL	Standard	X	X	X							2 1 Liter Ambers, 3 VOAs
	mw-7	12/11/01	0940	↓			↓	↓	X	X	X							↓
	mw-8	12/11/01	1450						X	X	X							
	mw-10	12/11/01	1350						X	X	X							
	mw-DUP	12/11/01	—						X	X	X							
	mw-13	12/11/01	1245						X	X	X							
✓	mw-15	12/11/01	1405						X	X	X							
	mw-16	12/11/01	1215						X	X	X							
	mw-17	12/11/01	1125						X	X	X							4.9°C
	mw-20	12/11/01	1540						X	X	X							
	Trip Blank	12/11/01	—	↓			↓	↓	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 Farrell	[signature]	Kennedy Jenks	12/12/01	3:30	ERIC TAM	[signature]	STL-CC	12/12/01	3:30
ERIC TAM	[signature]	STL-CC	12/12/01	1740	D. Harrington	D. Harrington	STL-CC	12/12/01	1740

Sample Chain-of-Custody/Analysis Request

Kennedy/Jenks Consultants

Possible Hazards: Analytes

Client: Kennedy Jenks

Site: Owens Brockway

Project No.: 950007.30

Sampler Name: J. Farrell

Telephone: 415 [illegible]2506

Report to: Meredith Durant

Company: Kennedy Jenks

Address: 622 Folsom St, San Francisco CA 94107

Fax: 415 896 0999

Lab Destination: STL Chromalab

Address: Quarry Lane, Pleasanton CA

Telephone: 925 484 1919

Carrier/Way Bill No.:

									EPA 8020 BTEX	EPA 8015 TEPH extractable	EPA 8015 TPPH purgeable							
	mw-5	12/12	0850	L			HCL	Standard	X	X	X							2 1 Liter Ambers, 3 VOAs
	mw-7	12/12	0940	↓			↓	↓	X	X	X							↓
	mw-8	12/11/01	1450						X	X	X							
	mw-10	12/11/01	1350						X	X	X							
	mw-DUP	12/11/01	—						X	X	X							
	mw-13	12/11/01	1245						X	X	X							
	mw-15	12/11/01	1405						X	X	X							
	mw-16	12/11/01	1215						X	X	X							
	mw-17	12/11/01	1125						X	X	X							
	mw-20	12/11/01	1540						X	X	X							
	Trip Blank	12/11/01	—	↓			↓	↓	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.

Print Name	Signature	Company	Date	Time	Print Name	Signature	Company	Date	Time
Jason Farrell	[signature]	Kennedy Jenks	12/12/01	3:30	ERIC TRAN	[signature]	STL-CL	12/12/01	3:30

Appendix B

Monitoring Well Purge and Sample Forms

FILE COPY

Groundwater Depth Measurement Log

Kennedy/Jenks Consultants

Project Name: Owens Brockway
Project Number: 950007.30
Project Manager: Meredith Durant

Date: 12/11/01
Time Start:
Time End:

Well Number	Time	Groundwater Depth	Total Well Depth	Measuring Point Description	Comments
MW-1		—			Burried under glass pile
MW-2		11.25			Free product
MW-5		10.22			
MW-6		11.38			Free Product
MW-7		11.31			
MW-8		8.22			
MW-9		—			Casing is partially destroyed Soakease device is at bottom of well
MW-10		8.74			
MW-13		9.69			
MW-15		10.80			
MW-16		7.57			
MW-17		8.74			
MW-20		9.01			

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-2

PROJECT NUMBER: 95000730 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 11.25 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Not purged

TIME START PURGE: PURGE DEPTH (FT)

TIME END PURGE:

TIME SAMPLED: Not Sampled

COMMENTS: .05' of Product in well. Not sampled

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		
			11.25				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: 12/4/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-2

PROJECT NUMBER: 950007.30 PERSONNEL: Farnell

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: 12/12/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-5

PROJECT NUMBER: 95000730 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 10.22 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 0839 PURGE DEPTH (FT) 25

TIME END PURGE: 0849

TIME SAMPLED: 0850

COMMENTS: slight sheen observed in 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)
	28.5		10.22		18.29		0.16	0.64	1.44		3 x 3 = 9

TIME	0839	0842	0845	0849			
VOLUME PURGED (GAL)	0	2	4	9			
PURGE RATE (GPM)							
TEMPERATURE (°C)	64.2	64.2	→	→			
pH	9.05	7.10	7.25	7.31			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	880	1110	1180	1180			
DISSOLVED OXYGEN (mg/L)	NM						
eH(MV)Pt-AgCl ref.	NM						
TURBIDITY/COLOR	gray	→	→	→			
ODOR	s.l	→	→	→			
DEPTH OF PURGE INTAKE (FT)	25	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM						
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	→	→	→			

Groundwater Purge and Sample Form Date: 12/12/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: mw-5

PROJECT NUMBER: 950 007.30 PERSONNEL: Farrell

SAMPLE DATA:
TIME SAMPLED: 0850 COMMENTS: Sheen observed in Purge water
DEPTH SAMPLED (FT): 22
SAMPLING EQUIPMENT: Disp. 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-5	3	VOA	HCl	N	Full	Brown		Yes	8020	BTEX
mw-5	2	1L Amb	N	N	Full	Brown		Yes	8015	TEPH TPPH

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): 9 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: Sunny 65
TEMPERATURE (SPECIFY °C OR °F):
PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/12/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-6

PROJECT NUMBER: 950007.30 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 11.38 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: _____ PURGE DEPTH (FT) 20

TIME END PURGE: _____

TIME SAMPLED: _____

COMMENTS: Visible Product in purge water Did not Sample

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)
	26.0		11.38				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: 12/12/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-7

PROJECT NUMBER: 950 007.30 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 11.31 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 0925 PURGE DEPTH (FT) 20

TIME END PURGE: 0939

TIME SAMPLED: 0940

COMMENTS: Slight sheen

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		
	23.50		11.31		12.19		0.16	0.64	1.44		2 x 3 = 6

TIME	0925	0930	0938				
VOLUME PURGED (GAL)	0	3	6				
PURGE RATE (GPM)							
TEMPERATURE (°C)	64.1	65.1	65.2				
pH	7.05	7.09	7.21				
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1210	1190	1190				
DISSOLVED OXYGEN (mg/L)	NM	→	→				
eH(MV)Pt-AgCl ref.	NM	→	→				
TURBIDITY/COLOR	dk Brown	Brown	Brown				
ODOR	oily	→	→				
DEPTH OF PURGE INTAKE (FT)	20	→	→				
DEPTH TO WATER DURING PURGE (FT)	NM	→	→				
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	→	→				

Groundwater Purge and Sample Form Date: 12/12/96 **Kennedy/Jenks Consultants**

PROJECT NAME: Burns Brockway WELL NUMBER: MW-17

PROJECT NUMBER: 95000730 PERSONNEL: Farrell

SAMPLE DATA:
TIME SAMPLED: 0940 COMMENTS:

DEPTH SAMPLED (FT): 20

SAMPLING EQUIPMENT: Disp. 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	3	VOA	HCl	N	Full	Brown		Yes	8020 BTEX	
MW-9	2	1L Amber	N	N	Full	Brown		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: Sunny 60°

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? NO

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Parkway WELL NUMBER: MW-9

PROJECT NUMBER: 950084.30 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 8.22 MEASURING POINT DESCRIPTION: Toc

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: Bailer

TIME START PURGE: 1430 PURGE DEPTH (FT) 25.0

TIME END PURGE: 1445

TIME SAMPLED: 1450

COMMENTS: Well Box was Flooded with dirty water
Recalibrated pH meter

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		
	29.5		8.22		20.28		0.16	0.64	1.44		3.2 x 3 = 9.6

TIME	1430	1433	1438	1445			
VOLUME PURGED (GAL)	0	2.5	5.0	10.0			
PURGE RATE (GPM)							
TEMPERATURE (°C)	61.4	62.2	60.2	60.5			
pH	6.90	7.24	7.03	7.08			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1090	910	840	840			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	tan	→	→	→			
ODOR	none	→	→	→			
DEPTH OF PURGE INTAKE (FT)	25	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM						
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	→	→	→			

Groundwater Purge and Sample Form Date: 12/10/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-8

PROJECT NUMBER: 950 007.30 PERSONNEL: Farrell

SAMPLE DATA:
TIME SAMPLED: 1450 COMMENTS:

DEPTH SAMPLED (FT): 25.0

SAMPLING EQUIPMENT: D.P. 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	Full	tan	-	Yes	8020	BTEX
MW-8	2	1L Amber	N	N	Full	tan	-		8015	TEPH TPPH

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): 10 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: Box is Flooded with gray water

GENERAL:
WEATHER CONDITIONS: Sunny 65

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Queens Brockway WELL NUMBER: MW-9

PROJECT NUMBER: 95000700 PERSONNEL: Farrell

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

WATER LEVEL MEASUREMENT METHOD: _____ PURGE METHOD: _____

TIME START PURGE: _____ PURGE DEPTH (FT) _____

TIME END PURGE: _____

TIME SAMPLED: Did not Sample

COMMENTS: Well casing is Crushed, Soaker device has been dropped into the well and unable to retrieve. Casing is flooded to the top with gray 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)
							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: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brookway WELL NUMBER: MW-10

PROJECT NUMBER: 950007.30 PERSONNEL: Tannell

STATIC WATER LEVEL (FT): 8.74 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 1330 PURGE DEPTH (FT) 20

TIME END PURGE: 1345

TIME SAMPLED: 1350

COMMENTS: Collected MW-DUP. Very Slight Sheen

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)
	25.0		8.74		16.26		0.16	0.64	1.44		2.6 x 3 = 7.8

TIME	1330	1334	1340	1343			
VOLUME PURGED (GAL)	0	2.5	5.0	7.5			
PURGE RATE (GPM)							
TEMPERATURE (°C)	64.2	64.1	67.2	69.1			
pH	7.13	6.80	6.82	6.91			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1280	1270	1270	1270			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Gray	→	→	→			
ODOR	Egg	→	→	→			
DEPTH OF PURGE INTAKE (FT)	20	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED		1	2	3			
DEWATERED?	No	→	→	→			

Groundwater Purge and Sample Form Date: 12/16/91 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: mw-10

PROJECT NUMBER: 95000230 PERSONNEL: Fann II

SAMPLE DATA:

TIME SAMPLED: 1350 COMMENTS: Slight Sheen

DEPTH SAMPLED (FT): 20

SAMPLING EQUIPMENT: Disp 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-10	3	VOA	HCL	N	Full	Gray	—	Yes	8020	BTEX
mw-10	2	1L Amber	N	N	Full	Gray	—	Yes	8015	TEPH, TPPH
MW-duplicate	3	VOA	HCL	N	Full	Gray		Yes	8020	BTEX
MW-duplicate	2	1L Amber	N	N	Full	Gray		Yes	8015	TPPH TEPH

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 7.5 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:

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Downs Brockway WELL NUMBER: MW-13

PROJECT NUMBER: 950009.30 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 9.69 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinst PURGE METHOD: Bailer

TIME START PURGE: 1225 PURGE DEPTH (FT) 20

TIME END PURGE: 1239

TIME SAMPLED: 1245

COMMENTS: NE Broken Plug does not seal

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		
	25.00		9.69		15.31		0.16	0.64	1.44		2.7x3=8.1

TIME	1225	1228	1234	1239			
VOLUME PURGED (GAL)	0	2.5	5.0	8.0			
PURGE RATE (GPM)							
TEMPERATURE (°C)	65.2	65.1	65.4	65.4			
pH	7.48	7.33	7.41	7.32			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1300	1250	1300	1290			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Slight tan	clear	clear	clear			
ODOR	none	→	→	→			
DEPTH OF PURGE INTAKE (FT)	20	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No						

Groundwater Purge and Sample Form Date: 12/6/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-13

PROJECT NUMBER: 950 009.30 PERSONNEL: Jamell

SAMPLE DATA:
TIME SAMPLED: 1245 COMMENTS:

DEPTH SAMPLED (FT): 20

SAMPLING EQUIPMENT: Disp. 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-13	3	VOA	HCL	N	Full	clear		Yes	8020	BTEX
MW-13	2	1 L Amber	N	N	Full	clear		Yes	8015	TEPH, TPPH

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): 7.5 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 PVC does not seal w/plug

GENERAL:
WEATHER CONDITIONS: Sunny 65°

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/10/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-15

PROJECT NUMBER: 950007.30 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 10.80 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 1300 PURGE DEPTH (FT) 25

TIME END PURGE: 1310

TIME SAMPLED: 1405

COMMENTS: Allowed well to recharge to 11.40

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)
	29.50		10.80		18.7		0.16	0.64	1.44		2.9 x 3 = 8.7

TIME	1300	1304	1310				
VOLUME PURGED (GAL)	0	2.5	4.5				
PURGE RATE (GPM) OR HAND	N/A	→	→				
TEMPERATURE (°C)	64.1	64.1					
pH	7.12	7.39	7.35				
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1450	1440	1440				
DISSOLVED OXYGEN (mg/L)	NM	→	→				
eH(MV)Pt-AgCl ref.	NM	→	→				
TURBIDITY/COLOR	tan	tan	tan				
ODOR	NONE	→	→				
DEPTH OF PURGE INTAKE (FT)	25	→	→				
DEPTH TO WATER DURING PURGE (FT)	NM	→	→				
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	No	Yes				

Groundwater Purge and Sample Form Date: 12/16/91 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-15

PROJECT NUMBER: 950007.30 PERSONNEL: Farrell

SAMPLE DATA:
TIME SAMPLED: 1405 COMMENTS:

DEPTH SAMPLED (FT): 25

SAMPLING EQUIPMENT: Wise 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-15	3	VOA	HCl	N	Full	lt gray		Yes	8020	BTEX
MW-15	2	1L Amber	N	N	Full	lt gray		Yes	8015	TEPH, TPPH

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): 4.5 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: Sunny 65

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? Dewatered waited for recharge

cc: Project Manager:
Job File:
Other:

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Queens Brockway WELL NUMBER: MW-16

PROJECT NUMBER: 950 009.30 PERSONNEL: Farwell

STATIC WATER LEVEL (FT): 8.05 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 1150 PURGE DEPTH (FT) 15

TIME END PURGE: 1208

TIME SAMPLED: 1215

COMMENTS: No Plug sock in place

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)
	20.85		17.57		13.28		0.16	0.64	1.44		2 x 3 = 6

TIME	1150	1155	1200	1208			
VOLUME PURGED (GAL)	0	2.5	5.0	6.0			
PURGE RATE (GPM) HAND	N/A						
TEMPERATURE (°C)	66.5	66.5	66.5	66.5			
pH	7.05	7.08	7.08	7.19			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	1740	1720	1740	1790			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	tan/Brown	tan	tan	tan			
ODOR	None						
DEPTH OF PURGE INTAKE (FT)	15	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	→	→	→			

Groundwater Purge and Sample Form Date: 12/1/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: mw-16

PROJECT NUMBER: 950 007.30 PERSONNEL: Farrell

SAMPLE DATA:

TIME SAMPLED: 1215 COMMENTS:

DEPTH SAMPLED (FT): 18

SAMPLING EQUIPMENT: Disp. 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	Full	gray	—	Yes	8020 BTEX	
mw-16	2	1L Amber	N	N	↓	gray	—	Yes	POLY	TOOH TEPH

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: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-17

PROJECT NUMBER: _____ PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 9.00 MEASURING POINT DESCRIPTION: Toc

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 1100 PURGE DEPTH (FT) 18

TIME END PURGE: 1120

TIME SAMPLED: 1125

COMMENTS: smells oily Can't detect a sheen
Casing Broken, Pvc Broken, No 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)
	24.50		8.74		15.76		0.16	0.64	1.44		2.5 x 3 = 7.5

TIME	1100	1110	1115	1120			
VOLUME PURGED (GAL)	0	2.5	5.0	7.5			
PURGE RATE (GPM) Hand							
TEMPERATURE (°C)	60.1	60.1	60.1	60.1			
pH	6.95	6.90	7.05	7.08			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	820	870	850	860			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Dark Gray	Gray	Gray	Gray			
ODOR	oil/gas	oil/gas	oil/gas	oil/gas			
DEPTH OF PURGE INTAKE (FT)	18	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	No	→	→	→			

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-17

PROJECT NUMBER: 950007.30 PERSONNEL: Farrell

SAMPLE DATA:
TIME SAMPLED: 1125 COMMENTS:

DEPTH SAMPLED (FT): 18

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-17	3	VOA	HCl	N	Full	greyish		Yes	8020 BTEX	
MW-17	2	1L Amber	N	N	Full	greyish			8015 TEPH, Total	

PURGE WATER DISPOSAL NOTES:
TOTAL DISCHARGE (GAL): 9.5 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: Sunny 65

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other:

F-43.2 (5-89)

Groundwater Purge and Sample Form Date: 12/11/01 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-20

PROJECT NUMBER: 950007.30 PERSONNEL: Farrell

STATIC WATER LEVEL (FT): 9.01 MEASURING POINT DESCRIPTION: TOC

WATER LEVEL MEASUREMENT METHOD: Solinist PURGE METHOD: Bailer

TIME START PURGE: 1525 PURGE DEPTH (FT) 20

TIME END PURGE: 1534

TIME SAMPLED: 1540

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		9.01		12.99		0.16	0.64	1.44		2 x 3 = 6

TIME	1325	1330	1333	1334			
VOLUME PURGED (GAL)	0	2.5	5.0	6.0			
PURGE RATE (GPM)							
TEMPERATURE (°C)	62.4	62.1	62.1	62.4			
pH	7.31	7.30	7.33	7.30			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	980	920	920	920			
DISSOLVED OXYGEN (mg/L)	NM	→	→	→			
eH(MV)Pt-AgCl ref.	NM	→	→	→			
TURBIDITY/COLOR	Slight tan	→	→	→			
ODOR	none	→	→	→			
DEPTH OF PURGE INTAKE (FT)	20	→	→	→			
DEPTH TO WATER DURING PURGE (FT)	NM	→	→	→			
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?	NO	→	→	→			

Groundwater Purge and Sample Form Date: 12/11/91 **Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: mw-20

PROJECT NUMBER: 750007.30 PERSONNEL: Farrell

SAMPLE DATA:

TIME SAMPLED: 1540 COMMENTS:

DEPTH SAMPLED (FT): 20

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	Full	tan	-	Yes	8020 8TEX	
mw-20	2	1L Amber	N	N	Full	tan		Yes	8015	TPPH TCPH

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: Sunny 65

TEMPERATURE (SPECIFY °C OR °F):

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager:
Job File:
Other: