

BIOSLURPER STATUS REPORT
FOR JUNE 2002 THROUGH AUGUST 2002
NAVAL WEAPONS STATION - EARLE
COLTS NECK, NEW JERSEY

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1.0 INTRODUCTION

Foster Wheeler Environmental Corporation (Foster Wheeler Environmental) was contracted by Engineering Field Activity Northeast to design, construct and operate bioslurper units for Site 16F at Naval Weapons Station (NWS) Earle located in Colts Neck, New Jersey. This System Operational Report is being submitted to satisfy the post-construction submittal requirements in paragraph 1.2.1, Pre-Post Construction Documentation of the Statement of Services for Contract Task Order No. 0049 under Remedial Action Contract No. N62472-99-D-0032.

This report summarizes the ongoing bioslurper operations at Site 16 at the Naval Weapons Station-Earle facility. The report summarizes the product recovered, groundwater treated, and the analytical results of the air and effluent discharges from the bioslurper systems. The operation period was from June 9, 2002 through August 31, 2002; however, the recovery numbers for the entire operational time (February 1998 through August 2002) are summarized in the report.

Bioslurper Unit #1 (located adjacent to Building C-16) normally recovers product from the following product extraction wells: 16MW-13, 16MW-14, 16MW-15, 16MW-04, 16MW-25, 16MW-26, 16MW-26 and vapor extraction wells: 16MW-22 and 16MW-23. Bioslurper Unit #2 (located north of Building C-50) normally extracts from 16MW-20, 16MW-16, C17/20MW-07, 16MW-17 and 16MW-19.

2.0 PROJECT LOCATION AND DESCRIPTION

NWS-Earle is located in east-central Monmouth County in the town of Colts Neck, New Jersey as depicted in Figure 2-1. Site 16F is located in the north-central portion of NWS-Earle. The areas addressed with the bioslurper remediation system at Site 16F are the light non-aqueous phase liquid (LNAPL) plume southeast of Building C-16, the small LNAPL plume northwest of Building C-50, and a former gas station west of Building C-18.

An underground fuel line located in the area north of Building C-19 was used to transport diesel fuel from an underground storage tank (UST) located at the northeast corner of Building C-18 to a dispensing station north of Building C-50. A leak in the fuel line was discovered in 1977. All of the former USTs were removed from the former gas station in 1998. Part of the former underground diesel transfer line is still in place.

2.1 PREVIOUS INVESTIGATIONS

Between June and October of 1995, Brown and Root Environmental conducted a Remedial Investigation (RI) at Site 16F. The RI Report concluded that hydrocarbons detected in the subsurface impacted the groundwater. The groundwater contamination (primarily volatile organics and fuel constituents) is associated with a free-phase LNAPL layer. This floating product is the source of organics in the groundwater.

In 1995, the Navy conducted an investigation at Site 16F using a Site Characterization and Analysis Penetrometer System (SCAPS). SCAPS is a field screening technique, which detects

polynuclear aromatic hydrocarbon (PAH) compounds using a Laser Induced Fluorescence (LIF) system. The LIF is quantitative to a known matrix with a known contaminant. A soil sample collected at the site was used to calibrate the LIF using diesel fuel marine. The fluorescent mapping, obtained from the push samples, was used to gain a better understanding of the contaminant distribution. Twenty nine (29) SCAPS borings were completed in the area between Building C-16 and C-50.

The free-phase plume to the south and east of Building C-16 is suspected to have been the result of the leaking former underground diesel fuel line. As evidenced by laboratory analytical results of groundwater samples, there is also some residual gasoline contamination associated with the plume near Building C-16.

The free-phase plume north of Building C-50 is suspected to have been the result of minor spills at a former diesel dispensing station located between the railroad tracks, north of Building C-50.

2.2 GEOLOGY

Site 16F is located within the Outer Coastal Plain of the Atlantic Coastal Plain Physiographic Province, approximately nine miles inland from the Atlantic Ocean. The site is relatively flat with most of the topographic relief being the drainage swales located between the railroad tracks. According to regional mapping, the site is located on an outcropping of the Vincentown Formation and upper colluvium. The upper colluvium, where present, is shallow and consists of massive sand and silty sand, which may contain quartz or ironstone pebbles. The Vincentown Formation consists of grey and green glauconitic, fine to coarse-grained sand with silt.

According to the information obtained from the well installation logs and the SCAPS Investigation, the soil underlying the site is composed of fine to medium grained sand and silty sand.

3.0 BIOSLURPER OBJECTIVES AND PLUME CHARACTERISTICS

The objectives of the bioslurper systems operations are to conduct remedial operations in three separate areas: 1) the main free-phase plume located south and southeast of Building C-16; 2) a smaller free-phase plume north of Building C-50; and 3) the residual soil contamination associated with the former gas station site west of Building C-18.

The diesel fuel spills would have started out as free product or free phase oil. This phase is initially very mobile, and migrates downward through the unsaturated (vadose) zone due to gravitational forces until either the water table or a stratigraphic barrier is encountered. The viscosity of the light non-aqueous phase liquid (LNAPL), the groundwater gradient, and the permeability of the aquifer media control the rate of free product migration. A “smear zone” develops when the mobile LNAPL is smeared vertically through seasonal fluctuations in the water table. Once the smear zone develops, a portion of the LNAPL exists as a discontinuous non-wetting liquid phase (residual) that is relatively immobile except at seasonal low water table. The increased smear zone reduces the volume of the remaining mobile free-phase oil.

Based on the data gathered from water level measurements obtained in the recovery wells, the elevations in the wells vary as much as 3.9 to 7.29-feet below grade, with the average groundwater fluctuation of 5.79-feet in a well. That means that the free-phase product is being smeared vertically across a smear zone of almost 6-feet. The main free product plume is located to the east and south of Building C-16. The free-phase plume area is overlain by drainage ditches and railroad tracks. Due to the topographic depressions of the drainage ditches, and the permeability of the ballast associated with the railroad tracks, the localized groundwater table is subject to excessive water table fluctuations from rain events, which cause an increase in the vertical distribution of the oil across the smear zone. According to Peargin, Ireland, and Stephenson (1997), the largest percentage of LNAPL occurs within the smear zone versus the vadose zone.

As depicted in the latest product thickness maps (Figures 5-1 through 5-3) the majority of remaining oil is located in the southwest portion of the free-phase plume near former Building C-16. The concentration of the free-phase LNAPL appears to be underlying the parking lot area south of former Building C-16. Free-phase LNAPL is also concentrated east of former Building C-16, in the area between the railroad tracks. Based on the present location of the wells, the western extent of the free-phase plume cannot be completely defined. The estimated boundaries of the free-phase plume generated from the SCAPS Investigation (dashed line in figures) have been used to define the original free-phase plume boundary.

The extent of the free-phase plume located north of Building C-50 has not been verified with additional wells. The free-phase boundary depicted is based on the SCAPS Investigation. One extraction well (16MW20) is being used to extract product from the central portion of the suspected plume. While extraction well 16MW20 has consistently recovered free-phase oil, the oil thickness in the well is minimal. Measurements from an extraction well located at the hydraulically downgradient edge of the suspected free-phase plume north of Building C-50 have not detected any free-phase oil.

The soil contamination associated with the former gas station site was from previously removed USTs. There is no free-phase oil present in the former gas station area. Two bioventing wells are situated in this area to aid in remediating the vadose zone soils.

4.0 BIOSLURPER SYSTEM OPERATION

The bioslurper systems are designed to de-water the smear zone and remove LNAPL through drainage, volatilization, and biodegradation. The high vacuum of the bioslurper system extracts LNAPL from the pore spaces where it was formerly held by capillary tension. Typically, a vacuum pressure of 2.1 to 4.6 inches of Hg is applied to each well. The velocity in the drop tube must be sufficient to lift water as an entrained fluid.

Unit #1, located adjacent to Building C-16, was operated utilizing seven product recovery wells (16MW13, 16MW04, 16MW14, 16MW15, 16MW25, 16MW26 and 16MW27), and two bioventing wells (16MW22 and 16MW23). The product recovery wells were operated at a vacuum of approximately 5 to 8 inches of mercury, with the one-inch diameter drop tube set immediately above the product level in the well. The bioventing wells were operated at a

vacuum of 2 to 3 inches of mercury, and the one-inch diameter drop tube was placed several feet above the water table to minimize any water withdraw.

Unit #2, located north of Building C-50, was operated utilizing five product recovery wells (16MW16, 16MW17, 16MW19, C17/20MW07, and 16MW20). The product recovery wells were operated at a vacuum of approximately 5 to 8 inches of mercury, with the one-inch diameter drop tube set right above the product level in the well. The pipe connections to Unit #2 were configured in order to allow extraction from the wells on the outer edge of the free-phase plume east of Building C-16, and the one recovery well north of Building C-50. The product thickness and product recovery rates of the wells were significantly less than the recovery wells connected to Unit #1; therefore Unit #2 was operated for a lesser amount of time.

5.0 OPERATIONS AND DIFFICULTIES ENCOUNTERED

The bioslurper units consist of two self-contained 8 ft. by 40 ft. by 8 ft high refurbished cargo boxes that house the bioslurper pumps, process equipment, and groundwater treatment units. The turnkey units are connected to the recovery wells via underground piping. Bioslurper Unit No. 1 is equipped with a vapor-phase knock out tank and vapor-phase activated carbon drums to treat the air discharge to comply with the NJDEP Air Discharge Permit. Unit No. 1 requires air treatment because of the suspected gasoline component of the LNAPL plume in the area around Building C-16. The air discharge from Bioslurper No. 2 does not require treatment prior to discharge because of the lower concentrations of volatile organics.

This section discusses the monthly operation of the units during this reporting period and any problems that were encountered. Appendix A contains graphs depicting the operational times and groundwater and oil extracted on a monthly basis.

JUNE 2002

Operations and maintenance during June 2002 were normal, and no major difficulties were encountered. Bioslurper Unit No. 1 was operated for a total of 110.5 hours in June 2002. The total amount of groundwater extracted in June was approximately 19,641 gallons, with approximately 62 gallons of free-phase oil removed. Bioslurper Unit No. 2 operated for a total of 91 hours, extracted approximately 6,464 gallons of groundwater and approximately 6 gallons of free-phase oil. Appendix A provides a graphical representation of the amount of oil/groundwater extracted, and the operations hours for each unit.

JULY 2002

Operations and maintenance during July 2002 were normal, and no major difficulties were encountered. Bioslurper Unit No. 1 was operated for a total of 143 hours in July 2002. The total amount of groundwater extracted in July was approximately 24,875 gallons, with approximately 53 gallons of free-phase oil removed. Bioslurper Unit No. 2 operated for a total of 148 hours, extracted approximately 5,362 gallons of groundwater and approximately 2 gallons of free-phase oil. Appendix A provides a graphical representation of the amount of oil/groundwater extracted, and the operations hours for each unit.

AUGUST 2002

Operations and maintenance during August 2002 were normal, and no major difficulties were encountered. Bioslurper Unit No. 1 was operated for a total of 138.5 hours in August 2002. The total amount of groundwater extracted in August was approximately 31,129 gallons, with approximately 87 gallons of free-phase oil removed. Bioslurper Unit No. 2 operated for a total of 110 hours, extracted approximately 5,977 gallons of groundwater and approximately 5 gallons of free-phase oil. Appendix A provides a graphical representation of the amount of oil/groundwater extracted, and the operations hours for each unit.

5.1 EVALUATION OF SITE CONDITIONS

Water level and product thickness measurements are obtained periodically to establish product thickness isopleths. Appendix B contains graphs and tables depicting the depth to product and depth to water in individual extraction wells. As demonstrated by Figures 5-1 through 5-3, there has been a continued reduction in the product thickness at the site. The product thickness isopleths are based on the corrected thickness, adjusted for exaggeration measured in the well. Appendix B provides a tabular and graphical representation of the adjusted water levels and product thickness in the extraction wells. As demonstrated by the graphs in Appendix B, the water table elevations have continued to decline due to the drought like conditions over the past few months. It should be noted that the most effective product recovery occurs when the water table elevations are at their lowest, thus exposing any trapped product below the water table (smear zone). The additional product thickness data obtained from the additional wells installed in April 2001 confirm that the main portion of the product plume is underlying the parking lot south of Building C-16.

5.2 PRODUCT RECOVERY DATA

Table 1 summarizes the amount of free-phase oil recovered from the Bioslurper Extraction Units. Appendix A provides a graphical representation of the amount of oil/groundwater extracted and the operational hours for each Unit. Table 2 summarizes the groundwater extracted/treated to date. Table 3 summarizes the volume of total petroleum hydrocarbons (TPH) removed via the groundwater treatment component of bioslurper systems. The TPH removal rate for the groundwater discharges was calculated using laboratory analytical data and the volume of water processed.

The product recovery operations from June 2002 through August 2002 have been somewhat consistent; however, Bioslurper Unit No.1 indicated a notably high amount (Table 3) of TPH removed via groundwater treatment in July. Bioslurper Unit No.2 does not recover as much product as Unit No. 1 because this system is connected to recovery wells on the outer edge of the product plume, whereas Unit No. 1 operates from wells in the central portion of the plume.

6.0 EFFLUENT AND AIR ANALYSIS

6.1 AIR ANALYSIS

The air discharges from the bioslurper units are routinely sampled to ensure discharges are in compliance with the NJDEP air discharge permit. The air discharge is sampled for total VOCs (including benzene). Appendix C summarizes the analytical results of the air discharge samples and the permit limits. Appendix C also contains the laboratory analytical results of the air samples.

It should be noted that vinyl chloride was detected at a concentration of 0.5 ppm(v) from the August Bioslurper Unit #2 air discharge sample. Based on past historical and analytical data, contamination from vinyl chloride was not anticipated. The detection of vinyl chloride may be an anomaly due to field or analytical contamination or error. Data from the next sampling event will be compared to the August data to determine if the presence of vinyl chloride was due to an error or if it is actually a contaminant present at the site.

Vinyl chloride was included in the air emission calculation in order to determine that the total VOCs emission was below the permitted emission of 0.035 lbs/hour. The total VOC emission, including vinyl chloride, was 0.029 lbs/hour. This value is below the permit emission limit.

As indicated by the analytical results, both bioslurper units are operating within the permit requirements established for air discharge.

6.2 EFFLUENT ANALYSIS

The effluent from Bioslurper Unit No.1 is processed through one bag filter (equipped with a 75-micron filter), three modified bentonite clay vessels (operating in series), and two liquid-phase granular activated carbon vessels (operating in series). The bag filter removes particulates (mainly precipitated iron), the clay units remove the higher molecular weight volatile organic compounds (VOCs) and TPH, and the activated carbon removes the remaining VOC and TPH compounds. The effluent from Bioslurper Unit No. 2 is processed in the same manner, except that only two bentonite vessels in series are used instead of three. Unit No. 2 is configured in this manner because of the lower TPH concentrations of the effluent.

The groundwater effluent from the bioslurper units is routinely sampled to ensure the discharges are in compliance with the requirements set forth by the Naval Weapons Station-Earle Sewer Treatment Plant (< 10 ppm TPH).

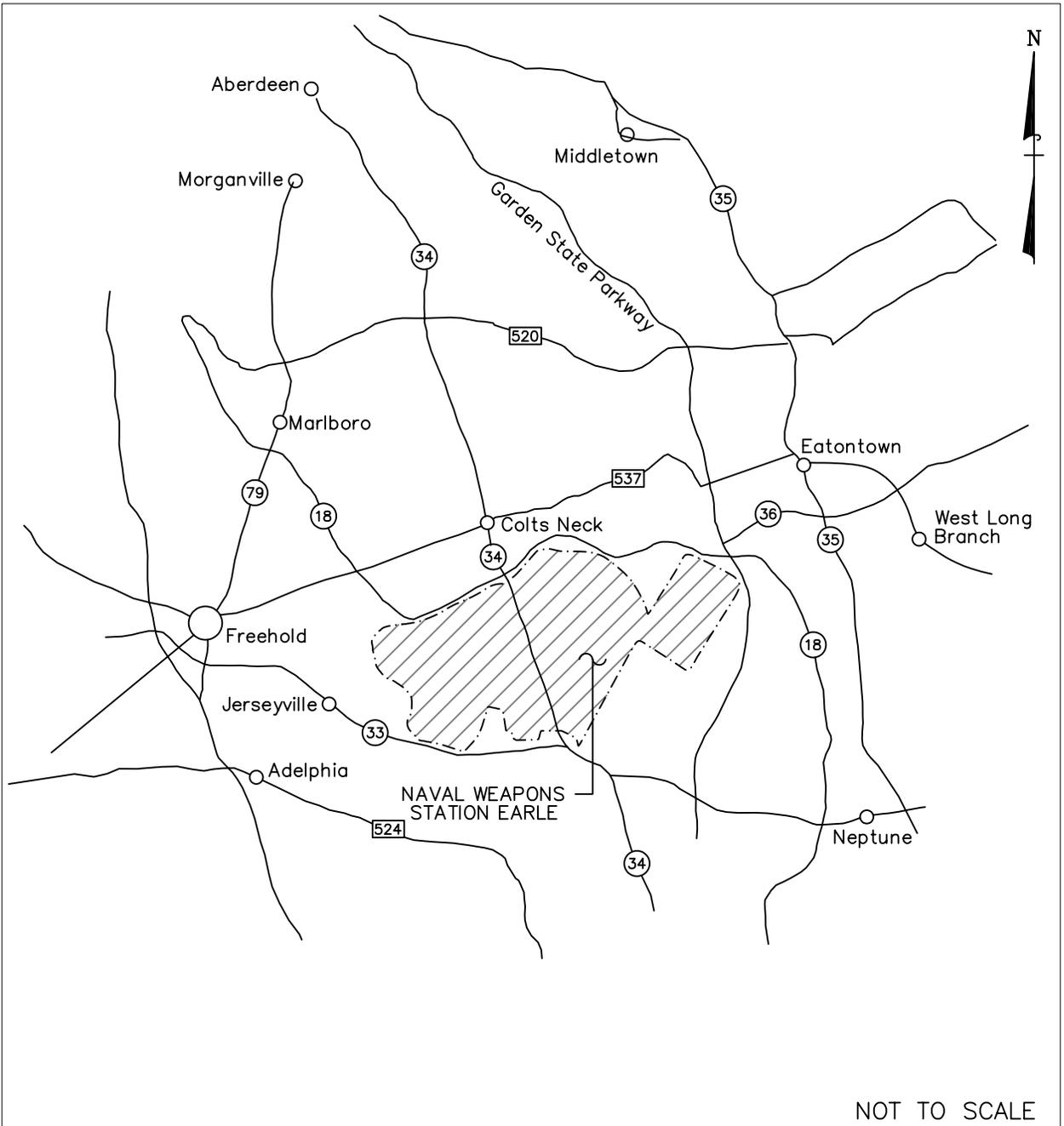
Table 4 summarizes the TPH results of the effluent samples. Appendix D contains the laboratory analytical results of the effluent samples. As demonstrated by the laboratory analytical results, all effluent discharged (after treatment) to the NWS-Earle Sewer Treatment Plant contained TPH concentrations less than 10 ppm.

7.0 CONCLUSIONS

The bioslurper units continued to operate within the design limits with only minor operational problems. The bioslurper units were operated at a vacuum of approximately 25 inches of mercury. A vacuum of between 3 to 5 inches of mercury was applied to each extraction well. As demonstrated by the analytical results of air and effluent discharge samples, the system was adequately treating the air and effluent to the limits established by the NJDEP Air Discharge Permit and the restrictions of the NWS-Earle Sewer Treatment Plant. The effluent of both bioslurper systems is discharged to the NWS-Earle Sewer Treatment Plant. Based on agreements with NWS-Earle prior to the start-up of the systems, the effluent discharge from the systems was to meet the NJPDES Discharge Permit criteria for their discharge. The effluent discharge has met the applicable discharge criteria of 10 ppm total petroleum hydrocarbons (TPH).

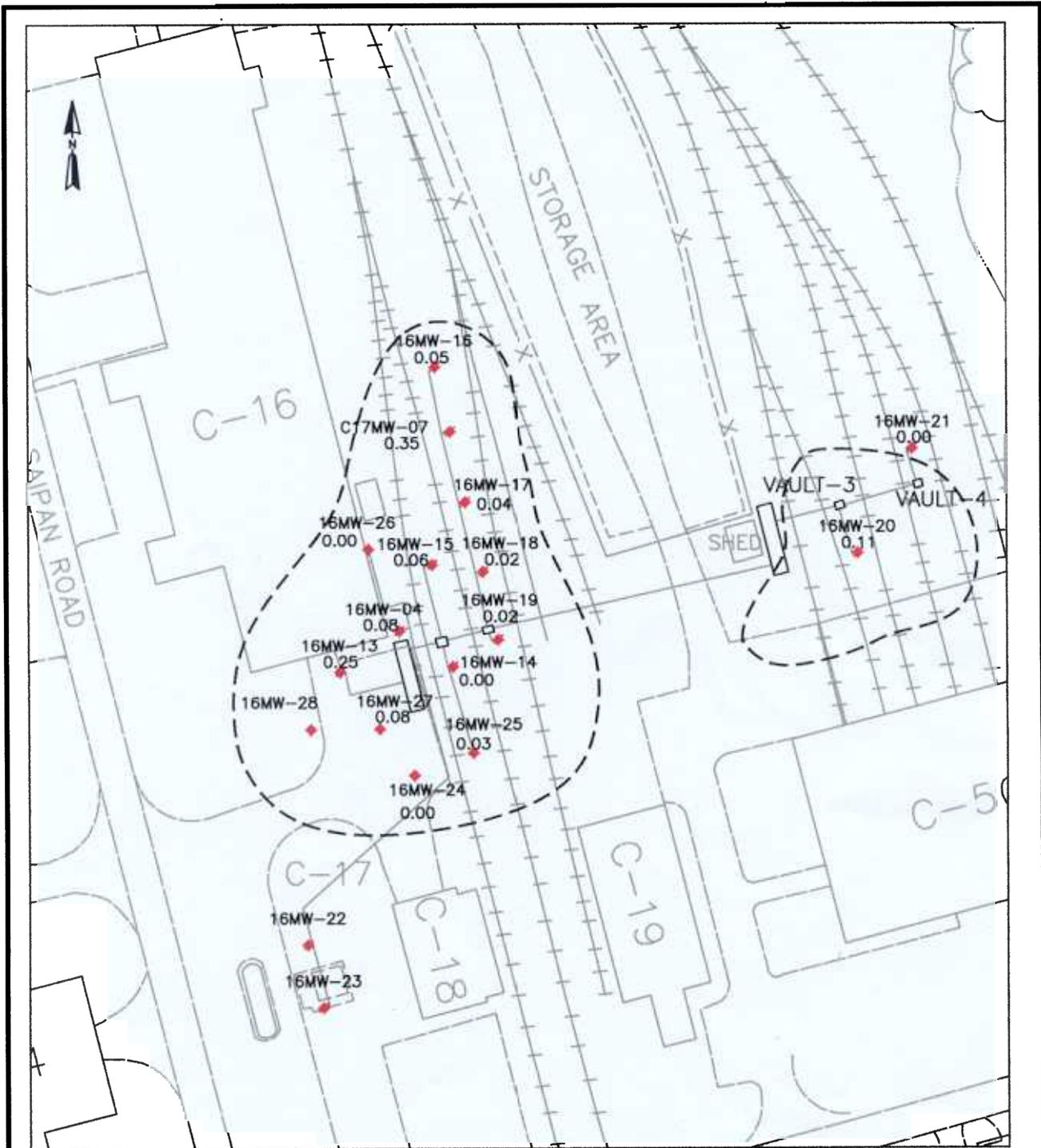
As demonstrated by the historical product thickness isopleths generated at the site, there is a continuing decline in the product thickness in the LNAPL plume south and east of the former C-16 Building. Decreased available product in the wells also results in decreased product recoveries over time. The decreased product recoveries at the site are demonstrated with the existing historical recovery data. The decreased product recoveries over time is not a result of the system becoming less effective, but a function of diminished returns based upon the availability of free product.

FIGURES

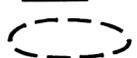


**U.S. Navy RAC
NWS- Earle, Colts Neck, NJ**

Figure 2-1
Vicinity Map



Legend



Product plume boundary based on former SCAPs Study

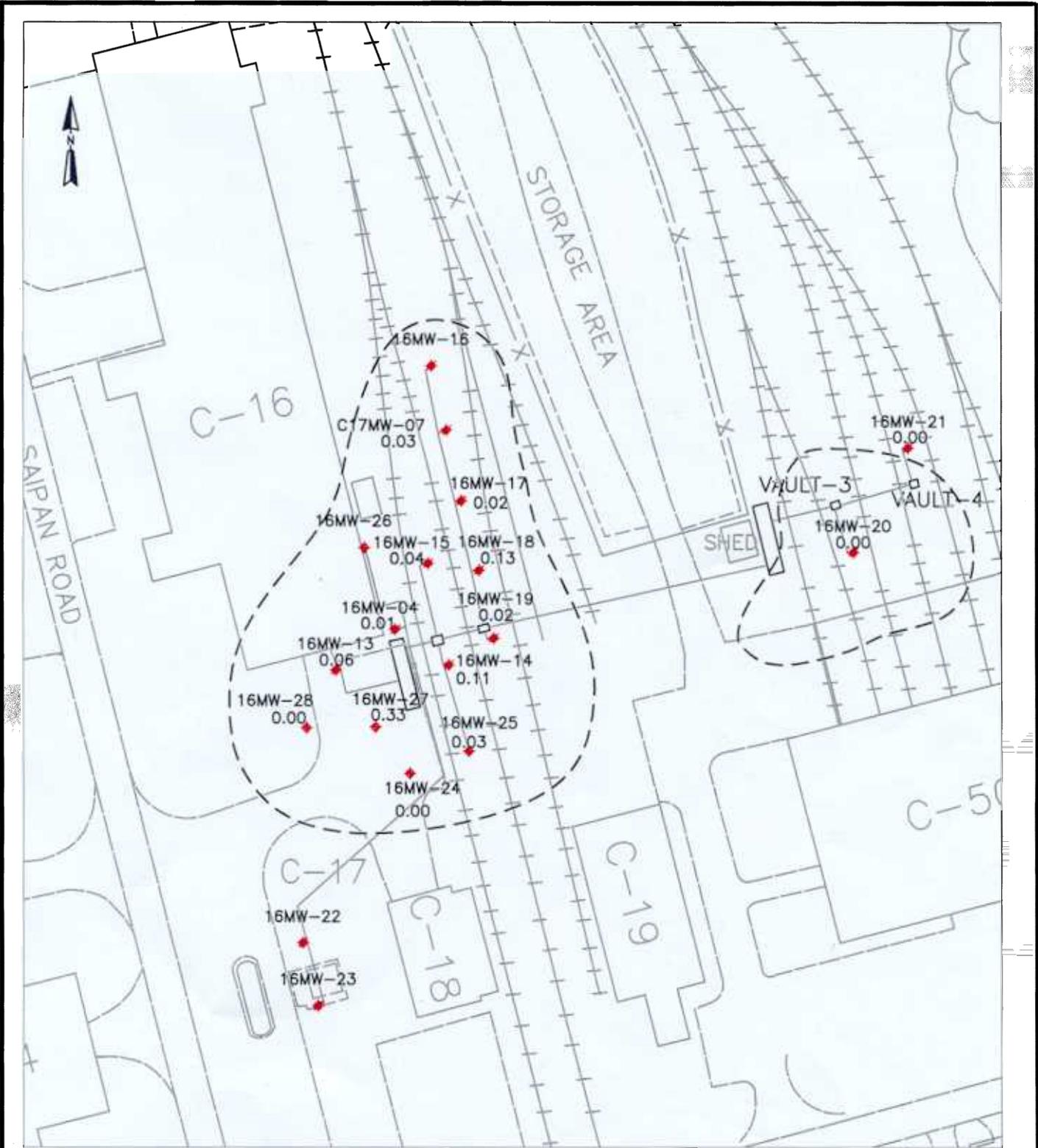


**U.S. Navy RAC
NWS - Earle, Colts Neck, NJ**

Figure 5-1
Product Thickness (ft.) Isopleth
06/27/2002



FOSTER WHEELER ENVIRONMENTAL CORPORATION



Legend



Product plume boundary based on former SCAPs Study

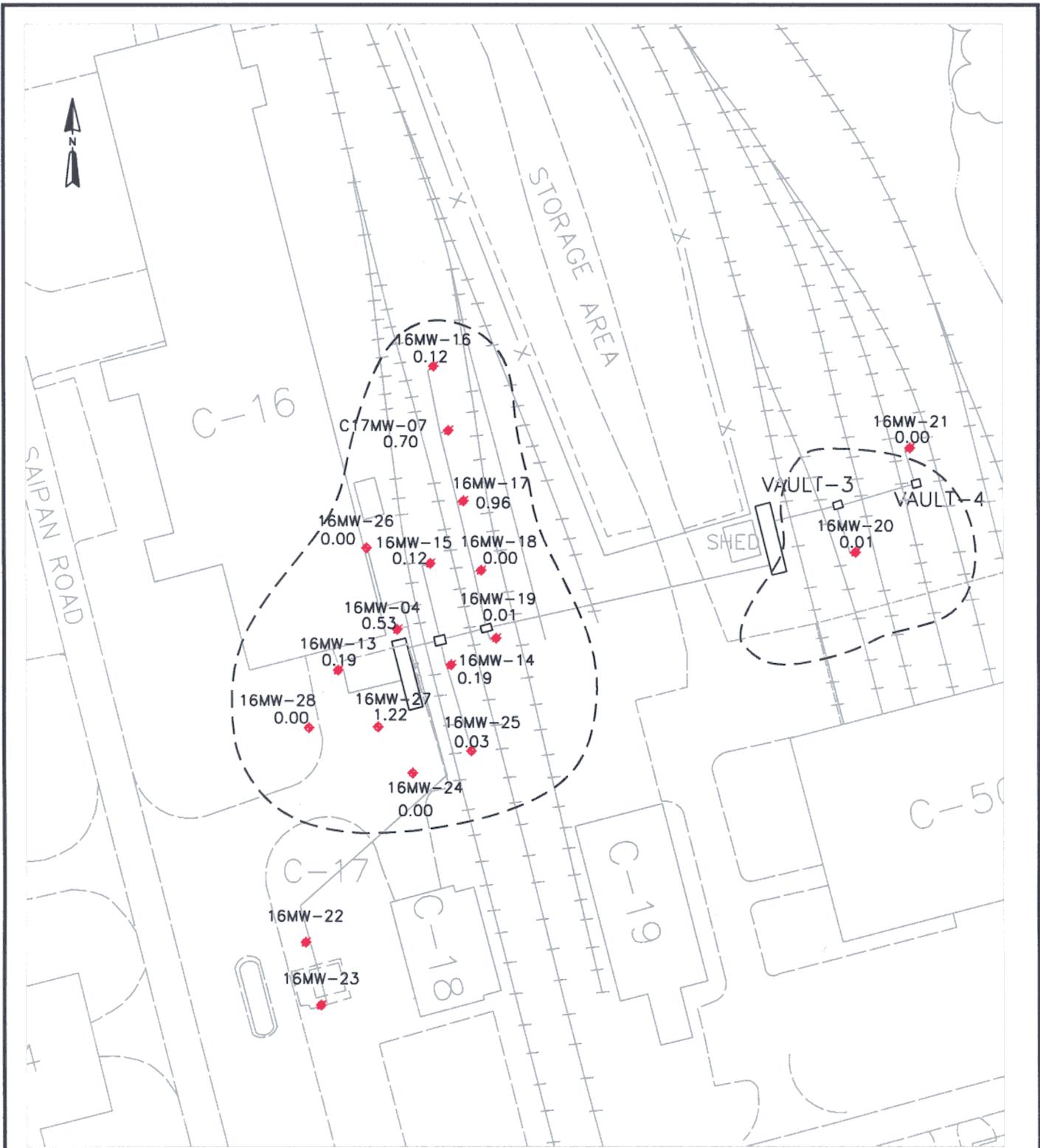


**U.S. Navy RAC
NWS - Earle, Colts Neck, NJ**

Figure 5-2
Product Thickness (ft.) Isoleth
07/16/2002



FOSTER WHEELER ENVIRONMENTAL CORPORATION



Legend

 Product plume boundary based on former SCAPs Study

 0 40 80
FEET

H:\GISPROJ\EARLE\prod08_15_02.dwg

U.S. Navy RAC
NWS - Earle, Colts Neck, NJ

Figure 5-3
 Product Thickness (ft.) Isopleth
 08/15/2002

 FOSTER WHEELER ENVIRONMENTAL CORPORATION

TABLES

TABLE 1
NAVAL WEAPONS STATION-EARLE
BIOSLURPER UNITS
FREE-PHASE OIL EXTRACTION TO DATE

	1998 Free-Phase Oil Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1		400	375	275	300	ND	ND	225	250	250	140	225	2440.0
Bioslurper System #2		25	50	50	20	ND	ND	55	30	40	20	30	320.0
Total		425	425	325	320			280	280	290	160	255	2760.0
	1999 Free-Phase Oil Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	220	50	125	65	ND	ND	ND	34	ND	ND	66	ND	560.0
Bioslurper System #2	20	15	15	10	ND	ND	ND	14	ND	ND	14	ND	68.0
Total	240	65	140	75				48			80		648.0
	2000 Free-Phase Oil Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	30	60	78	57	10	15	32	43	57	55	33	32	502.0
Bioslurper System #2	ND	ND	ND	ND	ND	24	1	5	4	0	ND	0	34.0
Total	30	60	78	57	10	39	33	48	61	55	33	32	536.0
	2001 Free-Phase Oil Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	31	45	35	ND	ND	ND	14	48	30	15	30	10	258.0
Bioslurper System #2	ND	4.5	4.5	ND	ND	ND			2	4	0.5	0	15.5
Total	31	49.5	39.5	0	0	0	14	48	32	19	30.5	10	273.5
	2002 Free-Phase Oil Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	52	21	11	16	34	62	53	87					336.0
Bioslurper System #2	6	0.5	0.5	5	2	6	2	5					21.0
Total	58	21.5	11.5	21	36	68	55	92	0	0	0	0	363.0

Notes:

ND - no data due to system not in operation

Total Oil extracted to date (g): 4580.5

TABLE 2
NAVAL WEAPONS STATION-EARLE
BIOSLURPER UNITS
GROUNDWATER EXTRACTION TO DATE

	1998 Groundwater Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1		2675	26,169	23898	12799	ND	ND	16498	34612	29974	20503	40611	207739
Bioslurper System #2		5282	20,586	22607	6584	ND	ND	13537	14451	27850	16196	9141	136234
Total		7957	46755	46505	19383			30035	49063	57824	36699	49752	343973
	1999 Groundwater Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	35078	6536	49834	40889	ND	ND	ND	7321	ND	ND	ND	ND	139658
Bioslurper System #2	8843	536	12956		ND	ND	ND		ND	ND	ND	ND	13492
Total	43921	7072	62790	40889	ND	ND	ND	7321	ND	ND	ND	ND	161993
	2000 Groundwater Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	3393	4618	9842	10945	2764	14112	19758	23298	36900	31669	27785	30231	215315
Bioslurper System #2	ND	ND	ND	ND	ND	2976	5549	17704	21156	21588	ND	20848	89821
Total	3393	4618	9842	10945	2764	17088	25307	41002	58056	53257	27785	51079	305136
	2001 Groundwater Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	25897	30981	33832				2812	12136	7669	1665	4635	3080	122707
Bioslurper System #2	ND	15852	19914						2967	6814	1277	345	47169
Total	25897	46833	53746	0	0	0	2812	12136	10636	8479	5912	3425	169876
	2002 Groundwater Extracted (gallons)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	13137	9292	16151	12749	24926	19641	24875	31129					151900
Bioslurper System #2	1095	1224	5726	7639	7727	6464	5362	5977					41214
Total	14232	10516	21877	20388	32653	26105	30237	37106	0	0	0	0	193114

Total Groundwater Extracted to Date = 1,174,092

TABLE 3
NAVAL WEAPONS STATION-EARLE
BIOSLURPER UNITS
TOTAL PETROLEUM HYDROCARBON (TPH)
REMOVED VIA GROUNDWATER TREATMENT

	1998 TPH Removed via Groundwater Treatment (pounds)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1		60.75	125.14	306.42	135.56	ND	ND	47.30		175.99	179.16	192.96	1223.28
Bioslurper System #2		4.25	14.17	32.40	9.61	ND	ND		13.99	2.37	4.26	11.48	92.53
Total		65.00	139.31	338.82	145.17	ND	ND	47.30	13.99	178.36	183.42	204.44	1315.81
	1999 TPH Removed via Groundwater Treatment (pounds)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	60.48	56.18	394.28	285.29	ND	ND	ND	ND	ND	ND	0.29	ND	796.52
Bioslurper System #2	3.84	0.21	29.30	15.20	ND	ND	ND	ND	ND	ND	0.01	ND	44.72
Total	64.32	56.39	423.58	300.49	ND	ND	ND	ND	ND	ND	0.30	ND	845.08
	2000 TPH Removed via Groundwater Treatment (pounds)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	8.58	ND	17.20	30.99	ND	31.80	18.14	ND	95.47	160.86	92.04	327.49	782.56
Bioslurper System #2	0.01	ND	ND	ND	ND	0.11	0.40	ND	2.63	37.55	ND	21.71	62.39
Total	8.59	ND	17.20	30.99	0.00	31.91	18.53	ND	98.10	198.40	92.04	ND	844.95
	2001 TPH Removed via Groundwater Treatment (pounds)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	34.31	45.04	50.54	ND	ND	ND	0.07	52.80	2.61	2.25	2.97	10.82	201.42
Bioslurper System #2	ND	8.59	59.43	ND	ND	ND	ND	ND	1.12	3.73	0.13	0.01	73.01
Total	34.31	49.65	109.97	0.00	0.00	0.00	0.07	52.80	3.73	5.98	3.10	ND	197.91
	2002 TPH Removed via Groundwater Treatment (pounds)												Year Total
	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	
Bioslurper System #1	40.35	21.35	13.51	35.86	21.58	7.60	581.16	73.62					795.03
Bioslurper System #2	2.40	0.18	4.68	0.75	5.08	1.60	2.77	1.13					16.19
Total	42.75	21.53	18.19	36.61	26.66	9.20	583.93	ND	0.00	0.00	0.00	ND	197.91

Pounds of TPH Removed via Groundwater Treatment to Date = 3203.75

Notes:

ND - no data due to system not in operation

Pounds of TPH: Influent - effluent concentration (mg/l) x 3.785 l/gal x 0.001 g/mg x 0.002205 lb/g x monthly effluent (gal) = lbs TPH

TABLE 4
NAVAL WEAPONS STATION-EARLE
BIOSLURPER UNITS NO. 1 AND NO. 2
TOTAL PETROLEUM HYDROCARBON (TPH)
EFFLUENT CONCENTRATIONS (mg/l)

Effluent Sample Date	Unit No. 1		Unit No. 2	
	Before Clay/Carbon	After Clay/Carbon	Before Clay/Carbon	After Clay/Carbon
02/29/00	<0.5	<0.5	NA	NA
04/04/00	210	0.57	NA	NA
04/28/00	16(A)EW00W5	16(A)EW00W6		
	340	0.68	NA	NA
06/19/00	270	<1.0	4.4	<1.0
07/21/00	16(A)EW00W10	16(A)EW00W09	16(B)EW00W05	16(B)EW00W06
	110	<1.0	8.7	<1.0
09/07/00	16(A)EW11	16(A)EW12	16(B)EW07	16(B)EW08
	310	5.1	18	3.1
10/30/00	16(A)EW13	16(A)EW14	16(B)EW09	16(B)EW10
	610	1.4	210	1.6
11/30/00	16(A)EW15	16(A)EW16	16(B)EW11	16(B)EW12
	400	3.1	220	2
12/28/00	16(A)EW17	16(A)EW18	16(B)EW13	16(B)EW14
	1300	2.4	1301	2.6
01/29/01	16(A)EW19	16(A)EW20	16(B)EW15	16(B)EW16
	210	1.6	75	1.6
02/27/01	16(A)EW21	16(A)EW22	16(B)EW17	16(B)EW18
	160	1.2	67	2.1
03/30/01	16(A)EW23	16(A)EW24	16(B)EW19	16(B)EW20
	180	1	360	2.4
07/31/01	16(A)EW24	16(A)EW25	NA	NA
	3.1	0.018	NA	NA
08/29/01	16(A)EW27	16(A)EW28	NA	NA
	187	<0.068	NA	NA
09/30/01	16(A)EW27	16(A)EW28	16(B)EW19	16(B)EW20
	40.8	<0.068	45.3	<0.067
10/31/01	16(A)EW31	16(A)EW32	16(B)EW01	16(B)EW02
	50	<0.07	65.7	<0.066
11/30/01	16(A)EW33	16(A)EW34	16(B)EW05	16(B)EW06
	76.9	0.18	12	<.20

TABLE 4
NAVAL WEAPONS STATION-EARLE
BIOSLURPER UNITS NO. 1 AND NO. 2
TOTAL PETROLEUM HYDROCARBON (TPH)
EFFLUENT CONCENTRATIONS (mg/l)

Effluent Sample Date	Unit No. 1		Unit No. 2	
	Before Clay/Carbon	After Clay/Carbon	Before Clay/Carbon	After Clay/Carbon
01/09/02	16(A)EW35	16(A)EW36	16(B)EW07	16(B)EW08
	421	<0.066	2.3	<0.066
01/31/02	16(A)EW31	16(A)EW32	16(B)EW01	16(B)EW02
	368	<0.066	22.1	<0.066
02/27/02	16(A)EW39	16(A)EW40	16(B)EW11	16(B)EW12
	276	0.7	17.6	
02/28/02	16(A)EW41	16(A)EW42	16(B)EW13	16(B)EW14
	101	0.81	98.1	0.19
03/29/02	16(A)EW41	16(A)EW42	16(B)EW13	16(B)EW14
	101	0.81	98.1	0.24
04/23/02	16(A)EW43	16(A)EW44	16(B)EW15	0.24
	338	0.96	12	0.19
05/29/02	16(A)EW45	16(A)EW46	16(B)EW17	16(B)EW18
	104	0.28	78.9	0.076
06/28/02	16(A)EW47	16(A)EW48	16(B)EW19	16(B)EW20
	46.6	0.23	29.7	0.11
07/29/02	16(A)EW49	16(A)EW50	16(B)EW21	16(B)EW22
	2800	0.63	62.5	0.54
08/28/02	16(A)EW51	16(A)EW52	16(B)EW23	16(B)EW24
	284	0.61	23.3	0.74

Notes:

All units are mg/l

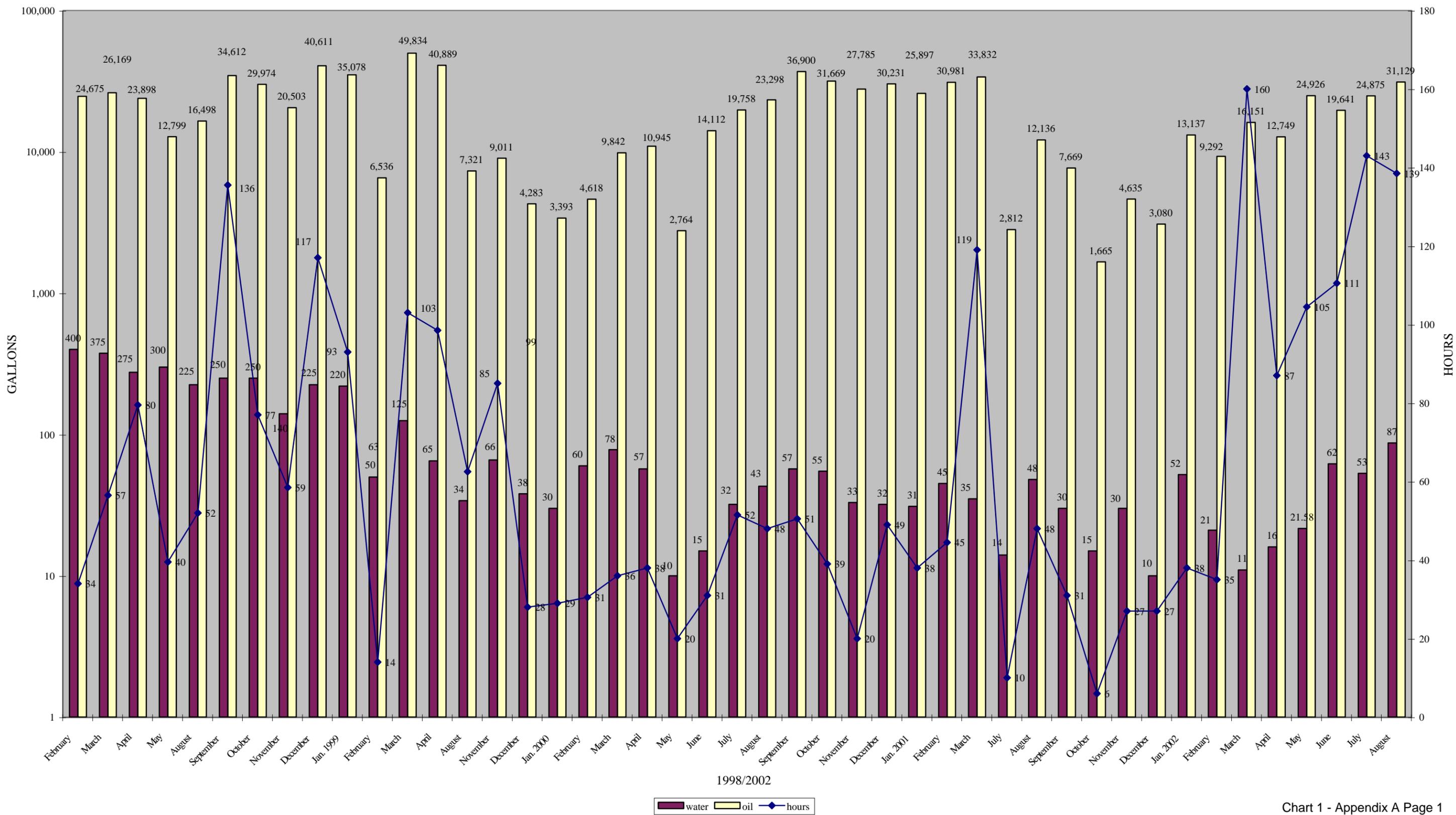
The NWS-Earle Sewer Treatment Plant NJPDES Permit Discharge Limit for TPH is 10 ppm.

ND = not detected above the laboratory detection limit.

NA = not applicable (no sample collected)

APPENDIX A
GRAPHS OF OIL/WATER EXTRACTED TO DATE

BIOSLURPER UNIT 1 OIL/WATER RECOVERED VERSUS OPERATIONAL TIME



BIOSLURPER UNIT 2 OIL/WATER RECOVERED VERSUS OPERATIONAL TIME

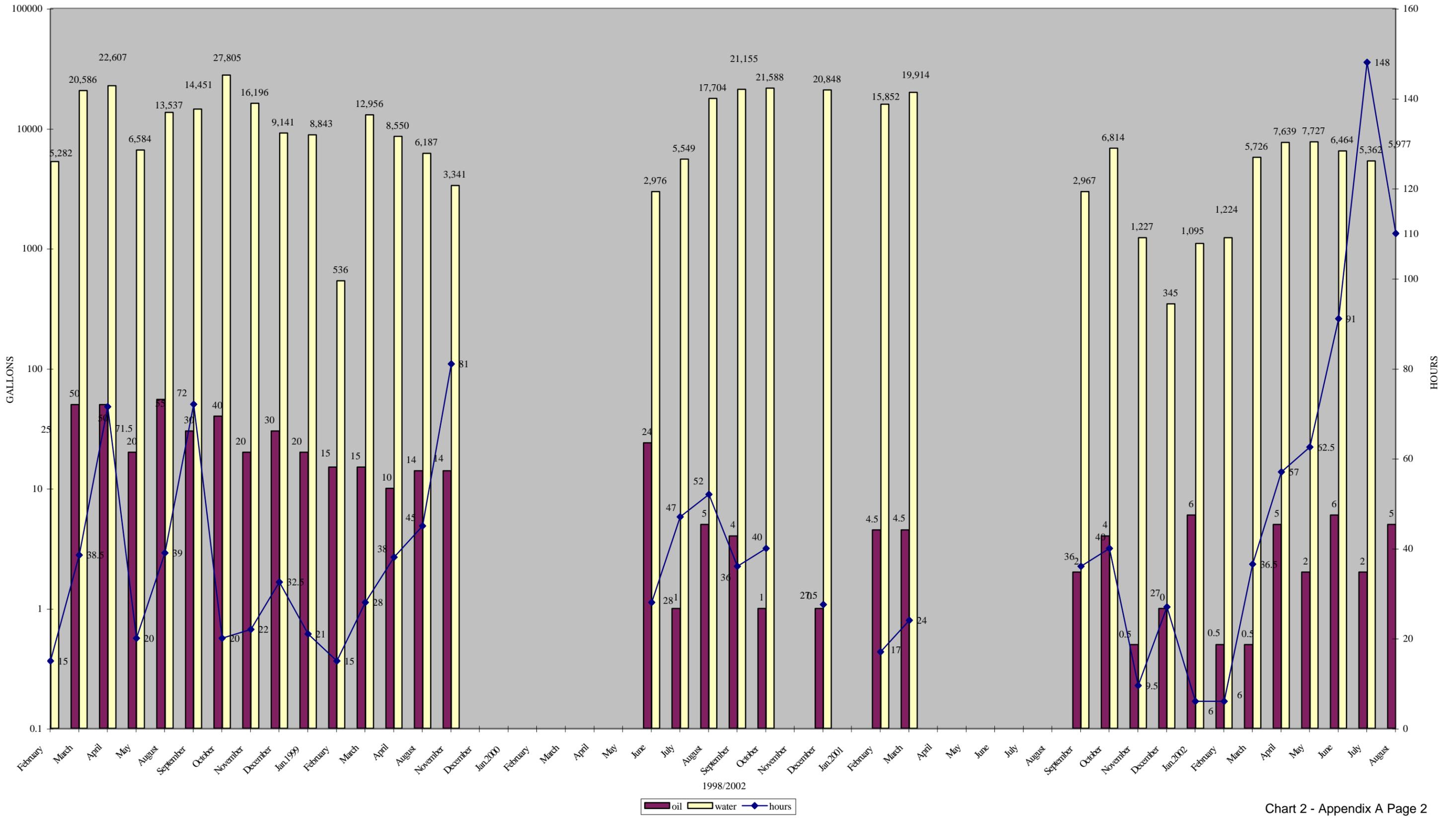
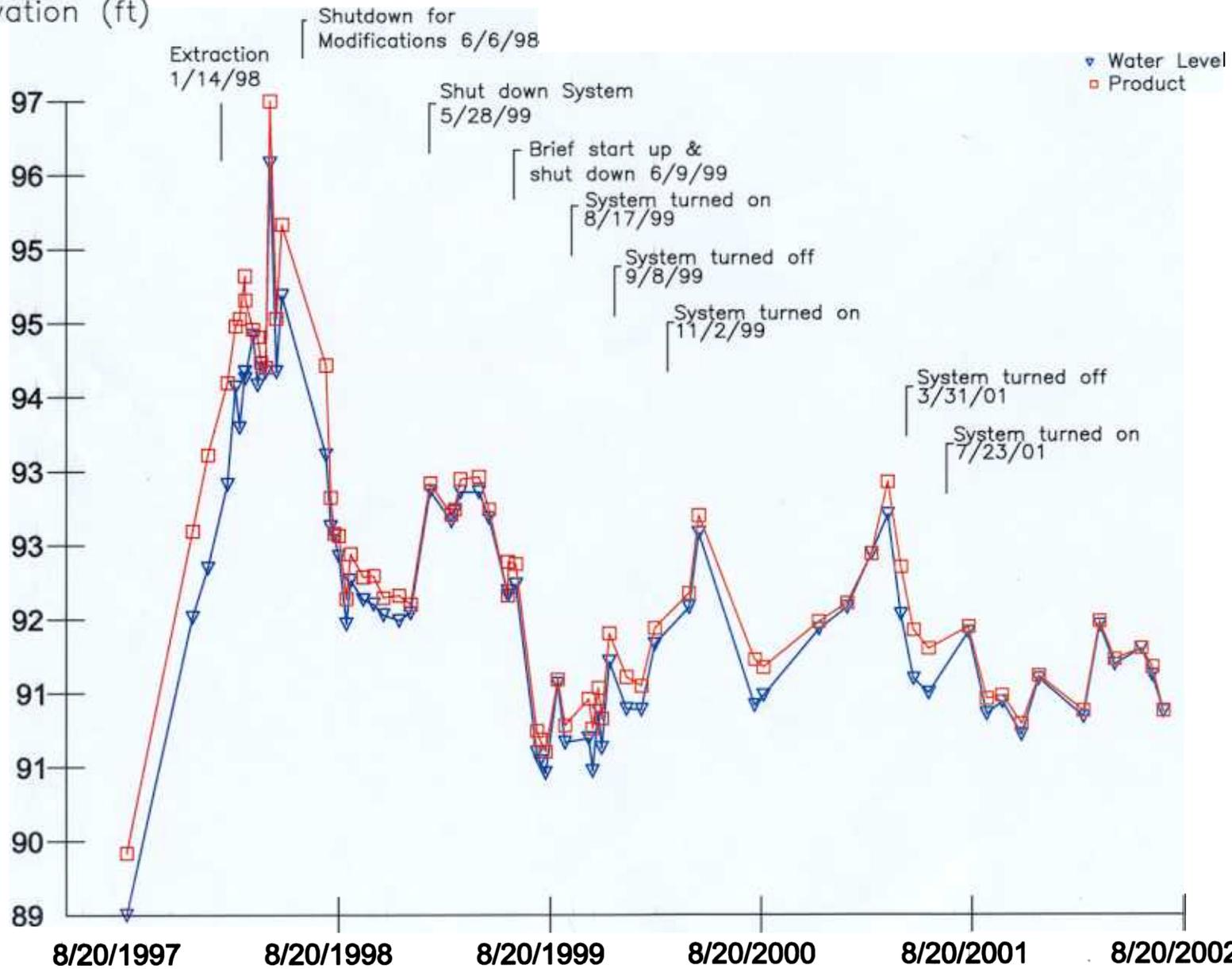


Chart 2 - Appendix A Page 2
BIOS 2 Chart

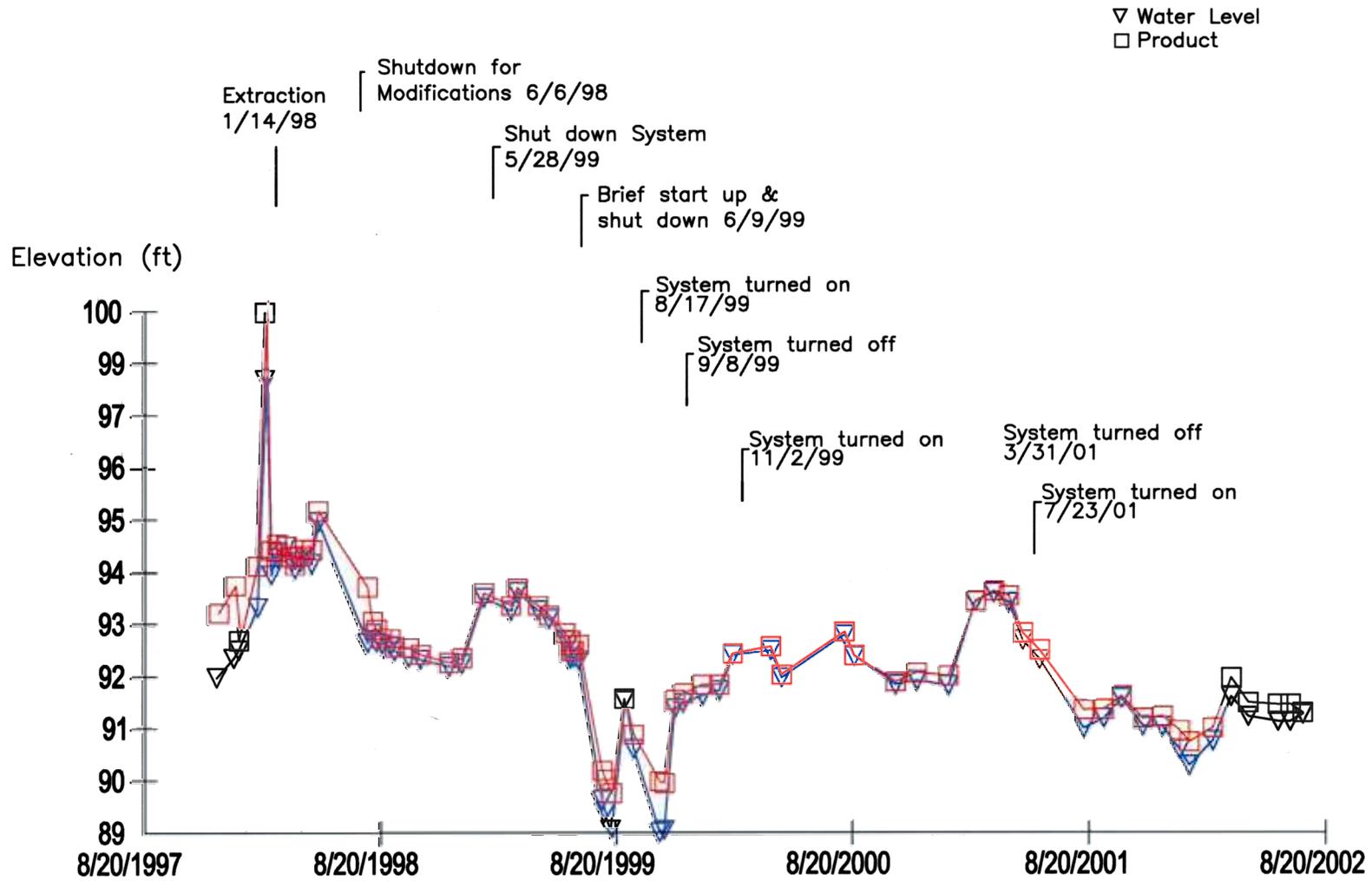
APPENDIX B
GRAPHS OF WATER LEVELS AND PRODUCT THICKNESS
DATA FROM EXTRACTION WELLS

Water Level & Product Surface Elevation 16MW-04

Elevation (ft)

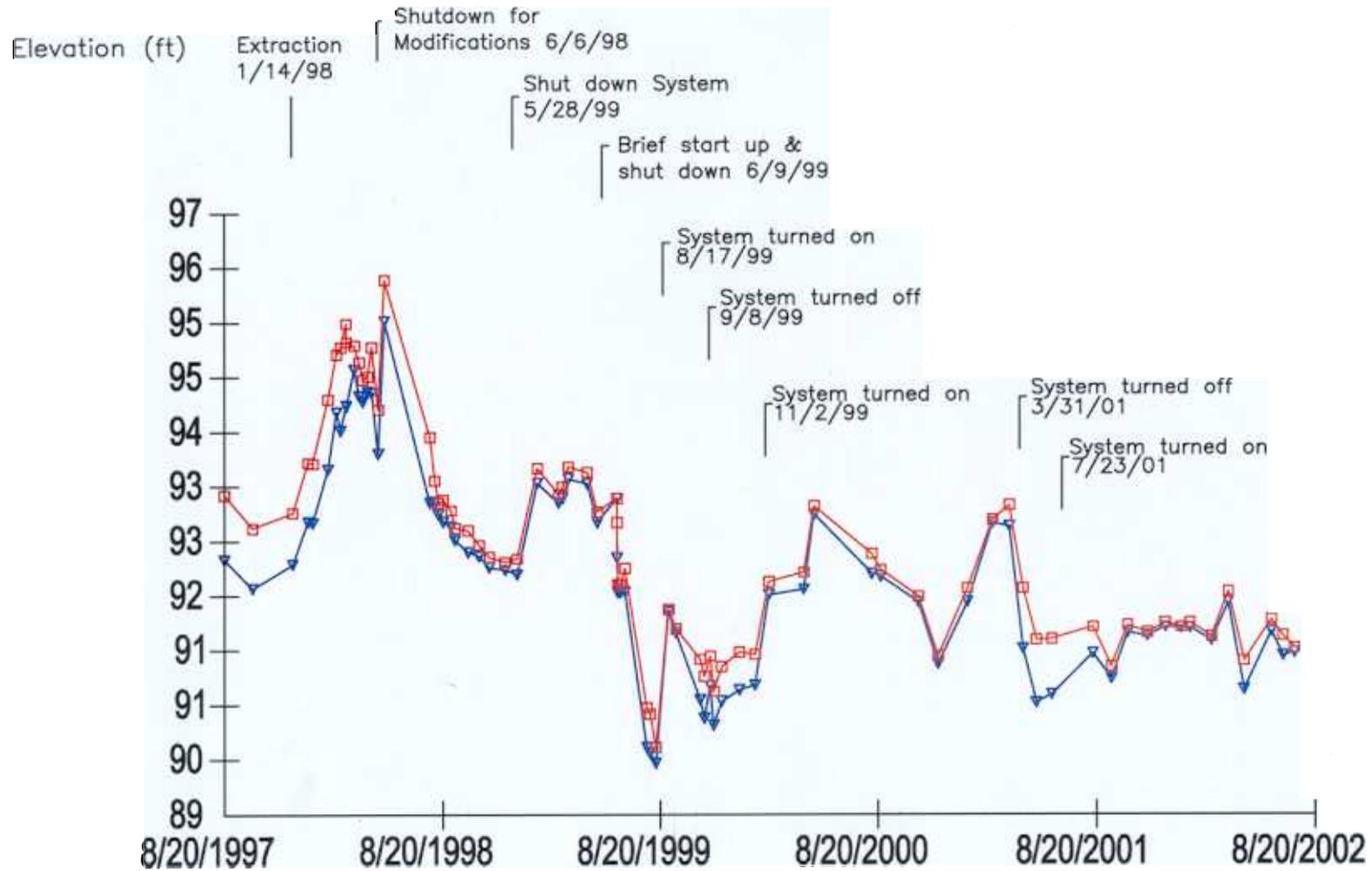


Water Level & Product Surface Elevation C17MW-07

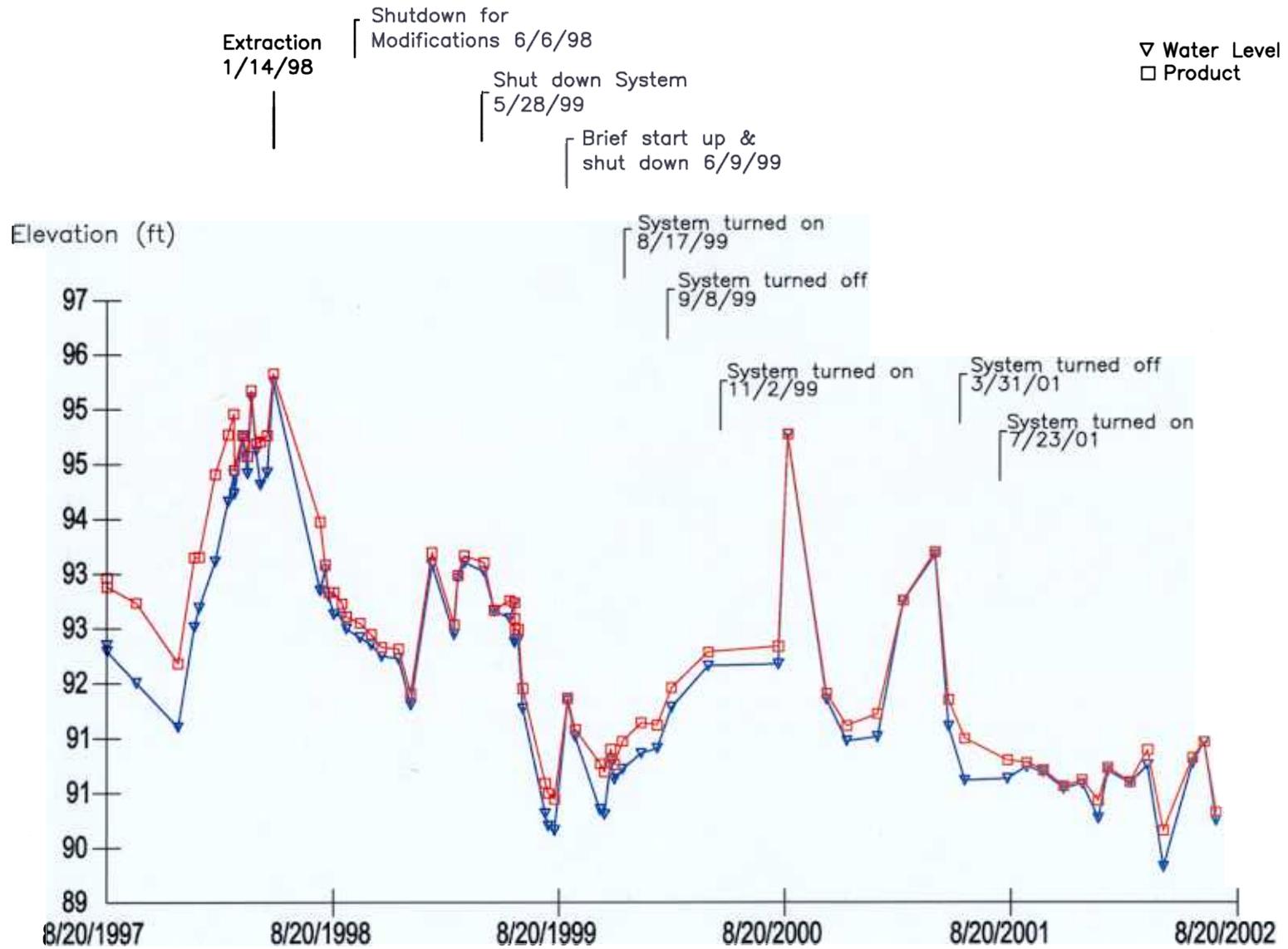


Water Level & Product Surface Elevation 16MW-13

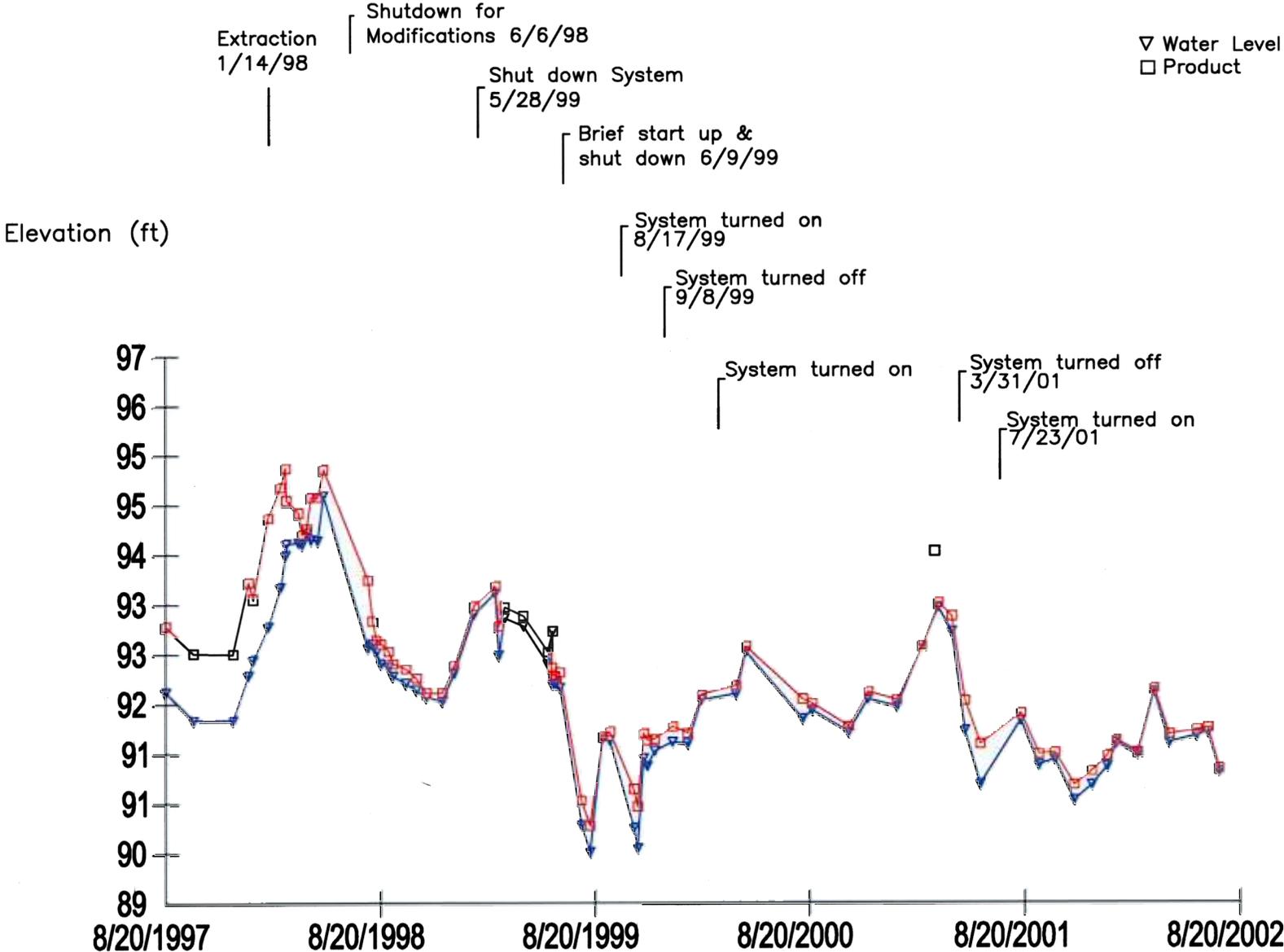
▽ Water Level
□ Product



Water Level & Product Surface Elevation 16MW-14

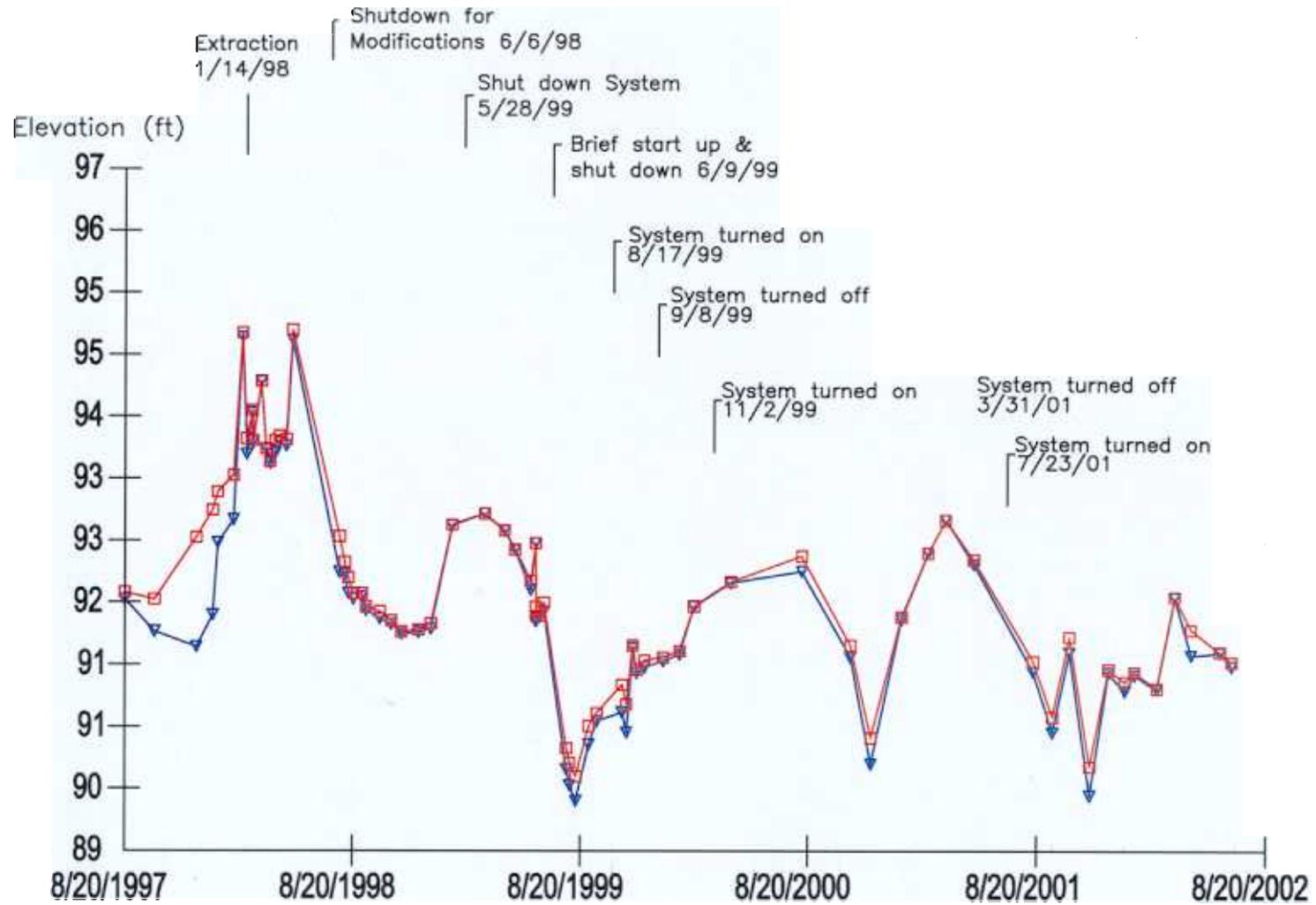


Water Level & Product Surface Elevation 16MW-15

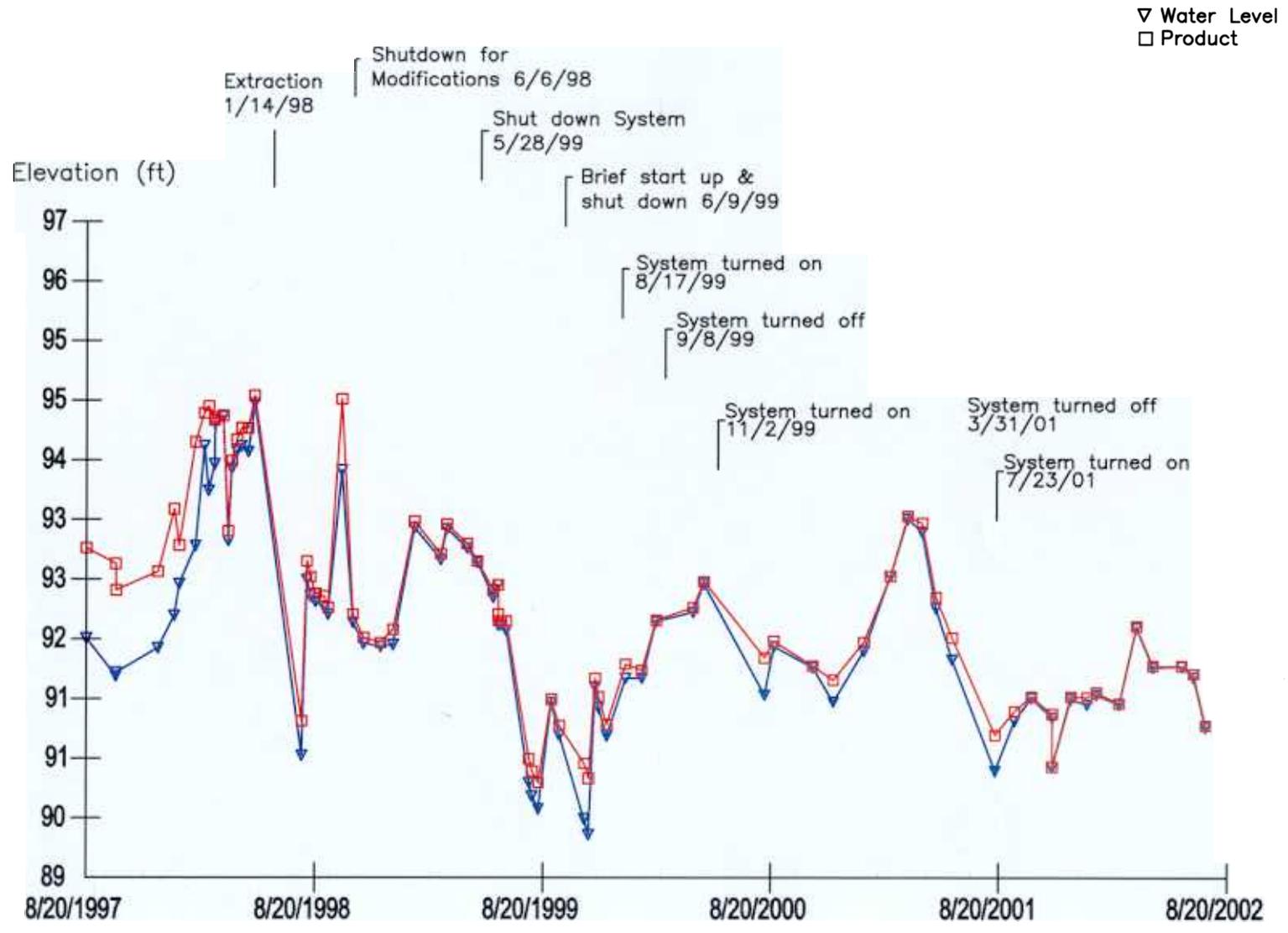


Water Level & Product Surface Elevation 16MW-16

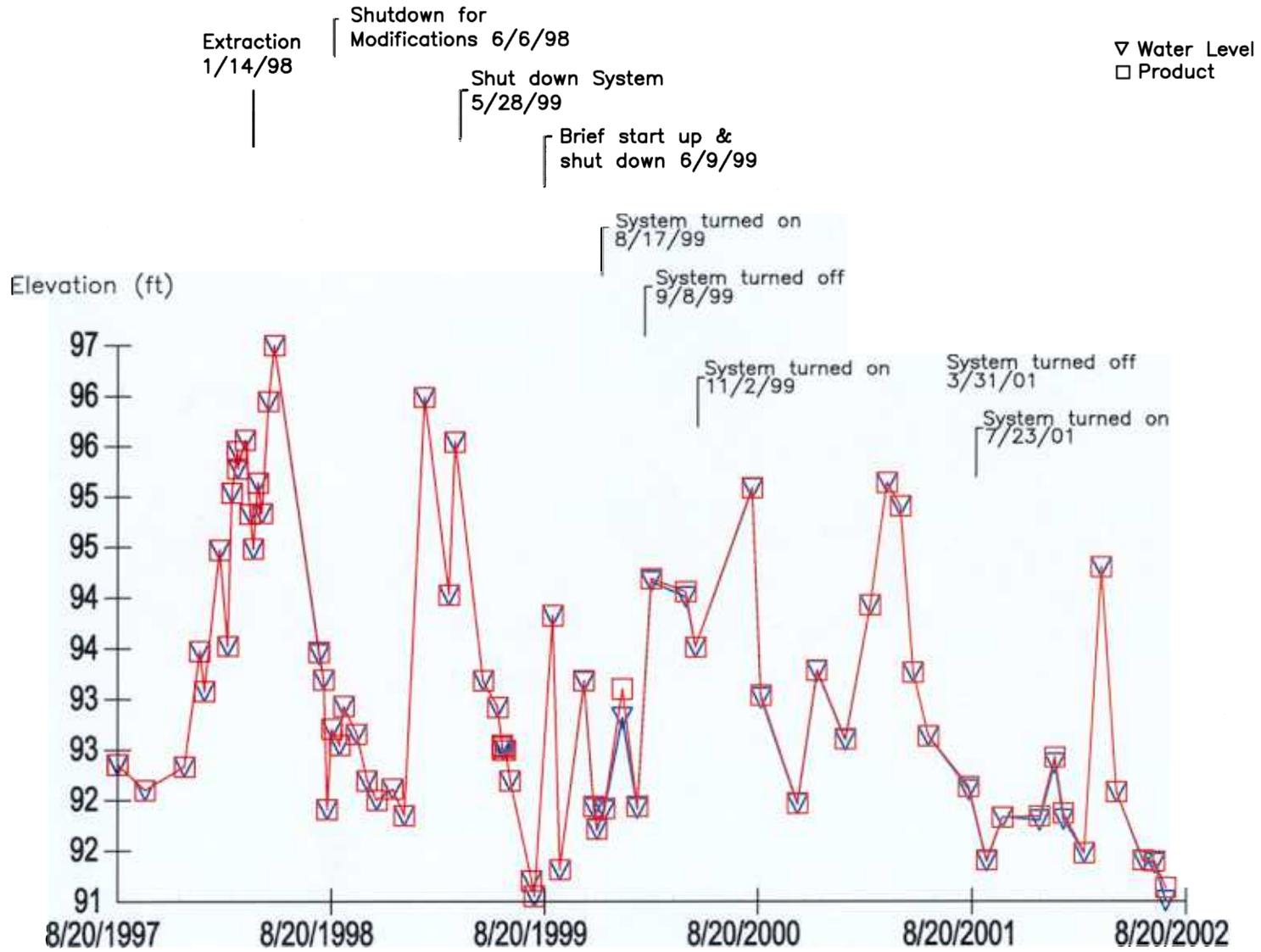
▽ Water Level
□ Product



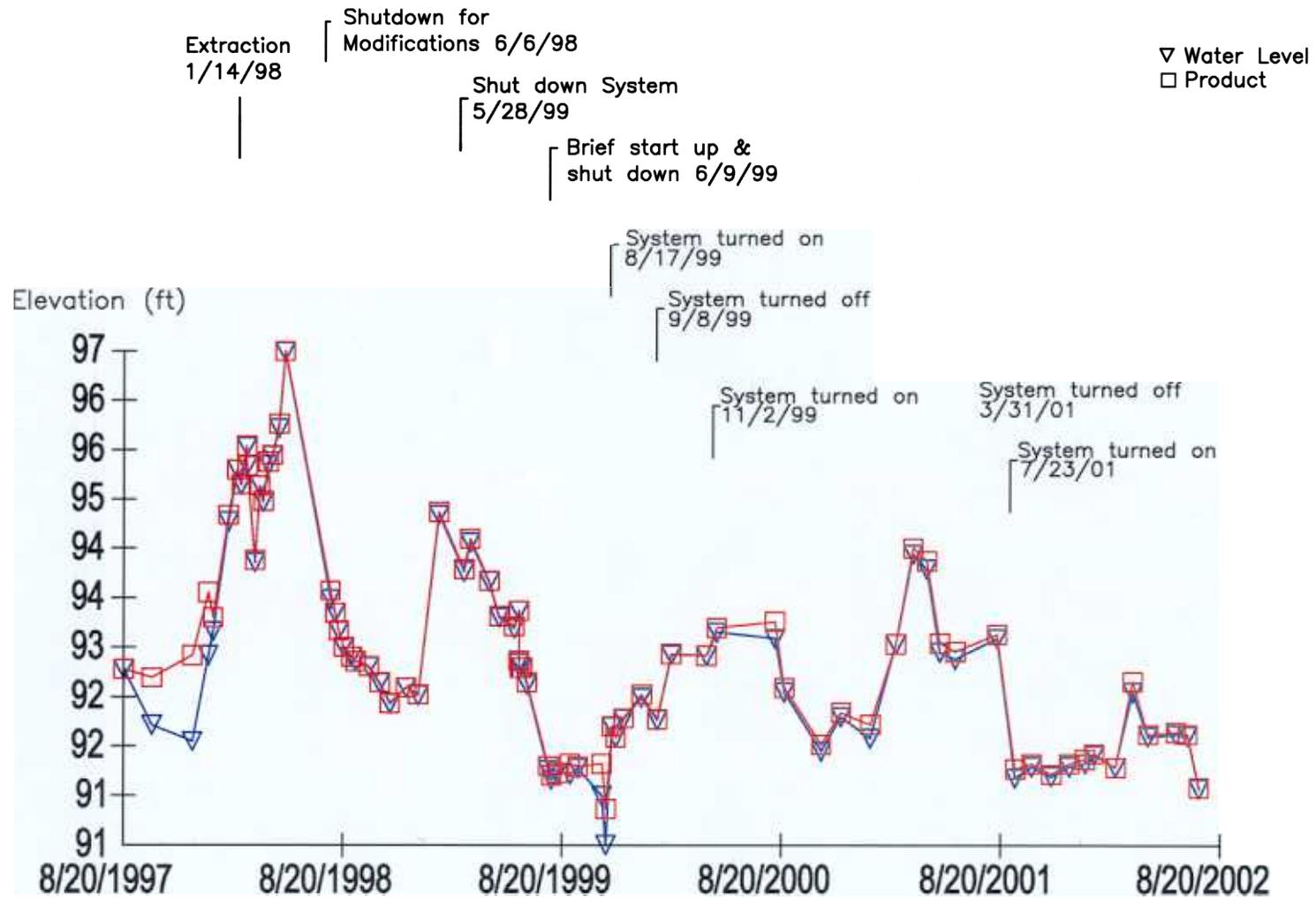
Water Level & Product Surface Elevation 16MW-17



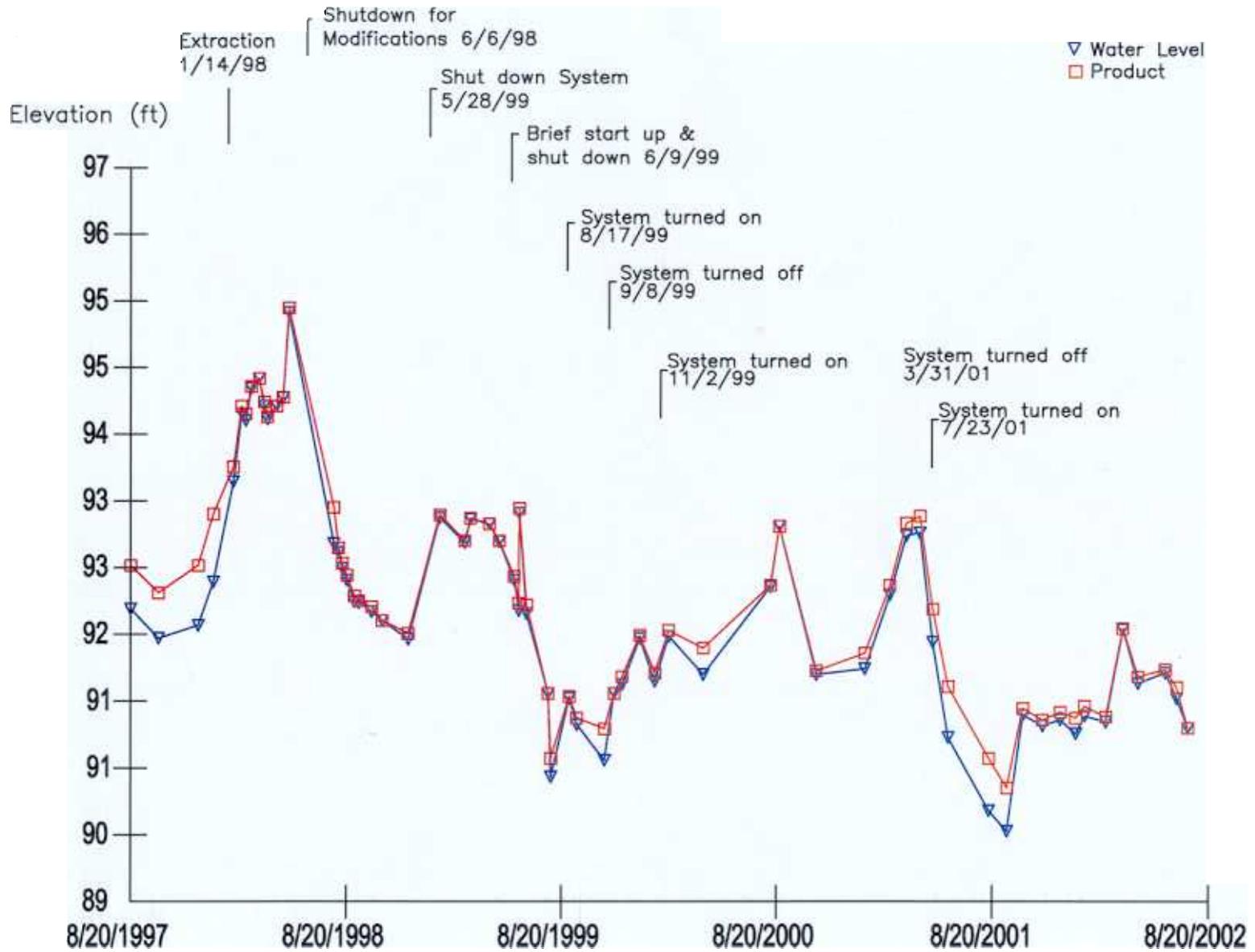
Water Level & Product Surface Elevation 16MW-18



Water Level & Product Surface Elevation 16MW-19



Water Level & Product Surface Elevation 16MW-20

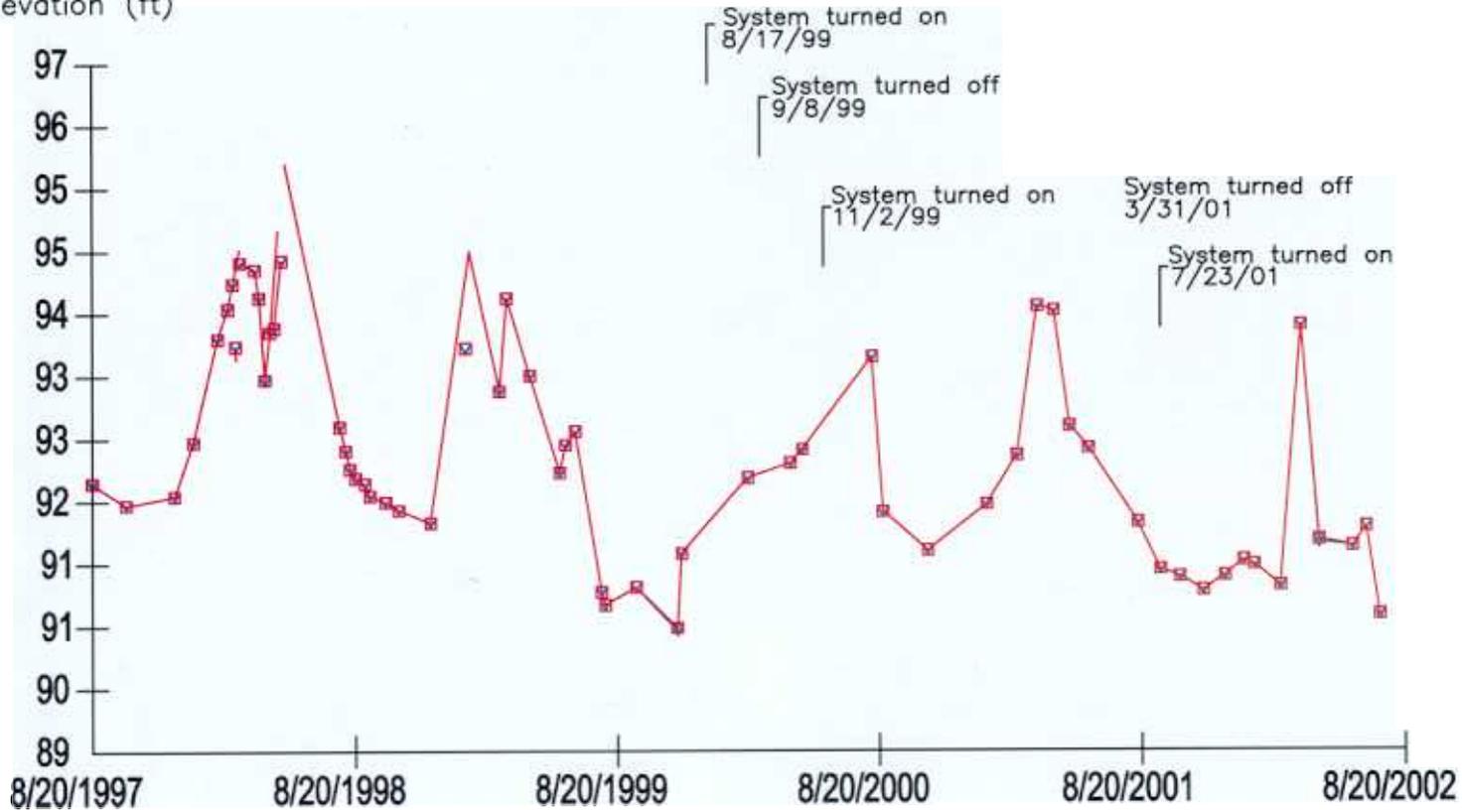


Water Level & Product Surface Elevation 16MW-21

▽ Water Level
□ Product

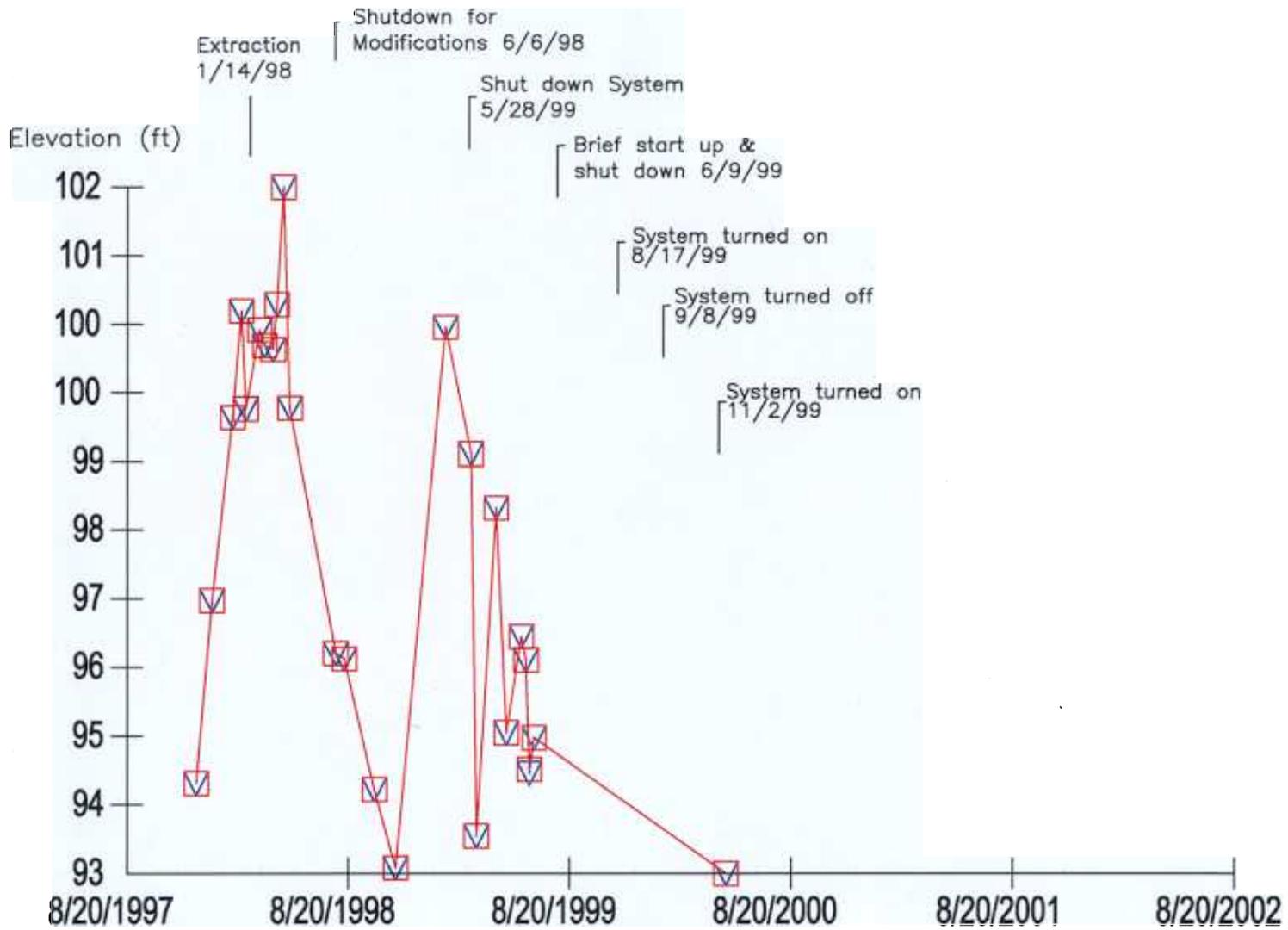
Extraction 1/14/98
Shut down for Modifications 6/6/98
Shut down System 5/28/99
Brief start up & shut down 6/9/99

Elevation (ft)

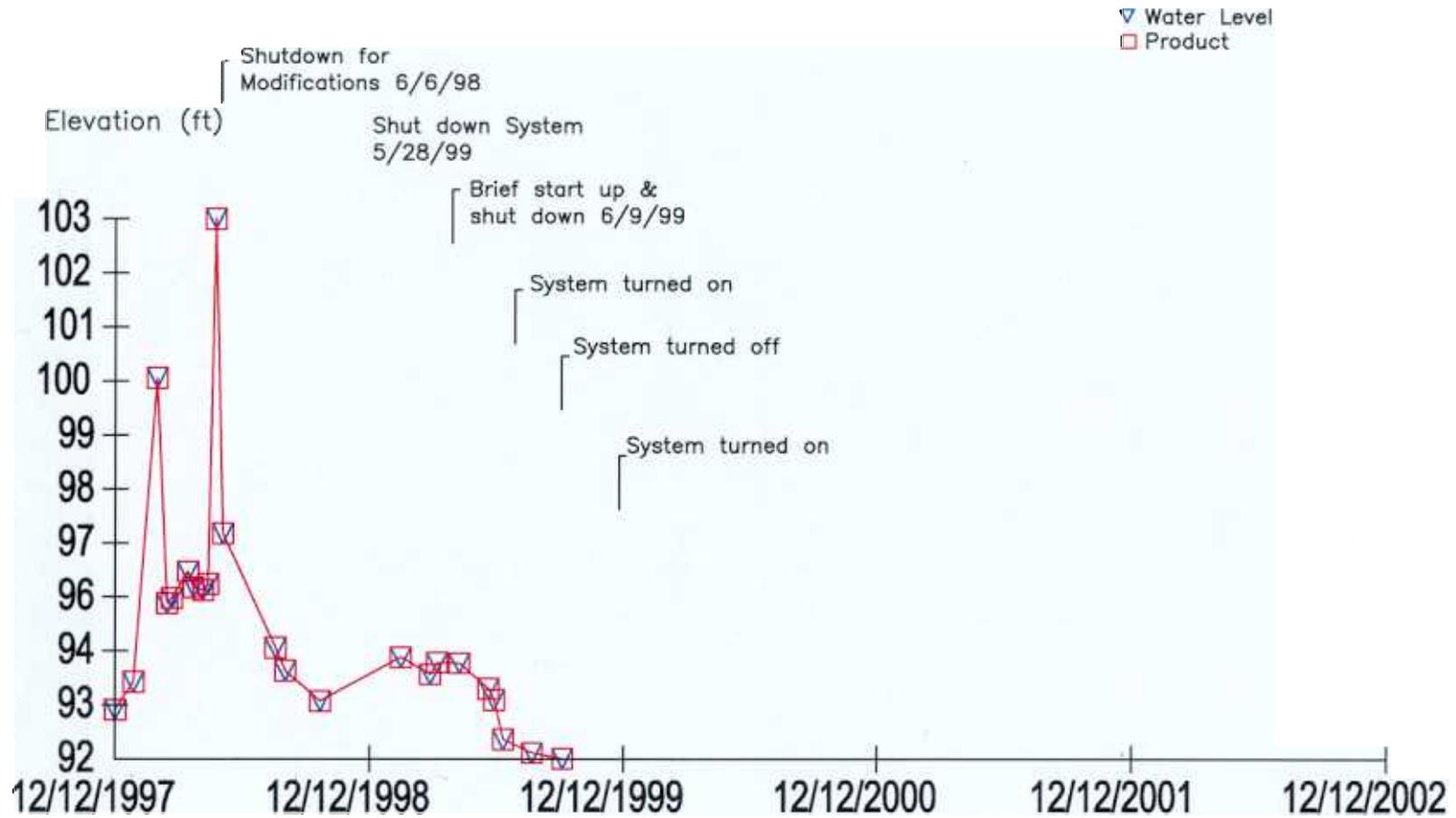


Water Level & Product Surface Elevation 16MW-22

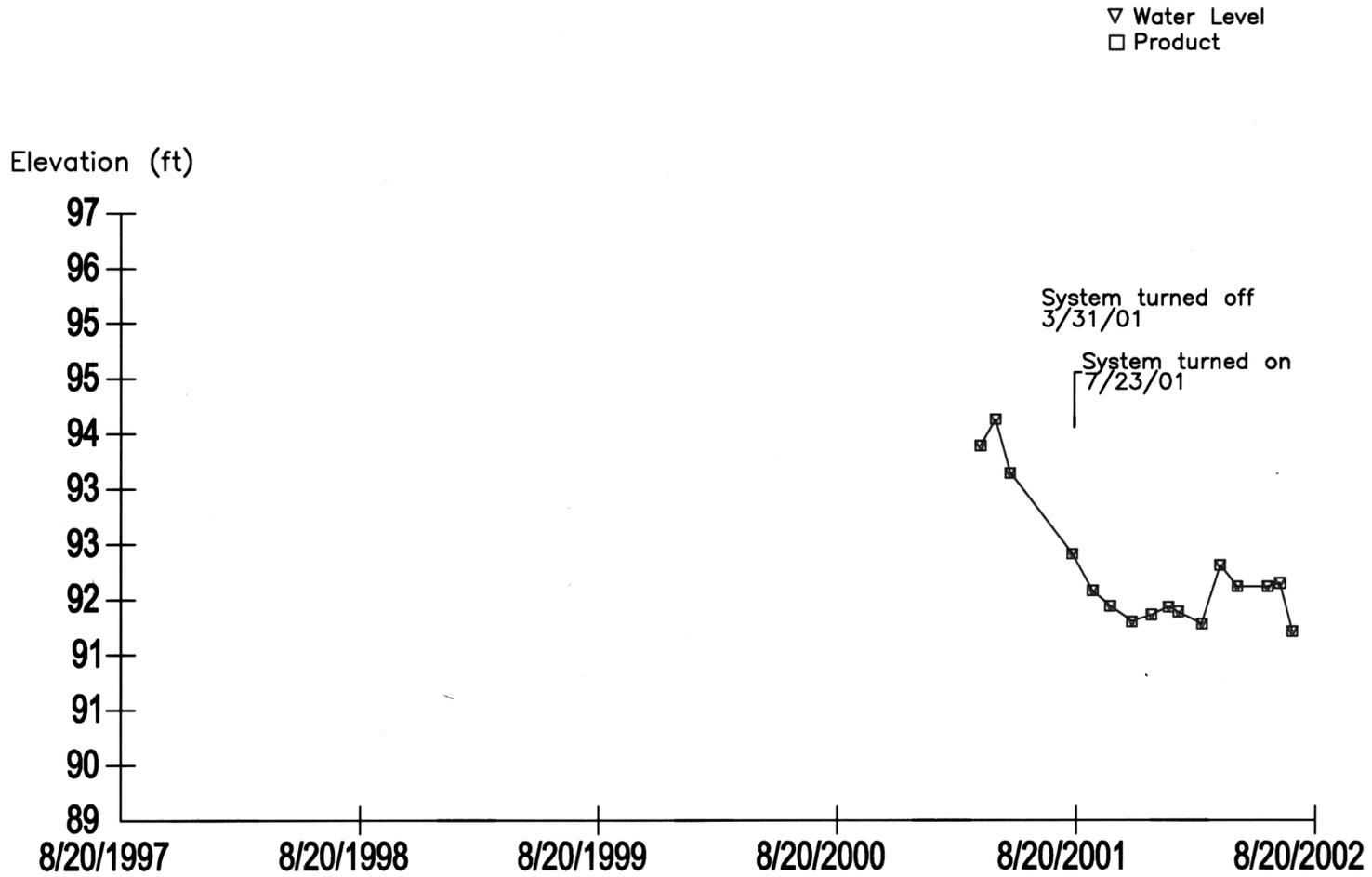
▽ Water Level
□ Product



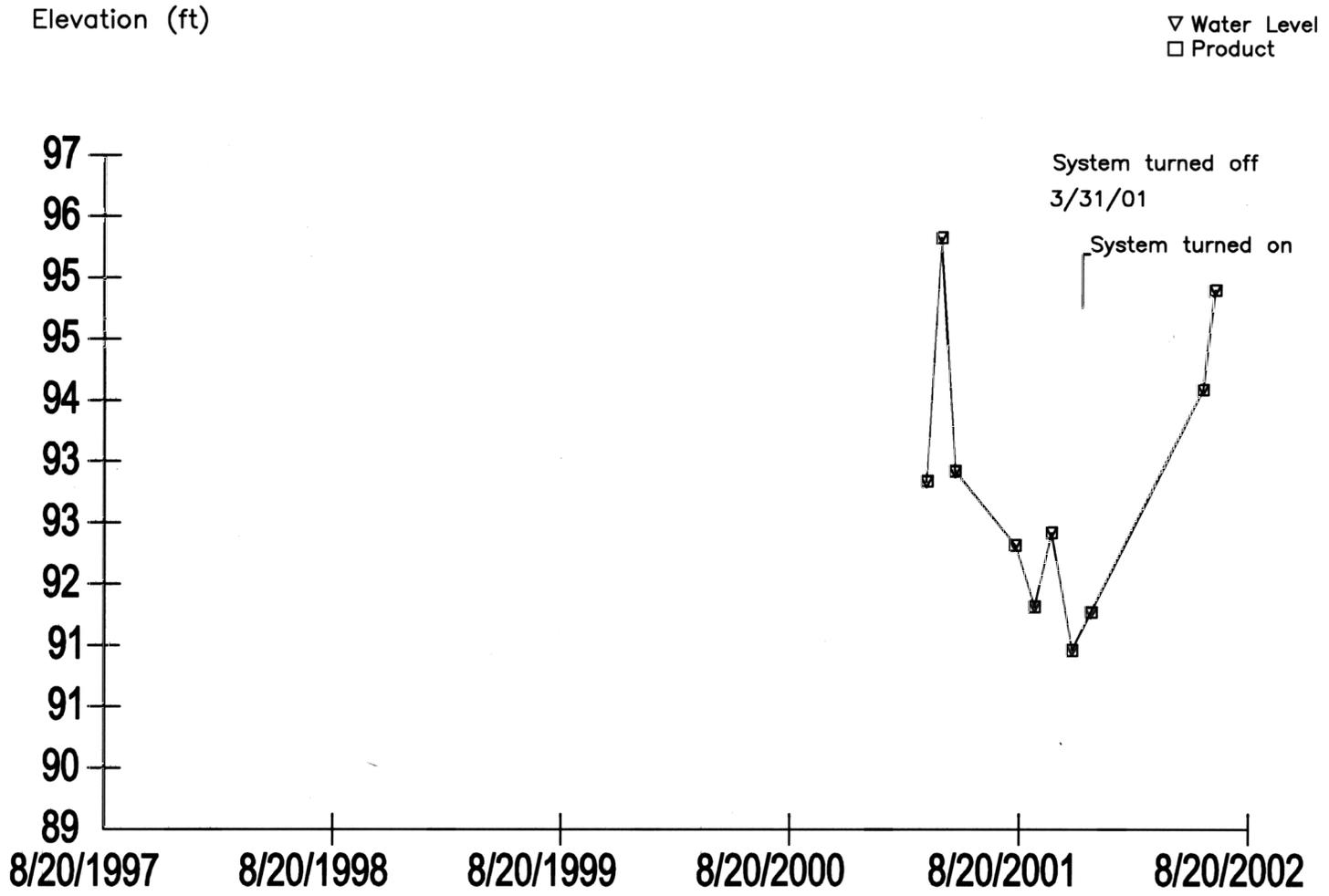
Water Level & Product Surface Elevation 16MW-23



Water Level & Product Surface Elevation 16MW-24



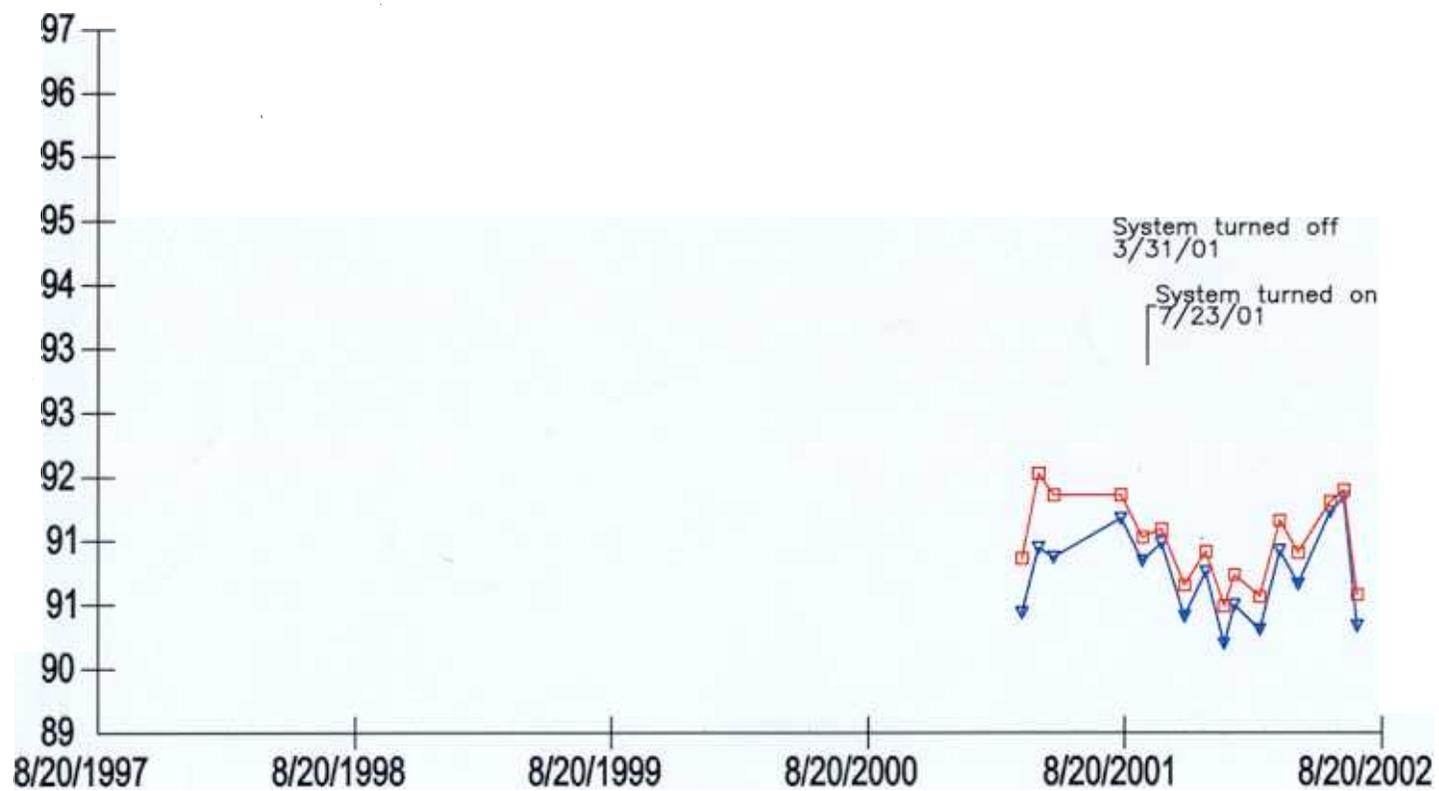
Water Level & Product Surface Elevation 16MW-26



Water Level & Product Surface Elevation 16MW-27

▽ Water Level
□ Product

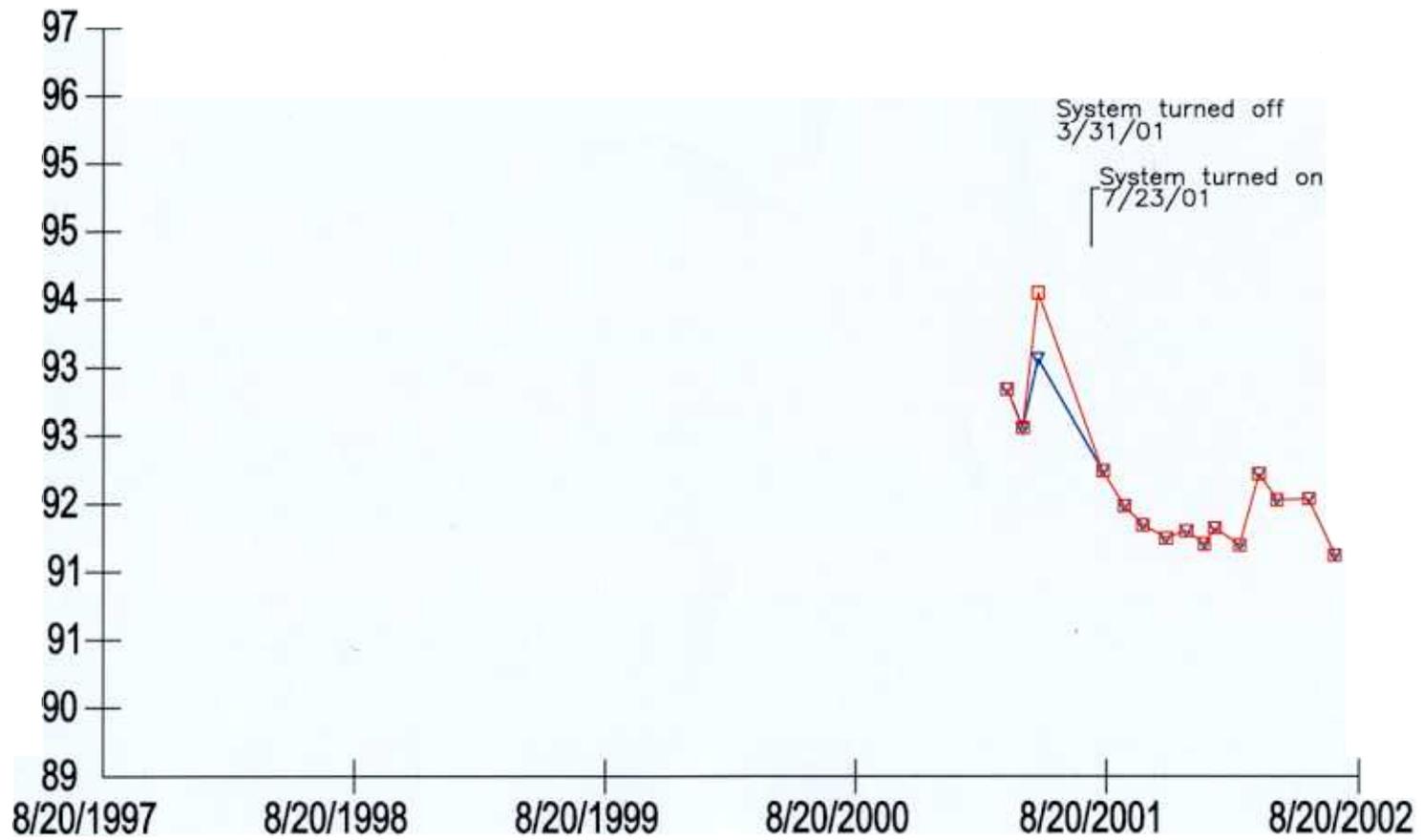
Elevation (ft)



Water Level & Product Surface Elevation 16MW-28

▽ Water Level
□ Product

Elevation (ft)



Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-04	8/20/1997	101.23	11:34	11.93	0.58	89.31	NA	89.80
16MW-04	12/12/1997	101.23	00:00	9.19	0.79	92.04	2.74	92.71
16MW-04	1/7/1998	101.23	11:02	8.74	1.04	92.49	0.45	93.38
16MW-04	2/10/1998	101.23	00:00	7.98	0.94	93.26	0.76	94.05
16MW-04	2/24/1998	101.23	00:00	7.09	0.57	94.15	0.89	94.63
16MW-04	3/3/1998	101.23	00:00	7.45	1.00	93.78	-0.37	94.63
16MW-04	3/12/1998	101.23	00:00	6.95	0.89	94.29	0.51	95.04
16MW-04	3/13/1998	101.23	00:00	7.00	0.72	94.23	-0.05	94.84
16MW-04	3/26/1998	101.23	00:00	6.60	0.05	94.63	0.40	94.67
16MW-04	4/3/1998	101.23	00:00	7.07	0.45	94.17	-0.46	94.54
16MW-04	4/9/1998	101.23	00:00	6.86	0.01	94.37	0.20	94.38
16MW-04	4/17/1998	101.23	00:00	6.94	0.04	94.29	-0.08	94.32
16MW-04	4/24/1998	101.23	00:00	5.03	0.58	96.20	1.91	96.69
16MW-04	5/5/1998	101.23	00:00	6.94	0.49	94.29	-1.90	94.78
16MW-04	5/15/1998	101.23	00:00	6.24	0.65	94.99	0.69	95.54
16MW-04	7/30/1998	101.23	00:00	7.70	0.82	93.53	-1.46	94.23
16MW-04	8/7/1998	101.23	00:00	8.36	0.27	92.87	-0.66	93.10
16MW-04	8/13/1998	101.23	00:00	8.44	0.02	92.79	-0.08	92.81
16MW-04	8/21/1998	101.23	00:00	8.63	0.19	92.60	-0.19	92.76
16MW-04	9/3/1998	101.23	00:00	9.25	0.23	91.98	-0.62	92.18
16MW-04	9/10/1998	101.23	00:00	8.85	0.24	92.38	0.40	92.58
16MW-04	10/2/1998	101.23	00:00	9.03	0.21	92.20	-0.18	92.38
16MW-04	10/20/1998	101.23	00:00	9.07	0.26	92.16	-0.04	92.38
16MW-04	11/6/1998	101.23	00:00	9.17	0.16	92.06	-0.10	92.19
16MW-04	12/3/1998	101.23	00:00	9.23	0.24	92.01	-0.05	92.21
16MW-04	12/23/1998	101.23	00:00	9.15	0.08	92.08	0.07	92.15
16MW-04	1/26/1999	101.23	00:00	8.04	0.08	93.20	1.12	93.26
16MW-04	3/3/1999	101.23	00:00	8.31	0.06	92.92	-0.28	92.97
16MW-04	3/9/1999	101.23	00:00	8.22	0.02	93.01	0.09	93.03
16MW-04	3/19/1999	101.23	00:00	8.04	0.12	93.19	0.18	93.29
16MW-04	4/20/1999	101.23	00:00	8.04	0.14	93.19	0.00	93.31
16MW-04	5/7/1999	101.23	00:00	8.28	0.08	92.95	-0.24	93.02
16MW-04	6/9/1999	101.23	00:00	8.99	0.00	92.24	-0.71	92.24
16MW-04	6/9/1999	101.23	00:01	8.95	0.27	92.28	0.04	92.51
16MW-04	6/22/1999	101.23	08:55	8.89	0.19	92.34	0.06	92.50
16MW-04	7/29/1999	101.23	00:00	10.43	0.20	90.80	-1.54	90.97
16MW-04	8/3/1999	101.23	00:00	10.51	0.20	90.72	-0.08	90.89
16MW-04	8/13/1999	101.23	00:00	10.62	0.20	90.61	-0.11	90.78
16MW-04	9/3/1999	101.23	00:00	9.80	0.04	91.43	0.82	91.46

1- Change in Water Elevation since last reported measurement

2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-04	9/15/1999	101.23	13:35	10.34	0.16	90.89	-0.54	91.03
16MW-04	10/26/1999	101.23	00:00	10.30	0.36	90.93	0.04	91.23
16MW-04	11/2/1999	101.23	00:00	10.60	0.39	90.63	-0.30	90.96
16MW-04	11/12/1999	101.23	00:00	10.05	0.21	91.18	0.55	91.36
16MW-04	11/18/1999	101.23	00:00	10.39	0.27	90.84	-0.34	91.07
16MW-04	12/1/1999	101.23	00:00	9.60	0.26	91.63	0.79	91.85
16MW-04	12/31/1999	101.23	00:00	10.03	0.29	91.20	-0.43	91.45
16MW-04	1/26/2000	101.23	00:00	10.04	0.22	91.19	-0.01	91.38
16MW-04	2/18/2000	101.23	00:00	9.44	0.15	91.79	0.60	91.92
16MW-04	4/17/2000	101.23	00:00	9.10	0.13	92.13	0.34	92.24
16MW-04	5/4/2000	101.23	00:00	8.42	0.16	92.81	0.68	92.95
16MW-04	8/9/2000	101.23	00:00	10.00	0.42	91.23	-1.58	91.59
16MW-04	8/24/2000	101.23	00:00	9.91	0.26	91.32	0.09	91.54
16MW-04	11/28/2000	101.23	00:00	9.30	0.07	91.93	0.61	91.99
16MW-04	1/16/2001	101.23	00:00	9.10	0.04	92.13	0.20	92.16
16MW-04	2/27/2001	101.23	00:00	8.61	0.00	92.62	0.49	92.62
16MW-04	3/27/2001	101.23	00:00	8.25	0.30	92.98	0.36	93.24
16MW-04	4/19/2001	101.23	00:00	9.17	0.44	92.06	-0.92	92.44
16MW-04	5/11/2001	101.23	00:00	9.76	0.45	91.47	-0.59	91.86
16MW-04	6/6/2001	101.23	00:00	9.89	0.41	91.34	-0.13	91.69
16MW-04	8/14/2001	101.23	00:00	9.33	0.05	91.90	0.56	91.94
16MW-04	9/14/2001	101.23	00:00	10.08	0.14	91.15	-0.75	91.27
16MW-04	10/11/2001	101.23	00:00	9.97	0.06	91.26	0.11	91.31
16MW-04	11/13/2001	101.23	00:00	10.27	0.10	90.96	-0.30	91.05
16MW-04	12/13/2001	101.23	00:00	9.76	0.03	91.47	0.51	91.49
16MW-04	2/28/2002	101.23	00:00	10.11	0.06	91.12	-0.35	91.17
16MW-04	3/28/2002	101.23	00:00	9.27	0.04	91.96	0.84	91.99
16MW-04	4/23/2002	101.23	00:00	9.63	0.05	91.60	-0.36	91.64
16MW-04	6/8/2002	101.23	00:00	9.48	0.00	91.75	0.15	91.75
16MW-04	6/27/2002	101.23	00:00	9.73	0.08	91.50	-0.25	91.56
16MW-04	7/16/2002	101.23	00:00	10.06	0.01	91.17	-0.33	91.17
16MW-13	8/20/1997	100.97	00:00	8.50	0.80	92.47	NA	93.15
16MW-13	8/20/1997	100.97	08:45	8.50	0.80	92.47	0.00	93.15
16MW-13	10/6/1997	100.97	10:45	8.86	0.75	92.11	-0.36	92.75
16MW-13	12/12/1997	100.97	08:30	8.57	0.65	92.41	0.29	92.96
16MW-13	1/7/1998	100.97	09:35	8.03	0.73	92.94	0.54	93.56
16MW-13	1/15/1998	100.97	07:30	8.06	0.75	92.92	-0.03	93.55
16MW-13	2/10/1998	100.97	00:00	7.39	0.88	93.59	0.67	94.33

1- Change in Water Elevation since last reported measurement

2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-13	2/24/1998	100.97	00:00	6.67	0.72	94.30	0.72	94.91
16MW-13	3/3/1998	100.97	00:00	6.90	1.04	94.07	-0.23	94.96
16MW-13	3/12/1998	100.97	00:00	6.60	1.03	94.38	0.31	95.25
16MW-13	3/13/1998	100.97	00:00	6.61	0.81	94.37	-0.01	95.05
16MW-13	3/26/1998	100.97	00:00	6.14	0.30	94.83	0.46	95.09
16MW-13	4/3/1998	100.97	00:00	6.47	0.42	94.50	-0.33	94.86
16MW-13	4/9/1998	100.97	00:00	6.54	0.27	94.43	-0.07	94.66
16MW-13	4/17/1998	100.97	00:00	6.41	0.18	94.56	0.13	94.71
16MW-13	4/24/1998	100.97	00:00	6.44	0.58	94.54	-0.03	95.03
16MW-13	5/5/1998	100.97	00:00	7.19	0.55	93.78	-0.76	94.33
16MW-13	5/15/1998	100.97	00:00	5.55	0.52	95.43	1.65	95.94
16MW-13	7/30/1998	100.97	00:00	7.80	0.82	93.17	-2.25	93.87
16MW-13	8/7/1998	100.97	00:00	7.78	0.26	93.19	0.02	93.41
16MW-13	8/13/1998	100.97	00:00	7.94	0.14	93.03	-0.16	93.15
16MW-13	8/21/1998	100.97	00:00	8.03	0.27	92.94	-0.09	93.17
16MW-13	9/3/1998	100.97	00:00	8.09	0.20	92.88	-0.06	93.05
16MW-13	9/10/1998	100.97	00:00	8.26	0.15	92.71	-0.17	92.84
16MW-13	10/2/1998	100.97	00:00	8.41	0.27	92.56	-0.15	92.79
16MW-13	10/20/1998	100.97	00:00	8.46	0.14	92.51	-0.05	92.63
16MW-13	11/6/1998	100.97	00:00	8.61	0.14	92.37	-0.15	92.48
16MW-13	12/3/1998	100.97	00:00	8.64	0.11	92.34	-0.03	92.42
16MW-13	12/23/1998	100.97	00:00	8.69	0.20	92.28	-0.06	92.45
16MW-13	1/26/1999	100.97	00:00	7.55	0.18	93.42	1.14	93.57
16MW-13	3/3/1999	100.97	00:00	7.80	0.11	93.17	-0.25	93.26
16MW-13	3/9/1999	100.97	00:00	7.74	0.14	93.23	0.06	93.35
16MW-13	3/19/1999	100.97	00:00	7.51	0.16	93.47	0.24	93.60
16MW-13	4/20/1999	100.97	00:00	7.57	0.15	93.41	-0.06	93.53
16MW-13	5/7/1999	100.97	00:00	8.05	0.14	92.93	-0.48	93.04
16MW-13	6/9/1999	100.97	00:00	7.75	0.01	93.23	0.30	93.23
16MW-13	6/9/1999	100.97	00:01	8.48	0.44	92.49	-0.74	92.87
16MW-13	6/10/1999	100.97	00:00	8.91	0.10	92.06	-0.43	92.14
16MW-13	6/14/1999	100.97	13:05	8.91	0.10	92.06	0.00	92.14
16MW-13	6/22/1999	100.97	08:55	8.90	0.29	92.07	0.01	92.32
16MW-13	6/22/1999	100.97	09:45	8.90	0.29	92.07	0.00	92.32
16MW-13	7/29/1999	100.97	00:00	10.83	0.49	90.14	-1.93	90.56
16MW-13	8/3/1999	100.97	00:00	10.90	0.48	90.07	-0.07	90.48
16MW-13	8/13/1999	100.97	00:00	11.03	0.20	89.94	-0.13	90.11
16MW-13	9/3/1999	100.97	00:00	9.15	0.03	91.82	1.88	91.85
16MW-13	9/15/1999	100.97	13:30	9.41	0.05	91.56	-0.26	91.60

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-13	10/26/1999	100.97	00:00	10.24	0.50	90.73	-0.83	91.15
16MW-13	11/2/1999	100.97	00:00	10.47	0.52	90.50	-0.23	90.94
16MW-13	11/12/1999	100.97	00:00	10.07	0.37	90.90	0.40	91.21
16MW-13	11/18/1999	100.97	00:00	10.56	0.42	90.41	-0.49	90.76
16MW-13	12/1/1999	100.97	00:00	10.26	0.43	90.71	0.30	91.07
16MW-13	12/31/1999	100.97	00:00	10.12	0.47	90.85	0.14	91.25
16MW-13	1/26/2000	100.97	00:00	10.06	0.38	90.91	0.06	91.24
16MW-13	2/18/2000	100.97	00:00	8.94	0.16	92.03	1.12	92.17
16MW-13	4/17/2000	100.97	00:00	8.87	0.21	92.10	0.07	92.28
16MW-13	5/4/2000	100.97	00:00	7.94	0.10	93.03	0.93	93.12
16MW-13	8/9/2000	100.97	00:00	8.68	0.25	92.29	-0.74	92.50
16MW-13	8/24/2000	100.97	00:00	8.71	0.08	92.26	-0.03	92.33
16MW-13	10/26/2000	100.97	00:00	9.03	0.07	91.94	-0.32	92.00
16MW-13	11/28/2000	100.97	00:00	9.80	0.10	91.17	-0.77	91.26
16MW-13	1/16/2001	100.97	00:00	9.03	0.17	91.94	0.77	92.09
16MW-13	2/27/2001	100.97	00:00	8.05	0.04	92.92	0.98	92.95
16MW-13	3/27/2001	100.97	00:00	8.09	0.26	92.88	-0.04	93.10
16MW-13	4/19/2001	100.97	00:00	9.61	0.75	91.36	-1.52	92.00
16MW-13	5/11/2001	100.97	00:00	10.28	0.78	90.69	-0.67	91.36
16MW-13	6/6/2001	100.97	00:00	10.18	0.69	90.79	0.10	91.38
16MW-13	8/14/2001	100.97	00:00	9.67	0.33	91.30	0.51	91.58
16MW-13	9/14/2001	100.97	00:00	9.98	0.15	90.99	-0.31	91.12
16MW-13	10/11/2001	100.97	00:00	9.41	0.09	91.56	0.57	91.63
16MW-13	11/13/2001	100.97	00:00	9.45	0.04	91.52	-0.04	91.56
16MW-13	12/13/2001	100.97	00:00	9.34	0.05	91.63	0.11	91.67
16MW-13	1/8/2002	100.97	00:00	9.35	0.01	91.62	-0.01	91.63
16MW-13	1/23/2002	100.97	00:00	9.35	0.06	91.62	0.00	91.67
16MW-13	2/28/2002	100.97	00:00	9.51	0.05	91.46	-0.16	91.50
16MW-13	3/28/2002	100.97	00:00	9.04	0.14	91.93	0.47	92.05
16MW-13	4/23/2002	100.97	00:00	10.12	0.36	90.85	-1.08	91.16
16MW-13	6/8/2002	100.97	00:00	9.40	0.15	91.57	0.72	91.70
16MW-13	6/27/2002	100.97	00:00	9.70	0.25	91.27	-0.30	91.48
16MW-13	7/16/2002	100.97	00:00	9.66	0.06	91.31	0.04	91.36
16MW-14	8/20/1997	100.66	00:00	8.16	0.83	92.50	NA	93.21
16MW-14	8/20/1997	100.66	08:48	8.24	0.80	92.42	-0.08	93.10
16MW-14	10/6/1997	100.66	10:45	8.63	0.99	92.03	-0.39	92.87
16MW-14	12/12/1997	100.66	08:30	9.18	0.79	91.48	-0.55	92.15
16MW-14	1/7/1998	100.66	09:49	7.94	0.86	92.72	1.24	93.45

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-14	1/7/1998	100.66	09:56	7.94	0.86	92.72	0.00	93.45
16MW-14	1/15/1998	100.66	07:30	7.71	0.64	92.96	0.24	93.50
16MW-14	2/10/1998	100.66	00:00	7.13	1.08	93.53	0.58	94.45
16MW-14	3/3/1998	100.66	00:00	6.40	0.84	94.27	0.73	94.98
16MW-14	3/12/1998	100.66	00:00	6.05	0.75	94.61	0.35	95.25
16MW-14	3/13/1998	100.66	00:00	6.29	0.29	94.37	-0.24	94.62
16MW-14	3/26/1998	100.66	00:00	5.60	0.03	95.06	0.69	95.09
16MW-14	4/3/1998	100.66	00:00	6.04	0.21	94.62	-0.44	94.80
16MW-14	4/9/1998	100.66	00:00	5.10	0.09	95.56	0.94	95.63
16MW-14	4/17/1998	100.66	00:00	5.77	0.10	94.90	-0.66	94.98
16MW-14	4/24/1998	100.66	00:00	6.19	0.55	94.48	-0.42	94.94
16MW-14	5/5/1998	100.66	00:00	6.03	0.46	94.63	0.16	95.02
16MW-14	5/15/1998	100.66	00:00	4.90	0.10	95.76	1.13	95.85
16MW-14	7/30/1998	100.66	00:00	7.49	0.85	93.17	-2.59	93.89
16MW-14	8/7/1998	100.66	00:00	7.23	0.06	93.43	0.27	93.48
16MW-14	8/13/1998	100.66	00:00	7.56	0.05	93.10	-0.33	93.14
16MW-14	8/21/1998	100.66	00:00	7.78	0.27	92.88	-0.22	93.11
16MW-14	9/3/1998	100.66	00:00	7.81	0.16	92.85	-0.03	92.99
16MW-14	9/10/1998	100.66	00:00	7.96	0.15	92.70	-0.15	92.83
16MW-14	10/2/1998	100.66	00:00	8.07	0.18	92.59	-0.11	92.74
16MW-14	10/20/1998	100.66	00:00	8.17	0.14	92.50	-0.09	92.61
16MW-14	11/6/1998	100.66	00:00	8.31	0.12	92.36	-0.14	92.45
16MW-14	12/3/1998	100.66	00:00	8.34	0.13	92.33	-0.03	92.43
16MW-14	12/23/1998	100.66	00:00	8.90	0.14	91.76	-0.57	91.88
16MW-14	1/26/1999	100.66	00:00	7.17	0.15	93.49	1.73	93.62
16MW-14	3/3/1999	100.66	00:00	8.04	0.13	92.63	-0.87	92.73
16MW-14	3/9/1999	100.66	00:00	7.34	0.04	93.32	0.70	93.35
16MW-14	3/19/1999	100.66	00:00	7.15	0.09	93.52	0.19	93.59
16MW-14	4/20/1999	100.66	00:00	7.25	0.11	93.41	-0.11	93.50
16MW-14	5/7/1999	100.66	00:00	7.74	0.01	92.92	-0.49	92.93
16MW-14	6/1/1999	100.66	00:00	7.83	0.22	92.83	-0.09	93.01
16MW-14	6/9/1999	100.66	00:00	7.64	0.00	93.02	0.19	93.02
16MW-14	6/9/1999	100.66	00:01	8.13	0.30	92.53	-0.49	92.78
16MW-14	6/10/1999	100.66	00:00	8.10	0.13	92.56	0.03	92.67
16MW-14	6/14/1999	100.66	13:10	8.10	0.13	92.56	0.00	92.67
16MW-14	6/22/1999	100.66	09:00	8.95	0.25	91.71	-0.85	91.93
16MW-14	7/29/1999	100.66	00:00	10.25	0.38	90.41	-1.30	90.73
16MW-14	8/3/1999	100.66	00:00	10.40	0.40	90.26	-0.15	90.60
16MW-14	8/13/1999	100.66	00:00	10.46	0.39	90.20	-0.06	90.53

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-14	9/3/1999	100.66	00:00	8.85	0.03	91.81	1.61	91.84
16MW-14	9/15/1999	100.66	13:40	9.29	0.09	91.37	-0.44	91.45
16MW-14	10/26/1999	100.66	00:00	10.20	0.57	90.46	-0.91	90.95
16MW-14	11/2/1999	100.66	00:00	10.26	0.53	90.40	-0.06	90.85
16MW-14	11/12/1999	100.66	00:00	9.60	0.15	91.06	0.66	91.19
16MW-14	11/18/1999	100.66	00:00	9.82	0.18	90.84	-0.22	90.99
16MW-14	12/1/1999	100.66	00:00	9.70	0.35	90.96	0.12	91.26
16MW-14	12/31/1999	100.66	00:00	9.50	0.38	91.16	0.20	91.48
16MW-14	1/26/2000	100.66	00:00	9.44	0.29	91.22	0.06	91.46
16MW-14	2/18/2000	100.66	00:00	8.93	0.24	91.73	0.51	91.94
16MW-14	4/17/2000	100.66	00:00	8.42	0.17	92.24	0.51	92.38
16MW-14	5/4/2000	100.66	00:00	NM	NA	NA	NA	NA
16MW-14	8/9/2000	100.66	00:00	8.40	0.22	92.26	-8.40	92.45
16MW-14	8/24/2000	100.66	00:00	5.56	0.01	95.10	2.84	95.11
16MW-14	10/26/2000	100.66	00:00	8.83	0.07	91.83	-3.27	91.89
16MW-14	11/28/2000	100.66	00:00	9.35	0.19	91.31	-0.52	91.47
16MW-14	1/16/2001	100.66	00:00	9.30	0.29	91.36	0.05	91.61
16MW-14	2/27/2001	100.66	00:00	7.62	0.01	93.04	1.68	93.04
16MW-14	4/19/2001	100.66	00:00	7.05	0.04	93.61	0.57	93.64
16MW-14	5/11/2001	100.66	00:00	9.17	0.33	91.49	-2.12	91.77
16MW-14	6/6/2001	100.66	00:00	9.84	0.52	90.82	-0.67	91.26
16MW-14	8/14/2001	100.66	00:00	9.82	0.23	90.84	0.02	91.04
16MW-14	9/14/2001	100.66	00:00	9.67	0.05	90.99	0.15	91.03
16MW-14	10/11/2001	100.66	00:00	9.74	0.03	90.92	-0.07	90.95
16MW-14	11/13/2001	100.66	00:00	9.94	0.03	90.72	-0.20	90.75
16MW-14	12/13/2001	100.66	00:00	9.88	0.05	90.78	0.06	90.82
16MW-14	1/8/2002	100.66	00:00	10.31	0.22	90.35	-0.43	90.53
16MW-14	1/23/2002	100.66	00:00	9.72	0.04	90.94	0.59	90.98
16MW-14	2/28/2002	100.66	00:00	9.87	0.01	90.79	-0.15	90.80
16MW-14	3/28/2002	100.66	00:00	9.65	0.19	91.01	0.22	91.17
16MW-14	4/23/2002	100.66	00:00	10.91	0.45	89.75	-1.26	90.13
16MW-14	6/8/2002	100.66	00:00	9.63	0.07	91.03	1.28	91.09
16MW-14	6/27/2002	100.66	00:00	9.36	0.00	91.30	0.27	91.30
16MW-14	7/16/2002	100.66	00:00	10.34	0.11	90.32	-0.98	90.41
16MW-15	8/20/1997	100.98	00:00	8.80	0.90	92.18	NA	92.95
16MW-15	8/20/1997	100.98	08:55	8.80	0.90	92.18	0.00	92.95
16MW-15	8/20/1997	100.98	09:12	8.80	0.90	92.18	0.00	92.95
16MW-15	10/6/1997	100.98	10:45	9.18	0.93	91.80	-0.39	92.59

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-15	12/12/1997	100.98	08:30	9.19	0.93	91.80	0.00	92.58
16MW-15	1/7/1998	100.98	10:05	8.57	1.27	92.41	0.62	93.49
16MW-15	1/15/1998	100.98	07:30	8.36	0.84	92.62	0.21	93.34
16MW-15	2/10/1998	100.98	00:00	7.92	1.50	93.07	0.45	94.34
16MW-15	3/3/1998	100.98	00:00	7.38	1.38	93.61	0.54	94.78
16MW-15	3/12/1998	100.98	00:00	6.93	1.19	94.05	0.45	95.06
16MW-15	3/13/1998	100.98	00:00	6.79	0.61	94.20	0.15	94.71
16MW-15	4/3/1998	100.98	00:00	6.77	0.42	94.22	0.02	94.57
16MW-15	4/9/1998	100.98	00:00	6.79	0.14	94.20	-0.02	94.31
16MW-15	4/17/1998	100.98	00:00	6.63	0.06	94.36	0.16	94.40
16MW-15	4/24/1998	100.98	00:00	6.72	0.58	94.26	-0.09	94.76
16MW-15	5/5/1998	100.98	00:00	6.73	0.59	94.25	-0.01	94.84
16MW-15	5/15/1998	100.98	00:00	6.12	0.36	94.86	0.61	95.17
16MW-15	7/30/1998	100.98	00:00	8.19	0.92	92.79	-2.07	93.57
16MW-15	8/7/1998	100.98	00:00	8.14	0.31	92.84	0.06	93.10
16MW-15	8/13/1998	100.98	00:00	8.26	0.17	92.72	-0.12	92.87
16MW-15	8/21/1998	100.98	00:00	8.41	0.27	92.57	-0.15	92.80
16MW-15	9/3/1998	100.98	00:00	8.46	0.22	92.52	-0.05	92.71
16MW-15	9/10/1998	100.98	00:00	8.59	0.18	92.40	-0.13	92.54
16MW-15	10/2/1998	100.98	00:00	8.69	0.21	92.30	-0.10	92.47
16MW-15	10/20/1998	100.98	00:00	8.77	0.16	92.21	-0.09	92.35
16MW-15	11/6/1998	100.98	00:00	8.87	0.06	92.11	-0.10	92.16
16MW-15	12/3/1998	100.98	00:00	8.93	0.12	92.06	-0.05	92.15
16MW-15	12/23/1998	100.98	00:00	8.54	0.11	92.44	0.39	92.53
16MW-15	1/26/1999	100.98	00:00	7.75	0.13	93.24	0.80	93.34
16MW-15	3/3/1999	100.98	00:00	7.46	0.11	93.53	0.29	93.61
16MW-15	3/9/1999	100.98	00:00	8.30	0.40	92.68	-0.85	93.02
16MW-15	3/19/1999	100.98	00:00	7.77	0.15	93.21	0.53	93.34
16MW-15	4/20/1999	100.98	00:00	7.88	0.14	93.10	-0.11	93.22
16MW-15	6/1/1999	100.98	00:00	8.40	0.17	92.58	-0.52	92.73
16MW-15	6/9/1999	100.98	00:00	7.95	0.00	93.03	0.45	93.03
16MW-15	6/9/1999	100.98	00:01	8.70	0.23	92.29	-0.74	92.48
16MW-15	6/10/1999	100.98	00:00	8.68	0.11	92.30	0.02	92.39
16MW-15	6/14/1999	100.98	13:15	8.69	0.11	92.29	-0.01	92.38
16MW-15	6/22/1999	100.98	09:00	8.74	0.21	92.24	-0.05	92.42
16MW-15	7/29/1999	100.98	00:00	10.61	0.33	90.37	-1.87	90.65
16MW-15	8/13/1999	100.98	00:00	10.98	0.36	90.00	-0.37	90.31
16MW-15	9/3/1999	100.98	00:00	9.44	0.04	91.54	1.54	91.57
16MW-15	9/15/1999	100.98	13:45	9.46	0.12	91.52	-0.02	91.62

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-15	10/26/1999	100.98	00:00	10.65	0.53	90.33	-1.19	90.78
16MW-15	11/2/1999	100.98	00:00	10.93	0.57	90.05	-0.28	90.54
16MW-15	11/12/1999	100.98	00:00	9.70	0.34	91.28	1.23	91.57
16MW-15	11/18/1999	100.98	00:00	9.81	0.35	91.17	-0.11	91.47
16MW-15	12/1/1999	100.98	00:00	9.60	0.16	91.38	0.21	91.52
16MW-15	12/31/1999	100.98	00:00	9.48	0.21	91.50	0.12	91.68
16MW-15	1/26/2000	100.98	00:00	9.50	0.14	91.48	-0.02	91.60
16MW-15	2/18/2000	100.98	00:00	8.91	0.07	92.07	0.59	92.13
16MW-15	4/17/2000	100.98	00:00	8.83	0.12	92.15	0.08	92.25
16MW-15	5/4/2000	100.98	00:00	8.25	0.07	92.73	0.58	92.79
16MW-15	8/9/2000	100.98	00:00	9.17	0.27	91.81	-0.92	92.04
16MW-15	8/24/2000	100.98	13:50	9.05	0.09	91.93	0.12	92.00
16MW-15	10/26/2000	100.98	00:00	9.35	0.08	91.63	-0.30	91.69
16MW-15	11/28/2000	100.98	00:00	8.90	0.10	92.08	0.45	92.17
16MW-15	1/16/2001	100.98	00:00	9.00	0.09	91.98	-0.10	92.06
16MW-15	2/27/2001	100.98	00:00	8.17	0.00	92.81	0.83	92.81
16MW-15	3/27/2001	100.98	00:00	7.65	0.06	93.33	0.52	93.38
16MW-15	4/19/2001	100.98	00:00	7.98	0.21	93.00	-0.33	93.18
16MW-15	5/11/2001	100.98	00:00	9.33	0.41	91.65	-1.35	92.00
16MW-15	6/6/2001	100.98	00:00	10.06	0.55	90.92	-0.73	91.39
16MW-15	8/14/2001	100.98	00:00	9.19	0.10	91.79	0.87	91.88
16MW-15	9/14/2001	100.98	00:00	9.80	0.15	91.18	-0.61	91.30
16MW-15	10/11/2001	100.98	00:00	9.72	0.09	91.26	0.08	91.33
16MW-15	11/13/2001	100.98	00:00	10.28	0.21	90.70	-0.56	90.88
16MW-15	12/13/2001	100.98	00:00	10.07	0.19	90.91	0.21	91.07
16MW-15	1/8/2002	100.98	00:00	9.82	0.15	91.16	0.25	91.29
16MW-15	1/23/2002	100.98	00:00	9.50	0.04	91.48	0.32	91.51
16MW-15	2/28/2002	100.98	00:00	9.65	0.03	91.33	-0.15	91.36
16MW-15	3/28/2002	100.98	00:00	8.80	0.05	92.18	0.85	92.22
16MW-15	4/23/2002	100.98	00:00	9.49	0.11	91.49	-0.69	91.58
16MW-15	6/8/2002	100.98	00:00	9.40	0.08	91.58	0.09	91.64
16MW-15	6/27/2002	100.98	00:00	9.35	0.06	91.63	0.05	91.68
16MW-15	7/16/2002	100.98	00:00	9.89	0.04	91.09	-0.54	91.12
16MW-16	8/20/1997	98.82	00:00	6.77	0.08	92.05	NA	92.12
16MW-16	8/20/1997	98.82	09:12	6.77	0.08	92.05	0.00	92.12
16MW-16	10/6/1997	98.82	10:45	7.13	0.36	91.70	-0.36	92.00
16MW-16	12/12/1997	98.82	08:30	7.29	1.20	91.53	-0.17	92.55
16MW-16	1/7/1998	98.82	10:10	6.94	1.15	91.88	0.35	92.86

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-16	1/15/1998	98.82	07:30	6.15	0.56	92.67	0.79	93.15
16MW-16	2/10/1998	98.82	00:00	5.90	0.49	92.92	0.25	93.34
16MW-16	2/24/1998	98.82	00:00	3.90	0.05	94.92	2.00	94.96
16MW-16	3/3/1998	98.82	00:00	5.18	0.17	93.64	-1.28	93.78
16MW-16	3/12/1998	98.82	00:00	4.73	0.03	94.09	0.46	94.12
16MW-16	3/13/1998	98.82	00:00	5.05	0.02	93.77	-0.33	93.79
16MW-16	3/26/1998	98.82	00:00	4.39	0.01	94.43	0.66	94.44
16MW-16	4/3/1998	98.82	00:00	5.13	0.01	93.69	-0.74	93.70
16MW-16	4/9/1998	98.82	00:00	5.28	0.02	93.54	-0.15	93.56
16MW-16	4/17/1998	98.82	00:00	5.17	0.14	93.65	0.11	93.77
16MW-16	4/24/1998	98.82	00:00	5.06	0.08	93.77	0.12	93.83
16MW-16	5/5/1998	98.82	00:00	5.10	0.08	93.73	-0.04	93.80
16MW-16	5/15/1998	98.82	00:00	3.93	0.11	94.89	1.17	94.98
16MW-16	7/30/1998	98.82	00:00	6.47	0.39	92.35	-2.54	92.68
16MW-16	8/7/1998	98.82	00:00	6.50	0.14	92.32	-0.03	92.44
16MW-16	8/13/1998	98.82	00:00	6.70	0.17	92.12	-0.20	92.26
16MW-16	8/21/1998	98.82	00:00	6.77	0.07	92.05	-0.07	92.11
16MW-16	9/3/1998	98.82	00:00	6.74	0.04	92.08	0.03	92.11
16MW-16	9/10/1998	98.82	00:00	6.89	0.04	91.93	-0.15	91.96
16MW-16	10/2/1998	98.82	00:00	6.98	0.08	91.84	-0.09	91.91
16MW-16	10/20/1998	98.82	00:00	7.04	0.04	91.78	-0.06	91.81
16MW-16	11/6/1998	98.82	00:00	7.15	0.03	91.67	-0.11	91.69
16MW-16	12/3/1998	98.82	00:00	7.14	0.04	91.69	0.02	91.72
16MW-16	12/23/1998	98.82	00:00	7.09	0.06	91.73	0.05	91.78
16MW-16	1/26/1999	98.82	00:00	5.96	0.01	92.86	1.13	92.87
16MW-16	3/19/1999	98.82	00:00	5.84	0.01	92.99	0.12	92.99
16MW-16	4/20/1999	98.82	00:00	6.02	0.01	92.80	-0.19	92.81
16MW-16	5/7/1999	98.82	00:00	6.23	0.01	92.59	-0.21	92.60
16MW-16	6/1/1999	98.82	00:00	6.66	0.10	92.16	-0.43	92.24
16MW-16	6/9/1999	98.82	00:00	6.15	0.00	92.67	0.51	92.67
16MW-16	6/9/1999	98.82	00:01	7.01	0.16	91.81	-0.86	91.94
16MW-16	6/10/1999	98.82	00:00	6.98	0.03	91.85	0.04	91.87
16MW-16	6/14/1999	98.82	13:40	6.98	0.03	91.85	0.00	91.87
16MW-16	6/22/1999	98.82	09:30	6.90	0.10	91.92	0.08	92.00
16MW-16	7/29/1999	98.82	00:00	8.62	0.23	90.20	-1.72	90.39
16MW-16	8/3/1999	98.82	00:00	8.80	0.25	90.02	-0.18	90.23
16MW-16	8/13/1999	98.82	00:00	8.97	0.27	89.85	-0.17	90.08
16MW-16	9/3/1999	98.82	00:00	8.35	0.20	90.47	0.62	90.64
16MW-16	9/15/1999	98.82	14:20	8.10	0.09	90.72	0.25	90.79

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-16	10/26/1999	98.82	00:00	8.00	0.30	90.82	0.10	91.08
16MW-16	11/2/1999	98.82	00:00	8.22	0.31	90.60	-0.22	90.86
16MW-16	11/12/1999	98.82	00:00	7.30	0.03	91.52	0.92	91.54
16MW-16	11/18/1999	98.82	00:00	7.57	0.04	91.25	-0.27	91.29
16MW-16	12/1/1999	98.82	00:00	7.51	0.08	91.31	0.06	91.38
16MW-16	12/31/1999	98.82	00:00	7.44	0.04	91.38	0.07	91.41
16MW-16	1/26/2000	98.82	00:00	7.37	0.04	91.45	0.07	91.49
16MW-16	2/18/2000	98.82	00:00	6.85	0.01	91.97	0.52	91.98
16MW-16	4/17/2000	98.82	00:00	6.59	0.02	92.23	0.26	92.25
16MW-16	8/9/2000	98.82	00:00	6.46	0.17	92.36	0.13	92.51
16MW-16	8/24/2000	98.82	13:50	O	NA	NA	NA	NA
16MW-16	10/26/2000	98.82	00:00	7.40	0.13	91.42	-7.40	91.53
16MW-16	11/28/2000	98.82	00:00	8.57	0.29	90.25	-1.17	90.49
16MW-16	1/16/2001	98.82	00:00	6.99	0.03	91.83	1.58	91.85
16MW-16	2/27/2001	98.82	00:00	6.26	0.00	92.56	0.73	92.56
16MW-16	3/27/2001	98.82	00:00	5.90	0.00	92.92	0.36	92.92
16MW-16	5/11/2001	98.82	00:00	6.38	0.05	92.44	-0.48	92.48
16MW-16	8/14/2001	98.82	00:00	7.56	0.12	91.26	-1.18	91.36
16MW-16	9/14/2001	98.82	00:00	8.22	0.17	90.60	-0.66	90.75
16MW-16	10/11/2001	98.82	00:00	7.35	0.17	91.47	0.87	91.62
16MW-16	11/13/2001	98.82	00:00	8.91	0.32	89.91	-1.56	90.18
16MW-16	12/13/2001	98.82	00:00	7.57	0.04	91.25	1.34	91.28
16MW-16	1/8/2002	98.82	00:00	7.77	0.10	91.05	-0.20	91.13
16MW-16	1/23/2002	98.82	00:00	7.60	0.04	91.22	0.17	91.25
16MW-16	2/28/2002	98.82	00:00	7.75	0.01	91.07	-0.15	91.07
16MW-16	3/28/2002	98.82	00:00	6.75	0.01	92.07	1.00	92.08
16MW-16	4/23/2002	98.82	00:00	7.38	0.28	91.44	-0.63	91.68
16MW-16	6/8/2002	98.82	00:00	7.35	0.01	91.47	0.03	91.48
16MW-16	6/27/2002	98.82	00:00	7.50	0.05	91.32	-0.15	91.36
16MW-17	8/20/1997	99.79	00:00	7.77	1.04	92.03	NA	92.91
16MW-17	8/20/1997	99.79	09:07	7.77	1.04	92.03	0.00	92.91
16MW-17	10/6/1997	99.79	00:00	8.19	1.28	91.60	-0.43	92.69
16MW-17	10/6/1997	99.79	10:45	8.15	0.94	91.64	0.04	92.44
16MW-17	12/12/1997	99.79	08:30	7.88	0.88	91.92	0.28	92.66
16MW-17	1/7/1998	99.79	10:23	7.51	1.22	92.29	0.37	93.32
16MW-17	1/15/1998	99.79	07:30	7.14	0.44	92.65	0.37	93.03
16MW-17	2/10/1998	99.79	00:00	6.71	1.18	93.08	0.43	94.09
16MW-17	2/24/1998	99.79	00:00	5.58	0.38	94.22	1.13	94.54

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-17	3/3/1998	99.79	00:00	6.08	0.96	93.71	-0.50	94.53
16MW-17	3/12/1998	99.79	00:00	5.78	0.50	94.01	0.30	94.44
16MW-17	3/13/1998	99.79	00:00	5.33	0.08	94.47	0.45	94.53
16MW-17	3/26/1998	99.79	00:00	5.25	0.02	94.55	0.08	94.56
16MW-17	4/3/1998	99.79	00:00	6.65	0.11	93.14	-1.40	93.23
16MW-17	4/9/1998	99.79	00:00	5.84	0.10	93.96	0.81	94.04
16MW-17	4/17/1998	99.79	00:00	5.64	0.14	94.16	0.20	94.27
16MW-17	4/24/1998	99.79	00:00	5.58	0.21	94.22	0.06	94.39
16MW-17	5/5/1998	99.79	00:00	5.64	0.27	94.15	-0.07	94.42
16MW-17	5/15/1998	99.79	00:00	5.09	0.09	94.70	0.55	94.78
16MW-17	7/30/1998	99.79	00:00	9.09	0.39	90.70	-4.00	91.03
16MW-17	8/7/1998	99.79	00:00	7.09	0.21	92.70	2.00	92.88
16MW-17	8/13/1998	99.79	00:00	7.28	0.22	92.51	-0.19	92.70
16MW-17	8/21/1998	99.79	00:00	7.34	0.09	92.45	-0.06	92.52
16MW-17	9/3/1998	99.79	00:00	7.40	0.12	92.39	-0.06	92.49
16MW-17	9/10/1998	99.79	00:00	7.49	0.08	92.30	-0.09	92.37
16MW-17	10/2/1998	99.79	00:00	5.85	0.81	93.94	1.64	94.63
16MW-17	10/20/1998	99.79	00:00	7.58	0.09	92.21	-1.73	92.29
16MW-17	11/6/1998	99.79	00:00	7.82	0.07	91.97	-0.24	92.03
16MW-17	12/3/1998	99.79	00:00	7.86	0.05	91.94	-0.03	91.97
16MW-17	12/23/1998	99.79	00:00	7.84	0.18	91.96	0.02	92.10
16MW-17	1/26/1999	99.79	00:00	6.51	0.08	93.29	1.33	93.35
16MW-17	3/9/1999	99.79	00:00	6.86	0.06	92.93	-0.35	92.98
16MW-17	3/19/1999	99.79	00:00	6.52	0.06	93.28	0.34	93.32
16MW-17	4/20/1999	99.79	00:00	6.74	0.06	93.06	-0.22	93.10
16MW-17	5/7/1999	99.79	00:00	6.90	0.02	92.89	-0.17	92.91
16MW-17	6/1/1999	99.79	00:00	7.29	0.08	92.50	-0.39	92.57
16MW-17	6/9/1999	99.79	00:00	7.15	0.00	92.64	0.14	92.64
16MW-17	6/9/1999	99.79	00:01	7.61	0.13	92.18	-0.46	92.29
16MW-17	6/10/1999	99.79	00:00	7.61	0.05	92.19	0.00	92.22
16MW-17	6/14/1999	99.79	13:30	7.61	0.05	92.19	0.00	92.22
16MW-17	6/22/1999	99.79	09:20	7.67	0.11	92.12	-0.07	92.22
16MW-17	7/29/1999	99.79	00:00	9.40	0.27	90.39	-1.73	90.62
16MW-17	8/3/1999	99.79	00:00	9.55	0.28	90.24	-0.15	90.48
16MW-17	8/13/1999	99.79	00:00	9.70	0.30	90.09	-0.15	90.35
16MW-17	9/3/1999	99.79	00:00	8.49	0.04	91.30	1.21	91.34
16MW-17	9/15/1999	99.79	14:05	8.86	0.11	90.93	-0.37	91.03
16MW-17	10/26/1999	99.79	00:00	9.81	0.63	89.98	-0.95	90.51
16MW-17	11/2/1999	99.79	00:00	9.99	0.64	89.80	-0.18	90.34

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-17	11/12/1999	99.79	00:00	8.31	0.10	91.48	1.68	91.57
16MW-17	11/18/1999	99.79	00:00	8.55	0.13	91.24	-0.24	91.35
16MW-17	12/1/1999	99.79	00:00	8.87	0.13	90.92	-0.32	91.03
16MW-17	12/31/1999	99.79	00:00	8.21	0.16	91.58	0.66	91.72
16MW-17	1/26/2000	99.79	00:00	8.21	0.09	91.58	0.00	91.66
16MW-17	2/18/2000	99.79	00:00	7.57	0.02	92.22	0.64	92.24
16MW-17	4/17/2000	99.79	00:00	7.46	0.05	92.33	0.11	92.37
16MW-17	5/4/2000	99.79	00:00	7.14	0.03	92.65	0.32	92.67
16MW-17	8/9/2000	99.79	00:00	8.40	0.42	91.39	-1.26	91.75
16MW-17	8/24/2000	99.79	00:00	7.85	0.06	91.94	0.55	91.99
16MW-17	10/26/2000	99.79	00:00	8.09	0.02	91.70	-0.24	91.72
16MW-17	11/28/2000	99.79	00:00	8.48	0.25	91.31	-0.39	91.53
16MW-17	1/16/2001	99.79	00:00	7.90	0.10	91.89	0.58	91.98
16MW-17	2/27/2001	99.79	00:00	7.05	0.00	92.74	0.85	92.74
16MW-17	3/27/2001	99.79	00:00	6.40	0.03	93.39	0.65	93.41
16MW-17	4/19/2001	99.79	00:00	6.55	0.10	93.24	-0.15	93.33
16MW-17	5/11/2001	99.79	00:00	7.42	0.13	92.37	-0.87	75.90
16MW-17	6/6/2001	99.79	00:00	8.00	0.25	91.79	-0.58	74.26
16MW-17	8/14/2001	99.79	00:00	9.27	0.41	90.52	-1.27	90.87
16MW-17	9/14/2001	99.79	00:00	8.70	0.11	91.09	0.57	91.18
16MW-17	10/11/2001	99.79	00:00	8.44	0.02	91.35	0.26	91.36
16MW-17	11/13/2001	99.79	00:00	8.66	0.04	91.13	-0.22	91.16
16MW-17	11/13/2001	99.79	00:00	9.22	0.00	90.57	-0.56	90.57
16MW-17	12/13/2001	99.79	00:00	8.45	0.03	91.34	0.77	91.36
16MW-17	1/8/2002	99.79	00:00	8.51	0.08	91.28	-0.06	91.35
16MW-17	1/23/2002	99.79	00:00	8.40	0.03	91.39	0.11	91.42
16MW-17	2/28/2002	99.79	00:00	8.51	0.01	91.28	-0.11	91.29
16MW-17	3/28/2002	99.79	00:00	7.64	0.02	92.15	0.87	92.16
16MW-17	4/23/2002	99.79	00:00	8.09	0.02	91.70	-0.45	91.72
16MW-17	6/8/2002	99.79	00:00	8.08	0.01	91.71	0.01	91.72
16MW-17	6/27/2002	99.79	00:00	8.20	0.04	91.59	-0.12	91.62
16MW-17	7/16/2002	99.79	00:00	8.77	0.02	91.02	-0.57	91.04
16MW-18	8/20/1997	100.69	00:00	7.96	0.00	92.73	NA	92.73
16MW-18	8/20/1997	100.69	09:03	7.96	0.00	92.73	0.00	92.73
16MW-18	10/6/1997	100.69	10:45	8.21	0.00	92.48	-0.25	92.48
16MW-18	12/12/1997	100.69	08:30	7.98	0.00	92.71	0.23	92.71
16MW-18	1/7/1998	100.69	10:30	6.85	0.00	93.84	1.13	93.84
16MW-18	1/15/1998	100.69	07:30	7.24	0.00	93.45	-0.39	93.45

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-18	2/10/1998	100.69	00:00	5.86	0.00	94.83	1.38	94.83
16MW-18	2/24/1998	100.69	00:00	6.80	0.00	93.89	-0.94	93.89
16MW-18	3/3/1998	100.69	00:00	5.30	0.00	95.39	1.50	95.39
16MW-18	3/12/1998	100.69	00:00	4.89	0.00	95.80	0.41	95.80
16MW-18	3/13/1998	100.69	00:00	5.06	0.00	95.63	-0.17	95.63
16MW-18	3/26/1998	100.69	00:00	4.78	0.00	95.91	0.28	95.91
16MW-18	4/3/1998	100.69	00:00	5.51	0.00	95.18	-0.73	95.18
16MW-18	4/9/1998	100.69	00:00	5.85	0.00	94.84	-0.34	94.84
16MW-18	4/17/1998	100.69	00:00	5.20	0.00	95.49	0.65	95.49
16MW-18	4/24/1998	100.69	00:00	5.50	0.00	95.19	-0.30	95.19
16MW-18	5/5/1998	100.69	00:00	4.40	0.00	96.29	1.10	96.29
16MW-18	5/15/1998	100.69	00:00	3.85	0.00	96.84	0.55	96.84
16MW-18	7/30/1998	100.69	00:00	6.88	0.02	93.81	-3.03	93.83
16MW-18	8/7/1998	100.69	00:00	7.13	0.00	93.56	-0.26	93.56
16MW-18	8/13/1998	100.69	00:00	8.40	0.00	92.29	-1.27	92.29
16MW-18	8/21/1998	100.69	00:00	7.61	0.00	93.08	0.79	93.08
16MW-18	9/3/1998	100.69	00:00	7.77	0.00	92.92	-0.16	92.92
16MW-18	9/10/1998	100.69	00:00	7.39	0.00	93.30	0.38	93.30
16MW-18	10/2/1998	100.69	00:00	7.66	0.00	93.03	-0.27	93.03
16MW-18	10/20/1998	100.69	00:00	8.12	0.00	92.57	-0.46	92.57
16MW-18	11/6/1998	100.69	00:00	8.31	0.00	92.38	-0.19	92.38
16MW-18	12/3/1998	100.69	00:00	8.20	0.00	92.49	0.11	92.49
16MW-18	12/23/1998	100.69	00:00	8.47	0.01	92.23	-0.27	92.23
16MW-18	1/26/1999	100.69	00:00	4.36	0.00	96.33	4.11	96.33
16MW-18	3/9/1999	100.69	00:00	6.30	0.00	94.39	-1.94	94.39
16MW-18	3/19/1999	100.69	00:00	4.80	0.00	95.89	1.50	95.89
16MW-18	5/7/1999	100.69	00:00	7.14	0.00	93.55	-2.34	93.55
16MW-18	6/1/1999	100.69	00:00	7.40	0.00	93.29	-0.26	93.29
16MW-18	6/9/1999	100.69	00:00	7.79	0.00	92.90	-0.39	92.90
16MW-18	6/9/1999	100.69	00:01	7.77	0.00	92.92	0.02	92.92
16MW-18	6/10/1999	100.69	00:00	7.82	0.00	92.87	-0.05	92.87
16MW-18	6/14/1999	100.69	13:25	7.82	0.00	92.87	0.00	92.87
16MW-18	6/22/1999	100.69	09:15	8.12	0.00	92.57	-0.30	92.57
16MW-18	7/29/1999	100.69	00:00	9.10	0.00	91.59	-0.98	91.59
16MW-18	8/3/1999	100.69	00:00	9.25	0.00	91.44	-0.15	91.44
16MW-18	9/3/1999	100.69	00:00	6.50	0.00	94.19	2.75	94.19
16MW-18	9/15/1999	100.69	14:00	8.99	0.00	91.70	-2.49	91.70
16MW-18	10/26/1999	100.69	00:00	7.15	0.01	93.54	1.84	93.55
16MW-18	11/12/1999	100.69	00:00	8.39	0.02	92.30	-1.24	92.32

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-18	11/18/1999	100.69	00:00	8.60	0.01	92.09	-0.21	92.10
16MW-18	12/1/1999	100.69	00:00	8.41	0.02	92.28	0.19	92.29
16MW-18	12/31/1999	100.69	00:00	7.50	0.28	93.19	0.91	93.42
16MW-18	1/26/2000	100.69	00:00	8.39	0.02	92.30	-0.89	92.32
16MW-18	2/18/2000	100.69	00:00	6.17	0.03	94.52	2.22	94.55
16MW-18	4/17/2000	100.69	00:00	6.32	0.05	94.37	-0.15	94.41
16MW-18	5/4/2000	100.69	00:00	6.81	0.00	93.88	-0.49	93.88
16MW-18	8/9/2000	100.69	00:00	5.26	0.01	95.43	1.55	95.44
16MW-18	8/24/2000	100.69	14:00	7.31	0.03	93.38	-2.05	93.40
16MW-18	10/26/2000	100.69	00:00	8.35	0.01	92.34	-1.04	92.35
16MW-18	11/28/2000	100.69	00:00	7.05	0.01	93.64	1.30	93.65
16MW-18	1/16/2001	100.69	00:00	7.72	0.01	92.97	-0.67	92.97
16MW-18	2/27/2001	100.69	00:00	6.40	0.00	94.29	1.32	94.29
16MW-18	3/27/2001	100.69	00:00	5.20	0.00	95.49	1.20	95.49
16MW-18	4/19/2001	100.69	00:00	5.43	0.00	95.26	-0.23	95.26
16MW-18	5/11/2001	100.69	00:00	7.06	0.00	93.63	-1.63	93.63
16MW-18	6/6/2001	100.69	00:00	7.68	0.00	93.01	-0.62	93.01
16MW-18	8/14/2001	100.69	00:00	8.21	0.03	92.48	-0.53	92.50
16MW-18	9/14/2001	100.69	00:00	8.91	0.01	91.78	-0.70	91.79
16MW-18	10/11/2001	100.69	00:00	8.48	0.00	92.21	0.43	92.21
16MW-18	12/13/2001	100.69	00:00	8.51	0.04	92.18	-0.03	92.22
16MW-18	1/8/2002	100.69	00:00	7.95	0.06	92.74	0.56	92.79
16MW-18	1/23/2002	100.69	00:00	8.50	0.06	92.19	-0.55	92.24
16MW-18	2/28/2002	100.69	00:00	8.83	0.00	91.86	-0.33	91.86
16MW-18	3/28/2002	100.69	00:00	6.03	0.00	94.66	2.80	94.66
16MW-18	4/23/2002	100.69	00:00	8.23	0.00	92.46	-2.20	92.46
16MW-18	6/8/2002	100.69	00:00	8.91	0.01	91.78	-0.68	91.79
16MW-18	6/27/2002	100.69	00:00	8.93	0.02	91.76	-0.02	91.77
16MW-18	7/16/2002	100.69	00:00	9.30	0.13	91.39	-0.37	91.50
16MW-19	8/20/1997	100.54	08:57	7.70	0.00	92.84	NA	92.84
16MW-19	10/6/1997	100.54	10:45	8.43	0.62	92.11	-0.73	92.64
16MW-19	12/12/1997	100.54	08:30	8.65	1.13	91.90	-0.22	92.85
16MW-19	1/7/1998	100.54	10:37	7.53	0.83	93.02	1.12	93.72
16MW-19	1/15/1998	100.54	07:30	7.21	0.18	93.33	0.31	93.48
16MW-19	2/10/1998	100.54	00:00	5.79	0.10	94.76	1.43	94.84
16MW-19	2/24/1998	100.54	00:00	5.10	0.00	95.44	0.69	95.44
16MW-19	3/3/1998	100.54	00:00	5.31	0.02	95.24	-0.21	95.25
16MW-19	3/12/1998	100.54	00:00	4.81	0.02	95.74	0.50	95.75

1- Change in Water Elevation since last reported measurement

2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-19	3/13/1998	100.54	00:00	5.05	0.00	95.49	-0.25	95.49
16MW-19	3/26/1998	100.54	00:00	6.31	0.03	94.23	-1.26	94.26
16MW-19	4/3/1998	100.54	00:00	5.31	0.00	95.23	1.00	95.23
16MW-19	4/9/1998	100.54	00:00	5.52	0.01	95.02	-0.21	95.03
16MW-19	4/17/1998	100.54	00:00	5.04	0.04	95.50	0.48	95.54
16MW-19	4/24/1998	100.54	00:00	4.92	0.01	95.62	0.12	95.63
16MW-19	5/5/1998	100.54	00:00	4.56	0.06	95.98	0.36	96.04
16MW-19	5/15/1998	100.54	00:00	3.56	0.01	96.98	0.99	96.99
16MW-19	7/30/1998	100.54	00:00	6.79	0.11	93.75	-3.23	93.84
16MW-19	8/7/1998	100.54	00:00	6.97	0.00	93.57	-0.18	93.57
16MW-19	8/13/1998	100.54	00:00	7.21	0.01	93.34	-0.24	93.34
16MW-19	8/21/1998	100.54	00:00	7.41	0.00	93.13	-0.21	93.13
16MW-19	9/3/1998	100.54	00:00	7.54	0.00	93.00	-0.13	93.00
16MW-19	9/10/1998	100.54	00:00	7.60	0.00	92.94	-0.06	92.94
16MW-19	10/2/1998	100.54	00:00	7.67	0.01	92.87	-0.07	92.88
16MW-19	10/20/1998	100.54	00:00	7.88	0.01	92.66	-0.21	92.67
16MW-19	11/6/1998	100.54	00:00	8.15	0.01	92.39	-0.27	92.40
16MW-19	12/3/1998	100.54	00:00	7.94	0.00	92.60	0.21	92.60
16MW-19	12/23/1998	100.54	00:00	8.05	0.02	92.50	-0.10	92.51
16MW-19	1/26/1999	100.54	00:00	5.69	0.04	94.85	2.36	94.88
16MW-19	3/9/1999	100.54	00:00	6.43	0.03	94.11	-0.74	94.14
16MW-19	3/19/1999	100.54	00:00	6.05	0.05	94.49	0.38	94.53
16MW-19	4/20/1999	100.54	00:00	6.56	0.01	93.98	-0.51	93.99
16MW-19	5/7/1999	100.54	00:00	7.04	0.03	93.51	-0.47	93.53
16MW-19	6/1/1999	100.54	00:00	7.17	0.03	93.37	-0.14	93.39
16MW-19	6/9/1999	100.54	00:00	6.94	0.00	93.60	0.23	93.60
16MW-19	6/9/1999	100.54	00:01	7.62	0.03	92.92	-0.68	92.95
16MW-19	6/10/1999	100.54	00:00	7.68	0.00	92.86	-0.06	92.86
16MW-19	6/14/1999	100.54	13:20	7.68	0.00	92.86	0.00	92.86
16MW-19	6/22/1999	100.54	09:10	7.90	0.03	92.64	-0.22	92.66
16MW-19	7/29/1999	100.54	00:00	9.01	0.05	91.53	-1.11	91.57
16MW-19	8/3/1999	100.54	00:00	9.14	0.06	91.40	-0.13	91.45
16MW-19	8/13/1999	100.54	00:00	9.05	0.00	91.49	0.09	91.49
16MW-19	9/3/1999	100.54	00:00	9.07	0.14	91.47	-0.02	91.59
16MW-19	9/15/1999	100.54	13:55	8.99	0.02	91.55	0.08	91.57
16MW-19	10/26/1999	100.54	00:00	9.35	0.42	91.19	-0.36	91.54
16MW-19	11/2/1999	100.54	00:00	9.99	0.47	90.55	-0.64	90.95
16MW-19	11/12/1999	100.54	00:00	8.45	0.01	92.09	1.54	92.10
16MW-19	11/18/1999	100.54	00:00	8.59	0.00	91.95	-0.14	91.95

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-19	12/1/1999	100.54	00:00	8.35	0.01	92.19	0.24	92.20
16MW-19	12/31/1999	100.54	00:00	8.07	0.04	92.47	0.28	92.50
16MW-19	1/26/2000	100.54	00:00	8.36	0.01	92.18	-0.29	92.19
16MW-19	2/18/2000	100.54	00:00	7.51	0.01	93.03	0.85	93.04
16MW-19	4/17/2000	100.54	00:00	7.52	0.00	93.02	-0.01	93.02
16MW-19	5/4/2000	100.54	00:00	7.22	0.06	93.32	0.30	93.37
16MW-19	8/9/2000	100.54	00:00	7.30	0.22	93.24	-0.08	93.42
16MW-19	8/24/2000	100.54	13:55	8.00	0.06	92.54	-0.70	92.59
16MW-19	10/26/2000	100.54	00:00	8.77	0.09	91.77	-0.77	91.84
16MW-19	11/28/2000	100.54	00:00	8.32	0.06	92.22	0.45	92.27
16MW-19	1/16/2001	100.54	00:00	8.60	0.18	91.94	-0.28	92.09
16MW-19	2/27/2001	100.54	00:00	7.37	0.00	93.17	1.23	93.17
16MW-19	3/27/2001	100.54	00:00	6.20	0.08	94.34	1.17	94.41
16MW-19	4/19/2001	100.54	00:00	6.40	0.11	94.14	-0.20	94.23
16MW-19	5/11/2001	100.54	00:00	7.48	0.12	93.06	-1.08	93.16
16MW-19	6/6/2001	100.54	00:00	7.57	0.10	92.97	-0.09	93.06
16MW-19	8/14/2001	100.54	00:00	7.30	0.05	93.24	0.27	93.28
16MW-19	9/14/2001	100.54	00:00	9.12	0.12	91.42	-1.82	91.52
16MW-19	10/11/2001	100.54	00:00	8.97	0.04	91.57	0.15	91.60
16MW-19	11/13/2001	100.54	00:00	9.10	0.03	91.44	-0.13	91.47
16MW-19	12/13/2001	100.54	00:00	8.97	0.04	91.57	0.13	91.60
16MW-19	1/8/2002	100.54	00:00	8.93	0.06	91.61	0.04	91.66
16MW-19	1/23/2002	100.54	00:00	8.82	0.02	91.72	0.11	91.73
16MW-19	2/28/2002	100.54	00:00	8.98	0.00	91.56	-0.16	91.56
16MW-19	3/28/2002	100.54	00:00	8.00	0.14	92.54	0.98	92.66
16MW-19	4/23/2002	100.54	00:00	8.58	0.03	91.96	-0.58	91.98
16MW-19	6/8/2002	100.54	00:00	8.55	0.03	91.99	0.03	92.01
16MW-19	6/27/2002	100.54	00:00	8.57	0.02	91.97	-0.02	91.99
16MW-19	7/16/2002	100.54	00:00	9.26	0.02	91.28	-0.69	91.29
16MW-20	8/20/1997	100.82	09:26	8.55	0.45	92.28	NA	92.65
16MW-20	10/6/1997	100.82	10:45	8.84	0.46	91.98	-0.30	92.37
16MW-20	12/12/1997	100.82	08:30	8.71	0.61	92.11	0.13	92.63
16MW-20	1/7/1998	100.82	10:49	8.28	0.70	92.55	0.44	93.14
16MW-20	2/10/1998	100.82	00:00	7.25	0.15	93.57	1.02	93.70
16MW-20	2/24/1998	100.82	00:00	6.56	0.08	94.26	0.69	94.33
16MW-20	3/3/1998	100.82	00:00	6.63	0.07	94.19	-0.07	94.25
16MW-20	3/12/1998	100.82	00:00	6.30	0.02	94.52	0.33	94.54
16MW-20	3/26/1998	100.82	00:00	6.20	0.00	94.62	0.10	94.62

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-20	4/3/1998	100.82	00:00	6.48	0.04	94.34	-0.28	94.37
16MW-20	4/9/1998	100.82	00:00	6.61	0.02	94.21	-0.13	94.23
16MW-20	4/24/1998	100.82	00:00	6.48	0.00	94.34	0.13	94.34
16MW-20	5/5/1998	100.82	00:00	6.40	0.01	94.42	0.08	94.43
16MW-20	5/15/1998	100.82	00:00	5.54	0.06	95.29	0.86	95.33
16MW-20	7/30/1998	100.82	00:00	7.88	0.37	92.94	-2.34	93.25
16MW-20	8/7/1998	100.82	00:00	7.97	0.05	92.85	-0.09	92.89
16MW-20	8/13/1998	100.82	00:00	8.13	0.05	92.69	-0.17	92.73
16MW-20	8/21/1998	100.82	00:00	8.25	0.05	92.57	-0.12	92.61
16MW-20	9/3/1998	100.82	00:00	8.47	0.06	92.35	-0.22	92.40
16MW-20	9/10/1998	100.82	00:00	8.48	0.02	92.34	-0.01	92.36
16MW-20	10/2/1998	100.82	00:00	8.57	0.05	92.25	-0.10	92.29
16MW-20	10/20/1998	100.82	00:00	8.66	0.00	92.16	-0.09	92.16
16MW-20	12/3/1998	100.82	00:00	8.85	0.06	91.97	-0.19	92.02
16MW-20	1/26/1999	100.82	00:00	7.62	0.03	93.20	1.23	93.22
16MW-20	3/9/1999	100.82	00:00	7.88	0.03	92.95	-0.26	92.97
16MW-20	3/19/1999	100.82	00:00	7.63	0.01	93.19	0.25	93.20
16MW-20	4/20/1999	100.82	00:00	7.69	0.01	93.14	-0.06	93.14
16MW-20	5/7/1999	100.82	00:00	7.87	0.02	92.96	-0.18	92.97
16MW-20	6/1/1999	100.82	00:00	8.25	0.04	92.57	-0.39	92.60
16MW-20	6/9/1999	100.82	00:01	8.56	0.08	92.26	-0.31	92.33
16MW-20	6/10/1999	100.82	00:00	7.57	0.05	93.25	0.99	93.29
16MW-20	6/22/1999	100.82	09:35	8.59	0.09	92.23	-1.02	92.30
16MW-20	7/29/1999	100.82	00:00	9.40	0.00	91.42	-0.81	91.42
16MW-20	8/3/1999	100.82	00:00	10.25	0.19	90.57	-0.85	90.73
16MW-20	9/3/1999	100.82	00:00	9.45	0.02	91.37	0.80	91.38
16MW-20	9/15/1999	100.82	14:30	9.72	0.07	91.10	-0.27	91.16
16MW-20	11/2/1999	100.82	00:00	10.08	0.32	90.74	-0.36	91.01
16MW-20	11/18/1999	100.82	00:00	9.40	0.00	91.42	0.68	91.42
16MW-20	12/1/1999	100.82	00:00	9.31	0.08	91.51	0.09	91.58
16MW-20	12/31/1999	100.82	00:00	8.84	0.03	91.98	0.47	92.01
16MW-20	1/26/2000	100.82	00:00	9.28	0.09	91.54	-0.44	91.62
16MW-20	2/18/2000	100.82	00:00	8.82	0.06	92.00	0.46	92.05
16MW-20	4/17/2000	100.82	00:00	9.21	0.27	91.61	-0.39	91.84
16MW-20	8/9/2000	100.82	00:00	8.32	0.02	92.50	0.89	92.52
16MW-20	8/24/2000	100.82	14:15	7.70	0.00	93.12	0.62	93.12
16MW-20	10/26/2000	100.82	00:00	9.21	0.04	91.61	-1.51	91.64
16MW-20	1/16/2001	100.82	00:00	9.15	0.16	91.67	0.06	91.81
16MW-20	2/27/2001	100.82	00:00	8.40	0.10	92.42	0.75	92.50

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-20	3/27/2001	100.82	00:00	7.80	0.13	93.02	0.60	93.13
16MW-20	4/19/2001	100.82	00:00	7.77	0.17	93.05	0.03	93.20
16MW-20	5/11/2001	100.82	00:00	8.88	0.34	91.94	-1.11	92.23
16MW-20	6/6/2001	100.82	00:00	9.85	0.52	90.97	-0.97	91.41
16MW-20	8/14/2001	100.82	00:00	10.59	0.53	90.23	-0.74	90.68
16MW-20	9/14/2001	100.82	00:00	10.80	0.44	90.02	-0.21	90.40
16MW-20	10/11/2001	100.82	00:00	9.62	0.07	91.20	1.18	91.26
16MW-20	11/13/2001	100.82	00:00	9.73	0.06	91.09	-0.11	91.14
16MW-20	12/13/2001	100.82	00:00	9.67	0.08	91.15	0.06	91.21
16MW-20	1/8/2002	100.82	00:00	9.81	0.16	91.01	-0.14	91.15
16MW-20	1/23/2002	100.82	00:00	9.63	0.10	91.19	0.18	91.28
16MW-20	2/28/2002	100.82	00:00	9.69	0.05	91.13	-0.06	91.17
16MW-20	3/28/2002	100.82	00:00	8.75	0.01	92.07	0.94	92.07
16MW-20	4/23/2002	100.82	00:00	9.30	0.07	91.52	-0.55	91.58
16MW-20	6/8/2002	100.82	00:00	9.19	0.03	91.63	0.11	91.65
16MW-20	6/27/2002	100.82	00:00	9.45	0.11	91.37	-0.26	91.47
16MW-20	7/16/2002	100.82	00:00	9.75	0.00	91.07	-0.30	91.07
16MW-21	8/20/1997	99.78	00:00	7.56	0.00	92.22	NA	92.22
16MW-21	8/20/1997	99.78	09:35	7.56	0.00	92.22	0.00	92.22
16MW-21	10/6/1997	99.78	10:45	7.80	0.00	91.98	-0.24	91.98
16MW-21	12/12/1997	99.78	08:30	7.70	0.00	92.08	0.10	92.08
16MW-21	1/7/1998	99.78	10:58	7.12	0.00	92.66	0.58	92.66
16MW-21	2/10/1998	99.78	00:00	6.00	0.00	93.78	1.12	93.78
16MW-21	2/24/1998	99.78	00:00	5.67	0.00	94.11	0.33	94.11
16MW-21	3/3/1998	99.78	00:00	5.40	0.00	94.38	0.27	94.38
16MW-21	3/12/1998	99.78	00:00	5.03	0.00	94.75	0.37	94.75
16MW-21	3/13/1998	99.78	00:00	5.17	0.00	94.61	-0.14	94.61
16MW-21	4/3/1998	99.78	00:00	5.25	0.00	94.53	-0.08	94.53
16MW-21	4/9/1998	99.78	00:00	5.55	0.00	94.23	-0.30	94.23
16MW-21	4/17/1998	99.78	00:00	6.45	0.01	93.33	-0.90	93.34
16MW-21	4/24/1998	99.78	00:00	5.93	0.00	93.85	0.52	93.85
16MW-21	5/5/1998	99.78	00:00	4.83	0.00	94.95	1.10	94.95
16MW-21	5/15/1998	99.78	00:00	4.10	0.00	95.68	0.73	95.68
16MW-21	7/30/1998	99.78	00:00	6.95	0.00	92.83	-2.85	92.83
16MW-21	8/7/1998	99.78	00:00	7.21	0.00	92.57	-0.26	92.57
16MW-21	8/13/1998	99.78	00:00	7.41	0.00	92.37	-0.20	92.37
16MW-21	8/21/1998	99.78	00:00	7.51	0.00	92.27	-0.10	92.27
16MW-21	9/3/1998	99.78	00:00	7.57	0.00	92.21	-0.06	92.21

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-21	9/10/1998	99.78	00:00	7.70	0.00	92.08	-0.13	92.08
16MW-21	10/2/1998	99.78	00:00	7.77	0.00	92.01	-0.07	92.01
16MW-21	10/20/1998	99.78	00:00	7.86	0.00	91.92	-0.09	91.92
16MW-21	12/3/1998	99.78	00:00	8.00	0.00	91.78	-0.14	91.78
16MW-21	1/26/1999	99.78	00:00	5.05	0.00	94.73	2.95	94.73
16MW-21	3/9/1999	99.78	00:00	6.57	0.00	93.21	-1.52	93.21
16MW-21	3/19/1999	99.78	00:00	5.56	0.00	94.22	1.01	94.22
16MW-21	4/20/1999	99.78	00:00	6.40	0.00	93.38	-0.84	93.38
16MW-21	6/1/1999	99.78	00:00	7.45	0.00	92.33	-1.05	92.33
16MW-21	6/9/1999	99.78	00:01	7.15	0.00	92.63	0.30	92.63
16MW-21	6/22/1999	99.78	09:40	7.00	0.00	92.78	0.15	92.78
16MW-21	7/29/1999	99.78	00:00	8.75	0.00	91.03	-1.75	91.03
16MW-21	8/3/1999	99.78	00:00	8.89	0.00	90.89	-0.14	90.89
16MW-21	9/15/1999	99.78	14:35	8.70	0.00	91.08	0.19	91.08
16MW-21	11/12/1999	99.78	00:00	9.17	0.03	90.61	-0.47	90.64
16MW-21	11/18/1999	99.78	00:00	8.33	0.00	91.45	0.84	91.45
16MW-21	2/18/2000	99.78	00:00	7.51	0.00	92.27	0.82	92.27
16MW-21	4/17/2000	99.78	00:00	7.35	0.00	92.43	0.16	92.43
16MW-21	5/4/2000	99.78	00:00	7.20	0.00	92.58	0.15	92.58
16MW-21	8/9/2000	99.78	00:00	6.20	0.00	93.58	1.00	93.58
16MW-21	8/24/2000	99.78	14:20	7.88	0.00	91.90	-1.68	91.90
16MW-21	10/26/2000	99.78	00:00	8.30	0.00	91.48	-0.42	91.48
16MW-21	1/16/2001	99.78	00:00	7.80	0.00	91.98	0.50	91.98
16MW-21	2/27/2001	99.78	00:00	7.27	0.00	92.51	0.53	92.51
16MW-21	3/27/2001	99.78	00:00	5.65	0.00	94.13	1.62	94.13
16MW-21	4/19/2001	99.78	00:00	5.70	0.00	94.08	-0.05	94.08
16MW-21	5/11/2001	99.78	00:00	6.95	0.00	92.83	-1.25	92.83
16MW-21	6/6/2001	99.78	00:00	7.19	0.00	92.59	-0.24	92.59
16MW-21	8/14/2001	99.78	00:00	8.00	0.00	91.78	-0.81	91.78
16MW-21	9/14/2001	99.78	00:00	8.51	0.00	91.27	-0.51	91.27
16MW-21	10/11/2001	99.78	00:00	8.59	0.00	91.19	-0.08	91.19
16MW-21	11/13/2001	99.78	00:00	8.74	0.00	91.04	-0.15	91.04
16MW-21	12/13/2001	99.78	00:00	8.58	0.00	91.20	0.16	91.20
16MW-21	1/8/2002	99.78	00:00	8.41	0.00	91.37	0.17	91.37
16MW-21	1/23/2002	99.78	00:00	8.46	0.00	91.32	-0.05	91.32
16MW-21	2/28/2002	99.78	00:00	8.69	0.00	91.09	-0.23	91.09
16MW-21	3/28/2002	99.78	00:00	5.86	0.00	93.92	2.83	93.92
16MW-21	4/23/2002	99.78	00:00	8.22	0.03	91.56	-2.36	91.58
16MW-21	6/8/2002	99.78	00:00	8.26	0.00	91.52	-0.04	91.52

1- Change in Water Elevation since last reported measurement

2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-21	6/27/2002	99.78	00:00	8.05	0.00	91.73	0.21	91.73
16MW-21	7/16/2002	99.78	00:00	9.00	0.00	90.78	-0.95	90.78
16MW-22	12/12/1997	102.22	00:00	7.70	0.00	94.52	NA	94.52
16MW-22	1/7/1998	102.22	00:00	5.34	0.00	96.88	2.36	96.88
16MW-22	2/10/1998	102.22	00:00	2.98	0.00	99.24	2.36	99.24
16MW-22	2/24/1998	102.22	00:00	1.60	0.00	100.62	1.38	100.62
16MW-22	3/3/1998	102.22	00:00	2.87	0.00	99.35	-1.27	99.35
16MW-22	3/26/1998	102.22	00:00	1.85	0.00	100.37	1.02	100.37
16MW-22	4/3/1998	102.22	00:00	2.05	0.00	100.17	-0.20	100.17
16MW-22	4/17/1998	102.22	00:00	2.10	0.00	100.12	-0.05	100.12
16MW-22	4/24/1998	102.22	00:00	1.52	0.00	100.70	0.58	100.70
16MW-22	5/5/1998	102.22	00:00	0.00	0.00	102.22	1.52	102.22
16MW-22	5/15/1998	102.22	00:00	2.86	0.00	99.36	-2.86	99.36
16MW-22	7/30/1998	102.22	00:00	6.03	0.00	96.19	-3.17	96.19
16MW-22	8/13/1998	102.22	00:00	6.10	0.00	96.12	-0.07	96.12
16MW-22	10/2/1998	102.22	00:00	7.78	0.00	94.44	-1.68	94.44
16MW-22	11/6/1998	102.22	00:00	8.79	0.00	93.43	-1.01	93.43
16MW-22	1/26/1999	102.22	00:00	1.81	0.00	100.41	6.98	100.41
16MW-22	3/9/1999	102.22	00:00	3.45	0.00	98.77	-1.64	98.77
16MW-22	3/19/1999	102.22	00:00	8.38	0.00	93.84	-4.93	93.84
16MW-22	4/20/1999	102.22	00:00	4.15	0.00	98.07	4.23	98.07
16MW-22	5/7/1999	102.22	00:00	7.05	0.00	95.17	-2.90	95.17
16MW-22	6/1/1999	102.22	00:00	5.81	0.00	96.41	1.24	96.41
16MW-22	6/9/1999	102.22	00:01	6.11	0.00	96.11	-0.30	96.11
16MW-22	6/14/1999	102.22	13:45	7.57	0.05	94.65	-1.46	94.69
16MW-22	6/22/1999	102.22	10:15	7.11	0.00	95.11	0.46	95.11
16MW-22	5/4/2000	102.22	00:00	8.86	0.00	93.36	-1.75	93.36
16MW-23	12/12/1997	102.58	08:30	9.19	0.00	93.39	NA	93.39
16MW-23	1/7/1998	102.58	09:35	8.67	0.00	93.91	0.52	93.91
16MW-23	1/7/1998	102.58	09:49	8.67	0.00	93.91	0.00	93.91
16MW-23	2/10/1998	102.58	00:00	2.98	0.00	99.60	5.69	99.60
16MW-23	2/24/1998	102.58	00:00	7.20	0.00	95.38	-4.22	95.38
16MW-23	3/3/1998	102.58	00:00	7.10	0.00	95.48	0.10	95.48
16MW-23	3/26/1998	102.58	00:00	6.60	0.00	95.98	0.50	95.98
16MW-23	4/3/1998	102.58	00:00	6.90	0.00	95.68	-0.30	95.68
16MW-23	4/17/1998	102.58	00:00	6.95	0.00	95.63	-0.05	95.63
16MW-23	4/24/1998	102.58	00:00	6.84	0.00	95.74	0.11	95.74

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-23	5/5/1998	102.58	00:00	0.00	0.00	102.58	6.84	102.58
16MW-23	5/15/1998	102.58	00:00	5.89	0.00	96.69	-5.89	96.69
16MW-23	7/30/1998	102.58	00:00	8.03	0.00	94.55	-2.14	94.55
16MW-23	8/13/1998	102.58	00:00	8.46	0.00	94.12	-0.43	94.12
16MW-23	10/2/1998	102.58	00:00	9.03	0.00	93.55	-0.57	93.55
16MW-23	1/26/1999	102.58	00:00	8.21	0.00	94.37	0.82	94.37
16MW-23	3/9/1999	102.58	00:00	8.53	0.00	94.05	-0.32	94.05
16MW-23	3/19/1999	102.58	00:00	8.31	0.00	94.27	0.22	94.27
16MW-23	4/20/1999	102.58	00:00	8.32	0.00	94.26	-0.01	94.26
16MW-23	6/1/1999	102.58	00:00	8.80	0.00	93.78	-0.48	93.78
16MW-23	6/9/1999	102.58	00:01	9.01	0.00	93.57	-0.21	93.57
16MW-23	6/22/1999	102.58	10:00	9.75	0.00	92.83	-0.74	92.83
16MW-23	8/3/1999	102.58	00:00	10.00	0.00	92.58	-0.25	92.58
16MW-23	9/15/1999	102.58	15:00	10.11	0.00	92.47	-0.11	92.47
16MW-23	4/17/2000	102.58	00:00	NM	NA	NA	NA	NA
16MW-23	5/4/2000	102.58	00:00	D	NA	NA	NA	NA
16MW-24	3/27/2001	102.06	00:00	8.15	0.00	93.91	NA	93.91
16MW-24	4/19/2001	102.06	00:00	7.83	0.00	94.23	0.32	94.23
16MW-24	5/11/2001	102.06	00:00	8.49	0.00	93.57	-0.66	93.57
16MW-24	8/14/2001	102.06	00:00	9.48	0.00	92.58	-0.99	92.58
16MW-24	9/14/2001	102.06	00:00	9.93	0.00	92.13	-0.45	92.13
16MW-24	10/11/2001	102.06	00:00	10.12	0.00	91.94	-0.19	91.94
16MW-24	11/13/2001	102.06	00:00	10.31	0.00	91.75	-0.19	91.75
16MW-24	12/13/2001	102.06	00:00	10.23	0.00	91.83	0.08	91.83
16MW-24	1/8/2002	102.06	00:00	10.13	0.00	91.93	0.10	91.93
16MW-24	1/23/2002	102.06	00:00	10.19	0.00	91.87	-0.06	91.87
16MW-24	2/28/2002	102.06	00:00	10.34	0.00	91.72	-0.15	91.72
16MW-24	3/28/2002	102.06	00:00	9.62	0.00	92.44	0.72	92.44
16MW-24	4/23/2002	102.06	00:00	9.88	0.00	92.18	-0.26	92.18
16MW-24	6/8/2002	102.06	00:00	9.88	0.00	92.18	0.00	92.18
16MW-24	6/27/2002	102.06	00:00	9.84	0.00	92.22	0.04	92.22
16MW-24	7/16/2002	102.06	00:00	10.43	0.00	91.63	-0.59	91.63
16MW-25	3/27/2001	100.92	00:00	8.01	0.00	92.91	NA	92.91
16MW-25	4/19/2001	100.92	00:00	6.20	0.00	94.72	1.81	94.72
16MW-25	8/14/2001	100.92	00:00	8.48	0.02	92.44	-2.28	92.45
16MW-25	9/14/2001	100.92	00:00	8.91	0.01	92.01	-0.43	92.02
16MW-25	10/11/2001	100.92	00:00	9.08	0.02	91.84	-0.17	91.85

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-25	11/13/2001	100.92	00:00	9.23	0.01	91.69	-0.15	91.70
16MW-25	12/13/2001	100.92	00:00	9.18	0.01	91.74	0.05	91.75
16MW-25	1/8/2002	100.92	00:00	9.07	0.01	91.85	0.11	91.85
16MW-25	1/23/2002	100.92	00:00	9.11	0.00	91.81	-0.04	91.81
16MW-25	2/28/2002	100.92	00:00	9.28	0.00	91.64	-0.17	91.64
16MW-25	3/28/2002	100.92	00:00	8.50	0.01	92.42	0.78	92.43
16MW-25	4/23/2002	100.92	00:00	8.84	0.01	92.08	-0.34	92.09
16MW-25	6/8/2002	100.92	00:00	8.81	0.02	92.11	0.03	92.12
16MW-25	6/27/2002	100.92	00:00	8.85	0.03	92.07	-0.04	92.09
16MW-25	7/16/2002	100.92	00:00	10.47	0.03	90.45	-1.62	90.47
16MW-26	3/27/2001	101.67	00:00	8.52	0.01	93.15	NA	93.15
16MW-26	4/19/2001	101.67	00:00	5.82	0.00	95.85	2.70	95.85
16MW-26	5/11/2001	101.67	00:00	8.41	0.01	93.26	-2.59	93.26
16MW-26	8/14/2001	101.67	00:00	9.22	0.00	92.45	-0.81	92.45
16MW-26	9/14/2001	101.67	00:00	9.90	0.00	91.77	-0.68	91.77
16MW-26	10/11/2001	101.67	00:00	9.08	0.00	92.59	0.82	92.59
16MW-26	11/13/2001	101.67	00:00	10.38	0.00	91.29	-1.30	91.29
16MW-26	12/13/2001	101.67	00:00	9.97	0.01	91.70	0.41	91.70
16MW-26	6/8/2002	101.67	00:00	7.50	0.00	94.17	2.47	94.17
16MW-26	6/27/2002	101.67	00:00	6.40	0.00	95.27	1.10	95.27
16MW-27	3/27/2001	100.80	00:00	10.22	0.58	90.58	NA	91.07
16MW-27	4/19/2001	100.80	00:00	9.53	0.79	91.27	0.69	91.95
16MW-27	5/11/2001	100.80	00:00	9.63	0.66	91.17	-0.10	91.73
16MW-27	8/14/2001	100.80	00:00	9.22	0.25	91.58	0.41	91.79
16MW-27	9/14/2001	100.80	00:00	9.67	0.25	91.13	-0.45	91.34
16MW-27	10/11/2001	100.80	00:00	9.48	0.15	91.32	0.19	91.45
16MW-27	11/13/2001	100.80	00:00	10.26	0.33	90.54	-0.78	90.82
16MW-27	12/13/2001	100.80	00:00	9.79	0.22	91.01	0.47	91.19
16MW-27	1/8/2002	100.80	00:00	10.55	0.40	90.25	-0.76	90.59
16MW-27	1/23/2002	100.80	00:00	10.14	0.32	90.66	0.41	90.93
16MW-27	2/28/2002	100.80	00:00	10.40	0.35	90.40	-0.26	90.70
16MW-27	3/28/2002	100.80	00:00	9.56	0.32	91.24	0.84	91.51
16MW-27	4/23/2002	100.80	00:00	9.92	0.34	90.88	-0.36	91.17
16MW-27	6/8/2002	100.80	00:00	9.15	0.11	91.65	0.77	91.75
16MW-27	6/27/2002	100.80	00:00	9.00	0.08	91.80	0.15	91.86
16MW-27	7/16/2002	100.80	00:00	10.36	0.33	90.44	-1.36	90.72

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
16MW-28	3/27/2001	100.62	00:00	7.46	0.00	93.16	NA	93.16
16MW-28	4/19/2001	100.62	00:00	7.85	0.01	92.77	-0.39	92.78
16MW-28	5/11/2001	100.62	00:00	7.16	0.66	93.46	0.69	94.02
16MW-28	8/14/2001	100.62	00:00	8.27	0.00	92.35	-1.11	92.35
16MW-28	9/14/2001	100.62	00:00	8.62	0.00	92.00	-0.35	92.00
16MW-28	10/11/2001	100.62	00:00	8.81	0.00	91.81	-0.19	91.81
16MW-28	11/13/2001	100.62	00:00	8.94	0.00	91.68	-0.13	91.68
16MW-28	12/13/2001	100.62	00:00	8.87	0.00	91.75	0.07	91.75
16MW-28	1/8/2002	100.62	00:00	9.00	0.00	91.62	-0.13	91.62
16MW-28	1/23/2002	100.62	00:00	8.84	0.00	91.78	0.16	91.78
16MW-28	2/28/2002	100.62	00:00	9.01	0.00	91.61	-0.17	91.61
16MW-28	3/28/2002	100.62	00:00	8.30	0.00	92.32	0.71	92.32
16MW-28	4/23/2002	100.62	00:00	8.56	0.00	92.06	-0.26	92.06
16MW-28	6/8/2002	100.62	00:00	8.55	0.00	92.07	0.01	92.07
16MW-28	7/16/2002	100.62	00:00	9.11	0.00	91.51	-0.56	91.51
C17MW-07	10/6/1979	100.16	00:00	8.19	1.28	91.97	NA	93.06
C17MW-07	12/12/1997	100.16	00:00	7.91	1.26	92.25	0.28	93.32
C17MW-07	1/7/1998	100.16	00:00	7.52	1.42	92.64	0.39	93.85
C17MW-07	1/15/1998	100.16	00:00	7.37	0.20	92.80	0.16	92.96
C17MW-07	2/10/1998	100.16	00:00	6.55	0.84	93.62	0.82	94.33
C17MW-07	2/24/1998	100.16	00:00	1.95	1.35	98.21	4.60	99.36
C17MW-07	3/3/1998	100.16	00:00	5.89	0.49	94.27	-3.94	94.69
C17MW-07	3/12/1998	100.16	00:00	5.45	0.18	94.71	0.44	94.86
C17MW-07	3/13/1998	100.16	00:00	5.56	0.14	94.61	-0.11	94.72
C17MW-07	3/26/1998	100.16	00:00	5.31	0.01	94.85	0.24	94.86
C17MW-07	4/3/1998	100.16	00:00	5.62	0.09	94.54	-0.31	94.61
C17MW-07	4/9/1998	100.16	00:00	5.77	0.08	94.39	-0.15	94.46
C17MW-07	4/17/1998	100.16	00:00	5.62	0.12	94.54	0.15	94.64
C17MW-07	4/24/1998	100.16	00:00	5.50	0.13	94.66	0.12	94.77
C17MW-07	5/5/1998	100.16	00:00	5.67	0.28	94.49	-0.17	94.77
C17MW-07	5/15/1998	100.16	00:00	4.83	0.22	95.33	0.83	95.52
C17MW-07	7/30/1998	100.16	00:00	7.25	1.12	92.91	-2.42	93.86
C17MW-07	8/7/1998	100.16	00:00	7.07	0.25	93.10	0.19	93.30
C17MW-07	8/13/1998	100.16	00:00	7.23	0.25	92.93	-0.17	93.14
C17MW-07	8/21/1998	100.16	00:00	7.27	0.11	92.89	-0.04	92.98
C17MW-07	9/3/1998	100.16	00:00	7.31	0.15	92.85	-0.04	92.98
C17MW-07	9/10/1998	100.16	00:00	7.42	0.09	92.75	-0.11	92.82
C17MW-07	10/2/1998	100.16	00:00	7.55	0.21	92.62	-0.13	92.79

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
C17MW-07	10/20/1998	100.16	00:00	7.58	0.10	92.58	-0.04	92.67
C17MW-07	12/3/1998	100.16	00:00	7.72	0.08	92.44	-0.14	92.51
C17MW-07	12/23/1998	100.16	00:00	7.67	0.12	92.49	0.05	92.59
C17MW-07	1/26/1999	100.16	00:00	6.35	0.10	93.81	1.32	93.90
C17MW-07	3/9/1999	100.16	00:00	6.61	0.11	93.55	-0.26	93.64
C17MW-07	3/19/1999	100.16	00:00	6.23	0.08	93.93	0.39	94.00
C17MW-07	4/20/1999	100.16	00:00	6.61	0.11	93.56	-0.38	93.64
C17MW-07	5/7/1999	100.16	00:00	6.78	0.08	93.39	-0.17	93.45
C17MW-07	6/1/1999	100.16	00:00	7.19	0.14	92.97	-0.42	93.09
C17MW-07	6/9/1999	100.16	00:00	7.20	0.00	92.96	-0.01	92.96
C17MW-07	6/9/1999	100.16	00:01	7.57	0.28	92.60	-0.37	92.83
C17MW-07	6/10/1999	100.16	00:00	7.54	0.13	92.62	0.03	92.73
C17MW-07	6/14/1999	100.16	13:35	7.54	0.13	92.62	0.00	92.73
C17MW-07	6/22/1999	100.16	09:25	7.60	0.32	92.56	-0.06	92.83
C17MW-07	7/29/1999	100.16	00:00	10.40	0.60	89.76	-2.80	90.27
C17MW-07	8/3/1999	100.16	00:00	10.62	0.63	89.54	-0.22	90.08
C17MW-07	8/13/1999	100.16	00:00	10.96	0.70	89.20	-0.34	89.20
C17MW-07	9/3/1999	100.16	00:00	8.37	0.04	91.79	2.59	91.83
C17MW-07	9/15/1999	100.16	14:15	9.37	0.29	90.79	-1.00	90.82
C17MW-07	10/26/1999	100.16	00:00	11.04	1.02	89.12	-1.67	89.99
C17MW-07	11/2/1999	100.16	00:00	10.99	0.93	89.17	0.05	89.17
C17MW-07	11/18/1999	100.16	00:00	8.56	0.17	91.60	2.43	91.74
C17MW-07	12/1/1999	100.16	00:00	8.45	0.19	91.71	0.11	91.87
C17MW-07	12/31/1999	100.16	00:00	8.30	0.22	91.86	0.15	92.05
C17MW-07	1/26/2000	100.16	00:00	8.20	0.12	91.96	0.10	92.06
C17MW-07	2/18/2000	100.16	00:00	7.47	0.03	92.69	0.73	92.72
C17MW-07	4/17/2000	100.16	00:00	7.38	0.08	92.78	0.09	92.85
C17MW-07	5/4/2000	100.16	00:00	7.92	0.06	92.24	-0.54	92.29
C17MW-07	8/9/2000	100.16	00:00	7.07	0.06	93.09	0.85	93.14
C17MW-07	8/24/2000	100.16	00:00	7.50	0.02	92.66	-0.43	92.68
C17MW-07	10/26/2000	100.16	00:00	8.08	0.06	92.08	-0.58	92.13
C17MW-07	11/28/2000	100.16	00:00	8.00	0.16	92.16	0.08	92.30
C17MW-07	1/16/2001	100.16	00:00	8.10	0.20	92.06	-0.10	92.23
C17MW-07	2/27/2001	100.16	00:00	6.42	0.01	93.74	1.68	93.74
C17MW-07	3/27/2001	100.16	00:00	6.25	0.04	93.91	0.17	93.95
C17MW-07	4/19/2001	100.16	00:00	6.44	0.14	93.72	-0.19	93.84
C17MW-07	5/11/2001	100.16	00:00	7.19	0.15	92.97	-0.75	93.10
C17MW-07	6/6/2001	100.16	00:00	7.57	0.19	92.59	-0.38	92.75
C17MW-07	8/14/2001	100.16	00:00	8.96	0.37	91.20	-1.39	91.52

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

Water Level & Product Thickness Data

PERIOD: From 10/06/1979 thru 07/16/2002 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
C17MW-07	9/14/2001	100.16	00:00	8.76	0.18	91.40	0.20	91.55
C17MW-07	10/11/2001	100.16	00:00	8.36	0.04	91.80	0.40	91.83
C17MW-07	11/13/2001	100.16	00:00	8.91	0.15	91.25	-0.55	91.38
C17MW-07	12/13/2001	100.16	00:00	8.93	0.21	91.23	-0.02	91.41
C17MW-07	1/8/2002	100.16	00:00	9.38	0.38	90.78	-0.45	91.11
C17MW-07	1/23/2002	100.16	00:00	9.70	0.47	90.46	-0.32	90.86
C17MW-07	2/28/2002	100.16	00:00	9.21	0.26	90.95	0.49	91.17
C17MW-07	3/28/2002	100.16	00:00	8.30	0.38	91.86	0.91	92.18
C17MW-07	4/23/2002	100.16	00:00	8.70	0.28	91.46	-0.40	91.70
C17MW-07	6/8/2002	100.16	00:00	8.80	0.34	91.36	-0.10	91.65
C17MW-07	6/27/2002	100.16	00:00	8.80	0.35	91.36	0.00	91.66
C17MW-07	7/16/2002	100.16	00:00	8.65	0.03	91.51	0.15	91.53

1- Change in Water Elevation since last reported measurement
2- Measurements based on mean sea level.

APPENDIX C
ANALYTICAL SUMMARY TABLES FOR AIR DISCHARGES
AND ASSOCIATED DATA

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 1
 Analytical Results of Air Samples

Bioslurper Unit #1

SAMPLE NO. 16(A)VD(02)23 Sample Date: 6/27/02								
Compound	Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)
Acetone	58.1	384.6	60.0	68.0	0.0035	N/A	2.16E-06	
Benzene	78.0	384.6	60.0	68.0	0.000	7.0	0.00E+00	8.00E-03
Toluene	92.0	384.6	60.0	68.0	0.010	N/A	9.76E-06	
Ethylbenzene	106.0	384.6	60.0	68.0	0.000	N/A	0.00E+00	
m,p-Xylenes	106.0	384.6	60.0	68.0	0.000	N/A	0.00E+00	
o-Xylene	106.0	384.6	60.0	68.0	0.000	N/A	0.00E+00	
1,3,5-Trimethylbenzene	120.0	384.6	60.0	68.0	0.000	N/A	0.00E+00	
1,2,4-Trimethylbenzene	120.0	384.6	60.0	68.0	0.000	N/A	0.00E+00	
Total Emissions:					0.01	27.5	1.19E-05	3.50E-02

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 2
 Analytical Results of Air Samples

Bioslurper Unit #2

SAMPLE NO. 16(B)VD(02)-10 Sample Date: 6/27/02		Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)
Compound									
Acetone		58.1	384.6	60.0	68.0	0.000	N/A	0.00E+00	
Benzene		78.0	384.6	60.0	68.0	0.140	7.0	1.16E-04	8.00E-03
Toluene		92.0	384.6	60.0	68.0	0.056	N/A	5.47E-05	
Ethylbenzene		106.0	384.6	60.0	68.0	0.560	N/A	6.30E-04	
m,p-Xylenes		106.0	384.6	60.0	68.0	1.700	N/A	1.91E-03	
o-Xylene		106.0	384.6	60.0	68.0	0.370	N/A	4.16E-04	
1,3,5-Trimethylbenzene		120.0	384.6	60.0	68.0	0.760	N/A	9.67E-04	
1,2,4-Trimethylbenzene		120.0	384.6	60.0	68.0	3.300	N/A	4.20E-03	
Total Emissions:						6.89	27.5	8.30E-03	3.50E-02

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 1
 Analytical Results of Air Samples

Bioslurper Unit #1

SAMPLE NO. 16(A)VD0(01)-25 Sample Date: 7/31/02									
Compound	Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)	
Acetone	58.1	384.6	60.0	68.0	0.014	N/A	8.63E-06		
Benzene	78.0	384.6	60.0	68.0	0.0008	7.0	6.95E-07	8.00E-03	
Toluene	92.0	384.6	60.0	68.0	0.0	N/A	0.00E+00		
Ethylbenzene	106.0	384.6	60.0	68.0	0.000	N/A	0.00E+00		
m,p-Xylenes	106.0	384.6	60.0	68.0	0.00	N/A	0.00E+00		
o-Xylene	106.0	384.6	60.0	68.0	0.000	N/A	0.00E+00		
1,3,5-Trimethylbenzene	120.0	384.6	60.0	68.0	0.000	N/A	0.00E+00		
1,2,4-Trimethylbenzene	120.0	384.6	60.0	68.0	0.000	N/A	0.00E+00		
Total Emissions:					0.01	27.5	9.32E-06	3.50E-02	

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 2
 Analytical Results of Air Samples

Bioslurper Unit #2

SAMPLE NO. 16(B)VD(02)-11 Sample Date: 7/31/02									
Compound	Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)	
Acetone	58.1	384.6	60.0	68.0	0.030	N/A	1.85E-05		
Benzene	78.0	384.6	60.0	68.0	0.071	7.0	5.87E-05	8.00E-03	
Toluene	92.0	384.6	60.0	68.0	0.011	N/A	1.07E-05		
Ethylbenzene	106.0	384.6	60.0	68.0	0.200	N/A	2.25E-04		
m,p-Xylenes	106.0	384.6	60.0	68.0	0.250	N/A	2.81E-04		
o-Xylene	106.0	384.6	60.0	68.0	0.033	N/A	3.71E-05		
1,3,5-Trimethylbenzene	120.0	384.6	60.0	68.0	0.180	N/A	2.29E-04		
1,2,4-Trimethylbenzene	120.0	384.6	60.0	68.0	1.100	N/A	1.40E-03		
Total Emissions:					1.88	27.5	2.26E-03	3.50E-02	

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 1
 Analytical Results of Air Samples

Bioslurper Unit #1

SAMPLE NO. 16(A)VD(02)-27 Sample Date: 8/28/02		Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)
Compound									
Acetone		58.1	384.6	60.0	43.0	0.000	N/A	0.00E+00	
Benzene		78.0	384.6	60.0	43.0	0.000	7.0	0.00E+00	8.00E-03
Toluene		92.0	384.6	60.0	43.0	0.000	N/A	0.00E+00	
Ethylbenzene		106.0	384.6	60.0	43.0	0.000	N/A	0.00E+00	
m,p-Xylenes		106.0	384.6	60.0	43.0	0.000	N/A	0.00E+00	
o-Xylene		106.0	384.6	60.0	43.0	0.000	N/A	0.00E+00	
1,3,5-Trimethylbenzene		120.0	384.6	60.0	43.0	0.000	N/A	0.00E+00	
1,2,4-Trimethylbenzene		120.0	384.6	60.0	43.0	0.000	N/A	0.00E+00	
Total Emissions:						0.00	27.5	0.00E+00	3.50E-02

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 2
 Analytical Results of Air Samples

Bioslurper Unit #2

SAMPLE NO. 16(B)VD(02)-12 Sample Date: 8/28/02		Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)
Compound									
Acetone		58.1	384.6	60.0	68.0	0.0	N/A	0.00E+00	
Benzene		78.0	384.6	60.0	68.0	0.150	7.0	1.24E-04	8.00E-03
Toluene		92.0	384.6	60.0	68.0	0.0	N/A	0.00E+00	
Ethylbenzene		106.0	384.6	60.0	68.0	2.800	N/A	3.15E-03	
m,p-Xylenes		106.0	384.6	60.0	68.0	8.60	N/A	9.67E-03	
o-Xylene		106.0	384.6	60.0	68.0	2.000	N/A	2.25E-03	
1,3,5-Trimethylbenzene		120.0	384.6	60.0	68.0	2.700	N/A	3.44E-03	
1,2,4-Trimethylbenzene		120.0	384.6	60.0	68.0	8.200	N/A	1.04E-02	
Total Emissions:						24.45	27.5	2.91E-02	3.50E-02

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

U.S. Navy RAC Contract No. 62472-94-D-0398
 Naval Weapons Station-Earle: Bioslurper No. 2
 Analytical Results of Air Samples

Bioslurper Unit #2

SAMPLE NO. 16(B)VD(02)-12 Sample Date: 8/28/02								
Compound	Molecular Weight (lbs/lbs-mol)	Conversion Constant (cu. ft/lbs-mol)	Time Conversion (min/hr)	Weekly Flow Rate (cu. ft/min)	Compound Conc. (ppm(v))	Compound Emission Limit ppm(v)	Output Rate (lbs/hr)	Emission Limits (lbs/hr)
Acetone	58.1	384.6	60.0	68.0	0.0	N/A	0.00E+00	
Benzene	78.0	384.6	60.0	68.0	0.150	7.0	1.24E-04	8.00E-03
Toluene	92.0	384.6	60.0	68.0	0.0	N/A	0.00E+00	
Ethylbenzene	106.0	384.6	60.0	68.0	2.800	N/A	3.15E-03	
m,p-Xylenes	106.0	384.6	60.0	68.0	8.60	N/A	9.67E-03	
o-Xylene	106.0	384.6	60.0	68.0	2.000	N/A	2.25E-03	
Vinyl Chloride	62.5	384.6	60.0	68.0	0.500	N/A	3.32E-04	
1,3,5-Trimethylbenzene	120.0	384.6	60.0	68.0	2.700	N/A	3.44E-03	
1,2,4-Trimethylbenzene	120.0	384.6	60.0	68.0	8.200	N/A	1.04E-02	
Total Emissions:					24.95	27.5	2.94E-02	3.50E-02

Formula: Output Rate per Compound = $\frac{(\text{Mol. Wt.}) \times (\text{Time Conv.}) \times (\text{Concentration}) \times (\text{Flow Rate})}{(\text{Conv. Constant}) \times 10^6}$

Note: Sample collected after carbon treatment.

NWS-EARLE
 BIOSLURPER UNIT #1 AND #2
 TPH REMOVED VIA VAPOR EXTRACTION

11/15/02

BIOSLURPER UNIT 1	
OPERATED (hours):	110.5
AVERAGE FLOW RATE (cfm):	43
TPH CONCENTRATION (mg/m ³):	7100
(as per analytical)	6/27/02
	126.40 =POUNDS OF TPH

BIOSLURPER UNIT 2	
OPERATED (hours):	91
AVERAGE FLOW RATE (cfm):	53
TPH CONCENTRATION (mg/m ³):	870
(as per analytical)	6/27/02
	15.72 =POUNDS OF TPH

POUNDS OF TPH= _____
AVERAGE FLOW RATE (cfm) * 0.02832m³/ft³ * **TPH CONC**(mg/m³) * 0.001g/mg * 0.002205 lbs/g * 60 min/hr * **OPERATED** (hours)

NWS-EARLE
 BIOSLURPER UNIT #1 AND #2
 TPH REMOVED VIA VAPOR EXTRACTION

11/15/02

BIOSLURPER UNIT 1	
OPERATED (hours):	143
AVERAGE FLOW RATE (cfm):	42
TPH CONCENTRATION (mg/m ³):	6500
(as per analytical)	7/31/02
	146.27 =POUNDS OF TPH

BIOSLURPER UNIT 2	
OPERATED (hours):	148
AVERAGE FLOW RATE (cfm):	53
TPH CONCENTRATION (mg/m ³):	640
(as per analytical)	7/31/02
	18.81 =POUNDS OF TPH

POUNDS OF TPH= _____
AVERAGE FLOW RATE (cfm) * 0.02832m³/ft³ * **TPH CONC**(mg/m³) * 0.001g/mg * 0.002205 lbs/g * 60 min/hr * **OPERATED** (hours)

NWS-EARLE
 BIOSLURPER UNIT #1 AND #2
 TPH REMOVED VIA VAPOR EXTRACTION

11/15/02

BIOSLURPER UNIT 1	
OPERATED (hours):	138.5
AVERAGE FLOW RATE (cfm):	40
TPH CONCENTRATION (mg/m ³):	9100
(as per analytical)	8/28/02
	188.89 =POUNDS OF TPH

BIOSLURPER UNIT 2	
OPERATED (hours):	110
AVERAGE FLOW RATE (cfm):	53
TPH CONCENTRATION (mg/m ³):	2400
(as per analytical)	8/28/02
	52.42 =POUNDS OF TPH

POUNDS OF TPH= _____
AVERAGE FLOW RATE (cfm) * 0.02832m³/ft³ * **TPH CONC**(mg/m³) * 0.001g/mg * 0.002205 lbs/g * 60 min/hr * **OPERATED** (hours)

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample	Sample Extract		Sample Condition
					Holding Time (Days)	Date Analyzed	Holding Time (Days)	
P-16(A)UD(02)22	0206554A-01A	6/27/2002	6/28/2002	NA	4	7/ 1/2002	NA	Good
P-16(A)UD(02)23	0206554A-02A	6/27/2002	6/28/2002	NA	4	7/ 1/2002	NA	Good
26 AS-28	0206554A-03A	6/27/2002	6/28/2002	NA	4	7/ 1/2002	NA	Good
26 AS-29	0206554A-04A	6/27/2002	6/28/2002	NA	4	7/ 1/2002	NA	Good
16(B)B(UD)02(10)	0206554A-05A	6/27/2002	6/28/2002	NA	4	7/ 1/2002	NA	Good
Lab Blank	0206554A-06A	NA	NA	NA	NA	7/ 1/2002	NA	Good
LCS	0206554A-07A	NA	NA	NA	NA	7/ 1/2002	NA	Good

AIR TOXICS LTD.

SAMPLE NAME: P-16(A)UD(02)22

ID#: 0206554A-01A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g070116	Date of Collection:	6/27/02
Dil. Factor:	292	Date of Analysis:	7/1/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	150	730	Not Detected	Not Detected
Freon 114	150	1000	Not Detected	Not Detected
Chloromethane	150	310	Not Detected	Not Detected
Vinyl Chloride	150	380	Not Detected	Not Detected
Bromomethane	150	580	Not Detected	Not Detected
Chloroethane	150	390	Not Detected	Not Detected
Freon 11	150	830	Not Detected	Not Detected
1,1-Dichloroethene	150	590	Not Detected	Not Detected
Freon 113	150	1100	Not Detected	Not Detected
Methylene Chloride	150	520	Not Detected	Not Detected
1,1-Dichloroethane	150	600	Not Detected	Not Detected
cis-1,2-Dichloroethene	150	590	Not Detected	Not Detected
Chloroform	150	720	Not Detected	Not Detected
1,1,1-Trichloroethane	150	810	Not Detected	Not Detected
Carbon Tetrachloride	150	930	Not Detected	Not Detected
Benzene	150	470	9500	31000
1,2-Dichloroethane	150	600	Not Detected	Not Detected
Trichloroethene	150	800	Not Detected	Not Detected
1,2-Dichloropropane	150	680	Not Detected	Not Detected
cis-1,3-Dichloropropene	150	670	Not Detected	Not Detected
Toluene	150	560	1000	3900
trans-1,3-Dichloropropene	150	670	Not Detected	Not Detected
1,1,2-Trichloroethane	150	810	Not Detected	Not Detected
Tetrachloroethene	150	1000	Not Detected	Not Detected
Ethylene Dibromide	150	1100	Not Detected	Not Detected
Chlorobenzene	150	680	Not Detected	Not Detected
Ethyl Benzene	150	640	4300	19000
m,p-Xylene	150	640	16000	70000
o-Xylene	150	640	3800	17000
Styrene	150	630	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	150	1000	Not Detected	Not Detected
1,3,5-Trimethylbenzene	150	730	3900	20000
1,2,4-Trimethylbenzene	150	730	11000	57000
1,3-Dichlorobenzene	150	890	Not Detected	Not Detected
1,4-Dichlorobenzene	150	890	Not Detected	Not Detected
alpha-Chlorotoluene	150	770	Not Detected	Not Detected
1,2-Dichlorobenzene	150	890	Not Detected	Not Detected
1,2,4-Trichlorobenzene	580	4400	Not Detected	Not Detected
Hexachlorobutadiene	580	6300	Not Detected	Not Detected
Propylene	580	1000	Not Detected	Not Detected
1,3-Butadiene	580	1300	Not Detected	Not Detected
Acetone	580	1400	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: P-16(A)UD(02)22

ID#: 0206554A-01A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g070116	Date of Collection: 6/27/02
Dil. Factor:	292	Date of Analysis: 7/1/02

Compound	Rot. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	580	1800	Not Detected	Not Detected
2-Propanol	580	1400	Not Detected	Not Detected
trans-1,2-Dichloroethene	580	2400	Not Detected	Not Detected
Vinyl Acetate	580	2100	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	580	1800	Not Detected	Not Detected
Hexane	580	2100	58000	210000
Tetrahydrofuran	580	1800	Not Detected	Not Detected
Cyclohexane	580	2000	Not Detected	Not Detected
1,4-Dioxane	580	2100	Not Detected	Not Detected
Bromodichloromethane	580	4000	Not Detected	Not Detected
4-Methyl-2-pentanone	580	2400	Not Detected	Not Detected
2-Hexanone	580	2400	Not Detected	Not Detected
Dibromochloromethane	580	5000	Not Detected	Not Detected
Bromoform	580	6100	Not Detected	Not Detected
4-Ethyltoluene	580	2900	7200	36000
Ethanol	580	1100	Not Detected	Not Detected
Methyl tert-Butyl Ether	580	2100	Not Detected	Not Detected
Heptane	580	2400	17000	70000

Container Type: 6 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	117	70-130

AIR TOXICS LTD.

SAMPLE NAME: P-16(A)UD(02)23

ID#: 0206554A-02A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g070117	Date of Collection:	6/27/02
Dil. Factor:	1.44	Date of Analysis:	7/1/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	0.72	3.6	Not Detected	Not Detected
Freon 114	0.72	5.1	Not Detected	Not Detected
Chloromethane	0.72	1.5	Not Detected	Not Detected
Vinyl Chloride	0.72	1.9	Not Detected	Not Detected
Bromomethane	0.72	2.8	Not Detected	Not Detected
Chloroethane	0.72	1.9	Not Detected	Not Detected
Freon 11	0.72	4.1	Not Detected	Not Detected
1,1-Dichloroethene	0.72	2.9	Not Detected	Not Detected
Freon 113	0.72	5.6	Not Detected	Not Detected
Methylene Chloride	0.72	2.5	0.92	3.2
1,1-Dichloroethane	0.72	3.0	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.72	2.9	Not Detected	Not Detected
Chloroform	0.72	3.6	Not Detected	Not Detected
1,1,1-Trichloroethane	0.72	4.0	Not Detected	Not Detected
Carbon Tetrachloride	0.72	4.6	Not Detected	Not Detected
Benzene	0.72	2.3	Not Detected	Not Detected
1,2-Dichloroethane	0.72	3.0	Not Detected	Not Detected
Trichloroethene	0.72	3.9	Not Detected	Not Detected
1,2-Dichloropropane	0.72	3.4	Not Detected	Not Detected
cis-1,3-Dichloropropene	0.72	3.3	Not Detected	Not Detected
Toluene	0.72	2.8	Not Detected	Not Detected
trans-1,3-Dichloropropene	0.72	3.3	Not Detected	Not Detected
1,1,2-Trichloroethane	0.72	4.0	Not Detected	Not Detected
Tetrachloroethene	0.72	5.0	Not Detected	Not Detected
Ethylene Dibromide	0.72	5.6	Not Detected	Not Detected
Chlorobenzene	0.72	3.4	Not Detected	Not Detected
Ethyl Benzene	0.72	3.2	Not Detected	Not Detected
m,p-Xylene	0.72	3.2	Not Detected	Not Detected
o-Xylene	0.72	3.2	Not Detected	Not Detected
Styrene	0.72	3.1	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	0.72	5.0	Not Detected	Not Detected
1,3,5-Trimethylbenzene	0.72	3.6	Not Detected	Not Detected
1,2,4-Trimethylbenzene	0.72	3.6	Not Detected	Not Detected
1,3-Dichlorobenzene	0.72	4.4	Not Detected	Not Detected
1,4-Dichlorobenzene	0.72	4.4	Not Detected	Not Detected
alpha-Chlorotoluene	0.72	3.8	Not Detected	Not Detected
1,2-Dichlorobenzene	0.72	4.4	Not Detected	Not Detected
1,2,4-Trichlorobenzene	2.9	22	Not Detected	Not Detected
Hexachlorobutadiene	2.9	31	Not Detected	Not Detected
Propylene	2.9	5.0	Not Detected	Not Detected
1,3-Butadiene	2.9	6.5	Not Detected	Not Detected
Acetone	2.9	7.0	3.5	8.5

AIR TOXICS LTD.

SAMPLE NAME: P-16(A)UD(02)23

ID#: 0206554A-02A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g070117	Date of Collection: 6/27/02
Dil. Factor:	1.44	Date of Analysis: 7/1/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2.9	9.1	2.8 J	8.9 J
2-Propanol	2.9	7.2	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.9	12	Not Detected	Not Detected
Vinyl Acetate	2.9	10	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.9	8.6	Not Detected	Not Detected
Hexane	2.9	10	Not Detected	Not Detected
Tetrahydrofuran	2.9	8.6	Not Detected	Not Detected
Cyclohexane	2.9	10	Not Detected	Not Detected
1,4-Dioxane	2.9	10	Not Detected	Not Detected
Bromodichloromethane	2.9	20	Not Detected	Not Detected
4-Methyl-2-pentanone	2.9	12	Not Detected	Not Detected
2-Hexanone	2.9	12	Not Detected	Not Detected
Dibromochloromethane	2.9	25	Not Detected	Not Detected
Bromoform	2.9	30	Not Detected	Not Detected
4-Ethyltoluene	2.9	14	Not Detected	Not Detected
Ethanol	2.9	5.5	Not Detected	Not Detected
Methyl tert-Butyl Ether	2.9	10	Not Detected	Not Detected
Heptane	2.9	12	Not Detected	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

AIR TOXICS LTD.

SAMPLE NAME: 16(B)B(UD)02(10)

ID#: 0206554A-05A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g070120	Date of Collection:	6/27/02
Dil. Factor:	64.4	Date of Analysis:	7/1/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	32	160	Not Detected	Not Detected
Freon 114	32	230	Not Detected	Not Detected
Chloromethane	32	68	Not Detected	Not Detected
Vinyl Chloride	32	84	140	370
Bromomethane	32	130	Not Detected	Not Detected
Chloroethane	32	86	Not Detected	Not Detected
Freon 11	32	180	Not Detected	Not Detected
1,1-Dichloroethene	32	130	Not Detected	Not Detected
Freon 113	32	250	Not Detected	Not Detected
Methylene Chloride	32	110	Not Detected	Not Detected
1,1-Dichloroethane	32	130	Not Detected	Not Detected
cis-1,2-Dichloroethene	32	130	Not Detected	Not Detected
Chloroform	32	160	Not Detected	Not Detected
1,1,1-Trichloroethane	32	180	Not Detected	Not Detected
Carbon Tetrachloride	32	200	Not Detected	Not Detected
Benzene	32	100	140	470
1,2-Dichloroethane	32	130	Not Detected	Not Detected
Trichloroethene	32	180	Not Detected	Not Detected
1,2-Dichloropropane	32	150	Not Detected	Not Detected
cis-1,3-Dichloropropene	32	150	Not Detected	Not Detected
Toluene	32	120	56	220
trans-1,3-Dichloropropene	32	150	Not Detected	Not Detected
1,1,2-Trichloroethane	32	180	Not Detected	Not Detected
Tetrachloroethene	32	220	Not Detected	Not Detected
Ethylene Dibromide	32	250	Not Detected	Not Detected
Chlorobenzene	32	150	Not Detected	Not Detected
Ethyl Benzene	32	140	560	2500
m,p-Xylene	32	140	1700	7500
o-Xylene	32	140	370	1600
Styrene	32	140	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	32	220	Not Detected	Not Detected
1,3,5-Trimethylbenzene	32	160	760	3800
1,2,4-Trimethylbenzene	32	160	3300	17000
1,3-Dichlorobenzene	32	200	Not Detected	Not Detected
1,4-Dichlorobenzene	32	200	Not Detected	Not Detected
alpha-Chlorotoluene	32	170	Not Detected	Not Detected
1,2-Dichlorobenzene	32	200	Not Detected	Not Detected
1,2,4-Trichlorobenzene	130	970	Not Detected	Not Detected
Hexachlorobutadiene	130	1400	Not Detected	Not Detected
Propylene	130	220	Not Detected	Not Detected
1,3-Butadiene	130	290	Not Detected	Not Detected
Acetone	130	310	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: 16(B)B(UD)02(10)

ID#: 0206554A-05A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g070120	Date of Collection: 6/27/02
Dil. Factor:	64.4	Date of Analysis: 7/1/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	130	410	Not Detected	Not Detected
2-Propanol	130	320	Not Detected	Not Detected
trans-1,2-Dichloroethene	130	520	Not Detected	Not Detected
Vinyl Acetate	130	460	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	130	390	210	630
Hexane	130	460	1600	5700
Tetrahydrofuran	130	390	480	1400
Cyclohexane	130	450	1500	5100
1,4-Dioxane	130	470	Not Detected	Not Detected
Bromodichloromethane	130	880	Not Detected	Not Detected
4-Methyl-2-pentanone	130	540	Not Detected	Not Detected
2-Hexanone	130	540	Not Detected	Not Detected
Dibromochloromethane	130	1100	Not Detected	Not Detected
Bromoform	130	1400	Not Detected	Not Detected
4-Ethyltoluene	130	640	1400	7200
Ethanol	130	250	Not Detected	Not Detected
Methyl tert-Butyl Ether	130	470	Not Detected	Not Detected
Heptane	130	540	2100	8900

Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	149 Q	70-130

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample	Sample Extract		Sample Condition
					Holding Time (Days)	Date Analyzed	Holding Time (Days)	
P-16(A)UD(02)22	0206554B-01A	6/27/2002	6/28/2002	NA	5	7/ 2/2002	NA	Good
P-16(A)UD(02)23	0206554B-02A	6/27/2002	6/28/2002	NA	5	7/ 2/2002	NA	Good
16(B)B(UD)02(10)	0206554B-05A	6/27/2002	6/28/2002	NA	5	7/ 2/2002	NA	Good
Lab Blank	0206554B-06A	NA	NA	NA	NA	7/ 2/2002	NA	Good
LCS	0206554B-07A	NA	NA	NA	NA	7/ 2/2002	NA	Good

AIR TOXICS LTD.

SAMPLE NAME: P-16(A)UD(02)22

ID#: 0206554B-01A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d070205	Date of Collection:	6/27/02
Dil. Factor:	1170	Date of Analysis:	7/2/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	29	120	1700	7100

Container Type: 6 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: P-16(A)UD(02)23

ID#: 0206554B-02A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d070206	Date of Collection:	6/27/02
Dil. Factor:	1.44	Date of Analysis:	7/2/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	0.036	0.15	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	92	75-125

AIR TOXICS LTD.

SAMPLE NAME: 16(B)B(UD)02(10)

ID#: 0206554B-05A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d070209	Date of Collection:	6/27/02
Dil. Factor:	32.2	Date of Analysis:	7/2/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	0.80	3.3	210	870

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	101	75-125



AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

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This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

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Hours 8:00 A.M to 6:00 P.M. Pacific

E-mail to: samplereceiving@airtoxics.com



AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0208023A

Work Order Summary

CLIENT:	Mr. Mike Heffron Foster Wheeler Environmental Corporation 1 Oxford Valley #200 2300 Lincoln Highway Langhorne, PA 19047 215-702-4000	BILL TO:	Ms. Sonya Staten Foster Wheeler Environmental Corporation 1 Oxford Valley #200 2300 Lincoln Highway
PHONE:	215-702-4000	P.O. #	040380
FAX:	215-702-4045	PROJECT #	22820491920200 NWS EARLE
DATE RECEIVED:	8/1/02	CONTACT:	Betty Chu
DATE COMPLETED:	8/6/02		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT YAC./PRES.</u>
01A	26AS-30	Modified TO-14	0.8psi
02A	16(B)VD(02)-11	Modified TO-14	5.5 "Hg
03A	16(A)VD(02)-25	Modified TO-14	2.5 "Hg
04A	16(A)VD(02)-24	Modified TO-14	2.5 "Hg
05A	26AS-31	Modified TO-14	1.5 "Hg
06A	Lab Blank	Modified TO-14	NA
06B	Lab Blank	Modified TO-14	NA
07A	LCS	Modified TO-14	NA
07B	LCS	Modified TO-14	NA

CERTIFIED BY: _____

Laboratory Director

DATE: 08/06/02

Certification numbers: CA NELAP - 02110CA, NY NELAP - 11291, UT NELAP - 9166389892, LA NELAP/LELAP- AI 30763
 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
 Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified Method TO-14
Foster Wheeler Environmental Corporation
Workorder# 0208023A

Four 6 Liter Summa Canister and One 6 Liter Silonite Canister samples were received on August 01, 2002. The laboratory performed analysis via modified EPA Method TO-14 using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

During the five point calibration, two low-level standards are used. The low-level standard for TO-14 compounds is spiked at 0.5 ppbv and represents the reporting limit for these compounds. The low-level standard for the non-TO-14 compounds is spiked at 2.0 ppbv and represents the reporting limit for these compounds. The TO-14 compounds are present in both standards but are excluded from reporting in the 2.0 ppbv standard since a lower level is already included in the curve.

Method modifications taken to run these samples include:

<i>Requirement</i>	<i>TO-14</i>	<i>ATL Modifications</i>
Internal standard retention times.	Not specified.	Within 0.50 minutes of most recent daily CCV internal standards
Internal standard recoveries.	Not specified.	Within 40% of the daily CCV internal standard area for blanks and samples.
Initial calibration criteria.	Not specified.	RSD of 30% or less for standard compounds, 40% or less for non-standard and polar compounds
Continuing calibration verification criteria	Not specified.	70 - 130% for at least 90% of standard compounds, 60 - 140% for at least 80% of non-standard and polar compounds

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample 16(A)VD(02)-24 due to the presence of high level non-target species.

The recovery of surrogate Bromofluorobenzene in sample 16(B)VD(02)-11 was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: 16(B)VD(02)-11

ID#: 0208023A-02A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	r080520	Date of Collection:	7/31/02
Dil. Factor:	13.1	Date of Analysis:	8/5/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	6.6	33	Not Detected	Not Detected
Freon 114	6.6	46	Not Detected	Not Detected
Chloromethane	6.6	14	Not Detected	Not Detected
Vinyl Chloride	6.6	17	470	1200
Bromomethane	6.6	26	Not Detected	Not Detected
Chloroethane	6.6	18	11	29
Freon 11	6.6	37	Not Detected	Not Detected
1,1-Dichloroethene	6.6	26	Not Detected	Not Detected
Freon 113	6.6	51	Not Detected	Not Detected
Methylene Chloride	6.6	23	Not Detected	Not Detected
1,1-Dichloroethane	6.6	27	Not Detected	Not Detected
cis-1,2-Dichloroethene	6.6	26	9.5	38
Chloroform	6.6	32	Not Detected	Not Detected
1,1,1-Trichloroethane	6.6	36	Not Detected	Not Detected
Carbon Tetrachloride	6.6	42	Not Detected	Not Detected
Benzene	6.6	21	71	230
1,2-Dichloroethane	6.6	27	Not Detected	Not Detected
Trichloroethene	6.6	36	Not Detected	Not Detected
1,2-Dichloropropane	6.6	31	Not Detected	Not Detected
cis-1,3-Dichloropropene	6.6	30	Not Detected	Not Detected
Toluene	6.6	25	11	43
trans-1,3-Dichloropropene	6.6	30	Not Detected	Not Detected
1,1,2-Trichloroethane	6.6	36	Not Detected	Not Detected
Tetrachloroethene	6.6	45	13	93
1,2-Dibromoethane (EDB)	6.6	51	Not Detected	Not Detected
Chlorobenzene	6.6	31	Not Detected	Not Detected
Ethyl Benzene	6.6	29	200	890
m,p-Xylene	6.6	29	250	1100
o-Xylene	6.6	29	33	140
Styrene	6.6	28	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	6.6	46	Not Detected	Not Detected
1,3,5-Trimethylbenzene	6.6	33	180	900
1,2,4-Trimethylbenzene	6.6	33	1100	5300
1,3-Dichlorobenzene	6.6	40	Not Detected	Not Detected
1,4-Dichlorobenzene	6.6	40	Not Detected	Not Detected
alpha-Chlorotoluene	6.6	34	Not Detected	Not Detected
1,2-Dichlorobenzene	6.6	40	Not Detected	Not Detected
1,2,4-Trichlorobenzene	26	200	Not Detected	Not Detected
Hexachlorobutadiene	26	280	Not Detected	Not Detected
Propylene	26	46	Not Detected	Not Detected
1,3-Butadiene	26	59	Not Detected	Not Detected
Acetone	26	63	30	72

AIR TOXICS LTD.

SAMPLE NAME: 16(B)VD(02)-11

ID#: 0208023A-02A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	r080520	Date of Collection: 7/31/02
Dil. Factor:	13.1	Date of Analysis: 8/5/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	26	83	Not Detected	Not Detected
2-Propanol	26	65	Not Detected	Not Detected
trans-1,2-Dichloroethene	26	100	Not Detected	Not Detected
Vinyl Acetate	26	94	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	26	78	Not Detected	Not Detected
Hexane	26	94	470	1700
Tetrahydrofuran	26	78	Not Detected	Not Detected
Cyclohexane	26	92	480	1700
1,4-Dioxane	26	96	Not Detected	Not Detected
Bromodichloromethane	26	180	Not Detected	Not Detected
4-Methyl-2-pentanone	26	110	Not Detected	Not Detected
2-Hexanone	26	110	Not Detected	Not Detected
Dibromochloromethane	26	230	Not Detected	Not Detected
Bromoform	26	280	Not Detected	Not Detected
4-Ethyltoluene	26	130	420	2100
Ethanol	26	50	Not Detected	Not Detected
Methyl tert-Butyl Ether	26	96	Not Detected	Not Detected
Heptane	26	110	340	1400

Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	130	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	262 Q	70-130

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SAMPLE NAME: 16(A)VD(02)-25

ID#: 0208023A-03A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	r080606	Date of Collection:	7/31/02
Dil. Factor:	1.46	Date of Analysis:	8/6/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	0.73	3.7	Not Detected	Not Detected
Freon 114	0.73	5.2	Not Detected	Not Detected
Chloromethane	0.73	1.5	Not Detected	Not Detected
Vinyl Chloride	0.73	1.9	1.3	3.4
Bromomethane	0.73	2.9	Not Detected	Not Detected
Chloroethane	0.73	2.0	Not Detected	Not Detected
Freon 11	0.73	4.2	Not Detected	Not Detected
1,1-Dichloroethene	0.73	2.9	Not Detected	Not Detected
Freon 113	0.73	5.7	Not Detected	Not Detected
Methylene Chloride	0.73	2.6	Not Detected	Not Detected
1,1-Dichloroethane	0.73	3.0	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.73	2.9	Not Detected	Not Detected
Chloroform	0.73	3.6	Not Detected	Not Detected
1,1,1-Trichloroethane	0.73	4.0	Not Detected	Not Detected
Carbon Tetrachloride	0.73	4.7	Not Detected	Not Detected
Benzene	0.73	2.4	0.84	2.7
1,2-Dichloroethane	0.73	3.0	Not Detected	Not Detected
Trichloroethene	0.73	4.0	Not Detected	Not Detected
1,2-Dichloropropane	0.73	3.4	Not Detected	Not Detected
cis-1,3-Dichloropropene	0.73	3.4	Not Detected	Not Detected
Toluene	0.73	2.8	Not Detected	Not Detected
trans-1,3-Dichloropropene	0.73	3.4	Not Detected	Not Detected
1,1,2-Trichloroethane	0.73	4.0	Not Detected	Not Detected
Tetrachloroethene	0.73	5.0	Not Detected	Not Detected
1,2-Dibromoethane (EDB)	0.73	5.7	Not Detected	Not Detected
Chlorobenzene	0.73	3.4	Not Detected	Not Detected
Ethyl Benzene	0.73	3.2	Not Detected	Not Detected
m,p-Xylene	0.73	3.2	Not Detected	Not Detected
o-Xylene	0.73	3.2	Not Detected	Not Detected
Styrene	0.73	3.2	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	0.73	5.1	Not Detected	Not Detected
1,3,5-Trimethylbenzene	0.73	3.6	Not Detected	Not Detected
1,2,4-Trimethylbenzene	0.73	3.6	Not Detected	Not Detected
1,3-Dichlorobenzene	0.73	4.5	Not Detected	Not Detected
1,4-Dichlorobenzene	0.73	4.5	Not Detected	Not Detected
alpha-Chlorotoluene	0.73	3.8	Not Detected	Not Detected
1,2-Dichlorobenzene	0.73	4.5	Not Detected	Not Detected
1,2,4-Trichlorobenzene	2.9	22	Not Detected	Not Detected
Hexachlorobutadiene	2.9	32	Not Detected	Not Detected
Propylene	2.9	5.1	Not Detected	Not Detected
1,3-Butadiene	2.9	6.6	Not Detected	Not Detected
Acetone	2.9	7.0	14	33

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD(02)-25

ID#: 0208023A-03A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	r080606	Date of Collection: 7/31/02
Dil. Factor:	1.46	Date of Analysis: 8/6/02

Compound	Rot. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2.9	9.2	Not Detected	Not Detected
2-Propanol	2.9	7.3	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.9	12	Not Detected	Not Detected
Vinyl Acetate	2.9	10	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.9	8.8	6.3	19
Hexane	2.9	10	Not Detected	Not Detected
Tetrahydrofuran	2.9	8.8	6.8	20
Cyclohexane	2.9	10	Not Detected	Not Detected
1,4-Dioxane	2.9	11	Not Detected	Not Detected
Bromodichloromethane	2.9	20	Not Detected	Not Detected
4-Methyl-2-pentanone	2.9	12	Not Detected	Not Detected
2-Hexanone	2.9	12	Not Detected	Not Detected
Dibromochloromethane	2.9	25	Not Detected	Not Detected
Bromoform	2.9	31	Not Detected	Not Detected
4-Ethyltoluene	2.9	14	Not Detected	Not Detected
Ethanol	2.9	5.6	Not Detected	Not Detected
Methyl tert-Butyl Ether	2.9	11	Not Detected	Not Detected
Heptane	2.9	12	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	113	70-130

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD(02)-24

ID#: 0208023A-04A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	r080607	Date of Collection: 7/31/02
Dil. Factor:	1170	Date of Analysis: 8/6/02

Compound	Rot. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	580	2900	Not Detected	Not Detected
Freon 114	580	4200	Not Detected	Not Detected
Chloromethane	580	1200	Not Detected	Not Detected
Vinyl Chloride	580	1500	Not Detected	Not Detected
Bromomethane	580	2300	Not Detected	Not Detected
Chloroethane	580	1600	Not Detected	Not Detected
Freon 11	580	3300	Not Detected	Not Detected
1,1-Dichloroethene	580	2400	Not Detected	Not Detected
Freon 113	580	4600	Not Detected	Not Detected
Methylene Chloride	580	2100	Not Detected	Not Detected
1,1-Dichloroethane	580	2400	Not Detected	Not Detected
cis-1,2-Dichloroethene	580	2400	Not Detected	Not Detected
Chloroform	580	2900	Not Detected	Not Detected
1,1,1-Trichloroethane	580	3200	Not Detected	Not Detected
Carbon Tetrachloride	580	3700	Not Detected	Not Detected
Benzene	580	1900	22000	72000
1,2-Dichloroethane	580	2400	Not Detected	Not Detected
Trichloroethene	580	3200	Not Detected	Not Detected
1,2-Dichloropropane	580	2700	Not Detected	Not Detected
cis-1,3-Dichloropropene	580	2700	Not Detected	Not Detected
Toluene	580	2200	7100	27000
trans-1,3-Dichloropropene	580	2700	Not Detected	Not Detected
1,1,2-Trichloroethane	580	3200	Not Detected	Not Detected
Tetrachloroethene	580	4000	Not Detected	Not Detected
1,2-Dibromoethane (EDB)	580	4600	Not Detected	Not Detected
Chlorobenzene	580	2700	Not Detected	Not Detected
Ethyl Benzene	580	2600	6800	30000
m,p-Xylene	580	2600	22000	97000
o-Xylene	580	2600	4200	19000
Styrene	580	2500	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	580	4100	Not Detected	Not Detected
1,3,5-Trimethylbenzene	580	2900	2600	13000
1,2,4-Trimethylbenzene	580	2900	8100	40000
1,3-Dichlorobenzene	580	3600	Not Detected	Not Detected
1,4-Dichlorobenzene	580	3600	Not Detected	Not Detected
alpha-Chlorotoluene	580	3100	Not Detected	Not Detected
1,2-Dichlorobenzene	580	3600	Not Detected	Not Detected
1,2,4-Trichlorobenzene	2300	18000	Not Detected	Not Detected
Hexachlorobutadiene	2300	25000	Not Detected	Not Detected
Propylene	2300	4100	Not Detected	Not Detected
1,3-Butadiene	2300	5300	Not Detected	Not Detected
Acetone	2300	5600	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD(02)-24

ID#: 0208023A-04A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	r080607	Date of Collection: 7/31/02
Dil. Factor:	1170	Date of Analysis: 8/6/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2300	7400	Not Detected	Not Detected
2-Propanol	2300	5800	Not Detected	Not Detected
trans-1,2-Dichloroethene	2300	9400	Not Detected	Not Detected
Vinyl Acetate	2300	8400	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2300	7000	Not Detected	Not Detected
Hexane	2300	8400	73000	260000
Tetrahydrofuran	2300	7000	Not Detected	Not Detected
Cyclohexane	2300	8200	13000	47000
1,4-Dioxane	2300	8600	Not Detected	Not Detected
Bromodichloromethane	2300	16000	Not Detected	Not Detected
4-Methyl-2-pentanone	2300	9700	Not Detected	Not Detected
2-Hexanone	2300	9700	Not Detected	Not Detected
Dibromochloromethane	2300	20000	Not Detected	Not Detected
Bromoform	2300	24000	Not Detected	Not Detected
4-Ethyltoluene	2300	12000	6000	30000
Ethanol	2300	4500	Not Detected	Not Detected
Methyl tert-Butyl Ether	2300	8600	Not Detected	Not Detected
Heptane	2300	9700	20000	84000

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130



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E-mail to: samplereceiving@airtoxics.com



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0208023B

Work Order Summary

CLIENT: Mr. Mike Heffron
Foster Wheeler Environmental
Corporation
1 Oxford Valley #200
2300 Lincoln Highway
Langhorne, PA 19047
215-702-4000

PHONE: 215-702-4000

FAX: 215-702-4045

DATE RECEIVED: 8/1/02

DATE COMPLETED: 8/5/02

BILL TO: Ms. Sonya Staten
Foster Wheeler Environmental
Corporation
1 Oxford Valley #200
2300 Lincoln Highway

P.O. # 040380

PROJECT # 22820491920200 NWS EARLE

CONTACT: Betty Chu

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT YAC/PRES.</u>
02A	16(B)VD(02)-11	Modified TO-3	5.5 "Hg
02AA	16(B)VD(02)-11 Duplicate	Modified TO-3	5.5 "Hg
03A	16(A)VD(02)-25	Modified TO-3	2.5 "Hg
04A	16(A)VD(02)-24	Modified TO-3	2.5 "Hg
05A	Lab Blank	Modified TO-3	NA
06A	LCS	Modified TO-3	NA

CERTIFIED BY: *Sinda D. Freeman*

Laboratory Director

DATE: 08/05/02

Certification numbers: CA NELAP - 02110CA, NY NELAP - 11291, UT NELAP - 9166389892, LA NELAP/LELAP- AI 30763
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03

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LABORATORY NARRATIVE
Modified TO-3
Foster Wheeler Environmental Corporation
Workorder# 0208023B

Three 6 Liter Summa Canister samples were received on August 01, 2002. The laboratory performed analysis via modified EPA Method TO-3 for Total Petroleum Hydrocarbons (TPH). TPH was analyzed via GC/FID. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. See the data sheets for the reporting limits for TPH.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: 16(B)VD(02)-11

ID#: 0208023B-02A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d080410	Date of Collection:	7/31/02
Dil. Factor:	16.4	Date of Analysis:	8/4/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	0.41	1.7	150	630

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	100	75-125

AIR TOXICS LTD.

SAMPLE NAME: 16(B)VD(02)-11 Duplicate

ID#: 0208023B-02AA

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d080411	Date of Collection:	7/31/02
Dil. Factor:	16.4	Date of Analysis:	8/4/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	0.41	1.7	150	640

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	102	75-125

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD(02)-25

ID#: 0208023B-03A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d080407	Date of Collection:	7/31/02
Dil. Factor:	1.46	Date of Analysis:	8/4/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	0.036	0.15	0.52	2.2

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD(02)-24

ID#: 0208023B-04A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d080409	Date of Collection:	7/31/02
Dil. Factor:	487	Date of Analysis:	8/4/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	12	51	1600	6500

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	122	75-125



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Hours 8:00 A.M to 6:00 P.M. Pacific

E-mail to: samplereceiving@airtoxics.com



AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0208597A

Work Order Summary

CLIENT:	Mr. Mike Heffron Foster Wheeler Environmental Corporation 1 Oxford Valley #200 2300 Lincoln Highway Langhorne, PA 19047 215-702-4000	BILL TO:	Ms. Sonya Staten Foster Wheeler Environmental Corporation 1 Oxford Valley #200 2300 Lincoln Highway
PHONE:	215-702-4000	P.O. #	040380
FAX:	215-702-4045	PROJECT #	228204919202 NWS EARLE
DATE RECEIVED:	8/29/02	CONTACT:	Betty Chu
DATE COMPLETED:	9/4/02		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT YAC./PRES.</u>
01A	26AS32	Modified TO-14	0.8psi
02A	26AS33	Modified TO-14	0.5 "Hg
03A	16(A)VD-02-26	Modified TO-14	0.5 "Hg
04A	16(A)VD-02-27	Modified TO-14	0.5 "Hg
05A	16(B)VD-02-12	Modified TO-14	4.0 "Hg
06A	Lab Blank	Modified TO-14	NA
07A	LCS	Modified TO-14	NA

CERTIFIED BY: *Sinda D. Fruman*

DATE: 09/04/02

Laboratory Director

Certification numbers: CA NELAP - 02110CA, NY NELAP - 11291, UT NELAP - 9166389892, LA NELAP/LELAP- AI 30763
 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
 Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards
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LABORATORY NARRATIVE
Modified Method TO-14
Foster Wheeler Environmental Corporation
Workorder# 0208597A

Five 6 Liter Summa Canister samples were received on August 29, 2002. The laboratory performed analysis via modified EPA Method TO-14 using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

During the five point calibration, two low-level standards are used. The low-level standard for TO-14 compounds is spiked at 0.5 ppbv and represents the reporting limit for these compounds. The low-level standard for the non-TO-14 compounds is spiked at 2.0 ppbv and represents the reporting limit for these compounds. The TO-14 compounds are present in both standards but are excluded from reporting in the 2.0 ppbv standard since a lower level is already included in the curve.

Method modifications taken to run these samples include:

<i>Requirement</i>	<i>TO-14</i>	<i>ATL Modifications</i>
Internal standard retention times.	Not specified.	Within 0.50 minutes of most recent daily CCV internal standards
Internal standard recoveries.	Not specified.	Within 40% of the daily CCV internal standard area for blanks and samples.
Initial calibration criteria.	Not specified.	RSD of 30% or less for standard compounds, 40% or less for non-standard and polar compounds
Continuing calibration verification criteria	Not specified.	70 - 130% for at least 90% of standard compounds, 60 - 140% for at least 80% of non-standard and polar compounds

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample 16(B)VD-02-12 due to the presence of high level non-target species. The recovery of surrogate Bromofluorobenzene in sample 16(B)VD-02-12 was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD-02-26

ID#: 0208597A-03A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f090324	Date of Collection: 8/28/02
Dil. Factor:	272	Date of Analysis: 9/3/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	140	680	Not Detected	Not Detected
Freon 114	140	970	Not Detected	Not Detected
Chloromethane	140	280	Not Detected	Not Detected
Vinyl Chloride	140	350	Not Detected	Not Detected
Bromomethane	140	540	Not Detected	Not Detected
Chloroethane	140	360	Not Detected	Not Detected
Freon 11	140	780	Not Detected	Not Detected
1,1-Dichloroethene	140	550	Not Detected	Not Detected
Freon 113	140	1000	Not Detected	Not Detected
Methylene Chloride	140	480	Not Detected	Not Detected
1,1-Dichloroethane	140	560	Not Detected	Not Detected
cis-1,2-Dichloroethene	140	550	Not Detected	Not Detected
Chloroform	140	670	Not Detected	Not Detected
1,1,1-Trichloroethane	140	750	Not Detected	Not Detected
Carbon Tetrachloride	140	870	Not Detected	Not Detected
Benzene	140	440	15000	50000
1,2-Dichloroethane	140	560	Not Detected	Not Detected
Trichloroethene	140	740	Not Detected	Not Detected
1,2-Dichloropropane	140	640	Not Detected	Not Detected
cis-1,3-Dichloropropene	140	630	Not Detected	Not Detected
Toluene	140	520	1600	6100
trans-1,3-Dichloropropene	140	630	Not Detected	Not Detected
1,1,2-Trichloroethane	140	750	Not Detected	Not Detected
Tetrachloroethene	140	940	Not Detected	Not Detected
1,2-Dibromoethane (EDB)	140	1100	Not Detected	Not Detected
Chlorobenzene	140	640	Not Detected	Not Detected
Ethyl Benzene	140	600	4700	21000
m,p-Xylene	140	600	14000	64000
o-Xylene	140	600	2400	10000
Styrene	140	590	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	140	950	Not Detected	Not Detected
1,3,5-Trimethylbenzene	140	680	1400	6800
1,2,4-Trimethylbenzene	140	680	3400	17000
1,3-Dichlorobenzene	140	830	Not Detected	Not Detected
1,4-Dichlorobenzene	140	830	Not Detected	Not Detected
alpha-Chlorotoluene	140	720	Not Detected	Not Detected
1,2-Dichlorobenzene	140	830	Not Detected	Not Detected
1,2,4-Trichlorobenzene	540	4100	Not Detected	Not Detected
Hexachlorobutadiene	540	5900	Not Detected	Not Detected
Propylene	540	950	Not Detected	Not Detected
1,3-Butadiene	540	1200	Not Detected	Not Detected
Acetone	540	1300	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD-02-26

ID#: 0208597A-03A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f090324	Date of Collection: 8/28/02
Dil. Factor:	272	Date of Analysis: 9/3/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	540	1700	Not Detected	Not Detected
2-Propanol	540	1400	Not Detected	Not Detected
trans-1,2-Dichloroethene	540	2200	Not Detected	Not Detected
Vinyl Acetate	540	1900	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	540	1600	Not Detected	Not Detected
Hexane	540	1900	63000 E	220000 E
Tetrahydrofuran	540	1600	Not Detected	Not Detected
Cyclohexane	540	1900	13000	45000
1,4-Dioxane	540	2000	Not Detected	Not Detected
Bromodichloromethane	540	3700	Not Detected	Not Detected
4-Methyl-2-pentanone	540	2300	Not Detected	Not Detected
2-Hexanone	540	2300	Not Detected	Not Detected
Dibromochloromethane	540	4700	Not Detected	Not Detected
Bromoform	540	5700	Not Detected	Not Detected
4-Ethyltoluene	540	2700	3000	15000
Ethanol	540	1000	Not Detected	Not Detected
Methyl tert-Butyl Ether	540	2000	Not Detected	Not Detected
Heptane	540	2300	18000	77000

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD-02-27

ID#: 0208597A-04A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	1090323	Date of Collection:	8/28/02
Dil. Factor:	1.36	Date of Analysis:	9/3/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	0.68	3.4	Not Detected	Not Detected
Freon 114	0.68	4.8	Not Detected	Not Detected
Chloromethane	0.68	1.4	Not Detected	Not Detected
Vinyl Chloride	0.68	1.8	Not Detected	Not Detected
Bromomethane	0.68	2.7	Not Detected	Not Detected
Chloroethane	0.68	1.8	Not Detected	Not Detected
Freon 11	0.68	3.9	Not Detected	Not Detected
1,1-Dichloroethene	0.68	2.7	Not Detected	Not Detected
Freon 113	0.68	5.3	Not Detected	Not Detected
Methylene Chloride	0.68	2.4	Not Detected	Not Detected
1,1-Dichloroethane	0.68	2.8	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.68	2.7	Not Detected	Not Detected
Chloroform	0.68	3.4	Not Detected	Not Detected
1,1,1-Trichloroethane	0.68	3.8	Not Detected	Not Detected
Carbon Tetrachloride	0.68	4.3	Not Detected	Not Detected
Benzene	0.68	2.2	Not Detected	Not Detected
1,2-Dichloroethane	0.68	2.8	Not Detected	Not Detected
Trichloroethene	0.68	3.7	Not Detected	Not Detected
1,2-Dichloropropane	0.68	3.2	Not Detected	Not Detected
cis-1,3-Dichloropropene	0.68	3.1	Not Detected	Not Detected
Toluene	0.68	2.6	Not Detected	Not Detected
trans-1,3-Dichloropropene	0.68	3.1	Not Detected	Not Detected
1,1,2-Trichloroethane	0.68	3.8	Not Detected	Not Detected
Tetrachloroethene	0.68	4.7	Not Detected	Not Detected
1,2-Dibromoethane (EDB)	0.68	5.3	Not Detected	Not Detected
Chlorobenzene	0.68	3.2	Not Detected	Not Detected
Ethyl Benzene	0.68	3.0	Not Detected	Not Detected
m,p-Xylene	0.68	3.0	Not Detected	Not Detected
o-Xylene	0.68	3.0	Not Detected	Not Detected
Styrene	0.68	2.9	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	0.68	4.7	Not Detected	Not Detected
1,3,5-Trimethylbenzene	0.68	3.4	Not Detected	Not Detected
1,2,4-Trimethylbenzene	0.68	3.4	Not Detected	Not Detected
1,3-Dichlorobenzene	0.68	4.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.68	4.2	Not Detected	Not Detected
alpha-Chlorotoluene	0.68	3.6	Not Detected	Not Detected
1,2-Dichlorobenzene	0.68	4.2	Not Detected	Not Detected
1,2,4-Trichlorobenzene	2.7	20	Not Detected	Not Detected
Hexachlorobutadiene	2.7	29	Not Detected	Not Detected
Propylene	2.7	4.8	Not Detected	Not Detected
1,3-Butadiene	2.7	6.1	Not Detected	Not Detected
Acetone	2.7	6.6	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD-02-27

ID#: 0208597A-04A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f090323	Date of Collection: 8/28/02
Dil. Factor:	1.36	Date of Analysis: 9/3/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2.7	8.6	Not Detected	Not Detected
2-Propanol	2.7	6.8	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.7	11	Not Detected	Not Detected
Vinyl Acetate	2.7	9.7	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.7	8.2	Not Detected	Not Detected
Hexane	2.7	9.7	Not Detected	Not Detected
Tetrahydrofuran	2.7	8.2	Not Detected	Not Detected
Cyclohexane	2.7	9.5	Not Detected	Not Detected
1,4-Dioxane	2.7	10	Not Detected	Not Detected
Bromodichloromethane	2.7	18	Not Detected	Not Detected
4-Methyl-2-pentanone	2.7	11	Not Detected	Not Detected
2-Hexanone	2.7	11	Not Detected	Not Detected
Dibromochloromethane	2.7	24	Not Detected	Not Detected
Bromoform	2.7	28	Not Detected	Not Detected
4-Ethyltoluene	2.7	14	Not Detected	Not Detected
Ethanol	2.7	5.2	Not Detected	Not Detected
Methyl tert-Butyl Ether	2.7	10	Not Detected	Not Detected
Heptane	2.7	11	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	88	70-130

AIR TOXICS LTD.

SAMPLE NAME: 16(B)VD-02-12

ID#: 0208597A-05A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	090325	Date of Collection:	8/28/02
Dil. Factor:	155	Date of Analysis:	9/3/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	78	390	Not Detected	Not Detected
Freon 114	78	550	Not Detected	Not Detected
Chloromethane	78	160	Not Detected	Not Detected
Vinyl Chloride	78	200	500	1300
Bromomethane	78	300	Not Detected	Not Detected
Chloroethane	78	210	Not Detected	Not Detected
Freon 11	78	440	Not Detected	Not Detected
1,1-Dichloroethene	78	310	Not Detected	Not Detected
Freon 113	78	600	Not Detected	Not Detected
Methylene Chloride	78	270	Not Detected	Not Detected
1,1-Dichloroethane	78	320	Not Detected	Not Detected
cis-1,2-Dichloroethene	78	310	Not Detected	Not Detected
Chloroform	78	380	Not Detected	Not Detected
1,1,1-Trichloroethane	78	430	Not Detected	Not Detected
Carbon Tetrachloride	78	500	Not Detected	Not Detected
Benzene	78	250	150	480
1,2-Dichloroethane	78	320	Not Detected	Not Detected
Trichloroethene	78	420	Not Detected	Not Detected
1,2-Dichloropropane	78	360	Not Detected	Not Detected
cis-1,3-Dichloropropene	78	360	Not Detected	Not Detected
Toluene	78	300	Not Detected	Not Detected
trans-1,3-Dichloropropene	78	360	Not Detected	Not Detected
1,1,2-Trichloroethane	78	430	Not Detected	Not Detected
Tetrachloroethene	78	530	Not Detected	Not Detected
1,2-Dibromoethane (EDB)	78	600	Not Detected	Not Detected
Chlorobenzene	78	360	Not Detected	Not Detected
Ethyl Benzene	78	340	2800	12000
m,p-Xylene	78	340	8600	38000
o-Xylene	78	340	2000	8900
Styrene	78	340	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	78	540	Not Detected	Not Detected
1,3,5-Trimethylbenzene	78	390	2700	14000
1,2,4-Trimethylbenzene	78	390	8200	41000
1,3-Dichlorobenzene	78	470	Not Detected	Not Detected
1,4-Dichlorobenzene	78	470	Not Detected	Not Detected
alpha-Chlorotoluene	78	410	Not Detected	Not Detected
1,2-Dichlorobenzene	78	470	Not Detected	Not Detected
1,2,4-Trichlorobenzene	310	2300	Not Detected	Not Detected
Hexachlorobutadiene	310	3400	Not Detected	Not Detected
Propylene	310	540	Not Detected	Not Detected
1,3-Butadiene	310	700	Not Detected	Not Detected
Acetone	310	750	Not Detected	Not Detected

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SAMPLE NAME: 16(B)VD-02-12

ID#: 0208597A-05A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f090325	Date of Collection: 8/28/02
Dil. Factor:	155	Date of Analysis: 9/3/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	310	980	Not Detected	Not Detected
2-Propanol	310	770	Not Detected	Not Detected
trans-1,2-Dichloroethene	310	1200	Not Detected	Not Detected
Vinyl Acetate	310	1100	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	310	930	Not Detected	Not Detected
Hexane	310	1100	1600	5600
Tetrahydrofuran	310	930	Not Detected	Not Detected
Cyclohexane	310	1100	1200	4200
1,4-Dioxane	310	1100	Not Detected	Not Detected
Bromodichloromethane	310	2100	Not Detected	Not Detected
4-Methyl-2-pentanone	310	1300	Not Detected	Not Detected
2-Hexanone	310	1300	Not Detected	Not Detected
Dibromochloromethane	310	2700	Not Detected	Not Detected
Bromoform	310	3200	Not Detected	Not Detected
4-Ethyltoluene	310	1500	6200	31000
Ethanol	310	590	Not Detected	Not Detected
Methyl tert-Butyl Ether	310	1100	Not Detected	Not Detected
Heptane	310	1300	1200	5000

Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	142 Q	70-130



AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

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This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0208597B

Work Order Summary

CLIENT: Mr. Mike Heffron
Foster Wheeler Environmental Corporation
1 Oxford Valley #200
2300 Lincoln Highway
Langhorne, PA 19047
215-702-4000

BILL TO: Ms. Sonya Staten
Foster Wheeler Environmental Corporation
1 Oxford Valley #200
2300 Lincoln Highway

PHONE: 215-702-4000

FAX: 215-702-4045

DATE RECEIVED: 8/29/02

DATE COMPLETED: 9/4/02

P.O. # 040380

PROJECT # 228204919202 NWS EARLE

CONTACT: Betty Chu

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
03A	16(A)VD-02-26	Modified TO-3	0.5 "Hg
04A	16(A)VD-02-27	Modified TO-3	0.5 "Hg
05A	16(B)VD-02-12	Modified TO-3	4.0 "Hg
06A	Lab Blank	Modified TO-3	NA
07A	LCS	Modified TO-3	NA

CERTIFIED BY:

Laboratory Director

DATE: 09/04/02

Certification numbers: CA NELAP - 02110CA, NY NELAP - 11291, UT NELAP - 9166389892, LA NELAP/LELAP- AI 30763
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-3
Foster Wheeler Environmental Corporation
Workorder# 0208597B

Three 6 Liter Summa Canister samples were received on August 29, 2002. The laboratory performed analysis via modified EPA Method TO-3 for Total Petroleum Hydrocarbons (TPH). TPH was analyzed via GC/FID. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. See the data sheets for the reporting limits for each compound.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The recovery of surrogate Fluorobenzene in sample 16(A)VD-02-26 was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD-02-26

ID#: 0208597B-03A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d090318	Date of Collection:	8/28/02
Dil. Factor:	218	Date of Analysis:	9/3/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	5.4	23	2200	9100

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	176 Q	75-125

AIR TOXICS LTD.

SAMPLE NAME: 16(A)VD-02-27

ID#: 0208597B-04A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d090316	Date of Collection:	8/28/02
Dil. Factor:	1.36	Date of Analysis:	9/3/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	0.034	0.14	0.070	0.29

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	105	75-125

AIR TOXICS LTD.

SAMPLE NAME: 16(B)VD-02-12

ID#: 0208597B-05A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d090317	Date of Collection:	8/28/02
Dil. Factor:	77.5	Date of Analysis:	9/3/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (C2+ Hydrocarbons) ref. to Gasoline	1.9	8.0	580	2400

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	106	75-125

APPENDIX D
ANALYTICAL RESULTS FOR EFFLUENT SAMPLES

NWS-EARLE
 BIOSLURPER UNIT #1 AND #2
 TPH EXTRACTED VIA GROUNDWATER TREATMENT

11/15/02

BIOSLURPER UNIT 1	
TPH INFLUENT* (mg/L):	46.6
TPH EFFLUENT* (mg/L):	0.23
GALLONS GROUNDWATER TREATED:	19641
* as per analytical average if more than one sample	6/28/02
	7.60 =POUNDS OF TPH

BIOSLURPER UNIT 2	
TPH INFLUENT* (mg/L):	29.7
TPH EFFLUENT* (mg/L):	0.11
GALLONS GROUNDWATER TREATED:	6464
* as per analytical average if more than one sample	6/28/02
	1.60 =POUNDS OF TPH

POUNDS OF TPH=

$$\frac{\text{Gallons Groundwater Treated} * (3.785 \text{ L/gal}) * (\text{TPH INFLUENT (mg/L)} - \text{TPH EFFLUENT (mg/l)}) * 0.001\text{g/mg} * 0.002205 \text{ pounds/g}}{}$$

NWS-EARLE
 BIOSLURPER UNIT #1 AND #2
 TPH EXTRACTED VIA GROUNDWATER TREATMENT

11/15/02

BIOSLURPER UNIT 1	
TPH INFLUENT* (mg/L):	2800
TPH EFFLUENT* (mg/L):	0.63
GALLONS GROUNDWATER TREATED:	24875
* as per analytical average if more than one sample	
	581.16 =POUNDS OF TPH

BIOSLURPER UNIT 2	
TPH INFLUENT* (mg/L):	62.5
TPH EFFLUENT* (mg/L):	0.54
GALLONS GROUNDWATER TREATED:	5362
* as per analytical average if more than one sample	
	2.77 =POUNDS OF TPH

POUNDS OF TPH=

$$\frac{\text{Gallons Groundwater Treated} * (3.785 \text{ L/gal}) * (\text{TPH INFLUENT (mg/L)} - \text{TPH EFFLUENT (mg/l)}) * 0.001\text{g/mg} * 0.002205 \text{ pounds/g}}{}$$

NWS-EARLE
 BIOSLURPER UNIT #1 AND #2
 TPH EXTRACTED VIA GROUNDWATER TREATMENT

11/15/02

BIOSLURPER UNIT 1	
TPH INFLUENT* (mg/L):	284
TPH EFFLUENT* (mg/L):	0.61
GALLONS GROUNDWATER TREATED:	31129
* as per analytical average if more than one sample	
	73.62 =POUNDS OF TPH

BIOSLURPER UNIT 2	
TPH INFLUENT* (mg/L):	23.3
TPH EFFLUENT* (mg/L):	0.74
GALLONS GROUNDWATER TREATED:	5977
* as per analytical average if more than one sample	
	1.13 =POUNDS OF TPH

POUNDS OF TPH=

$$\frac{\text{Gallons Groundwater Treated} * (3.785 \text{ L/gal}) * (\text{TPH INFLUENT (mg/L)} - \text{TPH EFFLUENT (mg/l)}) * 0.001\text{g/mg} * 0.002205 \text{ pounds/g}}{}$$

SIMALABS INTERNATIONAL

FAXED
7/5/02

NARRATIVE GC Organic Analysis

SIMALABS Project No.: L4733

Customer Name: Foster Wheeler

Prep. Work Group NO: WG11002 ✓

Analytical Work Group NO: WG11010 ✓

1. QC Package for this Prep. Batch is from this Project? YES
2. Extraction Method Sep Funnel 3510C Analytical Method EPA 8015B SAP#: ORG1 REV. 10
3. Detector: FID Column: RTX-5
4. CALIBRATION: Initial calibration date: 5-20-02 PASSED
5. The ICV is from a second source. ICV PASSED
6. Continuing calibration passed: X yes or ___ Describe any Calibration problems:
7. DILUTION: Sample L4733-1 was analyzed and reported from a 25X dilution. Sample L4733-3 was analyzed and reported from a 5X dilution.
8. SURROGATES: Surrogate recovery for sample L4733-1 was low. This is due to the high concentration and dilution of the sample. Low surrogate recovery on this sample may have also been caused by the heavy emulsion that formed during the extraction of this sample.
9. QUALITY CONTROL: Method Blank analyzed: YES Any Contamination?: NO
 LCS/LCD analyzed: YES Is recovery within QC limits: NO ^{VF 7/5/02} The recovery for the LCS was just below recovery limits. The LCD passed. —
 MS/MSD analyzed: NO recovery within QC limits: This is a method modification.
 QC CHARTS: A review of historical QC charts were done. Any violations will be reported to the QA Manager.
10. Manual Integration: Manual integrations were performed as per SOP GEN43, details are documented on the raw data.
11. Any sediment problems, instrument problem, extraction problem, etc. If no problem, write NO in the blank space: ___ If yes describe: Sample L4733-1 formed a heavy emulsion during the extraction process. Sample L4733-3 also formed an emulsion during extraction process.

REVIEW: Level 1	Initial <u>MLW</u>	Date <u>07-03-02</u>
Level 2	Initial <u>VF</u>	Date <u>7/5/02</u>

Customer: FOSTER WHEELER ENVIRONMENTAL CORPORATION
 Source: NWS EARLE
 Analysis: TPH Diesel by GC
 Method: EPA 8015B
 Prep Method: EPA 3510C
 Lab Notebook No: 1296 P.46
 Initial Cal ID: 2DZ0520H

SAMPLE RESULTS

Cust. Proj. No.: MOA NO. 032876
 Login No.: L4733
 Date Received: 29-JUN-02
 Date Analyzed: 02-JUL-02
 Prep Date: 02-JUL-02
 Preparation Batch: WG11002
 Instrument Batch: WG11010

LAB I.D.	CUSTOMER SAMPLE NO. & LOCATION	MATRIX	TPH	MDL (mg/l)	RL (mg/l)	DILUTION	VALUE / FLAG (mg/l)	Surrogate Recovery (%)
L4733-1	16(A)EW(02)47	Misc. H2O	NonVolatile (Diesel range)	0.095	8.0	25	46.6 D	N-Nonacosane 45 * N-Triacontane 43
L4733-2	16(A)EW(02)48	Misc. H2O	NonVolatile (Diesel range)	0.097	0.33	1	0.23 J	N-Nonacosane 98 N-Triacontane 97
L4733-3	16(B)EW(02)19	Misc. H2O	NonVolatile (Diesel range)	0.091	1.5	5	29.7 D	N-Nonacosane 84 N-Triacontane 83
L4733-4	16(B)EW(02)20	Misc. H2O	NonVolatile (Diesel range)	0.091	0.31	1	0.11 J	N-Nonacosane 75 N-Triacontane 73

RL - Reporting Limit
 D - Diluted

MDL - Method Detection Limit
 J - Estimated Value

* - Value(s) outside of QC limits

Comments: 1) Surrogate Percent Recovery Limits: N-Nonacosane 64-140, N-Triacontane 40-140

SIMALABS INTERNATIONAL

NARRATIVE GC Organic Analysis

SIMALABS Project No.: L4878

Customer Name: Foster Wheeler

Prep. Work Group NO: WG11533

Analytical Work Group NO: WG11553

1. QC Package for this Prep. Batch is from this Project? YES
2. Extraction Method Sep Funnel 3510C Analytical Method EPA 8015B SAP# :ORG1 REV. 10
3. **Detector:** FID **Column:** RTX-5
4. **CALIBRATION:** Initial calibration date: 08-05-02 PASSED
5. The ICV is from a second source. ICV PASSED
6. **Continuing calibration** passed: X yes or Describe any Calibration problems:
7. **DILUTION:** Both samples L4878-1 & -3 had strong fuel smells to them therefore they were diluted before analysis. Sample L4878-1 was analyzed and reported from a 50X dilution. Sample L4878-3 was analyzed and reported from a 10X dilution.
8. **SURROGATES:** The prep blank had high surrogate recovery and the surrogate was diluted out of sample L4878-1. All other surrogate recoveries passed.
9. **QUALITY CONTROL:** Method Blank analyzed: YES Any Contamination?: NO
LCS/LCD analyzed: YES Is recovery within QC limits: NO The recovery for the LCS and LCD were high. The samples can not be re-extracted as all of the sample that was provided has been used.
MS/MSD analyzed: NO recovery within QC limits: This is a modification to the method. The client did not provide enough sample to do a MS/MSD.
QC CHARTS: A review of historical QC charts were done. Any violations will be reported to the QA Manager.
10. **Manual Integration:** Manual integrations were performed as per SOP GEN43, details are documented on the raw data.
11. Any sediment problems, instrument problem, extraction problem, etc. If no problem, write NO in the blank space: If yes describe: Sample L4878-1 formed a heavy emulsion during the extraction process. Sample L4878-1 would not concentrate down to 1ml therefore it was put in a final volume of 10ml.

REVIEW: Level 1	Initial <u>AKW</u>	Date <u>08-05-02</u>
Level 2	Initial <u>VF</u>	Date <u>8/6/02</u>



INTERNATIONAL

SAMPLE RESULTS

Customer: FOSTER WHEELER ENVIRONMENTAL CORPORATION
 Source: NWS EARLE
 Analysis: TPH Diesel by GC
 Method: EPA 8015B
 Prep Method: EPA 3510C
 Lab Notebook No: 1296 P.47-48
 Initial Cal ID: 2DZ0805

Cust. Proj. No.: MOA NO. 032876
 Login No.: L4878
 Date Received: 01-AUG-02
 Date Analyzed: 06-AUG-02
 Prep Date: 01-AUG-02
 Preparation Batch: WG11533
 Instrument Batch: WG11553

LAB I.D.	CUSTOMER SAMPLE NO. & LOCATION	MATRIX	TPH	MDL (mg/l)	RL (mg/l)	DILUTION	VALUE / FLAG (mg/l)	Surrogate Recovery (%)
L4878-1	16(A)EW-02-49 NWS EARLE	Misc. H2O	NonVolatile (Diesel range)	0.27	156	50	2800 D	N-Triacontane 0 *
L4878-2	16(A)EW-02-50 NWS EARLE	Misc. H2O	NonVolatile (Diesel range)	0.026	0.31	1	0.63	N-Triacontane 103
L4878-3	16(B)EW-02-21 NWS EARLE	Misc. H2O	NonVolatile (Diesel range)	0.027	3.1	10	62.5 D	N-Triacontane 149 *
L4878-4	16(B)EW-02-22 NWS EARLE	Misc. H2O	NonVolatile (Diesel range)	0.026	0.30	1	0.54	N-Triacontane 107

RL - Reporting Limit
 D - Diluted

MDL - Method Detection Limit

* - Value(s) outside of QC limits

Comments: 1) Surrogate Percent Recovery Limits: N-Triacontane 67-110

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08/06/02 TUE 13:20 FAX 513 943 3967

SIMALABS of Ohio

FOSTERWHLREARL

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HERE COMES A FAX
from . .

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250 W. 84th Drive
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INTERNATIONAL

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6954 Cornell Road, Suite 300
Cincinnati, OH 45252
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Fax: (513) 489-2223

To: Mike Heffron

Company: FOSTER WHEELER ENVIRONMENTAL CORP.

Fax: SD #32

From: *Denise Richards*

Date: *8-6-02 1:20 pm*

Client Project ID: MOA NO. 032876

Pages (including cover): *3*

Lab Workorder No.: *L4878 Recd 8-10-02*

Message:

Diesel

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SIMALABS INTERNATIONAL

NARRATIVE GC Organic Analysis

SIMALABS Project No.: L5001

Customer Name: Foster Wheeler

Prep. Work Group NO: WG12060

Analytical Work Group NO: WG12061

1. QC Package for this Prep. Batch is from this Project? YES
2. Extraction Method Sep Funnel 3510C Analytical Method EPA 8015B SAP#: ORG1 REV. 10
3. Detector: FID Column: RTX-5
4. CALIBRATION: Initial calibration date: 08-05-02 PASSED
5. The ICV is from a second source. ICV PASSED
6. Continuing calibration passed: yes or X Describe any Calibration problems: The surrogate n-Triacontane was high on the end CCV.
7. DILUTION: Both samples L5001-1 & -3 had strong fuel smells to them therefore they were diluted before analysis. Sample L5001-1 was analyzed and reported from a 50X dilution. Sample L5001-3 was analyzed and reported from a 5X dilution.
8. ~~SURROGATES-PASSED~~ *High in Sample L5001-1. This could be due to the large dilution done on Sample. 8-9-02*
9. QUALITY CONTROL: Method Blank analyzed: YES Any Contamination?: NO
 LCS/LCD analyzed: YES Is recovery within QC limits: YES
 MS/MSD analyzed: NO recovery within QC limits: This is a modification to the method. The client did not provide enough sample to do a MS/MSD.
 QC CHARTS: A review of historical QC charts were done. Any violations will be reported to the QA Manager.
10. **Manual Integration:** Manual integrations were performed as per SOP GEN43, details are documented on the raw data.
11. Any sediment problems, instrument problem, extraction problem, etc.:
 Sample L5001-1 & -3 formed an emulsion during the extraction process.

REVIEW: Level 1	Initial <u>AKW</u>	Date <u>09-04-02</u>
Level 2	Initial <u>K</u>	Date <u>9-4-02</u>

SIMALABS

INTERNATIONAL

Customer: FOSTER WHEELER ENVIRONMENTAL CORPORATION
 Source: N.W.S EARLE
 Analysis: TPH Diesel by GC
 Method: EPA 8015B
 Prep Method: EPA 3510C
 Lab Notebook No: 1296 P.53
 Initial Cal ID: 2DZ0805

SAMPLE RESULTS

Cust. Proj. No.: MOA NO. 032876
 Login No.: L5001
 Date Received: 29-AUG-02
 Date Analyzed: 30-AUG-02
 Prep Date: 30-AUG-02
 Preparation Batch: WG12060
 Instrument Batch: WG12061

LAB ID.	CUSTOMER SAMPLE NO. & LOCATION	MATRIX	TPH	MDL (mg/l)	RL (mg/l)	DILUTION	VALUE / FLAG (mg/l)	Surrogate Recovery (%)
L5001-1	01 / 16(A)EW-02-51	Misc. H2O	NonVolatile (Diesel range)	0.026	15.3	50	284 D	N-Triacontane 157 *
L5001-2	02 / 16(A)EW-02-52	Misc. H2O	NonVolatile (Diesel range)	0.026	0.31	1	0.61	N-Triacontane 114
L5001-3	03 / 16(B)EW-02-23	Misc. H2O	NonVolatile (Diesel range)	0.026	1.5	5	23.3 D	N-Triacontane 107
L5001-4	04 / 16(B)EW-02-24	Misc. H2O	NonVolatile (Diesel range)	0.026	0.31	1	0.74	N-Triacontane 117

RL - Reporting Limit
 D - Diluted

MDL - Method Detection Limit

* - Value(s) outside of QC limits

Comments: 1) Surrogate Percent Recovery Limits: N-Triacontane 54-151

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