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INVESTIGATION. pdf

URS

REPORT
SOIL AND GROUNDWATER INVESTIGATION

Prepared For:

PACTIV
MACEDON, NEW YORK

August 21, 2000

Prepared by:

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URS

August 21, 2000

Mr. Dick St. James
Pactiv
102 North Street
Canandaigua, New York 14424

Re: Soil and Groundwater Investigation
Pactiv
Macedon, New York

Dear Mr. St. James:

This letter report presents the results of Dames & Moore's (a division of URS Corporation) investigation of the soil and groundwater quality at the Pactiv (formerly known as Tenneco Packaging) Plant in Macedon, New York. The investigation was conducted in accordance with our September 10, 1999 proposal and subsequent modifications.

This letter contains five sections. Section 1.0 provides background information about the site. The scope of the work conducted during the investigation is presented in Section 2.0. The results of the investigation are presented in Section 3.0. Our conclusions are presented in Section 4.0 and our recommendations are presented in Section 5.0.

1.0 BACKGROUND

Pactiv's Macedon Plant is part of a 23.6-acre complex that also includes manufacturing facilities for Mobil's Commercial Films Division and Huntsman Design Products. As shown in Figure 1, the complex is bounded by the New York State Barge Canal and a Pennsylvania Central railroad spur to the north, New York State Route 31 to the south, Quaker Road and a truck trailer parking area to the east, and New York State Route 350 to the west.

In the 1980s, approximately 5,000 gallons of Lacolene (a petroleum distillate) and 500 gallons of fuel oil were spilled near Building 12. Mobil Chemical (Mobil) installed a multi-phase extraction system on Pactiv's portion of the property to remediate soil and groundwater in the spill area. Mobil shut down the system in April 1996 with the concurrence of the New York State Department of Environmental Conservation (NYSDEC).

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The April 17, 1997 CH2M Hill report, entitled *Environmental Audit, Tenneco Packaging Specialty Products, Macedon, NY* (*CH2M Hill Report*) and the NYSDEC's September 30, 1997 response letter identified several areas of potential soil and groundwater contamination at the Macedon facility. These areas were addressed in IT Corporation's *Summary of Environmental Issues and Investigation Plan, Tenneco Packaging, Macedon Plant (IT Plan)*, dated July 1998. The *IT Plan* recommended additional investigation in six locations to further characterize the soil and groundwater quality at the Macedon facility.

In February and August of 1999, representatives of Pactiv and Dames & Moore met with the NYSDEC to discuss the conditions at the site and the scope of the investigation proposed in the *IT Plan*. During these meetings, the NYSDEC indicated that they would use the results of the *CH2M Hill Report* and any additional information provided by Pactiv as part of a RCRA Facility Assessment (RFA).

On September 10, 1999, Dames & Moore submitted a proposal to Pactiv to conduct the work described in the *IT Plan* and additional sampling requested by the NYSDEC. The proposed work included the installation and sampling of five groundwater monitoring wells, installation and sampling of one piezometer, and the advancement and sampling of five soil borings. During subsequent conversations between Pactiv, Dames & Moore, and the NYSDEC, the advancement and sampling of two additional soil borings were added to the scope of work. The soil from these two borings was sampled for mercury to evaluate the extent of the apparent mercury that was previously detected. This letter report presents the results of the investigation.

2.0 SCOPE OF WORK

The *IT Plan* and the NYSDEC identified these five issues for further investigation at Pactiv's Macedon facility:

- Three groundwater sampling locations (MA-1, MA-2, and MA-3), which showed elevated concentrations of metals and toluene;
- The multi-phase extraction system area, where concentrations of three SVOCs and several metals exceeded groundwater standards at one monitoring well (MW-7);

- The former gasoline underground storage tank (UST) area (MA-6), where petroleum hydrocarbons were detected in soil samples;
- The waste ink tank area (MA-8), where a hydrocarbon odor was detected in the soil near the water table; and
- The area near the former ink room in Building 6A, where the mercury concentration in a soil sample (MA-20) exceeded both the NYSDEC's recommended soil cleanup objective (RSCO) and the Eastern United States background range.

The scope of the field investigation completed by Dames & Moore to address these issues at the Macedon facility consisted of these four tasks:

- Install monitoring wells, piezometers, and soil borings;
- Collect and analyze soil samples;
- Survey well and boring locations; and
- Conduct two groundwater sampling events.

In response to the NYSDEC's request, Dames & Moore will collect two additional rounds of water level measurements in the six newly installed monitoring wells and at the three surveyed canal gauging stations to evaluate the impact of water level changes in the canal on the groundwater flow beneath the site. The scope of the field work that has been completed through March 2000 is described in this section.

Monitoring Wells, Piezometers and Soil Borings

Between October 20 and October 25, 1999, Dames & Moore's subcontractor, MARCOR Remediation, Inc. of Rochester, New York, installed five monitoring wells (MMW-1 through MMW-5), one piezometer (MP-1), and seven soil borings (MSB-1 through MSB-7) at Pactiv's Macedon facility. During the drilling, a Dames & Moore geologist provided oversight for the drilling subcontractor. All 13 borings were advanced with hollow-stem augers. The soil at each boring was continuously sampled using two-inch diameter, two-foot long split-spoon samplers. The Dames & Moore geologist visually classified each split-spoon soil sample and collected headspace readings with a photoionization detector (PID) to screen the soil for the presence of volatile organic compounds (VOCs). Visually contaminated soil cuttings and soil that exhibited

elevated headspace readings were containerized in 55-gallon drums. The boring logs of the soil and the well construction details are provided in Appendix A.

The locations of the five monitoring wells are shown in Figure 2. The monitoring wells were constructed of two-inch diameter PVC risers and 10-foot-long PVC screens. The sand pack for each well extended one foot above the top of the well screen. A one-foot layer of bentonite pellets was placed above the sand pack, followed by sand to a depth of approximately six inches below the ground surface (bgs). The monitoring wells were finished with concrete seals and equipped with flush-mounted protective covers.

The monitoring wells were installed to depths of approximately 12 to 15 feet bgs. Bedrock was encountered between 12 and 14 feet bgs in three of the five monitoring wells. Monitoring well depths are summarized in Table 1.

As shown in Figure 2, monitoring well MMW-1 was installed near the main entrance to the building along the southern border of the site. Monitoring well MMW-2 was installed near the northern boundary of the site. Monitoring well MMW-3 was installed north of the former gasoline USTs. Monitoring well MMW-4 was installed on the south side of the former solvent tank near Building 12. Monitoring well MMW-5 was installed east of Building 34.

Bedrock was encountered at approximately 12 feet bgs at MMW-3. The split-spoon sample from four to six feet bgs at MMW-3 exhibited petroleum-like odors. Bedrock was encountered at a depth of approximately 14 feet at MMW-4.

Piezometer MP-1 was installed approximately four feet south of a dumpster on the west side of the site. The piezometer was constructed of three-quarter inch PVC and was equipped with a flush-mounted protective cover. Weathered bedrock was encountered at a depth of approximately 14 feet bgs at MP-1.

The seven soil boring locations are shown in Figure 2. All boring locations were approved by Pactiv prior to drilling. As shown in Figure 2, soil borings MSB-1 and MSB-2 were advanced near the former gasoline underground storage tanks and the solvent tanks. Soil boring MSB-2 was advanced through a concrete pad that was encountered approximately one foot below the ground surface.

Soil boring MSB-3 was advanced to a depth of 16 feet near the former solvent tank. Soil boring MSB-4 was advanced to a depth of 15 feet on the west side of the waste ink tank. Soil boring MSB-5 was advanced to bedrock at a depth of 16 feet on the east side of the waste ink tank. Soil borings MSB-6 and MSB-7 were advanced north of Building 6B to depths of four feet.

The locations of the soil borings, monitoring wells, and the piezometer were surveyed by the Sear-Brown Group of Rochester, New York after installation. The locations of three canal gauging stations, which are shown in Figure 2, were also surveyed. The survey data, including easting, northing, and elevation, are attached in Appendix A.

Soil Sample Analyses

Dames & Moore submitted eight soil samples to Columbia Analytical Services (CAS) of Rochester, New York for laboratory analysis. The split-spoon sampling interval that exhibited the highest headspace reading in each of soil borings MSB-1 through MSB-7 and MP-1 was selected for laboratory analyses. Soil samples were not collected for laboratory analyses from the borings completed as monitoring wells.

Columbia Analytical Services analyzed the five soil samples from soil borings MSB-1 through MSB-5 for these parameters:

- Gasoline Range Organics by EPA SW-846 Method 8015;
- Diesel Range Organics with fingerprinting by EPA SW-846 Method 8100M;
- VOCs by EPA SW-846 Method 8260B;
- Semivolatile Organic Compounds (SVOCs) by EPA SW-846 Method 8270C; and
- RCRA Metals.

The three soil samples from soil borings MSB-6 and MSB-7 and the boring for piezometer MP-1 were analyzed for mercury only. The laboratory analytical reports for all eight soil samples are in Appendix B.

November 1999 Groundwater Sample Analyses

On November 1, 1999, monitoring wells MMW-1 through MMW-5 were developed, purged, and sampled. Water levels were measured in monitoring wells MMW-1 through MMW-5 and

piezometer MP-1 before the five monitoring wells were purged and sampled. The water levels were also gauged at the three canal gauging stations.

The water removed from the wells during well development and purging was containerized in 55-gallon drums. The pH, temperature, conductivity, and turbidity of the groundwater were measured in the field. Each well was purged until the field parameter measurements stabilized or the well went dry.

Monitoring well MMW-1 went dry after five gallons of water had been purged from the well. The well was allowed to recharge overnight and was purged and sampled the following day (November 2, 1999).

Groundwater samples from wells MMW-1 through MMW-5 were submitted to CAS for laboratory analysis. Columbia Analytical Services analyzed the samples for these parameters:

- Gasoline Range Organics by EPA SW-846 Method 8015;
- Diesel Range Organics with fingerprinting by EPA SW-846 Method 8100M;
- VOCs by EPA SW-846 Method 8260B;
- SVOCs by EPA SW-846 Method 8270C; and
- RCRA Metals (field-filtered and unfiltered).

The laboratory analytical reports are in Appendix B.

March 2000 Groundwater Sample Analyses

On March 13, 2000, Dames & Moore completed the second gauging and groundwater sampling event at the Macedon facility. The objective of this second round of gauging and groundwater sampling was to assess whether groundwater flow or quality were affected by changes in the water level in the Barge Canal. Based on Dames & Moore recommendations and Pactiv's concurrence, this second sampling event included the purging and sampling of piezometer MP-1.

Prior to the collection of the groundwater samples, water levels were measured at the three canal gauging stations, monitoring wells MMW-1 through MMW-5, and piezometer MP-1. Monitoring well MMW-5 was dry and therefore, no groundwater sample was collected at this location. The canal was also dry at Gauging Station No.1, which is east of MMW-5.

The groundwater purging and sampling procedures followed were the same procedures used during the November 1999 sampling event. Groundwater samples were collected from monitoring wells MMW-1 through MMW-4 and piezometer MP-1. During purging and sampling of monitoring well MMW-3, Dames & Moore noted that the water had a gasoline-type odor.

The five groundwater samples were submitted to CAS for laboratory analysis. The groundwater samples collected from monitoring wells MMW-1 through MMW-4 and piezometer MP-1 in March 2000 were analyzed for:

- VOCs by EPA SW-846 Method 8260B; and
- SVOCs by EPA SW-846 Method 8270C.

According to the November 1999 groundwater gauging data the most upgradient groundwater monitoring location at the site is MP-1. Therefore, to evaluate groundwater quality in the upgradient portion of the site, the groundwater sample from piezometer MP-1 was also analyzed for:

- Gasoline Range Organics by EPA SW-846 Method 8015;
- Diesel Range Organics with fingerprinting by EPA SW-846 Method 8100M; and
- RCRA Metals (field-filtered and unfiltered).

The laboratory analytical reports are in Appendix B.

3.0 RESULTS

This section discusses the results of Dames & Moore's soil and groundwater investigation at Pactiv's Macedon, New York plant.

3.1 HYDROGEOLOGY

The overburden soils encountered during Dames & Moore's investigation primarily consisted of brown and gray fine- to medium-grained sand with traces of silt and angular gravel above a one- to two-foot-thick layer of brown and gray clay.

The bedrock, which consists of shales and dolostones of the Salina Group, was encountered between eight and 16 feet below grade in several of the borings. No borings were advanced beyond a depth of 16 feet.

Table 1 presents the groundwater levels in monitoring wells MMW-1 through MMW-5 and piezometer MP-1 on November 1, 1999 and March 13, 2000 and the water levels at the three canal gauging stations on October 25, 1999 and March 13, 2000. Groundwater levels ranged from 6.0 to 9.2 feet below the ground surface.

As shown in Figure 3, in November 1999, the groundwater beneath the site moves from west to east across the site, roughly parallel to the direction of flow in the New York State Barge Canal that forms the northern border of the site. These results concur with those of the *CH2M Hill Report,* dated April 17, 1997.

The water level in the canal is controlled by the New York State Thruway Authority who lowered the canal water level after October 1999. Figure 4, presents the March 13, 2000 gauging data and shows that the direction of groundwater flow is from southwest to northeast across the site.

As shown, with the exception of the groundwater levels measured at piezometer MP-1, the groundwater levels at the site generally decreased between November 1999 and March 2000. The groundwater level at MP-1 increased from 90.74 feet in November 1999 to 91.19 feet in March 2000. The groundwater level at monitoring well MMW-1 decreased approximately 0.65 feet between November 1999 and March 2000. The groundwater levels measured at the four monitoring wells along the northern boundary of the site decreased by at least one foot. Both Gauging Station #1 near Pactiv's SPDES Outfall 008 and monitoring well MMW-5, which is in the downgradient and northeast portion of the site, were dry on March 13, 2000. The maximum decrease in groundwater levels (from 84.53 feet in November 1999 to below 77.8 feet in March 2000) at the site was measured at monitoring well MMW-5.

3.2 SOIL ANALYTICAL RESULTS

The results of the soil sample analyses for metals, VOCs, SVOCs, and petroleum hydrocarbons are summarized in Tables 2 through 5. The NYSDEC's recommended soil cleanup objectives (RSCOs) from the *Division of Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, HWR-94-4046 (TAGM 4046)*, dated January 24, 1994, are also presented in the tables for comparison.

Metals

As shown in Table 2, neither cadmium nor silver was detected in the five soil samples analyzed for RCRA metals. Arsenic, barium, and chromium were detected in several samples at concentrations less than their RSCOs or background levels.

The concentrations of lead ranged from 6.96 mg/kg (MSB-1) to 14.0 mg/kg (MSB-5). Lead was not detected, above method detection limits, in soil sample MSB-3 (8 to 10 feet). Note that there is no RSCO for lead and the site-specific background level for lead is uncertain. The lead concentrations detected in the soil samples are within the range of Eastern USA background ranges.

Selenium exceeded its RSCO of 2 mg/kg in two samples, with 2.05 mg/kg at MSB-3 (8 to 10 feet) and 2.59 mg/kg at MSB-4 (4 to 6 feet). However, both of these results fall within the range of background levels of selenium in the Eastern United States.

Mercury was not detected in the samples from MSB-1 through MSB-5 or MP-1. Mercury was detected at concentrations less than the RSCO of 0.1 mg/kg in the soil samples from a depth of four feet at MSB-6 and MSB-7.

Volatile Organic Compounds

The results of the soil VOC analyses are summarized in Table 3. Due to the elevated levels of the organic compounds in four of the five soil samples (MSB-1, MSB-2, MSB-3, and MSB-4), the method detection limits that are reported for some compounds are greater than the NYSDEC's RSCOs. Although some of the method detection limits are greater than the NYSDEC's RSCOs, the results indicate that the soil has been impacted by VOCs. Estimated concentrations are

reported for compounds that were present in the soil samples at concentrations less than reported method detection limits. These estimated concentrations are indicated by a "J" flag.

No VOCs were detected in the soil sample from MSB-5. The detection limits reported for soil sample MSB-5 are elevated due to interference from a hydrocarbon that is not on the target analyte list. As shown below, 11 VOCs were detected in at least one of the four soil samples from borings MSB-1 through MSB-4. The maximum detected concentrations of most of the compounds were found in the sample from MSB-2.

Compound	RSCO (µg/kg)	Number of Detections	Number of Exceedances	Maximum Concentration Detected (µg/kg)	Location of Maximum Concentration
Benzene	60	1	1	170J	MSB-2 (8 to 10 feet)
sec-Butylbenzene	NL	2	N/A	1,600	MSB-2 (8 to 10 feet)
Ethylbenzene	5,500	3	1	7,700	MSB-2 (8 to 10 feet)
Isopropylbenzene	NL	2	N/A	1,000	MSB-2 (8 to 10 feet)
p-Isopropyltoluene	NL	2	N/A	1,900	MSB-2 (8 to 10 feet)
Naphthalene	NL	3	N/A	6,300	MSB-2 (8 to 10 feet)
n-Propylbenzene	NL	2	N/A	3,100	MSB-2 (8 to 10 feet)
Tetrachloroethene	1,400	1	1	730,000	MSB-4 (4 to 6 feet)
Toluene	1,500	2	1	110,000	MSB-3 (8 to 10 feet)
1,3,5-Trimethylbenzene	NL	2	N/A	9,300	MSB-2 (8 to 10 feet)
1,2,4-Trimethylbenzene	NL	3	N/A	31,000	MSB-2 (8 to 10 feet)
o-Xylene	1,200	2	0	790J	MSB-2 (8 to 10 feet)
m- and p-Xylenes	1,200	3	3	25,000	MSB-2 (8 to 10 feet)

Notes: NL = No RSCO is listed for this compound.
N/A = Not applicable.
J = Estimated value below method detection limit.

Semivolatile Organic Compounds

The results of the laboratory SVOC analyses are summarized in Table 4. No SVOCs were detected in the soil sample from MSB-5. The SVOCs detected in the soil samples from MSB-1 through MSB-4 are listed below. As shown below, none of the compounds was detected at a concentration exceeding its RSCO, except for phenol in the soil sample from MSB-1. Most of the maximum concentrations of the SVOCs were detected in the sample from MSB-2. The reported detection limits for the SVOC analyses of soil samples MSB-1 through MSB-4 are elevated due to interference from the other compounds detected in these soil samples. As shown in the laboratory reports in Appendix B, the reported detection limit for the SVOC analysis for soil sample MSB-5 are within 20 percent of the practical quantification limit for the analytical method.

Compound	RSCO (µg/kg)	Number of Detections	Number of Exceedences	Maximum Concentration Detected (µg/kg)	Location of Maximum Concentration
Acenaphthene	50,000	2	0	1,600J	MSB-4 (4 to 6 feet)
Anthracene	41,000	2	0	1,700J	MSB-4 (4 to 6 feet)
Dibenzofuran	6,200	1	0	1,500J	MSB-2 (8 to 10 feet)
Fluorene	50,000	4	0	4,100	MSB-2 (8 to 10 feet)
2-Methylnaphthalene	36,400	4	0	22,000	MSB-2 (8 to 10 feet)
Naphthalene	13,000	3	0	7,500	MSB-2 (8 to 10 feet)
Phenanthrene	50,000	4	0	6,100	MSB-4 (4 to 6 feet)
Phenol	30	1	1	1,100J	MSB-1 (8 to 10 feet)

Notes:
J = Estimated value below method detection limit.

Petroleum Hydrocarbons

As shown below and in Table 5, the petroleum hydrocarbon analyses detected gasoline-range organics, No. 2 fuel oil, and diesel range organics in the soil samples collected from borings MSB-1 through MSB-4. Although a diesel odor was detected in soil sampled between 10 and 12

feet at boring MSB-5, no gasoline- or diesel-range organics were detected above method detection limits in soil sample MSB-5 (12 to 14 feet).

Compound	Number of Detections	Maximum Concentration Detected (mg/kg)	Location of Maximum Concentration
Gasoline Range Organics	4	4,000	MSB-3 (8 to 10 feet)
Fuel Oil #2	1	2,100	MSB-3 (8 to 10 feet)
Diesel Range Organics	3	3,400	MSB-4 to 6 feet)

3.3 GROUNDWATER ANALYTICAL RESULTS

The results of the groundwater analyses for filtered and unfiltered metals, VOCs, SVOCs, and petroleum hydrocarbons are summarized in Tables 6 through 9. The NYSDEC's groundwater standards and guidance values from the June 1998 Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. are presented in the tables for comparison. The complete laboratory analytical reports are provided in Appendix B.

Metals

As shown in Table 6, arsenic, cadmium, lead, mercury and silver were not detected in either the filtered or the unfiltered groundwater samples from monitoring wells MMW-1 through MMW-5 and piezometer MP-1. Barium and chromium were detected in several of the unfiltered groundwater samples at concentrations that are less than NYSDEC's groundwater standards. Selenium was detected in three of the six unfiltered groundwater samples at concentrations less than the NYSDEC's groundwater standard. The concentration of selenium detected in the unfiltered sample from MP-1 was slightly greater than the groundwater standard. All six filtered samples contained detectable concentrations of barium. Selenium was detected in the filtered samples from MMW-5 and MP-1. Metals concentrations in the filtered samples were less than their concentrations in the unfiltered samples.

Volatile Organic Compounds

There were no VOCs detected above method detection limits in the groundwater samples from monitoring well MMW-5 and piezometer MP-1. Only one VOC, carbon disulfide, was detected

in the groundwater samples from monitoring wells MMW-1 and MMW-2. The VOC results show that low levels of several VOCs were detected in the groundwater samples collected from the monitoring wells MMW-3 and MMW-4 that were installed north of the former gasoline USTs and near the former solvent tank location, respectively. Only the concentrations of naphthalene and m- and p-xylenes that were detected in the MMW-3 groundwater samples exceeded the NYSDEC's guidance or groundwater standards.

As shown in Table 7, no VOCs were detected in the groundwater samples collected from monitoring wells MMW-1, MMW-2, and MMW-5 in November 1999. However, in March 2000, one VOC, carbon disulfide, was detected in the groundwater samples from monitoring wells MMW-1 at 11 µg/L and MMW-2 at 14 µg/L. The guidance value for carbon disulfide is 60 µg/L. Monitoring well MMW-5 was dry on March 13, 2000 and, therefore, was not resampled.

Low levels of three VOCs were detected in the November 1999 groundwater sample from MMW-4. Toluene was detected at 5.2 µg/L in the sample from MMW-4, which is slightly greater than the NYSDEC's groundwater standard of 5 µg/L. Naphthalene (3.6 µg/L) and m- and p-xylenes (2.1 µg/L) results for MMW-4 were reported at estimated concentrations that are less than the method detection limits (indicated by a J-flag). Both estimated concentrations are less than their respective NYSDEC guidance values or groundwater standard. Three different VOCs (acetone, 2-Butanone, and carbon disulfide) were detected in the March 2000 groundwater sample from MMW-4. Carbon disulfide was detected at 47 µg/L. Acetone and 2-Butanone were detected at 5.9 µg/L (J-flag) and 2.4 µg/L (J-flag), respectively, in the March 2000 groundwater sample. The NYSDEC's guidance value for both acetone and 2-Butanone is 50 µg/L. The guidance value for carbon disulfide is 60 µg/L.

Six VOCs (ethylbenzene, isopropylbenzene, naphthalene, n-propylbenzene, 1,2,4-trimethylbenzene, and m- and p-xylenes) were detected in both the November 1999 and March 2000 groundwater samples from MMW-3. These six VOCs were detected at lower concentrations during the second sampling event. The detected concentrations of ethylbenzene of 2.2 µg/L (J-flag) and 1.4 µg/L (J-flag) were both less than the NYSDEC's groundwater standard of 5 µg/L. The detected concentrations of isopropylbenzene were below 5 µg/L in November 1999 and March 2000. There is no groundwater standard or guidance value available

for isopropylbenzene. Naphthalene was detected at 20 µg/L (November 1999) and at 5.6 µg/L (March 2000). The NYSDEC's guidance value for naphthalene is 10 µg/L. The concentrations of n-propylbenzene at MMW-3 decreased from 5.2 µg/L in November 1999 to 2.7 µg/L (J-flag) in March 2000. There is no groundwater standard or guidance value available for n-propylbenzene. The detected concentrations of 1,2,4-trimethylbenzene at MMW-3 decreased from 46 µg/L (November 1999) to 25 µg/L (March 2000). There is no groundwater standard or guidance value available for 1,2,4-trimethylbenzene. Both concentrations of m- and p-xylenes in MMW-3 of 28 µg/L (November 1999) and 8.6 µg/L (March 2000) exceeded the NYSDEC's groundwater standard of 5 µg/L.

Five additional VOCs (acetone, 2-Butanone, sec-butylbenzene, carbon disulfide, and p-isopropyltoluene) were detected in one of the two groundwater samples from MMW-3. Sec-butylbenzene at 1.7 µg/L (J-flag), which is less than the groundwater standard of 5 µg/L, and p-isopropyltoluene at 1.6 µg/L (J-flag), were detected in the November 1999 groundwater sample from MMW-3. Note that there is no available groundwater standard or guidance value for p-isopropyltoluene. Acetone and 2-Butanone were detected at 5.5 µg/L (J-flag) and 2.1 µg/L (J-flag), respectively, concentrations below the guidance value for both VOCs of 50 µg/L, in the March 2000 groundwater sample. Carbon disulfide was detected at 34 µg/L in the March 2000 groundwater sample from MMW-3.

As shown in Table 7, no VOCs were detected above method detection limits from MP-1.

Carbon disulfide was detected in four of the five groundwater samples collected during the second groundwater sampling round. The concentrations of carbon disulfide ranged from 11 µg/L in MMW-1 to 47 µg/L in MMW-4, which are below the NYSDEC's guidance value of 60 µg/L. Carbon disulfide had not been detected in monitoring wells MMW-1 through MMW-5 during the November 1999 sampling event or in any of the soil or groundwater samples from previous (1996) sampling events conducted at Macedon. The source of the carbon disulfide concentrations detected in the groundwater is unknown. According to CAS, these carbon disulfide concentrations can not be attributed to laboratory contamination.

Semivolatile Organic Compounds

As shown in Table 8, only one SVOC, phenol, was detected in groundwater samples collected in November 1999 at concentrations exceeding its 1 µg/L standard. No SVOCs were detected in the groundwater samples collected in March 2000 at concentrations exceeding applicable groundwater standards or guidance values.

Phenol was detected in groundwater samples from MMW-1 (18 µg/L), MMW-3 (12 µg/L), and MMW-4 (21 µg/L). Phenol was also detected in groundwater samples collected from MMW-2 and MMW-5 at estimated concentrations below the 10 µg/L detection limit. These detections of phenol were limited to the groundwater samples collected in November 1999. No SVOCs were detected above method detection limits in the groundwater samples collected in March 2000.

Other SVOCs that were detected in the groundwater samples at estimated concentrations less than 10 µg/L (and less than applicable standards or guidance values) include: acenaphthene, anthracene, di-n-butlyphthalate, dibenzofuran, diethylphthalate, bis(2-ethylhexyl)phthalate, fluorene, isophorone, 2-methylnaphthalene, 4-methylphenol, naphthalene, and phenanthrene.

Petroleum Hydrocarbons

As shown in Table 9, petroleum hydrocarbons were not detected in the groundwater samples from MMW-2, MMW-5, and MP-1. Diesel-range organics were detected in groundwater samples from MMW-1, MMW-3, and MMW-4. Gasoline-range organics were detected in groundwater samples from MMW-3 and MMW-4. The MMW-3 groundwater sample contained 3,300 µg/L diesel-range organics and 390 µg/L gasoline-range organics. The MMW-4 groundwater sample contained 2,200 µg/L diesel-range organics and 880 µg/L gasoline-range organics. The MMW-1 groundwater sample contained 1,400 µg/L diesel-range organics.

4.0 CONCLUSIONS

This section presents Dames & Moore's conclusions regarding this investigation and conditions at the site. We have developed these conclusions based upon the results of this investigation and information contained in the *CH2M Hill Report*.

4.1 HYDROGEOLOGY

The overburden at Pactiv's Macedon facility primarily consists of brown and gray fine- to medium-grained sand with traces of silt and gravel. The depth to bedrock ranges from eight feet at MSB-4 near the ink storage tank to greater than 15 feet at MMW-1 at the southern edge of the site and at MMW-5 in the northeast corner of the site.

As shown in Figures 3 and 4, the groundwater beneath the site flows from west to east, roughly parallel to the direction of flow of the New York State Barge Canal that runs along the northern boundary of the site. The April 1997 *CH2M Hill Report* reached the same conclusion regarding the direction of groundwater flow.

On November 1, 1999, water was flowing through the entire length of the canal north of the site and the difference in canal levels from the upgradient gauging station (Gauging Station No. 2) to the downgradient gauging station (Gauging Station No.1) was approximately 10 feet. The most upgradient groundwater monitoring point at the site was piezometer MP-1.

On March 13, 2000, there was no water flowing in the canal at Gauging Station No. 1. The water levels dropped more than one foot at the other two canal gauging stations since the first sampling round. The groundwater elevations at the three monitoring wells (MMW-2, MMW-3, and MMW-4) along the central portion of the northern boundary of the site also dropped by at least one foot. The groundwater elevation at MMW-1 dropped only 0.65 feet. Monitoring well MMW-5, in the northeastern portion of the site and the nearest well to Gauging Station No. 1, was dry. Based on the well construction of MMW-5, the water level at MMW-5 had dropped approximately 6.7 feet. There was an approximately 0.5 foot rise in the groundwater elevation at MP-1.

The groundwater beneath the site appears to migrate parallel to the canal and is influenced by flow within the canal. The elevations of the groundwater table decreased when the canal water level was dropped. Based on the available data, the most pronounced effect occurs in the northeastern portion of the site where the groundwater level dropped approximately 6.7 feet between the first and second gauging and sampling events.

4.2 SOIL AND GROUNDWATER QUALITY

Based on Dames & Moore's review of the results of the current and prior investigations, we have developed conclusions regarding these five issues of concern:

- Groundwater quality in the southeastern, northwestern, and northeastern portions of the site;
- Groundwater and soil quality near the multi-phase extraction system;
- The former gasoline UST area;
- The waste ink tank area; and
- The area near the Building 6A former ink room.

Our conclusions for each of the five issues of potential concern are provided below. In general, our conclusions are that:

- The groundwater quality in the southeastern, northwestern and northeastern portions of the study area have not been significantly impacted by metals, VOCs, or petroleum hydrocarbons.
- Toluene, xylenes, some SVOCs, gasoline range organics, and No. 2 fuel oil have impacted both the groundwater and soil quality near the multi-phase extraction system.
- Petroleum hydrocarbons were detected in the soil near the former gasoline UST area. Petroleum hydrocarbons and SVOCs have also impacted the groundwater near the former gasoline UST.
- Contaminated soil near the waste ink tank appears to be limited to the area north and west of the tank.
- The extent of mercury in the soil near the former ink room in Building 6A is limited to the area near MA-20, immediately west of the building.

Groundwater quality in the southeastern, northwestern, and northeastern portions of the site

Elevated concentrations of metals in the groundwater samples taken from temporary wells MA-1, MA-3, and MA-2 during previous investigations appear to have been related to well construction and insufficient purging, as suggested in the *IT Plan*. Field-filtered and unfiltered groundwater samples collected by Dames & Moore from monitoring wells MMW-1, MMW-2, and MMW-5, which are near the previous temporary wells, did not exceed the NYSDEC's groundwater standards for any of the RCRA metals.

During Dames & Moore's investigation, no petroleum hydrocarbons were detected in the groundwater samples from MMW-2 and MMW-5 in these locations. The previous detection of toluene at temporary wells MA-2 and MA-3 was not duplicated during our investigation. No VOCs were detected in the MMW-5 groundwater sample. Only carbon disulfide (14 µg/L) was detected in the MMW-2 groundwater sample collected in March 2000. Thus, it is possible that the previous detection of toluene at these two locations may be due to sampling errors or laboratory interference.

Phenol was detected in the November 1999 groundwater sample from MMW-1 in the southeastern portion of the site at 18 µg/L, which exceeds the groundwater standard of 1 µg/L. Phenol was not detected in the March 2000 groundwater sample from MMW-1. Thus, because phenol was not detected in the second sampling event, it does not appear to be a concern at the site.

Groundwater and soil quality near the multi-phase extraction system

The groundwater quality near the multi-phase extraction system, west of Building 12, contained low levels of toluene and phenol that exceed the NYSDEC's groundwater quality standards. The only SVOC that exceeded its groundwater standard in the November 1999 sample from monitoring well MMW-4 was phenol. During the March 2000 sampling event, toluene and phenol were not detected at MMW-4 but carbon disulfide (47 µg/L) was detected below NYSDEC's guidance value of 60 µg/L. In previous investigations at MW-7, which is part of the multi-phase extraction system in the former solvent tank area, there were three other SVOCs detected in MW-7 at concentrations that exceeded their groundwater standards.

No RCRA metals exceeded groundwater standards in either the filtered or the unfiltered groundwater sample from monitoring well MMW-4 in the former solvent tank area near the multi-phase extraction area. During previous investigations, elevated concentrations of several metals had been found in a groundwater sample from monitoring well MW-7.

The soil from the eight to 10 foot bgs interval at boring MSB-3 near the multi-phase extraction system has been impacted by toluene and xylenes at concentrations that exceeded their NYSDEC RSCOs. In addition, this soil contained elevated levels of gasoline-range organics and No. 2 fuel oil.

The former gasoline UST area

The soil and groundwater near the former gasoline UST area, north of Building 11, appears to have been impacted by petroleum hydrocarbons. In previous investigations, petroleum hydrocarbons were detected in a soil sample (MA-6B, 7 to 8 feet bgs) from this area. During Dames & Moore's investigation, soil samples MSB-1 (8 to 10 feet) and MSB-2 (8 to 10 feet) from this region contained gasoline- and diesel-range organics and elevated concentrations of several VOCs. The groundwater at MMW-3 in this area contained gasoline- and diesel-range organics and exceeded groundwater standards for naphthalene, phenols, and m- and p-xylenes. Carbon disulfide was also detected in the groundwater at MMW-3 (34 µg/L). The guidance value for carbon disulfide is 60 µg/L.

The waste ink tank area

The extent of impacted soil near the waste ink tank, southwest of Building 12, appears to be limited. No VOCs, SVOCs, or petroleum hydrocarbons were detected in a soil sample from boring MSB-5. Soil sample MSB-4 (4 to 6 feet) contained gasoline- and diesel-range organics and exceeded the RSCO for tetrachloroethene. In previous investigations, there was evidence of potential hydrocarbon contamination in the soil near the waste ink tank area.

The area near the Building 6A former ink room

The extent of potential mercury impacts near the Building 6A former ink room appears to be limited to the sample (MA-20) from the previous investigation. Mercury was not detected in one

of the three soil samples (MP-1) taken at a depth of four feet near Building 6A. Furthermore, mercury was not detected in the groundwater sample collected from piezometer MP-1 in March 2000. Mercury concentrations in the other two soil samples (MSB-6 and MSB-7) were less than the RSCO for mercury and within the Eastern United States background range.

4.3 EXPOSURE POTENTIAL

The potential for exposure to the compounds detected in soil and groundwater at the site is minimal. Most of the site is paved or is covered by the buildings. Therefore, direct contact with the site soil or groundwater is unlikely. There are no drinking water supply wells at the site. The groundwater beneath the site is influenced by flow within the canal, which is controlled by the New York State Thruway Authority. Depending on the flow in the canal a portion of the site groundwater may migrate into the canal. The canal is not used a drinking water source. In addition, because the water level in the canal is not maintained around the year, the canal is not likely to be considered a sensitive ecological habitat for aquatic communities. The human health and ecological risks associated the soil and groundwater quality at the site are anticipated to be minimal based on the limited potential for contact with the site soil and groundwater.

5.0 RECOMMENDATIONS

This section presents Dames & Moore's recommendations for the site and the five specific issues of concern identified at the site.

Recommended Plan of Action for Site

Dames & Moore recommends that Pactiv develop and implement corrective measures, which are likely to include access restrictions and institutional controls, for the three areas at the site that appear to have been impacted. These three impacted areas include soil and groundwater near the former gasoline UST, near the multi-phase extraction system, and north and west of the waste ink tank area. Although the extent of impacts has not been fully defined, we believe the available data will allow development, comparison, selection, and implementation of corrective measures for the impacted areas.

The development and evaluation of corrective measures for the site should consider the potential exposure routes and receptors. As discussed in Section 4.3, the human health and ecological risks associated with the site appear to be minimal. Thus, we believe that access restrictions to limit contact with impacted materials and land use restrictions to control future uses of the site would be appropriate corrective measures for the site.

Groundwater quality in the southeastern, northwestern, and northeastern portions of the site

Dames & Moore recommends no further action regarding the elevated concentrations of toluene and metals that were previously detected in the groundwater samples collected from three temporary wells. Toluene was not detected in groundwater samples collected from wells installed near the previous temporary well locations. The concentrations of metals detected in field-filtered and unfiltered groundwater samples collected from wells installed near the previous temporary well locations meet NYSDEC's groundwater standards.

Groundwater and soil quality near the multi-phase extraction system

Dames & Moore recommends no further action regarding the elevated concentrations of metals previously detected in the groundwater near the multi-phase extraction system. No metals were detected at concentrations that exceed groundwater standards in the groundwater sample collected from the well installed near the multi-phase extraction system.

We recommend development and evaluation of potential corrective measures to address the SVOCs previously detected in the groundwater and the VOCs detected in soil above the water table near the multi-phase extraction system. Five SVOCs have been detected in groundwater samples collected from this area. Both toluene and xylenes have been detected in the soil near the water table.

The former gasoline UST area

We recommend development and evaluation of potential corrective measures to address the impacts to soil and groundwater quality near the former gasoline UST. Petroleum hydrocarbons have been detected in both the soil and groundwater near the former gasoline UST. Also, naphthalene and phenols have been detected in the groundwater near the former gasoline UST.

The waste ink tank area

We recommend development and evaluation of potential corrective measures to address the VOC impacted soil north and west of the former waste ink tank area. One VOC, tetracholorethene, and gasoline- and diesel-range organics were detected in the soil.

The area near the Building 6A former ink room

Dames & Moore recommends no further action regarding the suspected mercury contaminated soils west of Building 6A. The impacts to soil from mercury appear to be limited to the mercury concentration in soil sample MA-20 that exceeded the NYSDEC's RSCO and the Eastern United States background range. Mercury was either not detected (MP-1) or was detected at concentrations that were less than the RSCO and within the Eastern United States background range for mercury at soil borings MSB-6 and MSB-7 during this investigation.

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We appreciate the opportunity to submit this report, and we look forward to working with you on future projects. If you have any questions or require additional information, please do not hesitate to call.

Sincerely,

DAMES & MOORE

Don Porterfield, P.E.
Senior Engineer

cc: Jim Wakeman, Pactiv, Bakersfield, California
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TABLE 1

CANAL AND GROUNDWATER ELEVATION DATA
PACTIV
MACEDON, NEW YORK

WELL/BORING ID	MEASURING POINT ELEVATIONS (feet)	TOTAL DEPTH (feet bgs)	SCREEN LENGTH (feet)	November 1, 1999[a]		March 13, 2000		Change in Water Levels between gauging events (feet)
				Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	
GAUGING STATION 1 (near SPDES 008)	89.10	N/A	N/A	5.0	84.10	6.0[b]	<83.10[b]	-1.0 (estimate)
GAUGING STATION 2 (Culvert)	100.95	N/A	N/A	6.3	94.65	7.5	93.45	-1.20
GAUGING STATION 3 (Stone Wall)	102.33	N/A	N/A	7.4	94.93	9.1	93.23	-1.70
MMW-1	95.26	14.3	10	8.4	86.86	9.05	86.21	-0.65
MMW-2	96.23	13.7	10	6.0	90.23	7.82	88.41	-1.82
MMW-3	96.97	11.5	10	8.1	88.87	9.15	87.82	-1.05
MMW-4	94.80	13.2	10	7.2	87.60	9.2	85.60	-2.00
MMW-5	93.03	15.2	10	8.5	84.53	DRY	<77.8	-6.73
MP-1	97.74	13.7	10	7.0	90.74	6.55	91.19	0.45

Notes:
Elevations are relative to site datum.
N/A = Not applicable
a. Gauging stations were measured on October 25, 1999 during the first gauging event.
b. Approximate depth to the bottom of the canal is six feet below the measuring point elevation.

TABLE 2

SUMMARY OF SOIL ANALYTICAL RESULTS
FOR METAL ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	Recommended Soil Cleanup Objective	Eastern USA Background	MSB-1 (8'-10') 10/25/99	MSB-2 (8'-10') 10/25/99	MSB-3 (8'-10') 10/21/99	MSB-4 (4'-6') 10/20/99	MSB-5 (12'-14') 10/20/99	MSB-6 (4') 10/22/99	MSB-7 (4') 10/22/99	MP-1 (4'-5') 10/22/99
Arsenic	7.5 or SB	3-12**	**1.75**	1.21 U	2.95 U	2.87 U	**3.37**	-	-	-
Barium	300 or SB	15-600	**18.8**	**34.9**	**13.0**	**9.47**	**10.6**	-	-	-
Cadmium	1 or SB	0.1-1.0	0.601 U	0.605 U	0.590 U	0.574 U	0.594 U	-	-	-
Chromium	10 or SB	1.5-40.0**	**8.39**	**9.19**	**4.03**	**2.90**	**7.71**	-	-	-
Lead	SB****	****	**6.96**	**9.60**	5.90 U	**6.37**	**14.0**	-	-	-
Mercury	0.1	0.001-0.2	0.0601 U	0.0605 U	0.0590 U	0.0574 U	0.0594 U	**0.0963**	**0.0816**	0.0613 U
Selenium	2 or SB	0.1-3.9	**1.19**	**1.35**	**2.05**	**2.59**	**1.91**	-	-	-
Silver	SB	N/A	1.20 U	1.21 U	1.18 U	1.15 U	1.19 U	-	-	-

Notes:
Units are mg/kg
SB = site background
** = New York State background
**** = Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4 to 61 ppm.
Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200 to 500 ppm.
U indicates analyte not detected at a concentration greater than the method detection limit.
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS
FOR VOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	Recommended Soil Cleanup Objective	MSB-1 (8'-10') 10/25/99	MSB-2 (8'-10') 10/25/99	MSB-3 (8'-10') 10/21/99	MSB-4 (4'-6') 10/20/99	MSB-5 (12'-14') 10/20/99
Acetone	200	3,000 U	3,000 U	15,000 U	140,000 U	3,000 U
Benzene	60	750 U	**170 J**	3,700 U	36,000 U	740 U
Bromodichloromethane	NL	750 U	760 U	3,700 U	36,000 U	740 U
Bromoform	NL	750 U	760 U	3,700 U	36,000 U	740 U
Bromomethane	NL	750 U	760 U	3,700 U	36,000 U	740 U
2-Butanone	300	1,500 U	1,500 U	7,400 U	72,000 U	1,500 U
sec-Butylbenzene	NL	**370 J**	**1,600**	3,700 U	36,000 U	740 U
n-Butylbenzene	NL	750 U	760 U	3,700 U	36,000 U	740 U
tert-Butylbenzene	NL	750 U	760 U	3,700 U	36,000 U	740 U
Carbon Disulfide	2,700	1,500 U	1,500 U	7,400 U	72,000 U	1,500 U
Carbon Tetrachloride	600	750 U	760 U	3,700 U	36,000 U	740 U
Chlorobenzene	1,700	750 U	760 U	3,700 U	36,000 U	740 U
Chloroethane	1,900	750 U	760 U	3,700 U	36,000 U	740 U
Chloroform	300	750 U	760 U	3,700 U	36,000 U	740 U
Chloromethane	100	750 U	760 U	3,700 U	36,000 U	740 U
Dibromochloromethane	NL	750 U	760 U	3,700 U	36,000 U	740 U
1,1-Dichloroethane	200	750 U	760 U	3,700 U	36,000 U	740 U
1,2-Dichloroethane	100	750 U	760 U	3,700 U	36,000 U	740 U
1,1-Dichloroethene	400	750 U	760 U	3,700 U	36,000 U	740 U
cis-1,2-Dichloroethene	NL	750 U	760 U	3,700 U	36,000 U	740 U
trans-1,2-Dichloroethene	300	750 U	760 U	3,700 U	36,000 U	740 U
1,2-Dichloropropane	NL	750 U	760 U	3,700 U	36,000 U	740 U
cis-1,3-Dichloropropene	NL	750 U	760 U	3,700 U	36,000 U	740 U
trans-1,3-Dichloropropene	NL	750 U	760 U	3,700 U	36,000 U	740 U
Methyl-tert-butyl-ether	NL	750 U	760 U	3,700 U	36,000 U	740 U
Ethylbenzene	5,500	**900**	**7,700**	**2,100 J**	36,000 U	740 U
2-Hexanone	NL	1,500 U	1,500 U	7,400 U	72,000 U	1,500 U
Isopropylbenzene	NL	**220 J**	**1,000**	3,700 U	36,000 U	740 U
p-Isopropyltoluene	NL	**340 J**	**1,900**	3,700 U	36,000 U	740 U
Methylene Chloride	100	750 U	760 U	3,700 U	36,000 U	740 U
Naphthalene	NL	**1,400**	**6,300**	**1,700 J**	36,000 U	740 U
4-Methyl-2-pentanone	1,000	1,500 U	1,500 U	7,400 U	72,000 U	1,500 U
n-Propylbenzene	NL	**930**	**3,100**	3,700 U	36,000 U	740 U
Styrene	NL	750 U	760 U	3,700 U	36,000 U	740 U
1,1,2,2-Tetrachloroethane	600	750 U	760 U	3,700 U	36,000 U	740 U
Tetrachloroethene	1,400	750 U	760 U	3,700 U	**730,000**	740 U

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS
FOR VOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	Recommended Soil Cleanup Objective	MSB-1 (8'-10') 10/25/99	MSB-2 (8'-10') 10/25/99	MSB-3 (8'-10') 10/21/99	MSB-4 (4'-6') 10/20/99	MSB-5 (12'-14') 10/20/99
Toluene	1,500	**190 J**	760 U	**110,000**	36,000 U	740 U
1,1,1-Trichloroethane	800	750 U	760 U	3,700 U	36,000 U	740 U
1,1,2-Trichloroethane	NL	750 U	760 U	3,700 U	36,000 U	740 U
Trichloroethene	700	750 U	760 U	3,700 U	36,000 U	740 U
1,3,5-Trimethylbenzene	NL	**3,100**	**9,300**	3,700 U	36,000 U	740 U
1,2,4-Trimethylbenzene	NL	**7,800**	**31,000**	**1,400 J**	36,000 U	740 U
Vinyl Chloride	200	750 U	760 U	3,700 U	36,000 U	740 U
o-Xylene	1,200	750 U	**220 J**	**790 J**	36,000 U	740 U
m+p-Xylene	1,200	**1,800**	**25,000**	**4,000**	36,000 U	740 U

Notes:
Units are µg/kg
U indicates analyte not detected at a concentration greater than the method detection limit.
J indicates estimated concentration below method detection limit.
NL = No RSCO is listed for this compound
Samples were analyzed for volatile organic compounds by EPA Method 8260B
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 4

SUMMARY OF SOIL ANALYTICAL RESULTS
FOR SEMIVOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	Recommended Soil Cleanup Objective	MSB-1 (8'-10') 10/25/99	MSB-2 (8'-10') 10/25/99	MSB-3 (8'-10') 10/21/99	MSB-4 (4'-6') 10/20/99	MSB-5 (12'-14') 10/20/99
Acenaphthene	50,000	2,000 U	4,000 U	**1,200 J**	**1,600 J**	390 U
Acenaphthylene	41,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Anthracene	50,000	2,000 U	4,000 U	**910 J**	**1,700 J**	390 U
Benzo(a)anthracene	224	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Benzo(a)pyrene	61	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Benzo(b)fluoranthene	1,100	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Benzo(g,h,i)perylene	50,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Benzo(k)fluoranthene	1,100	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Benzyl alcohol	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Butyl benzyl phthalate	50,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
di-n-Butylphthalate	8,100	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Carbazole	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Indeno(1,2,3-cd)pyrene	3,200	2,000 U	4,000 U	1,900 U	3,800 U	390 U
4-Chloroaniline	220	2,000 U	4,000 U	1,900 U	3,800 U	390 U
bis(2-Chloroethoxy)methane	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
bis(2-Chloroethyl)ether	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2-Chloronaphthalene	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2-Chlorophenol	800	2,000 U	8,100 U	1,900 U	3,800 U	390 U
2-2'-oxybis(1-Chloropropane)	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Chrysene	400	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Dibenzo(a,h)anthracene	14	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Dibenzofuran	6,200	2,000 U	**1,500 J**	1,900 U	3,800 U	390 U
1,3-Dichlorobenzene	1,600	2,000 U	4,000 U	1,900 U	3,800 U	390 U
1,2-Dichlorobenzene	7,900	2,000 U	4,000 U	1,900 U	3,800 U	390 U
1,4-Dichlorobenzene	8,500	2,000 U	4,000 U	1,900 U	3,800 U	390 U
3,3'-Dichlorobenzidine	N/A	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2,4-Dichlorophenol	400	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Diethylphthalate	7,100	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Dimethylphthalate	20	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2,4-Dimethylphenol	NL	4,000 U	4,000 U	1,900 U	3,800 U	390 U
2,4-Dinitrophenol	400	10,000 U	21,000 U	10,000 U	20,000 U	2,000 U
2,4-Dinitrotoluene	200	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2,6-Dinitrotoluene	100	2,000 U	4,000 U	1,900 U	3,800 U	390 U
bis(2-Ethylhexyl)phthalate	50,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Fluoranthene	50,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Fluorene	50,000	**1,200 J**	**4,100**	**2,200**	**3,400 J**	390 U
Hexachlorobenzene	410	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Hexachlorobutadiene	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Hexachlorocyclopentadiene	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Hexachloroethane	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Isophorone	4,400	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2-Methylnaphthalene	36,400	**8,500**	**22,000**	**11,000**	**11,000**	390 U

TABLE 4

SUMMARY OF SOIL ANALYTICAL RESULTS
FOR SEMIVOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	Recommended Soil Cleanup Objective	MSB-1 (8'-10') 10/25/99	MSB-2 (8'-10') 10/25/99	MSB-3 (8'-10') 10/21/99	MSB-4 (4'-6') 10/20/99	MSB-5 (12'-14') 10/20/99
4,6-Dinitro-2-methylphenol	NL	10,000 U	21,000 U	10,000 U	20,000 U	2,000 U
4-Chloro-3-methylphenol	240	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2-Methylphenol	100	2,000 U	4,000 U	1,900 U	3,800 U	390 U
4-Methylphenol	900	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Naphthalene	13,000	**2,800**	**7,500**	**1,800 J**	3,800 U	390 U
2-Nitroaniline	430	10,000 U	21,000 U	10,000 U	20,000 U	2,000 U
3-Nitroaniline	500	10,000 U	21,000 U	10,000 U	20,000 U	2,000 U
4-Nitroaniline	NL	10,000 U	21,000 U	10,000 U	20,000 U	2,000 U
Nitrobenzene	200	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2-Nitrophenol	330	2,000 U	4,000 U	1,900 U	3,800 U	390 U
4-Nitrophenol	100	10,000 U	21,000 U	10,000 U	20,000 U	2,000 U
n-Nitrosodimethylamine	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
n-Nitrosodiphenylamine	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Di-n-octyl phthalate	50,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Pentachlorophenol	100	4,800 U	9,700 U	4,700 U	9,200 U	950 U
Phenanthrene	50,000	**2,400**	**5,900**	**4,100**	**6,100**	390 U
Phenol	30	**1,100 J**	4,000 U	1,900 U	3,800 U	390 U
4-Bromophenyl-phenylether	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
4-Chlorophenyl-phenylether	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
n-Nitroso-di-n-propylamine	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
Pyrene	50,000	2,000 U	4,000 U	1,900 U	3,800 U	390 U
1,2,4-Trichlorobenzene	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2,4,6-Trichlorophenol	NL	2,000 U	4,000 U	1,900 U	3,800 U	390 U
2,4,5-Trichlorophenol	100	2,000 U	4,000 U	1,900 U	3,800 U	390 U

Notes:
Units are µg/kg
U indicates analyte not detected at a concentration greater than the method detection limit.
J indicates estimated concentration below method detection limit.
NL = No RSCO is listed for this compound .
Samples were analyzed for semivolatile organic compounds by EPA Method 8270C
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 5

SUMMARY OF SOIL ANALYTICAL RESULTS
FOR PETROLEUM HYDROCARBON ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	Recommended Soil Cleanup Objective	MSB-1 (8'-10') 10/25/99	MSB-2 (8'-10') 10/25/99	MSB-3 (8'-10') 10/21/99	MSB-4 (4'-6') 10/20/99	MSB-5 (12'-14') 10/20/99
Gasoline range organics	NL	**1,400**	**480**	**4,000**	**61**	7.4 U
Fuel oil #2	NL	4.8 U	4.8 U	**2,100**	4.6 U	2.4 U
Fuel oil #4	NL	4.8 U	4.8 U	24 U	4.6 U	2.4 U
Fuel oil #6	NL	4.8 U	4.8 U	24 U	4.6 U	2.4 U
Kerosene	NL	4.8 U	4.8 U	24 U	4.6 U	2.4 U
Diesel range organics	NL	**2,600**	**3,300**	47 U	**3,400**	4.8 U

Notes:
Units are mg/kg
U indicates analyte not detected at a concentration greater than the method detection limit.
NL = No RSCO is listed for this compound
Samples were analyzed for petroleum hydrocarbons by EPA Methods 8015B and 8100
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 6

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR METAL ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-1 FILTERED 11/02/99	MMW-2 11/01/99	MMW-2 FILTERED 11/01/99	MMW-3 11/01/99	MMW-3 FILTERED 11/01/99	MMW-4 11/01/99	MMW-4 FILTERED 11/01/99	MMW-5 11/01/99	MMW-5 FILTERED 11/01/99	MP-1 03/13/00	MP-1 FILTERED 03/13/00
Arsenic	0.025	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Barium	1	**0.139**	**0.0612**	**0.204**	**0.0795**	**0.147**	**0.103**	**0.193**	**0.139**	**0.153**	**0.0918**	**0.202**	**0.0716**
Cadmium	0.005	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Chromium	0.05	**0.0254**	0.0100 U	**0.0420**	0.0100 U	**0.0173**	0.0100 U	**0.0100**	0.0100 U	**0.0176**	0.0100 U	**0.0244**	0.0100 U
Lead	0.025	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Mercury	0.0007	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U
Selenium	0.01	**0.00666**	0.00500 U	**0.00578**	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	**0.00620**	**0.00564**	**0.0145**	**0.00685**
Silver	0.05	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U

Notes:
Units are mg/L
U indicates analyte not detected at a concentration greater than the method detection limit.
(a) = New York State Groundwater Standards from Division of Water Technical and Operational Guidance Series (1.1.1) (NYSDEC, June 1998).
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 7

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR VOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-1 03/13/00	MMW-2 11/01/99	MMW-2 03/13/00	MMW-3 11/01/99	MMW-3 03/13/00	MMW-4 11/01/99	MMW-4 03/13/00	MMW-5 11/01/99	MP-1 03/13/00
Acetone	[50]	20 U	20 U	20 U	20 U	20 U	**5.5 J**	20 U	**5.9 J**	20 U	20 U
Benzene	1	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromodichloromethane	[50]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromoform	[50]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromomethane	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	[50]	10 U	10 U	10 U	10 U	10 U	**2.1 J**	10 U	**2.4 J**	10 U	10 U
sec-Butylbenzene	5	5.0 U	5.0 U	5.0 U	5.0 U	**1.7 J**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
n-Butylbenzene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
tert-Butylbenzene	NL	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	[60]	10 U	**11**	10 U	**14**	10 U	**34**	10 U	**47**	10 U	10 U
Carbon Tetrachloride	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloroethane	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloroform	7	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	50	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethane	0.6	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloropropane	1	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	0.4	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,3-Dichloropropene	0.4	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl-tert-butyl-ether	[10]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ethylbenzene	5	5.0 U	5.0 U	5.0 U	5.0 U	**2.2 J**	**1.4 J**	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	[50]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	NL	5.0 U	5.0 U	5.0 U	5.0 U	**2.3 J**	**1.3 J**	5.0 U	5.0 U	5.0 U	5.0 U

TABLE 7

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR VOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-1 03/13/00	MMW-2 11/01/99	MMW-2 03/13/00	MMW-3 11/01/99	MMW-3 03/13/00	MMW-4 11/01/99	MMW-4 03/13/00	MMW-5 11/01/99	MP-1 03/13/00
p-Isopropyltoluene	NL	5.0 U	5.0 U	5.0 U	5.0 U	**1.6 J**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	[10]	5.0 U	5.0 U	5.0 U	5.0 U	**20**	**5.6**	**3.6 J**	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NL	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Propylbenzene	NL	5.0 U	5.0 U	5.0 U	5.0 U	**5.2**	**2.7 J**	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**5.2**	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	1	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,3,5-Trimethylbenzene	NL	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trimethylbenzene	NL	5.0 U	5.0 U	5.0 U	5.0 U	**46**	**25**	5.0 U	5.0 U	5.0 U	5.0 U
Vinyl Chloride	2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
m+p-Xylene	5	5.0 U	5.0 U	5.0 U	5.0 U	**28**	**8.6**	**2.1 J**	5.0 U	5.0 U	5.0 U

Notes:
Units are µg/L
U indicates analyte not detected at a concentration greater than the method detection limit.
J indicates estimated concentration below method detection limit.
(a) = New York State Groundwater Standards from Division of Water Technical and Operational Guidance Series (1.1.1) (NYSDEC, June 1998).
[ ] = Brackets indicate guidance value.
NL = No standard or guidance value is listed for this compound
Samples were analyzed for volatile organic compounds by EPA Method 8260B
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 8

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR SEMIVOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-1 03/13/00	MMW-2 11/01/99	MMW-2 03/13/00	MMW-3 11/01/99	MMW-3 03/13/00	MMW-4 11/01/99	MMW-4 03/13/00	MMW-5 11/01/99	MP-1 03/13/00
Acenaphthene	[20]	11 U	10 U	10 U	10 U	**1.2 J**	10 U	**2.3 J**	10 U	10 U	10 U
Acenaphthylene	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	[50]	11 U	10 U	10 U	10 U	10 U	10 U	**1.1 J**	10 U	10 U	10 U
Benzo(a)anthracene	[0.002]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	[0.002]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzyl alcohol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	50	**1.2 J**	**1.0 J**	**1.4 J**	10 U	**2.2 J**	10 U	**1.6 J**	**2.6 J**	**1.7 J**	10 U
Carbazole	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	[0.002]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	1	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	[10]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-2'-oxybis(1-Chloropropane)	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	[0.002]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NL	11 U	10 U	10 U	10 U	**1.4 J**	10 U	**2.0 J**	10 U	10 U	10 U
1,3-Dichlorobenzene	3	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	3	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	3	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	1	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 8

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR SEMIVOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-1 03/13/00	MMW-2 11/01/99	MMW-2 03/13/00	MMW-3 11/01/99	MMW-3 03/13/00	MMW-4 11/01/99	MMW-4 03/13/00	MMW-5 11/01/99	MP-1 03/13/00
Diethylphthalate	[50]	**1.1 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	[10]	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
2,4-Dinitrotoluene	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	5	**1.8 J**	10 U	10 U	10 U	10 U	10 U	10 U	**1.8 J**	10 U	10 U
Fluoranthene	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	[50]	**1.9 J**	10 U	**1.4 J**	10 U	**3.3 J**	10 U	10 U	**2.1 J**	10 U	10 U
Hexachlorobenzene	0.04	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	[50]	11 U	10 U	10 U	10 U	10 U	**1.0 J**	10 U	10 U	10 U	10 U
2-Methylnaphthalene	NL	**1.1 J**	10 U	**1.4 J**	10 U	10 U	10 U	**5.3 J**	10 U	10 U	10 U
4,6-Dinitro-2-methylphenol	NL	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
4-Chloro-3-methylphenol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	NL	**1.1 J**	10 U	10 U	10 U	10 U	10 U	**1.6 J**	10 U	10 U	10 U
Naphthalene	[10]	11 U	10 U	10 U	10 U	10 U	10 U	**2.3 J**	10 U	10 U	10 U
2-Nitroaniline	5	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
3-Nitroaniline	5	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
4-Nitroaniline	5	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
Nitrobenzene	0.4	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	NL	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
n-Nitrosodimethylamine	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 8

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR SEMIVOLATILE ORGANIC COMPOUND ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-1 03/13/00	MMW-2 11/01/99	MMW-2 03/13/00	MMW-3 11/01/99	MMW-3 03/13/00	MMW-4 11/01/99	MMW-4 03/13/00	MMW-5 11/01/99	MP-1 03/13/00
n-Nitrosodiphenylamine	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	54 U	50 U	50 U	50 U	52 U	50 U	50 U	50 U	52 U	50 U
Phenanthrene	[50]	**5.0 J**	10 U	10 U	10 U	10 U	10 U	10 U	**1.8 J**	**2.1 J**	10 U
Phenol	1	**18**	10 U	**9.9 J**	10 U	**12**	10 U	**21**	10 U	**2.8 J**	10 U
4-Bromophenyl-phenylether	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitroso-di-n-propylamine	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	[50]	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	5	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	NL	11 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

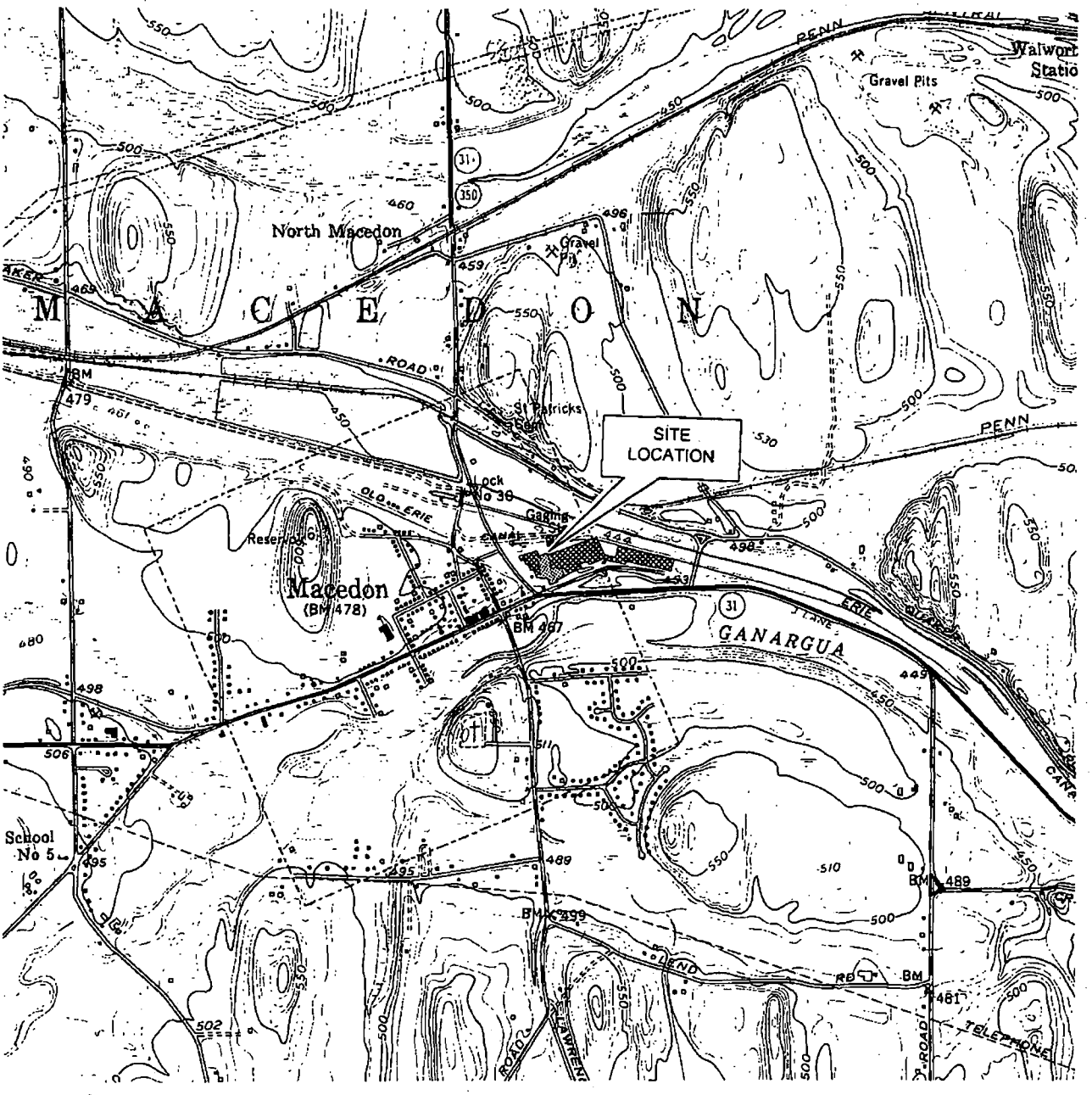
Notes:
Units are µg/L
U indicates analyte not detected at a concentration greater than the method detection limit.
J indicates estimated concentration below method detection limit.
(a) = New York State Groundwater Standards from Division of Water Technical and Operational Guidance Series (1.1.1) (NYSDEC, June 1998).
[ ] = Brackets indicate guidance value.
NL = No standard or guidance value is listed for this compound
Samples were analyzed for semivolatile organic compounds by EPA Method 8270C
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.

TABLE 9

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FOR PETROLEUM HYDROCARBON ANALYSES
PACTIV
MACEDON, NEW YORK

PARAMETER	NYSDEC Groundwater Standards (a)	MMW-1 11/02/99	MMW-2 11/01/99	MMW-3 11/01/99	MMW-4 11/01/99	MMW-5 11/01/99	MP-1 03/13/00
Gasoline range organics	NL	50 U	50 U	**390**	**880**	50 U	50 U
Fuel oil #2	NL	100 U	100 U	100 U	100 U	100 U	100 U
Fuel oil #4	NL	100 U	100 U	100 U	100 U	100 U	100 U
Fuel oil #6	NL	100 U	100 U	100 U	100 U	100 U	100 U
Kerosene	NL	100 U	100 U	100 U	100 U	100 U	100 U
Diesel range organics	NL	**1,400**	100 U	**3,300**	**2,200**	100 U	100 U

Notes:
Units are µg/L
U indicates analyte not detected at a concentration greater than the method detection limit.
(a) = New York State Groundwater Standards from Division of Water Technical and Operational Guidance Series (1.1.1) (NYSDEC, June 1998).
[ ] = Brackets indicate guidance value.
NL = No standard or guidance value is listed for this compound
NA = Not Analyzed
Samples were analyzed for petroleum hydrocarbons by EPA Methods 8015B and 8100.
Analyses were performed by Columbia Analytical Services, Inc., in Rochester, New York.
Numbers in bold are detected concentrations.



0 2,000 4,000

GRAPHIC SCALE

QUADRANGLE LOCATION

N

CONTOUR INTERVAL = 10 FEET

REFERENCE:
USGS 7.5 MINUTE TOPOGRAPHIC MAP
MACEDON, N.Y. QUADRANGLE
1951 (PHOTOINSPECTED 1976)

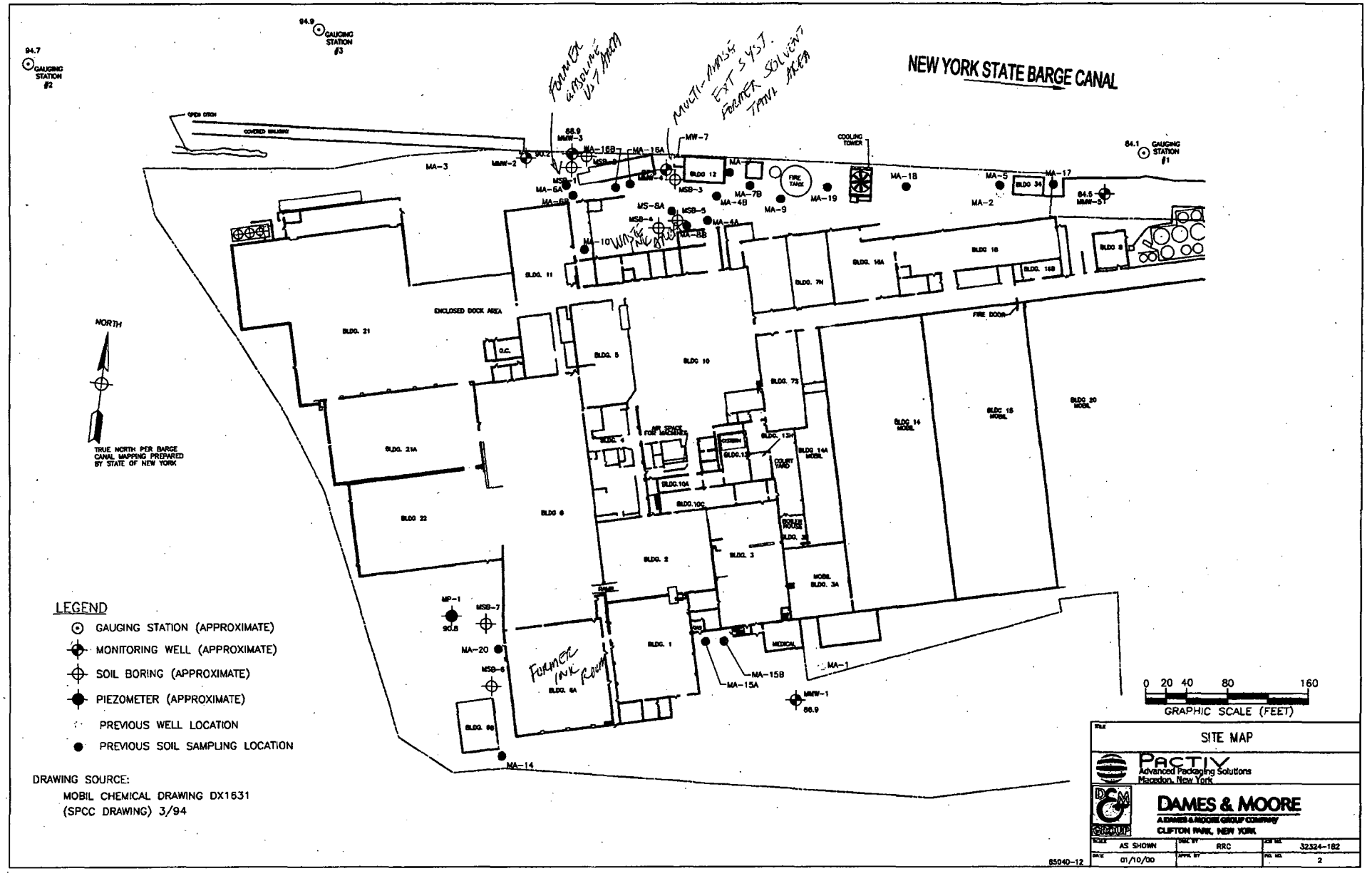
85040-13

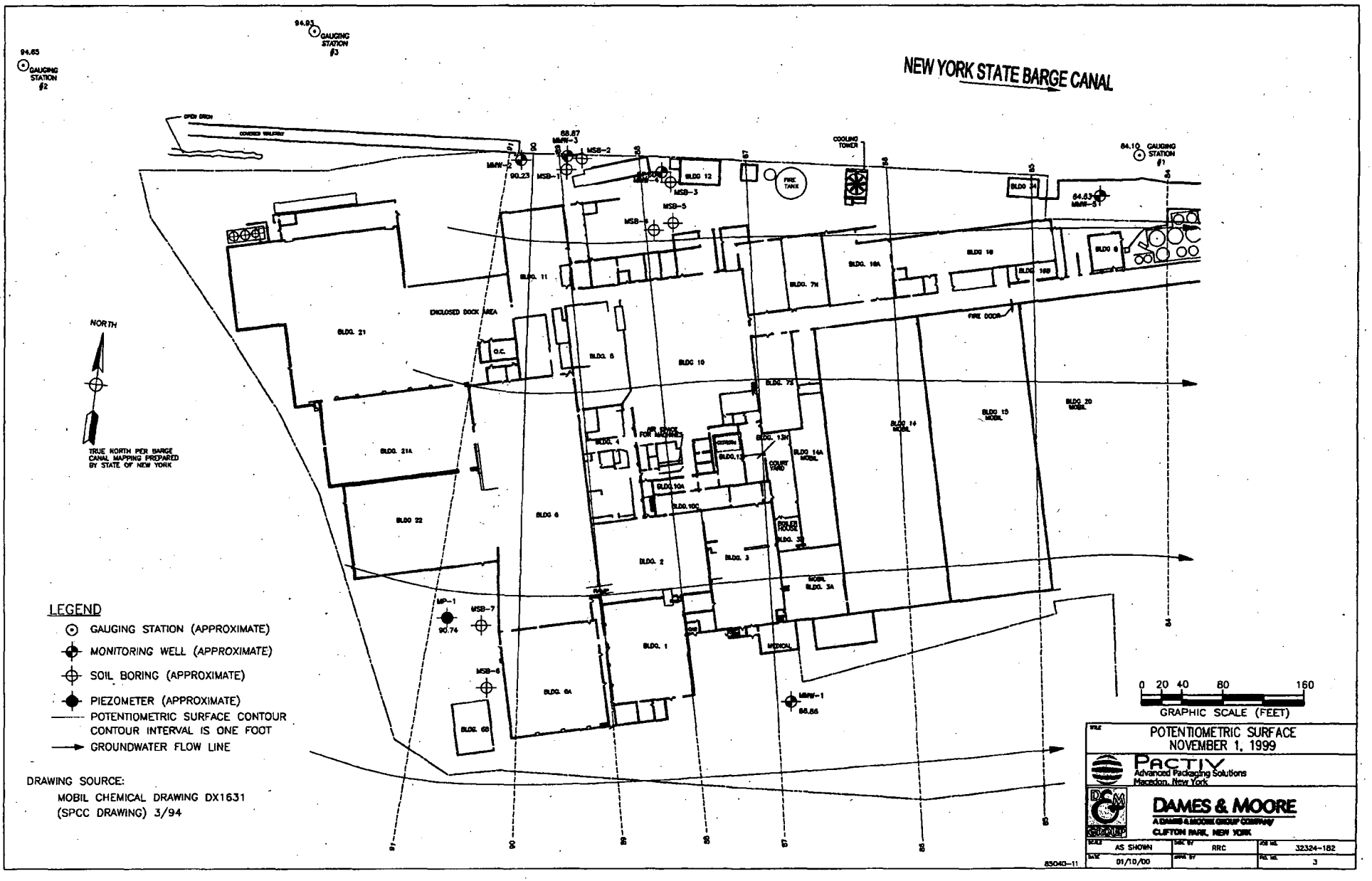
TITLE: SITE LOCATION

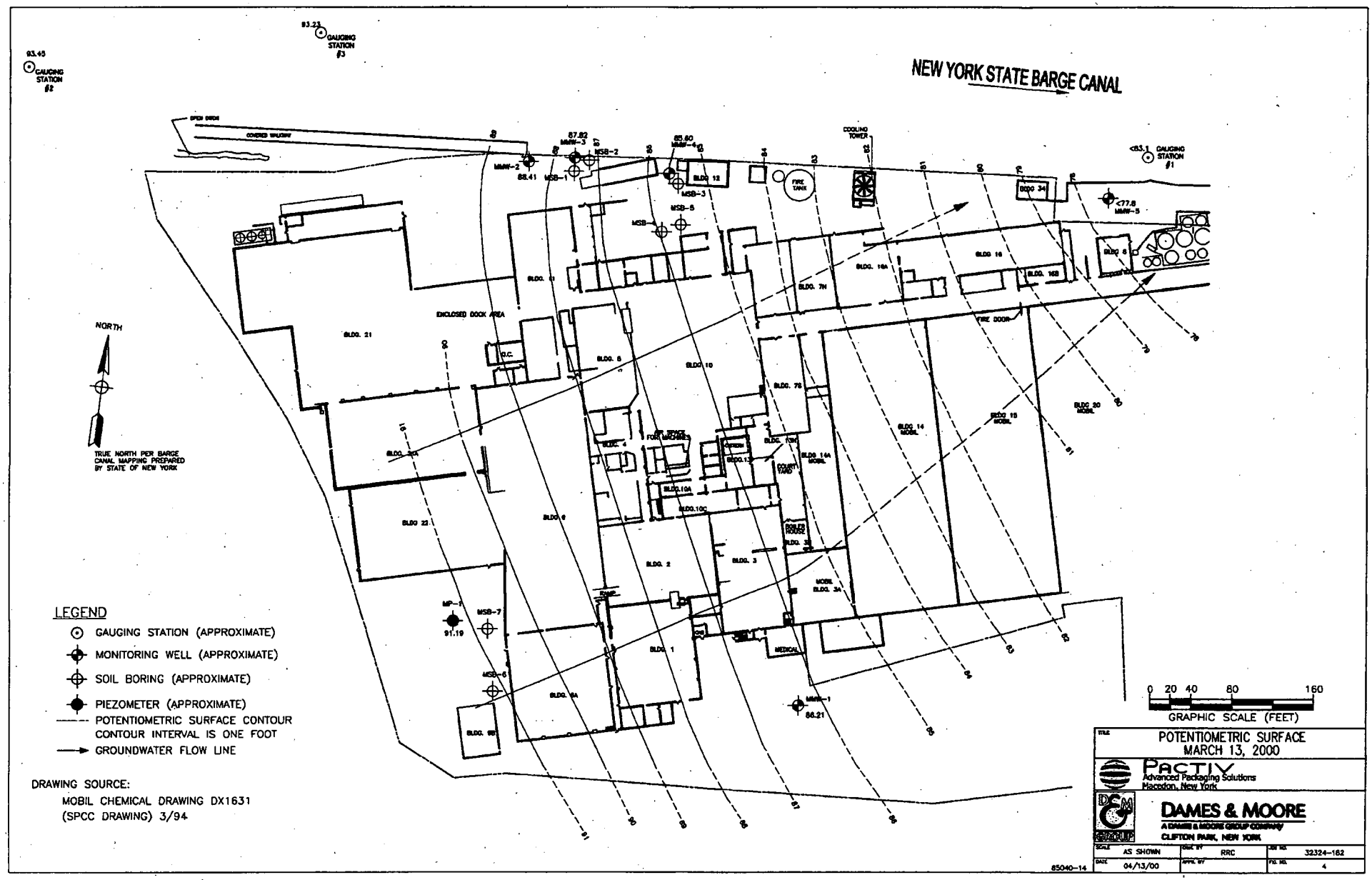
PACTIV
Advanced Packaging Solutions
Macedon, New York

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
CLIFTON PARK, NEW YORK

SCALE	DWN. BY	JOB NO.
AS SHOWN	RRC	32324-182
DATE	APPR. BY	FIG. NO.
01/10/00		1


NEW YORK STATE BARGE CANAL
GAUGING STATION #1
GAUGING STATION #2
GAUGING STATION #3
COOLING TOWER
FIRE TANK
ENCLOSED DOCK AREA
FORMER INK ROOM
NORTH
TRUE NORTH PER BARGE CANAL MAPPING PREPARED BY STATE OF NEW YORK
LEGEND
GAUGING STATION (APPROXIMATE)
MONITORING WELL (APPROXIMATE)
SOIL BORING (APPROXIMATE)
PIEZOMETER (APPROXIMATE)
PREVIOUS WELL LOCATION
PREVIOUS SOIL SAMPLING LOCATION
DRAWING SOURCE:
MOBIL CHEMICAL DRAWING DX1631
(SPCC DRAWING) 3/94
0 20 40 80 160
GRAPHIC SCALE (FEET)
SITE MAP
PACTIV
Advanced Packaging Solutions
Macedon, New York
DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
CLIFTON PARK, NEW YORK
AS SHOWN
RRC
32324-182
01/10/00
2
85040-12


NEW YORK STATE BARGE CANAL
94.65 GAUGING STATION #2
94.93 GAUGING STATION #3
84.10 GAUGING STATION #1
NORTH
TRUE NORTH PER BARGE CANAL MAPPING PREPARED BY STATE OF NEW YORK
LEGEND
GAUGING STATION (APPROXIMATE)
MONITORING WELL (APPROXIMATE)
SOIL BORING (APPROXIMATE)
PIEZOMETER (APPROXIMATE)
POTENTIOMETRIC SURFACE CONTOUR
CONTOUR INTERVAL IS ONE FOOT
GROUNDWATER FLOW LINE
DRAWING SOURCE:
MOBIL CHEMICAL DRAWING DX1631
(SPCC DRAWING) 3/94
0 20 40 80 160
GRAPHIC SCALE (FEET)
POTENTIOMETRIC SURFACE
NOVEMBER 1, 1999
PACTIV
Advanced Packaging Solutions
Macedon, New York
DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
CLIFTON PARK, NEW YORK
AS SHOWN
RRC
32324-182
01/10/00
3
85040-11


NEW YORK STATE BARGE CANAL
93.45
GAUGING STATION #2
93.23
GAUGING STATION #3
<83.1
GAUGING STATION #1
NORTH
TRUE NORTH PER BARGE CANAL MAPPING PREPARED BY STATE OF NEW YORK
ENCLOSED DOCK AREA
COVERED WALKWAY
COOLING TOWER
FIRE TANK
FIRE DOOR
BLDG. 21
BLDG. 22
BLDG. 6
BLDG. 10
BLDG. 7S
BLDG. 7N
BLDG. 14
BLDG. 15
BLDG. 20
BLDG. 34
BLDG. 1
BLDG. 2
BLDG. 3
BLDG. 4
BLDG. 5
BOILER HOUSE
MEDICAL
MSB-1
MSB-2
MSB-3
MSB-5
MSB-6
MSB-7
MW-1
MW-2
MW-3
MW-4
MW-5
MP-1
88.41
87.82
85.80
<77.8
91.19
86.21
LEGEND
GAUGING STATION (APPROXIMATE)
MONITORING WELL (APPROXIMATE)
SOIL BORING (APPROXIMATE)
PIEZOMETER (APPROXIMATE)
POTENTIOMETRIC SURFACE CONTOUR
CONTOUR INTERVAL IS ONE FOOT
GROUNDWATER FLOW LINE
DRAWING SOURCE:
MOBIL CHEMICAL DRAWING DX1631
(SPCC DRAWING) 3/94
0 20 40 80 160
GRAPHIC SCALE (FEET)
85040-14
TITLE
POTENTIOMETRIC SURFACE
MARCH 13, 2000
PACTIV
Advanced Packaging Solutions
Macedon, New York
DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
CLIFTON PARK, NEW YORK
SCALE AS SHOWN
DRWN. BY RRC
JOB NO. 32324-162
DATE 04/13/00
APPR. BY
FIG. NO. 4