QUARTERLY OPERATIONS AND MAINTENANCE REPORT (APRIL, MAY, JUNE 1997)

FOR THE

GROUND-WATER TREATMENT/SOIL REMEDIATION SYSTEM
CARBORUNDUM FACILITY

LOCATED AT

2040 CORY ROAD
SANBORN, NEW YORK

JULY 1997

PREPARED FOR:

BP EXPLORATION & OIL, INC.

PREPARED BY:

HULL & ASSOCIATES, INC.
6130 WILCOX ROAD
DUBLIN, OHIO 43016
(614) 793-8777

EXECUTIVE SUMMARY

Hull & Associates, Inc. (HAI) has been retained by BP Exploration & Oil Inc. (BP) as of June 16, 1996 to perform operations and maintenance (O&M) for the ground-water treatment/soils remediation system at the Carborundum Facility in Sanborn, New York. Prior to June 16, 1996, O&M was performed by McLaren Hart. BP notified the New York State Department of Environmental Conservation (NYSDEC) of this change in a May 30, 1996 letter from Martin Coleman to Maurice Moore and Marty Doster of NYSDEC.

This quarterly report includes monthly progress reports and associated data summaries for April, May, June 1997. The attachments included with this report contain only summary information. Specifically, the attachments contain the following information:

- Attachment A includes only the graphs summarizing hours of system operation, but does not include the Hours of System Operation Logs. Completed logs are available and can be provided upon request.

- Attachment B includes only the graphs summarizing pumping rates for PW-1, PW-2, P-2, P-3, and P-4, but does not include Daily Ground-water Well Status Log Sheets for the wells. Completed daily logs are available and can be provided upon request.

- Attachment C includes summary tables and graphs for air monitoring data, but does not include tabular reports of all monitoring data collected. This detailed monitoring data is available and can be provided upon request.

- Attachment D is reserved for analytical results of samples collected by HAI (or by McLaren Hart prior to June 16, 1996) other than the air monitoring results from the MSA VOC Analyzer. This attachment does not include any information because no additional samples were analyzed this quarter.

- Attachment E is reserved for VES Monitoring Trailer Daily Report Forms. These completed forms are not included in this report; however, these forms are available and can be provided upon request.

- Attachment F is reserved for Routine Inspection Log and Record of Operating Conditions forms. These completed forms are not included in this report; however, these forms are available and can be provided upon request.

- Attachment G contains a list of 40 Hour OSHA trained site personnel. The names of HAI personnel who have been or may be present at the Site are shown at the end of this list. The Carborundum training is no longer required.

The complete monthly progress reports are on file at BP. Information not included in this quarterly report, as described above, is contained in these monthly reports and is available upon request.

PROGRESS REPORT NO. 35
April 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

1. Summary of Groundwater Treatment/Soil Remediation System hours of operation.

- See Attachment A for Hours of System Operation Log (GWTS) Log No. 035 April 1997 and accompanying figures for a summary of Groundwater Treatment System hours of operation. This log also delineates when the system was down and the primary reason for the shutdown.

- Daily Groundwater Well (PW-1, PW-2, P-2, P-3 and P-4) Status Log Sheets are presented in Attachment B. Pumping rates at PW-1, PW-2, P-2, P-3, and P-4 for the month of April 1997 are shown graphically in Attachment B.

- See Attachment A for Hours of System Operation Log (VES) Log No. 035 April 1997 and accompanying figures for a summary of Soil Remediation System hours of operation. This log also delineates when the system was down and the primary reason for the shutdown. In addition, a table highlighting which vacuum well lines were operational during the month is included in Attachment A.

- Please refer to Section 3 for a discussion of critical down time issues.

2. Summary of results of sampling, tests and all other performance monitoring data collected during the month.

- Air monitoring performance data for the month of April 1997 is presented in Attachment C. This provides for a tabular reporting of all monitoring data collected for the system from the VES operation, emissions of the air strippers, and at the effluent discharge stack. Graphs depicting the amount of VOCs removed during April 1997, and removed to date, from the operation of the vacuum extraction system are also contained in Attachment C.

  Please note that the MSA VOC Analyzer records any value below the preset detection limit as zero. The preset detection limits for the three compounds of interest are as follows: TCE - 0.5 ppm, DCE - 0.05 ppm, and Vinyl Chloride -0.01 ppm. A zero value is used in all calculations in Attachment C, because incremental mass removal is insignificant at the detection limits.

- Tedlar bag samples are being routinely collected at the mid-point of the vapor phase carbon units and are being analyzed using the MSA VOC analyzer to determine breakthrough of the carbon beds. VOC mass loading has been detected during mid-point sampling below the discharge levels identified in the air permit to operate. Results of mid-point sampling are available on-site.

- Performance monitoring data was collected under various conditions using the VES trailer to determine the distribution of mass removal by branch. Testing was performed on twenty two separate occasions during April 1997. Airflow and total VOCs concentration were measured for each branch in operation on selected days. Individual branch air flow rates were determined using FIT 601A. Total VOC concentrations were determined by filling a Tedlar Bag with a sample using a vacuum sampling pump, and then analyzing the sample using a Photovac PID. Results of the performance monitoring testing are given in Attachment E.

- Hull & Associates operated the SVE system over the entire site. VEW wells, as indicated on the VES Monitoring Trailer Daily Report forms included as attachment E, were operated under a vacuum of approximately 9 to 15 inches of mercury. VEW wells across the entire site were operated based on sampling results obtained during VES trailer monitoring. VEW wells exhibiting excessive air flow rates due to short circuiting were not operated until the short circuiting was addressed.

  Air Injection Blowers B-901, B-902, B-903 and B-904 were operated based on which VEW well branches were opened. Only the air injection blowers contributing to the area were VEW wells were opened were operational. All air injection wells in close proximity to operational VEW wells were opened during operation. Injected air pressure at the wellhead was regulated to below five pounds per square inch. Because the air flow into the subsurface is less than the capacity of the air injection blowers, Hull & Associates field personnel opened air release points to the atmosphere to allow adequate air flow from the compressor tank. For air injection pressures and operational time see Daily Operations Report (Attachment F).

- Influent temperatures and relative humidity for the vapor phase carbon have averaged less than 100°F and 50%, respectively, during the month of March 1997.

3. Summary of major process system operational problems or potential problems and actual or anticipated system down times encountered during the month.

- Daily operations and MSA/Baseline maintenance logs are presented in Attachment F.

- Based on an observed increase in differential pressure across the liquid phase carbon adsorption units, Hull & Associates field personnel performed a backflushing of the carbon units on April 9, 1997. Differential pressure across the carbon bed was reduced within the manufacturer's recommended levels. However, continuous solids loadings to the carbon bed may eventually require carbon changeout. Backflushing of the liquid phase carbon adsorption unit is a result of the continued solids loading to the liquid system from the air/water separator (SVE operation).

- Pump PW-1B remained in automatic operation for April 4-27. Pump PW-1A remained in automatic operation for April 1-3 and April 28-30.

- Pumps PW-2A and PW-2B remained in auto operation April 1- 8 and . Pump PW-2A and PW-2B remained off April 14-30. Pump PW-2B remained in automatic operation April 9-14.

- Groundwater Well P-2 remained in automatic operation for the entire month of April 1997.

- Groundwater Well P-3 remained in automatic operation for the entire month of April 1997.

- Groundwater Well P-4 remained in automatic operation for the entire month of April 1997.

- Filter bags for the groundwater treatment system pre-filters continued to foul and required replacement, although significantly less than previous months (see Section 4C). This was due to water/silt infiltration following significant rain fall events.

4. Summary of all inspection/maintenance activities.

- SRGWTP inspections were performed daily. Equipment operating conditions and status were recorded on a daily log sheet beginning April 1, 1997 and are provided in Attachment F.

- Groundwater Well (PW-1, PW-2, P-2, P-3, and P-4) Status was monitored daily and status sheets are presented in Attachment B.

A. Inspections Performed During Monthly Operations

- Treatment Building and General Grounds
- Piping and Appurtenances
- Transfer and Sump Pumps Inspection
- Vacuum Pumps and Blowers
- Vapor Phase Carbon Units (Inlet RH, Temp. chemical concentrations)
- Volatile Organic Compound Analyzer
- Heat Trace System
- Other inspections per the O&M Manual

B. Inspections to be Performed Next Period

- Treatment Building and General Grounds
- Piping and Appurtenances
- Transfer and Sump Pumps
- Vacuum pumps and blowers
- VOC Analyzer
- Vapor phase carbon units (Inlet RH, Temp.)
- Other inspections per the O&M Manual

C. Maintenance that occurred During This Period

- Changed filter bags from Groundwater Treatment Pre-filters a total of 8 times during the month on April 1997. Groundwater Treatment Pre- filters were changed on April 2, 4,7,9,11,14,21,25, 1997.

- Greased all pumps and motors on April 17, 1997.

- Lubrication oil for Vacuum Blowers P-701A was changed on April 22,1997.

- Lubrication oil for Vacuum Blower P-701B was changed on April 17,1997.

- Lubrication oil for Vacuum Blower P-701C was changed on April 14,1997.

- HAI field personnel repaired a broken Lovejoy motor coupling on P803-A on April 29,1997.

- P701-D vacuum blower caught on fire on March 9,1997 due to excessive overheating. Higgins Inc personnel removed the compressor head and transported it to Siewert Equipment in Rochester, NY for rebuilding/repair on April 1, 1997, the same contractor replaced the rebuilt compresor head on April 28,1997.

- HAI personnel performed midpoint sampling on April 2, 7, 16, 23 and 29, 1997.

- HAI personnel cleaned the built up silt out the Air Water Separator on April 10, 1997.

- HAI field personnel cleaned the air water separator level probes which had fouled causing erratic cycling of the air water separator pump on April 21 , 1997.

- HAI field personnel cleaned the VES particulate filters on April 25, 1997.

- HAI field personnel changed the lubrication oil in Air Injection blowers B901 and B902 on April 16, 1997.

- HAI field personnel repaired P805B motor , the cooling fan had loosened and was rubbing onthe motor housing on April 14, 1997.

- HAI field personnel repaired AI-33 and AI-36 which had been broken off by the snow plow or delivery trucks on April 4, 1997, also VEW 80 was repaired on April 3, 1997 this well had frozen and cracked sometime during the winter months.

- On the morning of April 30, 1997 I found that VEW 14 had been broken off by a truck sometime yesterday afternoon or night, I spoke to Kevin Scott of Metuallics about this and he said he would have his Maintenance personnel repair it.

- HAI personnel checked water level depths in VEW's on April 5, 12, 19, and 26,1997.

D. Maintenance Anticipated for Next Period

- Vapor Phase Carbon Change Out: Not anticipated for next period based on current operating conditions. Carbon changeout is being evaluated based on the air permit to operate.

- Liquid Phase Carbon Change Out: Not anticipated for next period. General backflushing will be provided to maintain carbon filters.

- Other activities as per the O&M Manual: No major activities anticipated for next period with the exception of bag filters changeout and liquid phase carbon backflushing.

5. Summary of all waste handling and disposal.

- Attachment F contains copies of the waste generation logs completed through April 30, 1997.

- Spent bag filters from the Groundwater Treatment Pre-filters are being stored in six 55-gallon drum within the treatment plant containment area for future disposal at Chemical Waste Management, Inc's TSDF, Model City, New York. The plant operator will coordinate appropriate waste disposal practices with Margaret Bonn of H&A and Werner Sicvol of BP.

6. Environmental releases.

- No releases (i.e., spills, etc.) occurred during this reporting period.

7. Personnel on Site.

A. Subcontractors on Site

Higgins Erectors and Haulers

B. Equipment Vendors on site during operations:

- none

C. Health and Safety: The following section summarizes various health and safety items conducted at the site relative to operations:

1. Hull & Associates Operation and Maintenance Personnel On-Site Hours:

This Period:	248 Hours
Total:	8656 Hours
Without Accident:	3780 Hours

2. Accident Summary: There were no reportable accidents during this reporting period. Two reportable accidents have occurred during Operations and Maintenance to date.

3. Incident Summary: There were no reportable incidents during this reporting period. One reportable incident has occurred during Operations and Maintenance to date.

4. OSHA/Carborundum Trained Site Workers: Attachment H contains a cumulative list of 40 hour OSHA trained and Carborundum trained Operation and Maintenance workers.

5. Health and Safety Monitoring: Operational and Maintenance activities performed this month did not require extensive health and safety monitoring.

8. Major Correspondence/Action Items

- None this period.

9. Planned Activities

- Repair of the broken potable water line near P-2.

Submitted by: Richard C. Becken.
Date: April 30,1997

PROGRESS REPORT NO. 36
MAY 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

1. Summary of Groundwater Treatment/Soil Remediation System hours of operation.

- See Attachment A for Hours of System Operation Log (GWTS) Log No. 036 May 1997 and accompanying figures for a summary of Groundwater Treatment System hours of operation. This log also delineates when the system was down and the primary reason for the shutdown.

- Daily Groundwater Well (PW-1, PW-2, P-2, P-3 and P-4) Status Log Sheets are presented in Attachment B. Pumping rates at PW-1, PW-2, P-2, P-3, and P-4 for the month of May 1997 are shown graphically in Attachment B.

- See Attachment A for Hours of System Operation Log (VES) Log No. 036 May 1997 and accompanying figures for a summary of Soil Remediation System hours of operation. This log also delineates when the system was down and the primary reason for the shutdown. In addition, a table highlighting which vacuum well lines were operational during the month is included in Attachment A.

- Please refer to Section 3 for a discussion of critical down time issues.

2. Summary of results of sampling, tests and all other performance monitoring data collected during the month.

- Air monitoring performance data for the month of May 1997 is presented in Attachment C. This provides for a tabular reporting of all monitoring data collected for the system from the VES operation, emissions of the air strippers, and at the effluent discharge stack. Graphs depicting the amount of VOCs removed during May 1997, and removed to date, from the operation of the vacuum extraction system are also contained in Attachment C.

  Please note that the MSA VOC Analyzer records any value below the preset detection limit as zero. The preset detection limits for the three compounds of interest are as follows: TCE - 0.5 ppm, DCE - 0.05 ppm, and Vinyl Chloride -0.01 ppm. A zero value is used in all calculations in Attachment C, because incremental mass removal is insignificant at the detection limits.

- Tedlar bag samples are being routinely collected at the mid-point of the vapor phase carbon units and are being analyzed using the MSA VOC analyzer to determine breakthrough of the carbon beds. VOC mass loading has been detected during mid-point sampling below the discharge levels identified in the air permit to operate. Results of mid-point sampling are available on-site.

- Performance monitoring data was collected under various conditions using the VES trailer to determine the distribution of mass removal by branch. Testing was performed on twenty one separate occasions during May 1997. Airflow and total VOCs concentration were measured for each branch in operation on selected days. Individual branch air flow rates were determined using FIT 601A. Total VOC concentrations were determined by filling a Tedlar Bag with a sample using a vacuum sampling pump, and then analyzing the sample using a Photovac PID. Results of the performance monitoring testing are given in Attachment E.

- Hull & Associates operated the SVE system over the entire site. VEW wells, as indicated on the VES Monitoring Trailer Daily Report forms included as attachment E, were operated under a vacuum of approximately 9 to 15 inches of mercury. VEW wells across the entire site were operated based on sampling results obtained during VES trailer monitoring. VEW wells exhibiting excessive air flow rates due to short circuiting were not operated until the short circuiting was addressed.

  Air Injection Blowers B-901, B-902, B-903 and B-904 were operated based on which VEW well branches were opened. Only the air injection blowers contributing to the area were VEW wells were opened were operational. All air injection wells in close proximity to operational VEW wells were opened during operation. Injected air pressure at the wellhead was regulated to below five pounds per square inch. Because the air flow into the subsurface is less than the capacity of the air injection blowers, Hull & Associates field personnel opened air release points to the atmosphere to allow adequate air flow from the compressor tank. For air injection pressures and operational time see Daily Operations Report (Attachment F).

- Influent temperatures and relative humidity for the vapor phase carbon have averaged less than 100°F and 50%, respectively, during the month of May 1997.

3. Summary of major process system operational problems or potential problems and actual or anticipated system down times encountered during the month.

- Daily operations and MSA/Baseline maintenance logs are presented in Attachment F.

- Based on an observed increase in differential pressure across the liquid phase carbon adsorption units, Hull & Associates field personnel performed a backflushing of the carbon units on April 9, 1997. Differential pressure across the carbon bed was reduced within the manufacturer's recommended levels. However, continuous solids loadings to the carbon bed may eventually require carbon changeout. Backflushing of the liquid phase carbon adsorption unit is a result of the continued solids loading to the liquid system from the air/water separator (SVE operation).

- Pump PW-1B remained off the month of May 1997. Pump PW-1A remained in automatic operation for the month May 1997.

- Pumps PW-2A and PW-2B remained in manual operation the month of May 1997.

- Groundwater Well P-2 remained in automatic operation for the entire month of May 1997.

- Groundwater Well P-3 remained in automatic operation for the entire month of May 1997.

- Groundwater Well P-4 remained in automatic operation for the entire month of May 1997.

- Filter bags for the groundwater treatment system pre-filters continued to foul and required replacement, although significantly less than previous months (see Section 4C). This was due to water/silt infiltration following significant rain fall events.

4. Summary of all inspection/maintenance activities.

- SRGWTP inspections were performed daily. Equipment operating conditions and status were recorded on a daily log sheet beginning May 1, 1997 and are provided in Attachment F.

- Groundwater Well (PW-1, PW-2, P-2, P-3, and P-4) Status was monitored daily and status sheets are presented in Attachment B.

A. <u>Inspections Performed During Monthly Operations</u>

- Treatment Building and General Grounds
- Piping and Appurtenances
- Transfer and Sump Pumps Inspection
- Vacuum Pumps and Blowers
- Vapor Phase Carbon Units (Inlet RH, Temp. chemical concentrations)
- Volatile Organic Compound Analyzer
- Heat Trace System
- Other inspections per the O&M Manual

B. Inspections to be Performed Next Period

- Treatment Building and General Grounds
- Piping and Appurtenances
- Transfer and Sump Pumps
- Vacuum pumps and blowers
- VOC Analyzer
- Vapor phase carbon units (Inlet RH, Temp.)
- Other inspections per the O&M Manual

C. Maintenance that occurred During This Period

- Changed filter bags from Groundwater Treatment Pre-filters a total of 3 times during the month on May 1997. Groundwater Treatment Pre- filters were changed on May 9,19 and 27, 1997
  Greased all pumps and motors on May 19, 1997.
- Lubrication oil for Vacuum Blowers P-701A was changed on May 21, 1997.
- Lubrication oil for Vacuum Blower P-701B was changed on May 21, 1997.
- Lubrication oil for Vacuum Blower P-701C was changed on May 21,1997.
- P701-D vacuum blower caught on fire on March 9,1997 due to excessive overheating. Higgins Inc personnel removed the compressor head and transported it to Siewert Equipment in Rochester, NY for rebuilding/repair on April 1, 1997, the same contractor replaced the rebuilt compressor head on April 28,1997. P701-D was reassembled and operational on May 9, 1997.
- HAI personnel performed midpoint sampling on May 6, 13, 20 and 27, 1997.
- HAI personnel cleaned the built up silt out the Air Water Separator on May 9 and 26, 1997.
- HAI field personnel cleaned the air water separator level probes which had fouled causing erratic cycling of the air water separator pump on May 13, 1997.
- Feldman Barrel of Buffalo, NY removed twenty two empty drums from the site on May 20, 1997. These drums were left over from the construction phase of the project.
- Cerrone Inc. personnel repaired a leaking potable water line near P-2 groundwater well on May 5, 1997.
- HAI field personnel dicovered on May 27, 1997 that P701-C had broke down sometime over the weekend. The drive belts were all broken and the lobes in the compressor head fell like they are hitting each other indicating a timing problem. On the afternoon of May 27, 1997 P-701-A broke down the drive belts all broke and the compressor head siezed up.

- HAI field personnel disassembled P701-a and P701-D so Higgins personnel could remove the compressor units on May 28, 1997.
- HAI field personnel scheduled the pick up of nine drums of waste filters and PPE on June 13, 1997.
- Higgins personnel were on site on May 30, 1997 to remove the compressor units of P701-A and P701-D and ship them to Siewert Equipment in Rochester, NY.
- HAI personnel checked water level depths in VEW's on May 3, 10, 17, 24, and 31, 1997.

D. Maintenance Anticipated for Next Period

- Vapor Phase Carbon Change Out: Not anticipated for next period based on current operating conditions. Carbon changeout is being evaluated based on the air permit to operate.

- Liquid Phase Carbon Change Out: Not anticipated for next period. General backflushing will be provided to maintain carbon filters.

- Other activities as per the O&M Manual: No major activities anticipated for next period with the exception of bag filters changeout and liquid phase carbon backflushing.

5. Summary of all waste handling and disposal.

- Attachment F contains copies of the waste generation logs completed through May 31, 1997.

- Spent bag filters from the Groundwater Treatment Pre-filters are being stored in nine 55-gallon drum within the treatment plant containment area for future disposal at Chemical Waste Management, Inc's TSDF, Model City, New York. The plant operator will coordinate appropriate waste disposal practices with Margaret Bonn of H&A and Werner Sicvol of BP.

6. Environmental releases.

- No releases (i.e., spills, etc.) occurred during this reporting period.

7. Personnel on Site.

A. Subcontractors on Site

Higgins Erectors and Haulers

B. Equipment Vendors on site during operations:

- none

C. Health and Safety: The following section summarizes various health and safety items conducted at the site relative to operations:

1. Hull & Associates Operation and Maintenance Personnel On-Site Hours:

This Period:	264 Hours
Total:	8920 Hours
Without Accident:	4044 Hours

2. Accident Summary: There were no reportable accidents during this reporting period. Two reportable accidents have occurred during Operations and Maintenance to date.

3. Incident Summary: There were no reportable incidents during this reporting period. One reportable incident has occurred during Operations and Maintenance to date.

4. OSHA/Carborundum Trained Site Workers: Attachment H contains a cumulative list of 40 hour OSHA trained and Carborundum trained Operation and Maintenance workers.

5. Health and Safety Monitoring: Operational and Maintenance activities performed this month did not require extensive health and safety monitoring.

8. Major Correspondence/Action Items

- None this period.

PROGRESS REPORT NO. 36
MAY 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

9. Planned Activities

- Repair of P701-A and P701-D.

Submitted by: Richard C. Becken.
Date: May 31, 1997

PROGRESS REPORT NO. 37
June 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

1. Summary of Groundwater Treatment/Soil Remediation System hours of operation.

- See Attachment A for Hours of System Operation Log (GWTS) Log No. 037 June 1997 and accompanying figures for a summary of Groundwater Treatment System hours of operation. This log also delineates when the system was down and the primary reason for the shutdown.

- Daily Groundwater Well (PW-1, PW-2, P-2, P-3 and P-4) Status Log Sheets are presented in Attachment B. Pumping rates at PW-1, PW-2, P-2, P-3, and P-4 for the month of June 1997 are shown graphically in Attachment B.

- See Attachment A for Hours of System Operation Log (VES) Log No. 037 June 1997 and accompanying figures for a summary of Soil Remediation System hours of operation. This log also delineates when the system was down and the primary reason for the shutdown. In addition, a table highlighting which vacuum well lines were operational during the month is included in Attachment A.

- Please refer to Section 3 for a discussion of critical down time issues.

2. Summary of results of sampling, tests and all other performance monitoring data collected during the month.

- Air monitoring performance data for the month of June 1997 is presented in Attachment C. This provides for a tabular reporting of all monitoring data collected for the system from the VES operation, emissions of the air strippers, and at the effluent discharge stack. Graphs depicting the amount of VOCs removed during June 1997, and removed to date, from the operation of the vacuum extraction system are also contained in Attachment C.

  Please note that the MSA VOC Analyzer records any value below the preset detection limit as zero. The preset detection limits for the three compounds of interest are as follows: TCE - 0.5 ppm, DCE - 0.05 ppm, and Vinyl Chloride -0.01 ppm. A zero value is used in all calculations in Attachment C, because incremental mass removal is insignificant at the detection limits.

PROGRESS REPORT NO. 37
June 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

- Tedlar bag samples are being routinely collected at the mid-point of the vapor phase carbon units and are being analyzed using the MSA VOC analyzer to determine breakthrough of the carbon beds. VOC mass loading has been detected during mid-point sampling below the discharge levels identified in the air permit to operate. Results of mid-point sampling are available on-site.

- Performance monitoring data was collected under various conditions using the VES trailer to determine the distribution of mass removal by branch. Testing was performed on twenty one separate occasions during June 1997. Airflow and total VOCs concentration were measured for each branch in operation on selected days. Individual branch air flow rates were determined using FIT 601A. Total VOC concentrations were determined by filling a Tedlar Bag with a sample using a vacuum sampling pump, and then analyzing the sample using a Photovac PID. Results of the performance monitoring testing are given in Attachment E.

- Hull & Associates operated the SVE system over the entire site. VEW wells, as indicated on the VES Monitoring Trailer Daily Report forms included as attachment E, were operated under a vacuum of approximately 9 to 15 inches of mercury. VEW wells across the entire site were operated based on sampling results obtained during VES trailer monitoring. VEW wells exhibiting excessive air flow rates due to short circuiting were not operated until the short circuiting was addressed.

  Air Injection Blowers B-901, B-902, B-903 and B-904 were operated based on which VEW well branches were opened. Only the air injection blowers contributing to the area were VEW wells were opened were operational. All air injection wells in close proximity to operational VEW wells were opened during operation. Injected air pressure at the wellhead was regulated to below five pounds per square inch. Because the air flow into the subsurface is less than the capacity of the air injection blowers, Hull & Associates field personnel opened air release points to the atmosphere to allow adequate air flow from the compressor tank. For air injection pressures and operational time see Daily Operations Report (Attachment F).

- Influent temperatures and relative humidity for the vapor phase carbon have averaged less than 100°F and 50%, respectively, during the month of June 1997.

3. Summary of major process system operational problems or potential problems and actual or anticipated system down times encountered during the month.

- Daily operations and MSA/Baseline maintenance logs are presented in Attachment F.
- Based on an observed increase in differential pressure across the liquid phase carbon adsorption units, Hull & Associates field personnel performed a backflushing of the carbon units on April 9, 1997. Differential pressure across the carbon bed was reduced within the manufacturer's recommended levels. However, continuous solids loadings to the carbon bed may eventually require carbon changeout. Backflushing of the liquid phase carbon adsorption unit is a result of the continued solids loading to the liquid system from the air/water separator (SVE operation).
- Pump PW-1B remained off the month of June 1997. Pump PW-1A remained in automatic operation for the month June 1997.
- Pumps PW-2A and PW-2B remained in manual operation the month of June 1997.
- Groundwater Well P-2 remained in automatic operation for the entire month of June 1997.
- Groundwater Well P-3 remained in automatic operation for the entire month of June 1997.
- Groundwater Well P-4 remained in automatic operation for the entire month of June 1997.
- Filter bags for the groundwater treatment system pre-filters continued to foul and required replacement, although significantly less than previous months (see Section 4C). This was due to water/silt infiltration following significant rain fall events.

4. Summary of all inspection/maintenance activities.

- SRGWTP inspections were performed daily. Equipment operating conditions and status were recorded on a daily log sheet beginning June 2, 1997 and are provided in Attachment F.
- Groundwater Well (PW-1, PW-2, P-2, P-3, and P-4) Status was monitored daily and status sheets are presented in Attachment B.

PROGRESS REPORT NO. 37
June 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

A. Inspections Performed During Monthly Operations

- Treatment Building and General Grounds
- Piping and Appurtenances
- Transfer and Sump Pumps Inspection
- Vacuum Pumps and Blowers
- Vapor Phase Carbon Units (Inlet RH, Temp. chemical concentrations)
- Volatile Organic Compound Analyzer
- Heat Trace System
- Other inspections per the O&M Manual

B. Inspections to be Performed Next Period

- Treatment Building and General Grounds
- Piping and Appurtenances
- Transfer and Sump Pumps
- Vacuum pumps and blowers
- VOC Analyzer
- Vapor phase carbon units (Inlet RH, Temp.)
- Other inspections per the O&M Manual

C. Maintenance that occurred During This Period

- Changed filter bags from Groundwater Treatment Pre-filters a total of 5 times during the month on June 1997. Groundwater Treatment Pre- filters were changed on June 13, 17, 21, 24, and 27, 1997.

- Greased all pumps and motors on June 25, 1997.

- On June 2, 1997 HAI personnel started cutting weeds and grass when time allowed, this is on going through out the summer months.

- Lubrication oil for Vacuum Blower P-701B was changed on June 19, 1997.

- On June 4,1997 P701-D broke down , Ferguson Electric was called and they sent a electrician to the site on June 6, 1997, he found the motor circuit protector breaker was inoperable. In a effort to get this vacuum blower operating as soon as possible he removed the breaker from P701-A and installed in place of the broken breaker. A new breaker was ordered on June 23, 1997.

PROGRESS REPORT NO. 37
June 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

- HAI personnel performed midpoint sampling on June 11, 18, 26 and 30, 1997.

- HAI personnel cleaned the built up silt out the Air Water Separator June 4 and 20, 1997.

- HAI field personnel cleaned the air water separator level probes which had fouled causing erratic cycling of the air water separator pump on June 24, 1997.

- HAI field personnel shipped nine (9) drums of waste filter bags and PPE to Chemical Waste Management Inc. in Model City, NY on June 13, 1997.

- HAI field personnel received word from Seiwert Equipment that P701-A and P701-C were not repairable, new vacuum blower compressor heads would have to be ordered.

- HAI feild personnel ordered two (2) new vacuum blower compressor heads on June 12, 1997 from Detroit Air Compressor.

- HAI field personnel ordered a new power supply shaft from Siewert Equipment for P803-A on June 10,1997. The new shaft was recieved on June 20, 1997 and installed on the same day.

- On June 11,1997 HAI field personnel implemented a new VES operation plan per DEC approval. The new work plan would allow HAI personnel to pulse VES branch lines, closing branch lines with less than 5 ppm of concentration using the PID in the trailer.

- On June 5,1997 MSA completed a semi- annual inspection of the VOC analyzer . On June 10,1997 a new printer was received from MSA to replace the original printer which had worn out.

- HAI personnel cleaned the intake screens for the vacuum blower make up air on June 26, 1997.

- HAI personnel repaired two areas of pavement where the VES had created a void under the pavement on June 16,1997. One area was next to VEW 60 the other next to VEW 20.

- HAI personnel received two (2) new compressor unit for P-701-A and P701-C from Detroit Air Compressor on June 25, 1997.

- Higgins personnel were on site on June 26, 1997 to install the new compressor units for P701-A and P701-D.

- HAI personnel checked water level depths in VEW's on June 6, 14, 21 and 28, 1997.

- On June 24, 1997 HAI personnel found P2, P3, and P4 Partlow flow meters not operating and the Partlow level meter for P2 not operating, Carrier Controls was called and on June 25,1997 they were on site and found lightning had damaged the Sparling Tiger Mag flow meters for each of the three wells mentioned and the level controller for P2. A spare Tiger Mag flow meter was installed on P2 and all of the above mentioned units were shipped to the manufacturer for repair.

- On June 25,1997 HAI personnel received the reprogramed ISCO Auto sampler Model 6100. On June 27 the above mentioned was installed at outfall 01A and found to be inoperable.

D. Maintenance Anticipated for Next Period

- Vapor Phase Carbon Change Out: Not anticipated for next period based on current operating conditions. Carbon changeout is being evaluated based on the air permit to operate.

- Liquid Phase Carbon Change Out: Not anticipated for next period. General backflushing will be provided to maintain carbon filters.

- Other activities as per the O&M Manual: No major activities anticipated for next period with the exception of bag filters changeout and liquid phase carbon backflushing.

5. Summary of all waste handling and disposal.

- Attachment F contains copies of the waste generation logs completed through June 30, 1997.

- Spent bag filters from the Groundwater Treatment Pre-filters are being stored in two 55-gallon drum within the treatment plant containment area for future disposal at Chemical Waste Management, Inc's TSDF, Model City, New York. The plant operator will coordinate appropriate waste disposal practices with Margaret Bonn of H&A and Werner Sicvol of BP.

6. Environmental releases.

- No releases (i.e., spills, etc.) occurred during this reporting period.

7. Personnel on Site.

A. Subcontractors on Site

- Higgins Erectors and Haulers
- Carrier Control
- MSA Baseline

B. Equipment Vendors on site during operations:

- none

C. Health and Safety: The following section summarizes various health and safety items conducted at the site relative to operations:

1. Hull & Associates Operation and Maintenance Personnel On-Site Hours:

This Period:	228 Hours
Total:	9148 Hours
Without Accident:	4272 Hours

2. Accident Summary: There were no reportable accidents during this reporting period. Two reportable accidents have occurred during Operations and Maintenance to date.

3. Incident Summary: There were no reportable incidents during this reporting period. One reportable incident has occurred during Operations and Maintenance to date.

4. OSHA/Carborundum Trained Site Workers: Attachment H contains a cumulative list of 40 hour OSHA trained and Carborundum trained Operation and Maintenance workers.

5. Health and Safety Monitoring: Operational and Maintenance activities performed this month did not require extensive health and safety monitoring.

8. Major Correspondence/Action Items

- None this period.

9. Planned Activities

- none.

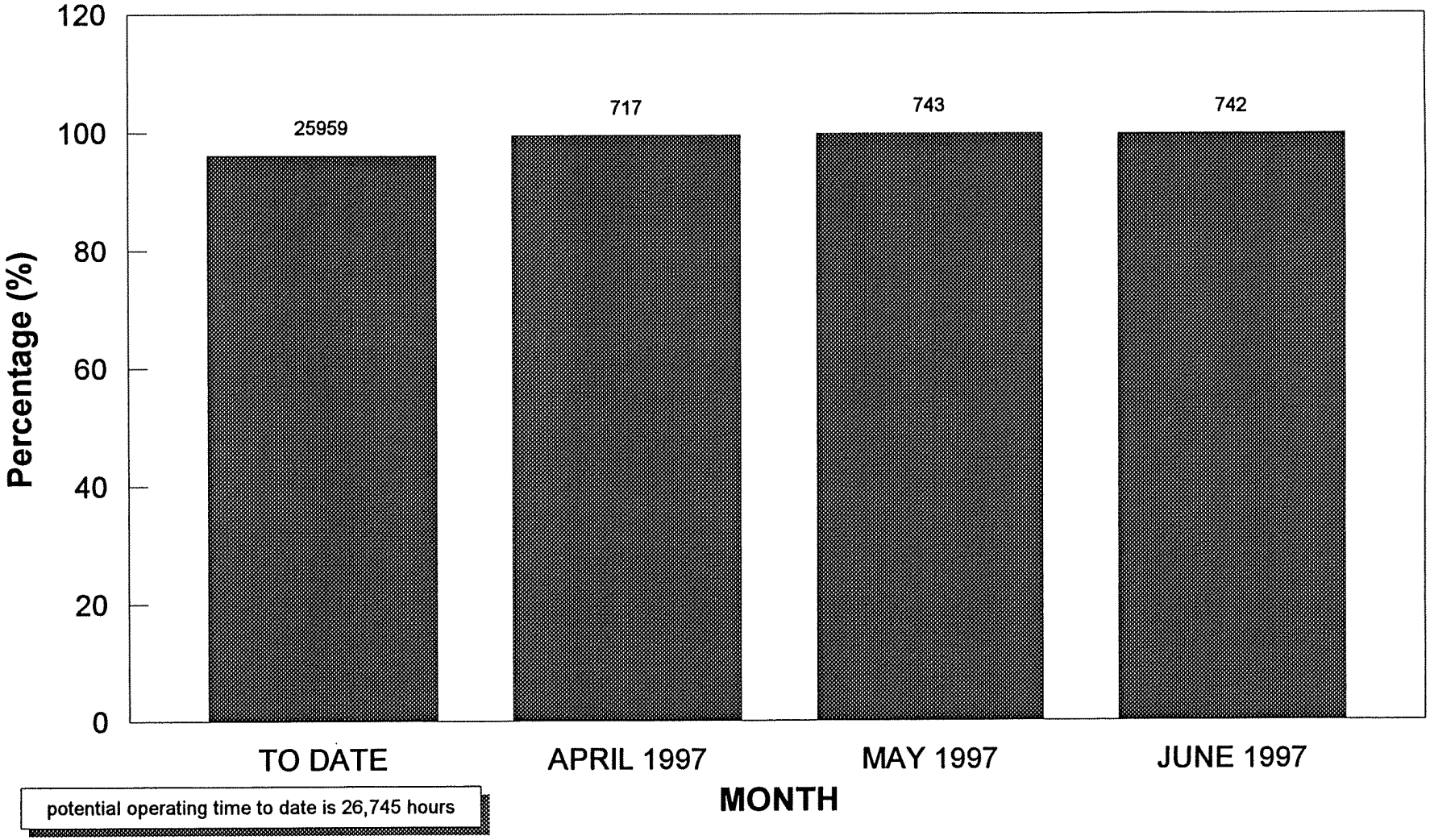
Submitted by: Richard C. Becken.
Date: June 30, 1997

ATTACHMENT A

GROUNDWATER TREATMENT/
SOIL REMEDIATION OPERATIONS INFORMATION

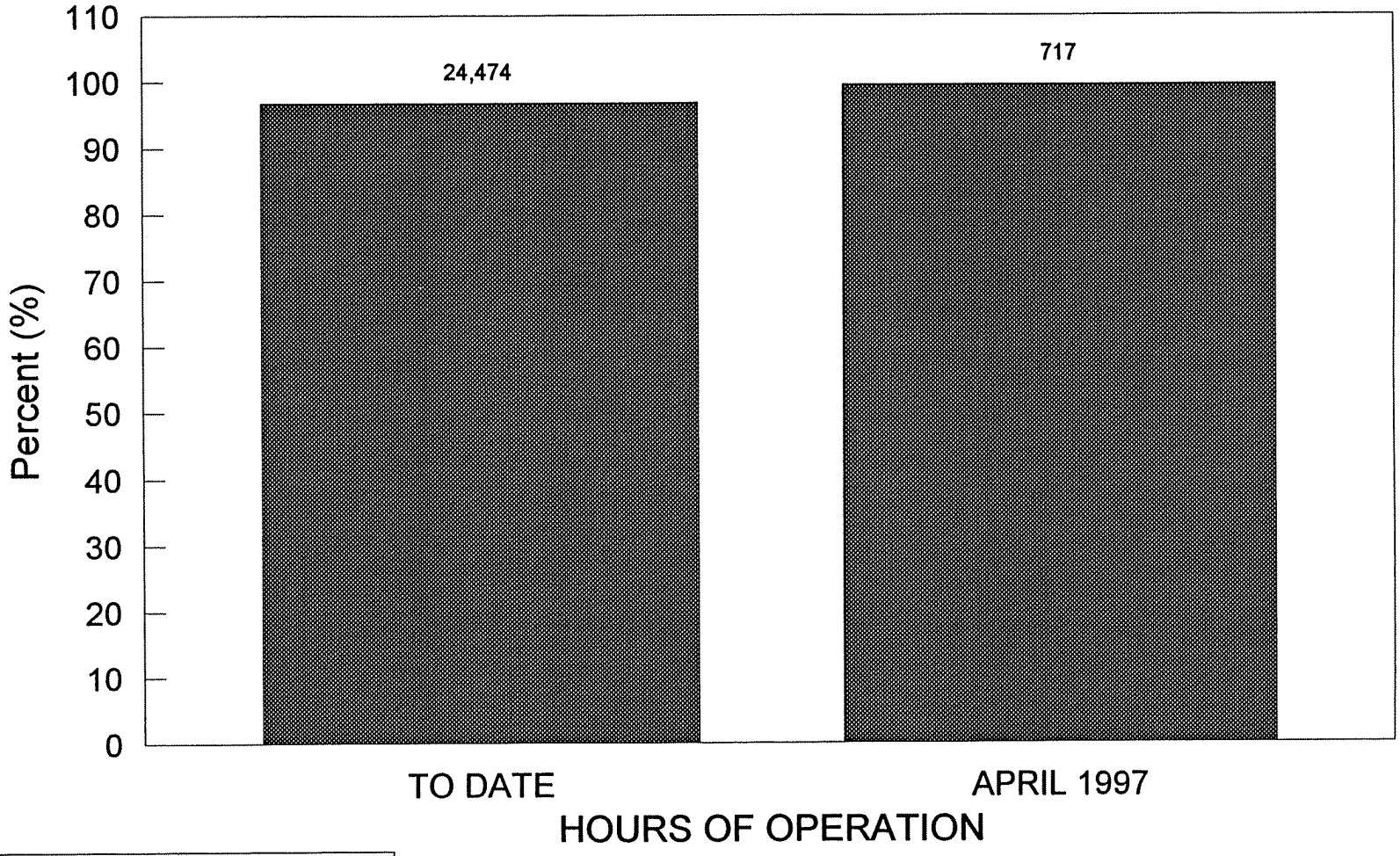
System Operational Hours and Up-Time Percentages

Ground-Water Treatment System



System Operational Hours and Up-Time Percentages

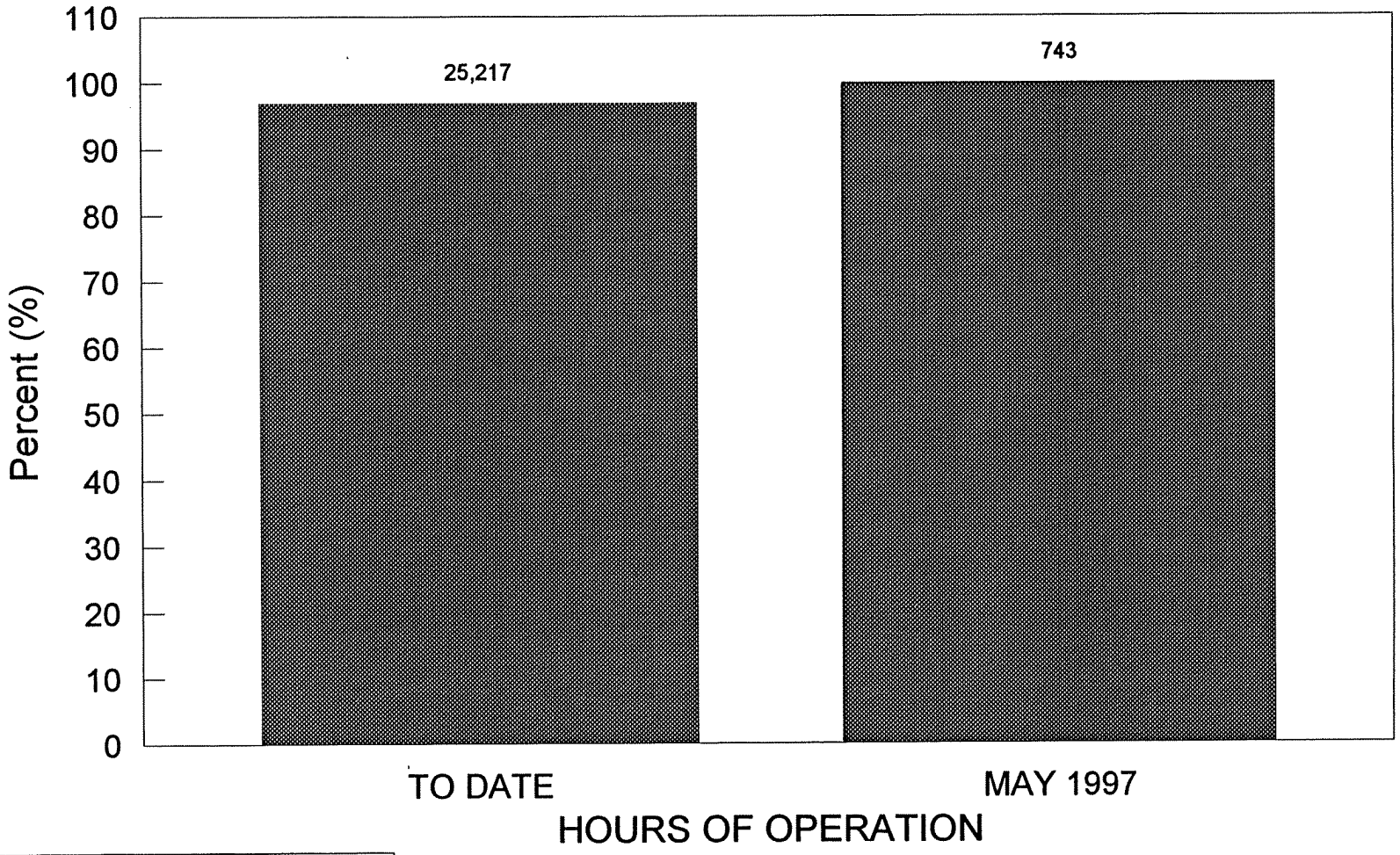
Groundwater Treatment System



potential operating time to date is 25,257 hours

System Operational Hours and Up-Time Percentages

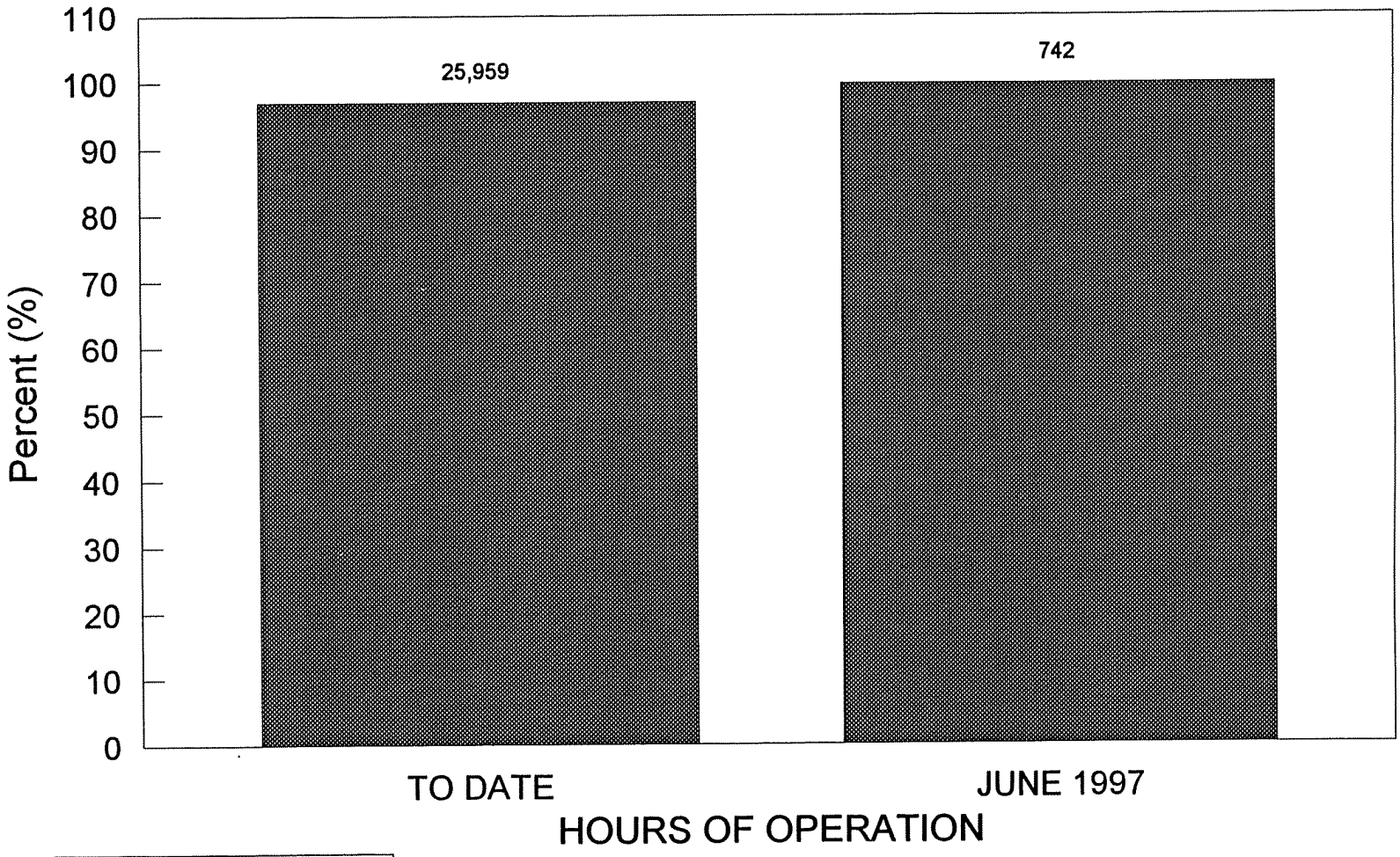
Groundwater Treatment System



potential operating time to date is 26,001 hours

System Operational Hours and Up-Time Percentages

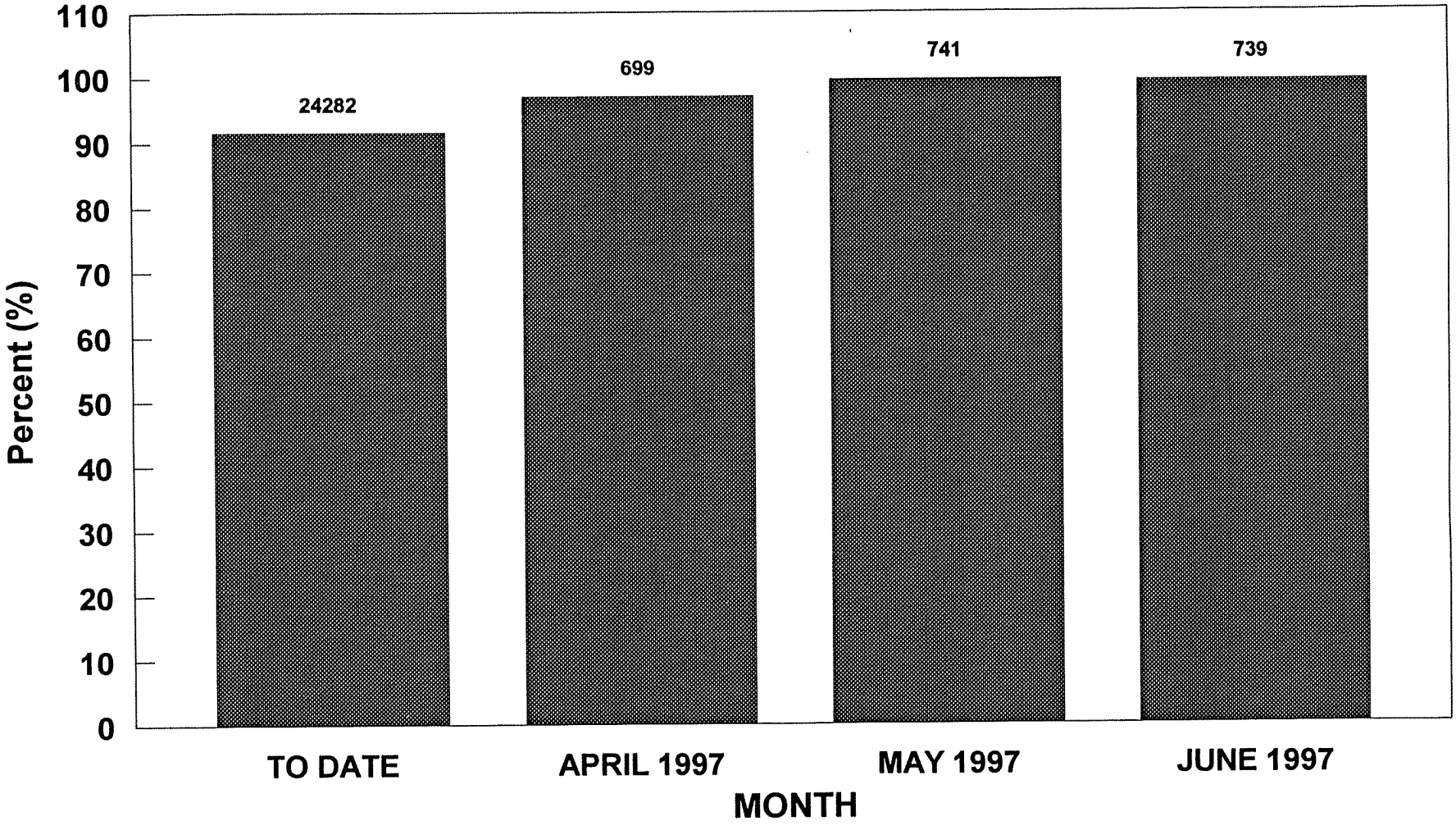
Groundwater Treatment System



potential operating time to date is 26,745 hours

System Operational Hours and Up-Time Percentages

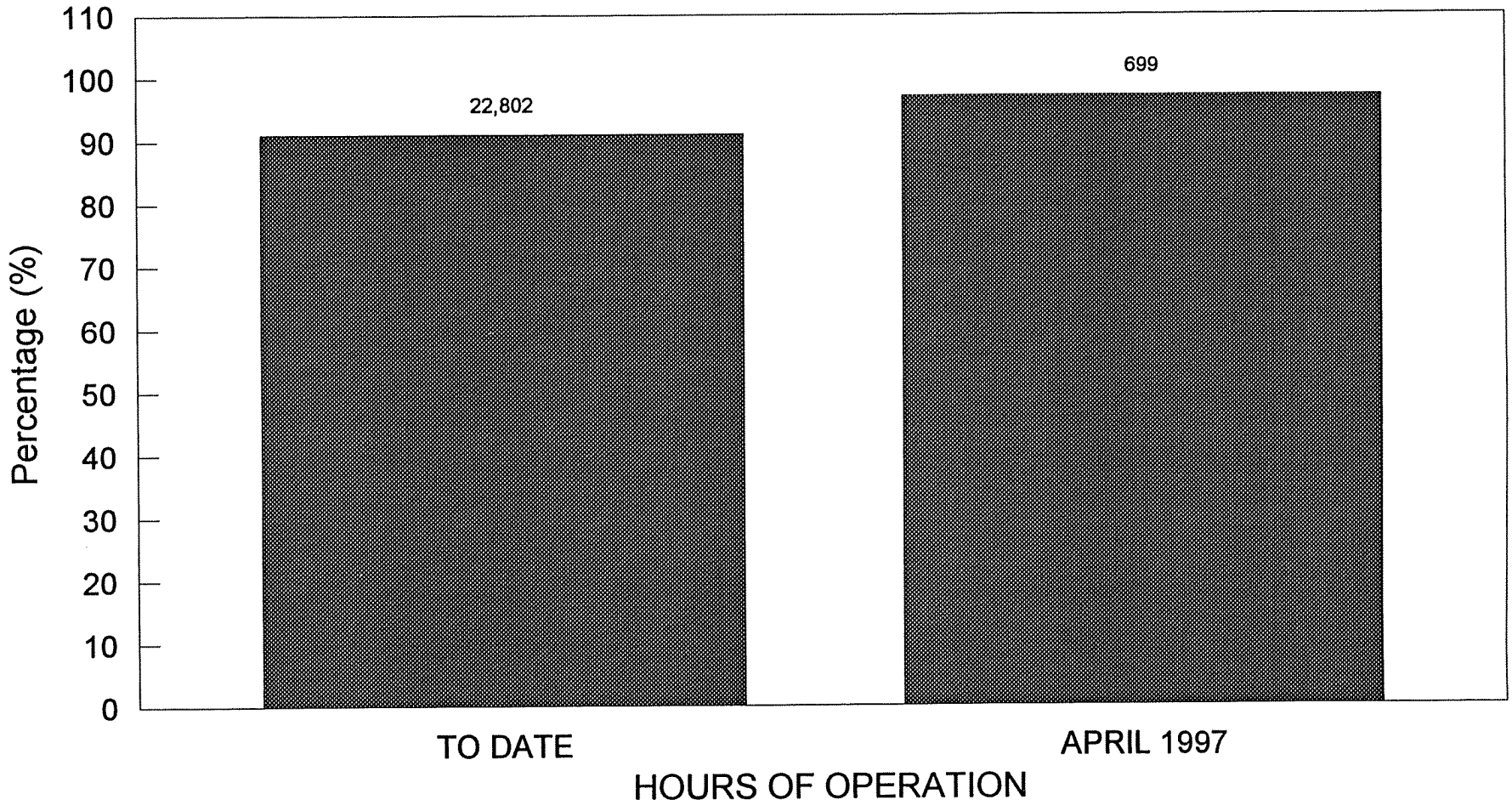
Soil Vapor Extraction System



potential operating time to date is 26,510 hours

System Operational Hours and Up-Time Percentages

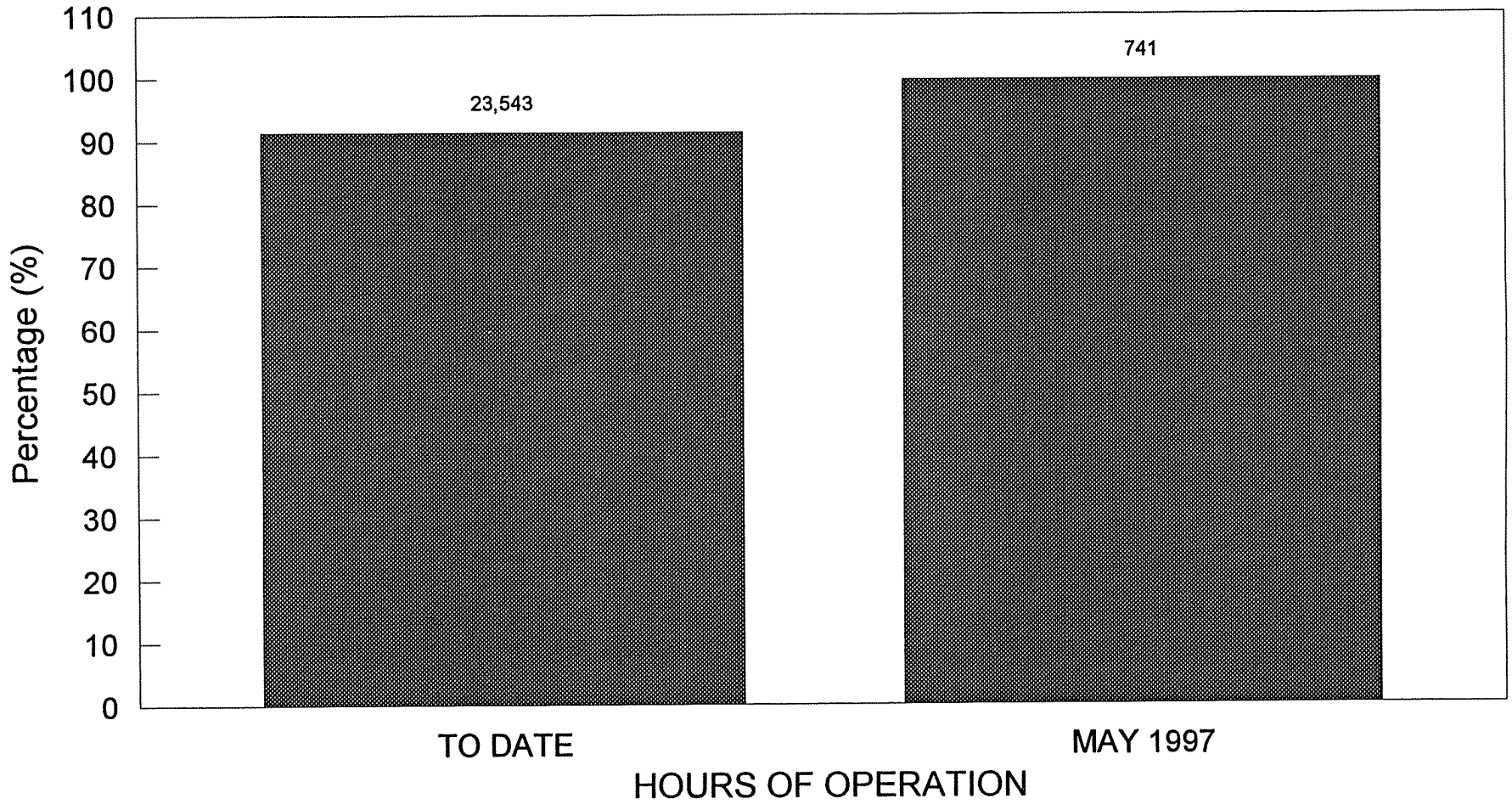
Soil Vapor Extraction System



potential operating time to date is 25,022 hours

System Operational Hours and Up-Time Percentages

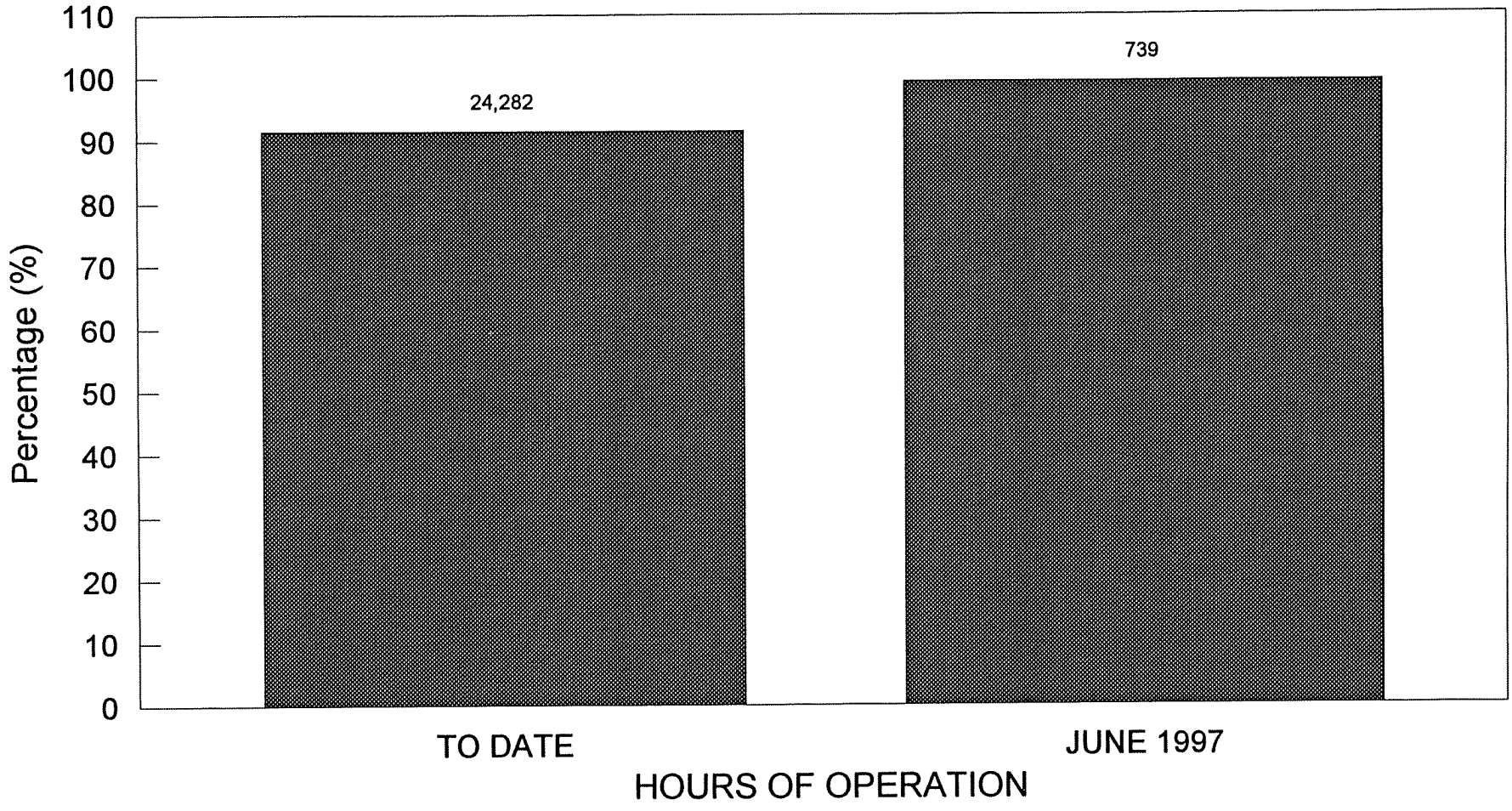
Soil Vapor Extraction System



potential operating time to date is 25,766 hours

System Operational Hours and Up-Time Percentages

Soil Vapor Extraction System



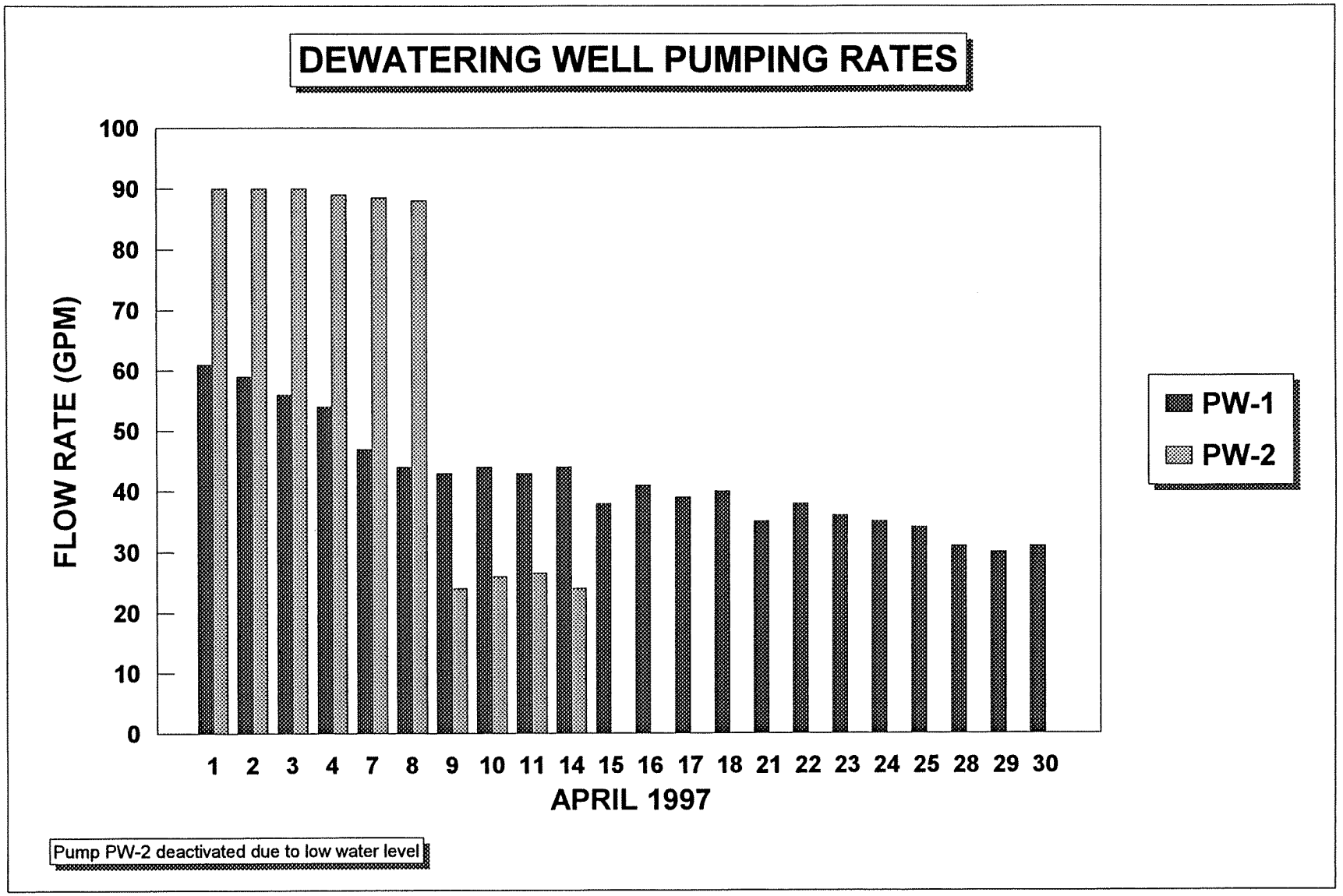
potential operating time to date is 26,510 hours

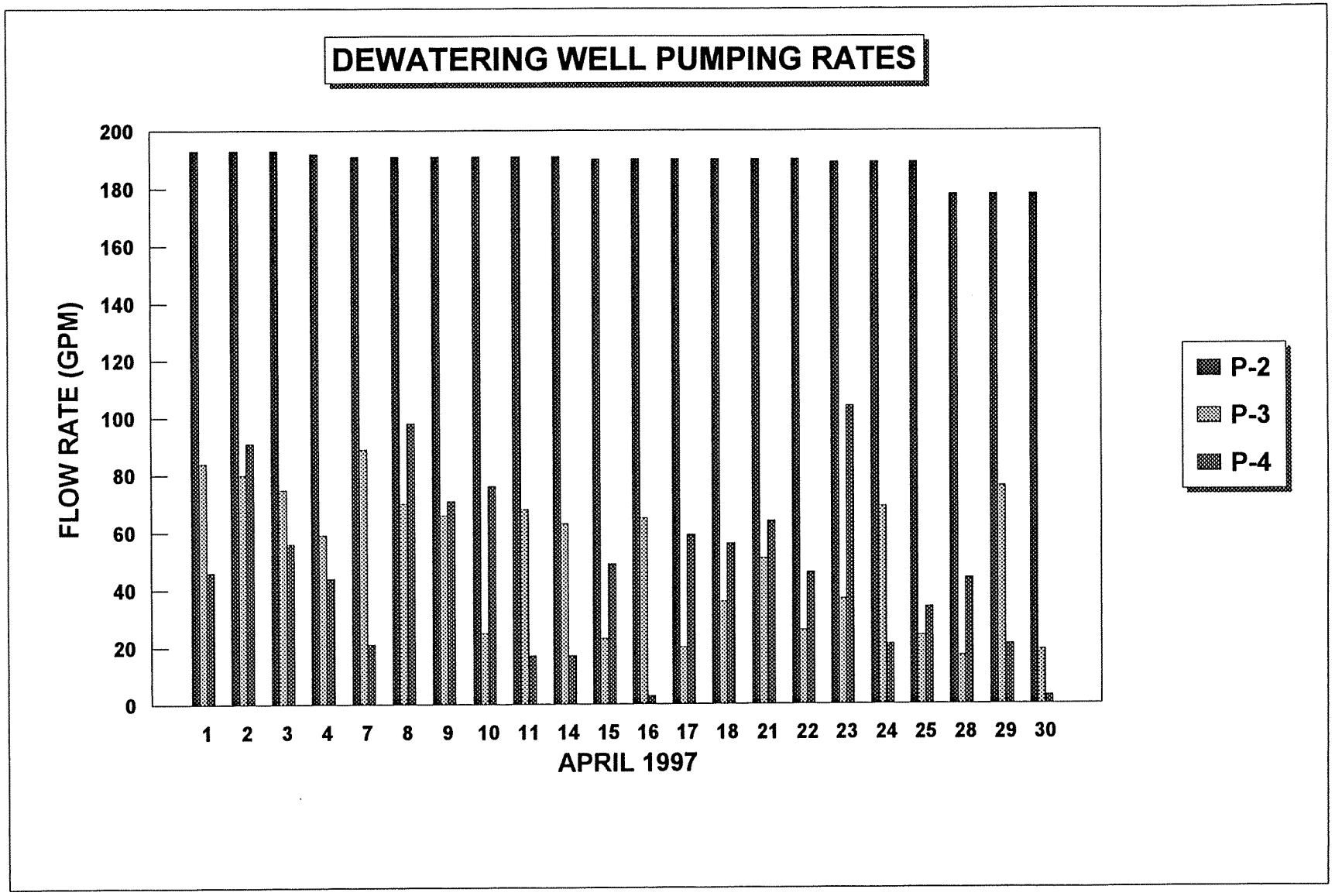
ATTACHMENT B

PW-1/PW-2 STATUS LOG SHEETS

DEWATERING WELL PUMPING RATES
APRIL 1997

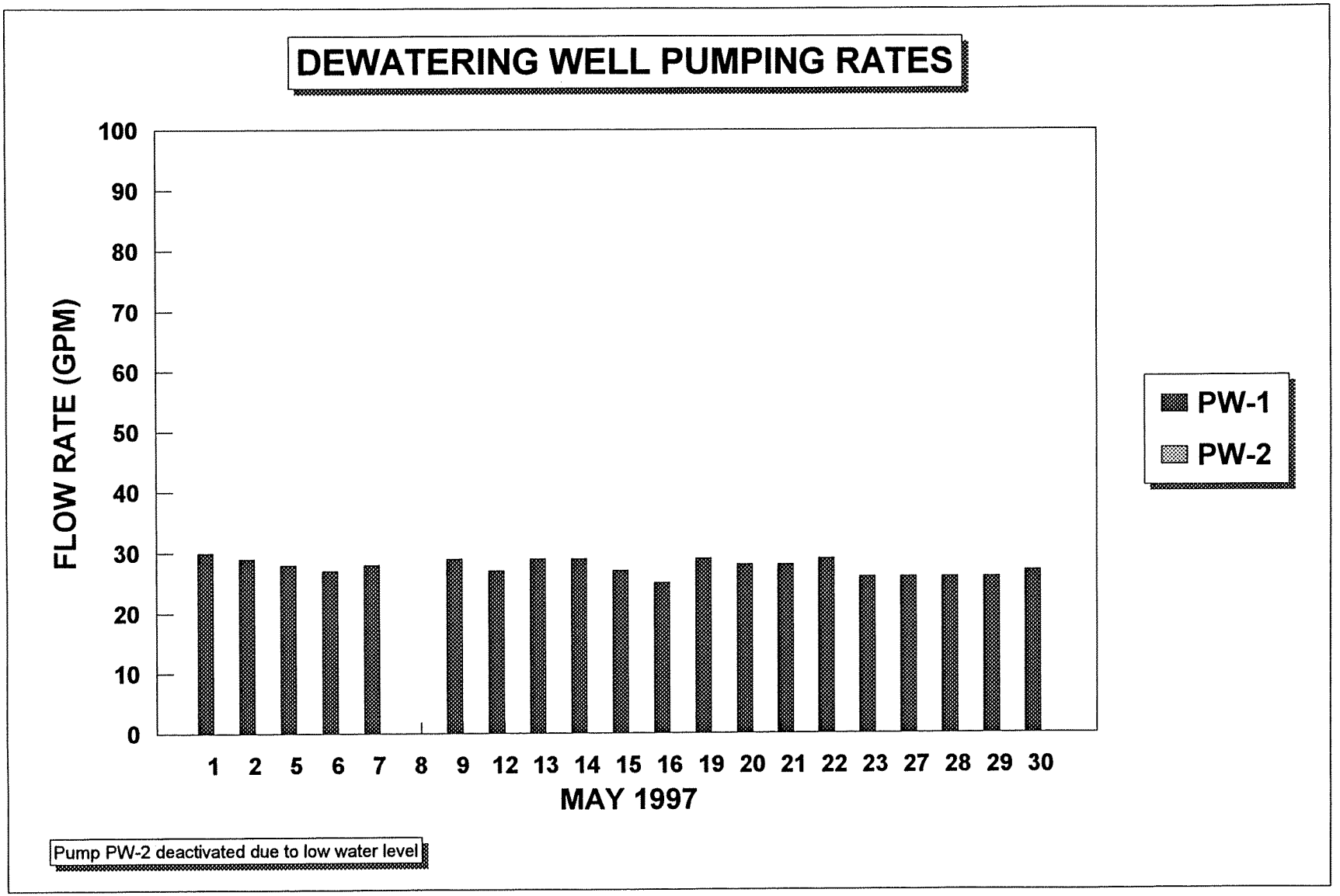
DATE	PW-1	PW-2	P-2	P-3	P-4
04/01/97	61	90	193	84	46
04/02/97	59	90	193	80	91
04/03/97	56	90	193	75	56
04/04/97	54	89	192	59	44
04/07/97	47	88.5	191	89	21
04/08/97	44	88	191	70	98
04/09/97	43	24	191	66	71
04/10/97	44	26	191	25	76
04/11/97	43	26.5	191	68	17
04/14/97	44	24	191	63	17
04/15/97	38	0	190	23	49
04/16/97	41	0	190	65	3
04/17/97	39	0	190	20	59
04/18/97	40	0	190	36	56
04/21/97	35	0	190	51	64
04/22/97	38	0	190	26	46
04/23/97	36	0	189	37	104
04/24/97	35	0	189	69	21
04/25/97	34	0	189	24	34
04/28/97	31	0	178	17	44
04/29/97	30	0	178	76	21
04/30/97	31	0	178	19	3

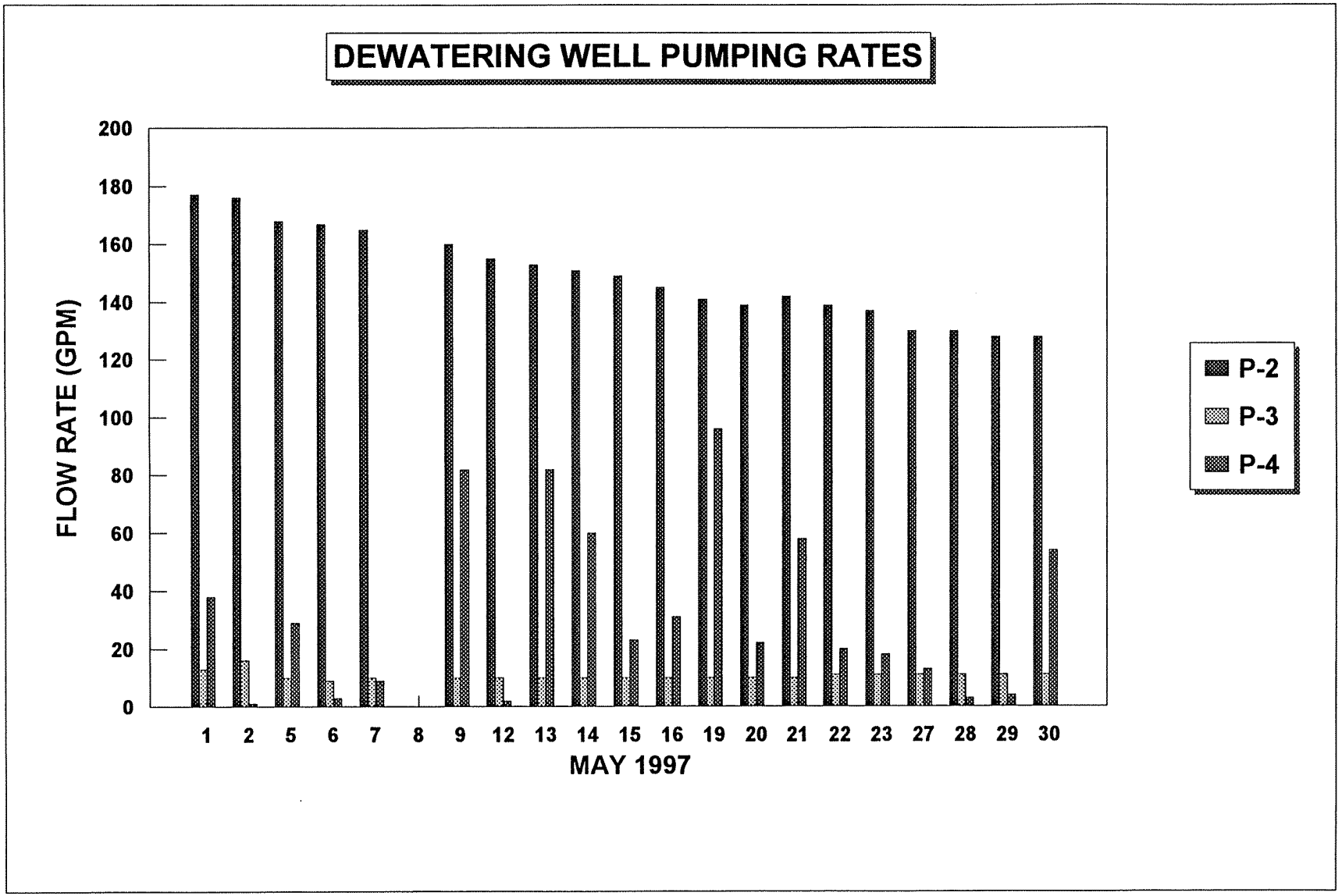

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
100
90
80
70
60
50
40
30
20
10
0
1 2 3 4 7 8 9 10 11 14 15 16 17 18 21 22 23 24 25 28 29 30
APRIL 1997
PW-1
PW-2
Pump PW-2 deactivated due to low water level


DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
200
180
160
140
120
100
80
60
40
20
0
1 2 3 4 7 8 9 10 11 14 15 16 17 18 21 22 23 24 25 28 29 30
APRIL 1997
P-2
P-3
P-4

DEWATERING WELL PUMPING RATES
MAY 1997

DATE	PW-1	PW-2	P-2	P-3	P-4
05/01/97	30	0	177	13	38
05/02/97	29	0	176	16	1
05/05/97	28	0	168	10	29
05/06/97	27	0	167	9	3
05/07/97	28	0	165	10	9
05/08/97	0	0	0	0	0
05/09/97	29	0	160	10	82
05/12/97	27	0	155	10	2
05/13/97	29	0	153	10	82
05/14/97	29	0	151	10	60
05/15/97	27	0	149	10	23
05/16/97	25	0	145	10	31
05/19/97	29	0	141	10	96
05/20/97	28	0	139	10	22
05/21/97	28	0	142	10	58
05/22/97	29	0	139	11	20
05/23/97	26	0	137	11	18
05/27/97	26	0	130	11	13
05/28/97	26	0	130	11	3
05/29/97	26	0	128	11	4
05/30/97	27	0	128	11	54

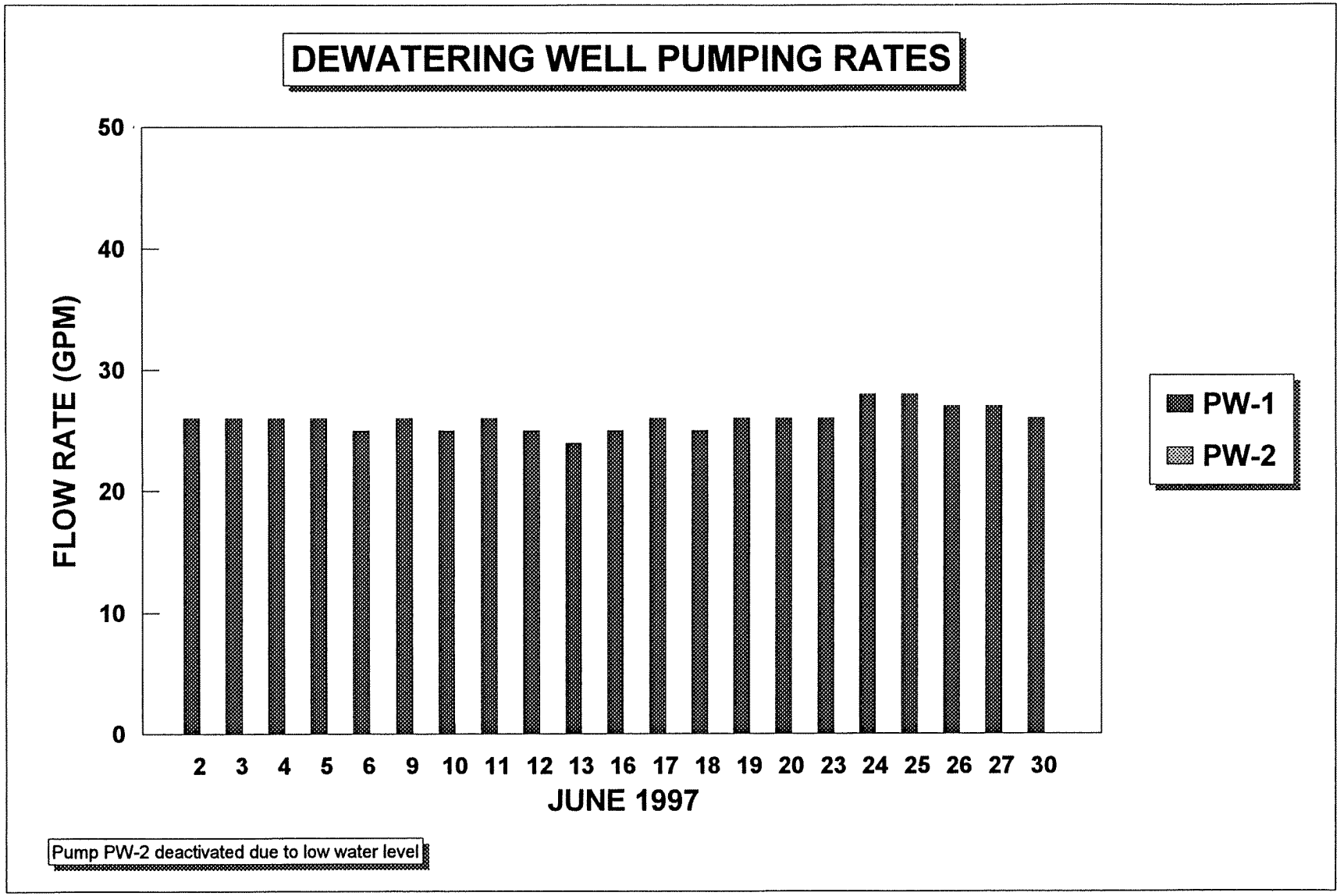

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
100
90
80
70
60
50
40
30
20
10
0
1 2 5 6 7 8 9 12 13 14 15 16 19 20 21 22 23 27 28 29 30
MAY 1997
PW-1
PW-2
Pump PW-2 deactivated due to low water level

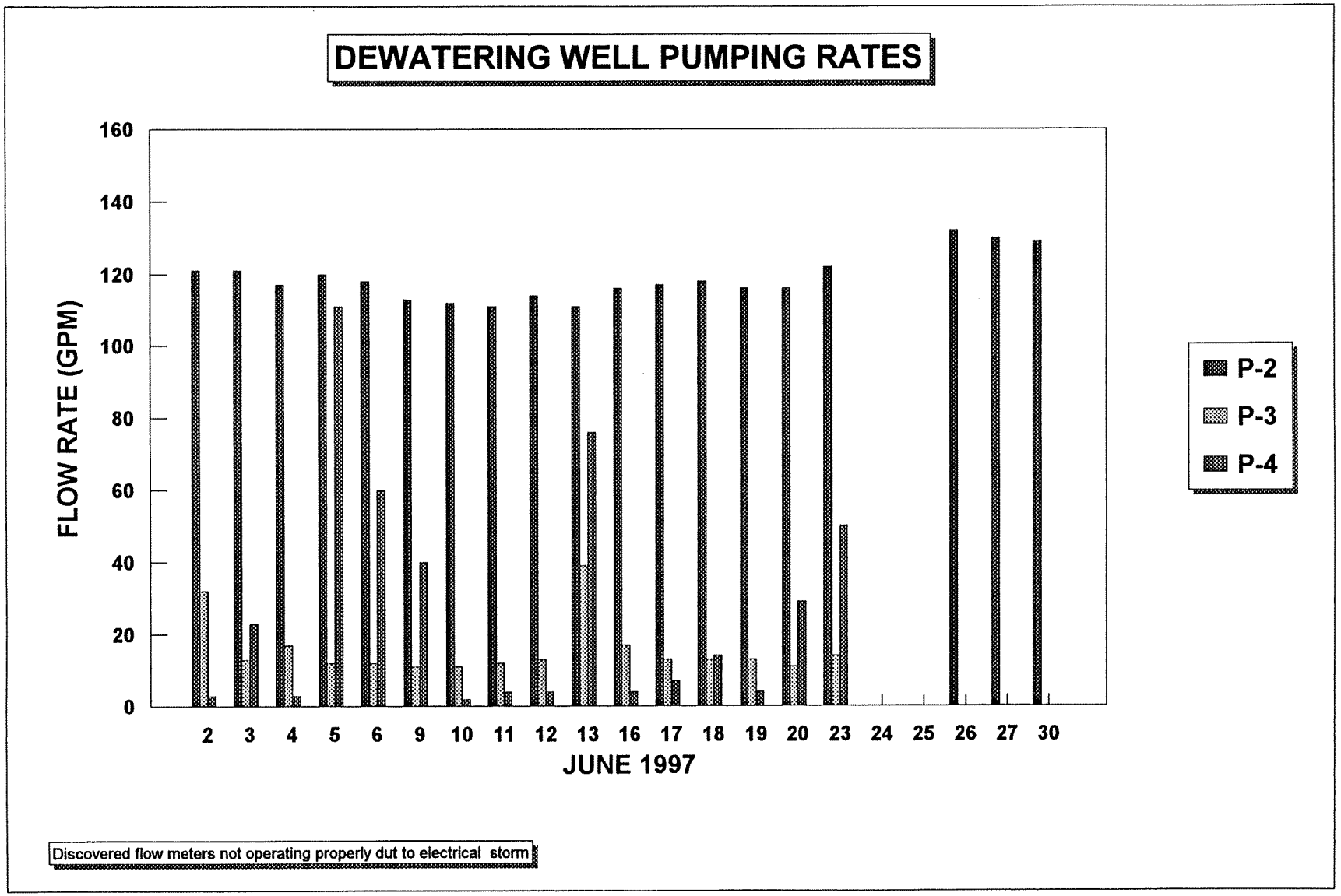

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
200
180
160
140
120
100
80
60
40
20
0
1 2 5 6 7 8 9 12 13 14 15 16 19 20 21 22 23 27 28 29 30
MAY 1997
P-2
P-3
P-4

DEWATERING WELL PUMPING RATES
JUNE 1997

DATE	PW-1	PW-2	P-2	P-3	P-4
06/02/97	26	0	121	32	3
06/03/97	26	0	121	13	23
06/04/97	26	0	117	17	3
06/05/97	26	0	120	12	111
06/06/97	25	0	118	12	60
06/09/97	26	0	113	11	40
06/10/97	25	0	112	11	2
06/11/97	26	0	111	12	4
06/12/97	25	0	114	13	4
06/13/97	24	0	111	39	76
06/16/97	25	0	116	17	4
06/17/97	26	0	117	13	7
06/18/97	25	0	118	13	14
06/19/97	26	0	116	13	4
06/20/97	26	0	116	11	29
06/23/97	26	0	122	14	50
06/24/97	28	0	0(a)	0(a)	0(a)
06/25/97	28	0	0	0	0
06/26/97	27	0	132	0	0
06/27/97	27	0	130	0	0
06/30/97	26	0	129	0	0

a. Discovered flow meters not operating properly due to electrical storms.


DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
50
40
30
20
10
0
2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 23 24 25 26 27 30
JUNE 1997
PW-1
PW-2
Pump PW-2 deactivated due to low water level


DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
160
140
120
100
80
60
40
20
0
2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 23 24 25 26 27 30
JUNE 1997
P-2
P-3
P-4
Discovered flow meters not operating properly dut to electrical storm

ATTACHMENT C

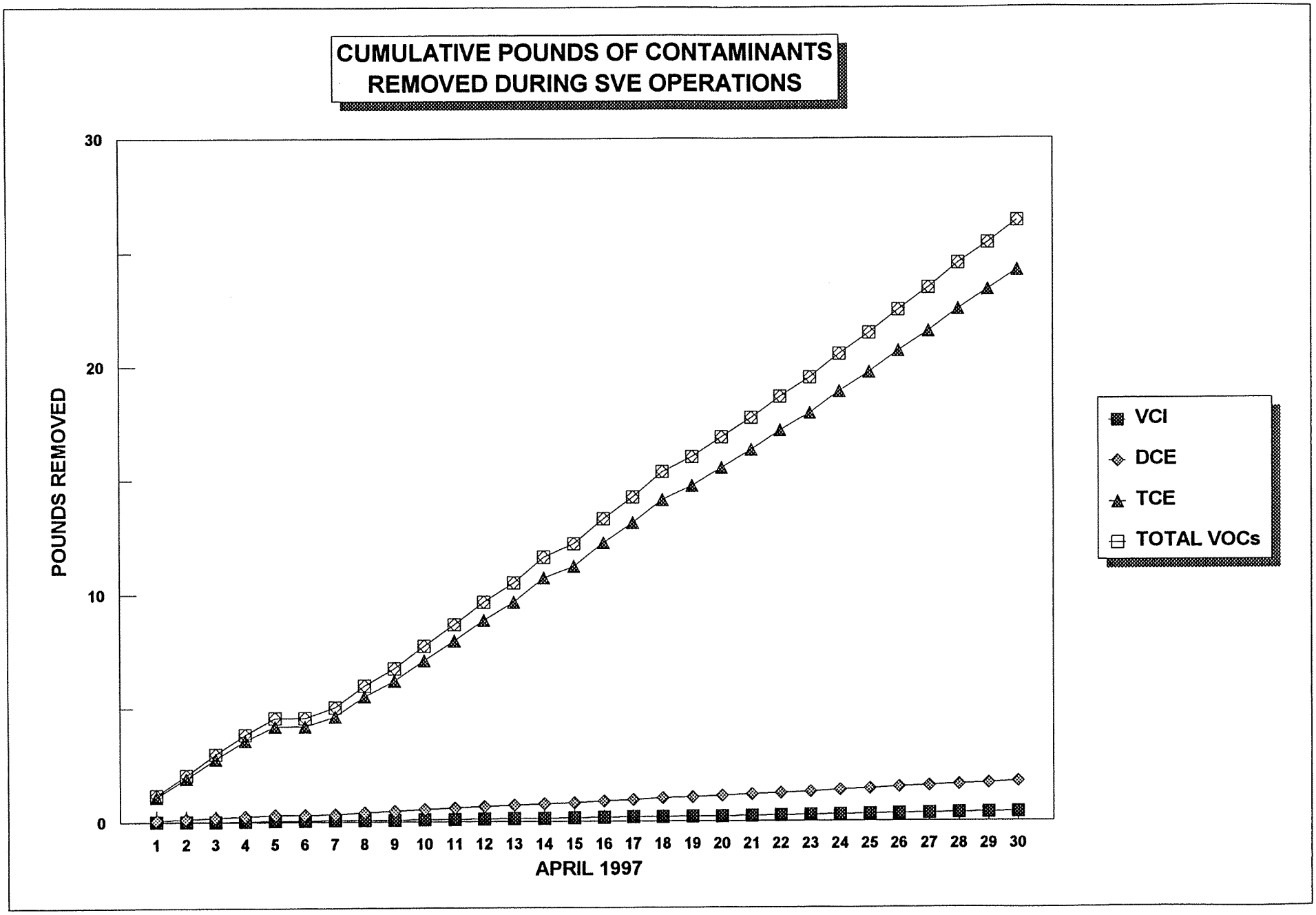
AIR MONITORING PERFORMANCE DATA

Contaminants Removed During SVE Operations

Groundwater Treatment and Soil Remediation Program
Carborumdum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
04/01/97	0.0103	0.0708	1.0971	1.1782
04/02/97	0.0009	0.0573	0.8235	0.8817
04/03/97	0.0131	0.0627	0.8611	0.9369
04/04/97	0.0155	0.0566	0.7870	0.8591
04/05/97	0.0244	0.0532	0.6558	0.7334
04/06/97	0.0000	0.0000	0.0000	0.0000
04/07/97	0.0050	0.0345	0.4262	0.4657
04/08/97	0.0079	0.0692	0.8799	0.9570
04/09/97	0.0051	0.0538	0.6921	0.7510
04/10/97	0.0106	0.0760	0.8893	0.9759
04/11/97	0.0114	0.0627	0.8713	0.9454
04/12/97	0.0126	0.0602	0.9029	0.9757
04/13/97	0.0118	0.0531	0.7880	0.8529
04/14/97	0.0139	0.0593	1.0516	1.1248
04/15/97	0.0135	0.0424	0.5195	0.5754
04/16/97	0.0193	0.0685	1.0057	1.0935
04/17/97	0.0139	0.0532	0.8826	0.9497
04/18/97	0.0095	0.0802	1.0196	1.1093
04/19/97	0.0084	0.0410	0.6113	0.6607
04/20/97	0.0119	0.0619	0.7928	0.8666
04/21/97	0.0132	0.0551	0.7830	0.8513
04/22/97	0.0177	0.0657	0.8470	0.9304
04/23/97	0.0172	0.0574	0.7640	0.8386
04/24/97	0.0209	0.0648	0.9489	1.0346
04/25/97	0.0147	0.0678	0.8620	0.9445
04/26/97	0.0253	0.0625	0.9207	1.0085
04/27/97	0.0207	0.0630	0.8860	0.9697
04/28/97	0.0191	0.0711	0.9835	1.0737
04/29/97	0.0133	0.0532	0.8346	0.9011
04/30/97	0.0286	0.0682	0.8525	0.9493

April 1997	0.4097	1.7454	24.2395	26.3946
Previous Total	18.9971	223.3275	2118.5366	2360.8612
Thru 04/30/97	19.4068	225.0729	2142.7761	2387.2558

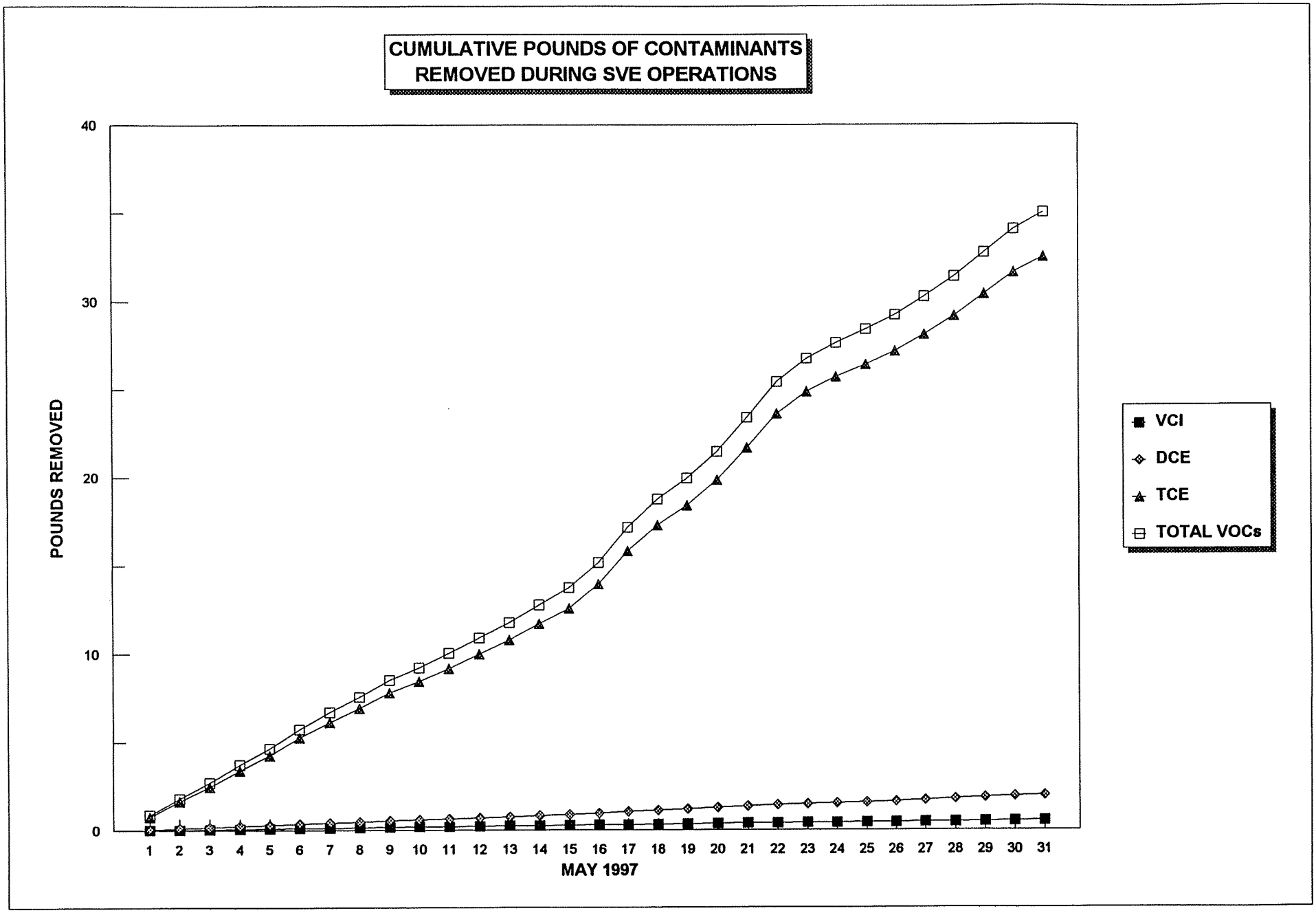

CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING SVE OPERATIONS
POUNDS REMOVED
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
APRIL 1997
VCl
DCE
TCE
TOTAL VOCs

Contaminants Removed During SVE Operations

Groundwater Treatment and Soil Remediation Program
Carborundum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
05/01/97	0.0186	0.0597	0.7865	0.8648
05/02/97	0.0146	0.0645	0.8465	0.9256
05/03/97	0.0218	0.0578	0.8288	0.9084
05/04/97	0.0214	0.0650	0.9282	1.0146
05/05/97	0.0201	0.0588	0.8633	0.9422
05/06/97	0.0189	0.0704	1.0005	1.0898
05/07/97	0.0130	0.0580	0.8923	0.9633
05/08/97	0.0226	0.0516	0.7848	0.8590
05/09/97	0.0176	0.0577	0.8963	0.9716
05/10/97	0.0217	0.0492	0.6438	0.7147
05/11/97	0.0208	0.0499	0.7277	0.7984
05/12/97	0.0157	0.0535	0.8077	0.8769
05/13/97	0.0128	0.0539	0.8090	0.8757
05/14/97	0.0167	0.0671	0.9089	0.9927
05/15/97	0.0192	0.0645	0.8658	0.9495
05/16/97	0.0124	0.0720	1.3605	1.4449
05/17/97	0.0232	0.0907	1.8665	1.9804
05/18/97	0.0247	0.0722	1.4816	1.5785
05/19/97	0.0226	0.0675	1.1109	1.2010
05/20/97	0.0136	0.0689	1.4339	1.5164
05/21/97	0.0192	0.0763	1.8445	1.9400
05/22/97	0.0129	0.0836	1.9400	2.0365
05/23/97	0.0147	0.0518	1.2410	1.3075
05/24/97	0.0141	0.0514	0.8373	0.9028
05/25/97	0.0131	0.0500	0.6866	0.7497
05/26/97	0.0127	0.0533	0.7741	0.8401
05/27/97	0.0140	0.0629	0.9614	1.0383
05/28/97	0.0125	0.0695	1.0533	1.1353
05/29/97	0.0216	0.0725	1.2520	1.3461
05/30/97	0.0240	0.0842	1.2119	1.3201
05/31/97	0.0158	0.0444	0.8700	0.9302

May 1997	0.5466	1.9528	32.5156	35.0150
Previous Total	19.4068	225.0729	2142.7761	2387.2558
Thru 05/31/97	19.9534	227.0257	2175.2917	2422.2708

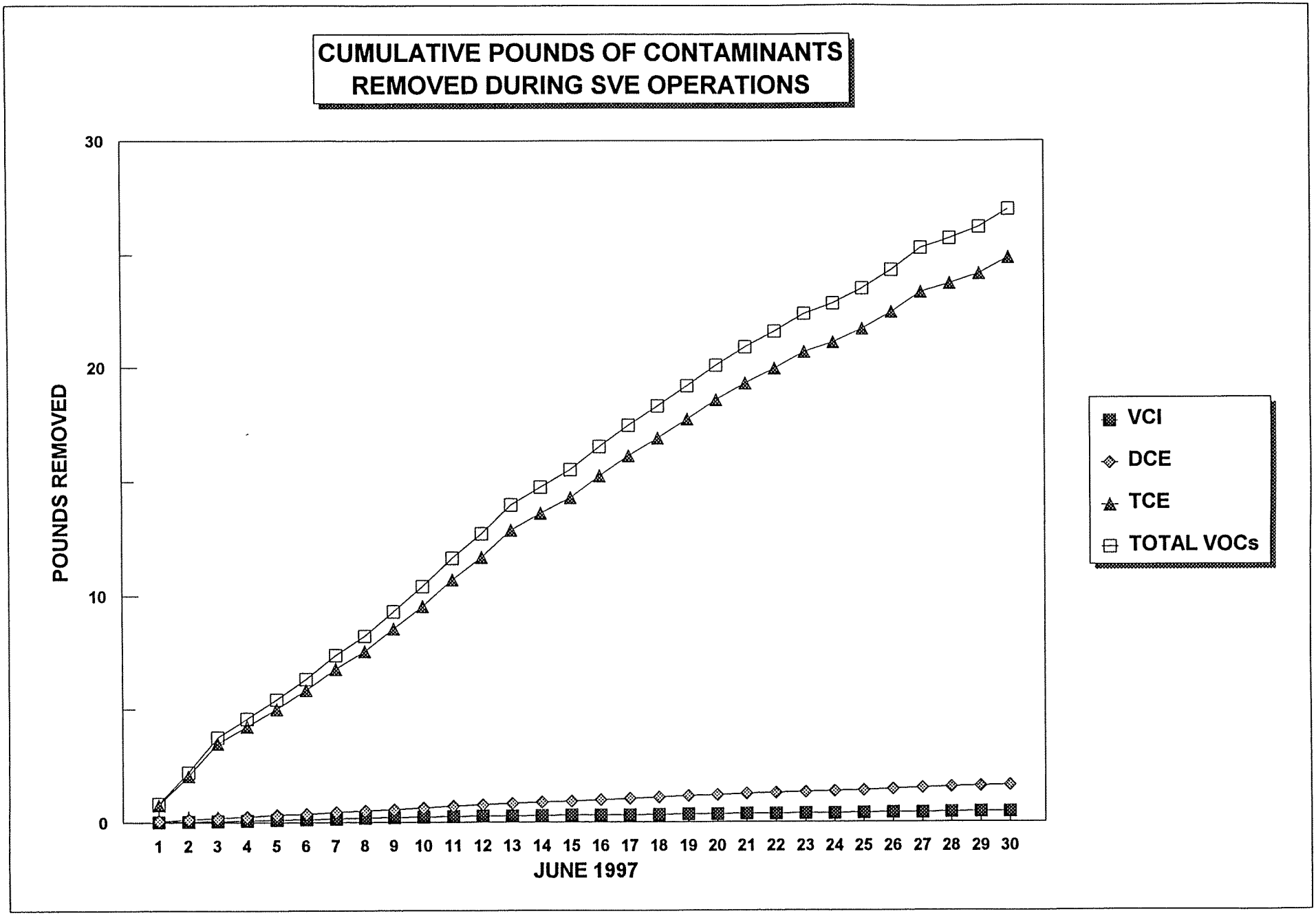

CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING SVE OPERATIONS
POUNDS REMOVED
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
MAY 1997
VCl
DCE
TCE
TOTAL VOCs

Contaminants Removed During SVE Operations

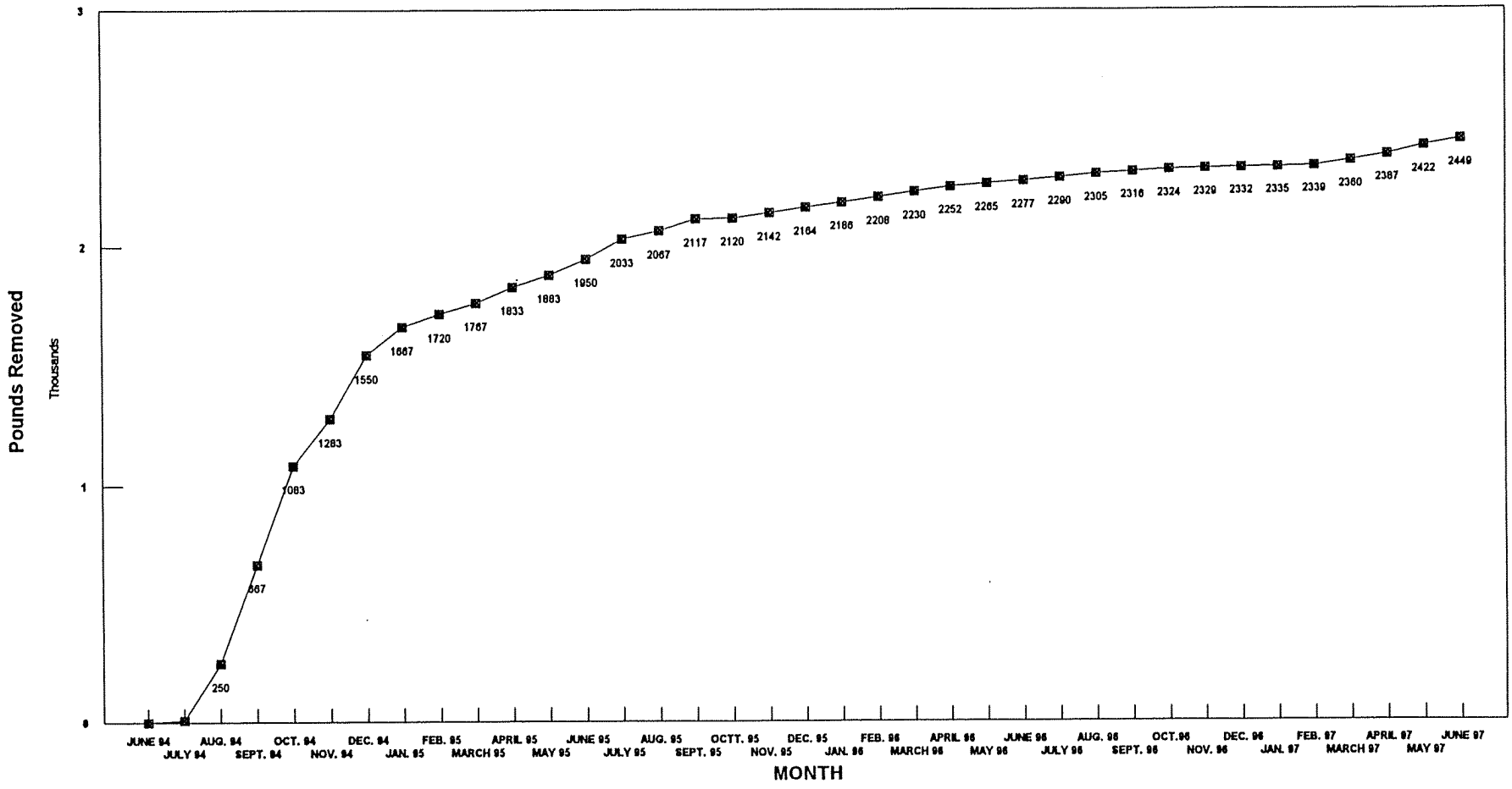
Groundwater Treatment and Soil Remediation Program
Carborundum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
06/01/97	0.0162	0.0534	0.7563	0.8259
06/02/97	0.0196	0.0692	1.3011	1.3899
06/03/97	0.0272	0.0768	1.4354	1.5394
06/04/97	0.0145	0.0514	0.7555	0.8214
06/05/97	0.0307	0.0578	0.7669	0.8554
06/06/97	0.0220	0.0537	0.8387	0.9144
06/07/97	0.0271	0.0674	0.9382	1.0327
06/08/97	0.0282	0.0560	0.7716	0.8558
06/09/97	0.0281	0.0719	0.9914	1.0914
06/10/97	0.0191	0.0673	1.0052	1.0916
06/11/97	0.0163	0.0760	1.1575	1.2498
06/12/97	0.0141	0.0605	0.9896	1.0642
06/13/97	0.0074	0.0668	1.1788	1.2530
06/14/97	0.0072	0.0498	0.7296	0.7866
06/15/97	0.0116	0.0491	0.6872	0.7479
06/16/97	0.0103	0.0552	0.9359	1.0014
06/17/97	0.0070	0.0555	0.8750	0.9375
06/18/97	0.0125	0.0592	0.7761	0.8478
06/19/97	0.0113	0.0508	0.8311	0.8932
06/20/97	0.0098	0.0511	0.8395	0.9004
06/21/97	0.0113	0.0455	0.7523	0.8091
06/22/97	0.0118	0.0397	0.6506	0.7021
06/23/97	0.0073	0.0485	0.7442	0.8000
06/24/97	0.0090	0.0331	0.4266	0.4687
06/25/97	0.0129	0.0424	0.5884	0.6437
06/26/97	0.0141	0.0515	0.7618	0.8274
06/27/97	0.0109	0.0602	0.8753	0.9464
06/28/97	0.0136	0.0346	0.3930	0.4412
06/29/97	0.0144	0.0401	0.4277	0.4822
06/30/97	0.0110	0.0502	0.7002	0.7614

June 1997	0.4565	1.6447	24.8807	26.9819
Previous Total	19.9534	227.0257	2175.2917	2422.2708
Thru 06/30/97	20.4099	228.6704	2200.1724	2449.2527


CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING SVE OPERATIONS
POUNDS REMOVED
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
JUNE 1997
VCl
DCE
TCE
TOTAL VOCs

CUMULATIVE POUNDS OF CONTAMINANTS REMOVED DURING SVE OPERATION

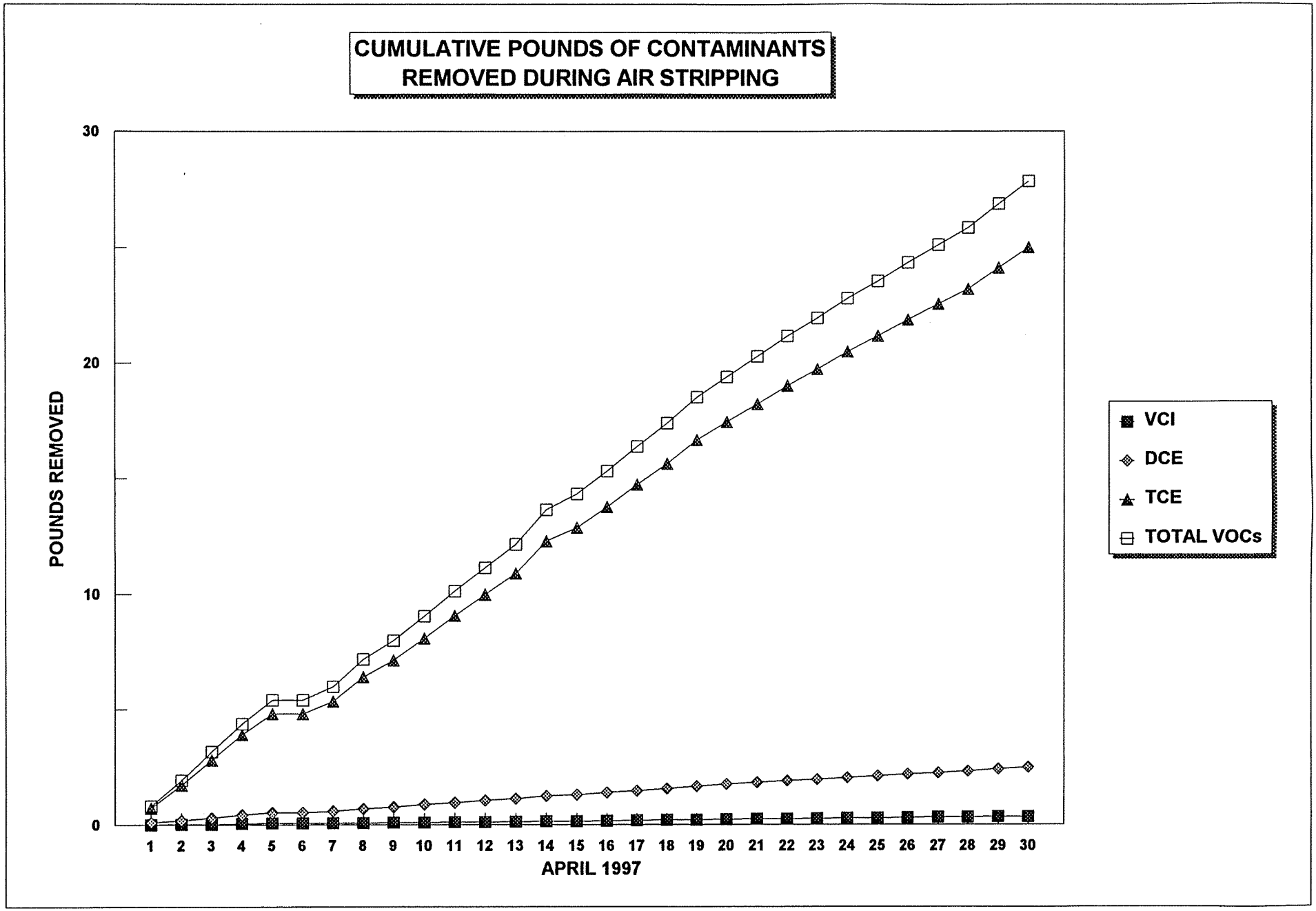


Contaminants Removed Via Air Stripping

Groundwater Treatment and Soil Remediation Program
Carborundum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
04/01/97	0.0074	0.0833	0.7129	0.8036
04/02/97	0.0093	0.1100	0.9859	1.1052
04/03/97	0.0166	0.1158	1.1207	1.2531
04/04/97	0.0157	0.1183	1.0846	1.2186
04/05/97	0.0144	0.1049	0.9053	1.0246
04/06/97	0.0000	0.0000	0.0000	0.0000
04/07/97	0.0027	0.0516	0.5406	0.5949
04/08/97	0.0101	0.0949	1.0644	1.1694
04/09/97	0.0053	0.0888	0.7155	0.8096
04/10/97	0.0091	0.0973	0.9515	1.0579
04/11/97	0.0112	0.0906	0.9907	1.0925
04/12/97	0.0118	0.0807	0.9105	1.0030
04/13/97	0.0187	0.0831	0.9020	1.0038
04/14/97	0.0120	0.1100	1.3837	1.5057
04/15/97	0.0125	0.0732	0.5938	0.6795
04/16/97	0.0176	0.0824	0.8880	0.9880
04/17/97	0.0124	0.0868	0.9779	1.0771
04/18/97	0.0100	0.0851	0.9086	1.0037
04/19/97	0.0132	0.0963	1.0172	1.1267
04/20/97	0.0172	0.0849	0.7846	0.8867
04/21/97	0.0121	0.0777	0.7815	0.8713
04/22/97	0.0137	0.0802	0.7940	0.8879
04/23/97	0.0126	0.0642	0.7189	0.7957
04/24/97	0.0108	0.0757	0.7656	0.8521
04/25/97	0.0103	0.0665	0.6652	0.7420
04/26/97	0.0125	0.0708	0.7136	0.7969
04/27/97	0.0135	0.0675	0.6700	0.7510
04/28/97	0.0130	0.0714	0.6629	0.7473
04/29/97	0.0077	0.0964	0.9099	1.0140
04/30/97	0.0116	0.0874	0.8734	0.9724

April 1997	0.3450	2.4958	24.9934	27.8342
Previous Total	11.6211	134.9888	626.4314	773.0415
Thru 04/30/97	11.9661	137.4846	651.4248	800.8757

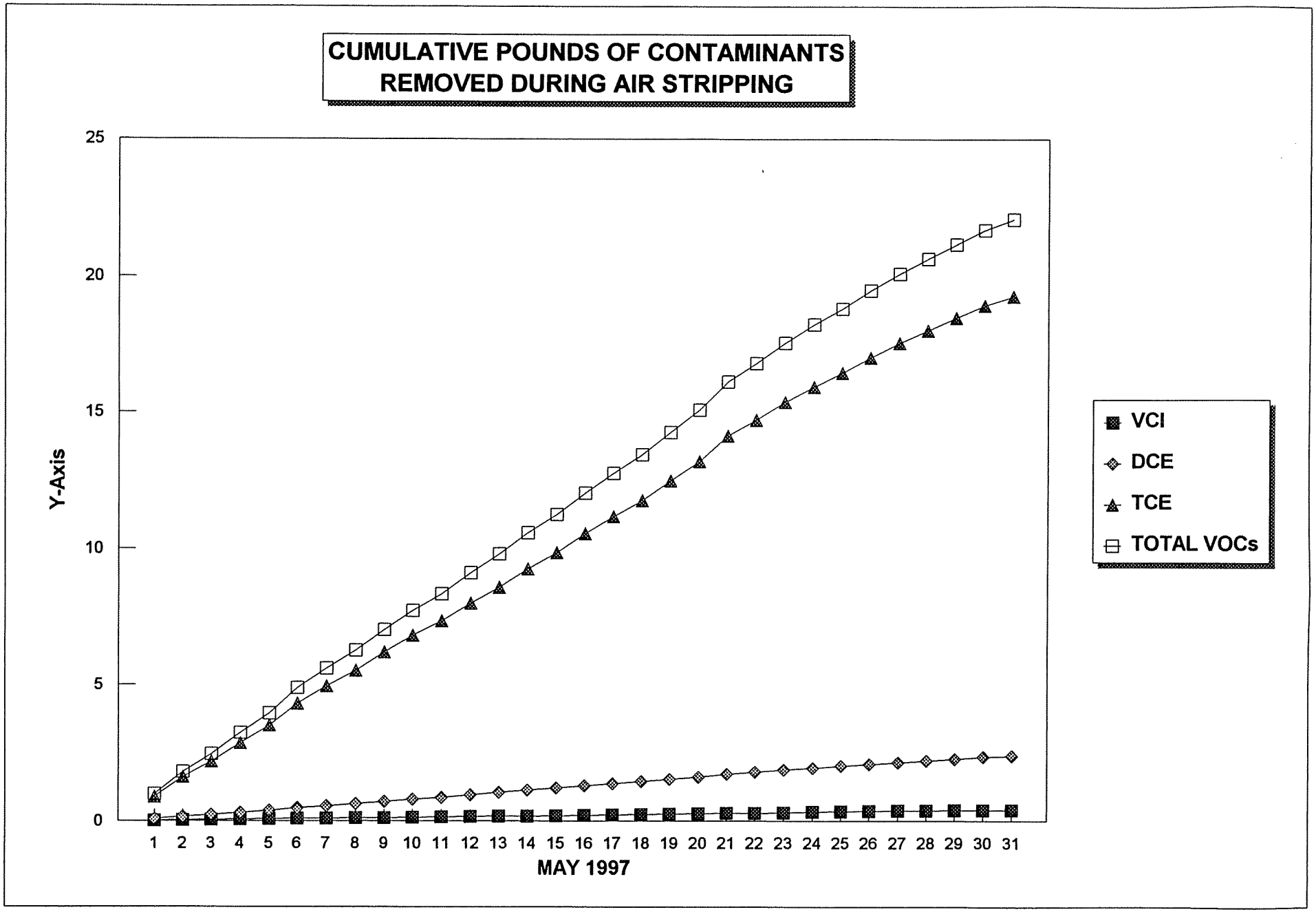

CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING AIR STRIPPING
POUNDS REMOVED
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
APRIL 1997
VCl
DCE
TCE
TOTAL VOCs

Contaminants Removed Via Air Stripping

Groundwater Treatment and Soil Remediation Program
Carborumdum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
05/01/97	0.0096	0.0810	0.8780	0.9686
05/02/97	0.0159	0.0804	0.7272	0.8235
05/03/97	0.0190	0.0682	0.5678	0.6550
05/04/97	0.0216	0.0828	0.6865	0.7909
05/05/97	0.0114	0.0734	0.6436	0.7284
05/06/97	0.0137	0.0917	0.8149	0.9203
05/07/97	0.0082	0.0758	0.6407	0.7247
05/08/97	0.0094	0.0719	0.5827	0.6640
05/09/97	0.0112	0.0752	0.6724	0.7588
05/10/97	0.0128	0.0755	0.6070	0.6953
05/11/97	0.0165	0.0682	0.5239	0.6086
05/12/97	0.0144	0.1037	0.6552	0.7733
05/13/97	0.0119	0.0895	0.5897	0.6911
05/14/97	0.0095	0.0841	0.6698	0.7634
05/15/97	0.0136	0.0804	0.5880	0.6820
05/16/97	0.0127	0.0824	0.6908	0.7859
05/17/97	0.0172	0.0812	0.6236	0.7220
05/18/97	0.0107	0.0752	0.5960	0.6819
05/19/97	0.0236	0.0859	0.7182	0.8277
05/20/97	0.0108	0.0774	0.7210	0.8092
05/21/97	0.0116	0.1085	0.9331	1.0532
05/22/97	0.0094	0.0790	0.5848	0.6732
05/23/97	0.0166	0.0887	0.6585	0.7638
05/24/97	0.0239	0.0713	0.5629	0.6581
05/25/97	0.0198	0.0672	0.5026	0.5896
05/26/97	0.0197	0.0700	0.5713	0.6610
05/27/97	0.0101	0.0631	0.5457	0.6189
05/28/97	0.0077	0.0608	0.4640	0.5325
05/29/97	0.0057	0.0624	0.4626	0.5307
05/30/97	0.0081	0.0737	0.4506	0.5324
05/31/97	0.0046	0.0439	0.3310	0.3795

May 1997	0.4109	2.3925	19.2641	22.0675
Previous Total	11.9661	137.4846	651.4248	800.8757
Thru 05/31/97	12.3770	139.8771	670.6889	822.9432



Hull & Associates, Inc.

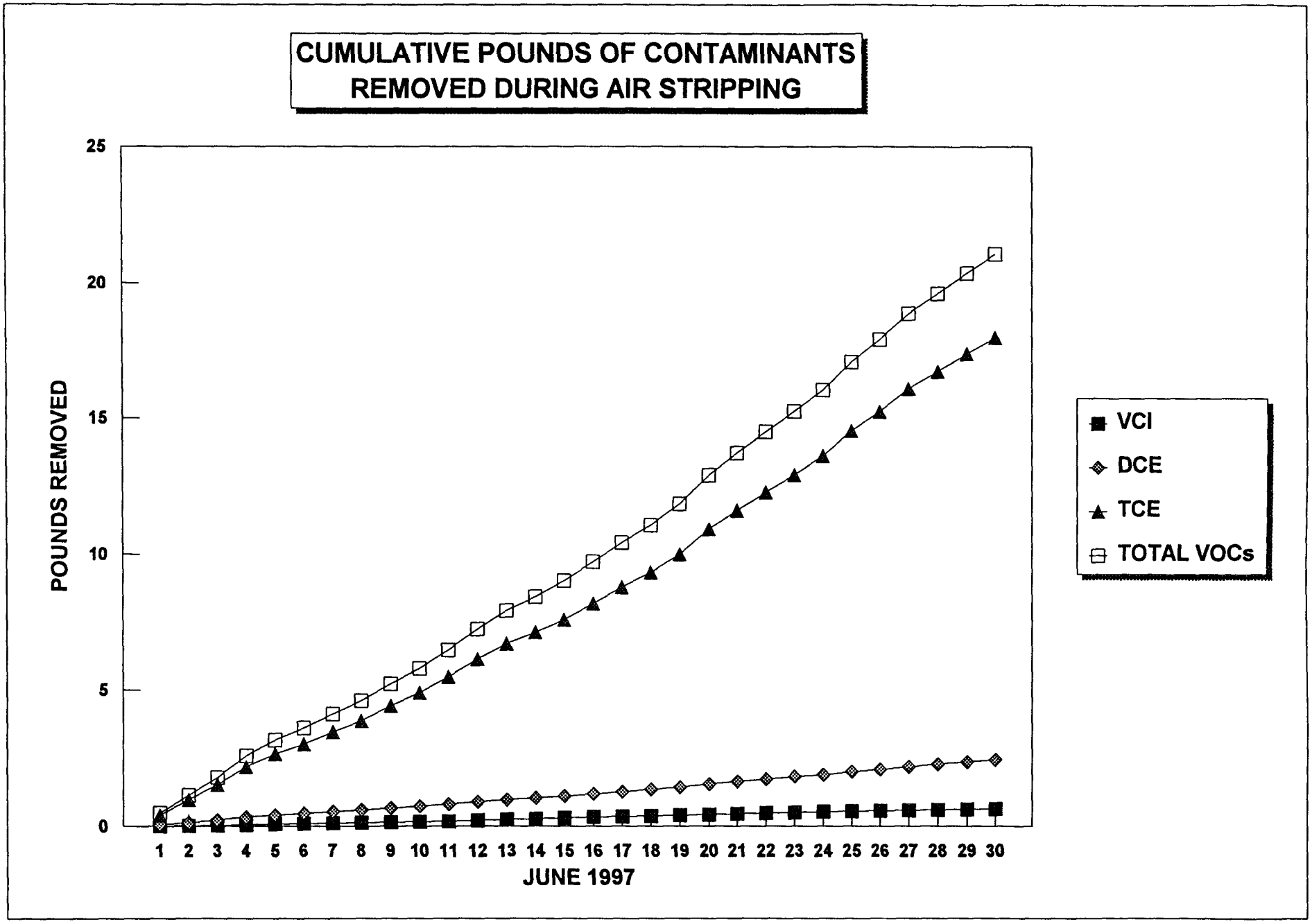
f:\data\bpny\field\may97\airtotal.wk4

Contaminants Removed Via Air Stripping

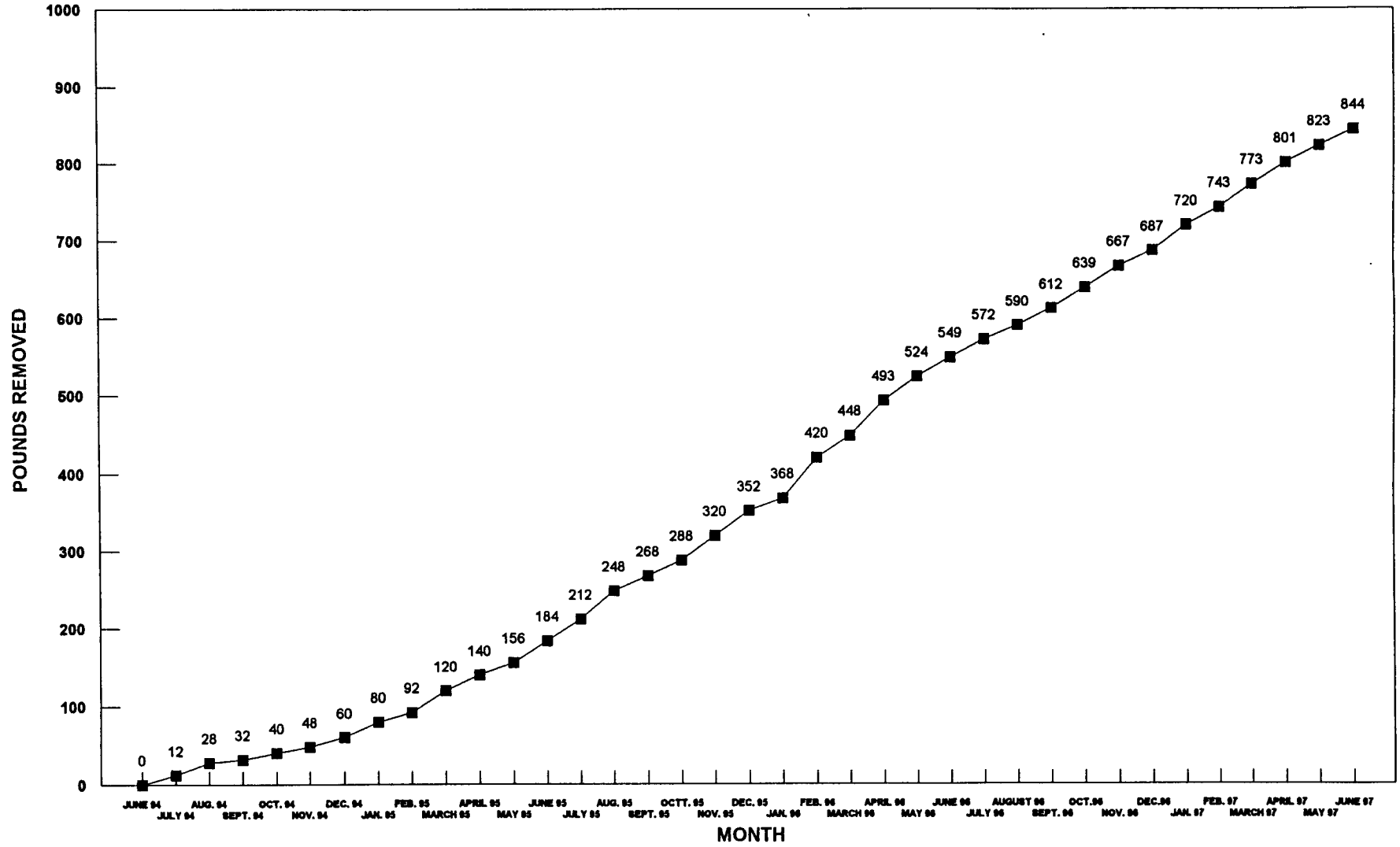
Groundwater Treatment and Soil Remediation Program
Carborumdum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
06/01/97	0.0108	0.0637	0.4087	0.4832
06/02/97	0.0129	0.0748	0.5696	0.6573
06/03/97	0.0149	0.0848	0.5534	0.6531
06/04/97	0.0213	0.1150	0.6615	0.7978
06/05/97	0.0219	0.0737	0.4775	0.5731
06/06/97	0.0218	0.0613	0.3530	0.4361
06/07/97	0.0131	0.0665	0.4398	0.5194
06/08/97	0.0113	0.0568	0.4135	0.4816
06/09/97	0.0157	0.0739	0.5404	0.6300
06/10/97	0.0146	0.0629	0.4823	0.5598
06/11/97	0.0231	0.0770	0.5811	0.6812
06/12/97	0.0358	0.0897	0.6494	0.7749
06/13/97	0.0270	0.0770	0.5753	0.6793
06/14/97	0.0335	0.0658	0.4207	0.5200
06/15/97	0.0340	0.0770	0.4675	0.5785
06/16/97	0.0252	0.0763	0.6017	0.7032
06/17/97	0.0228	0.0810	0.5984	0.7022
06/18/97	0.0203	0.0736	0.5442	0.6381
06/19/97	0.0278	0.0833	0.6611	0.7722
06/20/97	0.0184	0.1193	0.9141	1.0518
06/21/97	0.0313	0.0862	0.6925	0.8100
06/22/97	0.0297	0.0916	0.6720	0.7933
06/23/97	0.0208	0.0869	0.6343	0.7420
06/24/97	0.0218	0.0794	0.7035	0.8047
06/25/97	0.0204	0.1064	0.9167	1.0435
06/26/97	0.0196	0.0896	0.7179	0.8271
06/27/97	0.0182	0.0964	0.8460	0.9606
06/28/97	0.0112	0.0906	0.6408	0.7426
06/29/97	0.0183	0.0872	0.6447	0.7502
06/30/97	0.0178	0.0799	0.5974	0.6951

June 1997	0.6353	2.4476	17.9790	21.0619
Previous Total	12.3770	139.8771	670.6889	822.9432
Thru 06/30/97	13.0123	142.3247	688.6679	844.0051


CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING AIR STRIPPING
POUNDS REMOVED
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
JUNE 1997
VCl
DCE
TCE
TOTAL VOCs

CUMULATIVE POUNDS OF CONTAMINANTS REMOVED DURING AIR STRIPPING



ATTACHMENT D

RESULTS OF SAMPLING

None this period.

ATTACHMENT E

PERFORMANCE MONITORING DATA - SVE SYSTEM

Not Included

Information can be provided upon request

ATTACHMENT F

DAILY OPERATIONS REPORTS

Not Included

Information can be provided upon request

ATTACHMENT G

40 HOUR OSHA TRAINED SITE PERSONNEL

OSHA/CARBORUNDUM TRAINED WORKERS

COMPANY	EMPLOYEE	40 HR. OSHA TRAINED	CARBORUNDUM TRAINING
Haley & Aldrich	Susan L. Boyle	X	X
	Dave Nostrant	X	X
	Brenda G. Hanna	X	X
	Steven H. Phillips	X	X
	Margare. J. Corrigan	X	X
	Dan Putz	X	X
McLaren Hart	Christine A. Retherford	X	X
	Brian Radus	X	X
	Robert F. DeLisio	X	X
	Steven J. Katzenstein	X	X
	Kevin Baumgartner	X	X
	Ken Andromalos	X	X
	Julie Panko	X	X
	Richard C. Becken (now HAI)	X	X
	Syed Farooq	X	X
	Joseph J. Kilcer	X	X
	Matt Plautz	X	X
	Don Bigley	X	X
	Mike D'Eufeumia	X	X
	Shabad Khalsa	X	X
	Lise Nielsen	X	X
	Dennis Hagerty	X	X
	Fred Coll	X	X

	John Parker	X	X
	Trevor King	X	X
	Gregory Marmol	X	
	George Bland	X	
	Robert Koltuniak	X	
	Chad Becken (now HAI)	X	
Empire Soils	William L. Levergood	X	X
	Steven Wolkiewicz	X	X
	Ronald Brown	X	X
	Kenneth Fuller	X	X
	Thomas Kasperek	X	X
	Dan Beitz	X	X
	Alan Przywara	X	X
	Philip Bence	X	X
	Robert Taylor	X	X
	David Maddex	X	X
	Anthony Mitwick	X	X
Armand Cerrone	Dave Burns	X	X
	Vincent Cerrone	X	X
	Frank Perri	X	X
	Paul E. Otto	X	X
	Billy Williamson	X	X

	Donald Kneeppe	X	X
	Mark V. Cerrone	X	X
	Fred J. Diez	X	X
	Lewis D'Antuono	X	X
	George D. Perry	X	X
	Leo Lipomi	X	X
	Rick Bernier	X	X
	Jack D'Antuono	X	X
	Enrico Berulaqua	X	X
	Willy Williams	X	X
	Ed Seefeldt	X	X
Walter J. Johnson	Doug Janeese	X	X
	Robert L. Stevens	X	X
	Robert Aleks	X	X
	Charles A. Locurto	X	X
	Christopher V. Shakarjian	X	X
	Wayne D. Courteau	X	X
	Salvatore A. Nasca	X	X
	Patrick Harrigan	X	X
	Robert J. McNerney	X	X
	James Cali	X	X
	Robert Boland	X	X
	Ronald Hillman	X	X
	Bob Green	X	X
	Ray Mosci	X	X
	Steve Cal	X	X
	Rick Johnson	X	X
	Brian Perry	X	X

	Ron Follum	X	X
Niagara Boundry	Alan W. Slaugenhoupt	X	X
	Paul Glassman	X	X
	Edward Pitz	X	X
	Barry Nichols	X	X
Ferguson Electric	Paul D. Beecher	X	X
	Dan Kroening	X	X
	Don Freedman	X	X
	Gerald Manzi	X	X
	Robert C. Wawro	X	X
	Tim Ried	X	X
	Nicholas Metro, Jr.	X	X
	Jerauld Stanish	X	X
	Steven Frank	X	X
	Kirk Clarkson	X	X
	Salin Kinar	X	X
Frontier Building	Wayne Zimmerman	X	X
	Frank P. Tedesco	X	X
	Michael Kuligsoiski	X	X
	John Hart	X	X
	David McElwain	X	X
Niagara Piping	Steven Bartlet	X	X
	Alex Green	X	X
	Wayne Laska	X	X
Apollo Steel Corp.	Mike Kessler	X	X
	Wesley Pokelwaldt	X	X
	Robert Fiori	X	X

	Albert Black	X	X
	Roy Owens	X	X
	David Sears	X	X
CIR	Jeff Haseley	X	X
	Charlie Carr	X	X
	Paul Kloosterman	X	X
	Larry Krueger	X	X
J.W. Danforth	Peter Reagan	X	X
	Tom Reagan	X	X
	Mike Adams	X	X
	Mark Gaines	X	
	David Cronkhite	X	X
	Donald Kelly	X	X
	Tab Mardon	X	X
	Mike Calarco	X	X
	Frank Nardello	X	X
	Rickard Bleck	X	X
Fox Fence	Mark Fox	X	X
	Bill Cramer	X	X
	John White	X	X
Niagara Insulation	Mike Barry	X	X
	Andrew Namynanik	X	X
	John White	X	X
Hayes Buri	L.N. Palmer	X	X
	M.A. Albore	X	X

Carrier Controls	Dave Carrier	X	X
Building Controls	Dan Griffin	X	X
Hull & Associates, Inc.	Dave Richards	X	
	Mark Hoidas	X	
	Kevin Wildman	X	
	Mike Mohr	X	
	Craig Kasper	X	