QUARTERLY OPERATIONS AND MAINTENANCE REPORT (JANUARY, FEBRUARY, MARCH 1997)

FOR THE

GROUND-WATER TREATMENT/SOIL REMEDIATION SYSTEM
CARBORUNDUM FACILITY

LOCATED AT

2040 CORY ROAD
SANBORN, NEW YORK

APRIL 1997

PREPARED FOR:

BP EXPLORATION & OIL INC.

PREPARED BY:

HULL & ASSOCIATES, INC.
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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 January, February and March 1997. The January, February and March monthly progress reports were prepared by HAI. 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. 34
March 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. 034 March 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 March 1997 are shown graphically in Attachment B.

- See Attachment A for Hours of System Operation Log (VES) Log No. 034 March 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 March 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 March 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 March 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 5 to 17 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 March 13and 28, 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 March 1-3, March 7-11. Pump PW-1A remained in automatic operation for March 4- 6 and March 12- 31.
- Pumps PW-2A and PW-2B remained in auto operation March 1- 24 and March 27- 31 . Pump PW-2A and PW-2B remained off March 25 and 26.
- Groundwater Well P-2 remained in automatic operation for the entire month of March 1997.
- Groundwater Well P-3 remained in automatic operation for the entire month of March 1997.
- Groundwater Well P-4 remained in automatic operation for the entire month of March 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 March 3, 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 22 times during the month on March 1997. Groundwater Treatment Pre-filters were changed on March 2, 3 ,4, 5 ,7, 10, 11, 12 (threetimes), 13, 14, 15,17, 19 ,21, 24 ,25, 27 (two times) ,28, and 31, 1997.

- Greased all pumps and motors on March 7, 1997.

- Lubrication oil for Vacuum Blowers P-701A and P701B was changed on March 18,1997.
- Haz-Mat Transportation picked up nine (9) drums of waste filters and PPE for disposal at CWM Model City on March 19, 1997.

- HAI field personnel repaired a broken Lovejoy motor coupling on P803A on March 25 and 27, 1997.

- P701-D vacuum blower caught on fire on March 9,1997 due to excessive overheating. Higgins Inc. personnel are scheduled to remove the compressor head and transport it to Siewaert Equipment in Rochester, NY for rebuilding/repair on April 1, 1997.

- HAI personnel performed midpoint sampling on March 6, 13, 17, and 28, 1997.

- HAI personnel cleaned the built up silt out the Air Water Separator on March 11and 26, 1997.

- HAI field personnel cleaned the air flow probe for the Air Stripper towers on March 11, 1997.

- HAI field personnel cleaned the air water separator level probes which had fouled causing erratic cycling of the air water separator pump on March 27, 1997.

- HAI field personnel recived a repaired Isco Model 6100 auto sampler on March 5, 1997, there was a programming problem with it. On March 12, 1997 the second Model 6100 was sent back to the factory for repairs.

- Ferguson Electric had a technician on site on March 26,1997 to repair P701D motor which had caught fire on March 9 and melted the wire insulation on the feed line, also the circuit breaker for P806B was replaced and the starter for P701B was adjusted.

- HAI personnel checked water level depths in VEW's on March 1, 8, 15, 22 and 29,1997.

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 March 31, 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

Ferguson Electric

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:	224 Hours
Total:	8408 Hours
Without Accident:	3532 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

- Removal and repair of P701D vacuum blower.

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

PROGRESS REPORT NO. 33
February 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. 033 Feburary 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 Feburary 1997 are shown graphically in Attachment B.

   - See Attachment A for Hours of System Operation Log (VES) Log No. 033 Feburary 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 Feburary 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 February 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 separate occasions during February 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 5 to 17 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 February 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 February 25, 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 the entire month of February 1997. Pump PW-1A remained off the entire month of February 1997 to prevent on/off cycling caused by low well recharge rates.

- Pumps PW-2A and PW-2B remained in auto operation February 5 to February 16 and February 19 to February 28. Pump PW-2A and PW-2B remained off February 1 to February 4 and February 17 to February 18,1997.

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

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

- Groundwater Well P-4 remained in automatic operation for the entire month of February 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 February 3, 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 10 times during the month on February 1997. Groundwater Treatment Pre-filters were changed on February 6, 12,17, 19,20,21, 24 ,25 and 27, 1997 twice.

- Greased all pumps and motors on February 4, 1997.

- Lubrication oil for Vacuum Blowers P-701A and P701C was changed on February 6,1997, and lubrication oil for Vac Blower P-701B was changed on February 5, 1997.

- Jeff Abel of MSA Baseline was on site on February 4,1997 for the semi-annual inspection of the VOC analyzer .

- HAI field personnel repaired a broken Lovejoy motor coupling on P803A on January 13 and 16, 1997.

- HAI field personnel Moved the Isco 3710 auto sampler from the SPDES

  shed to the POTW shed on February 5, 1997,the semi-annual POTW sampling was performed on February 10-11, 1997 and the auto sampler was returned to the SPDES shed on February 12, 1997.

- HAI personnel performed midpoint sampling on February 5, 8,15 and 26,1996.

- HAI personnel cleaned the built up silt out the Air Water Separator on February 21, 1997.

- HAI field personnel installed the housing on Vac Blower P701-C on February 13 and 14, 1997.

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

  February 20 , 1997.

- HAI field personnel replaced the Lovejoy motor coupling spider for P806C which had worn out and retighten the Lovejoy couplings on P805A on
  February 10, 1997.

- HAI field personnel installed a new seal kit on P803B on February 20-21, 1997.

  - HAI field personnel changed lubrication oil in Air Injection blowers B901A and B on February 24, 1997.

  - HAI personnel checked water level depths in VEW's on February 1, 8,

  15, and 22,1997.

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 February 28, 1997.

- Spent bag filters from the Groundwater Treatment Pre-filters are being stored in seven 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. Pick up of the seven drums of waste filters is scheduled for March 12,1997.

6. Environmental releases.

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

7. Personnel on Site.

A. Subcontractors on Site

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:

PROGRESS REPORT NO. 33
February 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

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

This Period:	215 Hours
Total:	8184 Hours
Without Accident:	3308 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: February 28,1997

PROGRESS REPORT NO. 32
January 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. 032 January 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 January 1997 are shown graphically in Attachment B.

- See Attachment A for Hours of System Operation Log (VES) Log No. 032 January 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 January 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 January 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.

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January 1997
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- 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 January 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 13 to 17 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 January 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 Jan.07 and 30, 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 the entire month of January 1997. Pump PW-1A remained off the entire month of January 1997 to prevent on/off cycling caused by low well recharge rates.

- Pumps PW-2A and PW-2B remained in auto operation January 1 to January 16 and January 23 to January 27. Pump PW-2B remained in auto operation January 16 to January 20 and January 29 to January 31,1997.

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

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

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

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 January 1997. Groundwater Treatment Pre-filters were changed on January 2, 6, 8, 9, 14,17,22, 27, and 31, 1997.

- Greased all pumps and motors on January 9, 1997.

PROGRESS REPORT NO. 32
January 1997
CARBORUNDUM FACILITY
WHEATFIELD, NEW YORK

- Lubrication oil for Vacuum Blowers P-701A and P701C was changed on January 9,1997.
- MW Controls was on site on January 22,1997 to recalibrate the POTW flowmeter which had been repaired and calibrated in November 1996.
- HAI field personnel repaired a broken Lovejoy motor coupling on P803A on January 13 and 16, 1997.
- Niagara Fire Extinguisher was on site to recharge and inspect the site fire extinguishers on January 10, 1997.
- HAI field personnel sent one Isco Model 6100 auto sampler back to the manufacturer for repair on January 15,1997.
- HAI personnel performed midpoint sampling on January 8, 14, 21, and 29,1996.
- HAI personnel cleaned the built up silt out the Air Water Separator on January 16 and 23, 1997.
- HAI personnel aligned P803A pump and motor and replaced the rubber insert on January 17 and 21, 1997.
- HAI field personnel cleaned the air water separator level probes which had fouled causing erratic cycling of the air water separator pump on January 16 , 1997.
- HAI field personnel replaced the Lovejoy motor coupling on P805B which had broken on January 7, 1997.
- Carrier Controls was on site to install the new Sparling flowmeter on outfall O1A and install an AC line filter on P2 level controller to possibly eliminate the constant electrical spikes which have caused many problems on P4 level controller.
- HAI personnel repaired the dilution valves on VEW 2, 56 and 32 on January 24,1997.
- HAI personnel repaired the Lovejoy motor couplings on P806C and P805A, and tightened the coupling on P806A on January 28,1997.
- HAI personnel checked water level depths in VEW's on January 4,

11, 18, and 25,1997.

- HAI personnel installed shives, drive belts and guards on Vacuum blower P701B on January 2 and 3, 1997 to finish the new motor installation.

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 December 31, 1996.

- Spent bag filters from the Groundwater Treatment Pre-filters are being stored in three 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 Controls Carrier Controls.

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:	230 Hours
Total:	7969 Hours
Without Accident:	3093 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

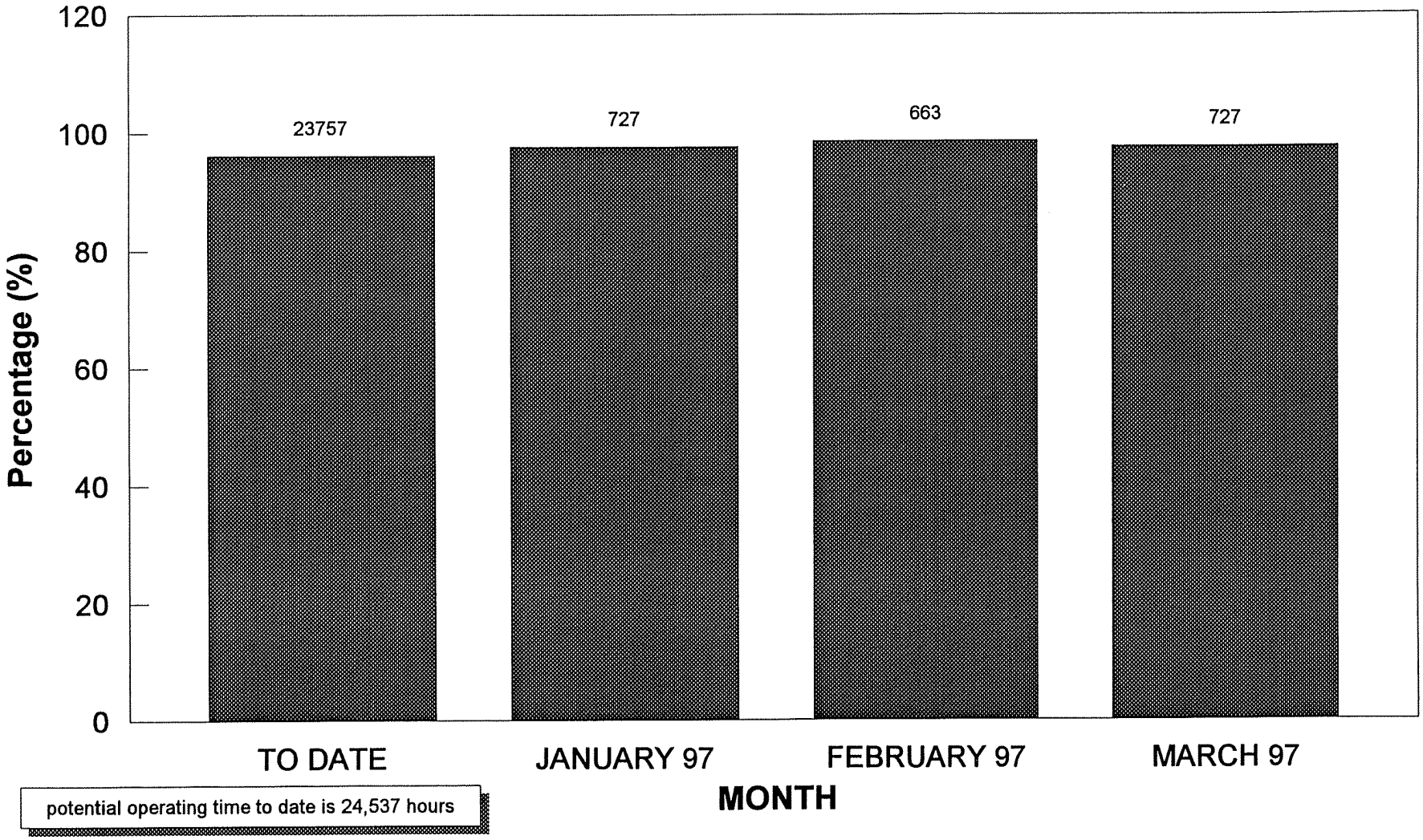
Submitted by: Richard C. Becken.
Date: January 31,1997

ATTACHMENT A

GROUNDWATER TREATMENT/ SOIL REMEDIATION OPERATIONS INFORMATION

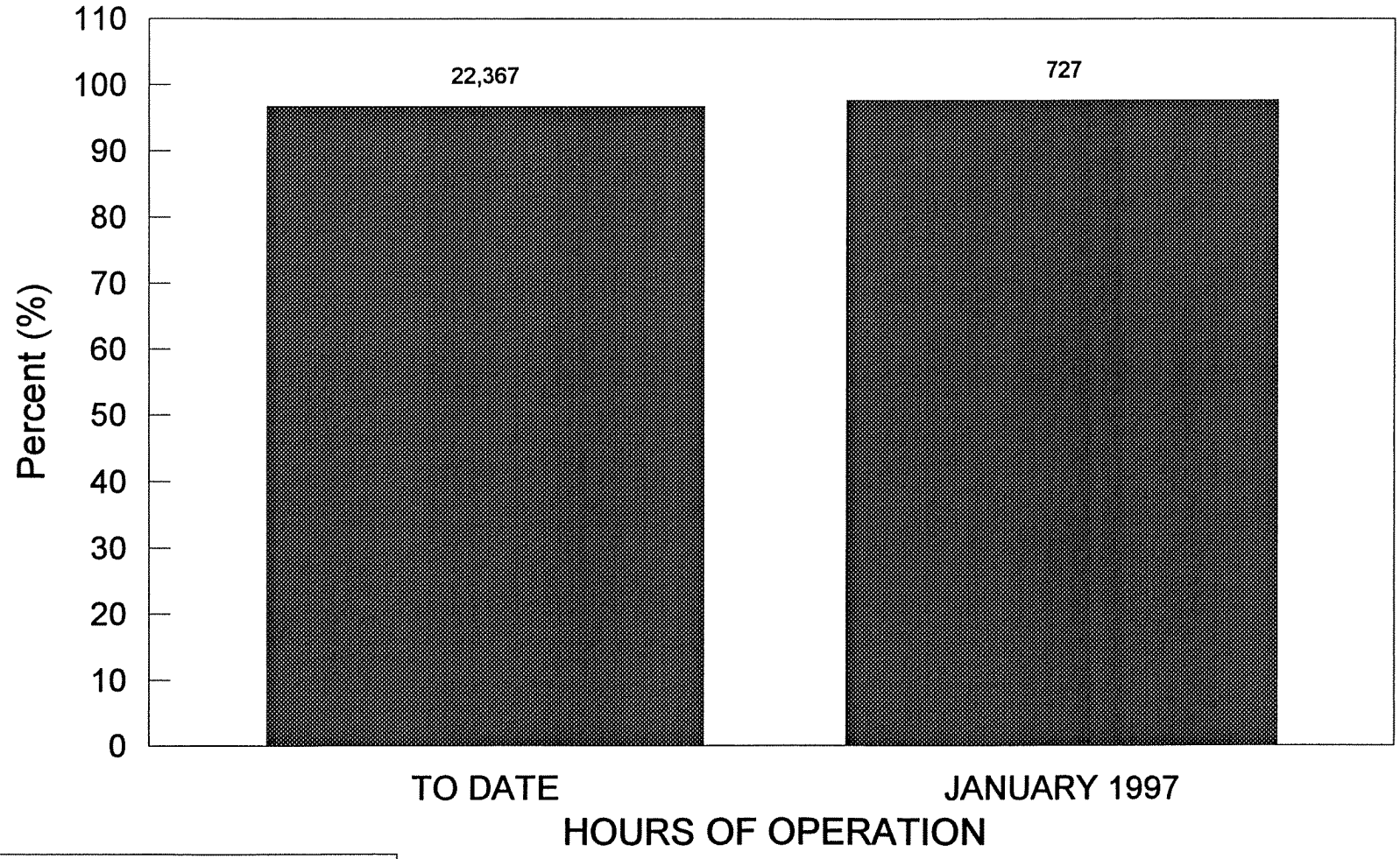
System Operational Hours and Up-Time Percentages

Ground-water Treatment System



System Operational Hours and Up-Time Percentages

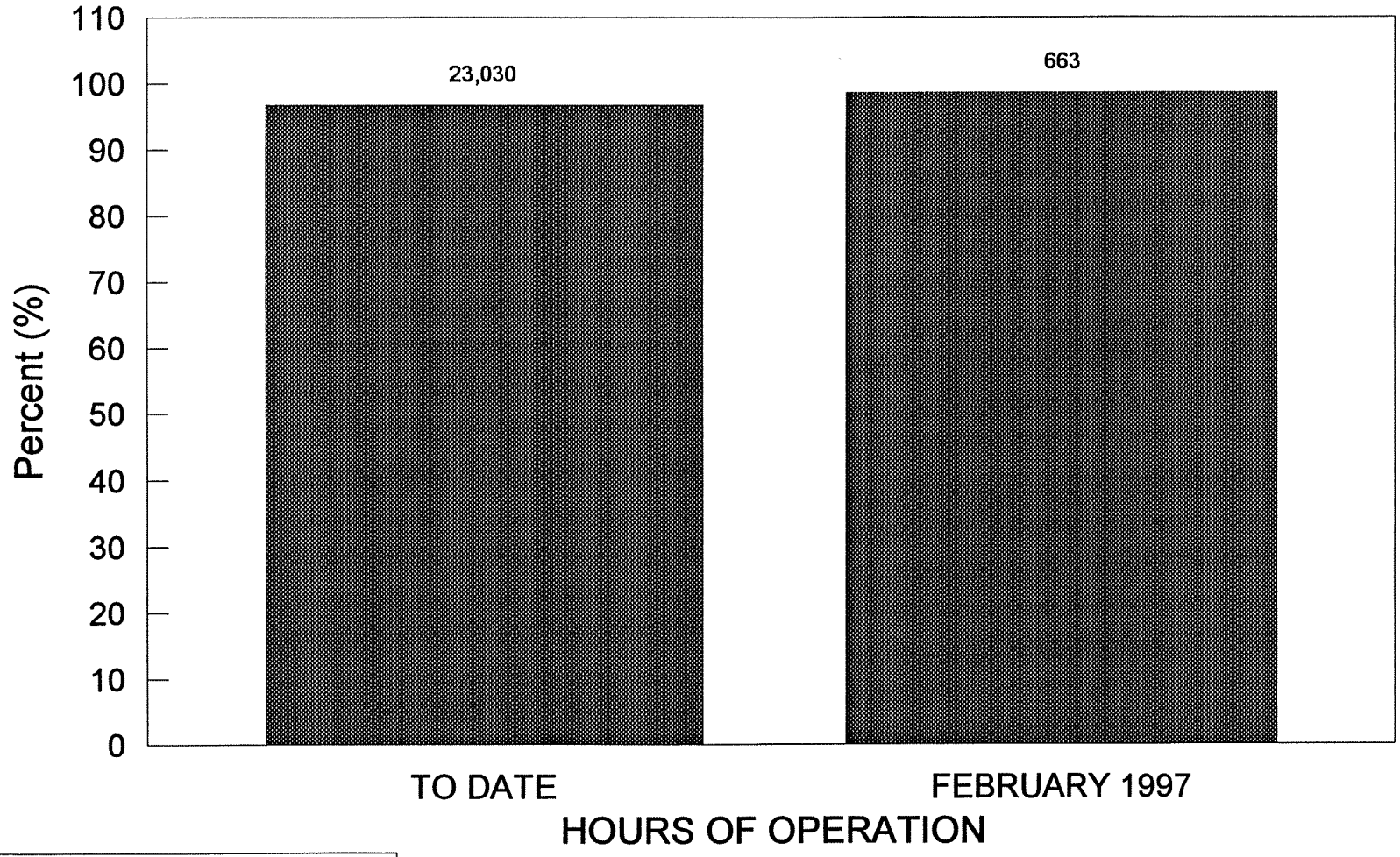
Groundwater Treatment System



potential operating time to date is 23,121 hours

System Operational Hours and Up-Time Percentages

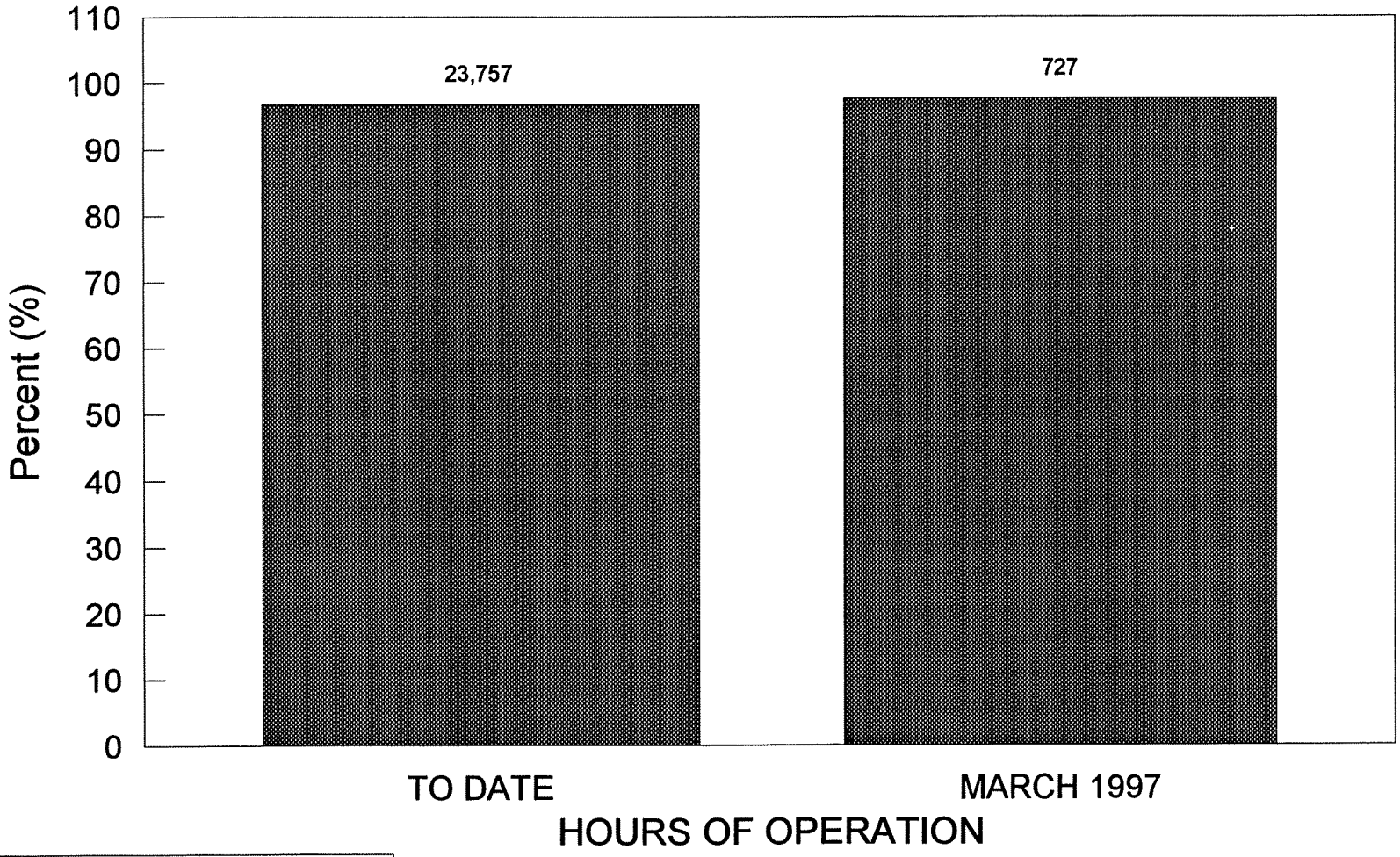
Groundwater Treatment System



potential operating time to date is 23,793 hours

System Operational Hours and Up-Time Percentages

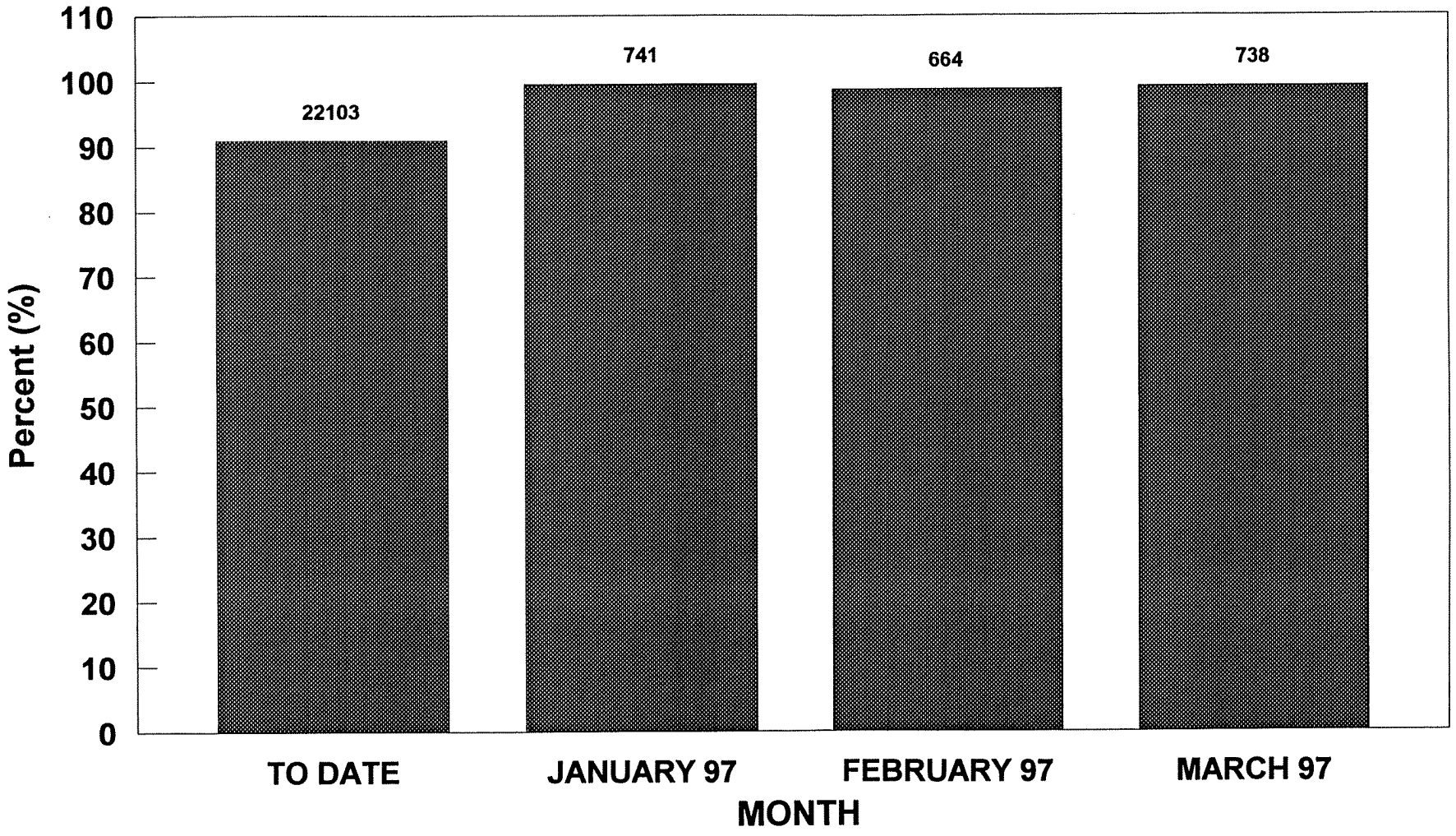
Groundwater Treatment System



potential operating time to date is 24,537 hours

System Operational Hours and Up-Time Percentages

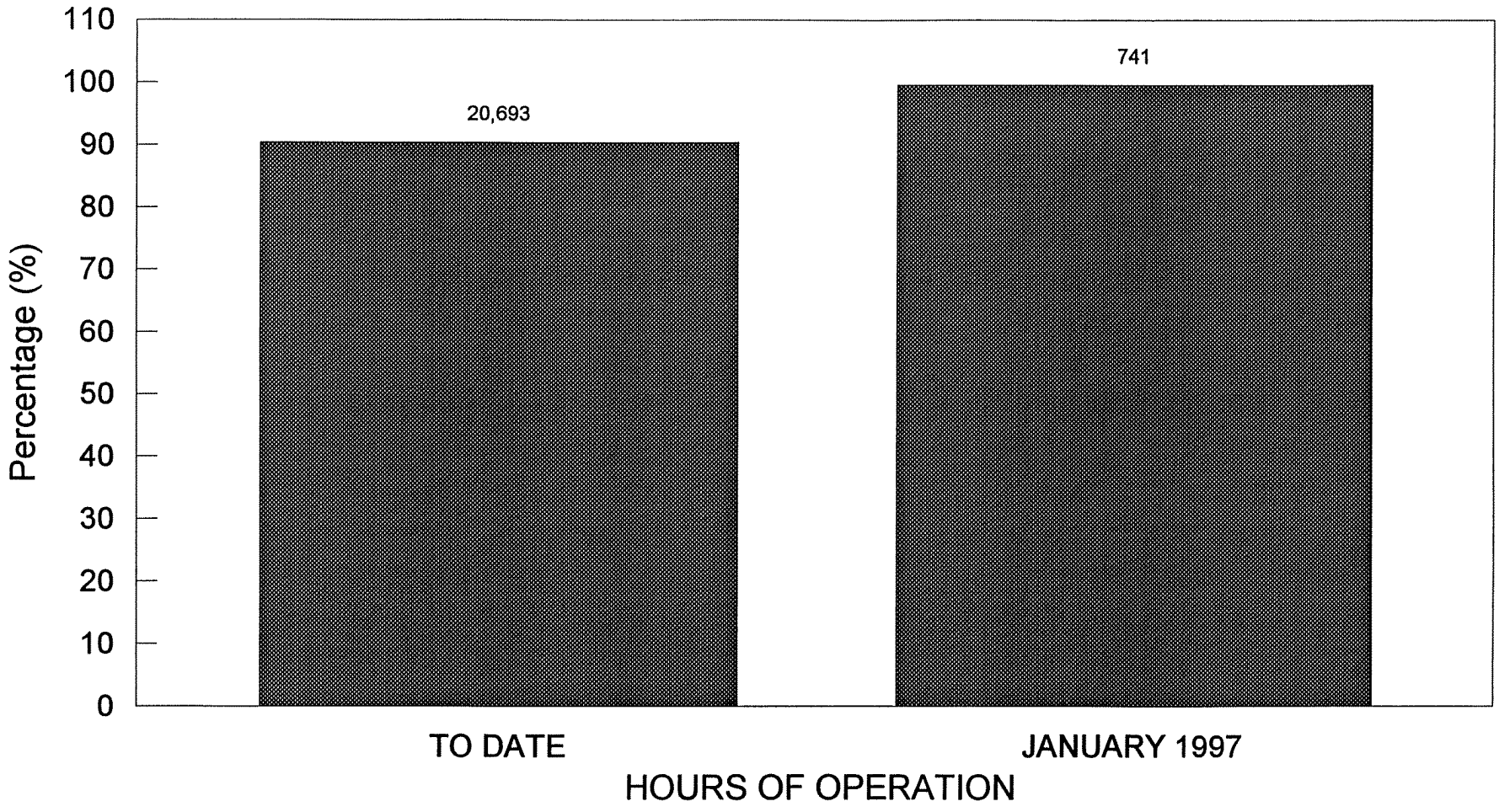
Soil Vapor Extraction System



potential operating time to date is 24,302 hours

System Operational Hours and Up-Time Percentages

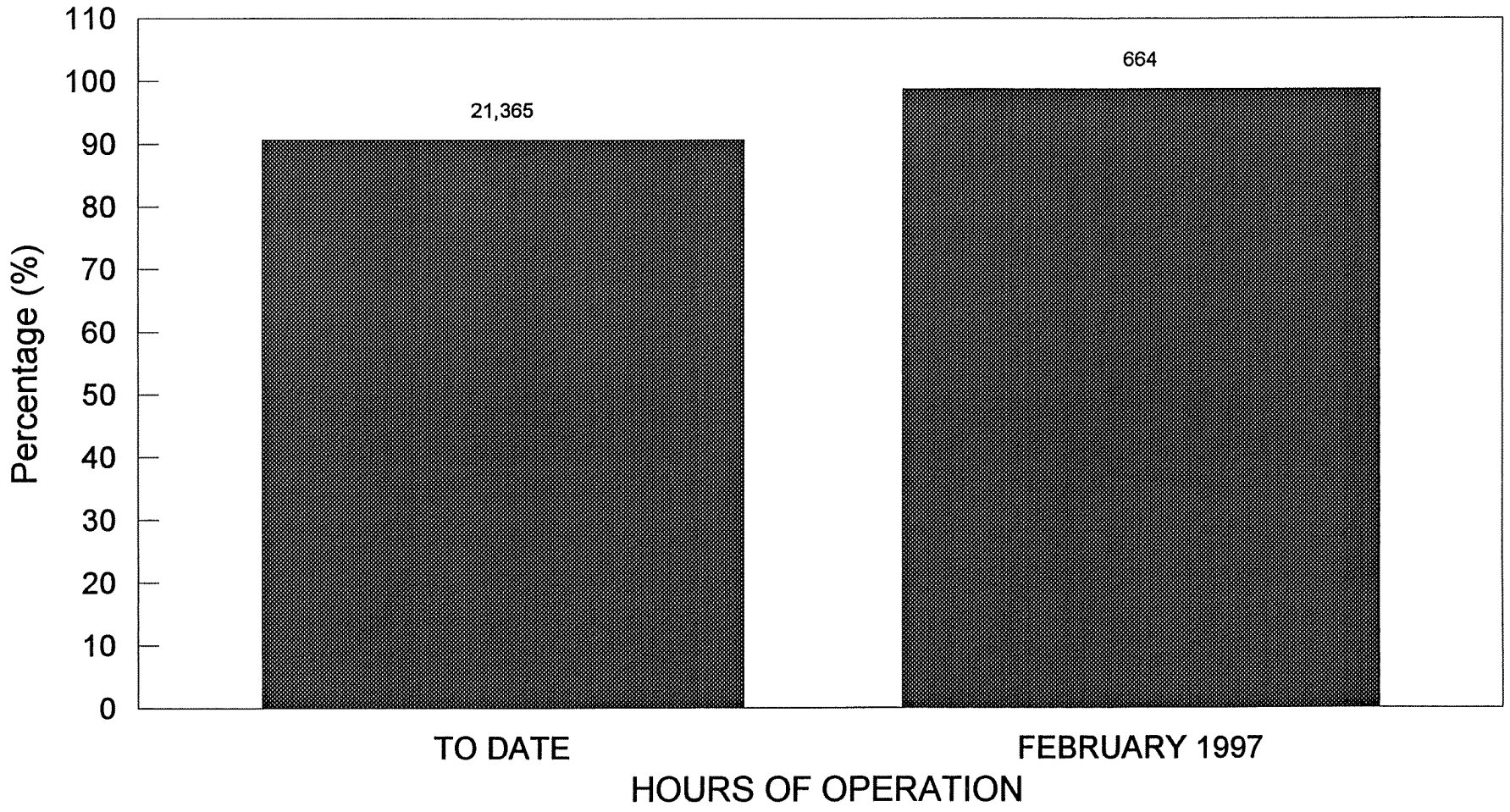
Soil Vapor Extraction System



potential operating time to date is 22,886 hours

System Operational Hours and Up-Time Percentages

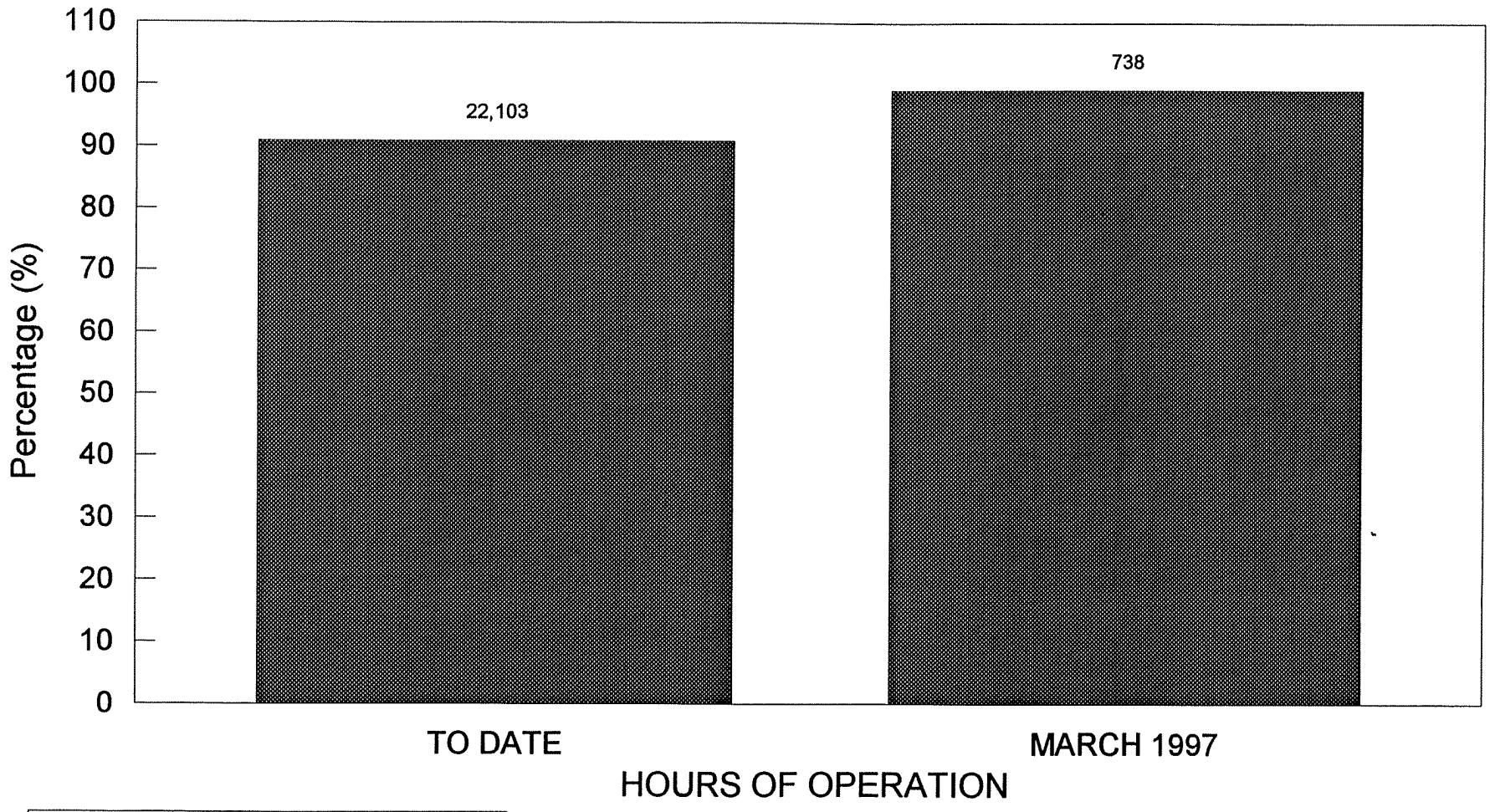
Soil Vapor Extraction System



potential operating time to date is 23,558 hours

System Operational Hours and Up-Time Percentages

Soil Vapor Extraction System



potential operating time to date is 24,302 hours

ATTACHMENT B

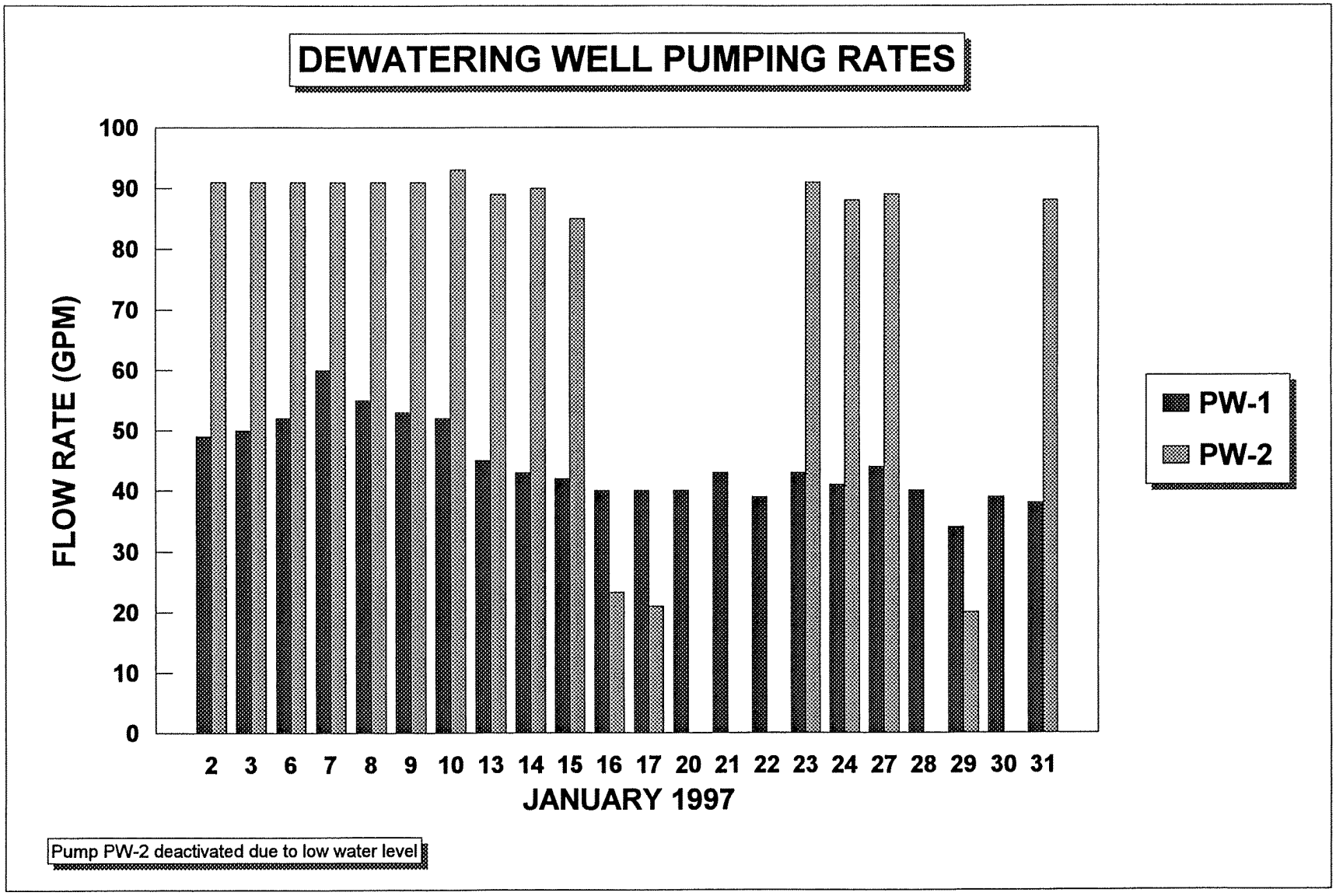
PW-1/PW-2 STATUS LOG SHEETS

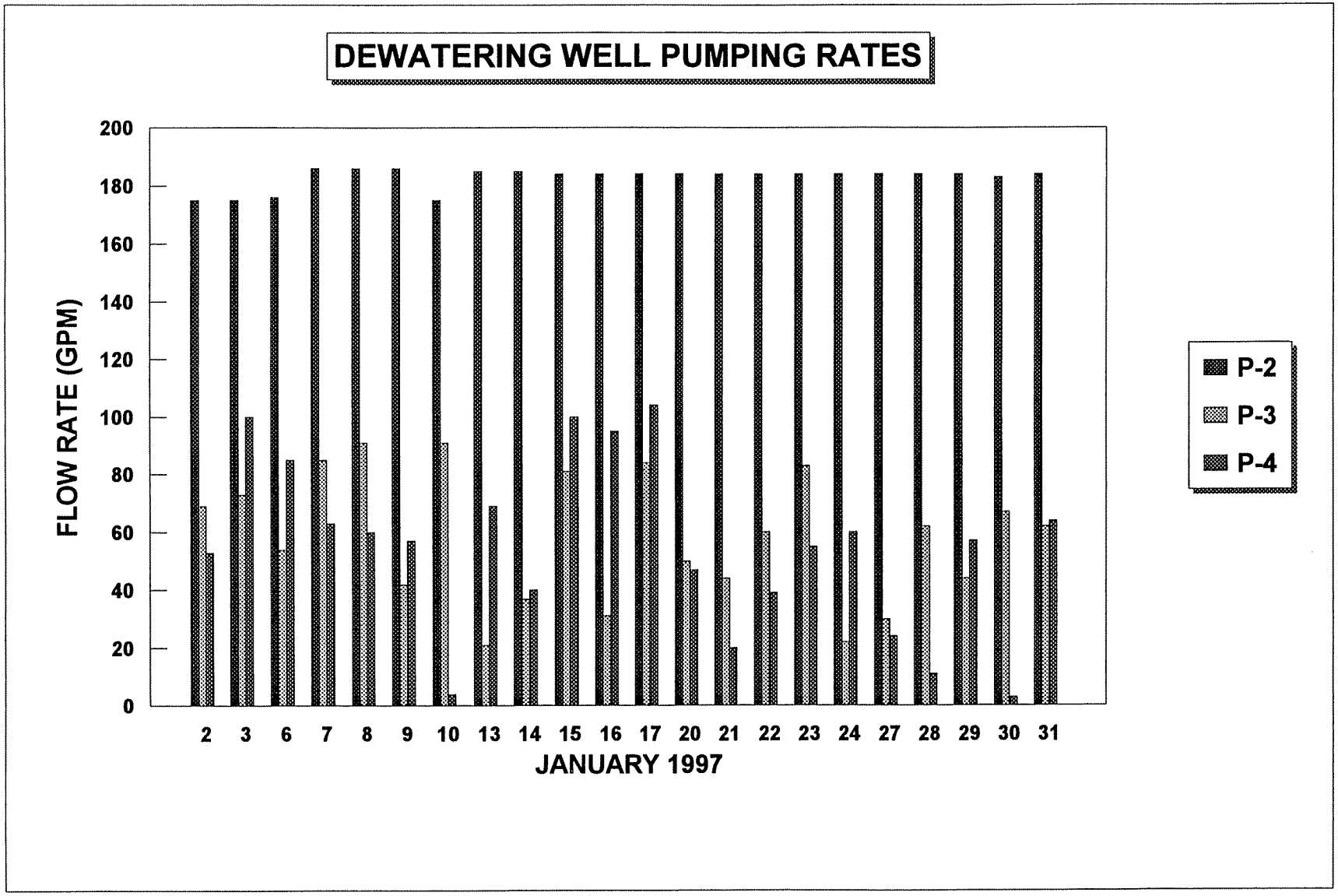
DEWATERING WELL PUMPING RATES

JANUARY 1997

DATE	PW-1	PW-2	P-2	P-3	P-4
01/02/97	49	91	175	69	53
01/03/97	50	91	175	73	100
01/06/97	52	91	176	54	85
01/07/97	60	91	186	85	63
01/08/97	55	91	186	91	60
01/09/97	53	91	186	42	57
01/10/97	52	93	175	91	4
01/13/97	45	89	185	21	69
01/14/97	43	90	185	37	40
01/15/97	42	85	184	81	100
01/16/97	40	23.3	184	31	95
01/17/97	40	21	184	84	104
01/20/97	40	0	184	50	47
01/21/97	43	0	184	44	20
01/22/97	39	0	184	60	39
01/23/97	43	91	184	83	55
01/24/97	41	88	184	22	60
01/27/97	44	89	184	30	24
01/28/97	40	0	184	62	11
01/29/97	34	20	184	44	57
01/30/97	39	0	183	67	3
01/31/97	38	88	184	62	64

a. Pump deactivated due to low water level in Well.

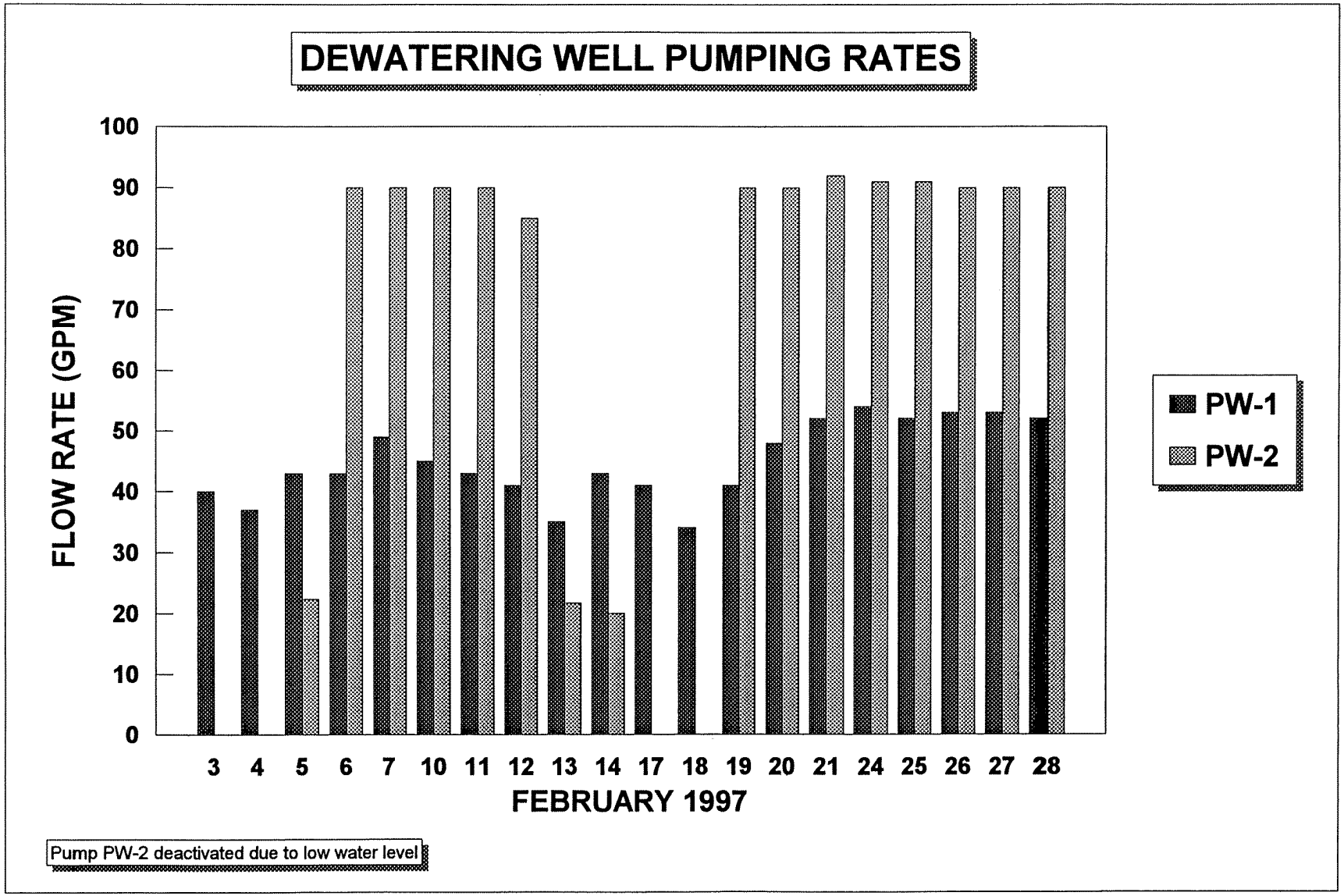

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
100
90
80
70
60
50
40
30
20
10
0
2 3 6 7 8 9 10 13 14 15 16 17 20 21 22 23 24 27 28 29 30 31
JANUARY 1997
PW-1
PW-2
Pump PW-2 deactivated due to low water level

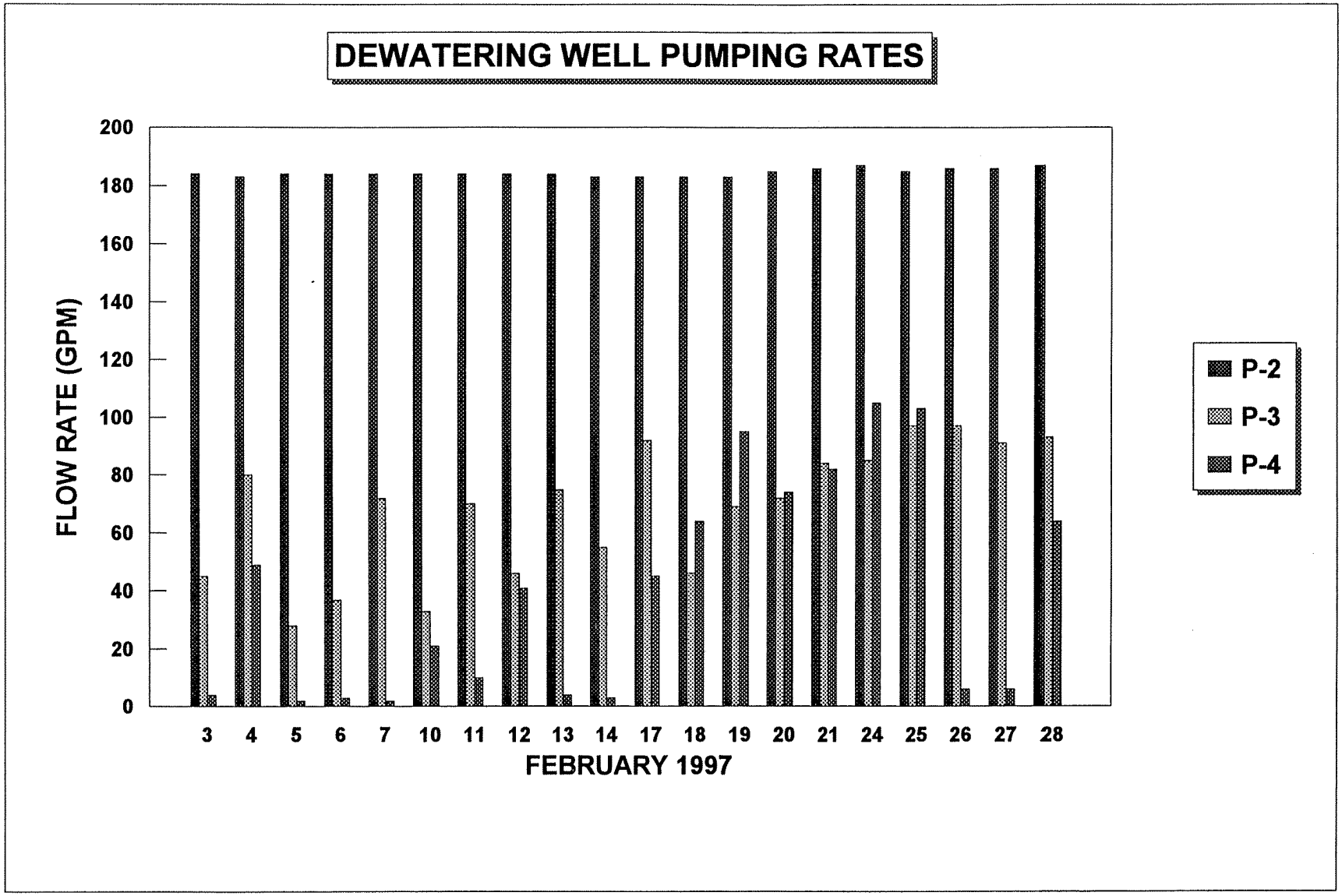

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
200
180
160
140
120
100
80
60
40
20
0
2 3 6 7 8 9 10 13 14 15 16 17 20 21 22 23 24 27 28 29 30 31
JANUARY 1997
P-2
P-3
P-4

DEWATERING WELL PUMPING RATES
FEBRUARY 1997

DATE	PW-1	PW-2	P-2	P-3	P-4
02/03/97	40	0(a)	184	45	4
02/04/97	37	0	183	80	49
02/05/97	43	22.4	184	28	2
02/06/97	43	90	184	37	3
02/07/97	49	90	184	72	2
02/10/97	45	90	184	33	21
02/11/97	43	90	184	70	10
02/12/97	41	85	184	46	41
02/13/97	35	21.7	184	75	4
02/14/97	43	20	183	55	3
02/17/97	41	0	183	92	45
02/18/97	34	0	183	46	64
02/19/97	41	90	183	69	95
02/20/97	48	90	185	72	74
02/21/97	52	92	186	84	82
02/24/97	54	91	187	85	105
02/25/97	52	91	185	97	103
02/26/97	53	90	186	97	6
02/27/97	53	90	186	91	6
02/28/97	52	90	187	93	64

a. Pump deactivated due to low water level in Well.

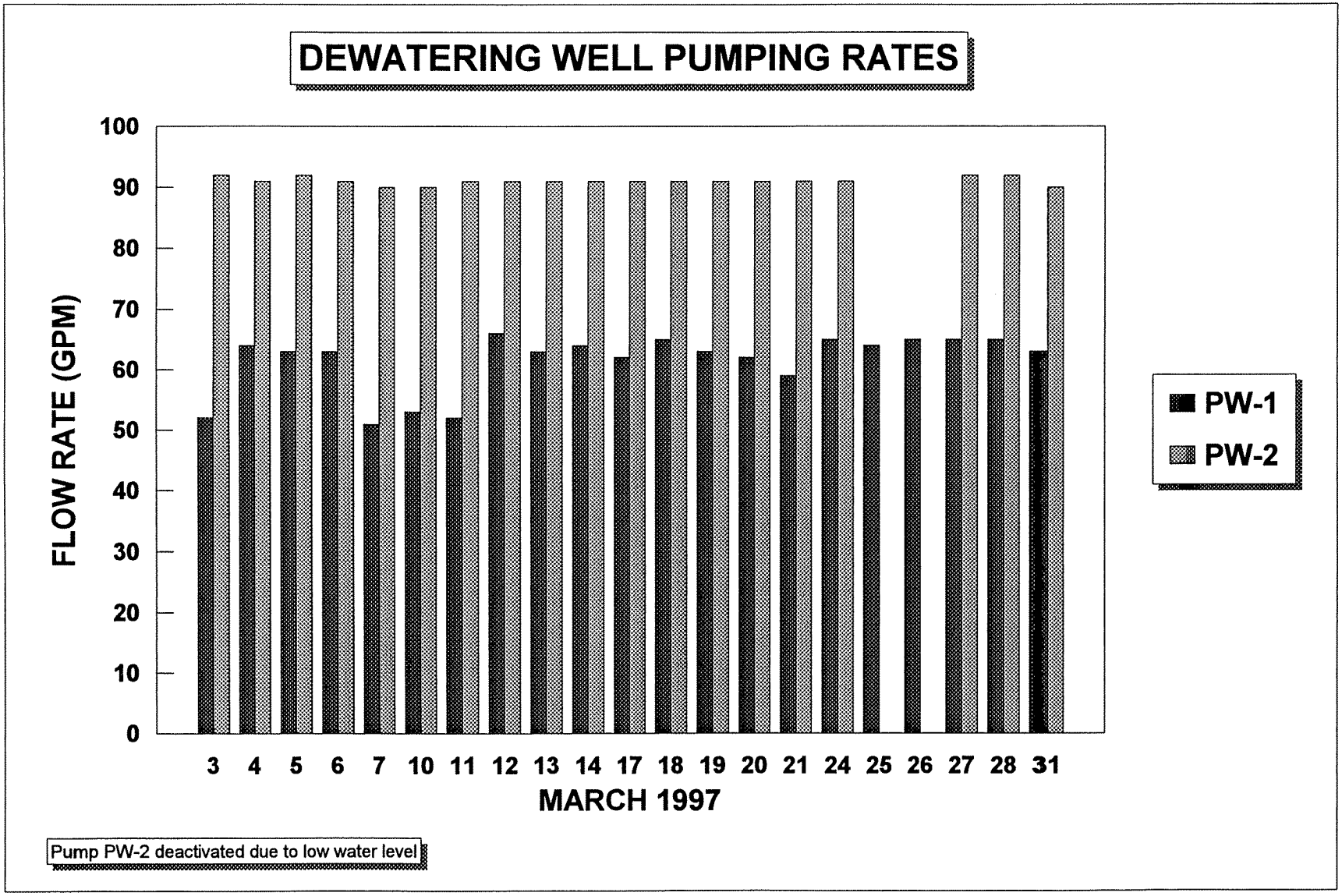

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
100
90
80
70
60
50
40
30
20
10
0
3 4 5 6 7 10 11 12 13 14 17 18 19 20 21 24 25 26 27 28
FEBRUARY 1997
PW-1
PW-2
Pump PW-2 deactivated due to low water level

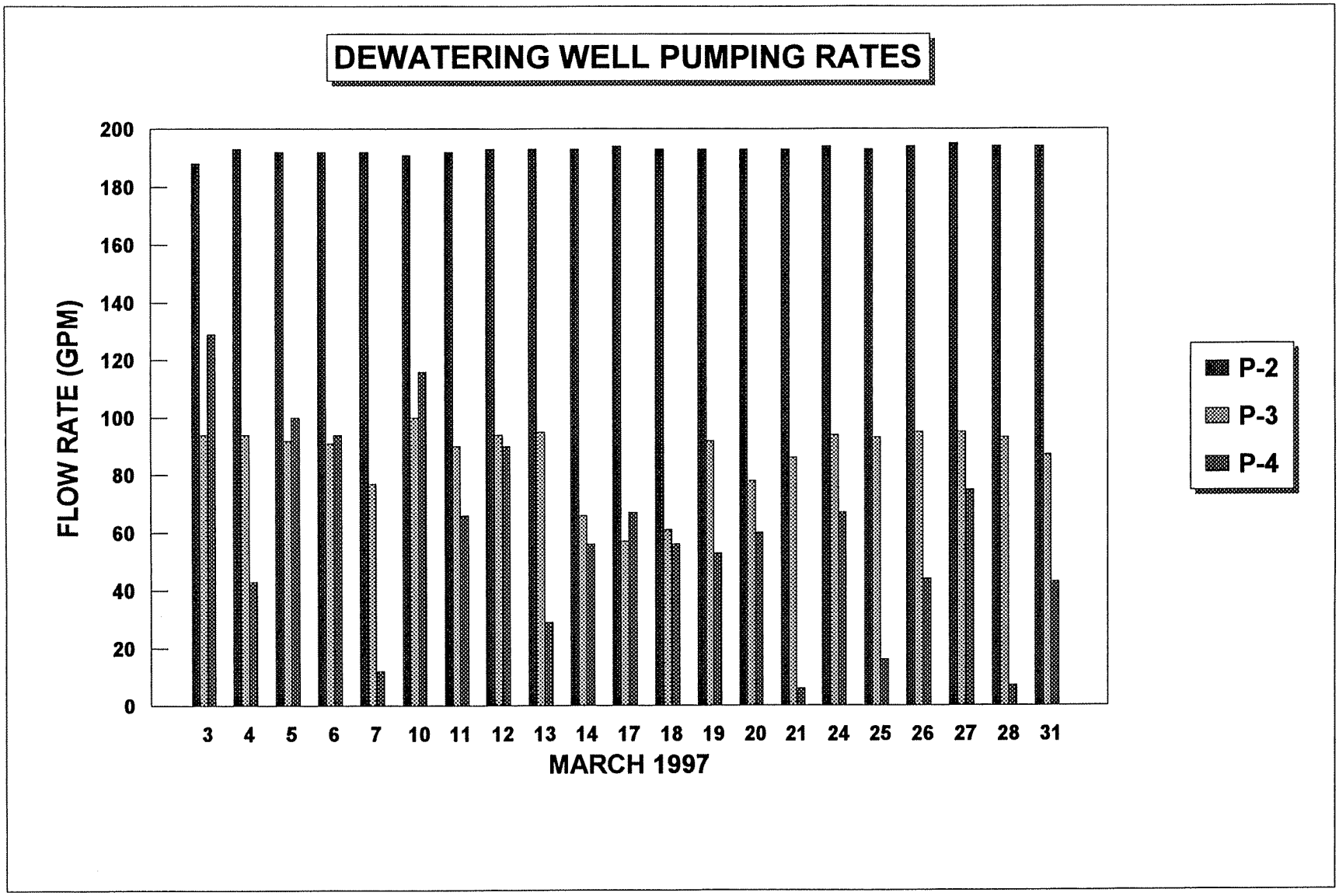

DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
200
180
160
140
120
100
80
60
40
20
0
3
4
5
6
7
10
11
12
13
14
17
18
19
20
21
24
25
26
27
28
FEBRUARY 1997
P-2
P-3
P-4

DEWATERING WELL PUMPING RATES
MARCH 1997

DATE	PW-1	PW-2	P-2	P-3	P-4
03/03/97	52	92	188	94	129
03/04/97	64	91	193	94	43
03/05/97	63	92	192	92	100
03/06/97	63	91	192	91	94
03/07/97	51	90	192	77	12
03/10/97	53	90	191	100	116
03/11/97	52	91	192	90	66
03/12/97	66	91	193	94	90
03/13/97	63	91	193	95	29
03/14/97	64	91	193	66	56
03/17/97	62	91	194	57	67
03/18/97	65	91	193	61	56
03/19/97	63	91	193	92	53
03/20/97	62	91	193	78	60
03/21/97	59	91	193	86	6
03/24/97	65	91	194	94	67
03/25/97	64	0(a)	193	93	16
03/26/97	65	0(a)	194	95	44
03/27/97	65	92	195	95	75
03/28/97	65	92	194	93	7
03/31/97	63	90	194	87	43

a. Pump deactivated due to low water level in Well.


DEWATERING WELL PUMPING RATES
FLOW RATE (GPM)
100
90
80
70
60
50
40
30
20
10
0
3 4 5 6 7 10 11 12 13 14 17 18 19 20 21 24 25 26 27 28 31
MARCH 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
3 4 5 6 7 10 11 12 13 14 17 18 19 20 21 24 25 26 27 28 31
MARCH 1997
P-2
P-3
P-4

ATTACHMENT C

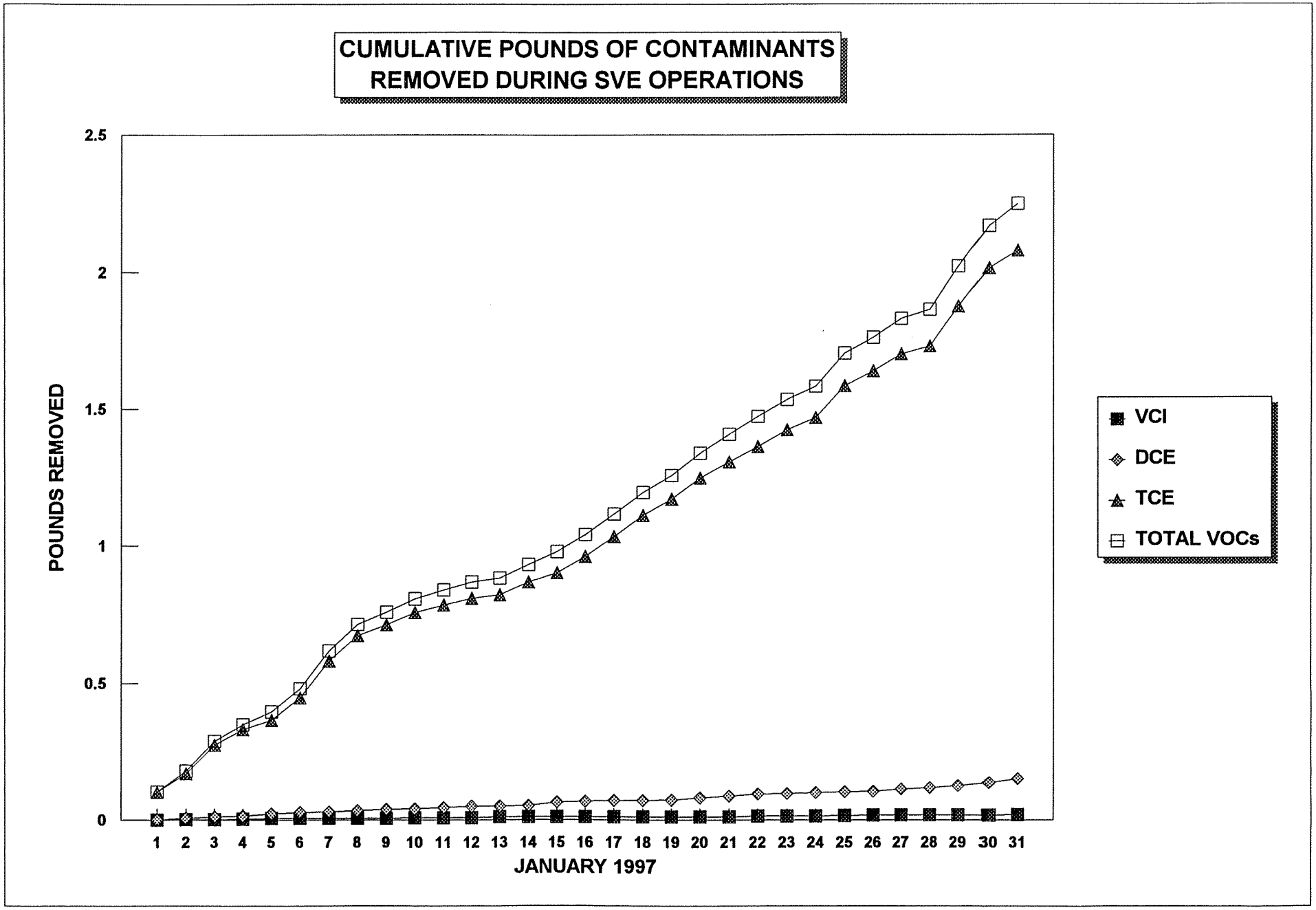
AIR MONITORING PERFORMANCE DATA

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
01/01/97	0.0010	0.0000	0.1016	0.1026
01/02/97	0.0003	0.0072	0.0691	0.0766
01/03/97	0.0013	0.0040	0.1036	0.1089
01/04/97	0.0009	0.0034	0.0577	0.0620
01/05/97	0.0041	0.0084	0.0334	0.0459
01/06/97	0.0000	0.0043	0.0810	0.0853
01/07/97	0.0000	0.0020	0.1354	0.1374
01/08/97	0.0000	0.0049	0.0926	0.0975
01/09/97	0.0000	0.0046	0.0401	0.0447
01/10/97	0.0002	0.0020	0.0451	0.0473
01/11/97	0.0004	0.0050	0.0265	0.0319
01/12/97	0.0009	0.0044	0.0230	0.0283
01/13/97	0.0026	0.0000	0.0126	0.0152
01/14/97	0.0001	0.0024	0.0481	0.0506
01/15/97	0.0002	0.0121	0.0332	0.0455
01/16/97	0.0001	0.0040	0.0583	0.0624
01/17/97	0.0000	0.0025	0.0730	0.0755
01/18/97	0.0000	0.0000	0.0775	0.0775
01/19/97	0.0002	0.0020	0.0598	0.0620
01/20/97	0.0000	0.0069	0.0758	0.0827
01/21/97	0.0001	0.0073	0.0607	0.0681
01/22/97	0.0026	0.0081	0.0551	0.0658
01/23/97	0.0003	0.0022	0.0602	0.0627
01/24/97	0.0000	0.0023	0.0457	0.0480
01/25/97	0.0011	0.0032	0.1174	0.1217
01/26/97	0.0009	0.0023	0.0540	0.0572
01/27/97	0.0001	0.0075	0.0618	0.0694
01/28/97	0.0006	0.0034	0.0285	0.0325
01/29/97	0.0004	0.0093	0.1469	0.1566
01/30/97	0.0002	0.0103	0.1383	0.1488
01/31/97	0.0014	0.0143	0.0639	0.0796

January 1997	0.0200	0.1503	2.0799	2.2502
Previous Total	18.6598	221.2664	2092.4744	2332.4006
Thru 1/31/96	18.6798	221.4167	2094.5543	2334.6508

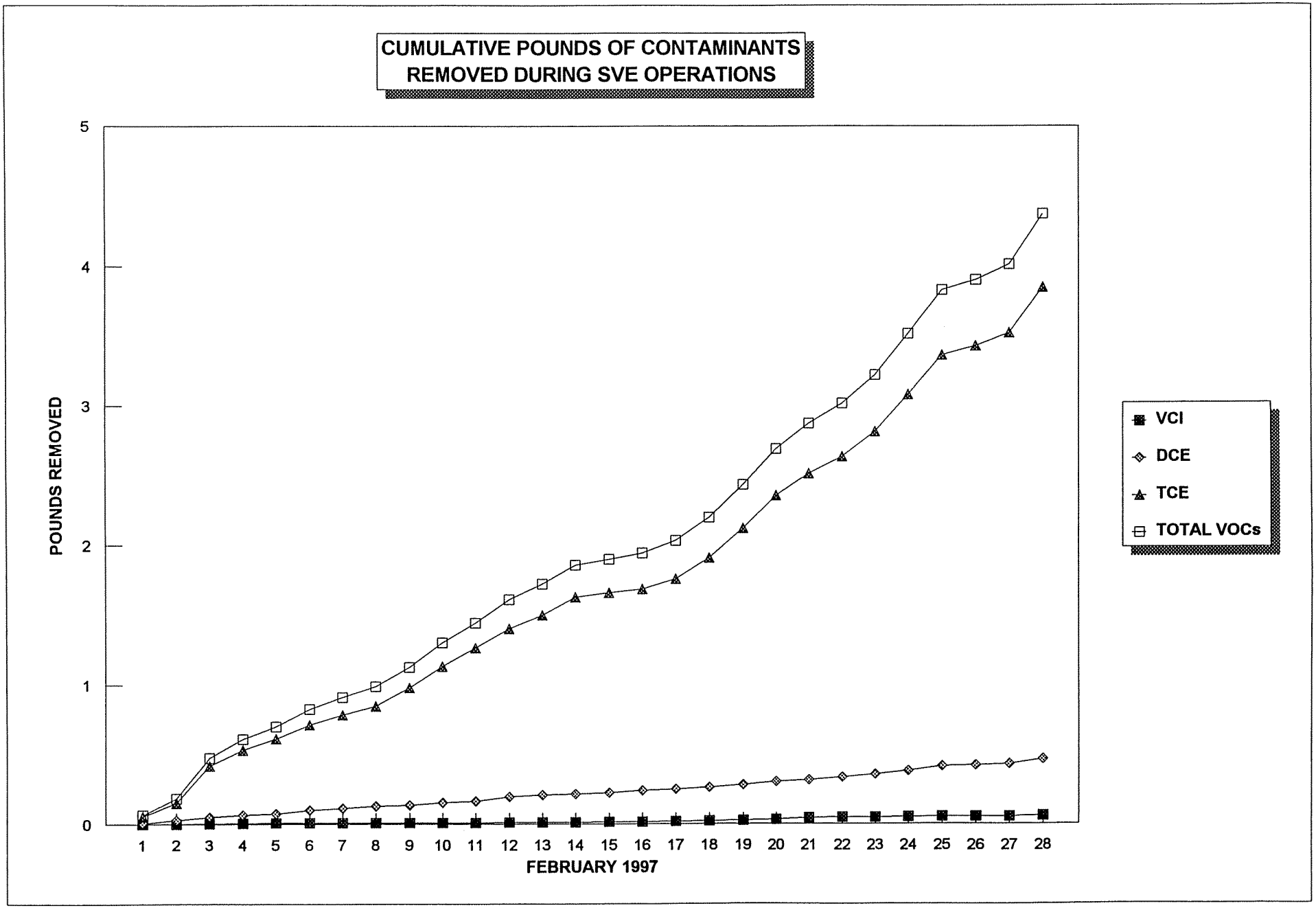

CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING SVE OPERATIONS
POUNDS REMOVED
2.5
2
1.5
1
0.5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
JANUARY 1997
VCl
DCE
TCE
TOTAL VOCs

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
02/01/97	0.0009	0.0093	0.0571	0.0673
02/02/97	0.0014	0.0191	0.0968	0.1173
02/03/97	0.0023	0.0230	0.2660	0.2913
02/04/97	0.0047	0.0173	0.1116	0.1336
02/05/97	0.0009	0.0098	0.0815	0.0922
02/06/97	0.0002	0.0243	0.1006	0.1251
02/07/97	0.0000	0.0129	0.0723	0.0852
02/08/97	0.0008	0.0147	0.0633	0.0788
02/09/97	0.0005	0.0062	0.1316	0.1383
02/10/97	0.0003	0.0183	0.1553	0.1739
02/11/97	0.0000	0.0098	0.1304	0.1402
02/12/97	0.0026	0.0311	0.1372	0.1709
02/13/97	0.0007	0.0123	0.0967	0.1097
02/14/97	0.0001	0.0072	0.1284	0.1357
02/15/97	0.0004	0.0085	0.0304	0.0393
02/16/97	0.0028	0.0154	0.0253	0.0435
02/17/97	0.0033	0.0117	0.0734	0.0884
02/18/97	0.0006	0.0133	0.1515	0.1654
02/19/97	0.0058	0.0190	0.2089	0.2337
02/20/97	0.0050	0.0203	0.2348	0.2601
02/21/97	0.0116	0.0137	0.1556	0.1809
02/22/97	0.0036	0.0186	0.1230	0.1452
02/23/97	0.0016	0.0229	0.1777	0.2022
02/24/97	0.0030	0.0246	0.2697	0.2973
02/25/97	0.0018	0.0310	0.2823	0.3151
02/26/97	0.0001	0.0059	0.0672	0.0732
02/27/97	0.0015	0.0103	0.0949	0.1067
02/28/97	0.0035	0.0347	0.3254	0.3636

February 1997	0.0600	0.4652	3.8489	4.3741
Previous Total	18.6798	221.4167	2094.5543	2334.6508
Thru 02/28/96	18.7398	221.8819	2098.4032	2339.0249



Hull & Associates, Inc.

f:\data\bpny\field\feb97\svetotal.wk4

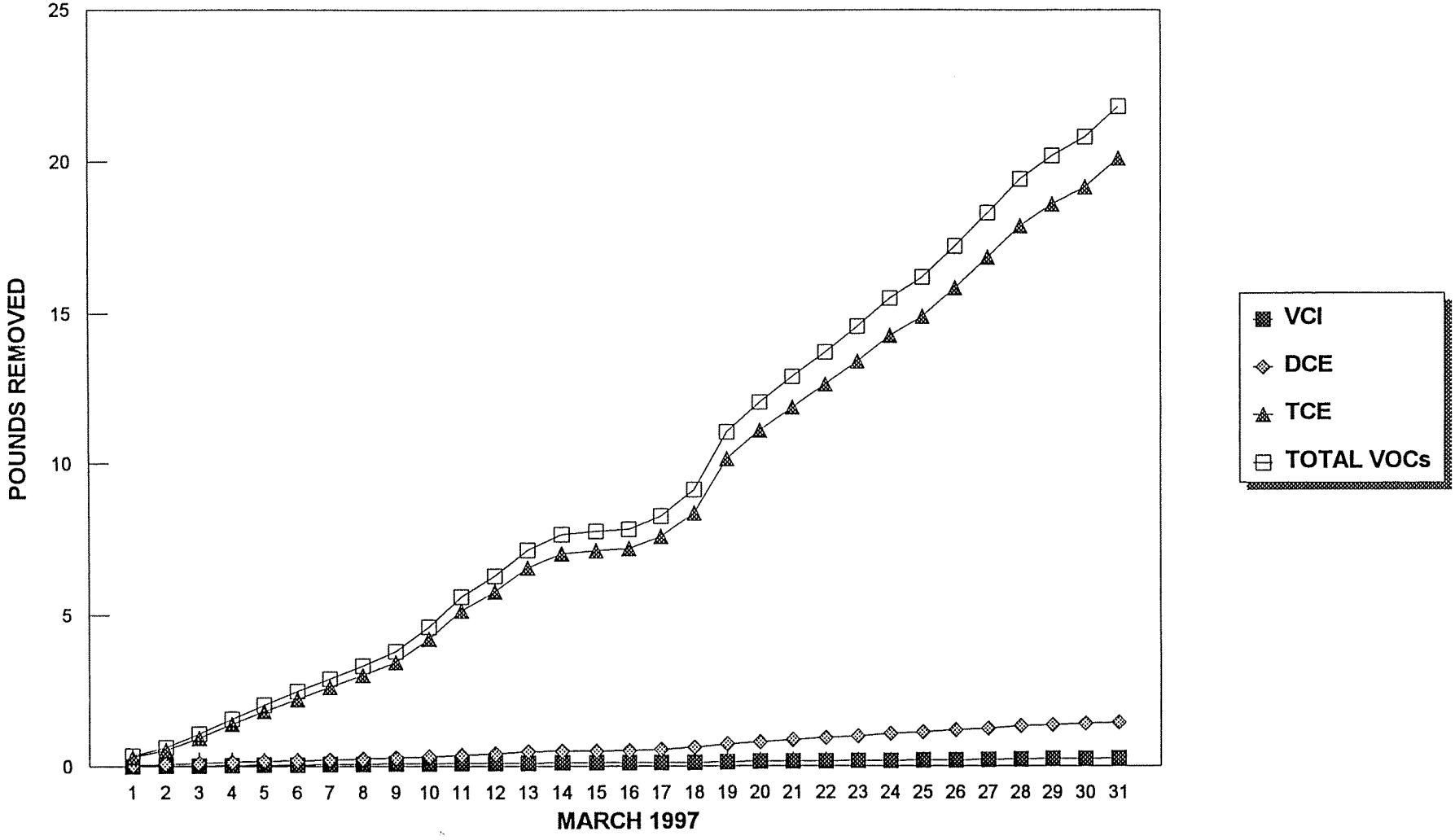
Contaminants Removed During SVE Operations

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

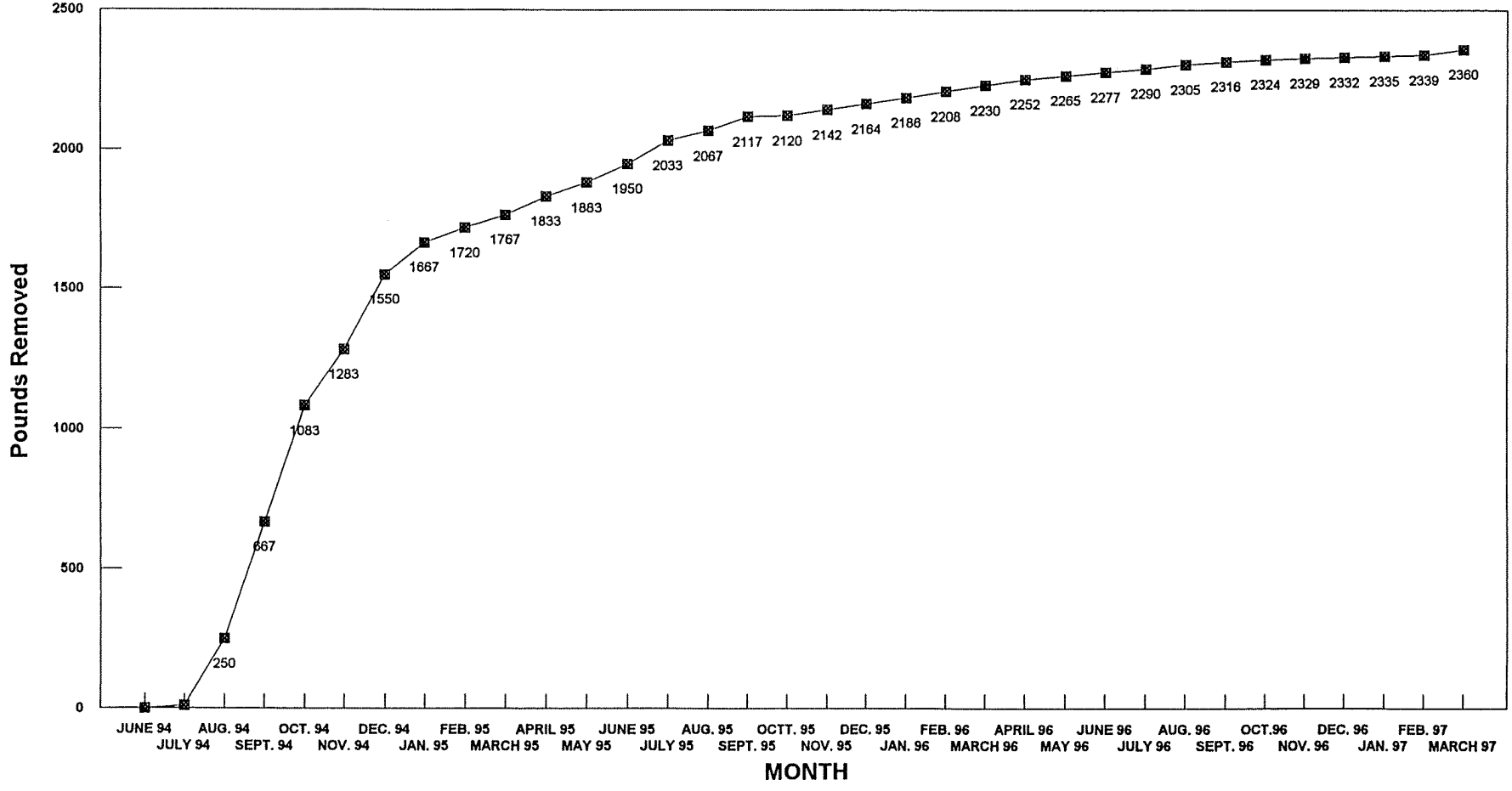
DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
03/01/97	0.0071	0.0363	0.3005	0.3439
03/02/97	0.0112	0.0267	0.2383	0.2762
03/03/97	0.0062	0.0384	0.3935	0.4381
03/04/97	0.0106	0.0346	0.4566	0.5018
03/05/97	0.0122	0.0343	0.4325	0.4790
03/06/97	0.0097	0.0265	0.4026	0.4388
03/07/97	0.0057	0.0179	0.3845	0.4081
03/08/97	0.0076	0.0243	0.4044	0.4363
03/09/97	0.0126	0.0363	0.4316	0.4805
03/10/97	0.0079	0.0382	0.7613	0.8074
03/11/97	0.0067	0.0584	0.9488	1.0139
03/12/97	0.0045	0.0442	0.6360	0.6847
03/13/97	0.0094	0.0636	0.7938	0.8668
03/14/97	0.0057	0.0246	0.4712	0.5015
03/15/97	0.0007	0.0038	0.1005	0.1050
03/16/97	0.0006	0.0093	0.0673	0.0772
03/17/97	0.0044	0.0316	0.3929	0.4289
03/18/97	0.0065	0.0717	0.7811	0.8593
03/19/97	0.0069	0.1017	1.7725	1.8811
03/20/97	0.0121	0.0713	0.9241	1.0075
03/21/97	0.0127	0.0744	0.7706	0.8577
03/22/97	0.0004	0.0647	0.7642	0.8293
03/23/97	0.0058	0.0561	0.7867	0.8486
03/24/97	0.0098	0.0711	0.8529	0.9338
03/25/97	0.0091	0.0516	0.6419	0.7026
03/26/97	0.0072	0.0655	0.9469	1.0196
03/27/97	0.0155	0.0658	1.0098	1.0911
03/28/97	0.0189	0.0752	1.0324	1.1265
03/29/97	0.0125	0.0480	0.7164	0.7769
03/30/97	0.0088	0.0437	0.5696	0.6221
03/31/97	0.0083	0.0358	0.9480	0.9921

March 1997	0.2573	1.4456	20.1334	21.8363
Previous Total	18.7398	221.8819	2098.4032	2339.0249
Thru 03/31/97	18.9971	223.3275	2118.5366	2360.8612

CUMULATIVE POUNDS OF CONTAMINANTS REMOVED DURING SVE OPERATIONS



CUMULATIVE POUNDS OF CONTAMINANTS REMOVED DURING SVE OPERATION

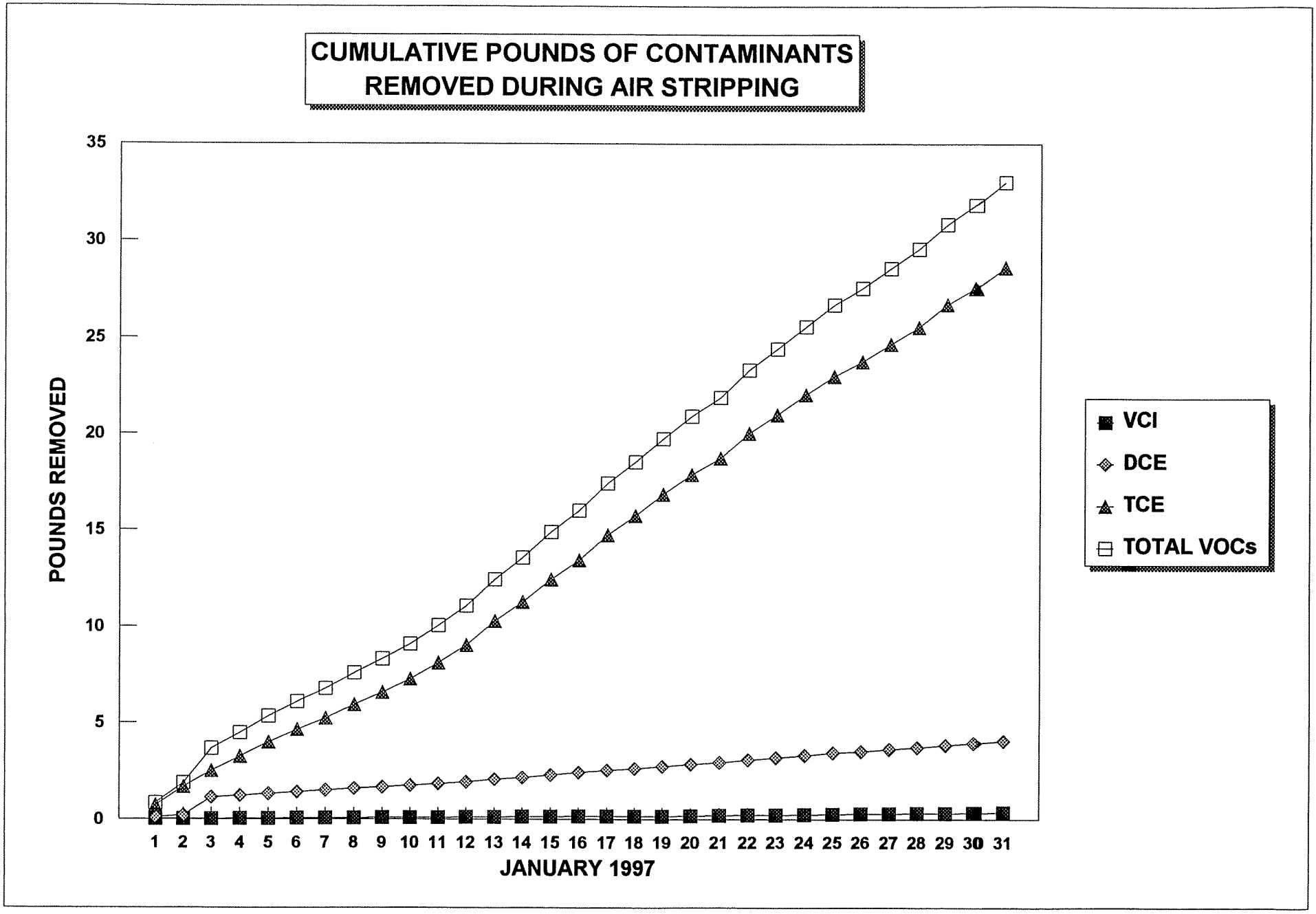


Contaminants Removed Via Air Stripping

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

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
01/01/97	0.0077	0.1036	0.7341	0.8454
01/02/97	0.0081	0.1053	0.9283	1.0417
01/03/97	0.0094	0.9160	0.8555	1.7809
01/04/97	0.0109	0.0808	0.7384	0.8301
01/05/97	0.0096	0.1024	0.7346	0.8466
01/06/97	0.0092	0.0907	0.6585	0.7584
01/07/97	0.0083	0.0910	0.5787	0.6780
01/08/97	0.0040	0.0935	0.7137	0.8112
01/09/97	0.0108	0.0776	0.6513	0.7397
01/10/97	0.0072	0.0790	0.6765	0.7627
01/11/97	0.0091	0.1003	0.8485	0.9579
01/12/97	0.0058	0.0897	0.9169	1.0124
01/13/97	0.0136	0.1270	1.2448	1.3854
01/14/97	0.0102	0.1020	1.0009	1.1131
01/15/97	0.0166	0.1321	1.1692	1.3179
01/16/97	0.0089	0.1296	0.9886	1.1271
01/17/97	0.0049	0.1142	1.2753	1.3944
01/18/97	0.0034	0.0932	1.0220	1.1186
01/19/97	0.0067	0.1142	1.0910	1.2119
01/20/97	0.0166	0.1139	1.0268	1.1573
01/21/97	0.0183	0.0921	0.8749	0.9853
01/22/97	0.0232	0.1308	1.2846	1.4386
01/23/97	0.0102	0.1118	0.9619	1.0839
01/24/97	0.0159	0.1214	1.0232	1.1605
01/25/97	0.0166	0.1245	0.9782	1.1193
01/26/97	0.0149	0.0815	0.7759	0.8723
01/27/97	0.0162	0.1055	0.8995	1.0212
01/28/97	0.0165	0.0928	0.8944	1.0037
01/29/97	0.0105	0.1113	1.1571	1.2789
01/30/97	0.0138	0.1132	0.8524	0.9794
01/31/97	0.0229	0.1163	1.0593	1.1985

January 1997	0.3600	4.0573	28.6150	33.0323
Previous Total	10.3854	124.4252	552.2065	687.0172
Thru 01/31/97	10.7454	128.4825	580.8215	720.0495



Hull & Associates, Inc.

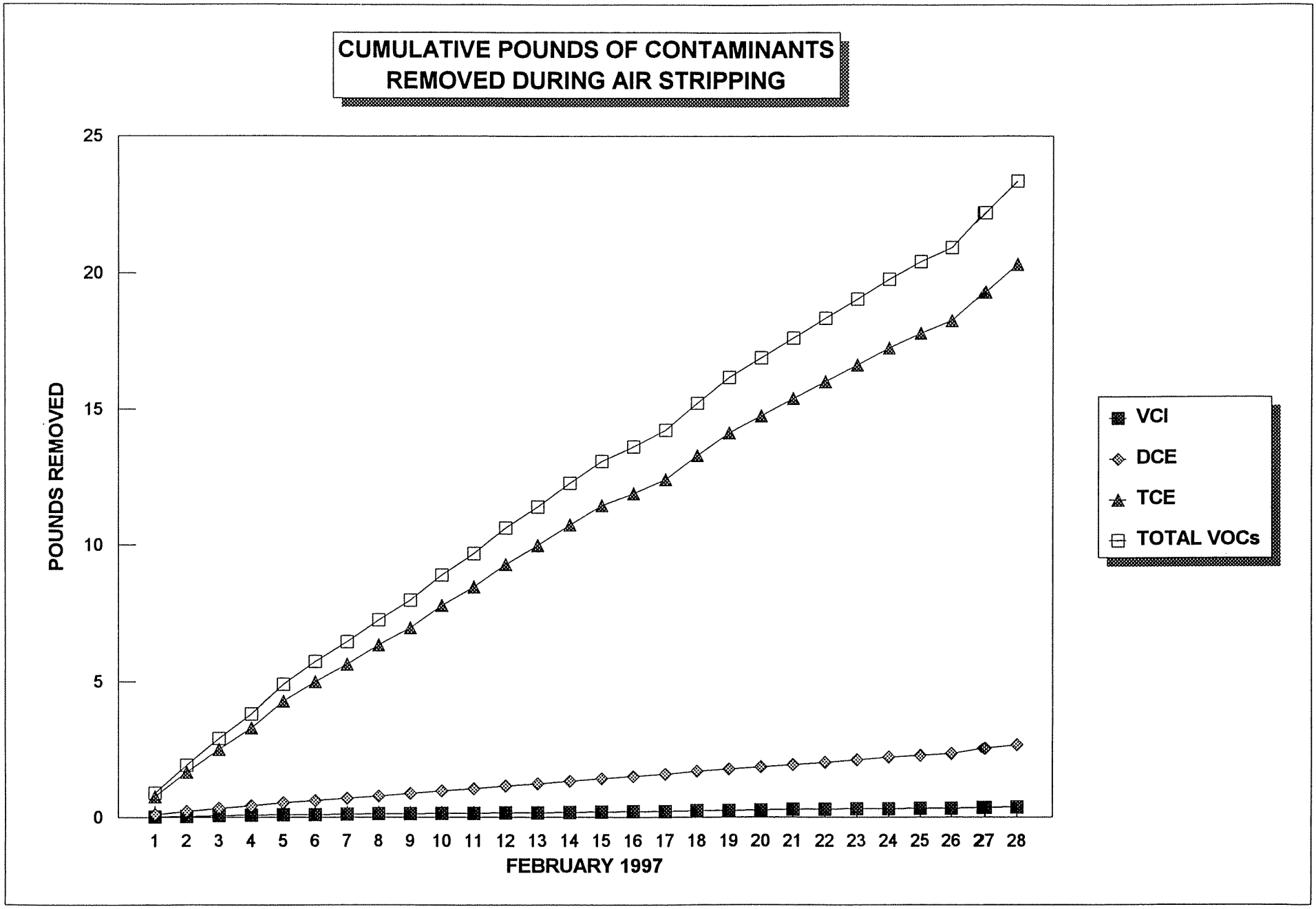
F:data\bpny\field\jan97\airtotal.wk4

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
02/01/97	0.0182	0.1076	0.7710	0.8968
02/02/97	0.0258	0.1126	0.8866	1.0250
02/03/97	0.0261	0.1102	0.8485	0.9848
02/04/97	0.0147	0.0993	0.7913	0.9053
02/05/97	0.0129	0.1101	0.9726	1.0956
02/06/97	0.0137	0.0793	0.7370	0.8300
02/07/97	0.0108	0.0766	0.6333	0.7207
02/08/97	0.0086	0.0882	0.7104	0.8072
02/09/97	0.0090	0.0917	0.6256	0.7263
02/10/97	0.0115	0.1019	0.8133	0.9267
02/11/97	0.0096	0.0788	0.6902	0.7786
02/12/97	0.0091	0.1030	0.8207	0.9328
02/13/97	0.0073	0.0800	0.6884	0.7757
02/14/97	0.0103	0.0944	0.7553	0.8600
02/15/97	0.0141	0.0934	0.7101	0.8176
02/16/97	0.0124	0.0822	0.4312	0.5258
02/17/97	0.0115	0.0797	0.5180	0.6092
02/18/97	0.0183	0.1021	0.8797	1.0001
02/19/97	0.0144	0.0889	0.8420	0.9453
02/20/97	0.0161	0.0851	0.6265	0.7277
02/21/97	0.0213	0.0736	0.6390	0.7339
02/22/97	0.0107	0.0838	0.6121	0.7066
02/23/97	0.0053	0.0901	0.6162	0.7116
02/24/97	0.0079	0.0937	0.6238	0.7254
02/25/97	0.0075	0.0729	0.5583	0.6387
02/26/97	0.0075	0.0602	0.4571	0.5248
02/27/97	0.0223	0.1999	1.0531	1.2753
02/28/97	0.0179	0.1239	1.0058	1.1476

February 1997	0.3748	2.6632	20.3171	23.3551
Previous Total	10.7454	128.4825	580.8215	720.0495
Thru 02/28/97	11.1202	131.1457	601.1386	743.4047

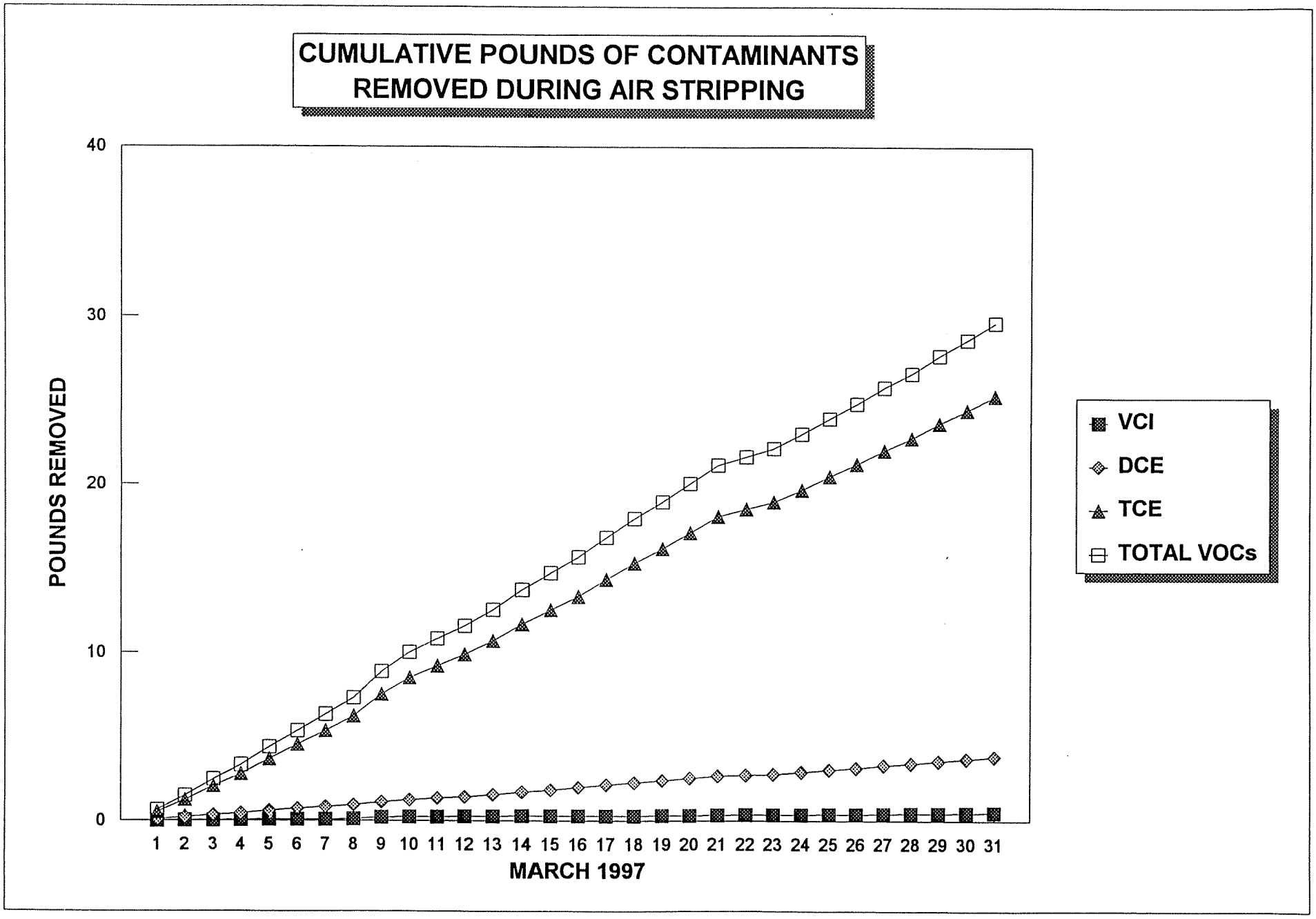

CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING AIR STRIPPING
POUNDS REMOVED
0
5
10
15
20
25
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
FEBRUARY 1997
VCl
DCE
TCE
TOTAL VOCs

Contaminants Removed Via Air Stripping

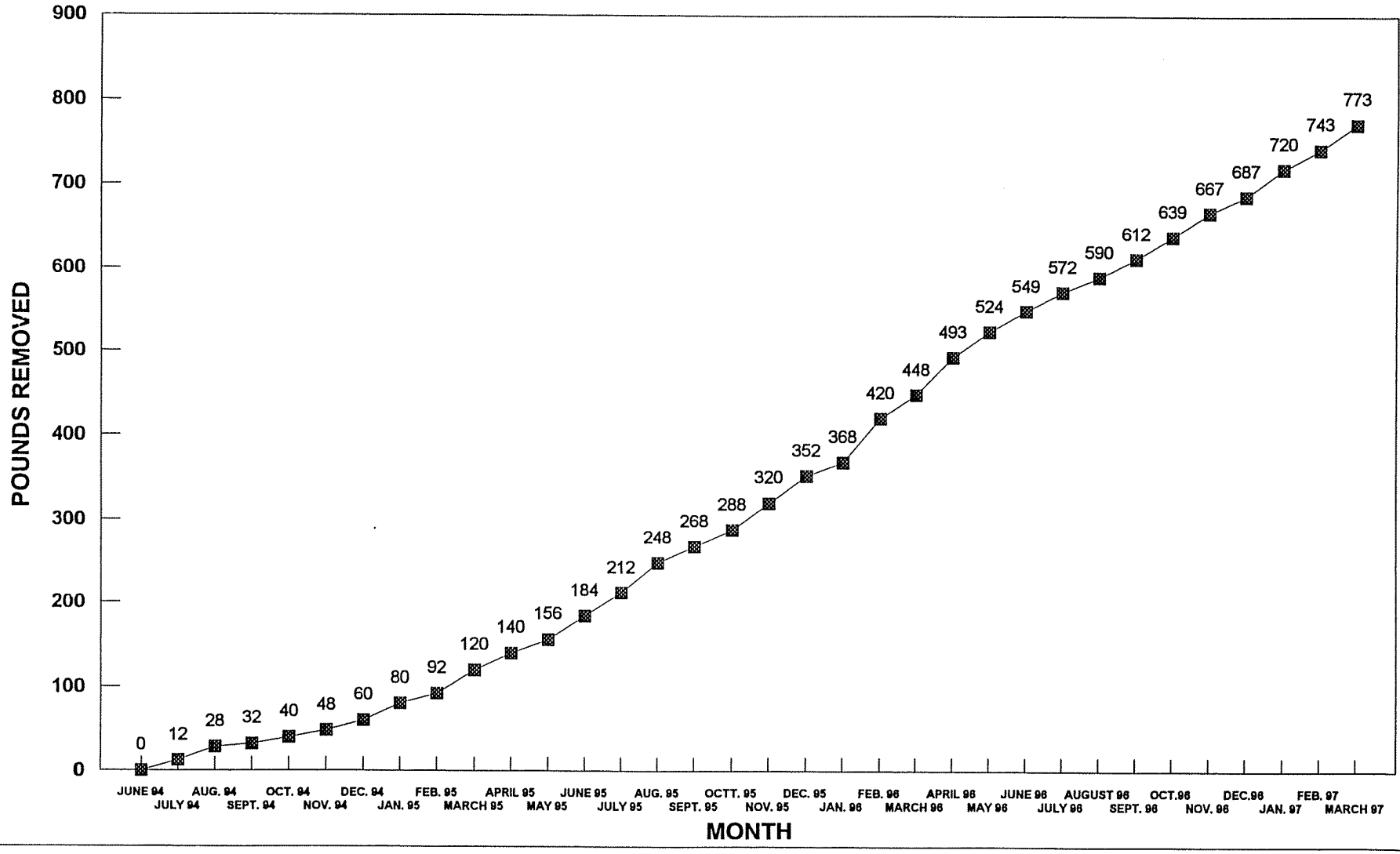
Groundwater Treatment and Soil Remediation Program
Carborumdum Facility
Wheatfield, New York

DATE	Daily Load (pounds)			
	V Cl	DCE	TCE	TOTAL
03/01/97	0.0171	0.0993	0.5434	0.6598
03/02/97	0.0227	0.1230	0.7298	0.8755
03/03/97	0.0112	0.1318	0.8452	0.9882
03/04/97	0.0157	0.1144	0.7088	0.8389
03/05/97	0.0149	0.1466	0.8767	1.0382
03/06/97	0.0116	0.1201	0.8585	0.9902
03/07/97	0.0114	0.1077	0.8178	0.9369
03/08/97	0.0115	0.1174	0.8554	0.9843
03/09/97	0.1007	0.1767	1.2861	1.5635
03/10/97	0.0205	0.1313	0.9934	1.1452
03/11/97	0.0120	0.1078	0.7126	0.8324
03/12/97	0.0137	0.0878	0.6592	0.7607
03/13/97	0.0148	0.1220	0.8220	0.9588
03/14/97	0.0164	0.1587	1.0067	1.1818
03/15/97	0.0000	0.1421	0.8521	0.9942
03/16/97	0.0002	0.1409	0.7868	0.9279
03/17/97	0.0085	0.1528	0.9855	1.1468
03/18/97	0.0076	0.1519	0.9670	1.1265
03/19/97	0.0071	0.1269	0.8789	1.0129
03/20/97	0.0155	0.1263	0.9301	1.0719
03/21/97	0.0166	0.1215	0.9681	1.1062
03/22/97	0.0201	0.0460	0.4512	0.5173
03/23/97	0.0163	0.0470	0.4162	0.4795
03/24/97	0.0053	0.1320	0.7130	0.8503
03/25/97	0.0161	0.1280	0.7937	0.9378
03/26/97	0.0106	0.1285	0.7478	0.8869
03/27/97	0.0149	0.1348	0.8138	0.9635
03/28/97	0.0135	0.1065	0.7178	0.8378
03/29/97	0.0224	0.1473	0.9009	1.0706
03/30/97	0.0198	0.1372	0.7845	0.9415
03/31/97	0.0122	0.1288	0.8698	1.0108

March 1997	0.5009	3.8431	25.2928	29.6368
Previous Total	11.1202	131.1457	601.1386	743.4047
Thru 03/31/97	11.6211	134.9888	626.4314	773.0415


CUMULATIVE POUNDS OF CONTAMINANTS
REMOVED DURING AIR STRIPPING
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
MARCH 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
	Margaret 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	