

FINAL DRAFT

**Optimization Study Report for Site 16F, Naval Weapons Station Earle,
Colts Neck, New Jersey**

Contract No. N62472-00-D-1300

Contract Task Order No. 0008

To

**Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113-2090**

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EXECUTIVE SUMMARY

Objectives

The objectives of this project are to assess the existing remedial actions at Site 16F, and provide recommendations to the Navy that help the systems achieve remedial action objectives (RA Objectives) and ultimate site closure while optimizing life-cycle costs. This report follows the seven-step optimization guidance presented in NAVFAC Guidance for Optimizing Remedial Action Operation Special Report SR-2101-ENV (Radian, 2001):

- Step 1: Review and Evaluate Remedial Action Objectives
- Step 2: Evaluate Remediation Effectiveness
- Step 3: Evaluate Cost Efficiency
- Step 4: Identify Remediation Alternatives
- Step 5: Develop and Prioritize Optimization Strategy
- Step 6: Prepare Optimization Report
- Step 7: Implement Optimization Strategy.

Where appropriate, specific recommendations are included based on the results of the document review and observations made during the site visit. These recommendations are intended to provide the first step in the optimization process, and are not necessarily all encompassing. The optimization process should be refined as operational data become available.

Site Investigation and Remediation Activities

Site 16F is located in the north-central portion of NWS Earle, northeast of the intersection of Coral and Saipan roads, in an area currently used for industrial purposes. The site is about 8 acres in size, and several areas contain fuel-related contaminants, including an LNAPL plume southeast of Building C-16, an LNAPL plume northwest of Building C-50, and a former gas station near Building C-17.

A pilot-scale vacuum-enhanced free product recovery (bioslurper) pilot test was performed in 1996 to determine whether the LNAPL could be recovered. High concentrations of iron in the shallow groundwater interfered with the operation of the system, but system modifications were made to overcome this problem.

A full-scale bioslurper system was designed and installed to treat the LNAPL contamination. Installation was completed in January 1998. The system includes two self-contained units, each housed in its own cargo container for protection from the elements. Nine extraction wells were installed for the full-scale bioslurper system to be used with two existing wells. Approximately 4,000 gallons of LNAPL were recovered from February 1998 through April 2001. Five additional wells were installed April 2001 to better delineate the LNAPL plume and increase hydrocarbon recovery. Approximately 700 gallons of additional LNAPL were recovered between April 1999 and May 2003.

Remediation System Performance

Battelle reviewed available site-specific documents and visited the site on November 21, 2003 to observe and discuss remedial operations being conducted at Site 16F. Key issues addressed include:

Remedial Action Objectives – The RA Objectives are summarized as: recover free product until it is removed or no longer practicable to continue recovery, and demonstrate the efficacy of natural attenua-

tion at the site. The New Jersey Department of Environmental Protection (NJDEP) requires the removal of free product at contaminated sites, regardless of any site-specific risks caused by the free product. Based on regulation NJAC 7:26E-6, free product recovery can be terminated when free product is no longer present or when free product removal is no longer practicable. The NJDEP has approved natural attenuation as the long-term remedial action for dissolved benzene in the groundwater, and also has granted a Classification Exception Area (CEA) for the site. The objective of the groundwater monitoring program is to "assess and document migration, degradation, and attenuation of target constituents at the site."

LNAPL Recovery – The rate of recovery of LNAPL has decreased significantly since the beginning of operation. In fact, neither bioslurper unit has recovered significant amounts of LNAPL during the last four months of operation for which data were available (February through May 2003). The rate of recovery during these four months decreased by more than 98% from the average recovery rate achieved during the first 6 months of operation.

LNAPL Remaining – LNAPL thickness in site wells is gradually decreasing; however, there is considerable variability in the measurements from month to month. One trend that can easily be observed is that the thickness of LNAPL in the wells increases as the water table decreases. This may be a result of fluctuating groundwater table elevation. This type of variation also is observed at sites where the LNAPL thickness is measured at varying intervals after shutting off the bioslurper system. If measurements are not collected uniformly, varying amounts of rebound from month to month will influence the thickness of LNAPL in the wells.

Well Spacing – Based on the locations of the bioslurper extraction wells, several portions of the LNAPL plume are not within the bioslurper radius of influence of 40 feet that was determined during the pilot test performed in 1996. Also, of particular importance is the portion of the plume that is thought to be located beneath the former C-16 building. Wells were not previously installed in this area because of costly logistical issues associated with installing them in an operational facility. However, the building was removed early 2002, and additional wells could easily be installed at this time.

Cost Efficiency – The monthly operations and monitoring and maintenance (OM&M) cost for the bioslurper system was estimated to be about \$14,800. The primary contributor to the monthly cost is labor, which represents approximately 57% of the monthly costs. The second largest cost factor is the air and vapor analyses, which are an average of \$2,600 or 18% of the average monthly costs. The cost per pound of TPH recovered per quarter was calculated to range from a low of \$47/lb to a high of about \$140/lb. The primary factor that appears to influence this cost is the mass of LNAPL recovered. The price per pound of hydrocarbons recovered drops significantly during times in which a greater mass of hydrocarbons was recovered.

Recommendations

Bioslurper data from Site 16F indicated a need for several operational and system modifications to improve performance. Also, at some point in the future, it will be necessary to collect data that identify if LNAPL has been recovered to the maximum extent practicable, or whether an alternate approach will be needed as site conditions change and remediation nears completion. In order to collect these data, the following optimization recommendations were developed for Site 16F:

1. Install at least two additional wells and collect soil borings in the area where the southeast portion of Building C-16 formerly was located. All of the site-specific documentation reviewed indicates that hydrocarbon contamination (and likely LNAPL) is present in this area; however, this area

was never investigated due to the complications associated with installing wells inside or underneath Building C-16.

2. Install at least three additional wells within the boundaries of the known LNAPL plume to improve the rate of LNAPL recovery while operating the bioslurper system. If the number of wells located within the LNAPL plume is increased, thereby decreasing the distance between the wells, it may be possible to sustain higher recovery rates for a longer period and achieve site cleanup faster, which would result in lower overall costs.
3. Continue LNAPL recovery with the bioslurper system extracting from wells that contain LNAPL. Based on the analysis of the data reviewed by Battelle, it appears that hydrocarbon recovery (as LNAPL, in the vapor phase, and in the aqueous phase) is greater when the water table is low.
4. Focus on operating the system when the water table is naturally depressed. Data indicate that the recovery of hydrocarbons will be greater while operating costs will remain the same (or less if a lower groundwater flowrate is realized).
5. Operate the system for a longer period of time each month (especially at times when the groundwater table is depressed). Based on cost data provided for the period January 2002 through January 2004, the water and vapor treatment costs made up a small percentage of the overall monthly project costs (on average about 15% total). Costs that should be relatively insensitive to operating time, such as water and vapor analyses and other direct costs (ODCs), make up an average of 24% of the average monthly costs. Therefore, if the system is operated for a longer period each month, provided that product recovery can be maintained, overall project costs will be minimized.
6. Place the drop tube at the oil/water interface. This may improve LNAPL recovery to some extent without increasing the groundwater extraction rate. A test also may be performed to determine if lowering the drop tube several feet beneath the oil/water interface can increase LNAPL recovery. The associated increase in water recovery also must be carefully monitored. A cost-benefit analysis may be performed to determine if there is substantial benefit to operating the system in this fashion.
7. Reevaluate aqueous and vapor treatment. The costs associated with treating these streams have reportedly been a major portion of the OM&M costs. Hydrocarbon concentrations typically decrease significantly during operation of the bioslurper system. After the new extraction wells have been installed and extracted for a period, hydrocarbon concentrations in both the aqueous and vapor phases should decrease. Regulatory and treatment requirements should be reassessed to determine if treatment of these streams remains necessary based on new site and operating conditions. At many sites, it can be demonstrated that treatment of the water and vapor streams can be reduced or eliminated without adversely impacting the environment.

1.0 BACKGROUND

Site 16F is located in the north-central portion of Naval Weapons Station (NWS) Earle (Figure 1), and consists of two areas that contain light, nonaqueous-phase liquid (LNAPL) contamination and fuel-related constituents: a larger LNAPL plume southeast of Building C-16, and a second smaller plume northwest of Building C-50 (Figure 2). The larger LNAPL plume is suspected to have been caused by a leaking underground diesel fuel transfer line, which fed from an underground storage tank (UST) at the northwest corner of Building C-18 to a fuel dispenser located between the railroad tracks north of Building C-50. The leak was detected in 1977 and the use of the transfer line was discontinued (FWEC, 1997).

A pilot-scale vacuum-enhanced free product recovery (bioslurper) pilot test was performed in 1996 to determine whether the LNAPL could be recovered. High concentrations of iron in the shallow groundwater interfered with the operation of the system, but system modifications were made to overcome this problem.

Installation of a full-scale bioslurper system was completed in January 1998. The system includes two self-contained units, each housed in its own cargo container for protection from the elements. Each unit consists of liquid extraction, process, and treatment equipment. Each extraction system is connected to a series of wells by a manifold system. A vapor treatment system was installed with Unit #1. Vapor from Unit #2 is discharged directly to the atmosphere. Aqueous effluent from each unit is treated and discharged to the Base sanitary sewer system. Both systems include safety controls and alarms to reduce the risk of accidental discharge of contaminants to the environment.

Nine extraction wells were installed for the full-scale bioslurper system to be used with two existing wells. Two of the new wells, 16-MW20 and 16-MW21, were installed 60 feet apart in the plume north of Building C-50. The remaining wells were installed in the contaminated area adjacent to Building C-16, and were spaced 35 to 40 feet apart.

Approximately 4,000 gallons of LNAPL were recovered from February 1998 through April 2001. An independent evaluation was performed to assess the feasibility and effectiveness of removing additional hydrocarbons (Battelle, 2000). Five additional wells (16-MW24, 16-MW25, 16-MW26, 16-MW27, and 16-MW28) were installed April 2001 to better delineate the LNAPL plume and increase hydrocarbon recovery. Approximately 700 gallons of additional LNAPL were recovered between April 1999 and May 2003.

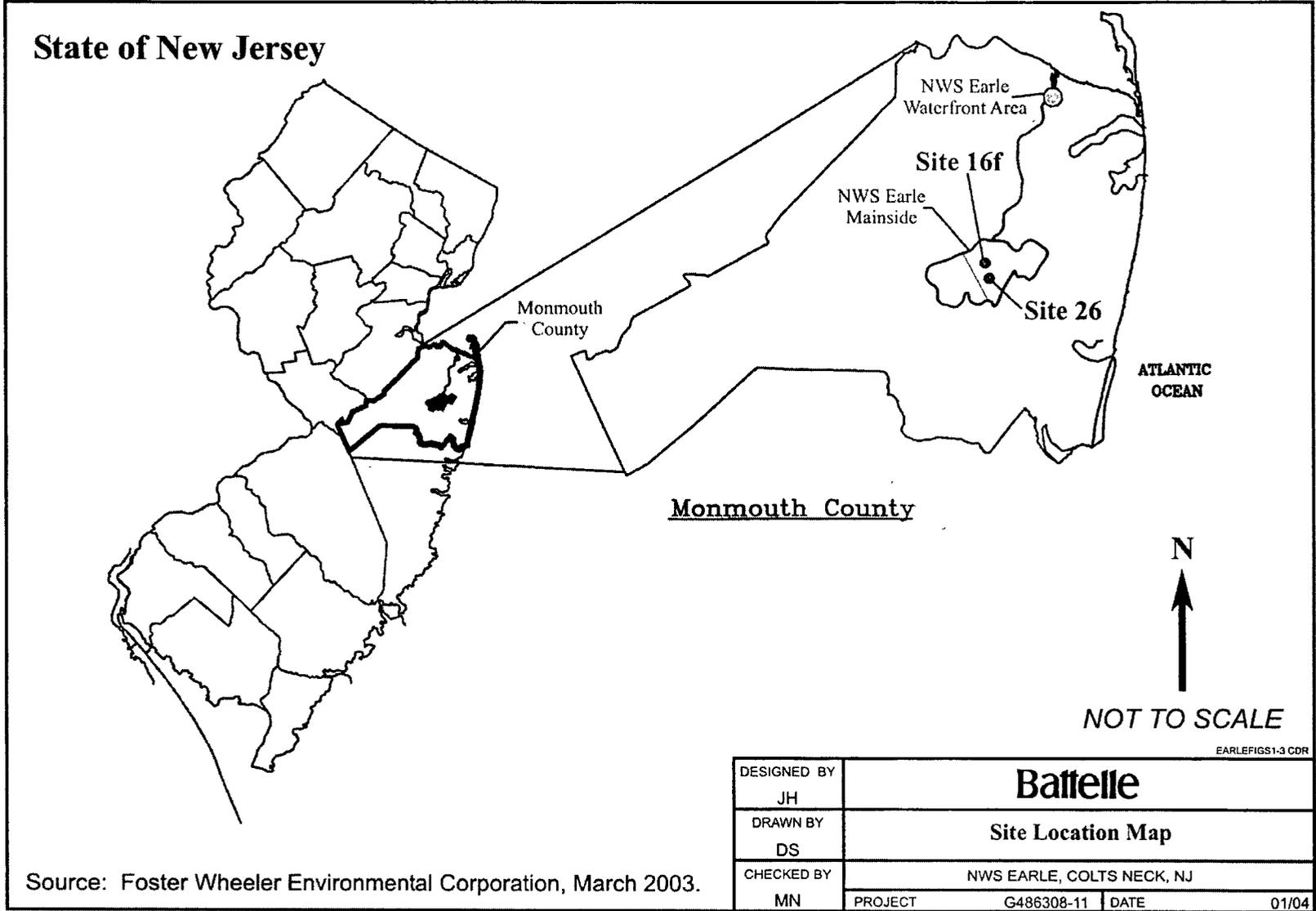


Figure 1. Site Location Map

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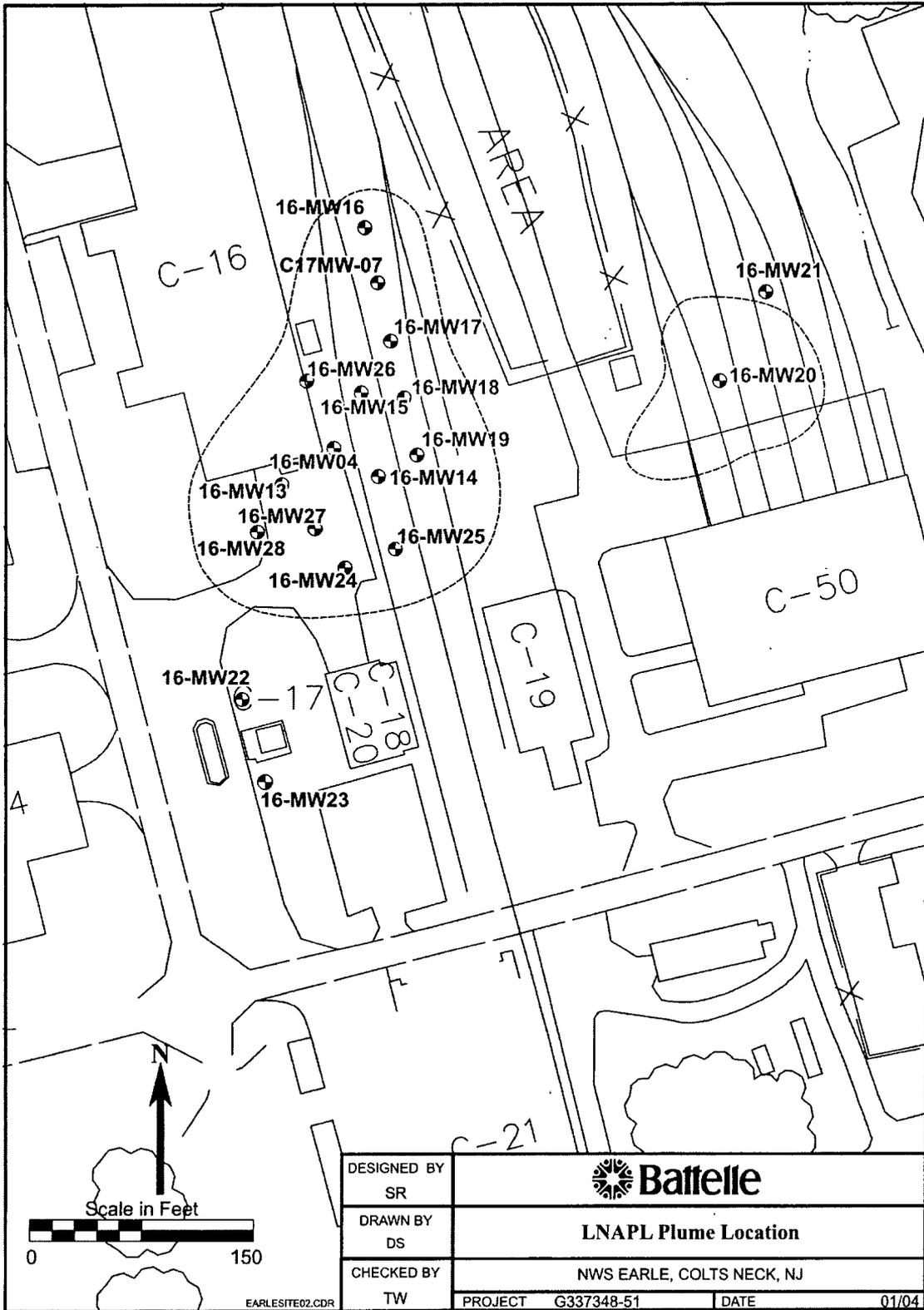


Figure 2. LNAPL Plume Location

2.0 SITE CONCEPTUAL MODEL

2.1 Setting

Site 16F is located in the north-central portion of NWS Earle, northeast of the intersection of Coral and Saipan roads, in an area currently used for industrial purposes. The site is about 8 acres in size. The larger of the two areas of contamination is located adjacent to former Building C-16 (removed late 2001 early 2002), a shop building with power tools and a vehicle high bay. The smaller area of contamination is located to the north of Building C-50, which is used for railroad car maintenance. The area also contains multiple rail lines running north from Building C-50 and north and south to the east of former Building C-16. The majority of the area is paved, with the exception of the soil where Building C-16 formerly was located.

2.2 Geology and Hydrogeology

According to regional maps, surface sediments at Site 16F consist of the Vincentown Formation and upper colluvium. The Vincentown Formation is described as a gray and green fine- to coarse-grained glauconitic sand with silt, and the upper colluvium consists of a shallow massive sand and silty sand (FWEC, 1999). Boring logs and Site Characterization and Analysis Penetrometer System (SCAPS) data indicate that the soil underlying Site 16F consists of fine- to medium-grained sand and silty sand. Relief at the site is minimal, with the drainage channels between the railroad tracks being the most significant local differences in surface elevation.

Groundwater at the site occurs in the shallow unconfined aquifer consisting of the upper colluvium and the Vincentown Formation. Monitoring of the wells at Site 16F indicates that the groundwater occurs 6 to 10 feet below ground surface (bgs). Water table elevations vary seasonally within this range. Slug testing performed during the Remedial Investigation (RI) indicates that the hydraulic conductivity at the site is approximately 1 foot/day, which is approximately $\frac{1}{3}$ of the average value for the upper colluvium and Vincentown Formation (Brown and Root Environmental, 1996). Water table elevations measured during the RI and during the operation of the bioslurper system indicate a northerly groundwater flow direction, with some localized flow to the west/northwest near Building C-16 (FWEC, 1999).

2.3 Contamination Description

Site 16F consists of several areas that contain fuel-related contaminants. These areas include an LNAPL plume southeast of Building C-16, an LNAPL plume northwest of Building C-50, and a former gas station near Building C-17 (FWEC, 1997).

Elevated total petroleum hydrocarbon (TPH) concentrations were detected in soil borings advanced as part of a site investigation performed in 1992. Additional sampling was performed during an RI conducted in 1995 (Brown and Root Environmental, 1996). This investigation demonstrated that groundwater at Site 16F had been impacted by the hydrocarbon contamination in the subsurface. Monitoring wells installed during the RI contained up to 2 feet of LNAPL (FWEC, 1997). The LNAPL and contaminated soil act as sources of hydrocarbon contamination to the groundwater.

SCAPS investigations using laser-induced fluorescence (LIF) to detect the presence of polycyclic aromatic hydrocarbons (PAHs) in the subsurface were conducted by the Navy in 1995 and covered the areas between Buildings C-17 and C-18 and north of Building C-50. A mercury vapor lamp investigation was conducted in 1996 (FWEC, 1997) to further delineate the extent of the soil contamination (Figure 2).

The dissolved contaminant plume is being monitored simultaneously with the LNAPL removal effort. Concentrations of dissolved hydrocarbons (benzene, toluene, ethylbenzene, xylenes [BTEX], and naphthalene) are being monitored in eight wells at Site 16F. Dissolved hydrocarbons have been observed in several of the monitoring wells.

2.4 Exposure Pathways

Based on the Focused Investigation and Remedial Action Workplan for B.C-17/20/16/50 (Brown and Root Environmental, 1997), it is understood that there is no current or reasonably likely future use of groundwater and that there is little ecological habitat associated with Site 16F. The primary migration pathway for contamination detected at Site 16F is via shallow, northerly groundwater flow. The area immediately downgradient of the source area is characterized by similar industrial-type structures and open ground covered only by railroad lines.

A second exposure pathway is through the development of the land under which Building C-16 was constructed. A portion of the soil beneath the former building likely is contaminated with petroleum constituents. However, at this time, there is no planned future use of this land.

3.0 SITE VISIT

A site visit was performed on November 21, 2003, by Mr. Stephen Rosansky of Battelle and Mr. Mark Nielsen of ENVIRON Corporation (now with Battelle). Mr. Rosansky and Mr. Nielsen were accompanied by Ms. Michele DiGeambeardino and Mr. John Mayhew of EFANE, and Mr. Larry Burg of NWS Earle. The visit was made to observe and discuss remedial operations being conducted at Site 16F. Prior to the site visit, Battelle had received and reviewed certain site-specific documentation received from EFANE, including operation and maintenance (O&M) data from bioslurper system startup (February 1998) through May 2003.

Several items were observed and discussed during the site visit. These included:

- The bioslurper systems were not operational during the site visit. Mr. Mayhew indicated that it is normal for the bioslurper systems only to be operational for a short time each month, in order to allow LNAPL to migrate into the extraction wells during extended shutdown periods.
- Five additional wells were installed in April 2001 to better delineate and remediate the LNAPL plume located in the vicinity of former Building C-16.
- Building C-16 was removed some time during late 2001 or early 2002.
- Few significant changes have been made to the bioslurper systems during the last few years of operation.

4.0 OPTIMIZATION STRATEGY

The remainder of this report uses steps from the seven-step optimization approach to organize recommendations for optimizing the remedial activities at Site 16F. Where appropriate, specific recommendations are included based on the results of the document review and observations made during the site visit.

4.1 Review and Evaluate Remedial Action Objectives

The New Jersey Department of Environmental Protection (NJDEP) requires the removal of free product at contaminated sites, regardless of any site-specific risks caused by the free product. Based on regulation NJAC 7:26E-6, free product recovery can be terminated when free product is no longer present or when free product removal is no longer practicable. Natural attenuation for free-phase product or residual product remaining in the soil is not permitted. Decisions regarding the practicability of a remedial decision are made by the NJDEP on a case-by-case basis.

According to a 1999 Groundwater Monitoring Report (Tetra Tech NUS, 1999), the NJDEP has approved natural attenuation as the long-term remedial action for dissolved benzene in the groundwater, and also has granted a Classification Exception Area (CEA) for the site. The objective of the groundwater monitoring program is to "assess and document migration, degradation, and attenuation of target constituents at the site." The program includes short-term monitoring and provisions for long-term monitoring if NJDEP Groundwater Quality Standards (GQSs) are exceeded during the short-term monitoring.

The RA Objectives are summarized as: recover free product until it is removed or no longer practicable to continue recovery, and demonstrate the efficacy of natural attenuation at the site. It will be critical to collect enough data to demonstrate to the NJDEP that the LNAPL has been recovered to "the maximum extent practicable." This may involve implementing an alternative (less-costly) technology in order to remove the small amount of LNAPL remaining if it is determined that the bioslurper system is no longer cost-effective, or the most technically practicable solution based on changed site conditions.

4.2 Evaluate Remedial Action Effectiveness

The effectiveness of the bioslurper systems must be evaluated continuously to determine if vacuum-enhanced free product recovery remains the most effective treatment option. In accordance with post-construction submittal requirements, FWEC submits quarterly status reports, which summarize system operation activities, system performance monitoring results and groundwater sampling results. As part of this task, Battelle reviewed the following status reports provided by EFANE:

- *Bioslurper Status Report for April 2001 through February 2002* (FWEC, 2002a)
- *Bioslurper Status Report for March 2002 through May 2002* (FWEC, 2002b)
- *Bioslurper Status Report for June 2002 through August 2002* (FWEC, 2002c)
- *Bioslurper Status Report for September 2002 through November 2002* (FWEC, 2003a)
- *Bioslurper Status Report for December 2002 through February 2003* (FWEC, 2003b)
- *Bioslurper Status Report for March 2003 through May 2003* (FWEC, 2003c).

Hydrocarbon Recovery – According to the status reports, the rate of recovery of LNAPL has decreased significantly since the beginning of operation. In fact, neither unit has recovered significant amounts of LNAPL during the last four months of operation for which data were available (February through May 2003). Figure 3 shows the cumulative recovery for each of the units. Little LNAPL was recovered by Unit 1 in 2003 and even less has been recovered by Unit 2.

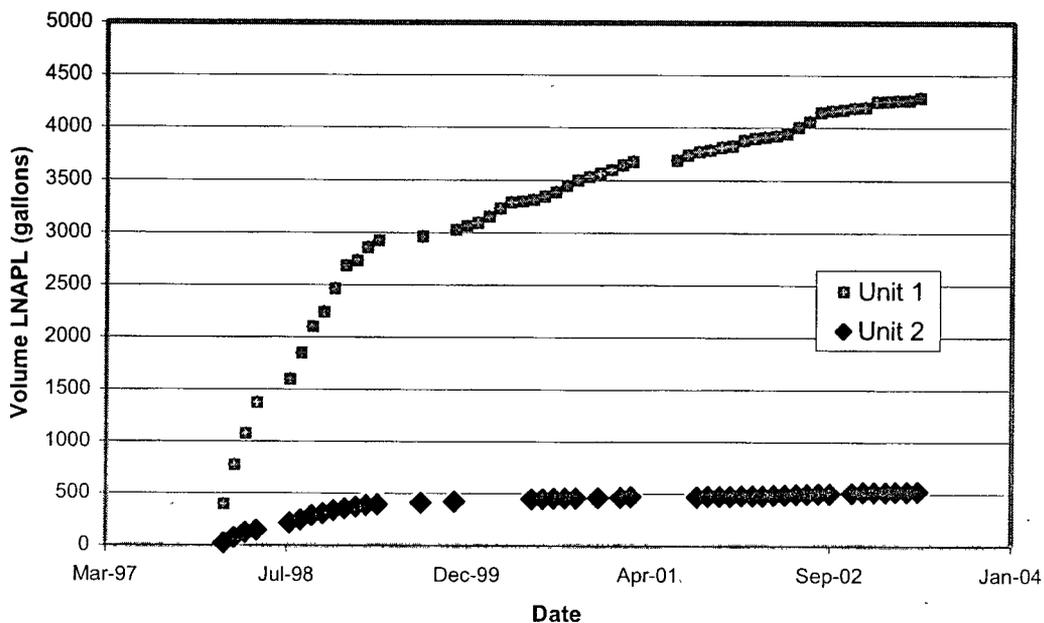


Figure 3. Cumulative LNAPL Recovery

Figure 4 illustrates the decrease in the monthly recovery rate since bioslurper operation began in 1998. The LNAPL recovery data presented in the bioslurper status reports was used to calculate an average daily recovery rate for a 6-month period. The total volume recovered in a 6-month period was divided by the hours of operation within that period. The rate of recovery during the last four months for which data was available (February 2003 through May 2003) has decreased by more than 98% from the average recovery rate achieved during the first 6 months of operation.

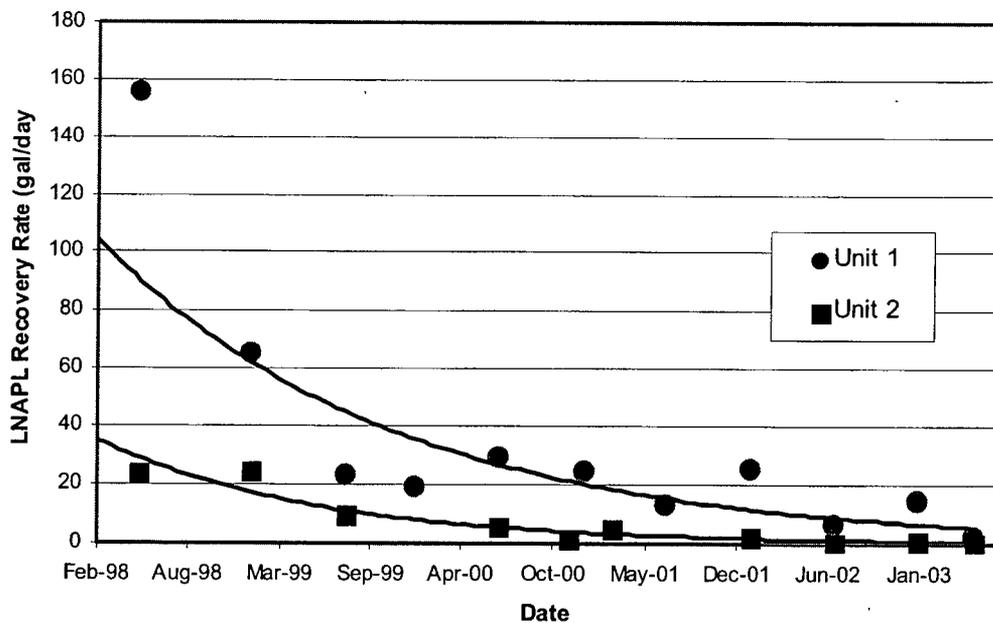


Figure 4. LNAPL Recovery Rates

The hydrocarbon recovery rate for Unit 1 was plotted against the operational time (Figure 5) to determine if a relationship exists between these variables. The first year of operational data was not included in this analysis because recovery rates are much greater at the beginning of operation and is not representative of current site conditions. As can be seen from these data, as the operating time increases, the rate of recovery decreases. Therefore, the operating strategy of operating the system for a short period of time each month to maximize LNAPL recovery while minimizing water recovered (as well as treatment costs) appears to be valid. However, it should be noted that if the well-field design was modified by adding more wells with a closer spacing, the rate of LNAPL recovery could be maximized for a longer period reducing the overall time and cost required to remediate the site.

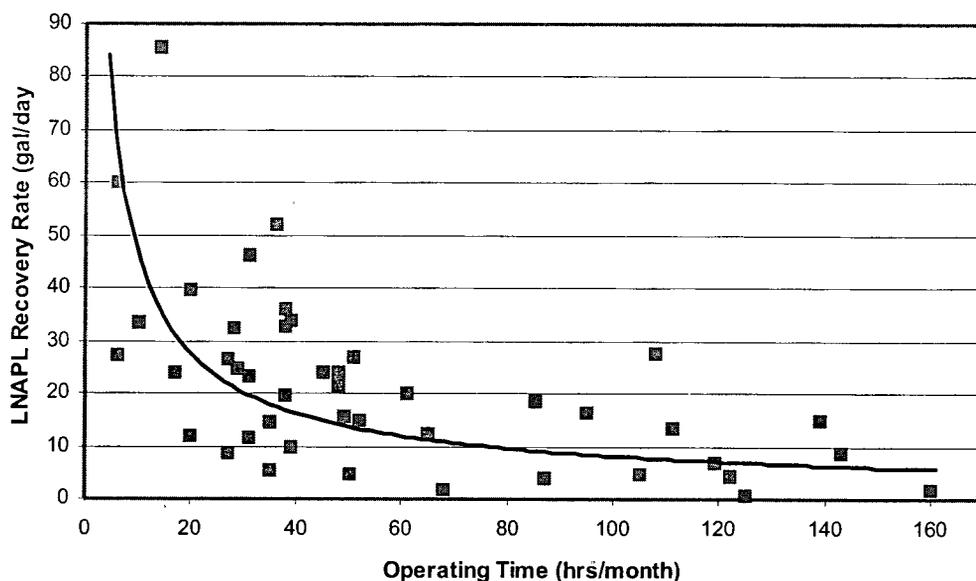


Figure 5. Relationship Between Operating Time and LNAPL Recovery

Hydrocarbons removed in the vapor and aqueous streams and through in situ biodegradation also should be considered part of the optimization analysis for the purpose of demonstrating that recovery has been performed to the maximum extent practicable. Removal of hydrocarbons in the vapor and aqueous phases and through biodegradation also is important when performing a cost-benefit analysis of the bio-slurper technology against alternative technologies such as passive skimming or bailing.

Biodegradation data were not available at the time this report was prepared. Respiration tests are not being performed to determine the mass of hydrocarbons that are being degraded in situ through the action of aeration and stimulation of naturally occurring microorganisms. However, the fuel is weathered and consists of fairly long-chained hydrocarbons, so it is likely that the biodegradation rate is fairly low. Therefore, the mass of hydrocarbons removed through biodegradation at this site may be minimal.

The mass of hydrocarbons removed in the aqueous stream is presented in Figure 6. This graph was constructed using the monthly recovery data presented in the quarterly status reports. A specific gravity of 0.85 for the LNAPL was used to convert the mass values presented in the status reports to gallons. FWEC routinely monitors the volume of water treated and the flowrate of vapor that is discharged from the system. Aqueous and vapor samples are collected on a monthly basis and analyzed for TPH. The results are used to calculate an estimated mass of hydrocarbons in each of these streams.

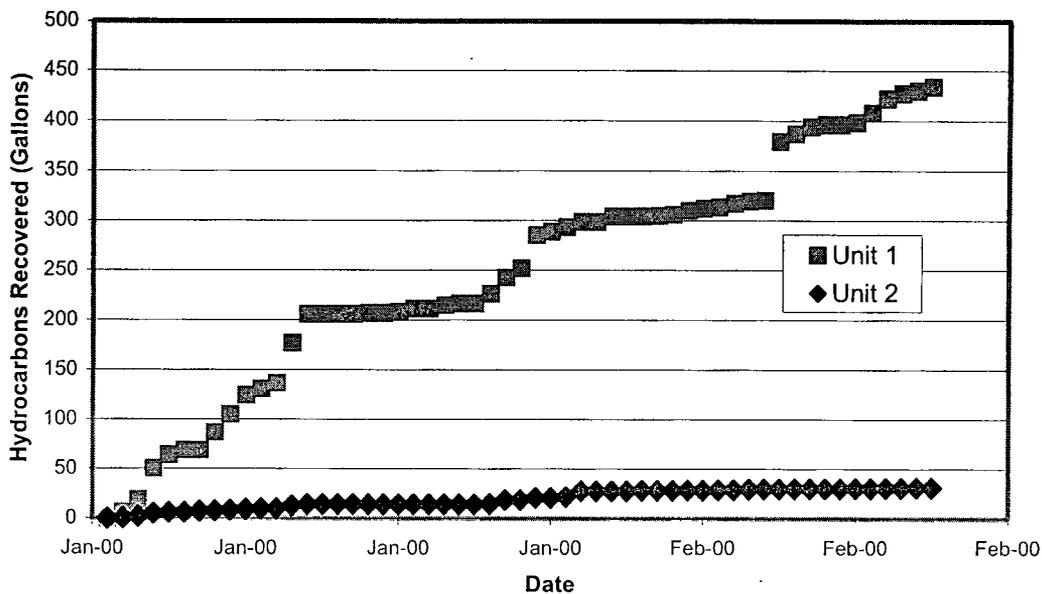


Figure 6. Cumulative Volume of Hydrocarbons Removed in Aqueous Stream

The volume of hydrocarbons recovered from the aqueous stream in Unit 1 is about 10 times greater than the volume recovered by Unit 2. These results are consistent with the LNAPL recovery data that is presented in Figure 3. Also, the volume of hydrocarbons recovered in the aqueous phase by both systems is about 10% of the volume that is recovered as LNAPL.

The hydrocarbon recovery rate of Unit 1 increased significantly between March and August of 2002. This corresponds to a time when the water table was very low. At many sites, it is observed that LNAPL trapped beneath the water table is released as the water table elevation decreases, at which point the LNAPL can more easily flow into the well under the influence of the vacuum induced by the bioslurper system.

The mass of hydrocarbons removed in the vapor phase by each unit from September 2001 through May 2003 is plotted in Figure 7. The mass of hydrocarbons removed in the vapor phase is relatively low. This is typically observed at sites that are contaminated with relatively heavy (i.e., diesel, JP-5, heating oil, etc.) fuels. Assuming a specific gravity of 0.85 and converting the mass to an equivalent volume, an equivalent of 123 and 23 gallons of hydrocarbons were removed by Unit 1 and Unit 2, respectively, during this period. Loadings were much greater between May and July 2002. The groundwater table was depressed during this time; therefore, the bioslurping system was able to strip hydrocarbons from the previously saturated soils. Also, system operating time was greater, allowing more time for mass to be removed.

Product Remaining – In addition to tracking the mass of hydrocarbons removed from the subsurface, it is extremely important to track the quantity of contamination remaining. FWEC includes a plot of the depth to LNAPL and the depth to the water table for each well in each quarterly status report. The difference between these two lines is the LNAPL thickness in the well. Based on the plots contained in the status reports reviewed by Battelle, it is apparent that the LNAPL thickness remaining in the wells is highly variable from month to month. However, one trend that can easily be observed is that the thickness of LNAPL in the wells increases as the water table decreases.

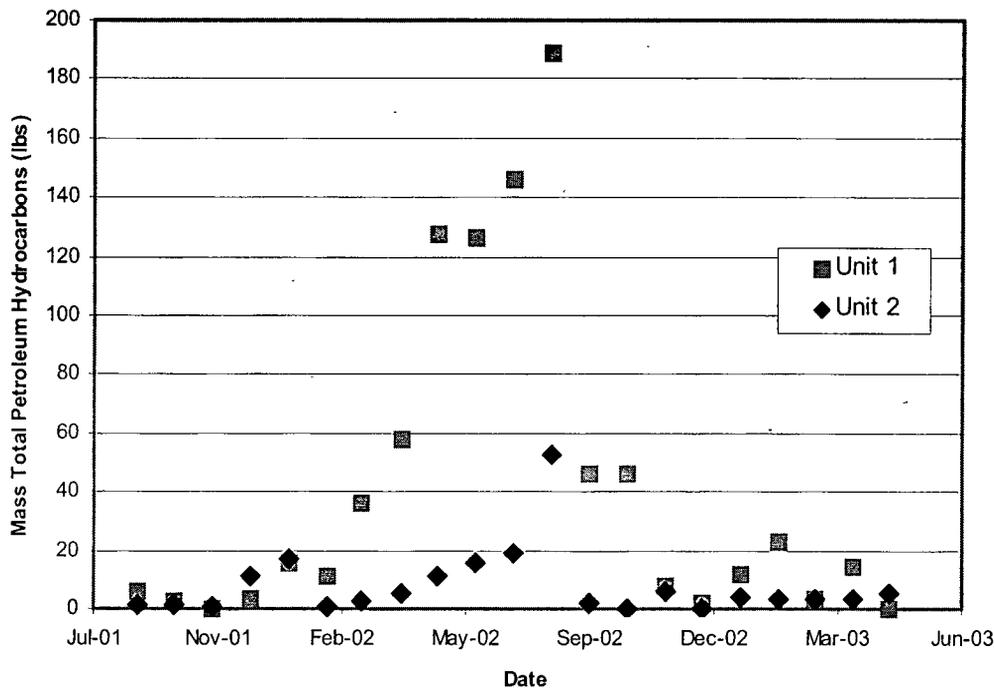


Figure 7. Hydrocarbon Loading in Vapor Phase

FWEC also prepares product thickness isopleths for each month of operation. A review of the isopleths indicates that the LNAPL thickness is gradually decreasing; however, there is considerable variability in the measurements from month to month. This may be a result of fluctuating groundwater table elevation. This type of variation also is observed at sites where the LNAPL thickness is measured at varying intervals after shutting off the bioslurper system. If measurements are not collected uniformly, varying amounts of rebound from month to month will influence the thickness of LNAPL in the wells.

Well Spacing – The pilot test performed by FWEC in 1996 determined that a pressure radius of influence of up to 40 feet could be achieved (FWEC, 1997). Based on the locations of the wells as shown in Figure 2, several portions of the LNAPL plume are not within the radius of influence of the existing extraction wells. Of particular importance is the portion of the plume that is thought to be located beneath the former C-16 building. Wells were not previously installed in this area because of costly logistical issues associated with installing them in an operational facility; however, the building was removed early 2002. Additional wells could easily be installed at this time.

It is important to note that the radius of influence determined in 1996 is the pressure radius of influence. The pressure radius of influence is a measurement of the distance from the extraction well at which a flow of vapor can be induced. Although the pressure radius is important because it is directly related to stripping and biodegradation processes, it cannot be used as an accurate indicator of the distance from a well at which LNAPL will be induced to flow into the well. Multiphase modeling, which is beyond the current scope of this project, is one means to estimate the radius of influence for the flow of LNAPL.

As discussed above, a greater LNAPL recovery rate is achieved when the bioslurper systems are only operated for a short period each month. This phenomenon occurs because an extended period of shut-down allows time for rebound to occur in the well and soil surrounding the well. Therefore, the rate of

LNAPL recovery is boosted upon turning on the system. However, a vacuum-enhanced recovery system should not rely on the passive recovery of LNAPL into the wells, but rather should induce a gradient to induce the flow of LNAPL toward and into the wells. If wells are spaced properly and if the entire plume is within the radius of influence of the extraction wells, then product outside of the radius of influence of one extraction well is within the radius of influence of another, and free product recovery will be more optimal. When the bioslurper is shut down, only product that is trapped within the water table will eventually migrate into the wells, and it will take a long time for this product to migrate back into the extraction wells.

System Operating Time – Minor O&M problems such as occasional freezing of pipe, scale in the heat exchanger, or fault of a controller resulting in a minor spill have occurred during the last several years of operation. However, these O&M issues have been overcome in a relatively short time and operation resumed. Of primary concern is the lack of operating time due to intentional shutdowns. Currently, the bioslurper systems are only operated for a short duration each month in order to reduce operating costs because treating the extracted groundwater is cost-prohibitive (Battelle, 2000) and the average rate of LNAPL recovery decreases during extended periods of operation.

Drop Tube Placement – The quarterly status reports indicate that the drop tubes inside the extraction wells have been placed at the top of the LNAPL layer. Typically, bioslurper drop tubes are placed at the LNAPL/water interface in the well. Experience at other sites indicates that placing the drop tube opening above the interface can cause mounding of the groundwater table. The locally mounded water table saturates the pores with water, which then can obstruct the flow of LNAPL into the well by lowering the relative permeability of the formation to LNAPL. The effect of this situation is reduced LNAPL extraction rates. A discussion of relative permeability can be found in Domenico and Schwartz (1990).

There also may be some benefit to placing the drop tubes at some depth beneath the water table in an effort to dewater the area and improve LNAPL recovery. Based on the results reviewed in the quarterly status reports, recovery of hydrocarbons is improved at times of low water table. However, the disadvantage of this approach is that the rate of water extraction will increase, resulting in increased treatment costs.

4.3 Evaluate Cost Efficiency

As part of this task, Battelle reviewed operation and maintenance costs for the bioslurper system (Tetra Tech FW, 2004). The information provided included the following monthly cost elements for the period of January 2002 to January 2004 (a copy of this cost summary is provided in Attachment A):

- Direct costs (combined costs between Site 16F and Site 26)
 - Labor
 - Equipment
 - ODCs (e.g., temporary utilities, office supplies, phones, etc.)
 - Materials (e.g., PPE, filters, sampling supplies, etc.).
- Subcontract costs
 - Quarterly groundwater analysis
 - Monthly air analysis
 - Vapor-phase carbon supply/disposal.

Over the period of operation for which cost information was provided, the monthly O&M cost for the Site 16 bioslurper system is approximately \$14,800, assuming that the direct costs are split evenly

between the Site 16F and Site 26 operations. The primary contributor to the monthly cost is labor, which represents approximately 57% of the monthly costs. The second largest cost factor is the air and vapor analyses, which are an average of \$2,600 or 18% of the average monthly costs. Based on the information available to Battelle, it is understood that this analytical cost is fixed with respect to the amount of time the systems are operational each month. The costs for granular activated carbon (GAC) to treat the vapor stream and for GAC/hydrophobic clay to treat the aqueous stream vary with the amount of time the systems are operational; these costs average \$940 (6.3%) and \$1,300 (9.0%), respectively, of the operating cost.

Cost and hydrocarbon mass extraction data are both available for the period of January 2002 through May 2003. The quarterly mass extraction rate and operation costs are presented on Figure 8. The mass of hydrocarbons recovered was calculated by adding the mass in the three separate streams – LNAPL, aqueous, and vapor. Only two months of operation and costs were used to calculate the last data point shown in Figure 8, so both cost and recovery are lower for this period. From this figure it can be observed that operating costs typically range between \$40,000 and \$60,000 for a three-month period and hydrocarbon recovery tends to fluctuate between a few hundred and 1,500 lb in the same period.

The resulting cost per pound of TPH recovered per quarter was calculated to range from a low of \$47/lb to a high of about \$140/lb. The primary factor that appears to influence this cost is the mass of LNAPL recovered. The price per pound of hydrocarbons recovered drops significantly during times in which a greater mass of hydrocarbons was recovered. The cost per pound of TPH recovered was plotted against system operating time (Figure 9). It was not possible to distinguish individual costs associated with the O&M of Units 1 and 2, so the operating times of both Units 1 and 2 also were summed. Figure 9 appears to indicate that the longer the systems are operated in a quarter, the lower the cost per gallon of TPH recovered. However, more data should be collected to confirm this trend.

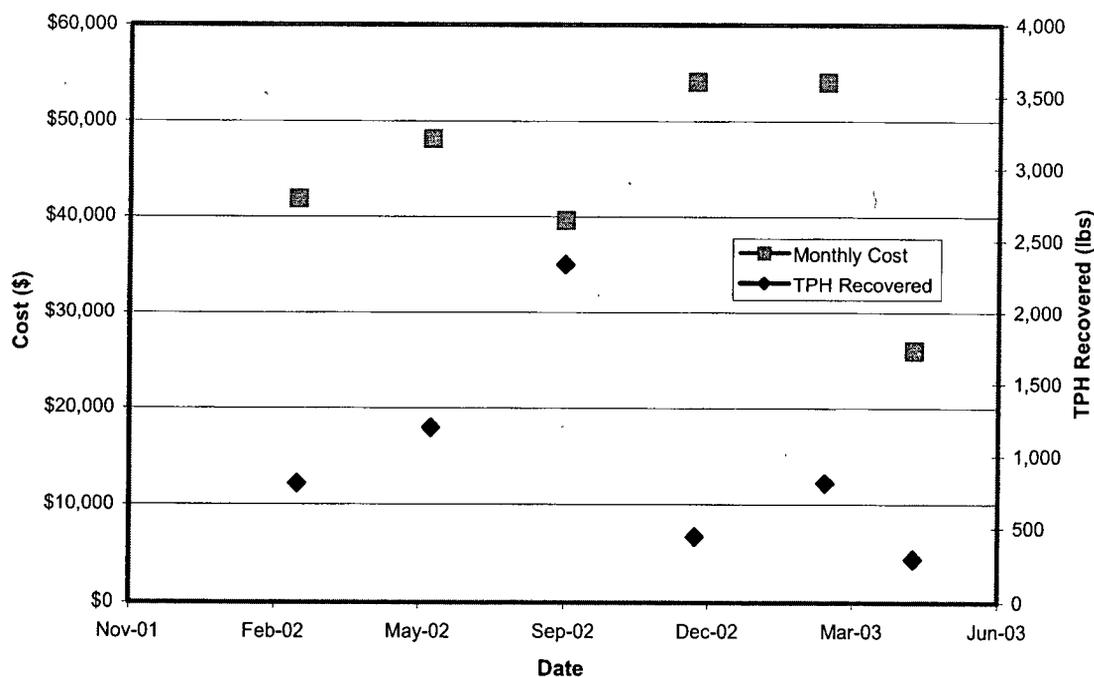


Figure 8. Approximate Quarterly Costs and Mass Recovery Rates

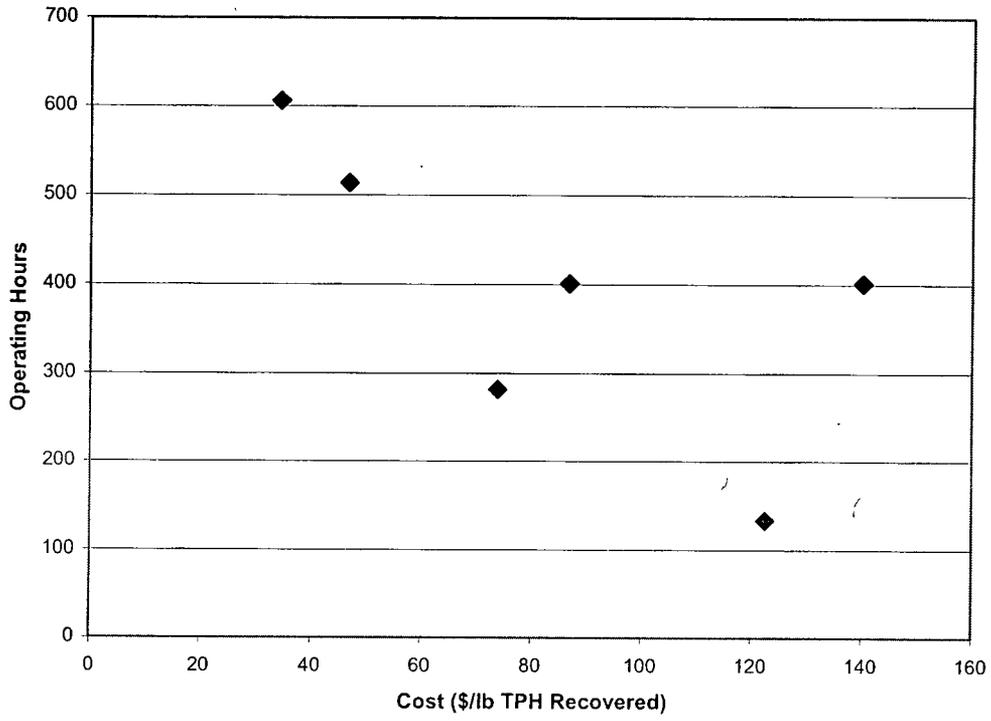


Figure 9. Comparison of Recovery Costs and Operating Hours

5.0 CONCLUSIONS AND RECOMMENDATIONS

Bioslurping is the best available technology for removal of LNAPL from the subsurface. However, the technology has its limitations. These include:

- Relatively high water and vapor treatment costs
- Channeling may occur in the subsurface
- As with all pump-and-treat technologies, it is not possible to remove all of the LNAPL in the subsurface, so a residual layer may periodically be observed in the extraction wells.

At some point it will no longer be cost-effective or practical to continue treatment with this technology, so alternative technologies should be considered. Therefore, the rate of hydrocarbon recovery and the decrease of LNAPL remaining in the wells must be closely evaluated as these above-mentioned recommendations are implemented. Also, a cost and technical analysis based on new data must be performed. If it is determined that the recovery of hydrocarbons is not significantly greater than what might be expected using a technology such as passive skimming (or bailing) and if it appears that the cost per recovered gallon of LNAPL is prohibitive, an argument can be made to modify the recovery approach based on technical impracticability of bioslurping at this time. Bioslurping is most effective at the beginning of the recovery phase; it can (and usually does) become cost-prohibitive later in the remediation phase after the majority of the hydrocarbon contamination has been extracted, degraded, or stripped from the subsurface. At this time, if a small volume of LNAPL remains in the well, a more passive approach such as skimming, absorbent socks, or bailing should be implemented.

An optimization strategy should be developed based on applicable remediation alternatives and cost-benefit analysis. At Site 16F, prior to discontinuing free product recovery, it must be demonstrated that LNAPL has been recovered to the maximum extent practicable. It is unclear at this time if LNAPL has been recovered to the maximum extent practicable (probably not) or that an alternative remediation technology would be more cost-effective or technically appropriate.

The following optimization strategy is recommended for Site 16F:

1. Install at least two additional wells in the area where the southeast portion of Building C-16 formerly was located (Figure 10). All of the site-specific documentation reviewed indicates that hydrocarbon contamination (and likely LNAPL) is present in this area; however, this area was never investigated due to the complications associated with installing wells inside or underneath Building C-16. Soil borings should be collected during the installation of these wells and carefully examined to detect the presence of hydrocarbon contamination and LNAPL.
2. Install at least three additional wells within the boundaries of the known LNAPL plume (Figure 10) to improve the rate of LNAPL recovery while operating the bioslurper system. If the number of wells located within the LNAPL plume is increased, thereby decreasing the distance between the wells, it may be possible to sustain higher recovery rates for a longer period and achieve site cleanup faster, which would result in lower overall costs.
3. Continue LNAPL recovery with the bioslurper system extracting from wells that contain LNAPL. Based on the analysis of the data reviewed by Battelle, it appears that hydrocarbon recovery (as LNAPL, in the vapor phase, and in the aqueous phase) is greater when the water table is low.

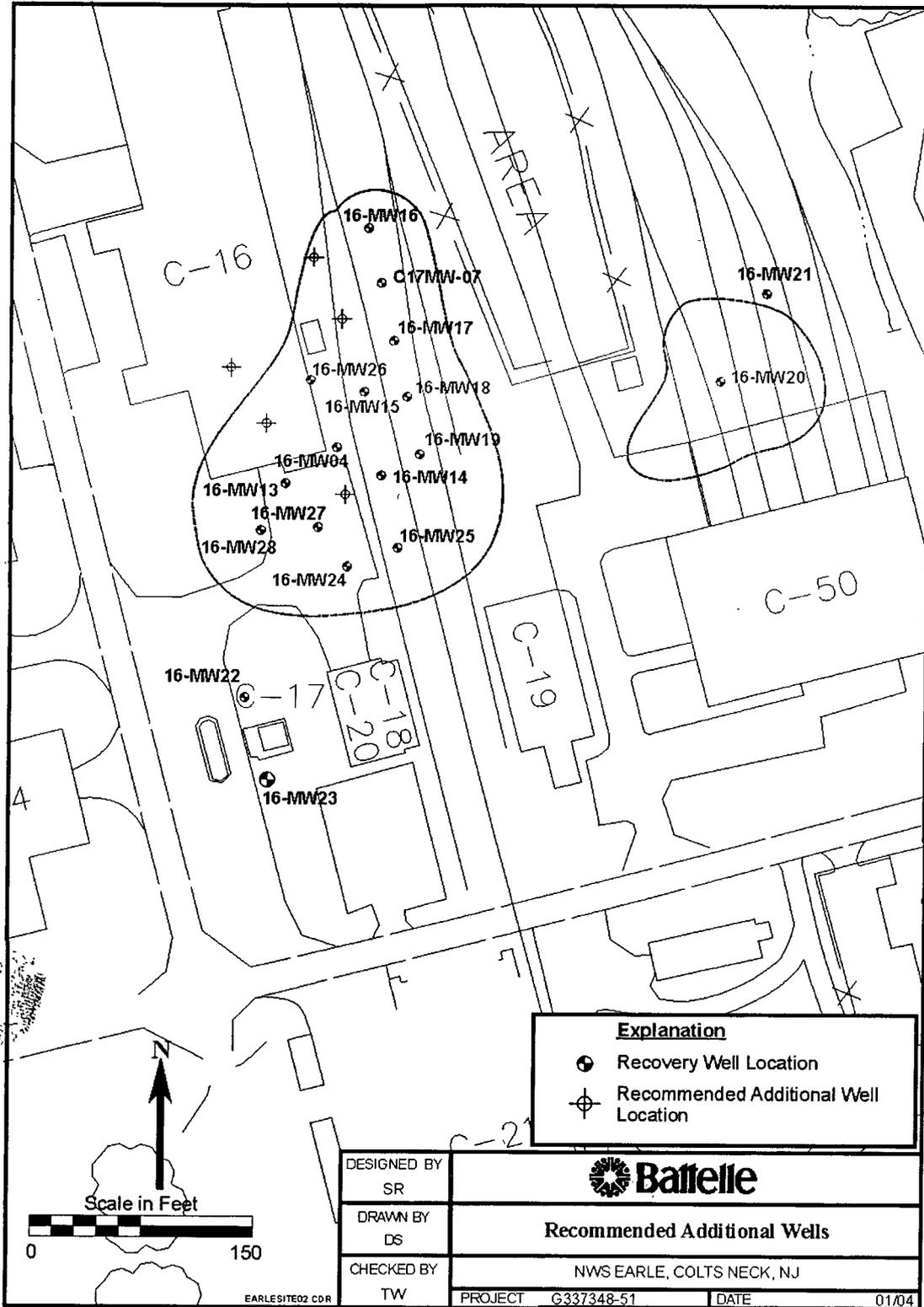


Figure 10. Locations of Additional Extraction Wells

Typically, at bioslurper sites, the water recovery (as well as associated water treatment costs) also is at times when the groundwater table is depressed; however, this relationship could not be confirmed from the operational data reviewed by Battelle.

4. Focus on operating the system when the water table is naturally depressed. Data indicate that the recovery of hydrocarbons will be greater while operating costs will remain the same (or less if a lower groundwater flowrate is realized).
5. Operate the system for a longer period of time each month (especially at times when the groundwater table is depressed). Based on cost data provided for the period January 2002 through January 2004, the water and vapor treatment costs made up a small percentage of the overall monthly project costs (on average about 15% total). Costs that should be relatively insensitive to operating time, such as water and vapor analyses and other direct costs (ODCs), make up an average of 24% of the average monthly costs. Therefore, if the system is operated for a longer period each month, provided that product recovery can be maintained, overall project costs will be minimized.
6. Place the drop tube at the oil/water interface. This may improve LNAPL recovery to some extent without increasing the groundwater extraction rate. A test also may be performed to determine if lowering the drop tube several feet beneath the oil/water interface can increase LNAPL recovery. The associated increase in water recovery also must be carefully monitored. A cost-benefit analysis may be performed to determine if there is substantial benefit to operating the system in this fashion.
7. Reevaluate aqueous and vapor treatment. The costs associated with treating these streams have reportedly been a major portion of the O&M costs. Hydrocarbon concentrations typically decrease significantly during operation of the bioslurper system. After the new extraction wells have been installed and extracted for a period, hydrocarbon concentrations in both the aqueous and vapor phases should decrease. Regulatory and treatment requirements should be reassessed to determine if treatment of these streams remains necessary based on new site and operating conditions. At many sites, it can be demonstrated that treatment of the water and vapor streams can be reduced or eliminated without adversely impacting the environment.

6.0 REFERENCES

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- Foster Wheeler Environmental Corporation. 2002c. *Bioslurper Status Report for June 2002 through August 2002*. Prepared for the Department of the Navy, Engineering Field Activity, Northeast, Naval Facilities Engineering Command. Contract No. N62472-99-D-0032. November 15.
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**Draft Optimization Study Report for Site 16F, rev2
Naval Weapons Station Earle, Colts Neck, New Jersey
April 2004**

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ATTACHMENT A

Site 16F and Site 26 O&M Costs
January 2002 through January 2004

CTO 49 Spreadsheet for Bioslurper & AS/SVE Monthly Operating Costs

	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02
Labor	\$14,135.43	\$12,246.66	\$21,403.11	\$10,939.21	\$18,133.61	\$16,007.24	\$7,419.74	\$11,464.94	\$23,163.48
Equip. Includes air monitors, misc. tools, Geoguard equip., etc.	\$0.00	\$2,620.86	\$373.65	\$1,013.43	\$384.25	\$373.65	\$0.00	\$0.00	\$185.50
ODCs Includes temporary utilities, office supplies, postage, reproduction, phones, etc	\$1,574.22	\$937.60	\$3,204.34	\$1,326.53	\$1,269.31	\$1,149.97	\$937.97	\$908.23	\$1,271.56
Material Includes PPE, filters, sampling supplies, etc.	\$0.00	\$989.80	\$0.00	\$0.00	\$396.45	\$80.06	\$5.15	\$50.05	\$590.36
Subcontracts									
Environmental Chemical Corp.									
Site 16F - Monthly water analysis	\$0.00	\$4,050.00	\$1,405.00	\$0.00	\$0.00	\$0.00	\$0.00	\$580.00	\$0.00
Chem-Trade									
Site 16F - Vapor-phase carbon supply/disposal	\$1,775.00	\$1,345.00	\$0.00	\$1,345.00	\$1,345.00	\$1,345.00	\$1,345.00	\$1,345.00	\$2,690.00
* Apollo Analytical									
Site 16F - monthly air analysis	\$955.30	\$722.00	\$640.00	\$0.00	\$0.00	\$3,060.00	\$0.00	\$0.00	\$0.00
Site 26 - monthly air analysis	\$955.30	\$722.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Lorco Petroleum									
Site 16F - Oil & oily water recycle/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$276.25
ChemTech									
Site 26 - Quarterly groundwater analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$1,800.00	\$2,067.50	\$0.00	\$0.00	\$1,710.00
Barnebey Sutcliff									
Site 16F - Carbon & clay supply/disposal	\$0.00	\$0.00	\$0.00	\$4,684.00	\$0.00	\$0.00	\$3,406.00	\$0.00	\$0.00
Site 26 - Vapor-phase carbon supply/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,754.00	\$0.00	\$0.00
* Air Toxics									
Site 16F - Monthly air analysis	\$0.00	\$0.00	\$2,265.00	\$2,265.00	\$2,261.25	\$2,261.25	\$1,665.00	\$1,665.00	\$1,665.00
Site 26 - Monthly air analysis	\$0.00	\$0.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00
Simalabs									
Site 16F - Monthly water analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$2,810.00	\$1,240.00	\$0.00	\$0.00	\$1,985.00
Danka Office Imaging									
Site 16F - Copier rental	\$0.00	\$0.00	\$0.00	\$340.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Analytical Labs									
Site 16F - Monthly water analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subcontract Total	\$3,685.60	\$6,839.00	\$5,030.00	\$9,354.10	\$8,936.25	\$10,693.75	\$9,890.00	\$4,310.00	\$9,046.25
Totals	\$19,395.25	\$23,633.92	\$30,011.10	\$22,633.27	\$29,119.87	\$28,304.67	\$18,252.86	\$16,733.22	\$34,257.15

* Costs per month are approximate for Site 16F and Site 26. Costs were actually invoiced on a quarterly basis

CTO 49 Spreadsheet for Bioslurper & AS/SVE Monthly Operating Costs

	Oct-02	Nov-02	Dec-02	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03
Labor	\$19,482.26	\$16,685.57	\$22,033.80	\$23,876.77	\$15,525.55	\$26,025.77	\$14,640.97	\$11,650.09	\$18,481.48	\$13,127.27
Equip. Includes air monitors, misc. tools, Geoguard eqp., etc.	\$0.00	\$1,408.25	\$2,570.98	\$848.00	\$0.00	\$0.00	\$1,196.25	\$777.08	\$0.00	\$1,152.75
ODCs Includes temporary utilities, office supplies, postage, reproduction, phones, etc.	\$725.68	\$1,127.85	\$1,666.50	\$2,771.92	\$2,315.83	\$3,522.90	\$1,944.82	\$1,677.92	\$1,526.25	\$1,664.74
Material Includes PPE, filters, sampling supplies, etc.	\$1,240.72	\$786.23	\$6,786.02	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subcontracts										
Environmental Chemical Corp. Site 16F - Monthly water analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Chem-Trade Site 16F - Vapor-phase carbon supply/disposal	\$0.00	\$1,345.00	\$0.00	\$0.00	\$1,447.24	\$0.00	\$1,447.24	\$0.00	\$0.00	\$2,894.48
* Apollo Analytical Site 16F - monthly air analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Site 26 - monthly air analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Lorco Petroleum Site 16F - Oil & oily water recycle/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,089.65	\$0.00	\$0.00	\$0.00	\$0.00
ChemTech Site 26 - Quarterly groundwater analysis	\$0.00	\$0.00	\$1,800.00	\$0.00	\$0.00	\$1,710.00	\$0.00	\$1,710.00	\$0.00	\$0.00
Barnebey Sutcliff Site 16F - Carbon & clay supply/disposal	\$4,394.00	\$3,833.00	\$0.00	\$4,109.00	\$0.00	\$2,343.00	\$3,822.00	\$0.00	\$0.00	\$3,406.00
Site 26 - Vapor-phase carbon supply/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
* Air Toxics Site 16F - Monthly air analysis	\$1,665.00	\$2,025.00	\$2,025.00	\$2,025.00	\$2,535.00	\$2,535.00	\$2,025.00	\$2,025.00	\$1,560.00	\$645.00
Site 26 - Monthly air analysis	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$720.00	\$0.00
Simalabs Site 16F - Monthly water analysis	\$0.00	\$580.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Danka Office Imaging Site 16F - Copier rental	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Analytical Labs Site 16F - Monthly water analysis	\$0.00	\$680.00	\$260.00	\$260.00	\$260.00	\$0.00	\$260.00	\$470.00	\$0.00	\$260.00
Subcontract Total	\$6,779.00	\$9,183.00	\$4,805.00	\$7,114.00	\$4,962.24	\$8,397.65	\$8,274.24	\$4,925.00	\$2,280.00	\$7,205.48
Totals	\$28,227.66	\$29,190.90	\$37,862.30	\$34,610.69	\$22,803.62	\$37,946.32	\$26,056.28	\$19,030.09	\$22,287.73	\$23,150.24

* Costs per month are approximate for Site 16F and Site 26. Costs were actually invoiced on a quarterly basis.

CTO 49 Spreadsheet for Bioslurper & AS/SVE Monthly Operating Costs

	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	
Labor	\$15,965.17	\$12,858.28	\$20,184.62	\$15,820.46	\$16,117.67	\$21,808.55	
Equip.	\$0.00	\$0.00	\$0.00	\$0.00	\$1,537.00	\$0.00	
Includes air monitors, misc tools, Geoguard equip , etc							
ODCs	\$1,896.01	\$1,967.95	\$1,773.74	\$1,937.50	\$1,879.42	\$2,251.66	
Includes temporary utilities, office supplies, postage, reproduction, phones, etc							
Material	\$0.00	\$0.00	\$0.00	\$0.00	\$532.50	\$0.00	
Includes PPE, filters, sampling supplies, etc.							
Subcontracts							
Environmental Chemical Corp.							
Site 16F - Monthly water analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Chem-Trade							
Site 16F - Vapor-phase carbon supply/disposal	\$1,447.24	\$1,447.24	\$1,447.24	\$1,447.24	\$0.00	\$0.00	
* Apollo Analytical							
Site 16F - monthly air analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Site 26 - monthly air analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Lorco Petroleum							
Site 16F - Oil & oily water recycle/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
ChemTech							
Site 26 - Quarterly groundwater analysis	\$0.00	\$720.00	\$0.00	\$0.00	\$1,710.00	\$0.00	
Barnebey Sutcliff							
Site 16F - Carbon & clay supply/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,385.00	
Site 26 - Vapor-phase carbon supply/disposal	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5,539.56	Inv. Received but not paid yet
* Air Toxics							
Site 16F - Monthly air analysis	\$1,665.00	\$1,665.00	\$1,665.00	\$2,025.00	\$1,800.00	\$0.00	
Site 26 - Monthly air analysis	\$720.00	\$720.00	\$720.00	\$720.00	\$0.00	\$0.00	
Simalabs							
Site 16F - Monthly water analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Danka Office Imaging							
Site 16F - Copier rental	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Analytical Labs							
Site 16F - Monthly water analysis	\$260.00	\$835.00	\$470.00	\$0.00	\$130.00	\$0.00	
Subcontract Total	\$4,092.24	\$5,387.24	\$4,302.24	\$4,192.24	\$3,640.00	\$8,924.56	
Totals	\$21,953.42	\$20,213.47	\$26,260.60	\$21,950.20	\$23,706.59	\$32,984.77	

* Costs per month are approximate for Site 16F and Site 26. Costs were actually invoiced on a quarterly basis.

The P-Card Web Solution - 6/9/2004

Battelle Memorial Institute

Order Report for Gerald L Tompkins

Order Date Range: 8/6/2002 to 6/8/2004

<u>Log No</u>	<u>Order Date</u>	<u>Supplier Name</u>	<u>Order Total</u>	<u>Order Tax</u>	<u>Order Freight</u>	<u>Date Promised</u>	<u>Date Received</u>
<u>Purchase Type</u>	<u>Qty</u>	<u>Item Description</u>	<u>Business Purpose</u>		<u>Work Package</u>		<u>Trans Amt</u>
V2977554937	4/22/2004	50MEGS.COM	\$44.90	\$0.00	\$0.00		
Misc Service	1	50 Megs.com			C101317101		\$24.95
Misc Service	1	50 Megs.com			C101317101		\$19.95
Comments:							
<hr/>							
V2977555131	6/1/2004	ABAG TRAINING CENTER	\$91.00	\$0.00	\$0.00		
PV Training	1	Online OSHA 8 Hour Refresher Course			C101317103		\$91.00
Comments:							
<hr/>							
V2977554018	10/24/2003	ACCURA ANALYTICAL LAB	\$750.00	\$0.00	\$0.00		
Misc Service	1	To cover analysis of samples as directed by Megan Gaberell			G48605041MS		\$750.00
Comments:							

V2977554157	12/2/2003	ACCURA ANALYTICAL LAB	\$90.00	\$0.00	\$0.00	
Misc Service	1	To cover analytical services as directed by Megan Gaberell				G48605071MS \$90.00

Comments:

V2977554708	3/16/2004	ACCURATE AIR	\$298.50	\$0.00	\$0.00	
Tech Supp	1	2" High Pressure (Discharge) Valve for Compressor	Compressor needs to be repaired for the system to operate.			G60150633MS \$88.20
Tech Supp	1	3 1/2" Intake Valve for Compressor	Compressor needs to be repaired for the system to operate.			G60150633MS \$210.30

Comments:

V2977555168	6/4/2004	ACE GLASS	\$125.68	\$0.00	\$0.00	
Tech Supp	3	Filter Column-Michel-Miller				C355BSTIERS47 \$61.38
Tech Supp	6	Connectors Tubing Not & Ferrule				C355BSTIERS47 \$27.06
Tech Supp	6	Connectors Tubing				C355BSTIERS47 \$27.06
Tech Supp	1	Tubing, TFE Spaghetti				C355BSTIERS47 \$10.18

Comments:

V2977555171	6/4/2004	ACE HARDWARE	\$5.15	\$0.33	\$0.00		
Tech Supp	1	Epoxy Glue	Needed in sample container construction.		G00462975		\$3.99
Tech Supp	1	Sand Paper	Needed in sample container construction.		G00462975		\$0.83

Comments:

V2977555135	6/1/2004	ACE HARDWARE	\$366.00	\$0.00	\$0.00		
Tech Supp	350	3/4" PVC Pipe	To keep the employees cool.		G48606012P		\$350.00
Tech Supp	6	3/4" Elbows	To keep the employees cool.		G48606012P		\$6.00
Tech Supp	1	Shut off valve	To keep the employees cool.		G48606012P		\$1.00
Tech Supp	9	Mist System Heads	To keep the employees cool.		G48606012P		\$9.00

Comments:

V2977554945	4/26/2004	AIR TOXICS	\$48.00	\$0.00	\$0.00		
Tech Supp	25	SKC #226-01 Charcoal Tubes	Air sampling analysis.		G469137120M		\$25.00
Tech Supp	20	Modified Vost Tube	Air sampling analysis.		G469137120M		\$20.00
Tech Supp	3	Suma Canister For TO15 (Collection time 6 hours)	Air sampling analysis.		G469137120M		\$3.00

Comments:

V2977553003	2/5/2003	AIRGAS WEST GLENDALE CA	\$65.00	\$0.00	\$0.00	3/26/2003
Misc Service	1	To cover the purchase of gas cylinders required for use at JPL, Pasadena, CA 91103	Required for sampling event.		G486009T6	\$65.00

Comments: Keep PO Open and note Battelle staff will make purchases and required and directed by David Clexton program manager Task Order #009.

V2977554736	3/19/2004	ALL SAFE STORAGE	\$600.00	\$0.00	\$0.00	3/25/2004
Misc Service	1	To cover the rental of storage unit for 8 months.	Required to store field supplies.		G482023EPAMS	\$600.00

Comments:

V2977555085	5/19/2004	AMSOIL	\$156.25	\$0.00	\$0.00	
Chem/Hazmatl	1	Synthetic DC Oil	Operaiton and maintenance supplies.		G48606012P	\$156.25

Comments:

V2977554489	2/10/2004	ANDY GUMP	\$2.00	\$0.00	\$0.00	2/26/2004
Misc Service	1	To cover the rental of portable restroom	Required on HASP.		G486009T9	\$1.00
Misc Service	1	To cover the rental of a temporary fence, at JPL field site, Pasadena, CA	Required on HASP.		G486009T9	\$1.00

Comments: Keep PO Open

V2977554982	5/3/2004	APPALACHIAN PTTC	\$50.00	\$0.00	\$0.00	
PV Training	1	Registration for Horizontal Drilling Course for Phil Jagucki on May 27.				C101317103 \$50.00

Comments:

V2977553041	2/12/2003	ARCADIA WEEKLY	\$171.00	\$0.00	\$0.00	
Misc Service	1	To cover printing legal notice (Notice of Public Meeting) in the Arcadia Weekly, on 10/31/02.	Required by client.			G486009T4 \$171.00

Comments:

V2977554493	2/10/2004	ARROWHEAD WATER	\$1.00	\$0.00	\$0.00	4/15/2004
Misc Service	1	Provide water to field site at Pasadena, CA	Required on HASP.			G486009T9 \$1.00

Comments: Account No. 0025516402 Pasadena, CA
Keep PO Open

V2977552566	9/24/2002	ARROWHEAD WATER	\$1.00	\$0.00	\$0.00	9/25/2002
Misc Service	1	To cover rental of water cooler and bottled				G486031IAS \$0.50

water for field trailer located at Camp
Pendleton, CA 92055

G48601611 \$0.50

Comments: Keep PO open. Camp Pendleton, CA. Phone 1-800-950-9393 Account Number 0019538784.

V2977552889	1/2/2003	ARROWHEAD WATER	\$1.00	\$0.00	\$0.00	1/15/2003
Misc Service	1	To cover the rental of Hot/Cold Water dispenser and purchase of cups drinking water and distilled water.	Required on HASP.		G48602521OMMS	\$1.00

Comments: Account Number is 0022271159. Phone 1-800-950-9393. Long Beach, CA

V2977553280	4/21/2003	ASHTREAD TECHNOLOGIES	\$1,000.00	\$0.00	\$0.00	6/11/2003
Misc Service	1	RENTAL OF METONE 237B PARTICLE COUNTER ONE MONTH RENTAL			G004225EX3031	\$1,000.00

Comments:

V2977554837	4/8/2004	B&W INDUSTRIAL SALES	\$1.00	\$0.00	\$0.00	4/29/2004
Misc Service	1	To cover the purchase of miscellaneous plumbing for materials required for use at JPL, Pasadena, CA	Required for assembly of field equipment.		G486009T9	\$1.00

Comments: Keep PO Open.

V2977555162	6/4/2004	BEARD EQUIPMENT	\$550.00	\$0.00	\$0.00	
Misc Service	1	To cover the rental of tool cat for one week on Site at Egling AFB, FL	Remove to move field equipment around field site.		G00462975	\$550.00

Comments:

V2977555111	5/27/2004	BELTZ PORTABLE TOILETS	\$150.00	\$0.00	\$0.00	
Tech Supp	2	rental of porta jons			G48606012SRV	\$150.00

Comments: RHONDA: KEEP PO OPEN, FOR 6 MONTHS

V2977555165	6/4/2004	BEN MEADOWS	\$242.10	\$0.00	\$45.00	
Tech Supp	2	Ekelkamp 1 Piece Edelman Auger Sandy Soils	Required for sampling event.		G00462975	\$197.10

Comments:

V2977553293	4/23/2003	BFI	\$50.00	\$0.00	\$0.00	6/11/2003
Misc Service	1	To cover expenses for a 30 cubic yard trash container 05/01/03 through 07/31/03			G60170103SUBS	\$50.00

Comments: Keep PO Open. (800) 331-0988 Ext. 152
Account Number 1-0341-5554431

V2977553419	5/27/2003	BFS PETROLEUM PRODUCTS, INC	\$1.25	\$0.00	\$0.00	6/11/2003
Misc Service	1	To cover the purchase of diesel fuel to power drilling rig at the mountaineer power plant, New Haven, WV	To keep field site operational.		G60170103SUBS	\$1.25

Comments:

V2977554386	1/16/2004	BIG WATER MARINA	\$1,680.00	\$0.00	\$0.00	3/25/2004
Misc Service	1	To cover the rental of Poontoon Boat for 2 to 3 weeks.	Required for sediment sampling event.		G482023EPAMS	\$1,680.00

Comments: Keep PO open for possible additional rental charges.

V2977554859	4/12/2004	BLUE OCEAN TACKLE	\$89.97	\$0.00	\$0.00	
Tech Supp	3	Polyform A-Series Bouy's (White)	Bouy's used to hold sample deployments.		G482023EPAMS	\$89.97

Comments:

V2977555195	6/8/2004	BOISE	\$456.24	\$0.00	\$0.00	
Office Supp	16	Standard Green Handing Folders	Required for client reports/on site for client.		G486009T4	\$223.04

Office Supp	20	Hanging Folders	Required for client reports/on site for client.	G486009T4	\$61.60
Office Supp	20	Hanging Folders	Required for client reports/on site for client.	G486009T4	\$171.60

Comments:

V2977553830	8/27/2003	BOISE	\$324.00	\$0.00	\$0.00	9/10/2003
Office Supp	1	High Speed Plain Paper Laser Fax with Copier			C101317109	\$239.00
Office Supp	1	Replacement Toner			C101317109	\$23.00
Office Supp	1	Replacement Drum Unit			C101317109	\$62.00

Comments:

V2977555061	5/14/2004	BOISE	\$130.35	\$0.00	\$0.00	
Office Furn	3	Coat Racks			C101317109	\$130.35

Comments:

V2977555090	5/20/2004	BOISE	\$17.64	\$0.00	\$0.00	
Office Supp	3	Sharpie Fine Point Markers	Office supplies.		G48606012P	\$17.64

Comments:

V2977555089	5/20/2004	BOISE		\$24.00	\$0.00	\$0.00		
Office Supp		3 Colored folders, 3 hole punch, 2 pocket multi	Office supplies.				G48606016P	\$24.00

Comments:

V2977555084	5/19/2004	BOISE		\$440.39	\$0.00	\$0.00		
Office Supp		1 HP-1300 Printer					C101317109	\$426.95
Cptr Equip		1 HP-IEEE Cable					C101317109	\$13.44

Comments:

V2977555117	5/28/2004	BRADLEYS PLASTIC BAG CO.		\$110.00	\$0.00	\$0.00		
Tech Supp		1000 12 x 12 zipper bags, 2 mil					G482019MS	\$110.00

Comments:

V2977555130	6/1/2004	CARBTRON		\$1,095.00	\$0.00	\$0.00		
Tech Supp		1 55-Gallon 300lb Clay/Coal Mixture	Required to perform water purification.				G60150930MAT	\$1,095.00

Comments:

V2977555125	6/1/2004	CDW	\$286.99	\$0.00	\$14.99	
Cptr Sftwr	1	Adobe Acrobat Standard				C101317109 \$272.00

Comments:

V2977555114	5/27/2004	CDW	\$1,632.00	\$0.00	\$0.00	
Office Supp	6	ACROBAT 6.0, STANDARD				C101317109 \$1,632.00

Comments:

V2977555193	6/8/2004	CDW	\$1,582.00	\$0.00	\$0.00	
Office Supp	1	HP Laser Jet 3500				C101317109 \$788.00
Office Supp	1	HP Scan Jet 8250				C101317109 \$780.00
Office Supp	2	USB Cable				C101317109 \$14.00

Comments:

V2977555107	5/25/2004	CHARTWELL INFORMATION	\$295.00	\$0.00	\$0.00	
PV Training	1	To cover on line training course/seminar for solid waste industry overview 2004				C101317103 \$295.00

Comments:

V2977555097	5/21/2004	CITY BLUE PRINT	\$600.00	\$0.00	\$0.00	
Tech Supp	1	Rental of Trimble GPS Back Pack Unit with all Accessories.	GPS location of test plots.		G00462950	\$600.00

Comments:

V2977552564	9/24/2002	COLLINS COMPUTER	\$19.95	\$0.00	\$0.00	11/26/2002
Misc Service	1	To cover the internet services for Department 3171 leased computer located at 29 Palms, CA			C117317101	\$19.95

Comments: Keep PO Open

V2977555189	6/4/2004	COLTON EQUIPMENT	\$1,353.82	\$0.00	\$0.00	
Misc Service	1	Repair on Al-Jon Logger	Operation and maintenance service.		G48606014SRV	\$1,353.82

Comments:

V2977554284	12/29/2003	COLUMBUS FASTNERS	\$34.17	\$2.16	\$0.00	
Tech Supp	8	3/8-16 x 3 Ss (Full Thread) Bolt			0041A7162	\$4.56

Tech Supp	8	SS 3/8-16 Nut		0041A7162	\$0.58
Tech Supp	8	3/8 SS Lock Washers		0041A7162	\$0.31
Tech Supp	16	SS 3/8 Flat Washer		0041A7162	\$0.52
Tech Supp	40	1/4-20 x 3 SS (Full Thread) Bolt		0041A7162	\$10.30
Tech Supp	40	V4-20 SS Hex Nut		0041A7162	\$1.54
Tech Supp	40	SS Lock Washer		0041A7162	\$0.62
Tech Supp	80	1/4 SS Flat Washer		0041A7162	\$1.47
Tech Supp	16	1/4 - 20 x 2 SS Flat Socket Cap Screw		0041A7162	\$11.20
Tech Supp	16	1/2 - 20 Ss Hex Nut		0041A7162	\$0.62
Tech Supp	16	1/4 SS Flat Washer		0041A7162	\$0.29

Comments:

V2977554892	4/19/2004	COLUMBUS STEEL DRUMS	\$30.00	\$0.00	\$0.00
Tech Supp	6	55 Gallon Drum Rings Outside Lever Lock	Required to seal drums of soil	G482023EPAMS	\$30.00

Comments:

V2977552897	1/3/2003	CORD CAMERA CENTERS	\$11.15	\$0.00	\$0.00
Tech Supp	1	Photo Finishing	Photo's of site.	G48603911	\$11.15

Comments:

V2977553673	8/5/2003	CORP EXPRESS	\$36.48	\$0.00	\$0.00	
Office Supp	8	Ink pens, red ball point, medium	Office Supplies			G48606015P \$13.50
						G48606016P \$22.98

Comments:

V2977554172	12/3/2003	CORPORATE EXPRESS	\$83.60	\$0.00	\$0.00	
Office Supp	20	Transparent tape 1 in x 2592 3 in Core	Need tape for packing supplies and other office needs.			G48606016P \$69.60
Office Supp	20	Transparent tape 3/4 in X 1296 1 in Core	Need tape for packing supplies and other office needs.			G48606016P \$14.00

Comments:

V2977553904	9/18/2003	CORPORATE EXPRESS	\$1,393.95	\$0.00	\$0.00	9/24/2003
Office Supp	2	Developer/5M Printer (Black)				C101317101 \$335.00
Office Supp	2	Developer/5M (Color)				C101317101 \$900.00
Office Supp	1	Toner/Cyan				C101317101 \$32.00
Office Supp	1	Toner/Yellow				C101317101 \$32.00

Office Supp	1	Toner/Magenta			C101317101	\$32.00
Office Supp	2	Toner/Black			C101317101	\$15.00
Office Supp	1	Coating Kit			C101317101	\$47.95

Comments:

V2977553771	8/19/2003	CORPROATE EXPRESS		\$70.00	\$0.00	\$0.00	
Tech Supp	20	Soap, Liquid, Hand Soap	Cleaning.				
					G48606012P	\$35.00	
					G48606014P	\$17.50	
					G48606015P	\$17.50	

Comments:

V2977555055	5/18/2004	CP MANUFACTURING		\$513.00	\$0.00	\$0.00	
Tech Supp	3	Can Holder Basket	For fluid and sand to drain.				
					G48606012P	\$513.00	

Comments:

V2977553333	5/6/2003	CULLIGAN		\$348.00	\$0.00	\$0.00	
Tech Supp	4	Green sand media					
					G482012EPA7A	\$348.00	

Comments:

V2977554214	12/10/2003	DELL	\$362.84	\$22.94	\$0.00	
Cptr Equip	2	Spare Battery for Dell Notebook				C101317109 \$339.90

Comments:

V2977553043	2/13/2003	DELTA RUBBER	\$215.80	\$0.00	\$0.00	
Tech Supp	1	Goodyear Multi Band Belt		Required maintenance item for SVE system.		G6015013AS3 \$164.38
Tech Supp	1	Goodyear Multi Band Belt		Required maintenance item for SVE system.		G6015013AS4 \$51.42

Comments:

V2977553858	9/4/2003	DELTA RUBBER CO	\$31.40	\$0.00	\$0.00	
Tech Supp	4	Bando Belts				G6015013AS4 \$31.40

Comments:

V2977555079	5/14/2004	DHL ANALYTICAL	\$70.00	\$0.00	\$0.00	
Misc Service	1	Perform analysis on samples as directed by Sandip Chattopadhyay				C355BSTIERS49A \$70.00

Comments:

V2977553613	7/18/2003	DON'S JONS	\$90.00	\$0.00	\$0.00	7/30/2003
Misc Service	1	TO COVER THE RENTAL OF ONE PORTABLE TOILET AND ONCE A WEEK CLEANING SERVICES ON SITE IN QUANTICO VA, FOR THE THE PERIOD MONDAY, JULY 21, 2003 THROUGH AUGUST 1, 2003	Required on HASP.		G48605071MS	\$90.00

Comments:

V2977555093	5/20/2004	DR MILLER	\$327.00	\$0.00	\$0.00	
Office Supp	1	Mid Back Black Office Chair			C101317109	\$327.00

Comments:

V2977555139	6/2/2004	DUNDAS DATA VISUALIZATION	\$699.00	\$0.00	\$0.00	
Cptr Sftwr	1	Dundas Chart for Net ASP Net Professional Edition			C101317109	\$699.00

Comments:

V2977555118	5/28/2004	EARTH FRIENDLY FINDS	\$228.00	\$0.00	\$0.00	
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Tech Supp	1	case quantity ice packs			G482019MS	\$228.00
Comments:						
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V2977555133	6/1/2004	EFR ENVIRONMENTAL SERVICES	\$388.55	\$0.00	\$0.00	
Misc Service	1	To cover profiling manifest and disposal of nonhazardous purge water from Camp Pendleton, CA 92055	Required for health and safety compliance.		G486044BUS	\$388.55
Comments:						
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V2977554446	1/30/2004	EMA EGAN MCALLISTER ASSOCIATES	\$930.70	\$0.00	\$0.00	
Misc Service	1	To cover up to 10 Hous for technical support for 11 x 05 mm at the MCAGCC Twentynine Palms, CA 92278			G48606013B4	\$930.70
Comments:						
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V2977555095	5/20/2004	ENVIRO TECH	\$205.70	\$0.00	\$0.00	
Tech Supp	2	200 Disposable Nylon Bailer Twine	Required for quarterly sample collection.		G6015013LTM1	\$173.00
Tech Supp	3	1.5" x 36" Weighted Bailers	Required for quarterly sample collection.		G6015013LTM1	\$32.70
Comments:						

V2977553805	8/26/2003	ENVIRO-TEC	\$2,320.00	\$0.00	\$0.00	
Tech Supp	80	Pemco Manhole 8" x 7.5" (skirt) Water Tight with 2 Stainless Steel Lock Down Bolts				G60150631MS \$2,320.00

Comments:

V2977555004	5/10/2004	ENVIROTECH	\$2.00	\$0.00	\$0.00	
Tech Supp	2	Teflon Sheets	Required for sampling event.			G00462951 \$2.00

Comments:

V2977554523	2/13/2004	ENVIROTECH	\$39.00	\$0.00	\$0.00	
Tech Supp	2	N-Dex Gloves Large				G48603911 \$39.00

Comments:

V2977554863	4/12/2004	EQUIPCO	\$115.00	\$0.00	\$0.00	
Tech Supp	1	Level 1 Auto Cal 500 mL Solution	Required for sampling event.			G48603911 \$50.00
Tech Supp	1	Ph 7 Buffer 500 mL	Required for sampling event.			G48603911 \$65.00

Comments:

V2977555116	5/27/2004	EWAVES WIRELESS	\$15.00	\$0.00	\$0.00	
Repair/Maint	1	to cover repairing/transfer programming data, in nextel phone				C117317101 \$15.00

Comments:

V2977552569	9/24/2002	FALLBROOK REFUSE SERVICES	\$1.00	\$0.00	\$0.00	9/25/2002
Misc Service	1	To cover the rental and disposal fee's for one 4 cu yard dumpster at Camp Pendleton, CA				G48601611 \$0.50

G486031IAS \$0.50

Comments: Keep PO Open

V2977555149	6/3/2004	FISHER SCIENTIFIC	\$39.24	\$0.00	\$0.00	
Tech Supp	1	Aroclor 1232, Ultra pack 4 x 1 mL (in Hexane)				C355BSTIERS49A \$39.24

Comments:

V2977554975	5/3/2004	FORBERG SCIENCE	\$163.70	\$0.00	\$0.00	
Tech Supp	10	1/4 Body x 1/4 Tube Non-Valved Nipple Need for pore water sampling.				G482023EPAMS \$163.70

Comments:

V2977554824	4/6/2004	FORBERG SCIENTIFIC	\$123.84	\$0.00	\$0.00	
Tech Supp	6	7/8" x 7/8" Tube Union	PUF holders.		G482023EPAMS	\$105.84
Tech Supp	18	7/8" Teflon Furvel	PUF holders.		G482023EPAMS	\$18.00

Comments:

V2977554810	4/5/2004	FORBERG SCIENTIFIC	\$50.28	\$0.00	\$0.00	
Tech Supp	4	1/8 Bulkhead Union	Collection of lake volitalization.		G482023EPAMS	\$18.84
Tech Supp	8	1/4 Bulkhead Union	Collection of lake water volitalization.		G482023EPAMS	\$31.44

Comments:

V2977554463	2/4/2004	FORBERG SCIENTIFIC	\$180.00	\$0.00	\$0.00	
Tech Supp	12	1/4" Male NPT x 1/4 Tubs, SS	Required for sediment equipment assembly.		G482023EPAMS	\$180.00

Comments:

V2977555137	6/2/2004	FORESTRY	\$123.00	\$0.00	\$0.00	
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Tech Supp	6	Stainless Steel Scoop	Soil sampling.	G00462950	\$123.00
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Comments:

V2977555127	6/1/2004	FORESTRY	\$51.00	\$0.00	\$0.00
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Tech Supp	12	12" Spoon - Sampling	Burn sampling.	G00462974	\$51.00
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Comments:

V2977555122	5/28/2004	FORESTRY SUPPLIERS	\$110.20	\$0.00	\$0.00
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Tech Supp	1	Keson 100 m/300 ft Tape	Required for field sampling.	G00462974	\$72.50
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Tech Supp	2	Rite in the Rain Notebook	Required for field sampling.	G00462974	\$26.70
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Tech Supp	2	Vinyl Stake Wire Flags	Required for field sampling.	G00462974	\$11.00
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Comments:

V2977553600	7/16/2003	FORRESTRY SUPPLIES	\$1,398.95	\$0.00	\$0.00	7/30/2003
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Tech Supp	1	25-Person Indoor/Outdoor Kit		C117317101	\$33.95
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Tech Supp	1	Niagara Nutating Disc Meter, 2" opening)		C117317101	\$1,365.00
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Comments:

V2977554785	4/2/2004	FOURNIER RUBBER	\$860.00	\$0.00	\$0.00	5/13/2004
Tech Supp	100	1" Tank Trans	Bioslurping.		G469137120M	\$383.00
Tech Supp	100	2" Tank Tansfer Hose	Bioslurping.		G469137120M	\$477.00

Comments:

V2977555142	6/2/2004	FOURNIER RUBBER	\$383.00	\$0.00	\$0.00	
Tech Supp	100	Tankporter Hose 1" 200 PSI			N00600920	\$383.00

Comments:

V2977552859	12/11/2002	FRANKLIN COVEY	\$38.90	\$0.00	\$0.00	
Office Supp	1	Compact Seasons Daily Pages Jan 03 - Dec 03			C101317109	\$29.95
Office Supp	1	Classic Sorage Case - Burgundy			C101317109	\$8.95

Comments:

V2977555108	5/25/2004	GB HOLISTON	\$263.00	\$0.00	\$0.00	
Tech Supp	1	Air flow meter ametek rotron	Required for field work.		G60150930	\$263.00

Comments:

V2977553184	4/1/2003	GE CAPITAL	\$178.62	\$0.00	\$0.00	4/9/2003
Misc Service	1	TO COVER RENTAL OF ONE 8' X 20' FIELD TRAILER			G486009T6	\$178.62
Comments: TRAILER LOCATED AT THE NASA FACILITY, JET PROPULSION LAB IN PASADENA CA. FOR THE PERIOD OF MARCH 1, 2003 - FEBRUARY 28, 2004						

V2977554206	12/10/2003	GKN SINTERED METALS	\$350.00	\$0.00	\$0.00	
Tech Supp	3	5 Micro Pore 3/8" outside diameter, 0.25" inside diameter 2'length			N00582502	\$150.00
Tech Supp	2	20 Micro Pore 1 outside diamter, 0.84" inside diameter 3" length			N00582502	\$200.00
Comments:						

V2977554533	2/16/2004	GORILLA RENTALS	\$100.00	\$0.00	\$0.00	5/26/2004
Misc Service	1	To cover the rental of trailers, deleanotors used at JPL, Pasadena, CA	Required for traffic control at JPL.		G486009T9	\$100.00
Comments: Keep PO Open						

V2977555164	6/4/2004	GRAINGER	\$691.79	\$0.00	\$0.00	
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Tech Supp	1	Stanley 220-Piece Tool Set	Operation and maintenance supplies.	G48606013P	\$305.10
Tech Supp	1	Stanley Fatmax Screwdrivers	Operation and maintenance supplies.	G48606013P	\$19.10
Tech Supp	1	DeWalt 24 Volt Reciprocating Saw	Operation and maintenance supplies.	G48606013P	\$359.10
Tech Supp	1	5-Piece Multi-Purpose Reciprocating	Operation and maintenance supplies.	G48606013P	\$8.49

Comments:

V2977555044	5/17/2004	GRAINGER	\$192.50	\$0.00	\$0.00
Tech Supp	25	Encompass Goggle (Grey Lens)	Required on HASP.	G48606012P	\$96.25
				G48606014P	\$96.25

Comments:

V2977553936	9/25/2003	GRAINGER	\$56.44	\$0.00	\$0.00
Tech Supp	2	Jack stands	Required by client.	G48606014P	\$56.44

Comments:

V2977555132	6/1/2004	GRAINGER	\$332.10	\$0.00	\$0.00
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Tech Supp	1	Bed Tool Box - Truck				C117317101	\$332.10
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Comments:

V2977555140	6/2/2004	GRAINGER	\$337.28	\$0.00	\$0.00		
Tech Supp	6	Manometers				N00600920	\$36.66
Tech Supp	17	ABS Well Seals 4 x 1				N00600920	\$180.20
Tech Supp	1	Magnehelic 0 to 1" Water				N00600920	\$60.21
Tech Supp	1	Magnehelic 0 to 4" Water				N00600920	\$60.21

Comments:

V2977555105	5/14/2004	GRAINGER	\$158.10	\$0.00	\$0.00		
Tech Supp	2	2.4 AMP Hour Battery pack for drill		Required to complete field work.		G48606013P	\$158.10

Comments:

V2977555102	5/12/2004	GRAINGER	\$30.98	\$0.00	\$0.00		
Tech Supp	1	Plug in Outlet		Required on project.		G48606013P	\$30.98

Comments:

V2977555103	5/12/2004	GRAINGER	\$99.88	\$0.00	\$0.00	
Tech Supp		2 Flux Cored Welding Wire 10lb Spool		Required for field work.		G48606012P \$49.94
						G48606014P \$49.94

Comments:

V2977555104	5/6/2004	GRAINGER	\$130.50	\$0.00	\$0.00	
Tech Supp		1 Electric Drill 1/2" Chuck		Required for field work.		G48606013P \$130.50

Comments:

V2977555182	6/7/2004	GRAINGER	\$55.80	\$0.00	\$0.00	
Tech Supp		36 Line Piercing and Charging Valves		Operation and maintenance supplies.		G48606013P \$55.80

Comments:

V2977555183	6/7/2004	GRAINGER	\$117.00	\$0.00	\$0.00	
Tech Supp		3 8-Mil N-Dex Plus, Low Powder (Med.)		Health and safety supplies.		G48606013P \$39.00
Tech Supp		3 8-Mil N-Dex Plus, Low Powder (Lg.)		Health and safety supplies.		G48606013P \$39.00
Tech Supp		3 8-Mil N-Dex Plus, Low Powder (XL.)		Health and safety supplies.		G48606013P \$39.00

Comments:

V2977555187	6/7/2004	HACH	\$72.00	\$0.00	\$0.00		
Tech Supp		1 Stablcal Turbidity Standard 1000 mL	Required for sample preparation.		G482019ENGLW		\$72.00

Comments:

V2977555025	5/14/2004	HELIWORKS, INC	\$1,850.00	\$0.00	\$0.00		
Misc Service		1 To cover fly over services for helicopter over a controlled burn area, at Eglin AFB, Pensacola, FL 32504	Required for health and safety reasons.		G00462951		\$1,850.00

Comments:

V2977554828	4/7/2004	HOFFMAN POWER EQUIPMENT	\$14.85	\$0.00	\$0.00		
Tech Supp		1 Fuel Meter Assembly for Honda EU3000 Generator	Maintenance of equipment.		G48603911		\$14.85

Comments:

V2977555170	6/4/2004	HOME DEPOT	\$141.81	\$8.98	\$0.00		
Tech Supp		1 1" Wooden Dowel Rod x 36"	Required to assembly field equipment.		G00462975		\$3.79

Tech Supp	2	Wooden Dowel Road 5/8" x 48"	Required to assembly field equipment.	G00462975	\$3.98
Tech Supp	1	33 Gallon Glad Trash Bags	Required to assembly field equipment.	G00462975	\$9.97
Tech Supp	50	Fittings	Required to assembly field equipment.	G00462975	\$13.50
Tech Supp	1	Permanent Marker	Required to assembly field equipment.	G00462975	\$0.99
Tech Supp	1	2-Pk Sharpie	Required to assembly field equipment.	G00462975	\$1.42
Tech Supp	2	Twine	Required to assembly field equipment.	G00462975	\$7.94
Tech Supp	2	250' Wind Twine	Required to assembly field equipment.	G00462975	\$9.92
Tech Supp	2	5 in. Trowel	Required to assembly field equipment.	G00462975	\$5.54
Tech Supp	1	Hand Trowel	Required to assembly field equipment.	G00462975	\$4.97
Tech Supp	1	Transplanter	Required to assembly field equipment.	G00462975	\$4.97
Tech Supp	1	Glove	Required to assembly field equipment.	G00462975	\$6.96
Tech Supp	1	Ear Plugs	Required to assembly field equipment.	G00462975	\$9.97
Tech Supp	1	Latex Gloves	Required to assembly field equipment.	G00462975	\$3.97
Tech Supp	1	First Aid Kit	Required to assembly field	G00462975	\$19.86

			equipment.			
Tech Supp	2	Shovel	Required to assembly field equipment.	G00462975		\$19.94
Tech Supp	1	Play Sand	Required to assembly field equipment.	G00462975		\$5.14

Comments:

V2977553027	2/10/2003	HUMMING BIRD.COM	\$150.00	\$0.00	\$0.00	
Cptr Sftwr	1	To cover total maintenance fee for Humming Bird Volume License fee for desktop connectivity software. License #S712651-00			C117317101	\$150.00

Comments:

V2977555110	5/27/2004	HUMMINGBIED	\$34.95	\$0.00	\$0.00	
Tech Supp	1	temp & speed sensor, for 200dx dual beam			C117317101	\$34.95

Comments:

V2977555175	6/7/2004	HUSTLER CONVEYOR	\$1,580.00	\$0.00	\$0.00	
Tech Supp	1	Replacement - FEed conveyor belt for the ST-100E Shredder at RPC	Required to process light steel at RPC.	G48606014P		\$1,580.00

Comments:

V2977555174	6/7/2004	IE	\$918.00	\$0.00	\$0.00		
Tech Supp	1	Grundfus Redi Flo II MPI	Required for sampling event.		G6015013LTM1		\$918.00

Comments:

V2977555161	6/3/2004	IE	\$43.25	\$0.00	\$11.25		
Tech Supp	4	Tripod, Cassette Rental	Soil sampling.		G00462975		\$32.00

Comments:

V2977555026	5/13/2004	IE	\$1,237.00	\$0.00	\$0.00		
Tech Supp	1	Bladders Teflon Sample Pro (10 Pack)	Required for sampling event.		G48605071MS		\$220.00
Tech Supp	1	QED Controller Model MP10	Required for sampling event.		G48605071MS		\$263.00
Tech Supp	1	QED Sample Pro 1 3/4" x 12" Teflon Bladder Pump	Required for sampling event.		G48605071MS		\$225.00
Tech Supp	1	QED MP20 Meter with Flow Cell	Required for sampling event.		G48605071MS		\$300.00
Tech Supp	1	Hach Turbidity Meter	Required for sampling event.		G48605071MS		\$79.00
Tech Supp	1	Compressor, Electric 12V, in small black carrying case	Required for sampling event.		G48605071MS		\$150.00

Comments:

V297755029	5/14/2004	IE		\$135.00	\$0.00	\$0.00	
Tech Supp	1	To cover rental of oil water level indicator, 50ft.	Required to sample wells.			G48603822MS	\$135.00

Comments:

V2977552633	8/8/2002	IE		\$1,511.25	\$0.00	\$0.00	10/3/2002
Tech Supp	1	Hermit 3000. DataLogger Package	Required to measure water level and temperature.			G46913750MISC	\$1,050.00
Tech Supp	1	Transducer 20 psi 150 PXD260	Required to measure water level and temperature.			G46913750MISC	\$150.00
Tech Supp	1	Transducer 20 psi 250 PXD260	Required to measure water level and temperature.			G46913750MISC	\$150.00
Tech Supp	1	Transducer 20 psi 250 PDX260	Required to measure water level and temperature.			G46913750MISC	\$150.00
Freight/Ship	1	Shipping	Required to measure water level and temperature.			G46913750MISC	\$11.25

Comments:

V2977552632	8/6/2002	IE		\$1,130.25	\$0.00	\$0.00	10/3/2002
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Misc Service	1	To cover rental of the following FID Helium Detector (Marks) 2 Weeks Minimum Starting Friday 08/09/02	Required for pilot study.	G46913750MISC	\$64.50
Misc Service	1	Mark Helium Detector Model 9822 Kit	Required for pilot study.	G46913750MISC	\$900.00
Freight/Ship	1	Shipping	Required for pilot study.	G46913750MISC	\$165.75

Comments:

V2977553287	3/17/2003	IE	\$900.00	\$0.00	\$0.00	5/14/2003
Misc Service	1	To cover rental of one (1) Photovac microfid starting 3/24/03 for one month			G004225EXP2051	\$900.00

Comments: Keep PO Open

V2977553288	3/17/2003	IE	\$900.00	\$0.00	\$0.00	5/14/2003
Misc Service	1	To cover rental of one (1) photovac microfid starting 3/24/03 for one month			G004225EXP2051	\$900.00

Comments: Keep PO Open

V2977553507	6/16/2003	IE	\$210.00	\$0.00	\$0.00	7/30/2003
Tech Supp	1	Calibration meter gas cylinder for confined space meter with regulator	Required to calibrate confined space meter.		G60170103SUBS	\$210.00

Comments:

V2977554967	4/30/2004	IE		\$1,080.87	\$0.00	\$0.00	
Tech Supp	1	Replace with 2M Cable					C117317101 \$357.86
Tech Supp	1	Replace C/T Cell					C117317101 \$513.01
Misc Service	2	Labor					C117317101 \$120.00
Tech Supp	1	Clean and Calibration 3+ Sensors					C117317101 \$90.00

Comments:

V2977555173	6/7/2004	IE		\$172.00	\$0.00	\$0.00	
Tech Supp	1	To cover the purchase of materials to repair Grundfs Pump located at MCAS, Yuma. AZ	Required repairs supplies for equipment.				G6015013LTM1 \$172.00

Comments:

V2977552628	10/2/2002	IE		\$1.00	\$0.00	\$0.00	
Misc Service	1	To cover the rental of one (1) well oil/water interface probe.	Required for sampling event.				G46913780MISC \$1.00

Comments:

V2977552593	9/26/2002	IE		\$800.00	\$0.00	\$0.00		
Repair/Maint	1	To cover the repair of one Horiba Water Parameter Meter					C117317101	\$800.00

Comments:

V2977555015	5/6/2004	IEEE		\$95.00	\$0.00	\$0.00		
Lib Mat/Sub	1	IEEE Standard 112 Reference	Needed for chekcing compliance.				G486009T9	\$95.00

Comments:

V2977555157	6/4/2004	INOHVA PNEUMATICS		\$53.14	\$0.00	\$0.00		
Tech Supp	1	Ultra-v Sheave	Operation and Maintenance Supplies.				G48606013P	\$29.96
Tech Supp	1	Bushings	Operation and Maintenance Supplies.				G48606013P	\$14.18
Chem/Hazmatl	1	Quarter Uni-pae Oil	Operation and Maintenance Supplies.				G48606013P	\$9.00

Comments:

V2977552865	12/12/2002	INSTRUMENTATION NORTHWEST		\$250.00	\$0.00	\$0.00		
Misc Service	1	To cover the rental of one (1) oil, water interface probe, for NAS Fallon, NV 89496	Required to measure well emissions.				G46913780MISC	\$250.00

Comments:

V297755039	5/4/2004	ISAACS	\$76.34	\$0.00	\$0.00	
Tech Supp	2	1/4" NPT 8 oz. Trap (Plastic)	Required replacement part.		G48606017P15	\$76.34

Comments:

V2977554585	2/25/2004	ISAACS	\$304.73	\$0.00	\$0.00	3/25/2004
Tech Supp	1	2-Pole, Two Staged	Pump will be used to sample pore water and sediment gas.		G482023EPAMS	\$242.51
Tech Supp	1	1/4" NPT , 8 oz Trap	Pump will be used to sample pore water and sediment gas.		G482023EPAMS	\$33.49
Tech Supp	1	1/4" NPT, 2 oz. Trap	Pump will be used to sample pore water and sediment gas.		G482023EPAMS	\$28.73

Comments:

V2977554280	12/30/2003	J. WOLFE CONSULTANTS	\$2,221.59	\$0.00	\$0.00	
Tech Supp	21	2" X 20" 304 SK DRIVE POINT 010 SLOT SCREEN			G482023EPAMS	\$2,221.59

Comments:

V2977555035	5/17/2004	JJ KELLER AND ASSOCIATES	\$447.00	\$0.00	\$0.00	
Lib Mat/Sub	12	Hazmat Training Basics Employee Packet	Training materials for HWRC DOT HAZMAT Employee Training.		G48606013B1	\$135.00
Lib Mat/Sub	12	49 CFR Parts 100 to 185	Training materials for HWRC DOT HAZMAT Employee Training.		G48606013B1	\$312.00

Comments:

V2977554996	5/6/2004	JW WELDING SUPPLY	\$150.00	\$0.00	\$0.00	5/26/2004
Tech Supp	1	Oxygen Regulator	Needed to power equipment.		G60150930MAT	\$75.00
Tech Supp	1	To cover the rental of one hydrogen cylinder	Needed to power equipment.		G60150930MAT	\$75.00

Comments: Keep PO Open.

V2977553615	7/21/2003	KENDRO	\$283.87	\$0.00	\$0.00	
Tech Supp	1	Coil Evaporator			C101317104	\$283.87

Comments:

V2977553733	8/14/2003	KENTUCKY TANK	\$207.00	\$0.00	\$0.00	
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Tech Supp	1	150 gallon Polypropylene Tank			N00598501	\$161.00
Tech Supp	1	Tank Fittings			N00598501	\$46.00

Comments:

V2977555190	6/3/2004	KEY ENERGY	\$1,800.00	\$0.00	\$0.00	
Misc Service	1	To cover the pickup and disposal of nonhazardous liquid waste from AEP Power Plant, New Haven, WV			G60170103SUBS	\$1,800.00

Comments:

V2977555151	5/26/2004	KEY ENERGY	\$1,432.50	\$0.00	\$0.00	
Misc Service	1	To cover the pickup and disposal of nonhazardous liquid waste from AEP Power Plant, New Haven, WV	Required by DOE client.		G60170103SUBS	\$1,432.50

Comments:

V2977553495	6/11/2003	KEY ENERGY	\$1.00	\$0.00	\$0.00	7/16/2003
Misc Service	1	To cover the pickup and disposal of non hazardous liquid waste from AEP Power Plant, New Haven, WV	Required by DOE client.		G60170103SUBS	\$1.00

Comments:

V297755040	5/14/2004	LAB SAFETY	\$20.34	\$0.00	\$0.00	
Tech Supp	1	Hard Hat (Denver Broncos)	For worker safety.		G48606016P	\$20.34

Comments:

V297755036	5/17/2004	LABEL MASTER	\$95.40	\$0.00	\$0.00	
Tech Supp	12	49 CFR Bookmark Tabs	Training materials for HWRC DOT HAZMAT Employee Training.		G48606013B1	\$36.00
Tech Supp	12	2004 Emergency Response Guidebooks	Training materials for HWRC DOT HAZMAT Employee Training.		G48606013B1	\$59.40

Comments:

V2977552918	1/9/2003	LEXIS NEXIS	\$250.00	\$0.00	\$0.00	2/26/2003
Lib Mat/Sub	1	To cover subscription to Nexis News for Judith Bradbury and as directed by Neeraj Gupta. Battelle must provide 60 days notice to cancel contract. PNNL Richland, WA	Required by client.		G60170106STKHL	\$250.00

Comments: Keep PO Open

V2977553544	6/26/2003	LORENZ EQUIPMENT	\$1,650.00	\$0.00	\$0.00	8/13/2003
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Misc Service	11	Rental of Air Dryer for Airsep and Quality Compressor/Rental Period 11 Months	Supports the production of compressed air which is supplied to oxygen generator.	G482014EPA41	\$1,650.00
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Comments: Keep PO Open

V2977554336	1/12/2004	LORENZ EQUIPMENT	\$181.00	\$0.00	\$0.00
Tech Supp	4	Lubricant Filters	Required O&M items.	G601502A3NAFOP	\$37.00
Tech Supp	6	Inlet Air Filters	Required O&M items.	G601502A3NAFOP	\$94.50
Tech Supp	6	Foam Prefilters	Required O&M Items.	G601502A3NAFOP	\$18.00
Tech Supp	6	Quin-Cip Quart 20W	Required O&M items.	G601502A3NAFOP	\$31.50

Comments:

V2977555184	6/5/2004	LOWES	\$14.67	\$0.93	\$0.00
Tech Supp	2	5 Gallon Bucket	Woil sampling.	G00462975	\$5.34
Tech Supp	5	Spray Bottle	Soil sampling.	G00462975	\$8.40

Comments:

V2977554684	3/11/2004	LUMOS AND ASSOCIATES	\$560.00	\$0.00	\$0.00
Misc Service	4	Surveying 6 well locations and surface level measurements	Required to mark well locations.	G469137123	\$560.00

Comments:

V2977554254	12/18/2003	MCMaster CARR	\$644.57	\$0.00	\$0.00	
Tech Supp	1	Refrigerant Recycling Unit			G48606013P	\$644.57

Comments:

V2977553197	4/4/2003	MCMaster CARR	\$255.28	\$0.00	\$0.00	5/14/2003
Tech Supp	1	AIR COMPRESSOR			G6015023NAFOP	\$14.38
Tech Supp	1	THERM-OX BLOWER		REQUIRED FOR EQUIPMENT MAINTENANCE	G6015023NAFOP	\$10.92
Tech Supp	2	SVE MAIN		REQUIRED FOR EQUIPMENT MAINTENANCE.	G6015023NAFOP	\$76.00
Tech Supp	1	SVE BYPASS		REQUIRED FOR EQUIPMENT MAINTENANCE.	G6015023NAFOP	\$15.63
Tech Supp	5	AIR COMPRESSOR			G6015023NFREL	\$54.60
Tech Supp	1	THERM-OX BLOWER			G6015023NFREL	\$10.92
Tech Supp	1	SVE MAIN			G6015023NFREL	\$31.67
Tech Supp	2	SVE BYPASS			G6015023NFREL	\$41.16

Comments:

V2977555155	6/3/2004	MICRODAG.COM	\$2,231.00	\$0.00	\$0.00	
Tech Supp	24	HOBO Thermocouple Data Loggers	Log temperatures.		G00462974	\$2,136.00
Tech Supp	1	Box Car Pro 4.3 Software	Log temperatures.		G00462974	\$95.00

Comments:

V2977554999	5/7/2004	MINEROLOGICAL RESEARCH CO	\$45.00	\$0.00	\$0.00	
Tech Supp	1	Sturmanite Mineral			N00582503	\$45.00

Comments:

V2977553286	4/23/2003	MOBILE MINI INC.	\$1,012.30	\$57.30	\$0.00	5/14/2003
Freight/Ship	1	Delivery Charges			G60170103SUBS	\$200.00
Misc Service	1	Pickup Charge			G60170103SUBS	\$200.00
Misc Service	3	Rental of 8' X 40' Office, Open Bay 28 day Billing Cycle			G60170103SUBS	\$555.00

Comments: Blanket PO. Keep Open. Tony Day 449-8655

V2977554405	1/19/2004	MSC	\$6.70	\$0.00	\$0.00	
Tech Supp	2	Single Flint-Lighter Set	Required by client.		G48606014P	\$2.05
					G48606015P	\$2.05

Tech Supp	2	Single Flint Renewal 5 per package	Required by client.	G48606014P	\$1.30
				G48606015P	\$1.30

Comments:

V2977554404	1/19/2004	MSC	\$47.16	\$0.00	\$0.00	
Tech Supp	4	Band Aids	Required on HASP.	G48606012P	\$9.08	
Tech Supp	4	Tylenol	Required on HASP	G48606012P	\$38.08	

Comments:

V2977555106	5/12/2004	MSC	\$137.52	\$0.00	\$0.00	
Tech Supp	6	Drill Bits	Required O&M replacement parts.	G48606013P	\$137.52	

Comments:

V2977554282	12/30/2003	MSC DIGITAL	\$25.11	\$0.00	\$0.00	
Tech Supp	1	12 INCH -20C TO 100 C MERCURY THERMOMETER		N00582504	\$25.11	

Comments:

V2977555180	6/7/2004	NAPA	\$1,623.68	\$108.48	\$176.00	
Tech Supp	540	5 Gallon Bucket	Operation and maintenance supplies.		G48606014P	\$1,339.20

Comments:

V2977552817	11/21/2002	NATIONAL CONSTRUCTION	\$49.15	\$0.00	\$0.00	12/11/2002
Misc Service	1	FENCE RENTAL	REQUIRED FOR FIELD SITE SECURITY		G33739762507	\$49.15

Comments:

V2977553592	7/15/2003	NATIONAL SCIENTIFIC	\$648.00	\$0.00	\$0.00	7/30/2003
Tech Supp	8	Syringe Filter, PTFE 0.45 um pore size, 4 mm			N1042623000M	\$648.00

Comments:

V2977555113	5/27/2004	NORMS REFRIGERATION	\$65.00	\$0.00	\$0.00	
Repair/Maint	1	water trough , for ice o matic ice machine			G48606014P	\$65.00

Comments:

V2977552907	1/7/2003	NOVATO BUILDERS SUPPLY, INC	\$1.00	\$0.00	\$0.00	1/15/2003
Misc Service	1	To cover the purchase of miscellaneous hardware items.	As required and directed by Battelle while working on site in Novato, CA.		G48602631	\$1.00

Comments: Keep PO Open.

V2977553246	4/14/2003	NOVATO OAKS INN	\$150.00	\$0.00	\$0.00	
Misc Service	1	TO COVER RESERVING MEETING ROOM AT NOVATO OAKS INN ON APRIL 23, 2003 FOR MEETING WITH CLIENT AND WATERBOARD			G48602631MS	\$150.00

Comments:

V2977555091	5/20/2004	OFFICE DEPOT	\$218.12	\$15.69	\$0.00	
Office Supp	2	Black and Color Ink Combo Pack			C101317109	\$119.98
Office Supp	1	White Copy Paper			C101317109	\$26.32
Office Supp	1	Paper Mate X-Trend Stick Pens (Black)			C101317109	\$9.60
Office Supp	1	Fellowes Multimedia Travel Wallet,			C101317109	\$15.12
Office Supp	3	CD-RW Media with Jewel Cases			C101317109	\$21.81
Office Supp	1	Paper Mate X-Trend Stick Pens (Red)			C101317109	\$9.60

Comments:

V2977555159	6/4/2004	OHIO TRANSMISSION & PUMP	\$215.00	\$0.00	\$0.00	
Tech Supp	1	Repair kit for Husky 2150 aluminum pump	Operation and maintenance supplies.		G48606013P	\$215.00

Comments:

V2977555160	6/4/2004	OHIO TRANSMISSION AND PUMP	\$912.00	\$0.00	\$0.00	
Tech Supp	1	Husky 2150 Air-Operated Diaphragm Pump	Operation and maintenance supplies.		G48606013P	\$912.00

Comments:

V2977555053	5/18/2004	OMEGA	\$1,046.00	\$0.00	\$0.00	
Tech Supp	4	Thermocouple 42-SMP-M	Burn study.		G00462950	\$258.00
Tech Supp	4	Thermocouple 18-SPM-M	Burn study.		G00462950	\$183.20
Tech Supp	16	Thermocouple 6-SMP-M	Burn study.		G00462950	\$604.80

Comments:

V2977555121	5/28/2004	OMEGA	\$989.75	\$0.00	\$0.00	
Tech Supp	3	8 Dot Non-Reversible Temp Labels	Required to label field samples.		G00462975	\$240.00
Tech Supp	1	Non-Reversible Temp Labels	Required to label field samples.		G00462975	\$34.50

Tech Supp	3	Non-Reversible Temp Labels	Required to label field samples.	G00462975	\$240.00
Tech Supp	2	Non-Reversible Temp Labels	Required to label field samples.	G00462975	\$160.00
Tech Supp	5	Non-Reversible Temp Labels	Required to label field samples.	G00462975	\$155.25
Tech Supp	2	Non-Reversible Temp Labels	Required to label field samples.	G00462975	\$160.00

Comments:

V2977555126	5/21/2004	PIONEER FEED	\$590.00	\$0.00	\$0.00	
Tech Supp	20	Galv. PC. Bummer for HWMS	Safety on the lot.	G48606013SRV	\$240.00	
Misc Service	4	Crain Service for RRPC Shread Max Repair Work	Safety on the lot.	G48606013SRV	\$350.00	

Comments:

V2977555147	6/2/2004	PIPE VALVES	\$563.64	\$35.64	\$0.00	
Tech Supp	11	Globe Valve, PVC 1"		N00600920	\$528.00	

Comments:

V2977552783	11/15/2002	PRAXAIR	\$1.00	\$0.00	\$0.00	11/26/2002
Misc Service	1	TO COVER RENTAL CHARGES ON CYLINDERS LOCATED AT NAS FALLON, NV	REQUIRED RENTAL OF TANKS AT FIELD SITE	G46913780MISC	\$1.00	

Comments: KEEP OPEN

V2977555166	6/4/2004	PRIORITY WELL SERVICE, INC	\$156.90	\$6.90	\$0.00	
Misc Service	1	To cover repair of pump in the field at MCAS, Yuma, AZ	Required repair to equipment.		G6015013LTM1	\$150.00

Comments:

V2977552664	10/11/2002	PRIORITY WELL SERVICE INC.	\$1,063.00	\$0.00	\$0.00	
Tech Supp	1	FRANKLIN 5 H.P. INDUSTRIAL STAINLESS STEEL PUMP	REQUIRED TO PUMP PURGE WATER		G6015015141	\$1,063.00

Comments:

V2977555115	5/27/2004	PRO-LINKS.COM	\$228.00	\$0.00	\$0.00	
Tech Supp	1	quantity ice packs			C101317101	\$228.00

Comments:

V2977553441	5/29/2003	PT HUENEME MARINE SUPPLY CO, I	\$1.00	\$0.00	\$0.00	6/11/2003
Misc Service	1	To cover he purchase of miscellaneous hardware, plumbing, etc, while working at	Required for bioslurper installation.		G60150631MS	\$1.00

Naval Base Ventura County, Port
Hueneme, CA 93041.

Comments: Keep PO Open.

V2977553002	2/4/2003	QED	\$2,125.00	\$0.00	\$0.00	
Tech Supp	1	All polyethylene tubing, twin bonded, tangle-free design, 3/8" poly sample tube with 1/4" poly air line.	Required for sampling event.		G486009T6	\$2,125.00

Comments:

V2977555158	6/4/2004	RECYCLING RESEARCH INSTITUTE	\$49.00	\$0.00	\$0.00	
Lib Mat/Sub	1	Scrap Tire and Rubber Users Directory (2004)	Operation and maintenance supplies.		G48606014P	\$49.00

Comments:

V2977552888	12/30/2002	REDWOOD SANITARY	\$96.11	\$0.00	\$0.00	1/15/2003
Misc Service	1	To cover portable toilet rental and cleaning required at the former Hamilton Field in Novato, CA 94949	Required on HASP.		G48602631MS	\$96.11

Comments: Keep PO Open

V2977553865	8/13/2003	REELCRAFT	\$872.00	\$0.00	\$0.00	
Tech Supp	1	Automatic Reel	Required for sampling event.		G486048T4	\$492.00
Tech Supp	1	Controller Switch	Required for sampling event.		G486048T4	\$380.00

Comments:

V2977555017	5/11/2004	RESOURCE RECYCLING	\$127.00	\$0.00	\$0.00	
Lib Mat/Sub	1	Scrap Platics Market Directory (1 Year News Letter)	Requied to identify recycle sources and market pricing.		G48606012P	\$127.00

Comments:

V2977552782	11/14/2002	RESTEK	\$917.00	\$0.00	\$0.00	11/26/2002
Tech Supp	1	GC AUTOSAMPLER SYRINGES 6 PK			C117317101	\$168.00
Tech Supp	2	SYRINGE 100 UL			C117317101	\$68.00
Tech Supp	2	SYRINGE 500 UL			C117317101	\$68.00
Tech Supp	1	SEPTA THERMOLITE 100/CASE			C117317101	\$100.00
Tech Supp	1	2 MM LINERS 25/PK			C117317101	\$228.00
Tech Supp	1	GOLD SEALS			C117317101	\$250.00
Tech Supp	1	DEACTIVATED GLASS WOOL			C117317101	\$35.00

Comments:

V2977554993	5/6/2004	ROBERT MILLER ASSOCIATES	\$36.69	\$0.00	\$0.00	
Tech Supp	1	1/85 - SS 2.8W Wide Angle Full Cone	Nozzles will be used to pressure wash FTU.		G48606013B8	\$36.69
Tech Supp	1	1/85 - SS 4.3 W Wide Angle Full Cone	Nozzles will be used to pressure wash FTU.		G48606013B8	\$0.00

Comments:

V2977554053	11/4/2003	ROCKS TRAILER	\$77.91	\$4.93	\$0.00	11/12/2003
Tech Supp	1	Lite/Seal			C117317101	\$14.99
Tech Supp	1	Red Tail Light Lens			C117317101	\$12.00
Tech Supp	1	Lock (Trailer)			C117317101	\$39.99
Tech Supp	4	Running Lights			C117317101	\$6.00

Comments:

V2977555188	5/19/2004	ROPER FORD	\$232.21	\$6.51	\$0.00	
Chem/Hazmatl	1	Oil Change on Department 3171 Vechile			C117317101	\$8.50
Misc Service	1	Replaced Rear Door Handle			C117317101	\$65.00
Misc Service	1	Tire Repair			C117317101	\$22.00

Misc Service	1	Labor			C117317101	\$95.00
Tech Supp	1	Parts			C117317101	\$35.20

Comments:

V2977554874	4/14/2004	SAFETY SOLUTIONS	\$540.00	\$0.00	\$0.00	4/29/2004
Tech Supp	3	Woman's Size 8 m Boots	Required on HASP.		G48606012P	\$129.60
					G48606013P	\$64.80
					G48606014P	\$129.60
Tech Supp	1	Men's 9.5M Boot	Required on HASP.		G48606012P	\$43.20
					G48606013P	\$21.60
					G48606014P	\$43.20
Tech Supp	1	Men's 13M Boot	Required on HASP.		G48606012P	\$43.20
					G48606013P	\$21.60
					G48606014P	\$43.20

Comments:

V2977555154	6/3/2004	SCIOTO VALVE	\$129.60	\$0.00	\$0.00	
Tech Supp	24	Fitting Swagelock	Tube fittings for thermocouple probe connections.		G00462950	\$129.60

Comments:

V2977555156	6/3/2004	SCIOTO VALVES	\$408.00	\$0.00	\$0.00	
Tech Supp	40	1" Brass Cap	Sample tube end caps.		G00462950	\$308.00
Tech Supp	40	Teflon front ferrule 1"	Sample tube end caps.		G00462950	\$53.60
Tech Supp	40	Teflon back ferrule 1"	Sample tube end caps.		G00462950	\$46.40

Comments:

V2977555141	6/2/2004	SCIOTO VALVES	\$414.80	\$0.00	\$0.00	
Tech Supp	17	1/4" Quick Connect Protectors			N00600920	\$86.70
Tech Supp	17	1/4" MPT x 1/4 Female Tube			N00600920	\$221.00
Tech Supp	17	Quick Connect Female			N00600920	\$23.80
Tech Supp	17	Quick Connect Male			N00600920	\$23.80
Tech Supp	17	1/4 x 1/2 Reducing Bushing			N00600920	\$59.50

Comments:

V2977552681	10/17/2002	SCOTT GAS	\$342.00	\$0.00	\$0.00	11/13/2002
Chem/Hazmatl	1	100% CO2, 341 FT3			C355BSTIERS46	\$71.00
Chem/Hazmatl	1	100% SO2 590 FT3			C355BSTIERS46	\$271.00

Comments:

V2977554349	1/13/2004	SDI	\$2,180.00	\$0.00	\$0.00	4/15/2004
Tech Supp	3	Enviro Gard PCB Soil Test Kit	To do immunoassay of PCB in sediment.		G482023EPAMS	\$1,035.00
Tech Supp	3	Enviro Gard PCB Extraction Kit	To do immunoassay of PCB in sediment.		G482023EPAMS	\$345.00
Tech Supp	1	Ensys Accessory Kit (Rental)	To do immunoassay of PCB in sediment.		G482023EPAMS	\$800.00

Comments: Keep PO Open.

Confirmation # 062138

V2977554867	4/13/2004	SIGMA ALDRICH	\$126.22	\$7.98	\$53.84	
Chem/Hazmatl	1	Sodium Hypochlorite Solution	Required for sample preparation.		G469705ERS	\$64.40

Comments:

V2977555177	6/7/2004	SIGMA ALDRICH	\$56.00	\$0.00	\$0.00	
Tech Supp	1	Dowex 1 x 8 Chloride Form (50 - 100 mesh)	For sampling purposes.		G482020MS	\$56.00

Comments:

V2977555112	5/27/2004	SIGMA-ALDRICH	\$26.80	\$0.00	\$0.00		
Tech Supp	1	IRON CHLORIDE HEXAHDRATE				G482020MS	\$13.00
Tech Supp	1	IRON SULFATE HEPTAHYDRATE				G482020MS	\$13.80

Comments:

V2977554614	12/3/2003	SIGN MASTERS	\$104.45	\$8.45	\$0.00		
Tech Supp	2	Single Sided Steel Signs for NFEC Sothwest Division	Required by client.			G6015023MD	\$96.00

Comments:

V2977554122	11/20/2003	SKC	\$6.00	\$0.00	\$0.00		
Tech Supp	6	13 x 9 Sample Bag				C355BSTIERS47	\$6.00

Comments:

V2977555136	6/1/2004	SKC	\$79.00	\$0.00	\$0.00		
Tech Supp	1	1L Tedlar bags for off gas sampling	Required to collect samples.			G601502A3NAFOP	\$79.00

Comments:

V2977552938	1/9/2003	SOCIETY OF PETROLEUM ENGINEERS	\$1,039.00	\$0.00	\$0.00		1/29/2003
Misc Service	1	To cover Registration for Phil Jagucki to attend 2003 SPE/IADC Drilling Conference Feburary 19-21, 2003.				C101317103	\$1,039.00

Comments: Leave PO Open to allow for U.S. Dollar conversion.

V2977555128	6/1/2004	SONY.COM	\$85.70	\$4.25	\$18.50		
Cptr Sftwr	1	Software for Handycam				C117317101	\$62.95

Comments:

V2977555098	5/21/2004	SPECIAL TECHNOLOGY SOLUTION	\$1,785.00	\$0.00	\$0.00		
Misc Service	1	To cover technology transfer services for department 3171 staff.	Required to furnish data to clients.			G477703330	\$157.50
						G48630761	\$262.50
						G48602440IR	\$105.00
						G4820191C2DATA	\$1,260.00

Comments:

V2977555169	6/3/2004	SPEEDWAY	\$12.59	\$0.00	\$0.00	
Chem/Hazmatl	1	Gasoline for Department 3171 Vehicle for Errands	Required to pick up field supplies.		G00462975	\$12.59

Comments:

V2977553763	8/14/2003	SPRINT LUBE	\$73.89	\$0.00	\$0.00	
Repair/Maint	1	Oil Change			C117317101	\$73.89

Comments:

V2977555181	6/7/2004	SSI SHREDDING SYSTEMS	\$9.00	\$0.00	\$0.00	
Tech Supp	1	SHIM kit for cracker jaws	Operation and maintenance supplies.		G48606014P	\$1.00
Tech Supp	2	Fuel Filter	Operation and maintenance suppllies.		G48606014P	\$2.00
Tech Supp	2	Hydro oil filter	Operation and maintenance supplies.		G48606014P	\$2.00
Tech Supp	2	Engine oil filter	Operation and maintenance supplies.		G48606014P	\$2.00
Tech Supp	2	Engine air filter	Operation and maintenance supplies.		G48606014P	\$2.00

Comments:

V2977555124	5/28/2004	STAPLES	\$21.31	\$1.35	\$0.00		
Office Supp	2	CD Pockets - 3 Ring				C101317109	\$19.96

Comments:

V2977555101	5/20/2004	STAPLES	\$9.59	\$0.61	\$0.00		
Office Supp	1	10 Pack Double CD Jewel Cases		Required for project.		G477703330	\$4.49
						G601507112	\$4.49

Comments:

V2977555192	6/8/2004	STAPLES	\$33.67	\$2.13	\$0.00		
Office Supp	2	CD Labels, White 40 Labels per pack		Required for project.		G486009T4	\$31.54

Comments:

V2977555129	6/1/2004	STOCKMANS	\$150.00	\$0.00	\$0.00		
Tech Supp	1	Rental of Power Washer for One Week		To clean OWS/Tanks.		G60150930MAT	\$150.00

Comments:

V2977552551	9/19/2002	STOCKMEN'S RENTALS & SALES, CI	\$357.77	\$12.77	\$0.00	
Misc Service	1	To cover the rental of one 110 Pst Compressor and ONE (1) Post Driver		Required to install construction fence.	G46913730MISC	\$345.00
Comments:						
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V2977552669	10/16/2002	SUNBELT RENTALS	\$1,355.40	\$0.00	\$0.00	10/16/2002
Misc Service	1	RENTAL OF ONE YARD DUMP TRUCK		REQUIRED FOR PROJECT	G48606014SRV	\$1,355.40
Comments:						
<hr/>						
V2977555176	6/7/2004	SUNWEST CONTAINER CO	\$1,339.20	\$0.00	\$0.00	
Tech Supp	540	3.5 Gallon White Pale (no lids)			G48606013P1	\$1,339.20
Comments:						
<hr/>						
V2977555092	5/20/2004	SUPERIER CLEANING EQUIPMENT	\$730.00	\$0.00	\$0.00	
Misc Service	1	Service on pressure washer		Required O&M on equipment.	G48606012SRV	\$182.50
					G48606014SRV	\$182.50
Misc Service	1	Service and repair on pressure washer		Required O&M on equipment.	G48606012SRV	\$182.50
					G48606014SRV	\$182.50

Comments:

V2977555178	6/7/2004	SWANA	\$1,350.00	\$0.00	\$50.00	
Lib Mat/Sub	1	Training Sanitary Landfill OP	Office Supplies.		G48606016P	\$400.00
Lib Mat/Sub	1	Health and Safety at MSW	Office supplies.		G48606016P	\$300.00
Lib Mat/Sub	1	Waste Screening at MSWM	Office supplies.		G48606016P	\$300.00
Lib Mat/Sub	1	Training Collection OP Personnel	Office supplies.		G48606016P	\$300.00

Comments:

V2977555179	6/7/2004	SWANA	\$1,200.00	\$0.00	\$0.00	
Lib Mat/Sub	4	Additional Manual Health and Safety	Office supplies.		G48606016P	\$300.00
Lib Mat/Sub	4	Additional Manual Waste Screening	Office supplies.		G48606016P	\$300.00
Lib Mat/Sub	4	Additional Manual Training Collection	Office supplies.		G48606016P	\$300.00
Lib Mat/Sub	4	Additional Manual Training Sanitary	Office supplies.		G48606016P	\$300.00

Comments:

V2977555186	6/4/2004	TARGET	\$48.01	\$3.04	\$0.00	
Tech Supp	3	Coolers			G00462975	\$44.97

Comments:

V2977552819	11/25/2002	TARGUS.COM	\$129.98	\$0.00	\$0.00	
Gen Equip	1	TARGUS COMPUTER SPORT BACK PACK BLACK/NAVY			C117317101	\$59.99
Gen Equip	1	TARGUS COMPUTER BACK PACK			C117317101	\$69.99

Comments:

V2977553885	9/16/2003	TEAM MOBILE	\$69.99	\$0.00	\$0.00	11/12/2003
Misc Service	1	To cover one (1) year membership for unlimited use of Blcakberry 7230 Phone			C117317101	\$69.99

Comments: Keep PO Open. Blanket PO.

V2977554315	1/7/2004	THE COUNTY BUILDERS	\$1.00	\$0.00	\$0.00	2/12/2004
Tech Supp	1	To cover the purchase of miscellaneous and safety items while at field site in Clemson, SC	Required to conduct field events.		G482023EPAMS	\$1.00

Comments: Keep PO Open

V2977554683	3/11/2004	THE FENCE DOCTOR	\$1.00	\$0.00	\$0.00	
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Misc Service	1	Installation of chain link fence 9-gauge chain link fence 6'-high posts on 10' Centers concrete coring for posts	Required to secure field site.	G469137123	\$1.00
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Comments:

V2977554017	10/23/2003	THOMAS TOWING	\$50.00	\$0.00	\$0.00
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Misc Service	1	Come and mover around mobile max machine for RRPC	To move fixture to another location.	G48606014P	\$50.00
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Comments:

V2977554191	12/4/2003	TMOBILE	\$314.99	\$0.00	\$0.00	12/10/2003
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Misc Service	1	For use of World Cell phone for Steve Downs.		C101317109	\$314.99
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Comments: Keep PO Open

V2977555144	6/2/2004	TRANSFORMATION TECHNOLOGIES	\$990.00	\$0.00	\$0.00
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Tech Supp	2	Ozonator	Required for Lab study.	G469705ERS	\$990.00
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Comments:

V2977552651	10/7/2002	TRI-STATE OXYGEN OF W. VIRGINI	\$13.50	\$0.00	\$0.00	9/24/2003
Misc Service	1	HELIUM CYLINDER DEMURRAGE	RENTAL FEE OF CYLINDERS THAT ARE REQUIRED TO INJECT INTO GROUND FOR TRACING AIR PATTERNS		G482014EPAMS	\$6.50
Misc Service	1	NITROGEN CYLINDER DEMURRAGE	RENTAL FEE OF CYLINDERS THAT ARE REQUIRED TO INJECT INTO GROUND FOR TRACING AIR PATTERNS		G482014EPAMS	\$7.00

Comments:

V2977552618	10/1/2002	TUFFLY ENTERPRISES	\$50.00	\$0.00	\$0.00	10/16/2002
Misc Service	1	Monthly rental for on-site Conex for Yuma Arizona Site Storage	To provide O&M on Site.		G6015013MD	\$50.00

Comments:

V2977555150	6/3/2004	ULINE	\$243.40	\$0.00	\$0.00	
Tech Supp	2	3/16" x 12" x 175" Bubble Packing	Packing soil samples.		G00462974	\$32.00
Tech Supp	12	3/4" x 60 yds Strapping Tape	Packing soil samples.		G00462974	\$44.40
Tech Supp	1	10 x 15 1/2 Self Seal Bubble Bags	Packing soil samples.		G00462974	\$98.00
Tech Supp	2	Dispenser	Packing soil samples.		G00462974	\$40.00
Tech Supp	1	16 x 12 Slider Zip Bags	Packing soil samples.		G00462974	\$29.00

Comments:

V2977555145	6/2/2004	UNITED RENTALS	\$465.00	\$0.00	\$140.00	
Misc Service	1	To cover one (1) Day Rental of Forklift Required to unload truck.			G60150930MAT	\$325.00

Comments:

V2977553647	7/29/2003	UNITED RENTALS	\$200.00	\$0.00	\$0.00	8/13/2003
Misc Service	1	TO COVER THE RENTAL OF ONE 6000 EXTENDED FORK LIFT			G482014EPAMS	\$200.00

Comments:

V2977555191	6/8/2004	US LASER	\$251.00	\$0.00	\$0.00	
Misc Service	1	To cover service and cleaning of Xerox Phaser 7700 Printer, Per James E. Hicks			C117317101	\$251.00

Comments:

V2977554990	5/5/2004	US PLASTICS CORP	\$154.05	\$0.00	\$0.00	
Tech Supp	1	30 Gallon Green Open Head Drum	Water collection of lake water.		G482023EPAMS	\$51.35
Tech Supp	1	30 Gallon Red Open Head Drum	Water collection of lake water.		G482023EPAMS	\$51.35

Tech Supp	1	30 Gallon Yellow Open Head Drum	Water collection of lake water.	G482023EPAMS	\$51.35
Comments:					
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V2977554995	5/6/2004	US WIRE TIE SYSTEMS	\$300.00	\$0.00	\$0.00
Misc Service	1	340 Series automatic wire tying head has a broken roller and needs to be replaced.	Machine used on a daily basis, repair is operative.	G48606012SRV	\$300.00
Comments:					
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V2977552754	11/8/2002	VALLEY SUN NEWSPAPER	\$158.60	\$0.00	\$0.00
Misc Service	1	TO COVER PUBLICATION OF LEGAL AD NOTICE IN VALLEY SSUN NEWSPAPER	REQUIRED BY CLIENT	G486009T4	\$158.60
Comments:					
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V2977555146	6/2/2004	VOLCAN ELECTRIC	\$680.40	\$0.00	\$0.00
Tech Supp	24	1/8 OD Thermocouple	Recording temperature during sampling.	G00462950	\$680.40
Comments:					
<hr/>					
V2977555194	6/8/2004	VULCAN ELECTRIC	\$337.50	\$0.00	\$0.00

Tech Supp	1	To cover calibration of two (2) each 72" long thermocouples	Required to verify accuracy of thermocouple read out.	G00462975	\$337.50	
Comments:						
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V2977554997	5/7/2004	VWR	\$139.20	\$0.00	\$0.00	
Tech Supp	2	Cellulose Nitrate Membrane Filters, Type Wen, Whatman		C355BSTIERS47	\$139.20	
Comments:						
<hr/>						
V2977554693	3/17/2004	VWR	\$828.92	\$0.00	\$0.00	3/25/2004
Tech Supp	8	standard bottles, wide mouth		C355BSTIERS49A	\$667.52	
Tech Supp	2	low level tclp glass microfiber filers		C355BSTIERS49A	\$161.40	
Comments:						
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V2977553330	5/2/2003	VWR	\$876.73	\$0.00	\$0.00	5/14/2003
Tech Supp	1	RFX-5 GC Column		N1042623000M	\$390.57	
Tech Supp	2	Pentane		N1042623000M	\$486.16	
Comments:						
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V2977555009	5/10/2004	VWR	\$218.18	\$0.00	\$0.00	5/26/2004
Chem/Hazmatl	1	Chromium (VI) Oxide			C355BSTIERS49A	\$67.60
Chem/Hazmatl	1	Arsenic Trioxide			C355BSTIERS49A	\$95.68
Chem/Hazmatl	1	Naphthalene			C355BSTIERS49A	\$14.60
Chem/Hazmatl	1	Anthracene			C355BSTIERS49A	\$40.30

Comments:

V2977555163	6/4/2004	VWR	\$172.82	\$0.00	\$0.00	
Tech Supp	2	Standard Bottles, Wide Mouth, Qorpak 240 mL			C355BSTIERS49A	\$172.82

Comments:

V2977555099	5/21/2004	VWR	\$201.32	\$0.00	\$0.00	
Tech Supp	1	VWR Talon Three-Prong Clamps, Three-Pong, Large, Dual Adjustment			C355BSTIERS50A	\$28.23
Tech Supp	2	VWR Talon Heavy Duty Camp Holder			C355BSTIERS50A	\$39.34
Tech Supp	1	VWR Talon Chain Clamps			C355BSTIERS50A	\$36.13
Tech Supp	1	Erlenmeyer Flasks, Polypropylene, Nalgene			C355BSTIERS50A	\$97.62

Comments:

V2977555148	6/3/2004	VWR	\$86.41	\$0.00	\$0.00	
Tech Supp	1	Standard Bottles, Wide Mouth Qorpak 240 mL				C355BSTIERS49A \$86.41

Comments:

V2977555153	6/3/2004	VWR	\$72.42	\$0.00	\$0.00	
Chem/Hazmatl	2	Methanol HPLC Grade	Soil sampling decon.			G00462974 \$72.42

Comments:

V2977555123	5/28/2004	VWR	\$36.21	\$0.00	\$0.00	
Chem/Hazmatl	1	Methanol HPLC Grade	Decon.			G00462974 \$36.21

Comments:

V2977555119	5/27/2004	VWR	\$1,539.30	\$0.00	\$0.00	
Tech Supp	1	Plastipak Syringes with Eccentric 50 mL	Sampling supplies.			G482020MS \$255.60
Tech Supp	4	Nalgene Sample Bottles, HDPE with Caps	Samples supplies.			G482020MS \$384.44
Tech Supp	2	Nalgene Sample Bottles, HDPE with Caps	Sample supplies.			G482020MS \$240.20

Tech Supp	1	Nylon Syringe Filters, 25 mm Nalgene	Samples supplies.	G482020MS	\$624.26
Tech Supp	2	N-DEX Nitrile Gloves	Sample supplies.	G482020MS	\$34.80

Comments:

V2977555120	5/27/2004	VWR	\$405.12	\$0.00	\$0.00
Tech Supp	1	Pyrex Brand Watch Glass	Required to hold samples.	G00462975	\$267.84
Tech Supp	2	Pyrex Brand Drying Tray	Required to hold samples.	G00462975	\$137.28

Comments:

V2977555138	6/2/2004	VWR	\$771.35	\$0.00	\$0.00
Tech Supp	14	Amber 32 oz. Straight-Sided Jars	Bottles used for sample collection.	G00462950	\$595.70
Tech Supp	3	4 oz. Amber Wide Mouth Straight Sided Jars	Bottles used for sample collection.	G00462950	\$175.65

Comments:

V2977555143	6/2/2004	VWR	\$732.65	\$0.00	\$0.00
Tech Supp	5	Polypropylene Laboratory Bottles Wide Mouth (1,000 mL capacity)		C355BSTIERS50A	\$732.65

Comments:

V2977555167	6/4/2004	VWR	\$624.26	\$0.00	\$0.00	
Tech Supp	1	Nylon Syringers, 25 mm Nalgene 0.2 um non-sterile	Required for sampling event.		G482020MS	\$624.26

Comments:

V2977555056	5/18/2004	VWR	\$166.00	\$0.00	\$0.00	
Tech Supp	2	GN Metricel& Membrane Disc Filters, Pall* Life Scenices, Plain Nonsterile			C355BSTIERS49A	\$166.00

Comments:

V2977555059	5/18/2004	VWR	\$68.45	\$0.00	\$0.00	
Tech Supp	1	Bucket, Nalgene	To measure for fuel.		G469137120M	\$68.45

Comments:

V2977555094	5/20/2004	VWR	\$42.68	\$0.00	\$0.00	
Tech Supp	2	Large N-Dex Nitrile Gloves	Required for sampling event.		G6015013LTM1	\$42.68

Comments:

V2977555134	6/1/2004	VWR	\$141.22	\$0.00	\$0.00		
Tech Supp	1	Wide-Mouth Bottles, Amber Glass V&I with Caps				C355BSTIERS50B	\$108.22
Tech Supp	1	TCLP Glass Fiber Filters, Pall Life Sciences				C355BSTIERS50B	\$33.00

Comments:

V2977554006	10/22/2003	VWR	\$114.89	\$0.00	\$0.00		
Tech Supp	1	Nalgene Sample Bottles HDPE		Required for sample preparation.		G482019MS	\$96.11
Tech Supp	1	Boston Rand Bottles, HDPE, Narrow Mouth Nalgene (125 mL)		Required for sampling preparation.		G482019MS	\$18.78

Comments:

V2977555152	6/3/2004	WAGNER RENTAL	\$56.75	\$0.00	\$0.00		
Misc Service	1	To cover rental of a hot water pressure washer deliverd to KT properties.		Rental, EPA project decon sampling event.		G482014EPA51	\$56.75

Comments:

V2977555185	6/4/2004	WALMART	\$313.18	\$19.81	\$0.00		
Tech Supp	15	50 Qt. Coolers		Soil sampling.		G00462975	\$282.90

Tech Supp	1	Marker	Soil sampling.	G00462975	\$1.58
Tech Supp	1	Sharpie Twin Pack	Soil sampling.	G00462975	\$2.92
Tech Supp	1	Scissors	Soil sampling.	G00462975	\$5.97

Comments:

V2977555172	6/4/2004	WEST WATER SUPPLY	\$13.51	\$0.00	\$0.85
Tech Supp	2	4 oz. Proproxy 20 (Epoxy Putty)	Epoxy used in construction of sample containers.	G00462975	\$12.66

Comments:

V2977553029	2/10/2003	WESTERN BIG R, INC	\$1.00	\$0.00	\$0.00
Misc Service	1	To cover the purchase of miscellenous hardware items required at Site 14 at NAS Fallon, NV 89496.	Required plumbing parts for equipment installation.	G46913750MISC	\$1.00

Comments:

V2977552616	10/1/2002	WILLIAMS SCOTSMAN	\$1.00	\$0.00	\$0.00
Misc Service	1	Monthly rental for Trailer for Office at Yuma, Arizona Site	To provide O&M on Site.	G6015013MD	\$1.00

Comments: Keep P.O. Open. 800-782-1500 Pat

V2977553384	5/16/2003	XITECH	\$305.00	\$0.00	\$0.00	5/28/2003
Tech Supp	5	4" Filters			G6015023NAFREL	\$125.00
Tech Supp	4	4" Diaphragm	Parts required for air sparge system installation.		G6015023NAFREL	\$180.00

Comments:

V2977552615	10/1/2002	YOSEMITE WATER	\$1.00	\$0.00	\$0.00	2/26/2003
Misc Service	1	Monthly rental fee for bottled water for Yuma Project.	To provide O&M on Site.		G6015013MD	\$1.00

Comments: Keep P.O. Open. 800-642-3334 Carla BATTELLE a/c # 202324 bulk a/c # 202408 bottle

\$97,006.21	\$331.18	\$510.43	\$96,164.60
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*** End of Report ***

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