

PHASE II ENVIRONMENTAL SITE ASSESSMENT

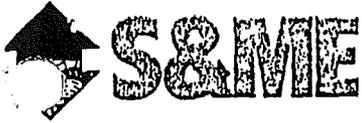
J.L. DE BALL GIRMES FACILITY
ASHEVILLE, NORTH CAROLINA
S&ME PROJECT NO. 1414-92-186

Prepared For:

Prepared By:

S&ME, Inc.
44 Buck Shoals Road, Unit G-9
Arden, North Carolina 28704

January, 1993



January 11, 1993

Attention:

Subject: Phase II Site Assessment and Limited Sampling
J. L. de Ball Girmes Facility
Old U. S. Highway 74
Asheville, North Carolina
S&ME Job No. 1414-92-186

Gentlemen:

S&ME, Inc. has completed the Phase II Site Assessment and limited sampling for the referenced project. The assessment was performed to further evaluate potential environmental concerns identified in the Phase I Site Assessment performed at this site by Bain, Palmer and Associates (BPA) and presented in their report dated March 4, 1992.

This report presents a summary of background information of the facility, the methods of assessment, the results of sampling and analytical testing, and our conclusions.

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S&ME, Inc. appreciates the opportunity to be of service to you on this project. If you have questions concerning information presented herein, please do not hesitate to contact us.

Sincerely,

S&ME, INC.



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Project Geologist



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1.0 EXECUTIVE SUMMARY

S&ME has performed a Phase II Site Assessment and limited sampling for the J. L. de Ball Girmes facility in Asheville, North Carolina. The assessment was performed to further evaluate potential environmental concerns identified in the Phase I Site Assessment performed by others.

The Phase II Assessment included performing limited interviews with past employees, the performance of soil test borings, hand auger borings, backhoe excavated test pits, and the installation of two monitor wells. Representative soil and groundwater samples were collected and subjected to quantitative laboratory testing.

The results of sampling and laboratory analysis indicate the presence of three compounds in the groundwater in excess of current groundwater standards established by NCDEHNR. Soil samples taken in various portions of the site indicate the presence of petroleum hydrocarbons in excess of allowable limits. Metal cuttings mixed with soil were discovered along the embankment to the north of the facility.

Based on our past experience with similar sites, we expect that further assessment and remediation will likely be required. Costs associated with additional assessment and remediation, particularly with regard to groundwater, could be significant.

2.0 INTRODUCTION

S&ME, Inc. has completed the Phase II Environmental Site Assessment and limited sampling at the subject property. The purpose of this assessment was to address several potential environmental concerns identified in the Phase I Environmental Assessment conducted by Bain, Palmer and Associates, Inc. (BPA), and identified in their report dated March 4, 1992. The scope of work performed for this assessment did not include additional Phase I activities or the confirmation of information presented in the Phase I report. Rather, this work scope focused on the further evaluation of potential concerns noted in the Phase I Assessment.

S&ME was authorized to proceed by Mr.

on November 23, 1992. Mr. Paul Flay of J. L. de Ball Girmes granted permission to construct groundwater monitor wells on the property.

3.0 PROJECT INFORMATION

The J. L. de Ball Girmes facility is located off Old U.S. Highway 74 in Asheville, North Carolina. The plant site is bordered to the west by Gashes Creek, and lies approximately 1200 feet southwest of the confluence of Gashes Creek and the Swannanoa River. The plant site occupies a small knoll at an elevation of approximately 2120 feet above mean sea level. The elevation of Gashes Creek and the Swannanoa River is approximately 2030 feet above mean sea level. The area of the site is 39.71 acres. A Site Location Map (Figure 1) is included in Appendix I of this report.

The facility consists of a 176,517 square feet building that was constructed in three phases. The original building was

constructed in 1963, and has a plan area of 127,467 square feet. A 26,462 square foot pre-engineered metal warehouse, designated the west wall warehouse, was constructed in 1980. A 21,600 square foot pre-engineered metal warehouse was constructed in 1986, and was designated the east wall warehouse. The above information was obtained from the Phase I report prepared by Bain, Palmer and Associates. A Site Base Map (Figure 2) is included in Appendix I of this report.

3.1 Site History

The plant was originally constructed by Air Products (SKF), a manufacturer of ball bearings for railway cars. Air Products operated the facility until 1973, when the plant was purchased by the present owner, J. L. de Ball Girmes of America (Girmes). Girmes converted the plant to a textile manufacturing operation in 1973 and manufactured textiles at the facility from 1973 until 1991.

Girmes ceased operations at the facility in 1991. The plant closure activities included the following: removal of equipment, washdown of drains and sumps, removal of a propane tank, removal of demolition debris from the ball field and embankment area, closure and cleaning of the equalization basin at the wastewater treatment plant, removal of lint from the wastewater treatment plant area, soil testing adjacent to the wastewater treatment plant, soil testing at the existing underground storage tank (UST) area, tank tightness testing of the two 30,000 gallon fuel oil USTs, sampling and analysis of an on-site water supply well, soil and debris removal, testing, and disposal. Many of these closure activities were completed in conjunction with the Phase I Environmental Site Assessment.

3.2 Previous Investigations

Girmes retained Bain, Palmer and Associates, Inc. (BPA) of Greensboro, North Carolina, to conduct a Phase I Environmental Site Assessment in conjunction with the sale of the property. BPA conducted the assessment of the property during the period of May, 1991 through March, 1992. The Phase I Environmental Site Assessment included both research of historical records, soil and groundwater sampling and analysis, and supervision of some of the plant closure activities. Several areas of possible concern which were identified by the Phase I assessment are as follows: several chemical storage areas and areas of apparently minor spillage, floor drains and sumps, a small parts degreasing sink, two 30,000-gallon fuel oil tanks, a 30,000-gallon quench oil tank that was reportedly removed in 1972, a 550-gallon gasoline tank that was removed on September 1, 1989, an aboveground propane storage tank, a 550-gallon diesel fuel tank located in the pump house, demolition debris located at the baseball field and on the slope to the rear of the main building, a drainage area where a pipe from the building discharged, and asbestos-containing material. The findings of the Phase I Site Assessment are discussed in greater detail in the following sections of this report.

3.2.1 Baseball Field - BPA recommended and supervised the removal of debris from the baseball field. Soil samples were not collected after removal of the debris.

3.2.2 Slope Debris Area - The area designated as "slope debris area" is located along the embankment to the northeast of the facility. BPA collected soil and water samples from this area. (The water sample was collected from the existing water supply well.) The analysis of the soil sample detected 160 parts per million (ppm) of a petroleum compound similar to Varsol. The analysis of the water sample did not detect solvents, arsenic, or

chromium. BPA supervised removal of approximately 40 truck loads of debris, which were transported to a landfill for disposal. BPA collected four samples from the soil beneath the remaining debris. Two of the soil samples contained concentrations of Oil and Grease and/or Total Petroleum Hydrocarbons above the maximum allowable concentration allowed by the North Carolina Department of Environment, Health, and Natural Resources (NCDEHNR).

3.2.3 Drainage Area - The area described as "drainage area" is located downgradient of the slope debris area described above. BPA collected soil samples from the drainage area and submitted one sample to a laboratory for analysis. The sample contained a petroleum compound similar to Varsol in a concentration of 430 ppm. BPA recommended and supervised the removal of approximately 1000 cubic yards of soil from this area. The soil was stockpiled on site. Five soil samples were collected from the drainage area after removal of the soil. None of these samples contained detectable concentrations of petroleum compounds.

3.2.4 Asbestos - An asbestos inspection was not conducted at the plant, and no samples were collected for asbestos identification. BPA noted non-friable asbestos-containing material on the ceiling of the Dye House in the Phase I report.

3.2.5 Floor Drains - The Phase I report noted that numerous floor drains are present in the plant. The discharge point of the floor drains was not confirmed. It was noted that floor drains that were present at the time the plant was purchased by Girmes were clogged, and were subsequently abandoned and replaced.

3.2.6 Oil House - The Oil House, an out-building located to the north of the facility, contained numerous drums of waste oil at the time of the Phase I inspection. We understand that the waste

oil was stored in this building prior to disposal. BPA did not collect soil samples adjacent to the Oil House.

3.2.7 Underground Storage Tanks - Two 30,000 gallon fuel oil tanks are located to the east of the facility. BPA advanced three soil borings adjacent to the tanks and collected soil samples at depths of 10 and 15 feet. The soil samples were screened in the field using an Organic Vapor Analyzer (OVA), but did not exhibit petroleum vapors detectable to the OVA. The samples were submitted to the laboratory for analysis. The soil samples contained Oil and Grease (EPA Method 9071) in concentrations of 220 ppm, 1,100 ppm, and 300 ppm. BPA recommended testing both tanks for tightness. The tanks were tested and no leaks were detected. The USTs are connected to underground piping which transports oil to the boiler located in the facility. No sampling was performed along the pipeline.

3.2.8 550 Gallon Gasoline Underground Storage Tank - The Phase I Report noted that a 550 gallon gasoline underground storage tank was removed by SPATCO on September 1, 1989. The tank was located along the southwest portion of the building. BPA did not collect soil samples in this area. The report stated that soil sampling beneath the tank was not performed at the time of closure.

3.2.9 30,000 Gallon Quench Oil Tank - The Phase I Report stated that a 30,000 gallon quench oil tank was installed in the plant on April 10, 1963, and removed on January 1, 1972.

3.2.10 Pump House - BPA noted the presence of a 550 gallon aboveground diesel fuel tank located inside the Pump House and an exterior sump outside the building. The exterior sump is used to collect oil or other liquids which are present on the floor of this building. The Pump House is identified on the Site Plan of the Phase I report as the building containing pumping equipment located

adjacent to the USTs described above. No soil samples were collected in this area. The report stated that no known release of fuel from this tank was reported by Girmes personnel.

4.0 METHODS OF ASSESSMENT

Specific areas of environmental concern, discussed in Section 2.2 of this report, were identified in the Phase I Report. To further evaluate these concerns, S&ME contacted several current or former employees of Girmes and SKF, along with local officials who may have information regarding the facility. Also, S&ME collected both soil and groundwater samples at the site in several areas. The following paragraphs present a more detailed description of the assessment procedures.

4.1 Interviews and Telephone Contacts

S&ME contacted several current or former employees of Girmes and SKF, and several public employees, regarding some of the concerns noted in the Phase I Report. The following issues were addressed: 1) past waste disposal practices; 2) the location of the 30,000 gallon quench oil tank that was reportedly removed on January 1, 1972; 3) the destination of effluent from the floor drains; and 4) whether the plant has ever had a lagoon, septic system, or other on-site wastewater disposal system. The interviews are summarized below:

- o S&ME contacted Mr. John Shearling, an employee of Girmes, on November 23, 1992, regarding the 30,000 gallon quench oil tank and the discharge from the floor drains. Mr. Shearling stated that he had no knowledge of the 30,000 gallon quench oil tank, nor of the floor drains. He suggested contacting Mr. Ralph Hughes, a former employee of Girmes and SKF.

- o S&ME contacted Mr. Ralph Hughes, a former employee of Girmes and SKF, on November 23, 1992. Mr. Hughes stated that the 30,000 gallon quench oil tank is still in place and is located approximately 20 feet from the Dye House, inside the plant. However, because a concrete slab has been constructed over the tank, the tank's fill pipe is not evident. Mr. Hughes stated that when the plant was sold to Girmes, the contents of the quench oil tank were pumped into a tanker and sold to another manufacturing firm. Mr. Hughes stated that he assumed the floor drains discharged into the sewer, but that he was not certain. He said that to his knowledge there had never been a septic system or lagoon at the facility.
- o S&ME contacted Mr. Bob Insley with the Metropolitan Sewer District (MSD) on November 24, 1992. Mr. Insley stated that he had been an employee of MSD for 18 years. He said that the pretreatment program began in 1974 and that the plant has been connected to the MSD system at least since that time. Mr. Insley said that prior to 1974 permits were not issued; however, he would assume that the plant was connected to the sewer lines. The MSD treatment plant was constructed in 1965-66. Prior to that time, sewer lines were available and discharged directly into the French Broad River without treatment.
- o S&ME contacted Mr. Bill Botson with Carolina Power and Light on November 24, 1992 regarding transformers at the site. Mr. Botson stated that he had no knowledge of the transformers at the site, and no report of leakage from a transformer.
- o S&ME contacted Mr. Mike Jones, the Assistant Fire Chief with the Asheville Fire Department. Mr. Jones stated that the Fire Department has been called to the site on several occasions. He said that the Fire Department responded to a small fire which occurred in improperly maintained ductwork several years ago. He said the other responses have not involved spills or environmental concerns.

4.2 Soil Test Borings

S&ME mobilized an all-terrain drill rig to the site on December 1, 1992 and advanced nine soil borings between December 1 and 9, 1992. The borings are shown as SS-8 through SS-13 and MW-1

through MW-3 on the Site Plan (Figure 2). The lithology of soil borings MW-1, MW-2, and MW-3 was logged in the field by a geologist. The lithologic logs for these three borings are included in Appendix I.

Soil samples were collected from MW-1, MW-2, and MW-3 at five-foot intervals using a split-spoon soil sampler. Each soil sample was sealed in a plastic bag and screened for volatile organic compounds using an OVA. Because the ambient temperature was 30 to 40 degrees Fahrenheit, the samples were placed in a heated vehicle for approximately five minutes prior to screening to allow volatilization to occur. The OVA probe was then inserted in the bag and a reading was recorded. The OVA screening results are summarized in Table 2. The soil samples from each of these borings exhibiting the highest OVA reading was packed in the appropriate glass containers supplied by the chemical laboratory and placed on ice in a cooler for later shipment to the laboratory.

On December 9, 1992, S&ME advanced six 15-foot soil borings around the 30,000 gallon USTs at the approximate locations shown on the Site Base Map as SS-8, SS-9, SS-10, SS-11, SS-12, and SS-13. Soil samples were collected at 15 feet below grade from each of the six soil borings. The sample collection depth was chosen to help determine if impacted soils noted in the BPA Phase I report were caused by surface spillage or by leaking of the tanks. The soil samples were packed in appropriate glass containers supplied by the laboratory and placed in a cooler on ice for later shipment to the laboratory.

In order to minimize the possibility of cross-contamination between borings, all down-hole drilling equipment was steam-cleaned in the field using a high-pressure steam cleaner.

4.3 Hand Auger Borings

Soil samples were collected at several locations, specifically, SS-1, SS-2, SS-3, SS-4, and SS-14, using a hand auger. This method of sample collection was chosen because of certain portions of the site being inaccessible to a conventional drill rig. A decontaminated metal hand-auger was used to collect soil samples from the surface to approximately 1 foot below the surface. The soil samples were packed in appropriate glass containers supplied by the laboratory and placed on ice in a cooler for later shipment to the laboratory. The hand-auger bucket was decontaminated in the field by scrubbing in a solution of laboratory soap and tap water, rinsing with tap water, rinsing with isopropyl alcohol, and finally rinsing with distilled water.

4.4 Backhoe Excavations

A backhoe was used to excavate soil from the slope debris area and from the 550 gallon gasoline UST area. (The concrete debris in the slope debris area prevented sample collection using a hand auger.) The backhoe was used in the 550 gallon gasoline UST area because the presence of shallow partially weathered rock in this area prevented the performance of a soil boring. Soil was excavated from each of these areas, and soil samples were collected from the excavation. The sample locations are shown on the Site Base Map as SS-5, SS-6, and SS-7. The soil samples were packed in appropriate glass containers and placed on ice in a cooler for later shipment to the laboratory.

4.5 Monitor Well Installation

S&ME completed two of the nine soil borings as groundwater monitor wells (MW-1 and MW-2). Groundwater was not encountered in MW-3 prior to reaching auger refusal at a depth of 25 feet below surface grade. Accordingly, a monitor well was not constructed at this location. Groundwater was encountered between 60-70 feet in MW-1 and 20-25 feet in MW-3. Each monitor well was constructed using a fifteen-foot section of 2-inch diameter PVC .010-slot manufactured well screen and 2-inch diameter PVC casing to surface grade. The borehole surrounding the well screen and casing was filled with filter sand from the base to two feet above the top of the screen, followed by a two-foot bentonite seal and portland cement grout to surface grade. The wells were completed using a flush-mount steel cover and protected by a locking well cap and lock. The monitoring wells were constructed in accordance with North Carolina Well Construction Standards (NCAC Title 15, Subchapter 2C, Section .0100). The North Carolina Well Construction Records for each of the monitoring wells are included in Appendix II.

4.6 Groundwater Sampling

On December 9, 1992 groundwater samples were collected from the monitor wells and submitted to a laboratory for analysis. The monitor wells were purged prior to sampling by bailing. Groundwater samples were collected using disposable bailers and transferred into 40-milliliter glass containers with teflon septa caps and one-liter brown glass containers. The samples were placed in a laboratory transpak with ice for later shipment to the laboratory.

4.7 Laboratory Analysis

The soil and groundwater samples were shipped using an overnight transportation service to IEA in Cary, North Carolina. S&ME's chain-of-custody procedure was followed. The soil samples were analyzed using EPA Method 9071 (Oil and Grease) and/or EPA Method 3550 and EPA Method 5030 (Total Petroleum Hydrocarbons). The groundwater samples were analyzed using Purgeable Organics using EPA Method 8240 and Base/Neutral/Acid Extractable Organics using EPA Method 8270. The analytical results are discussed in Section 4.0, "Analytical Results".

5.0

5.0 ANALYTICAL RESULTS

5.1 Soil Quality

Soil samples were collected from specific areas of environmental concern identified in the Phase I report. The analytical results of soil samples collected at the site are discussed below by area, as in Section 2.2 of this report. The analytical results are summarized in Table 1.

5.1.1 Baseball Field - One soil sample, SS-2, was collected from the baseball field. Laboratory analysis of sample SS-2 did not indicate the presence of petroleum hydrocarbons.

5.1.2 Slope Debris Area - Two soil samples, SS-5 and SS-6, were collected in the slope debris area. A backhoe was used to excavate soil and debris, and soil samples were collected at depths of approximately 3 and 10 feet below the surface. The test pits uncovered a relatively large concentration of metal cuttings mixed with soil. Sample SS-5 indicated the presence of oil and grease at a concentration of 610 mg/kg (ppm) and a total petroleum

hydrocarbon (TPH) concentration of 39 mg/kg (ppm). Sample SS-6 did not indicate the presence of TPH, but did indicate oil and grease at a concentration of 300 mg/kg (ppm).

5.1.3 Drainage Area - One soil sample, MW-2, was collected at the base of the slope from the drainage area. The sample did not contain detectable TPH or Oil and Grease concentrations.

5.1.4 Oil House - One soil sample, SS-1, was collected in front of the Oil House at approximately 1 foot below grade. The sample contained 3600 mg/kg Oil and Grease, and 11 mg/kg TPH in a concentration similar to #2 fuel oil.

5.1.5 30,000 Gallon #5 Fuel Oil USTs - Six soil samples, SS-8 through SS-13, were collected at a depth of 15 feet below the surface around the 30,000 gallon USTs. One of the samples, SS-11, was broken during shipment, as noted on the chain-of-custody form. None of the remaining soil samples contained detectable concentrations of Oil and Grease.

5.1.6 550 Gallon Gasoline UST - One soil sample, MW-3, was collected at a depth of 5 feet from a drilled boring. A second sample, SS-7, was collected from the test pit at a depth of approximately 13 feet below surface grade. MW-3 did not contain detectable TPH concentrations, but contained 1200 mg/kg Oil and Grease. SS-7 did not contain detectable TPH concentrations but contained 84 mg/kg Oil and Grease.

5.1.7 Slope Culverts - Two soil samples, SS-3 and SS-4, were collected near the outfall of culverts that discharge along the slope. SS-3 contained 390 mg/kg Oil and Grease and 29 mg/kg TPH in the distillation range similar to #2 fuel oil. SS-4 did not contain detectable concentrations of TPH or Oil and Grease.

5.1.8 Pump House - The soil sample collected adjacent to the sump outside the Pump House contained 19,000 mg/kg Oil and Grease.

At the time of our site reconnaissance, the Pump House did not contain an aboveground tank as referenced in the Phase I report, but the exterior sump was noted. An aboveground tank is present in the building which houses the fire protection pump, located to the south of the main facility. No floor drains were present in this building.

5.2 Groundwater Quality

Groundwater samples were collected from two monitor wells installed at the site, MW-1 and MW-2. MW-1 is located adjacent to the two 30,000-gallon #2 fuel oil USTs. MW-2 is located at the base of the slope adjacent to the drainage area that was excavated previously. The groundwater samples were analyzed for purgeable organic compounds using EPA Method 8240, and base/neutral and acid extractable organic compounds using EPA Method 8270.

5.2.1 30,000 Gallon #5 Fuel Oil USTs - The sample collected from MW-1 contained bis(2-Ethylhexyl)phthalate in a concentration of 49 ug/L. No other targeted compounds were detected in this sample. Bis(2-Ethylhexyl)phthalate is a compound associated with plastics.

5.2.1 Drainage Area - The sample collected from MW-2 contained bis(2-Ethylhexyl)phthalate in a concentration of 11 ug/L, 1,2-dichloroethene in a concentration of 37 ug/L, and trichloroethene in a concentration of 100 ug/L. Dichloroethene, also known as ethylene dichloride, is a solvent, and commonly used as a degreasing compound. Trichloroethene is a solvent, commonly

used as a drycleaning compound for textiles, and also as a degreasing compound.

The maximum allowable concentration for trichloroethene, established in the "Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina", NCAC Title 15, Subchapter 2L, Section .0202 (2L), is 2.8 ug/l. A 2L standard has not been established for bis(2-Ethylhexyl)phthalate, or for dichloroethene. Substances for which no standard has been established are not permitted in detectable concentrations.

6.0 CONCLUSIONS

S&ME conducted limited soil and groundwater sampling to further determine the impact of known or suspected sources of contamination identified in the Phase I Environmental Site Assessment. The sampling and analytical testing indicated that both soil and groundwater have been impacted by the release of various chemicals. Analytical testing of groundwater samples indicates the presence of three chemicals in excess of the allowable standards of the NCDEHNR. We expect that remediation measures for the groundwater will be required by the NCDEHNR.

Soil samples taken from various portions of the site contain concentrations of TPH and oil and grease above the "clean-up" levels established by the NCDEHNR. There is a potential that the "clean-up" levels for the soil could be adjusted based on the results of a Site Sensitivity Evaluation approved by the NCDEHNR. Remediation of some areas would still be required even with the adjusted levels. For purposes of discussion, the standard "clean-up" level is referenced in the following paragraphs.

The volume of soil that has been impacted at each of several locations where Oil and Grease and/or TPH concentrations were detected in soil samples is unknown. The cost of excavation and disposal of soil depends on the volume of soil, and whether the soil is acceptable for incineration, or some other method of treatment approved for disposal of soil that has been impacted by petroleum hydrocarbons. It is possible that a portion of the soil may contain hazardous wastes, based on the results of the groundwater sample obtained from MW-2, and would have to be disposed of in a hazardous waste landfill at a substantially higher cost. The volume of impacted soil at each location may range from small quantities resulting from incidental spillage, at the Oil House for instance, to large volumes of soil and other debris, in the slope area for example. In conclusion, the volume of soil is unknown, but may be large, given that metal cuttings and other debris were apparently dumped along the slope, and there is reason to believe some of the soil may contain chlorinated solvents and may require disposal at a hazardous waste landfill. The conclusions are discussed by individual area, as in Sections 2.2 and 4.1 above.

6.1 Baseball Field

One soil sample collected in the baseball field area did not contain petroleum hydrocarbons. It is our opinion that the potential for extensive soil contamination in this area, based on the information available at this time, is considered low.

6.2 Slope Debris Area

Metal cuttings mixed in substantial portion with soil fill material were present from a few feet below the surface to at least

10 feet below the surface, where the excavation was terminated. SS-5 contained 39 mg/kg (TPH) in the distillation range similar to #2 fuel oil and 610 mg/kg Oil and Grease. SS-6 did not contain detectable TPH concentrations but contained 300 mg/kg Oil and Grease.

6.3 Drainage Area

The soil sample collected from MW-2 did not contain targeted compounds above the laboratory detection limits. The groundwater sample collected from MW-2 contained trichloroethene in a concentration above the 2L standard, and several other compounds above the method detection limit, in violation of the 2L statute. Based on the data assembled, the presence of trichloroethene in the groundwater sample from MW-2 in a concentration approximately 36 times the 2L standard and the presence of other compounds in detectable concentrations, is the most serious environmental concern. The size of the contaminant plume, the levels of contamination within the contaminant plume, and whether or not other separate but similar contaminant plumes exist has not been determined.

6.4 Oil House

The sample soil sample collected adjacent to the oil house contained 3600 mg/kg Oil and Grease and 11 mg/kg TPH. The volume of impacted soil is unknown.

6.5 30,000 Gallon #5 Fuel Oil USTs

Six soil samples were collected at a depth of approximately 15 feet below the surface from six soil borings advanced around the tanks. One of the sample containers was broken during shipment. None of the other five samples contained petroleum compounds in detectable concentrations. The Phase I Assessment included collecting three soil samples from borings adjacent to these tanks. Oil and Grease concentrations in these samples were 220 mg/kg, 300 mg/kg, and 1,100 mg/kg. The concentrations reported in the initial investigation are above the "maximum allowable concentration" set by the NCDEHNR-Groundwater Section.

6.6 550 Gallon Gasoline UST

Two soil samples collected from the former location of the 550-gallon gasoline UST contained Oil and Grease in concentrations of 1200 mg/kg at 5 feet, and 84 mg/kg at 13 feet below grade. Neither of the two samples contained detectable TPH concentrations. Typically, high boiling point fuels, such as gasoline, are detected in the analytical procedures for TPH testing. Gasoline is not usually detected as a low boiling point fuel, which includes such items as fuel oil. The sample collected at 5 feet that contained 1200 mg/kg Oil and Grease was collected in fill material. Accordingly, the impacted soil does not appear to be the result of leakage from the gasoline UST. The source of the Oil and Grease detected in the sample from the fill material is unknown. The maximum allowable concentration for Oil and Grease is 250 mg/kg; therefore, the Oil and Grease concentration in the sample collected at 13 feet is below the maximum allowable concentration.

S&ME obtained the results of two soil samples that were collected beneath the gasoline tank at the time it was removed.

The two samples contained TPH concentrations of 31.9 mg/kg and 58 mg/kg, respectively. These two samples were analyzed using EPA Method 418.1, rather than EPA Method 5030, as required in North Carolina.

6.7 Slope Culverts

Soil samples were collected at the outfalls of two culverts along the slope to the north of the facility. One of the samples contained Oil and Grease in a concentration of 390 mg/kg, and TPH in a concentration of 29 mg/kg. The Oil and Grease concentration is above the maximum allowable concentration of 250 mg/kg. The TPH concentration is below the maximum allowable concentration for TPH, using EPA Method 3550, of 40 mg/kg.

6.8 Pump House

The soil sample collected adjacent to a sump from the Pump House contained 19,000 mg/kg Oil and Grease. This concentration is above the maximum "cleanup level" established by the NCDEHNR and would require excavation and disposal or bioremediation regardless of the SSE score. The volume of impacted soil is unknown.

6.9 Floor Drains

S&ME contacted the Metropolitan Sewer District, Mr. Clement Rigsby, a current employee of Girmes, Mr. Ralph Hughes, a former employee of Girmes and SKF, and Mr. John Shearling, an employee of Girmes, in an effort to determine the discharge point of the floor drains. None of these contacts provided any definitive information

on this subject. This was discussed with
and no further exploration was directed.

6.10 30,000 Gallon Quench Oil Tank

Mr. Ralph Hughes, a former employee of Girmes and SKF, stated that the 30,000-gallon quench oil tank is located inside the building near the Dye House, under the concrete slab. He stated that the oil was pumped from the tank and sold to another company by SKF when the property was purchased by Girmes, and that he was present when the tank was pumped out. He stated that the fill pipes are now under the concrete slab and that there is no evidence of the tank's location. The option of attempting to locate the tank and collect soil samples adjacent to it was discussed with Representatives of during the assessment. It was decided by that no further investigation would be performed at this time.

7.0 RECOMMENDATIONS

The analytical results presented in this report indicate that both soil and groundwater contain targeted compounds in concentrations that exceed "maximum allowable concentrations" established by the State of North Carolina. Based on past experience with similar projects, further assessment to determine the extent of soil and groundwater contamination, followed by soil and groundwater remediation, will be required. The costs of assessment and remediation would be significant. We recommend that give careful consideration to the anticipated costs and potential liabilities in deciding whether or not to purchase this property.

Under 15NCAC2L .0106(b), the person or party that conducts or controls an activity that results in a discharge of wastes, hazardous wastes, or oil to the groundwater must notify the NCDEHNR of the discharge. The property owner is responsible for reporting the discharge if the person who conducted or controlled the activity has not been determined. Under 15NCAC 2N 280.50, the owner and operator of a UST must report a release of regulated substances to the NCDEHNR. Under the North Carolina "Oil Pollution and Hazardous Substances Control Act", the person controlling the oil or hazardous substances must report a release to the NCDEHNR. We recommend that a copy of this report be forwarded to the current property owner.

8.0 QUALIFICATIONS OF REPORT

This report has been prepared for the use of
for the specific application to this project.
The report has been prepared in accordance with generally accepted engineering and hydrogeological practices for projects of this type. Findings and recommendations contained in this report were based on applicable standards of our profession at the time this report was prepared. No other warranty, expressed or implied, is made.

The analysis and findings submitted in this report were based, in part, upon data obtained from subsurface exploration by S&ME. The nature and extent of variations between borings and sampling locations may not be evident. Analysis and findings of this report are based upon interpolation between data points and may not be representative of all subsurface conditions.

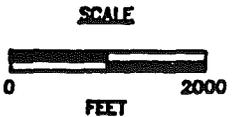
The sampling of asbestos within the building, PCB fluids within transformers, and radon gases was not within the scope of work performed at this site.

TABLE 1
 LABORATORY RESULTS
 J. L. DE BALL - GIRMES FACILITY
 ASHEVILLE, NORTH CAROLINA
 S&ME PROJECT NO. 1414-92-186

Sample Number	ANALYTICAL PARAMETERS				
	TPH (mg/kg)	O&G (mg/kg)	BIS(2-Ethylhexyl) Phthalate (ug/L)	1,2-Dichloroethene (ug/L)	Trichloroethene (ug/L)
SS-1	11	3,600	NA	NA	NA
SS-2	BQL	BQL	NA	NA	NA
SS-3	29	390	NA	NA	NA
SS-4	BQL	BQL	NA	NA	NA
SS-5	39	610	NA	NA	NA
SS-6	BQL	300	NA	NA	NA
SS-7	BQL	84	NA	NA	NA
SS-8	NA	BQL	NA	NA	NA
SS-9	NA	BQL	NA	NA	NA
SS-10	NA	BQL	NA	NA	NA
SS-11	NA	BQL	NA	NA	NA
SS-12	NA	BQL	NA	NA	NA
SS-13	NA	BQL	NA	NA	NA
SS-14	NA	19,000	NA	NA	NA
MW-1	BQL	BQL	49	BQL	BQL
MW-2	BQL	BQL	11	37	100
MW-3	BQL	1,200	NA	NA	NA

mg/kg milligrams/kilogram
 ug/L micrograms/liter
 O&G Oil and Grease

NA Not Analyzed
 BQL Below Quantitation Limit
 TPH Total Petroleum Hydrocarbons



JOB NO.: 1414-92-186
 DATE: 12-29-92
 SOURCE: ASHEVILLE, N.C.
 QUADRANGLE
 U.S.G.S. TOPOGRAPHIC
 7.5 MINUTE SERIES



TITLE: FIGURE 1
 SITE LOCATION MAP
 GIRMES AMERICA, INC.
 ASHEVILLE, NORTH CAROLINA

SOIL BORING RECORD

ELEV. FEET	DEPTH FT.	MATERIAL	GROUP SYMBOL	NOTES	• SPT - BLOWS PER FOOT						N	
					10	20	30	40	60	80		
	3.5	Saprolite - Very Stiff Reddish Brown Micaceous SILT with Weathered Feldspar Lineations OVA=0	ML									
	5											26
	8.5	Saprolite - Very Stiff Reddish Brown Micaceous SILT with Weathered Feldspar Lineations OVA=0	ML									
	10											22
	13.5	Saprolite - Hard Reddish Brown Micaceous SILT with Weathered Feldspar Lineations OVA=7	ML									
	15											36
	18.5	Saprolite - Hard Reddish Brown Micaceous SILT with Weathered Feldspar Lineations OVA=10	ML									
	20											35
	23.5	Saprolite - Hard Light Brown to White Micaceous Sandy SILT with Abundant Weathered Feldspar OVA=18	ML									
	25											34
	28.5	Saprolite - Very Stiff Light Brown to White Micaceous Sandy SILT with Abundant Weathered Feldspar OVA=30	ML									
	30											24
	33.5	Saprolite - Very Stiff Light Brown to White Micaceous Sandy SILT with Abundant Weathered Feldspar OVA=34	ML									
	35											23
	38.5	Saprolite - Hard Light Brown to White Micaceous Sandy SILT with Abundant Weathered Feldspar OVA=8	ML									
	40											41
	43.5	Saprolite - Very Hard Brown Micaceous SILT with Biotite Fragments to 1/4" OVA=8	ML									
												56



BORING NO.: MW1

DATE DRILLED 12/01/92

JOB NO. 1414-92-186

PAGE 1 of 2

SOIL BORING RECORD

ELEV. FEET	DEPTH FT.	MATERIAL	GROUP SYMBOL	NOTES	• SPT - BLOWS PER FOOT							
					10	20	30	40	60	80	N	
	48.5	Saprolite - Very Hard Dark Brown Micaceous Sandy SILT with Abundant Biotite OVA=82	ML									
	50	-----										50/4"
	53.5	Saprolite - Hard Grayish Brown Micaceous Sandy SILT OVA=2	ML									32
	55	-----										
	58.5	Saprolite - Very Hard Grayish Brown Micaceous Sandy SILT OVA=0	ML									50/5"
	60	-----										
	63.5	Saprolite - Very Hard Grayish Brown Micaceous Sandy SILT OVA=0	ML									73
	65	-----										
	68.5	Saprolite - Very Hard Grayish Brown Micaceous Sandy SILT OVA=0	ML									50/1"
	70	-----										
	75											
	80											
	85											



BORING NO. MW1
 DATE DRILLED 12/01/92
 JOB NO. 1414-92-186
 PAGE 2 of 2

SOIL DURING RECORD

ELEV. FEET	DEPTH FT.	MATERIAL	GROUP SYMBOL	NOTES	• SPT - BLOWS PER FOOT							
					10	20	30	40	60	80	N	
		Residuum - Very Stiff Light Reddish Brown Sandy Gravelly SILT OVA=0	ML									
	3.5											
	5											
		Residuum - Hard Light Reddish Brown to Reddish Brown Micaceous SILT OVA=0	ML									
	8.5											
	10											
		Residuum - Very Stiff Light Reddish Brown to Reddish Brown Micaceous SILT OVA=3	ML									
	13.5											
	15											
		Saprolite - Very Hard Tan to Light Brown Slightly Clayey Micaceous SILT OVA=4	ML									
	18.5											
	20											
		Saprolite - Very Stiff Tan to Dark Brown Clayey Sandy Micaceous SILT OVA=1	ML									
	23.5											
	25											
		Saprolite - Hard Grayish Brown Sandy Gravelly Micaceous SILT OVA=1	ML									
	28.5											
	30											
		Boring Terminated at 30 Ft. in Wet Soil										
	35											
	40											

BORING NO. MW2

DATE DRILLED 12/07/92

JOB NO. 1414-92-186

PAGE 1 of 1



SOIL BORING RECORD

ELEV. FEET	DEPTH FT.	MATERIAL	GROUP SYMBOL	NOTES	• SPT - BLOWS PER FOOT						N
					10	20	30	40	60	80	
		Fill - Very Soft Brownish Gray Clayey SILT OVA=700	ML								2
	3.5										
	5	No Recovery									50/5"
	8.5										
	10	Saprolite - Very Hard Brownish Gray Micaceous Fine Sandy SILT	ML								50/3"
	13.5										
	15	Saprolite - Very Hard Brownish Gray Micaceous Fine Sandy SILT	ML								50/2"
	18.5										
	20	Saprolite - Very Hard Brownish Gray Micaceous Fine Sandy SILT	ML								50/3"
	23.5										
	25	Boring Terminated at 25 Feet, at Auger Refusal									
	30	NOTE: Insufficient Recovery for OVA Screening from 8.5 - 25.0 Feet									
	35										
	40										



S&ME

BORING NO: MW3

DATE DRILLED 12/04/92

JOB NO. 1414-92-186

PAGE 1 of 1



IEA

An Aquarion Company

Post Office Box 12846
Research Triangle Park, NC 27709

DEC 23 REC
Phone 919-677-0090
Fax 919-677-0427

December 18, 1992

Mick Ussery
S&ME Asheville
44 Buck Shoals Rd. Unit G-9
Arden, NC 28704

IEA Project No.: 798017
IEA Reference No.: W9211414
Client Project I.D.: 1414-92-186

Dear Mr. Ussery,

Transmitted herewith are the results of analyses on five samples submitted to our laboratory.

The sample(s) were received chilled and intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Please do not hesitate to call your Client Account Representative should you have any questions regarding this report.

Very truly yours,

IEA, Inc.

Lizanne L. Kanger for

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Georgia - #816	Tennessee - #00296	Alabama - #40210
New Jersey - #67719	Virginia - #00179	South Carolina - #99021
California - #1768	West Virginia - #50	North Carolina - #37720/#84
Massachusetts - NC039	Kentucky - #90049	Kansas - E-158/E-1189

Monroe,
Connecticut
203-261-4458

Sunrise,
Florida
305-846-1730

Schaumburg,
Illinois
708-705-0740

N. Billerica,
Massachusetts
617-272-5212

Whippany,
New Jersey
201-428-8181

Essex Junction,
Vermont
802-878-5138



Total Petroleum Hydrocarbon Analysis

IEA Sample No:	798-017-4	Date Sampled:	12-01-92
Client Sample No:	MW-1	Date Received:	12-08-92
Client Project No:	1414-92-186	Date Extracted:	12-11-92

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 12-14-92 Analyzed by: Joaquin
Time Analyzed: 1447

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

=====

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 12-12-92 Analyzed by: Joaquin
Time Analyzed: 2112

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

FAX



IEA
An Aquarion Company

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	798-017-3	Date Sampled:	12-07-92
Client Sample No:	MW-2	Date Received:	12-08-92
Client Project No:	1414-92-186	Date Extracted:	12-11-92

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 12-14-92 Analyzed by: Joaquin
Time Analyzed: 1407

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

=====

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 12-12-92 Analyzed by: Joaquin
Time Analyzed: 2036

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

FAX



Total Petroleum Hydrocarbon Analysis

IEA Sample No:	798-017-5	Date Sampled:	12-04-92
Client Sample No:	MW-3	Date Received:	12-08-92
Client Project No:	1414-92-186	Date Extracted:	12-11-92

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 12-14-92 Analyzed by: Joaquin
Time Analyzed: 1847

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

=====
Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 12-12-92 Analyzed by: Joaquin
Time Analyzed: 2148

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

FAX



Total Petroleum Hydrocarbon Analysis

IEA Sample No: 798-017 Date Sampled: N/A
Client Sample No: QC Blank Date Received: N/A
Client Project No: 1414-92-186 Date Extracted: 12-11-92

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 12-14-92 Analyzed by: Joaquin
Time Analyzed: 1046

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:
N/A=Not Applicable
Corresponding Samples: 798-017-1 through 798-017-5

=====
Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 12-12-92 Analyzed by: Joaquin
Time Analyzed: 1143

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:
N/A=Not Applicable
Corresponding Samples: 798-017-1 through 798-017-5

FAX



3000 WESTON PKWY.
 CARY, N.C. 27513
 PH # 919-677-0090
 FAX # 919-677-0427

CHAIN OF CUSTODY RECORD

NO: 32459

REGULATORY CLASSIFICATION - PLEASE SPECIFY

NPDES DRINKING WATER RCRA OTHER _____

COMPANY:
S+ME

Page _____ of _____

PROJECT #		PROJECT NAME		# OF CONTAINERS	MATRIX		REQUESTED PARAMETERS													
1414-92		GIRMES			SOIL	WATER	EPA 3550 TPH	EPA 5030 TPH	EPA 9071 TPH											
AMPLERS (SIGNATURE)																				
AMPLE I.D.	DATE	TIME	STATION LOCATION																	
51	12/1/92	2:00		2	✓		✓	✓	✓											
52	12/1/92	2:45		2	✓		✓	✓	✓											
53	12/1/92	2:50		2	✓		✓	✓	✓											
54	12/1/92	3:00		2	✓		✓	✓	✓											
11W2	12/1/92	11:30		2	✓		✓	✓	✓											
11W1	12/1/92	4:00		2	✓		✓	✓	✓											
11W3	12/4/92	12:00		2	✓		✓	✓	✓											

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA RUSH NO.
<i>[Signature]</i>	12/1/92	4:00					
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME	PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
			<i>[Signature]</i>	12/18/92	8:45		

REMARKS ON SAMPLE RECEIPT	IEA REMARKS	FIELD REMARKS
<input type="checkbox"/> BOTTLE INTACT <input type="checkbox"/> PRESERVED <input type="checkbox"/> CUSTODY SEALS <input type="checkbox"/> SEALS INTACT		



IEA

An Aquarion Company

Post Office Box 12846
Research Triangle Park, NC 27709

DEC 28 REC'D
Phone 919-677-0090
Fax 919-677-0427

December 22, 1992

Mick Ussery
S&ME Asheville
44 Buck Shoals Rd. Unit G-9
Arden, NC 28704

IEA Project No.: 798017(0) 77
IEA Reference No.: W9211414
Client Project I.D.: 1414-92-186

Dear Mr. Ussery,

Transmitted herewith are the results of analyses on five samples submitted to our laboratory.

The sample(s) were received chilled and intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Please do not hesitate to call your Client Account Representative should you have any questions regarding this report.

Very truly yours,

IEA, Inc.

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Georgia - #816	Tennessee - #00296	Alabama - #40210
New Jersey - #67719	Virginia - #00179	South Carolina - #99021
California - #1768	West Virginia - #50	North Carolina - #37720/#84
Massachusetts - NC039	Kentucky - #90049	Kansas - E-158/E-1189

Monroe,
Connecticut
203-261-4458

Sunrise,
Florida
305-846-1730

Schaumburg,
Illinois
708-705-0740

N. Billerica,
Massachusetts
617-272-5212

Whippany,
New Jersey
201-428-8181

Essex Junction,
Vermont
802-878-5138



IEA
An Aquarion Company

IEA Project #: 798-017(0)
IEA Sample #: 798-017(0)-2
Client Name: S&ME Asheville
Client Proj. I.D.: 1414-92-186
Sample I.D.: SS-4

Matrix: Soil
Date Received: 12/08/92
Date Sampled: 12/07/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
Oil & Grease (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/18/92	LG

Comments:

QL = Below Quantitation Limit



IEA
An Aquarion Company

IEA Project #: 798-017(0)
IEA Sample #: 798-017(0)-3
Client Name: S&ME Asheville
Client Proj. I.D.: 1414-92-186
Sample I.D.: MW-2

Matrix: Soil
Date Received: 12/08/92
Date Sampled: 12/07/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
Oil & Grease (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/18/92	LG

Comments:

QL = Below Quantitation Limit



IEA
An Aquarion Company

IEA Project #: 798-017(0)
IEA Sample #: 798-017(0)-4
Client Name: S&ME Asheville
Client Proj. I.D.: 1414-92-186
Sample I.D.: MW-1

Matrix: Soil
Date Received: 12/08/92
Date Sampled: 12/01/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
Oil & Grease (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/18/92	LG

Comments:

BQL = Below Quantitation Limit



IEA
An Aquarion Company

IEA Project #: 798-017(0)
IEA Sample #: 798-017(0)
Client Name: S&ME Asheville
Client Proj. I.D.: 1414-92-186
Sample I.D.: QC Blank

Matrix: Solid
Date Received: N/A
Date Sampled: N/A

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
Oil & Grease (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/18/92	LG

Comments:

QL = Below Quantitation Limit

/A = Not Applicable

Corresponding Samples: 798-017(0)-1 through 5



IEA

An Aquarion Company

An Environmental Testing Company
Post Office Box 12846
Research Triangle Park, NC 27709

Phone 919-677-0090
Fax 919-677-0427

DEC 30 REC 1

December 28, 1992

Mick Ussery
S&ME Asheville
44 Buck Shoals Rd. Unit G-9
Arden, NC 28704

IEA Project No.: 798019(0)
IEA Reference No.: W9212099
Client Project I.D.: 1414-92-186 Girmes

Dear Mr. Ussery,

Transmitted herewith are the results of analyses on five samples submitted to our laboratory.

The sample(s) were received chilled. Breakage occurred as noted on the Chain of Custody.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Please do not hesitate to call your Client Account Representative should you have any questions regarding this report.

Very truly yours,

IEA, Inc.

Linda F. Mitchell
Linda F. Mitchell
Director, Technical Support Services

State Certification:

Georgia - #816	Tennessee - #00296	Alabama - #40210
New Jersey - #67719	Virginia - #00179	South Carolina - #99021
California - #1768	West Virginia - #50	North Carolina - #37720/#84
Massachusetts - NC039	Kentucky - #90049	Kansas - E-158/E-1189

Monroe,
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203-261-4458

Sunrise,
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305-846-1730

Schaumburg,
Illinois
708-705-0740

N. Billerica,
Massachusetts
617-272-5212

Whippany,
New Jersey
201-428-8181

Essex Junction,
Vermont
802-878-5138



Total Petroleum Hydrocarbon Analysis

IEA Sample No:	798-019(0)-2	Date Sampled:	12-09-92
Client Sample No:	SS6	Date Received:	12-11-92
Client Project No:	1414-92-186 Girmes	Date Extracted:	12-16-92

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 12-17-92 Analyzed by: Correa
Time Analyzed: 0736

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

=====
Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 12-17-92 Analyzed by: Correa
Time Analyzed: 1522

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

FAX



Total Petroleum Hydrocarbon Analysis

IEA Sample No: 798-019(0) Date Sampled: N/A
Client Sample No: QC Blank Date Received: N/A
Client Project No: 1414-92-186 Girmes Date Extracted: 12-16-92

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 12-16-92 Analyzed by: Correa
Time Analyzed: 1939

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

N/A=Not Applicable

Corresponding Samples: 798-019(0)-1 through 798-019(0)-5

=====
Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 12-17-92 Analyzed by: Correa
Time Analyzed: 1003

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

N/A=Not Applicable

Corresponding Samples: 798-019(0)-1 through 798-019(0)-5

FAX



IEA
An Aquarion Company

An Environmental Testing Company
Post Office Box 12846
Research Triangle Park, NC 27709

JAN 11 REC'D
Phone 919-677-0090
Fax 919-677-0427

January 7, 1993

Mick Ussery
S&ME Asheville
44 Buck Shoals Rd. Unit G-9
Arden, NC 28704

IEA Project No.: 798019
IEA Reference No.: W9212099
Client Project I.D.: 1414-92-186 Girmes

Dear Mr. Ussery,

Transmitted herewith are the results of analyses on 13 samples submitted to our laboratory.

The sample(s) were received chilled. Breakage occurred as noted on the Chain of Custody.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Please do not hesitate to call your Client Account Representative should you have any questions regarding this report.

Very truly yours,

IEA, Inc.

Deborah Lewitt Smith
Linda F. Mitchell for
Director, Technical Support Services

State Certification:

Georgia - #816	Tennessee - #00296	Alabama - #40210
New Jersey - #67719	Virginia - #00179	South Carolina - #99021
California - #1768	West Virginia - #50	North Carolina - #37720/#84
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305-846-1730

Schaumburg,
Illinois
708-705-0740

N. Billerica,
Massachusetts
617-272-5212

Whippany,
New Jersey
201-428-8181

Essex Junction,
Vermont
802-878-5138



IEA
An Aquarion Company

IEA Project #: 798-019
IEA Sample #: 798-019-4
Client Name: S&ME Ashville
Client Proj. I.D.: 1414-92-186 Girmes
Sample I.D.: SS-8

Matrix: Soil
Date Received: 12/11/92
Date Sampled: 12/09/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
O&G (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

QL = Below Quantitation Limit
&G (Grav) = Oil & Grease Gravimetric



IEA
An Aquanon Company

IEA Project #: 798-019
IEA Sample #: 798-019-5
Client Name: S&ME Ashville
Client Proj. I.D.: 1414-92-186 Girmes
Sample I.D.: SS-9
Matrix: Soil
Date Received: 12/11/92
Date Sampled: 12/09/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
Oil & Grease (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

BQL = Below Quantitation Limit
OG (Grav) = Oil & Grease Gravimetric



IEA
An Aquarion Company

IEA Project #: 798-019
IEA Sample #: 798-019-6
Client Name: S&ME Ashville
Client Proj. I.D.: 1414-92-186 Girmes
Sample I.D.: SS-10

Matrix: Soil
Date Received: 12/11/92
Date Sampled: 12/09/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
Oil & Grease (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

BQL = Below Quantitation Limit
Oil & Grease (Grav) = Oil & Grease Gravimetric



IEA

An Aquarion Company

IEA Project #: 798-019
IEA Sample #: 798-019-9 Matrix: Soil
Client Name: S&ME Ashville Date Received: 12/11/92
Client Proj. I.D.: 1414-92-186 Girmes Date Sampled: 12/09/92
Sample I.D.: SS-12

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
OGG (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

QL = Below Quantitation Limit

OGG (Grav) = Oil & Grease Gravimetric



IEA
An Aquarion Company

IEA Project #: 798-019
IEA Sample #: 798-019-10
Client Name: S&ME Ashville
Client Proj. I.D.: 1414-92-186 Girmes
Sample I.D.: SS-13

Matrix: Soil
Date Received: 12/11/92
Date Sampled: 12/09/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
O&G (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

QL = Below Quantitation Limit
&G (Grav) = Oil & Grease Gravimetric



IEA
An Aquarion Company

IEA Project #: 798-019
IEA Sample #: 798-019-12
Client Name: S&ME Ashville
Client Proj. I.D.: 1414-92-186 Girmes
Sample I.D.: SS-2
Matrix: Soil
Date Received: 12/11/92
Date Sampled: 12/09/92

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
O&G (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

QL = Below Quantitation Limit
&G (Grav) = Oil & Grease Gravimetric



IEA
An Aquarion Company

IEA Project #: 798-019
IEA Sample #: 798-019 Matrix: Solid
Client Name: S&ME Ashville Date Received: N/A
Client Proj. I.D.: 1414-92-186 Girmes Date Sampled: N/A
Sample I.D.: QC Blank

Parameter	Method	Detection Limits	Results	Date Prepared	Date Analyzed	Analyst
O&G (Grav)	SW-846 9071	10 mg/kg	BQL	12/18/92	12/22/92	LG

Comments:

QL = Below Quantitation Limit

/A = Not Applicable

O&G (Grav) = Oil & Grease Gravimetric

Corresponding Samples: 798-019-1,2,3,4,5,6,,9,10,11,12,13



IEA

An Aquarion Company

GC/MS PURCEABLES
SW-846 METHOD 8240

IEA Sample Number:	798-019	Date Received:	N/A
Client Name:	S&ME Asheville	Date Sampled:	N/A
Client Project ID:	1414-92-186 Girmes	Date Analyzed:	12/14/92
Sample Identification:	QC Blank (VBLKJH)	Analysis By:	Larkins
Matrix:	Water	Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	10	BQL
2	Benzene	5	BQL
3	Bromodichloromethane	5	BQL
4	Bromoform	5	BQL
5	Bromomethane	10	BQL
6	2-Butanone	10	BQL
7	Carbon disulfide	5	BQL
8	Carbon tetrachloride	5	BQL
9	Chlorobenzene	5	BQL
10	Dibromochloromethane	5	BQL
11	Chloroethane	10	BQL
12	2-Chloroethylvinyl ether	10	BQL
13	Chloroform	5	BQL
14	Chloromethane	10	BQL
15	1,1-Dichloroethane	5	BQL
16	1,2-Dichloroethane	5	BQL
17	1,1-Dichloroethene	5	BQL
18	1,2-Dichloroethene (total)	5	BQL
19	1,2-Dichloropropane	5	BQL
20	cis-1,3-Dichloropropane	5	BQL
21	trans-1,3-Dichloropropane	5	BQL
22	Ethylbenzene	5	BQL
23	2-Hexanone	10	BQL
24	Methylene chloride	5	BQL
25	4-Methyl-2-pentanone	10	BQL
26	Styrene	5	BQL
27	1,1,2,2-Tetrachloroethane	5	BQL
28	Tetrachloroethene	5	BQL
29	Toluene	5	BQL
30	1,1,1-Trichloroethane	5	BQL
31	1,1,2-Trichloroethane	5	BQL
32	Trichloroethene	5	BQL
33	Vinyl acetate	10	BQL
34	Vinyl chloride	10	BQL
35	Xylenes (total)	5	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

N/A = Not Applicable

Corresponding Samples: 798-019-7,8

Filename: 12141007



BASE/NEUTRAL/ACID EXTRACTABLES
SW-846 METHOD 8270

IEA Sample Number:	798-019	Date Received:	N/A
Client Name:	S&ME Asheville	Date Sampled:	N/A
Client Project I.D.:	1414-92-186 Girmes	Date Extracted:	12/14/92
Sample Identification:	QC Blank (SVB112)	Date Analyzed:	12/17/92
Matrix:	Water	Analysis By:	Murphy
		Dilution Factor:	1.0

Number	Compound	Quantitation	Results
		Limit (ug/L)	Concentration (ug/L)
1	Acenaphthene	10	BQL
2	Acenaphthylene	10	BQL
3	Anthracene	10	BQL
4	Benzoic acid	50	BQL
5	Benzo(a)anthracene	10	BQL
6	Benzo(b)fluoranthene	10	BQL
7	Benzo(k)fluoranthene	10	BQL
8	Benzo(g,h,i)perylene	10	BQL
9	Benzo(a)pyrene	10	BQL
10	Benzyl alcohol	20	BQL
11	bis(2-Chloroethoxy)methane	10	BQL
12	bis(2-Chloroethyl)ether	10	BQL
13	bis(2-Chloroisopropyl)ether	10	BQL
14	bis(2-Ethylhexyl)phthalate	10	BQL
15	4-Bromophenyl phenyl ether	10	BQL
16	Benzyl butyl phthalate	10	BQL
17	4-Chloroaniline	20	BQL
18	2-Chloronaphthalene	10	BQL
19	4-Chloro-3-methylphenol	20	BQL
20	2-Chlorophenol	10	BQL
21	4-Chlorophenyl phenyl ether	10	BQL
22	Chrysene	10	BQL
23	Dibenzo(a,h)anthracene	10	BQL
24	Dibenzofuran	10	BQL
25	Di-n-butylphthalate	10	BQL
26	1,3-Dichlorobenzene	10	BQL
27	1,4-Dichlorobenzene	10	BQL
28	1,2-Dichlorobenzene	10	BQL
29	3,3'-Dichlorobenzidine	20	BQL
30	2,4-Dichlorophenol	10	BQL
31	Diethyl phthalate	10	BQL
32	2,4-Dimethylphenol	10	BQL
33	Dimethyl phthalate	10	BQL
34	4,6-Dinitro-2-methylphenol	50	BQL
35	2,4-Dinitrophenol	50	BQL
36	2,4-Dinitrotoluene	10	BQL
37	2,6-Dinitrotoluene	10	BQL
38	Di-n-octylphthalate	10	BQL
39	Fluoranthene	10	BQL



BASE/NEUTRAL/ACID EXTRACTABLES
SW-846 METHOD 8270

IEA Sample Number:	798-019	Date Received:	N/A
Client Name:	S&ME Asheville	Date Sampled:	N/A
Client Project I.D.:	1414-92-186 Girmes	Date Extracted:	12/14/92
Sample Identification:	QC Blank (SVB112)	Date Analyzed:	12/17/92
Matrix:	Water	Analysis By:	Murphy
		Dilution Factor:	1.0

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
40	Fluorene	10	BQL
41	Hexachlorobenzene	10	BQL
42	Hexachlorobutadiene	10	BQL
43	Hexachlorocyclopentadiene	10	BQL
44	Hexachloroethane	10	BQL
45	Indeno(1,2,3-cd)pyrene	10	BQL
46	Isophorone	10	BQL
47	2-Methylnaphthalene	10	BQL
48	2-Methylphenol (o-cresol)	10	BQL
49	4-Methylphenol (p-cresol)	10	BQL
50	Naphthalene	10	BQL
51	2-Nitroaniline	50	BQL
52	3-Nitroaniline	50	BQL
53	4-Nitroaniline	50	BQL
54	Nitrobenzene	10	BQL
55	2-Nitrophenol	10	BQL
56	4-Nitrophenol	50	BQL
57	N-Nitroso-di-n-propylamine	10	BQL
58	N-Nitrosodiphenylamine	10	BQL
59	Pentachlorophenol	50	BQL
60	Phenanthrene	10	BQL
61	Phenol	10	BQL
62	Pyrene	10	BQL
63	1,2,4-Trichlorobenzene	10	BQL
64	2,4,5-Trichlorophenol	10	BQL
65	2,4,6-Trichlorophenol	10	BQL

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.

BQL = Below Quantitation Limit

N/A = Not Applicable

Filename: 1217602

Corresponding Samples: 798-019-7,8

FORM 8270 (2) Rev. 081792

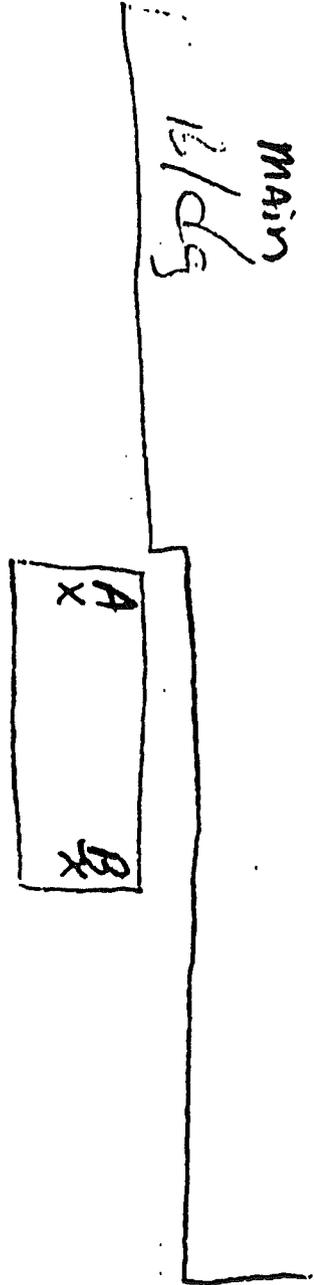
HOLSTON ENERGY INC.



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ART No 019 - Gimes

P. R. N. G. Lot



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