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GE Corporate Environmental Program
General Electric Company
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Transmitted Via Federal Express

June 13, 2000

Bryan Olson
EPA Project Coordinator
U.S. EPA New England
Mail Code: HBT
One Congress Street
Boston, MA 02203

Re: GE-Pittsfield/Housatonic River Site
On-Plant Consolidation Areas (GECD200)
Response to April 27, 2000 EPA Comments

Dear Mr. Olson:

In June 1999, the General Electric Company (GE) prepared a document entitled *Detailed Work Plan for On-Plant Consolidation Areas, Pittsfield, Massachusetts* (Detailed Work Plan). Subsequently, in a letter dated July 6, 1999, the United States Environmental Protection Agency (EPA) provided conditional approval of the Detailed Work Plan (subject to certain modifications), and required that GE prepare an addendum to the Detailed Work Plan to address certain EPA comments contained in the July 6, 1999 letter. In response, on August 12, 1999 GE submitted a document entitled *Addendum to June 1999 Detailed Work Plan for On-Plant Consolidation Areas* (Addendum). EPA's comments regarding the Addendum were provided to GE in an attachment to a letter dated April 27, 2000.

Following receipt of EPA's comments to the Addendum, a meeting among representatives of EPA, the Massachusetts Department of Environmental Protection (MDEP), and GE was conducted on May 3, 2000, in Pittsfield, Massachusetts. At that meeting, EPA clarified and modified a number of its comments attached to its April 27, 2000 letter. A follow-up teleconference among the parties was then held on May 30, 2000 to discuss certain technical issues.

Based on these discussions, GE has prepared responses to address the comments contained in the attachment to EPA's April 27, 2000 letter, as clarified and/or modified by EPA. Those responses are provided in Appendix A to this letter. That Appendix addresses in sequence each of the topics discussed in EPA's April 27, 2000 comments. For convenience, for each topic, the Appendix first repeats EPA's comments from its July 6, 1999 and April 27, 2000 letters. It then provides GE's response to each comment. Where EPA has clarified and/or modified a comment during the course of oral discussions, that clarification and/or modification is noted under GE's response. In addition, several attachments to Appendix A are provided to present additional information to supplement GE's responses.

We trust that these responses are sufficient to address EPA's comments. If you have any further questions, please call me or John Novotny.

Sincerely,

Andrew T. Silfer, P.E.
GE Project Coordinator

Attachments

cc: Michael Nalipinski, EPA*
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(* with attachments)

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APPENDIX A

General Electric Company's Responses to EPA's April 27, 2000 Comments on August 1999 Addendum to Detailed Work Plan for On-Plant Consolidation Areas

The Appendix provides the responses of the General Electric Company (GE) to the comments of the U.S. Environmental Protection Agency (EPA), sent to GE by letter of April 27, 2000, regarding GE's August 12, 1999 Addendum to its June 1999 Detailed Work Plan for On-Plant Consolidation Areas. For each topic addressed in those comments, this Appendix first repeats, in italics, EPA's comments from its prior letter of July 6, 1999 (providing conditional approval of the Detailed Work Plan, subject to certain modifications) and its comments of April 27, 2000. It then presents GE's response to each EPA comment. These responses take into account subsequent discussions of the issues among GE, EPA and the Massachusetts Department of Environmental Protection (MDEP) at a meeting on May 3, 2000 and a follow-up teleconference on May 30, 2000. In addition, several attachments are provided to present additional information to supplement GE's responses.

1. Surface Water Runoff Management

EPA's July 6, 1999 Comment 3 on Detailed Work Plan:

Revise to include a section in the Detailed Work Plan text and figures which discusses how surface water runoff will be managed. Discuss the interim and final drainage patterns/retention basins as appropriate.

EPA's April 27, 2000 Comment on August 12 Addendum:

BB&L states that retention basins will be constructed to attenuate and control peak runoff to "the extent practicable" to accommodate runoff resulting from a 25-year/24-hour storm event. Of the three basins described in the BB&L concept for stormwater management, only one (the basin located immediately south of the Building 71 Consolidation Area) is depicted on the drawings presented to date. It is assumed that calculations pertaining to the sizing of this basin, as well as routing of the 25-year design storm through its outlet structure, have been completed.

To date, the Agencies have not obtained for review any stormwater management calculations related to the retention basin(s), relocated storm sewer, swale sizing, etc. GE has indicated that the referenced 1990 HMM Associates report, which concludes that the existing capacity of hydraulic structures (presumably the 30-inch culvert under Merrill Road and the 36-inch culvert in the same vicinity), is insufficient to even accommodate a 10-year storm. BB&L states that as a result of this inadequacy, some modifications may be necessary to the design of the retention basins.

One question regarding the 1990 HMM Associates report is whether it offered any specific recommendations for the upgrading the existing culverts or hydraulic structures to accommodate storms of greater magnitudes.

GE shall provide the Agencies with the design drawings for the surface water runoff structures stormwater management calculations and with a copy of the 1990 HMM report for our review prior to initiating construction of the above-mentioned structures. Without the described stormwater management calculations or information from the referenced 1990 report, the Agencies cannot conduct a meaningful review or offer specific comments or recommendations regarding the suitability or adequacy of the system or features proposed. Upon the Agencies' receipt and review of the design drawings and the 1990 report we will offer our comments regarding stormwater runoff management.

GE Response:

As a general response to the EPA comments regarding this topic, it is important to recognize GE's overall approach concerning near-term and future design and construction activities for the On-Plant Consolidation Areas (OPCAs). First, conceptual design activities for the Building 71 and Hill 78 OPCAs -- including stormwater management systems and related structures -- have already been conducted to provide an overall understanding of long-term, post-closure OPCA conditions. This conceptual design has been previously summarized in the Detailed Work Plan and/or subsequent Addendum to the work plan. Second, to optimize future OPCA-related design, construction, operation, and closure activities, GE intends to develop the OPCAs (within the context of the conceptual design) in a sequential manner, so that specific portions of the OPCAs are only developed as needed.

Consistent with the approach summarized above, GE has to date performed detailed technical design related to only a portion of the Hill 78 and Building 71 OPCAs (i.e., those areas that were anticipated to be needed to address near-future consolidation activities). Related to surface water runoff management, the Detailed Work Plan provided technical drawings for the stormwater basin located immediately south of the Building 71 OPCA (referred to as the 1999 stormwater basin). That basin and its outlet structure have been designed to manage the 25-year, 24-hour storm event. Under the final OPCA configuration, the 1999 stormwater basin will likely manage stormwater runoff from a significant portion of the southern face of the Hill 78 OPCA and the majority of the Building 71 OPCA. The engineering design calculations provided in Attachment 1 delineate the anticipated watershed for the 1999 stormwater basin and outline the methodology employed in its design. The stormwater routing procedure contained in the engineering design calculations results in a 15% reduction in the post-development peak stormwater runoff rate from the 1999 stormwater basin watershed as compared to pre-development conditions during the 25-year, 24-hour design storm. Similar calculations and design drawings for future stormwater basins and control structures will be forwarded for EPA review as the OPCAs are expanded and the designs are completed.

A report entitled *Revised Drainage Analysis Altresco Cogeneration* (HMM Associates, Inc. [HMM], April 1990) compares pre- and post development stormwater runoff conditions for the Altresco Cogeneration (i.e., Pittsfield Generating Company, LLP) project, which is located immediately south of the OPCAs on a leased portion of GE's property. As part of the drainage analysis, HMM estimates the stormwater runoff from the approximately 130-acre watershed that is serviced by the 30-inch diameter culvert at Merrill Road. HMM's analysis indicates that the culvert does not have sufficient capacity to handle the peak stormwater runoff from this watershed during the 10-year, 24-hour and larger storm events. The report does not provide recommendations for upgrading the existing culvert. However, as noted above, the existing and future OPCA stormwater

basins will attenuate future peak discharges such that runoff from the OPCAs will not likely result in increased flooding potential at the Merrill Road culvert (relative to the impacts predicted in the HMM report). It should also be noted that the discharge point in question at the Merrill Road crossing is currently under construction by the Massachusetts Highway Department and will be modified. As requested, two copies of the HMM report were provided to EPA at the May 3, 2000 meeting.

2. Building 71 OPCA Subgrade Preparation

EPA's July 6, 1999 Comment 10 on Detailed Work Plan:

Page 5-11, Section 5.12: Reevaluate the diameter of deleterious material allowable in the consolidation area. Typically, the geotextile vendor has size requirements that should also be adhered to. The puncture requirements shall be evaluated using GRI test methods.

EPA's April 27, 2000 Comment on August 12 Addendum:

Typically no deleterious material is permitted within 6 inches of any geosynthetic component. The procedure suggested by BB&L for preparing the subgrade is theoretically correct but implementing such a procedure may prove difficult. BB&L previously stated that they would remove all deleterious material from the subgrade soil; however, this is impractical. If a layer of clean fill is not to be placed on the sideslopes, a heavy (e.g., 16 oz/yd2 or greater) nonwoven needlepunched geotextile shall be used as a cushioning layer between the prepared subgrade and the geomembrane. The cushioning geotextile shall be selected conservatively, assuming a piece of angular glass protruding from the subgrade surface.

With respect to the Consolidation Area floor, BBL shall define the term "clean soil" to be used directly beneath the geomembrane. The particle size distribution must be specified and a puncture calculation performed to determine if there is any potential to damage the geomembrane. GRI Report #13, "A Design Methodology for the Puncture Protection of Geomembranes" describes a method to evaluate puncture potential of geomembranes.

GE Response:

Subgrade preparation activities for the Building 71 OPCA can be divided into two components -- the floor and new perimeter berms (constructed of clean soils from an off-site location), and the existing perimeter embankments. For the portion of Building 71 OPCA constructed in 1999, the new perimeter berms are generally located on the southern and western sides of the OPCA, while the existing perimeter embankments are located on the northern and eastern sides of the OPCA. Activities that were performed to prepare the liner system subgrade in each of the areas are discussed below.

Consolidation Area Floor and New Perimeter Berms

Following removal of existing vegetation and other debris and surface grading, the OPCA area floor and perimeter berms were constructed of clean, imported, well graded sand. The compaction curves and particle size distributions for the sand used at these areas are provided in Attachment 2. As can

be seen from the particle distribution curves, there are no particles greater than two inches in diameter, and over 90% of the particles are smaller than 1/4-inch. The Unified Soil Classification System (USCS) classification for this material is SC, SM, or SC-SM (i.e., silty or clayey sands), making it suitable subgrade soil for this application.

Following placement of the sand layer, any deleterious materials (e.g., large stones, sticks, roots, etc.) were removed. The surface was then compacted using a steel, two drum roller until a smooth, flat surface free of any objects that could potentially puncture the geomembrane was formed. Indentations caused by the edges of the roller were hand-raked to prevent bridging of the overlying geomembrane layer that would contact this prepared surface. For additional protection and cushioning of the geomembrane, the perimeter berms were covered with 12 ounce per square yard (oz/yd^2) non-woven geotextile, as discussed below (refer to Attachment 2 for construction information submitted by the contractor for the non-woven geotextile).

Existing Perimeter Embankments

The northern and eastern sides of the OPCA base layer were constructed using the existing embankments. Since the embankments were heavily vegetated, several activities were performed to prepare the subgrade (e.g., clearing and grubbing). Following grubbing activities, the entire area was inspected for any remaining deleterious materials (e.g., large stones, sticks, roots, etc.), and any such materials found were removed. It was then determined that the existing embankment soil materials were suitable for use as the subgrade layer, so the surface was compacted using a steel, two drum roller until a smooth, flat surface free of any objects that could potentially puncture the geomembrane was formed. Indentations in the native sand caused by the edges of the roller were hand-raked to prevent any bridging of the geomembrane. The embankments were then covered with 12 oz/yd^2 non-woven geotextile prior to geomembrane installation (refer to Attachment 2 for construction information submitted by the contractor for the non-woven geotextile).

Given the particle distribution of the subgrade material, the installation of geotextile on the berms and embankments, the methodology used to prepare the subgrade surfaces, and related puncture calculations (discussed below), the potential for puncture of the geomembrane has been minimized. It should also be noted that EPA representatives were present to oversee subgrade preparation activities and geomembrane deployment, and no issues were identified.

3. Puncture Calculations

EPA's July 6, 1999 Comment 16 on Detailed Work Plan:

Section 6-8: The proposal to allow materials greater than 6-inches in the first lift seems excessive. Puncture calculations shall be provided that substantiate the appropriate particulate size which will not cause damage to the geosynthetic material. Use the GRI method to evaluate.

EPA's April 27, 2000 Comment on GE's August 12 Response:

The geotextile puncture calculations presented use a procedure outlined in the textbook "Designing with Geosynthetics" by R.M. Koerner. Although not a GRI method, the procedure is acceptable.

It is recommended that the puncture potential of the geomembrane also be evaluated. The contribution of any geotextiles in direct contact with the geomembrane shall be included.

GE Response:

An evaluation regarding the potential for puncture of the geomembrane by the overlying soils is not necessary. There are no areas within the OPCA where consolidation soils will be in direct contact with the geomembrane since a geosynthetic drainage composite (GDC) constructed of a geonet and two layers of geotextile will separate the geomembrane from the overlying soils. The calculations previously provided in the Addendum indicate that a single geotextile layer is sufficient to protect the geomembrane from puncture by overlying objects as large as 15 inches. Given that no materials greater than 6 inches will be placed in the first two-foot-thick layer of consolidation materials, it is reasonable to expect that two layers of geotextile and a geonet are more than sufficient to protect the geomembrane.

4. Geomembrane Thickness

EPA's July 6, 1999 Comment 28 on the Detailed Work Plan:

Figure 3: Define the thickness of the flexible membrane liner and sub base material. The EPA has recommended a 60 mil. flexible membrane.

EPA's April 27, 2000 Comment on August 12 Addendum:

The EPA recommended a 60-mil thick geomembrane. The response states that a 60-mil thick geomembrane will be provided. To avoid possible confusion in the future, the method used to determine the geomembrane thickness shall be defined. The material thickness can be specified as a minimum thickness or as an average thickness. Specifying a minimum thickness would result in the geomembrane being at least 60-mil thick, whereas specifying an average thickness of 60 mil would result in material with a minimum thickness of about 54 mils. It is likely that material with an average thickness of 60 mil is adequate for intended purpose.

GE Response:

A 60-mil, textured HDPE geomembrane was installed as part of the base liner system for the portion of the Building 71 OPCA constructed in 1999. Pre-construction conformance testing conducted on a single sample of the geomembrane upon delivery indicated an average geomembrane thickness of 65.9 mils. Manufacturing quality control procedures conducted by the geomembrane manufacturer, Solmax International, Inc., indicated an overall average thickness of 57.4 mils for all the geomembrane rolls delivered to the site. The geomembrane thickness testing results are provided in Attachment 3.

5. Leachate Generation (Geocomposite and Pipe Sizing)

EPA's July 6, 1999 Comment 32 on Detailed Work Plan:

Attachment A, Technical Drawings, A-5: Leachate pipes are shown which are 6-inch diameter with minimum slopes of 0.5%. No calculations are provided to substantiate pipe sizing or transmissivity of the drainage geocomposite for predicted leachate flows. In addition, pipe strength calculations

should be provided for Consolidation Area loading either at a final grade or due to vehicular and equipment loads during construction or operations.

EPA's April 27, 2000 Comment on August 12 Addendum:

BB&L performed three HELP model analyses in support of pipe sizing and geocomposite calculations. Based on the information presented, several issues need to be addressed in regard to HELP model analysis. The selection of material texture 8 (ML soil type by USCS) from the HELP default menu may not be sufficient. It is our understanding that the river sediment is predominately sandy; therefore, a more granular material selection may better represent the river sediment. As a matter of consistency, the HELP model identifies the river sediment as a silty soil (ML), whereas page 1 of the pipe wall thickness calculation identifies it as a "saturated silty sand and gravel."

The rationale for selecting the two scenarios to model worst-case conditions is not clear. The Agencies are of the opinion that the worst-case condition would occur when only small portion of the first lift of material has been placed in the consolidation area. Essentially, under this scenario, 100% of precipitation falling within the consolidation area footprint would need to be handled as leachate as there does not appear to be any provision for isolating "clean" rainwater from water that contacts in-place sediment. The scenarios presented address a time in the future after significant filling has occurred. For example, using Condition B, which in the Agencies' opinion more closely represents the worst-case scenario, the volume of leachate that the pipe must convey should be determined by multiplying the calculated percolation/leakage through layer 1 of 4.89 inches/day by the total area of landfill (AA + AB = 5.1 acres, as presented on page 2 of the leachate collection pipe size calculations in Appendix L). The resulting volume of leachate, Qtotal becomes approximately 1.05ft3/sec versus 0.219ft3/sec presented in the calculations, more than a fourfold increase. The pipe sizing calculations shall be revised accordingly to address the worst-case condition not a condition at some time in the future. An alternative approach would be to design the piping system based on a design storm event. From drawing A-5, it appears that all leachate generated within the consolidation area must be discharged through a single pipe. Therefore, this pipe must be able to convey sufficient flow so as to prevent a head build-up within the consolidation area in excess of 12 inches.

In regard to the transmissivity calculations, a more appropriate model would include a geonet/geocomposite and a geomembrane. Output from such a model using version 3.07 of the HELP model (latest version) would yield the volume of drainage collected from the geonet/geocomposite, maximum head build-up above the geomembrane and the location of the maximum head build-up from the drain point. Based on the drainage collected from the geonet/geocomposite, the required transmissivity can be determined. Additionally, the maximum drainage length was determined to be approximately 200 feet in the southernmost drainage area of the consolidation area as shown on drawing A-5. The calculation shall be revised using a more appropriate HELP model.

The EPA requests that GE shall provide an estimate of the leachate volume likely to be generated by dewatering sediment due to consolidation of the material be considered in the above calculations. Even though consolidation soils from the river will be required to pass the "paint filter test", there will be some moisture that could contribute to leachate generation. This volume of leachate will be in addition to leachate generated by precipitation.

There appears to be a conflict between the drawings and the apparent intent of the leachate collection piping system. A pipe running in an east-west direction across the consolidation area is identified as a perforated pipe while the collection pipe running along the toe of the western berm appears to be a solid wall pipe (see drawing A-5). Details 1 and 2 on drawing A-8 seem to verify these materials and conditions. In this regard, please clarify how leachate will be collected from the two southerly drainage areas within the consolidation area and discharged from the area.

Depending on how the revised pipe sizing calculations are prepared, it may be practical to use various pipe diameters to transmit flow to the exit point.

In regard to geocomposite testing, the creep potential of the material shall be considered. The specification should require the geocomposite to retain a certain percentage of its original thickness after a specified time under a given load. Manufacturers may have data available from long-term tests that reflect the creep potential of their product(s). It is also recommended that transmissivity tests be performed using a number of hydraulic gradients in order to span the range of possible gradients. Increasing or decreasing the gradient may cause flow to become either turbulent or laminar, changing the flow characteristics of the geocomposite.

GE Response:

Several EPA comments within the topic are best addressed by first describing the approach that has been utilized to estimate reasonable "worst case" leachate generation potential. Based on the results of several iterative evaluations of leachate potential using the Hydrologic Evaluation of Landfill Performance (HELP) Model, it is anticipated that maximum potential leachate generation will occur prior to final closure of the Building 71 OPCA. The HELP Model establishes a moisture content for each soil type modeled within the program, thereby accounting for the overall residual moisture within the soils. It is difficult to specify a moisture content and to quantify reliable leachate generation rates for the individual consolidation materials that are subject to consolidation, since the moisture contents of the material will vary and the actual volumes of these materials will also vary. For example, all of the consolidation materials scheduled to be placed in the Building 71 OPCA during the 2000 construction season have been stockpiled and tarped, in some cases in heated buildings, allowing much of the residual water within the soil to drain prior to placement within the OPCA. In other cases, soils may be excavated from an area of remediation and immediately hauled and directly placed within the OPCA. Also, it should be noted that construction debris (e.g., brick, concrete, metal, etc.) with very low moisture contents will comprise a percentage of the final consolidation materials. Based on the above considerations, the input parameter within the HELP Model for the soil type associated with the consolidation material has been revised to incorporate an overall and representative USCS soil type SM (i.e., silty sand). Using this soil type to represent the overall composition of the consolidation materials, it is not necessary to calculate separate leachate generation rates for the sediments (or any other specific materials) to be consolidated at the Building 71 OPCA. In addition and as indicated above, such calculations would not produce meaningful leachate estimates.

The leachate calculations previously provided in the Addendum were based on the assumption that the OPCA would be constructed in three separate "phases" with consolidation activities occurring in one area while an adjoining area was under design or construction. These calculations have since been refined to incorporate the portion of the OPCA constructed in 1999 to support the sizing of pumps for the leachate collection manhole that was recently modified, as described in a letter from GE to

EPA, dated March 23, 2000. The modified calculations are presented in Attachment 4. With a phased OPCA construction, the maximum leachate generation would occur under the following scenario:

- Approximately 75% (3.1 acres) of the final OPCA has been constructed and filled to its capacity;
- No portion of this area has received a final (impermeable) cap;
- Approximately 60% of the 3.1 acre area has an interim soil layer with established vegetative cover;
- The remaining filled area has an interim soil cover but is without an established vegetative cover; and
- The remaining 25% (1.0 acre) of the total OPCA is empty and contains no consolidation material, with no runoff allowed from the cell.

The pipe sizing calculations previously presented in the Addendum have been re-evaluated to account for the scenario mentioned above, and are provided in Attachment 4. The calculations indicate that a 6-inch diameter pipe is adequate in handling the leachate attributable to the worst-case condition.

The transmittivity of the geosynthetic drainage composite (GDC) was also re-evaluated using HELP Model (Version 3.07) and included the GDC and the underlying geomembrane to determine the required GDC transmissivity based on a maximum head condition of 12 inches of leachate above the geomembrane. As a result of the HELP Model evaluation, a GDC having a minimum transmissivity of 1.5×10^{-3} m^2/sec was required for use in the Building 71 OPCA liner system. Pre-construction transmittivity testing performed by AGP Laboratories, Inc. on a representative sample of the GDC installed within the Building 71 OPCA in 1999 is included in Attachment 4. As can be seen from the test results, the GDC attains the required transmittivity under conditions similar to the anticipated final OPCA conditions.

Regarding EPA's assertion of a conflict between the drawings and the apparent intent of the leachate collection piping system, it should be noted that the pipe running along the toe of the western berm is a perforated pipe. The reference on Sheet A-5 of the Detailed Work Plan is referring to the solid-wall section of pipe within the berm (i.e., outside of the base liner system limits). Detail 5 on Sheet A-8 is correct as shown; Detail 2 on Sheet A-8 should have further indicated that the pipe was perforated. Leachate will be collected within the two perforated leachate collection pipe networks and will be discharged into the collection manhole via a solid wall pipe outside the limits of the lined area.

Long-term testing of creep potential of a GDC using a specific liner system configuration and the expected loads and gradients at a site is not typically a standard testing requirement or specification for the GDC, since results are not available for years. A seating time of two hours was required for the pre-construction conformance testing of the GDC used in 1999 at the Building 71 OPCA. It is important to bear in mind that given the size and height restrictions for the Building 71 OPCA (i.e., a maximum height of approximately 30 feet, and a size of approximately 4 acres), the loading

conditions are significantly less than those for typical landfill disposal facilities for which most of the testing is performed. Literature and information on creep potential available from the manufacturers and independent research indicate that long-term creep under the loading conditions and gradients associated with the Building 71 OPCA is not a significant design factor.

6. Veneer Stability

EPA's July 6, 1999 Comment 33 on Detailed Work Plan:

Provide calculations to demonstrate that adequate veneer stability exists between the respective interface layers of the components of the final cover systems on the 33% slope. The calculated requirements should be verified using proposed materials by testing in accordance with ASTM D-5321. The tests to evaluate the interface friction requirements may include Koerner, Hwu, Giroud, Bachus and Bonabarte methods.

EPA's April 27, 2000 Comment on August 12 Addendum:

The veneer slope stability analysis presented to address EPA Comment 33 is only partially complete. The analysis does not include the influence of potential seepage head build-up within the cover soils on the consolidation area sideslopes. It is recommended that a fully saturated condition be evaluated given the potential for the formation of ice dams at the toe-of-slope or ice lenses within the drainage composite on the sideslopes due to a thickness of cover soil less than the anticipated frost depth for the location. The formation of ice dams and/or frost lenses could cause water to pond within the cover soil, thus inducing destabilizing hydrostatic forces (NAVFAC DM-7.1 suggests an extreme frost depth for the location of approximately 50 inches). The analysis shall be revised to include this condition. A procedure presented by Giroud, Bachus and Bonaparte can be used to evaluate veneer stability considering seepage forces.

The cohesive strength value of 50 psf should be justified/clarified. Is this value internal to the soil mass or is it actually an adhesion value between the cover soil and the upper geotextile of the drainage composite? Will the project specifications require the cover soil to have a cohesive strength of not less than 50 psi? GE shall perform direct shear tests in accordance with ASTM D-5321 on all critical interfaces.

Based on Figure 3 of Attachment K, it appears the geomembrane will be placed directly on natural (soil) materials. This being the case, the potential for slippage between the geomembrane and the soil material should be evaluated. Slippage between the geomembrane and the underlying soil material could result in tensioning of the geomembrane and possible failure of the material.

GE Response:

The issue of veneer stability along the steeper (i.e., 33%) slope of the final OPCA cap is discussed in the response to the next EPA comment (Comment 36).

With respect to the cohesive strength used on the veneer stability calculations conducted to date, the cohesive strength value of 50 psf in the calculations refers to the adhesion between the nonwoven geotextile of the GDC and the textured HDPE. This interface is considered to be one of the most

susceptible to a potential failure. As shown in a figure from the 1993 Geosynthetics Conference Proceedings (refer to Attachment 5), direct shear tests of this interface reveal typical friction angles of 21 degrees and cohesion factors of approximately 500 psf. Since adhesion can be difficult to quantify, a conservative value of 50 psf was used in the analyses, which is approximately 10 percent of the laboratory value. This approach accounts for adhesion without overestimating its importance on the stability of the slope. GE will also perform direct shear testing in accordance with ASTM D-5321 on the critical interface(s) as part of the pre-construction testing program for final cover installation. At that time, the actual construction materials (soils and geosynthetics) to be used during final cover installation will be tested.

Stability calculations for the interface between the consolidation material and the textured geomembrane component of the final cover system are also included in Attachment 5.

7. Frost Damage

EPA's July 6, 1999 Comment 36 on Detailed Work Plan:

As previously commented, there are no calculations provided to substantiate that the proposed thickness (e.g., min. 2 feet) of the final cover system will provide adequate protection from frost damage of the underlying geosynthetics. The preferred method to evaluate the frost protection issue is the Modified Berggren Equation.

EPA's April 27, 2000 Comment on August 12 Addendum:

The Agencies acknowledge receipt of several articles related to frost damage of geosynthetics. In general, the articles suggest that geosynthetics are not susceptible to frost damage. A concern not addressed by the articles directly is the potential for water to freeze within the drainage composite, subsequently resulting in a potential increase in hydrostatic pressure within the protective cover soil which could result in cover soil instability. In an article provided to BB&L by Carmo Environmental Systems, Inc. from a draft EPA document, the following statement is presented:

> *"It is advisable to prevent the drainage layer (if one is present) from freezing as well, particularly on relatively steep side slopes. If the drainage layer freezes, its function is destroyed for part of the year. During the thaw period, it is particularly important that the drainage layer function properly, i.e., drain from the toe, and that the protection layer be sufficiently thick to provide the protection that is required."*

In light of this statement, the Agencies strongly recommend that BB&L re-evaluate the cover soil thickness and potential veneer instability of the cover soil mass.

GE Response:

In response to this comment, GE has evaluated the potential for the formation of ice dams within the final cap drainage layer, subsequent saturation of the overlying soil layer, and a reduced veneer stability. To perform this evaluation, the thickness of saturated soils above the drainage layer was first estimated using the HELP Model (Version 3.07) assuming that the drainage layer was frozen

and unable to transmit water. The HELP modeling results are presented in Attachment 6. As can be seen in the modeling output, using climatological parameters for western Massachusetts, the average annual head developed on the geomembrane is approximately one inch, the average peak daily head on the geomembrane is approximately 8 inches, and the maximum peak daily head on the geomembrane is approximately 14 inches.

Slope stability calculations performed incorporating a 14-inch thick saturation zone indicate a factor of safety of approximately 1.2 (refer to Attachment 6). This safety factor is acceptable for temporary or short-term conditions, especially when considering the conservative nature of the input parameters and calculations. Also, a 14-inch saturation zone is not likely because, of the average total annual precipitation amount for western Massachusetts (48.7 inches) used within the model to develop the head calculations, only 16.4 inches (or approximately 34%) of the precipitation falls during months when the average monthly temperature is below 32° F (i.e., November through February). It should be noted that some of the key model input parameters are necessarily assumptions (e.g., slope angles, surface and porewater drainage lengths, hydraulic conductivities,.etc.) that may be refined during the final cover system design to be developed in the upcoming years. Where reasonable during the design, the slope angles, drainage lengths, and hydraulic conductivities will be optimized to increase safety factors.

With regard to the formation of ice lenses within the drainage layers and ice dams at the toe-of-slope, it is not expected that isolated lenses of ice within the GDC or overlying sand layer will have a significant effect on the overall drainage of the final cover system. Also, at this time, it is expected that the majority of the final cover porewater drainage system will drain into perforated subsurface piping located within anchor trenches (anticipated to be approximately 3 to 4 feet below final surface elevations) at the toe of the slope, with the number of discharge locations exposed to atmospheric conditions (i.e., to freezing temperatures) minimized. Once the final cap configurations are better understood, it may be possible to place additional cover material over the trenches at the toe of the slope, thereby providing additional frost protection in these critical areas. Also, the discharge locations for the porewater drainage system will be located as far from the toe of the landfill as possible to minimize the potential for freezing of porewater and the creation of ice dams at the toe.

8. Geophysical Survey, Hill 78 OPCA

EPA's April 27, 2000 Comment on August 12 Addendum:

In general, GE needs to provide additional information concerning the proposed geophysical survey along the perimeter of the Hill 78 Landfill. The following is a list of specific comments concerning the proposed geophysical surveys:

With regard to surveying a 50-foot-wide strip, it is recommended that the coverage be expanded to a 200-foot-wide strip with approximately 100 feet of the survey area located either side of the area subject to consolidation. This will enhance the lateral resolution of the boundary.

The Addendum to the June 1999 Work Plan includes surveying a 25-foot by 25-foot area, centered on H78B-8R. GE did not specify the geophysical methods (EM-31/61, Mag, and/or GPR) they propose to use at H78B-8R.

How will the survey be designed (transects perpendicular to axis of boundary, intervals between transects)?

Fifty-foot transects should be extended as needed (based on field readings) to obtain sufficient data on either side of the area subject to consolidation.

GE shall submit a written proposal and obtain Agency approval for the geophysical survey 30 days prior to the initiation of field work. The geophysical survey must be completed prior to the Hill 78 OPCA expanding south of the current access road.

GE Response:

At the May 3, 2000 meeting, EPA confirmed that the geophysical survey should be conducted over a 50-foot-wide band along the perimeter of the Hill 78 OPCA (as previously agreed between EPA and GE), rather than the 200-foot-wide band recommended in EPA's April 27, 2000 comments. Also, it was agreed that the 25-foot by 25-foot area centered around H78-8R will be surveyed using Geonics EM-31 instrumentation. Also discussed and agreed upon at the May 3, 2000 meeting, EPA's remaining comments relating to the geophysical survey will be addressed in a future proposal to be submitted to EPA and MDEP before the geophysical survey is performed. As presented in the Addendum, the timing of the survey will be such that it will be performed prior to any material placement in the area of interest (i.e., the 50-foot-wide band).

9. Future Groundwater Monitoring - Hill 78 and Building 71 OPCAs

EPA's April 27, 2000 Comment on August 12 Addendum:

Three additional wells on the eastern side of the General Dynamics parking lot (Unkamet Brook - Building OP-2 area) shall be added to the groundwater level-monitoring program to provide additional groundwater flow data east of the Consolidation Areas. No additional groundwater sampling would be necessary.

GE Response:

During the May 3, 2000 meeting, EPA agreed that these additional wells would not be necessary.

EPA's April 27, 2000 Comment on August 12 Addendum:

On Figure 3, GE shows a groundwater flow trough southwest of the Hill 78 Landfill. The area is dashed on the map due to limited well monitoring in that area. This map shows the potential for contaminants from the landfill and especially well H78B-8R to move preferentially in that direction - undetected by the proposed well monitoring network. EPA may require additional wells in that location based upon the results of the geophysical survey and other design factors e.g., groundwater mounding, etc..

GE Response:

GE will evaluate groundwater flow (and potential changes due to groundwater mounding) in this area following the collection of additional data as part of the OPCA groundwater monitoring program

and/or the baseline groundwater monitoring program for the Plant Site 3 Groundwater Management Area (GMA), which includes the OPCAs.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 2.2. Review the well installation logs presented in Appendix A and the top of till contours presented in Attachment C. The comparison of these data indicates that the OPCA monitoring wells are either not screened within a confining layer or within till. Therefore, dense non-aqueous phase liquids, if present, would likely not be detected by the monitoring program. GE shall propose a strategy for resolving this discrepancy.

GE Response:

As discussed with EPA, GE will submit to EPA within the next few months a proposal for DNAPL-related investigations in the OPCA area. That proposal will identify the scope and timetable for further investigations related to this topic.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Table 3. Provide a note indicating whether or not samples were filtered or unfiltered. Also, the inorganic analytes listed on Table 3 include only arsenic, barium, and zinc. GE shall present the results for the remaining inorganic analytes required by Appendix IX +3 analysis.

GE Response:

Unfiltered samples were collected during the baseline sampling round. During future rounds, both filtered and unfiltered samples will be collected for PCB and inorganics analyses (as stated on Page 3-1 of Attachment B to the Addendum), in accordance a revised version of GE's Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) (which is currently under development in response to EPA's April 11 and April 20, 2000 comments on the FSP/QAPP submitted in January 2000.

All detected inorganics were presented on the tables included in the Addendum. Analytical data for the remaining inorganic analytes (i.e., detection limits) are contained on the attached data sheets (see following comment and response).

EPA's April 27, 2000 Comments on August 12 Addendum:

Appendix B, Section 2.5, Page 2-3. GE shall provide copies of the laboratory analytical data sheets, along with a quality assurance/quality control (QA/QC) summary report indicating whether or not the analytical data meet the QA/QC requirements set forth by GE's Revised Sampling and Analysis Plan/Data Collection and Analysis Quality Assurance Plan, October 1998 (pending revisions).

GE Response:

The laboratory data sheets are provided within Attachment 7. GE's previous Sampling and Analysis Plan/Data Collection and Analysis Quality Assurance Plan (dated October 1998) has been extensively revised and was submitted to EPA and MDEP in January 2000 as a FSP/QAPP. That FSP/QAPP is currently being revised further in response to recent (April 11 and April 20, 2000)

EPA comments. After that revised FSP/QAPP has been finalized, the QA/QC summary report requested by EPA in this comment will be submitted.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.2, Page 3-1. GE indicates that both filtered and unfiltered groundwater samples will be collected for PCB and metal analyses. Were both unfiltered and filtered samples collected during the baseline monitoring program for PCBs and metals? Subsequent groundwater monitoring events should be consistent to ensure proper comparisons of data.

GE Response:

As noted above, only unfiltered samples were collected during the baseline sampling round. During future rounds, both filtered and unfiltered samples will be collected for PCB and inorganics analyses, in accordance with GE's revised FSP/QAPP (currently under development).

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.2, Page 3-1. GE shall sample all OPCA monitoring wells for PCDDs/PCDFs. Insufficient data have been collected to date to exclude analysis of these parameters at all OPCA monitoring wells.

GE Response:

GE will sample all OPCA monitoring wells for PCDDs/PCDFs until sufficient data have been collected to justify exclusion of these parameters from future analyses.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.4, Page 3-2, 3rd Paragraph. GE shall provide a rationale for why a Method 2 GW-2 standard should not be developed subject to EPA approval.

GE Response:

As discussed on the cited page of the Addendum, GE will initially use the Method 1 GW-2 standards specified in the Massachusetts Contingency Plan (MCP) to evaluate GW-2 groundwater. As also explained on that page, the baseline groundwater sampling for the OPCAs detected no volatile organic compounds (VOCs) in groundwater; but if future monitoring detects, in GW-2 groundwater, VOCs for which there are no Method 1 GW-2 standards, GE will develop a Method 2 GW-2 standard for each such constituent using procedures specified in the MCP or approved by EPA, or will provide a rationale for why such a standard should not be developed. This approach is consistent with the approach specified in Attachment H to the *Statement of Work for Removal Actions Outside the River* (SOW) (which is Appendix E to the Consent Decree). GE agrees that any such Method 2 GW-2 standard developed will be "subject to EPA approval."

EPA's April 27, 2000 Comment to August 12 Addendum:

Appendix B, Section 3.4, Page 3-2, 4th Paragraph. GE shall present its rationale to EPA for why a Method 2 GW-3 standard was not developed subject to EPA approval.

GE Response:

As discussed in Section 3.4, GE will initially use the MCP's Method 1 GW-3 standards to evaluate GW-3 groundwater. Section 3.4 then addresses the handling of compounds detected in GW-3 groundwater for which Method 1 GW-3 standards do not exist (or alternative standards have not been approved by EPA). It notes that no such compounds were detected during the baseline groundwater sampling for the OPCAs. It also indicates that if such compounds are detected in the future, GE will not develop Method 2 GW-3 standards, as part of the OPCA monitoring program, unless such compounds are shown to be attributable to the consolidation activities. However, Attachment H to the SOW provides that, as part of the general baseline monitoring program for the GMA that includes these areas (the Plant Site 3 GMA), if compounds are detected in GW-3 groundwater for which Method 1 GW-3 standards do not exist (or alternative standards have not been approved by EPA), GE will develop Method 2 GW-3 standards using procedures specified in the MCP or approved by EPA, or provide a rationale for why such standards should not be developed. In any case, GE agrees that if Method 2 GW-3 standards are developed (either because the constituents are shown to be attributable to consolidation activities or as part of the baseline monitoring program for the Plant Site 3 GMA), such standards will be "subject to EPA approval."

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.4, Page 3-2, 5th Paragraph. Consistent with Attachment H to the SOW, the site-specific risk evaluation shall consider EPA or MCP risk assessment guidance.

GE Response:

GE concurs that any site-specific risk evaluation supporting alternative risk-based GW-2 or GW-3 standards will consider appropriate EPA and/or MDEP risk assessment guidance, as provided in Attachment H to the SOW.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, NAPL performance standards need to be developed to address NAPL if detected in the OPCA monitoring well network.

GE Response:

The OPCA groundwater monitoring program is not designed to be a NAPL monitoring program. As stated in Section 3.3, second paragraph, should any new occurrences of NAPL be observed, subsequent activities will be conducted under the procedures outlined in Attachment H to the SOW and any other approved procedures established for the groundwater monitoring program for the Plant Site 3 GMA once that program has been implemented. Section 2.7 and Attachment H of the SOW set forth the Performance Standards for NAPL for the overall GE-Pittsfield/Housatonic River Site.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.5, Page 3-3, 2nd Paragraph. The notification requirements for GW-2 groundwater exceedances do not apply to the OPCA monitoring. There are no and will not be any school or residential structures within 30 feet of any OPCA monitoring point. GE shall propose and obtain the Agencies' approval for a more practical notification requirement.

GE Response:

The cited paragraph in Section 3.5 acknowledged that there are no current OPCA monitoring wells within 30 feet of a school or residence, but provided certain notification requirements for GW-2 exceedances in such wells in the event that such wells are installed in the future in response to data obtained from a GW-2 sentinel well. If no OPCA monitoring wells are installed within 30 feet of a school or residence, these notification requirements will not apply. Separate notification requirements are already provided in Section 3.5 for exceedances of GW-2 standards in GW-2 sentinel wells, as well as for exceedances of GW-3 performance standards and UCLs.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.5, Page 3-4. Exceedance of a UCL would likely indicate a "statistically significant increase" in dissolved-phase constituent for any OPCA monitoring well, and therefore, GE shall perform the same activities identified for statistically significant increases in dissolved-phase constituents. Revise the beginning of the 4th paragraph on page 3-4 as follows: "If a statistically significant increase or UCL exceedence...".

GE Response:

GE agrees to conduct the same activities specified in the cited paragraph on page 3-4 in the event that a UCL exceedance is identified.

EPA's April 27, 2000 Comment on August 12 Addendum:

Appendix B, Section 3.7, Page 3.5. Any proposed modifications to the monitoring program are subject to EPA approval.

GE Response:

Agreed.

Attachments

Attachment 1

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Stormwater Management Design Calculations

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

1999 Stormwater Basin Design

CLIENT: General Electric Company PROJECT: GE Pittsfield, MA Prepared By: BMS Date: 05-01-00
TITLE: Engineering Design Calculations Reviewed By: _____ Date: _____
SUBJECT: OPCA - 1999 Stormwater Basin Design

OBJECTIVE:

Calculate the required storage capacity for the 1999 stormwater basin and determine stormwater runoff conditions for the 1999 stormwater basin watershed based on pre- and post-developed OPCA conditions. Use TERRAMODEL to develop and route the inflow hydrograph for the 1999 stormwater basin to determine design capacity, outflow hydrographs, and peak outlet conditions during the 25-year, 24-hour design storm. Determine the required diameter and slope for the 1999 stormwater basin outlet pipe.

REFERENCES:

1. Technical drawings and figures contained in the Detailed Work Plan for On-Plant Consolidation Areas prepared by Blasland, Bouck & Lee, Inc. (BBL), dated June 1999 (Work Plan).

2. TERRAMODEL Version 9.60 computer terrain modeling and hydrology program developed by Plus 3/Spectra Precision (watershed hydrograph modeling performed by hydrology module resident within TERRAMODEL based on Technical Release-20 [TR-20] methodology).

3. Technical Release 55 "Urban Hydrology for Small Watersheds", Soil Conservation Service, June 1986.

4. Quick TR-55 Urban Hydrology for Small Watersheds Version 5.47 (DOS) computer-based implementation of the Soil Conservation Service's TR-55 methodology, Haestad Methods, Inc..

METHODOLOGY:

The design of the 1999 stormwater basin assumes that the basin must provide sufficient storage capacity to limit post-developed peak stormwater discharge from the stormwater basin watershed to pre-development conditions during the 25-year, 24-hour storm. Consequently, the configuration of the 1999 stormwater basin is dependent on the maximum allowable discharge from the basin and the rate of stormwater runoff entering the basin under post-development conditions. The rate of stormwater runoff entering the 1999 stormwater basin is determined from a runoff hydrograph generated using TR-20 methodology and the TERRAMODEL hydrology module. The following is used to determine the runoff hydrograph, the configuration of the 1999 stormwater basin, and the stormwater basin outflow hydrograph.

1. Stormwater modeling parameters used in TERRAMODEL are determined based on the following conditions:
   - Hydrologic soil group B for undisturbed areas (i.e., all pre-development watershed areas and areas of the post-developed watershed not affected by construction activities);
   - Hydrologic soil group C for developed watershed areas;
   - Runoff curve numbers (from TR-55):
     - Pre-developed areas covered by woods-grass combination (poor hydrologic condition) = 73
     - Unpaved roads for pre-developed areas = 82
     - Post-developed OPCA areas (grassland, fair hydrologic condition) = 79
     - Impervious areas such as the General Dynamics parking lot and the area covered by the 1999 stormwater basin during the approximate design high water stage = 98;
   - Rainfall depths:
     - 2 year/24 hour = 2.86"
     - 25 year/24 hour = 5.05";
   - Pre- and post-developed areas of stormwater basin watershed (delineated based on the technical drawings entitled "Subgrade Plan" and "Existing Site Plan" and the figure entitled "Final Configuration of On-Plant Consolidation Areas" contained in the Work Plan; and
   - Times of concentration (Tc) calculated using Quick TR-55 for pre- and post-developed stormwater basin watershed conditions.

2. Stormwater inflow hydrographs are computed for the pre- and post-developed OPCA condition using the TERRAMODEL hydrology module. The pre-development hydrograph is used as a baseline for comparison with post-developed runoff conditions and to establish the maximum allowable discharge from the 1999 stormwater basin. The post-development hydrograph is used to determine size requirements and performance characteristics for the 1999 stormwater basin.

3. A rating curve (stage/storage/discharge) is developed for the 1999 stormwater basin using the TERRAMODEL hydrology module.

4. The post-development inflow hydrograph is routed through the 1999 stormwater basin using the TERRAMODEL hydrology module to produce a stormwater basin outflow hydrograph. The design conditions for the 1999 stormwater basin assume the following:

   - Water level in the stormwater basin is at the invert elevation of the low flow orifices at the beginning of a storm event; and
   - 2-inch diameter low flow orifices in the concrete outlet structure are modeled as 1-inch diameter orifices to account for the reduction in flow capacity caused by the presence of riprap at the upstream end of the orifices.

5. The design of the stormwater basin outlet pipe is based on the peak stormwater basin discharge during the 25-year, 24-hour storm.

CALCULATIONS:

Supporting calculations, including output from Quick TR-55 and TERRAMODEL, are included as attachments.

1. TERRAMODEL Hydrology Input Parameters

The table below presents a summary of the input parameters required by the TERRAMODEL hydrology module to develop runoff hydrographs for pre- and post-developed conditions. Under the post-developed condition, the stormwater basin watershed is divided into two subareas (i.e., "Development" and "Bypass") as only the stormwater runoff from the "Development" subarea is routed through the 1999 stormwater basin. The "Bypass" subarea comprises a portion of the General Dynamics parking lot where runoff is conveyed through a relocated storm sewer pipe to a point that is downgradient of the 1999 stormwater basin. Although it does not contribute runoff to the basin, the "Bypass" subarea is still considered part of the 1999 stormwater basin watershed simplifying the comparison of pre- and post-development runoff conditions. The post-development runoff condition is obtained by combining the peak discharge from the two subareas.

Condition	Subarea	Watershed Area (acres ±)	Composite Curve Number, CN	Time of Concentration, Tc (hours)	25-Yr/24-Hr Precip. (in)
Pre-developed	Pre-development	8	85	0.27	5.05
Post-developed	Development	4.4	82	0.37	5.05
Post-developed	Bypass	3.2	98	0.17	5.05

2. Runoff Hydrograph for 1999 Stormwater Basin Watershed (TERRAMODEL Hydrology Output)

The table below presents the peak discharges from the stormwater basin watershed subareas for pre- and post-developed

conditions.

Condition	Subarea	25-Yr/24-Hr Storm Peak Discharge (cfs)
Pre-developed	Pre-development	23.3
Pre-development Total:		**23.3**
Post-developed	Development	10.7
	Bypass	12.8
Post-development Total:		***23.5***

Development of the 1999 stormwater basin watershed increases peak stormwater runoff for the design storm by 0.2 cfs (about 1%). This increase in peak runoff is compensated for by routing runoff from the "Development" subarea through the 1999 stormwater basin.

3. Rating Curve

The rating curve developed for the 1999 stormwater basin is based on the basin configuration as depicted in the technical drawing entitled "Subgrade Plan" contained in the Work Plan. The rating curve is determined using TERRAMODEL and is based on the planimetric area of the elevation contour lines within the 1999 stormwater basin. The rating curve for the 1999 stormwater basin represents storage volumes contained at various stages between the invert of the low flow orifices (elev. 1008.0) and the lowest crest elevation of the basin berm (elev. 1012.7).

4. Hydrograph Reservoir Routing

The generated runoff hydrograph for the "Development" subarea of the post-developed watershed is routed through the stormwater basin using the rating curve (stage/storage/discharge) described above. Results of the routing calculations are as follows:

Subarea	25-Yr/24-Hr Storm Peak Inflow (cfs)	25-Yr/24-Hr Storm Peak Routed Outflow (cfs)	25-Yr/24-Hr Storm Peak Water Elevation (ft)
Development	10.7	6.9	1011.5

The combined post-developed peak discharge for the 1999 stormwater basin watershed is 19.7 cfs (6.9 cfs for the "Development" subarea after routing through the basin plus 12.8 cfs for the "Bypass" subarea), which represents a 3.6 cfs decrease (about 15%) in peak discharge as compared to pre-developed conditions. Finally, the peak water elevation presented above provides for a minimum 12-inches of freeboard to the crest of the basin berm.

5. Basin Outlet Pipe

The basin outlet pipe is sized to convey the estimated peak discharge (6.9 cfs) from the 1999 stormwater basin during the 25-year, 24-hour design storm. Since the capacity of the basin outlet pipe may be impacted by a tailwater condition in downstream manhole MH-5, an oversized pipe diameter is proposed. A 15-inch diameter PVC pipe laid on a 2.8% slope has a capacity of 16 cfs, which is more than twice the expected peak discharge from the basin during the 25-year, 24-hour storm. An analysis of the outlet pipe

CLIENT: General Electric Company PROJECT: GE Pittsfield, MA Prepared By: BMS Date: 05-01-00
TITLE: Engineering Design Calculations Reviewed By: _____ Date: _____
SUBJECT: OPCA - 1999 Stormwater Basin Design

indicates that a slope of 0.51% slope is required for a 15-inch diameter PVC pipe to convey 6.9 cfs. Consequently, the proposed outlet pipe can convey the required 6.9 cfs peak basin discharge with a tailwater condition approximately 0.82 feet above the crown of the basin outlet pipe. Although not considered in this analysis, any headwater condition would tend to increase the flowrate through the outlet pipe.

SUMMARY:

Development of the consolidation areas will increase peak stormwater runoff from the 1999 stormwater basin watershed by about 1% during the 25-year, 24-hour storm. However, by routing the runoff from a portion of the watershed through the 1999 stormwater basin, peak runoff from the 1999 stormwater basin watershed is reduced by about 15% compared with pre-development conditions. Since these calculations are based on an assumed post-development watershed configuration (acreage, slopes, drainage ditch layout, etc.) for the 1999 stormwater basin, the actual stormwater basin inflow and outflow hydrographs may differ slightly from those presented in this document.

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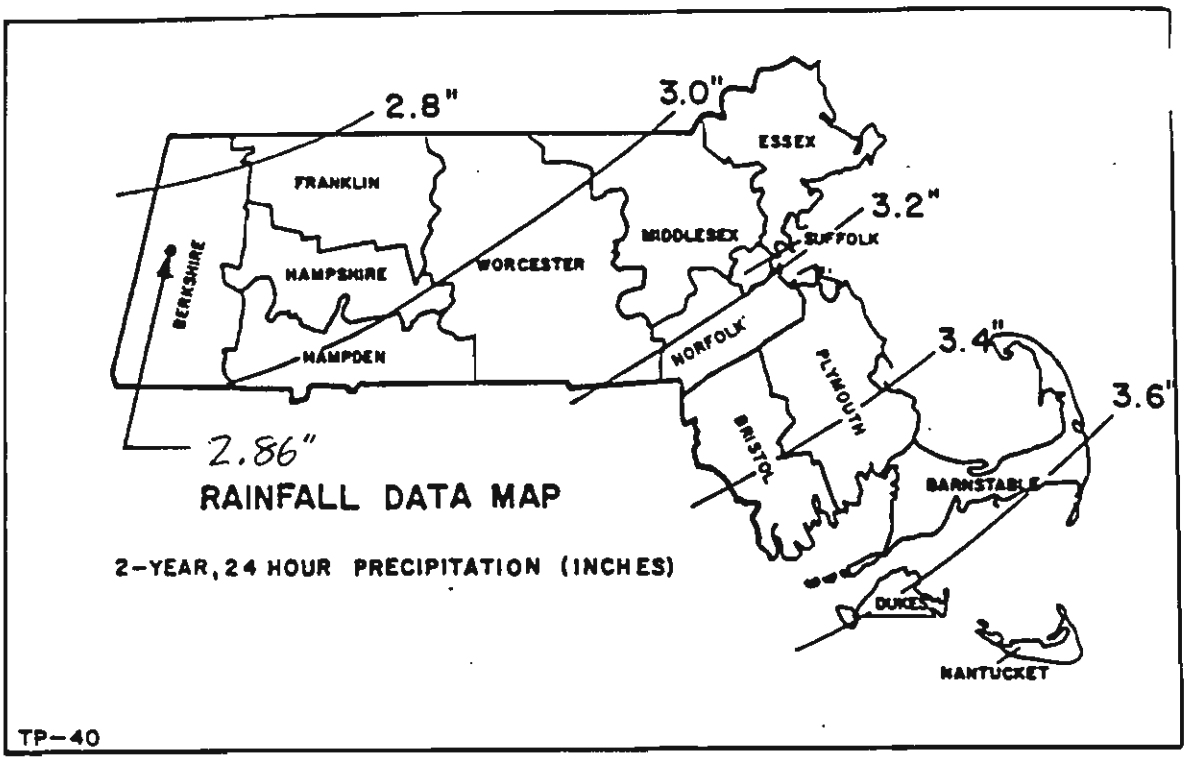
Precipitations Maps



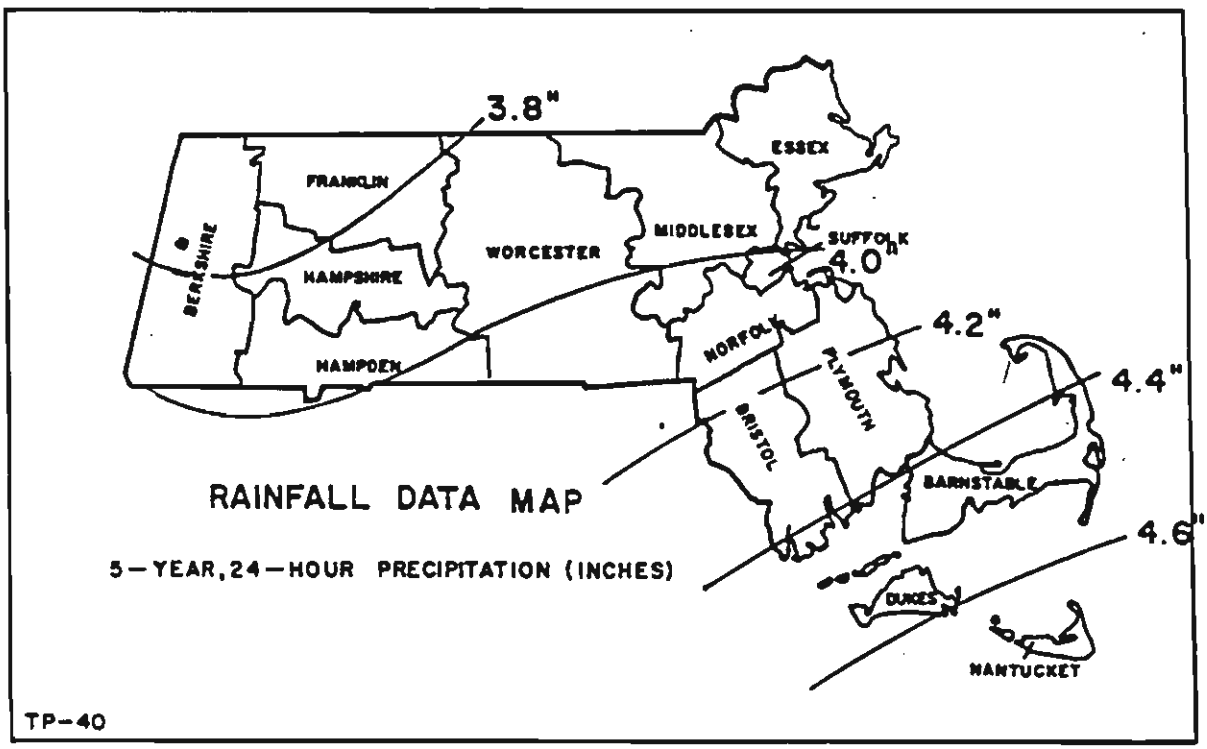
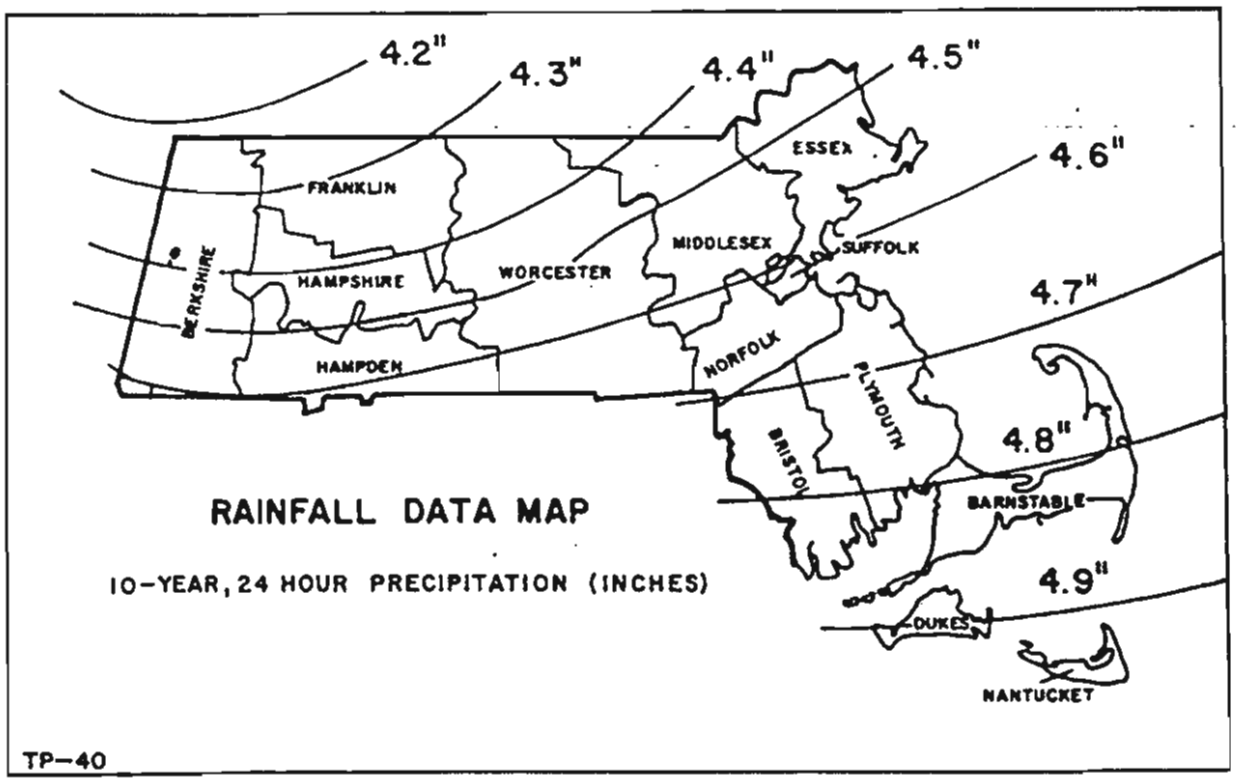


FIGURE B-1, SHEET 1 OF 3



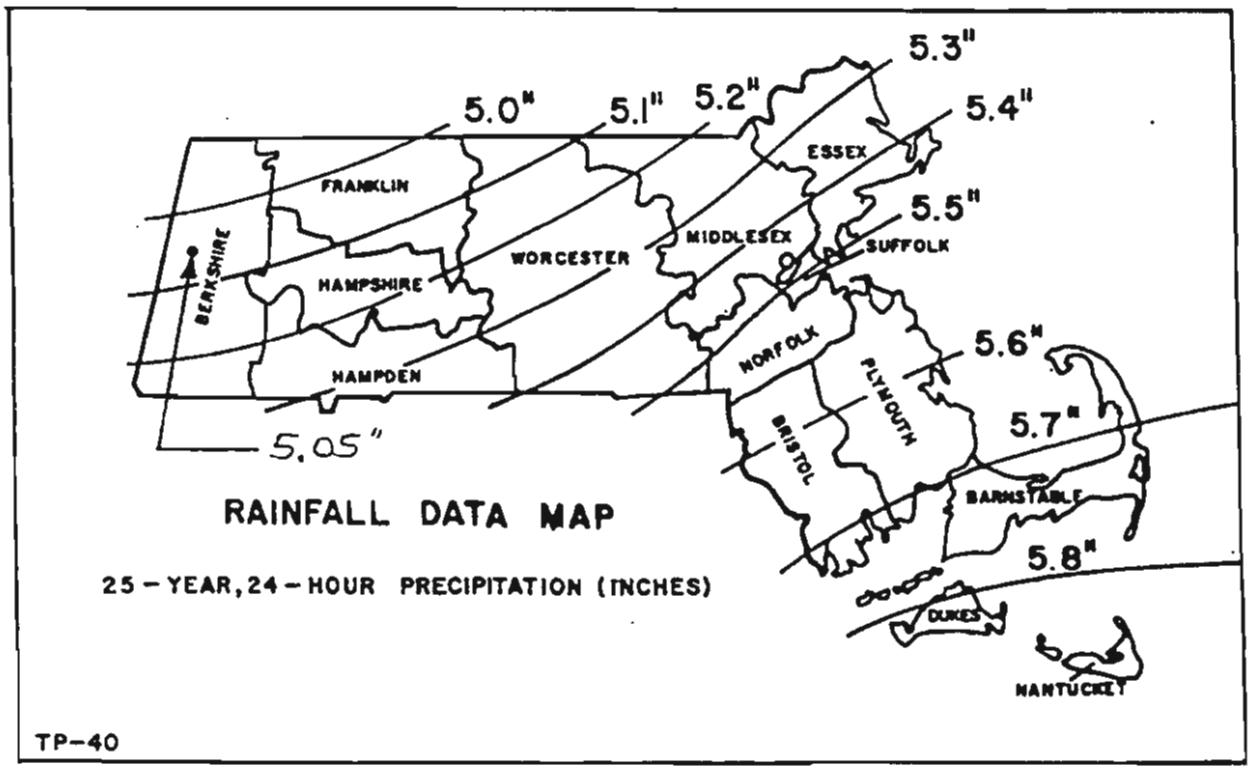


FIGURE B-1, SHEET 2 OF 3

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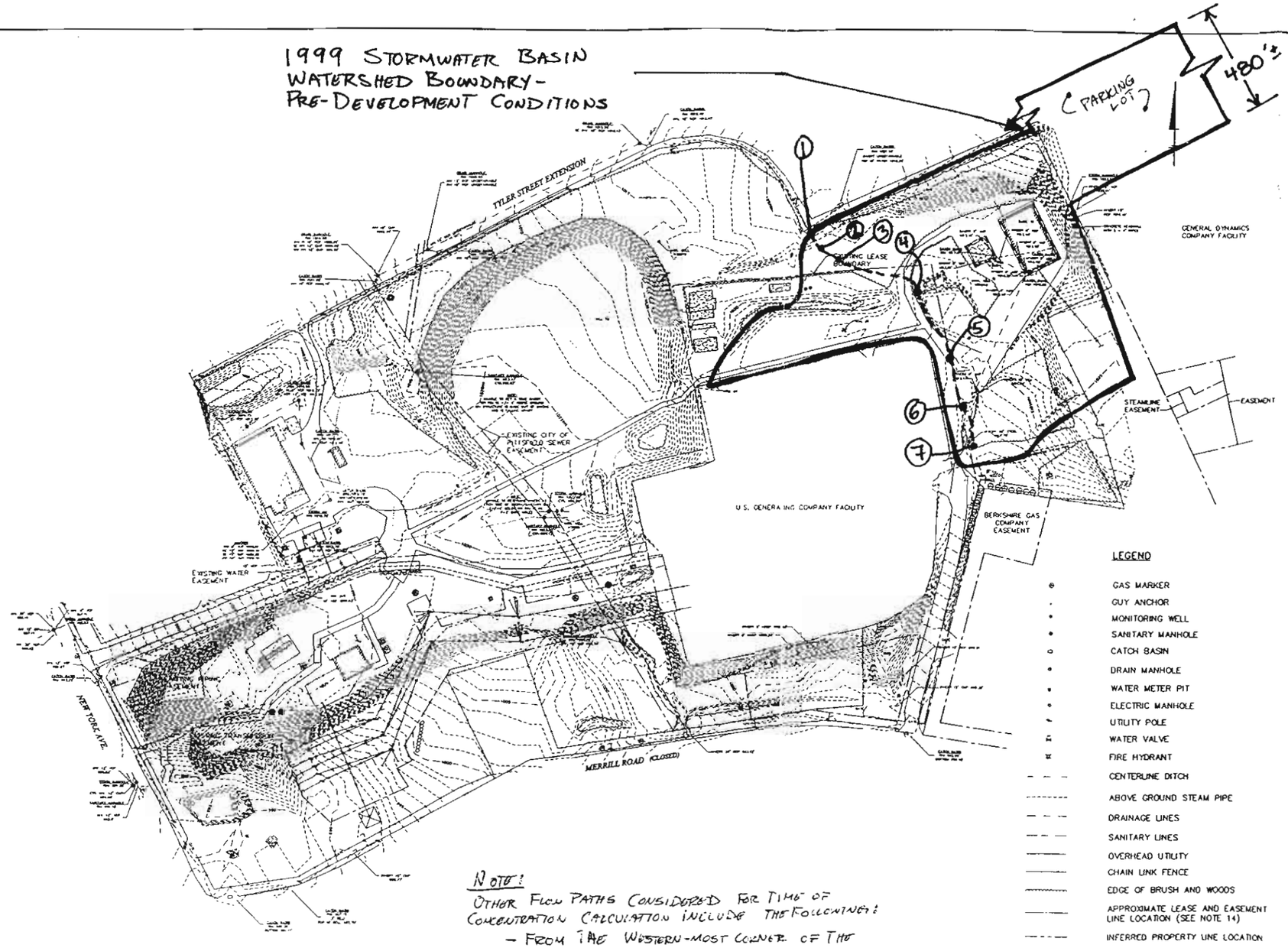
Watershed Area Maps

1999 STORMWATER BASIN WATERSHED BOUNDARY - PRE-DEVELOPMENT CONDITIONS



NOTE:

OTHER FLOW PATHS CONSIDERED FOR TIME OF CONCENTRATION CALCULATION INCLUDE THE FOLLOWING:

- FROM THE WESTERN-MOST CORNER OF THE WATERSHED ALONG THE ACCESS ROAD NORTH OF THE GENERATING FACILITY. THE CALCULATED TIME OF CONCENTRATION FOR THIS FLOW PATH IS SIGNIFICANTLY LESS THAN THE FLOW PATH SHOWN ABOVE
- FROM THE NORTH CORNER OF THE WATERSHED DOWN A STEEP SLOPE NORTH OF BLDG. 71. THIS FLOW PATH IS ALSO SIGNIFICANTLY SHORTER DUE TO THE STEEP SLOPE AND PRESENCE OF CATCH BASINS / HARD PIPING.

NOTES:

1. BASE MAP INFORMATION SHOWN ON THIS DRAWING WAS DEVELOPED FROM FIELD SURVEY DATA OBTAINED BY BLASLAND, BOUCK & LEE, INC. ON FEBRUARY 10, 1999. CONDITIONS SHOWN ARE APPROXIMATE ONLY DUE TO SNOW AND ICE ACCUMULATIONS EXISTING AT TIME OF SURVEY.
2. ELEVATIONS SHOWN ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
3. HORIZONTAL DATUM IS REFERENCED TO THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 1927).
4. CONTOUR INTERVAL EQUALS 1 FOOT.
5. DIFFERENCES NOTED BY THE CONTRACTOR BETWEEN BASE MAP INFORMATION AND ACTUAL SITE CONDITIONS, WHICH MAY AFFECT THE DESIGN CONFIGURATION, SHALL BE SUBMITTED TO GE. MODIFICATIONS MAY BE MADE TO THE DESIGN CONFIGURATION DURING PERFORMANCE OF THE SITE WORK AT THE DISCRETION OF GE.
6. CONTRACTOR SHALL VERIFY THE PRESENCE AND LOCATION OF ALL ABOVE GROUND AND UNDER GROUND SITE FEATURES IN THE VICINITY OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO COMMENCEMENT OF SITE WORK. ADDITIONAL SITE FEATURES MAY BE PRESENT WHICH ARE NOT SHOWN ON THIS DRAWING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH GE TO DETERMINE THE PRESENCE AND LOCATION OF SUCH FEATURES SHOULD THEY EXIST AND THE LOCATION OF ON-SITE EASEMENTS LEASE LINES AND RIGHT-OF-WAYS.
7. INFORMATION REGARDING SITE SURVEY CONTROL WILL BE PROVIDED BY GE FOR CONTRACTOR USE PRIOR TO COMMENCEMENT OF SITE WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR ESTABLISHING AND MAINTAINING CONSTRUCTION SURVEY CONTROL DURING PERFORMANCE OF THE CONTRACT WORK.
8. CONTRACTOR SHALL ASSUME EXISTING FENCING AT PERIMETER OF SITE IS GE'S PROPERTY LINE. NO WORK SHALL BE PERFORMED OUTSIDE THE PROPERTY LINE WITHOUT GE'S PRIOR APPROVAL. GE WILL OBTAIN APPROVALS FOR ANY WORK WITHIN IDENTIFIED LEASE OR EASEMENT AREAS.
9. CONTRACTOR SHALL PROVIDE ALL LOCAL (NON-ENVIRONMENTAL) PERMITS AND MAKE ARRANGEMENTS FOR LOCAL INSPECTIONS (AS NECESSARY).
10. CONTRACTOR SHALL FURNISH AND PLACE PROPER GUARDS FOR PREVENTION OF ACCIDENTS, PROVIDE ALL TRENCH SHORING, SCAFFOLDING, SHIELDING, DUST/FUME PROTECTION, SAFETY RAILINGS, BARRIERS, OR OTHER SAFETY FEATURES REQUIRED. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT LIGHTS DURING NIGHT HOURS TO SECURE SUCH PROTECTION.
11. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THIS CONTRACT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE THE NECESSARY PRECAUTION TO PREVENT DAMAGE, INJURY, OR LOSS TO ALL EMPLOYEES ON THE WORK AND ANY OTHER PERSONS WHO MAY BE AFFECTED THEREBY.
12. EXISTING SURFACES OR FEATURES NOT SPECIFIED FOR MODIFICATION THAT ARE DAMAGED OR DESTROYED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE RESTORED BY THE CONTRACTOR TO THEIR PRECONSTRUCTION CONDITION IN A TIMELY MANNER.
13. ALL CONTRACTOR RELATED ACTIVITIES SHALL BE PERFORMED IN A MANNER WHICH ALLOWS FOR ALL NECESSARY OPERATING ACTIVITIES ASSOCIATED WITH THE U.S. GENERATING COMPANY AND GENERAL DYNAMIC COMPANY FACILITIES. ANY WORK DEEMED NECESSARY WHICH MAY AFFECT THOSE FACILITIES SHALL BE BROUGHT TO THE ATTENTION OF GE PRIOR TO COMMENCEMENT OF SUCH WORK. GE SHALL PROVIDE THE CONTRACTOR WITH AUTHORIZATION TO PROCEED PROVIDED GE AND THE AFFECTED PARTY(IES) DEEM THE ACTION NECESSARY AND ACCEPTABLE.
14. LEASE AND EASEMENT LINE LOCATIONS SHOWN ON THIS DRAWING PLOTTED FROM PLAN PREPARED BY DESIGN GROUP, INC. ENTITLED "PLAN OF LAND SURVEYED FOR GENERAL ELECTRIC COMPANY", DATED FEBRUARY 18, 1993 (PROJECT NO. 930004) AND ARE APPROXIMATE ONLY.

LEGEND

- GAS MARKER
- GUY ANCHOR
- MONITORING WELL
- SANITARY MANHOLE
- CATCH BASIN
- DRAIN MANHOLE
- WATER METER PIT
- ELECTRIC MANHOLE
- UTILITY POLE
- WATER VALVE
- FIRE HYDRANT
- CENTERLINE DITCH
- ABOVE GROUND STEAM PIPE
- DRAINAGE LINES
- SANITARY LINES
- OVERHEAD UTILITY
- CHAIN LINK FENCE
- EDGE OF BRUSH AND WOODS
- APPROXIMATE LEASE AND EASEMENT LINE LOCATION (SEE NOTE 14)
- INFERRED PROPERTY LINE LOCATION
- INDEX CONTOUR LINE
- INTERMEDIATE CONTOUR LINE
- 1999 STORMWATER BASIN WATERSHED BOUNDARY - PRE-DEVELOPMENT CONDITIONS
- FLOW PATH FOR TIME OF CONCENTRATION CALCULATION

NOT FOR CONSTRUCTION

X: 20185X01.DWG
L: ON-1, OFF-YELL*
P: STD-PLOT.DR
6/10/99 5:51:34 PM, NET USER, DWG
20185003/WORKPLAN/20185G01.DWG

Graphic Scale: 100' 0 100' 200'

No.	Date	Revisions	Init.

Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
PE License _____

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
DETAILED WORK PLAN FOR ON-PLANT CONSOLIDATION AREAS

EXISTING SITE PLAN

GENERAL

File Number: 20185 XXX
Date: JUNE 1999

Blasland, Bouck & Lee, Inc.
Engineers & Scientists
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

A-1

1999 STORMWATER BASIN
WATERSHED BOUNDARY –
POST-DEVELOPMENT CONDITIONS

HILL 78 CONSOLIDATION AREA

BUILDING 71 CONSOLIDATION AREA

"BYPASS" SUBAREA

NEW YORK AVE.

78

78-2

14-E

BASIN

GENERAL DYNAMICS
PARKING LOT

DEVELOPMENT
SUBAREA

NEW YORK AVENUE/
MERRILL ROAD
CONSOLIDATION AREA

JUNCTION RD.

LEGEND:

- NON-TSCA/NON-RCRA AREA
- TSCA/RCRA AND NON-TSCA/NON-RCRA AREA
- APPROXIMATE AREA OF PROPOSED CONSOLIDATION AREAS
- EXISTING SECURITY FENCE
- 1999 STORMWATER BASIN WATERSHED BOUNDARY
- SUBAREA BOUNDARY
- FLOW PATH USED FOR TIME OF CONCENTRATION CALCULATION

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. -FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND, BOUCK & LEE, INC. (BBL) CONSTRUCTION PLANS, AND ON OBSERVATIONS DURING A SITE VISIT BY BBL PERSONNEL ON DECEMBER 3, 1997.
2. SITE BOUNDARIES ARE APPROXIMATE.
3. NOT ALL PHYSICAL FEATURES SHOWN

100' 0 100' 200'
GRAPHIC SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
DETAILED WORK PLAN FOR
ON-PLANT CONSOLIDATION AREAS

FINAL CONFIGURATION OF ON-PLANT CONSOLIDATION AREAS

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 5

XC 20185X01.DWG
LT GW=1", OFF="REF"
P STD-POP/ON.PCP
8/10/99 SYR-34-KLN 24.5
20185003/REPORT/20155B68.DWG

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Summary of Peak Discharges

Blasland, Bouck & Lee, Inc.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
315/446-9120
Mon May 08 14:38:59 2000

PROJECT: X:\TMPROJ\201\20185\20185C.pro

HYDROLOGIC REPORT - SUMMARY OF PEAK FLOW RATES

BASIN: OPCA
ID: 1999 STORMWATER BASIN
PREDEVELOPMENT

AREA	=	8.00
AVERAGE BASIN SLOPE	=	0.00
HYDRAULIC LENGTH	=	0.00
TIME OF CONCENTRATION	=	0.27
BASIN CURVE NUMBER	=	85.00

DEVELOPMENT

AREA	=	4.40
AVERAGE BASIN SLOPE	=	0.00
HYDRAULIC LENGTH	=	0.00
TIME OF CONCENTRATION	=	0.37
BASIN CURVE NUMBER	=	82.00

BYPASS

AREA	=	3.20
AVERAGE BASIN SLOPE	=	0.00
HYDRAULIC LENGTH	=	0.00
TIME OF CONCENTRATION	=	0.17
BASIN CURVE NUMBER	=	98.00

Frequency (years)	Pre-developed Peak Q (cfs) ①	By-pass area Peak Q (cfs) ②	Developed Peak Q (cfs) ③	Allowable peak Peak Q (cfs) ④
25	23.3	12.8	10.7	10.5

① PRE-DEVELOPED PEAK Q IS THE PEAK STORMWATER RUNOFF FROM THE 1999 STORMWATER BASIN WATERSHED BEFORE CONSOLIDATION AREA DEVELOPMENT.

② BYPASS AREA PEAK Q IS THE PEAK STORMWATER RUNOFF FROM THE BYPASS SUBAREA. SINCE THIS SUBAREA IS NOT AFFECTED BY CONSOLIDATION AREA DEVELOPMENT, THIS PEAK RUNOFF IS VALID FOR BOTH PRE- AND POST-DEVELOPMENT CONDITIONS.

③ DEVELOPED PEAK Q IS THE PEAK STORMWATER RUNOFF FROM THE DEVELOPMENT SUBAREA UNDER POST-DEVELOPMENT CONDITIONS. BY ROUTING RUNOFF FROM THE DEVELOPMENT SUBAREA THROUGH THE 1999 STORMWATER BASIN, THIS PEAK Q IS REDUCED.

④ ALLOWAWABLE PEAK Q IS THE MAXIMUM ALLOWABLE STORMWATER RUNOFF FROM THE DEVELOPMENT SUBAREA UNDER POST-DEVELOPMENT CONDITIONS. IT IS CALCULATED BY SUBTRACTING THE BYPASS AREA PEAK Q FROM THE PRE-DEVELOPED PEAK Q (23.3 - 12.8 = 10.5). SINCE THE DEVELOPED PEAK Q (10.7) EXCEEDS THE ALLOWABLE PEAK Q (10.5), THE 1999 STORMWATER BASIN IS NECESSARY TO REDUCE THE DEVELOPED PEAK Q TO ENSURE POST-DEVELOPMENT STORMWATER RUNOFF FROM THE WATERSHED DOES NOT EXCEED THAT OF PRE-DEVELOPMENT CONDITIONS.

Blasland, Bouck & Lee, Inc.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
315/446-9120
Mon May 08 14:37:57 2000

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HYDROLOGIC REPORT FOR OPCA
SUMMARY OF PEAK FLOW RATES

FREQ (yr)	PRE-DEVELOPED FLOW (c.f.s.)	POST-DEVELOP FLOW (c.f.s.)	POND ELEVATION (ft.)	STORAGE (cu.ft.)	ROUTED OUTFLOW (c.f.s)
25	23.3	10.7	1011.5	19617.7	6.9

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Pre-Development Runoff Conditions

Quick TR-55 Ver.5.47 S/N:
Executed: 14:03:48 05-08-2000

OPCA
1999 STORMWATER BASIN
PRE-DEVELOPED CONDITION

RUNOFF CURVE NUMBER SUMMARY

Subarea Description	Area (acres)	CN (weighted)
	8.00	85

Quick TR-55 Ver.5.47 S/N:
Executed: 14:03:48 05-08-2000

OPCA
1999 STORMWATER BASIN
PRE-DEVELOPED CONDITION

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
IMPERVIOUS	3.80	98	
DIRT ROAD	0.50	82	
WOODS/GRASS COMBINATION	3.70	73	
COMPOSITE AREA --->	8.00	85.4	(85)

OPCA
1999 STORMWATER BASIN
PRE-DEVELOPED CONDITION

Tc COMPUTATIONS FOR: P99B

SHEET FLOW (Applicable to Tc only)

		1-2	2-3		
Segment ID					
Surface description		WOODS	BRUSH		
Manning's roughness coeff., n		0.2400	0.2400		
Flow length, L (total < or = 300)	ft	28.0	38.0		
Two-yr 24-hr rainfall, P2	in	2.700	2.700		
Land slope, s	ft/ft	0.1400	0.0100		
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.04	+ 0.16	=	0.20

SHALLOW CONCENTRATED FLOW

		3-4	4-5		
Segment ID					
Surface (paved or unpaved)?		Unpaved	Unpaved		
Flow length, L	ft	164.0	128.0		
Watercourse slope, s	ft/ft	0.0100	0.0160		
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.6135	2.0409		
$T = L / (3600*V)$	hrs	0.03	+ 0.02	=	0.05

where: Unpaved Csf = 16.1345
Paved Csf = 20.3282

CHANNEL FLOW

		5-6	6-7		
Segment ID					
Cross Sectional Flow Area, a	sq.ft	1.90	7.00		
Wetted perimeter, Pw	ft	13.80	13.70		
Hydraulic radius, r = a/Pw	ft	0.138	0.511		
Channel slope, s	ft/ft	0.0220	0.0540		
Manning's roughness coeff., n		0.0500	0.0500		
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.1785	4.4259		
Flow length, L	ft	92	74		
$T = L / (3600*V)$	hrs	0.02	+ 0.00	=	0.03

TOTAL TIME (hrs) 0.27

Blasland, Bouck & Lee, Inc.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
315/446-9120
Mon May 08 14:09:18 2000

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HYDROLOGIC REPORT

PRE-DEVELOPED 24 HOUR SCS HYDROGRAPH

BASIN IDENTIFIER	OPCA		
DISCHARGES INTO	1999 STORMWATER BASIN		
BASIN AREA	= 8.00	ACRES	
BASIN CURVE NUMBER	= 85.00		
24-HOUR PRECIPITATION	= 5.05	INCHES	
24-HOUR RUNOFF	= 3.41	INCHES	
AVERAGE BASIN SLOPE	= 0.0	%	
HYDRAULIC LENGTH	= 0.0	FEET	
BASIN LAG, (Tc)	= 0.16	HOURS	0.27 HOURS
UNITPEAK COEFFICIENT	= 484		
RAINFALL DISTRIBUTION	= iii.scs		

HYDROGRAPH RUNOFF VALUES

25 YEAR STORM FREQUENCY

TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.
5.92	0.00	6.00	0.00	6.08	0.00	6.17	0.00
6.25	0.01	6.33	0.01	6.42	0.01	6.50	0.02
6.58	0.03	6.67	0.03	6.75	0.04	6.83	0.04
6.92	0.04	7.00	0.05	7.08	0.06	7.17	0.06
7.25	0.07	7.33	0.08	7.42	0.10	7.50	0.11
7.58	0.11	7.67	0.12	7.75	0.14	7.83	0.17
7.92	0.19	8.00	0.21	8.08	0.22	8.17	0.24
8.25	0.25	8.33	0.26	8.42	0.28	8.50	0.29
8.58	0.30	8.67	0.31	8.75	0.34	8.83	0.38
8.92	0.41	9.00	0.44	9.08	0.46	9.17	0.47
9.25	0.49	9.33	0.50	9.42	0.52	9.50	0.53
9.58	0.55	9.67	0.56	9.75	0.60	9.83	0.65
9.92	0.69	10.00	0.72	10.08	0.74	10.17	0.77
10.25	0.81	10.33	0.86	10.42	0.93	10.50	1.01
10.58	1.04	10.67	1.08	10.75	1.15	10.83	1.21
10.92	1.27	11.00	1.37	11.08	1.48	11.17	1.59
11.25	1.71	11.33	1.80	11.42	1.92	11.50	2.15
11.58	2.40	11.67	2.62	11.75	2.93	11.83	3.41
11.92	4.56	12.00	7.07	12.08	11.05	12.17	16.54
12.25	21.60	12.33	23.28	12.42	20.91	12.50	16.68
12.58	12.10	12.67	8.55	12.75	6.42	12.83	5.23
12.92	4.48	13.00	3.90	13.08	3.52	13.17	3.25
13.25	2.99	13.33	2.82	13.42	2.73	13.50	2.57
13.58	2.47	13.67	2.38	13.75	2.21	13.83	2.09
13.92	2.05	14.00	1.98	14.08	1.90	14.17	1.86
14.25	1.81	14.33	1.75	14.42	1.72	14.50	1.70
14.58	1.69	14.67	1.68	14.75	1.62	14.83	1.52
14.92	1.46	15.00	1.43	15.08	1.41	15.17	1.40
15.25	1.37	15.33	1.32	15.42	1.28	15.50	1.27
15.58	1.26	15.67	1.26	15.75	1.24	15.83	1.22
15.92	1.20	16.00	1.19	16.08	1.19	16.17	1.18
16.25	1.12	16.33	1.04	16.42	0.98	16.50	0.95
16.58	0.94	16.67	0.93	16.75	0.93	16.83	0.93
16.92	0.93	17.00	0.93	17.08	0.93	17.17	0.92
17.25	0.87	17.33	0.78	17.42	0.72	17.50	0.69
17.58	0.68	17.67	0.68	17.75	0.67	17.83	0.67
17.92	0.67	18.00	0.67	18.08	0.67	18.17	0.67
18.25	0.64	18.33	0.61	18.42	0.58	18.50	0.57
18.58	0.56	18.67	0.56	18.75	0.56	18.83	0.56
18.92	0.56	19.00	0.56	19.08	0.56	19.17	0.56
19.25	0.54	19.33	0.52	19.42	0.50	19.50	0.49

19.58	0.49	19.67	0.49	19.75	0.49	19.83	0.49
19.92	0.49	20.00	0.49	20.08	0.49	20.17	0.49
20.25	0.48	20.33	0.47	20.42	0.46	20.50	0.45
20.58	0.45	20.67	0.45	20.75	0.45	20.83	0.45
20.92	0.45	21.00	0.45	21.08	0.45	21.17	0.45
21.25	0.44	21.33	0.41	21.42	0.40	21.50	0.39
21.58	0.39	21.67	0.39	21.75	0.39	21.83	0.39
21.92	0.39	22.00	0.39	22.08	0.39	22.17	0.39
22.25	0.39	22.33	0.39	22.42	0.39	22.50	0.39
22.58	0.39	22.67	0.39	22.75	0.39	22.83	0.39
22.92	0.39	23.00	0.39	23.08	0.39	23.17	0.39
23.25	0.39	23.33	0.39	23.42	0.39	23.50	0.39
23.58	0.39	23.67	0.39	23.75	0.39	23.83	0.39
23.92	0.39	24.00	0.39	24.08	0.39	24.17	0.37
24.25	0.28	24.33	0.15	24.42	0.07	24.50	0.03
24.58	0.01	24.67	0.01	24.75	0.00	24.83	0.00

PEAK FLOW = 23.28 CFS
TIME TO PEAK = 12.25 HRS
TOTAL VOLUME = 99201.76 CU FT

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Post-Development Runoff Conditions

Quick TR-55 Ver.5.47 S/N:
Executed: 01:26:27 05-02-2000

OPCA
1999 STORMWATER BASIN
DEVELOPED CONDITION

RUNOFF CURVE NUMBER SUMMARY

Subarea Description	Area (acres)	CN (weighted)
	4.50	82

Quick TR-55 Ver.5.47 S/N:
Executed: 01:26:27 05-02-2000

OPCA
1999 STORMWATER BASIN
DEVELOPED CONDITION

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
IMPERVIOUS	0.80	98	
PASTURE	3.70	79	
COMPOSITE AREA --->	4.50	82.4	(82)

OPCA
1999 STORMWATER BASIN
DEVELOPED CONDITION

Tc COMPUTATIONS FOR: D99B

SHEET FLOW (Applicable to Tc only)

Segment ID		1-2		
Surface description		PASTURE		
Manning's roughness coeff., n		0.2400		
Flow length, L (total < or = 300)	ft	100.0		
Two-yr 24-hr rainfall, P2	in	2.700		
Land slope, s	ft/ft	0.0400		
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.20	=	0.20

SHALLOW CONCENTRATED FLOW

Segment ID		2-3		
Surface (paved or unpaved)?		Unpaved		
Flow length, L	ft	100.0		
Watercourse slope, s	ft/ft	0.0500		
$Avg.V = Csf * (s)^{0.5}$	ft/s	3.6078		
where: Unpaved Csf = 16.1345				
Paved Csf = 20.3282				
T = L / (3600*V)	hrs	0.01	=	0.01

CHANNEL FLOW

Segment ID		3-4	4-5		
Cross Sectional Flow Area, a	sq.ft	2.50	5.00		
Wetted perimeter, Pw	ft	5.40	7.47		
Hydraulic radius, r = a/Pw	ft	0.463	0.669		
Channel slope, s	ft/ft	0.0100	0.3300		
Manning's roughness coeff., n		0.0650	0.0400		
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.3718	%16.3738		
Flow length, L	ft	800	85		
T = L / (3600*V)	hrs	0.16	+ 0.00	=	0.16

::

TOTAL TIME (hrs) 0.37

Blasland, Bouck & Lee, Inc.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
315/446-9120
Mon May 08 14:40:28 2000

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HYDROLOGIC REPORT

DEVELOPED 24 HOUR SCS HYDROGRAPH
BASIN IDENTIFIER OPCA
DISCHARGES INTO 1999 STORMWATER BASIN
BASIN AREA = 4.40 ACRES
BASIN CURVE NUMBER = 82.00
24-HOUR PRECIPITATION = 5.05 INCHES
24-HOUR RUNOFF = 3.12 INCHES
AVERAGE BASIN SLOPE = 0.0 %
HYDRAULIC LENGTH = 0.0 FEET
BASIN LAG, (Tc) = 0.22 HOURS 0.37 HOURS
UNITPEAK COEFFICIENT = 484
RAINFALL DISTRIBUTION = iii.scs
HYDROGRAPH RUNOFF VALUES
25 YEAR STORM FREQUENCY

TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.
7.00	0.00	7.08	0.00	7.17	0.00	7.25	0.00
7.33	0.00	7.42	0.01	7.50	0.01	7.58	0.01
7.67	0.02	7.75	0.02	7.83	0.03	7.92	0.04
8.00	0.04	8.08	0.05	8.17	0.06	8.25	0.07
8.33	0.07	8.42	0.08	8.50	0.08	8.58	0.09
8.67	0.10	8.75	0.11	8.83	0.12	8.92	0.13
9.00	0.14	9.08	0.16	9.17	0.17	9.25	0.17
9.33	0.18	9.42	0.19	9.50	0.20	9.58	0.21
9.67	0.22	9.75	0.23	9.83	0.24	9.92	0.26
10.00	0.28	10.08	0.29	10.17	0.31	10.25	0.32
10.33	0.34	10.42	0.37	10.50	0.40	10.58	0.43
10.67	0.45	10.75	0.48	10.83	0.50	10.92	0.53
11.00	0.57	11.08	0.61	11.17	0.67	11.25	0.72
11.33	0.77	11.42	0.83	11.50	0.90	11.58	1.00
11.67	1.11	11.75	1.24	11.83	1.41	11.92	1.75
12.00	2.45	12.08	3.76	12.17	5.77	12.25	8.19
12.33	10.14	12.42	10.66	12.50	9.84	12.58	8.16
12.67	6.30	12.75	4.78	12.83	3.72	12.92	3.05
13.00	2.57	13.08	2.23	13.17	1.98	13.25	1.78
13.33	1.63	13.42	1.53	13.50	1.44	13.58	1.37
13.67	1.31	13.75	1.25	13.83	1.18	13.92	1.12
14.00	1.09	14.08	1.05	14.17	1.01	14.25	0.98
14.33	0.95	14.42	0.93	14.50	0.91	14.58	0.90
14.67	0.90	14.75	0.88	14.83	0.84	14.92	0.81
15.00	0.78	15.08	0.76	15.17	0.75	15.25	0.74
15.33	0.72	15.42	0.70	15.50	0.68	15.58	0.68
15.67	0.67	15.75	0.66	15.83	0.66	15.92	0.65
16.00	0.64	16.08	0.63	16.17	0.63	16.25	0.61
16.33	0.59	16.42	0.55	16.50	0.53	16.58	0.51
16.67	0.50	16.75	0.50	16.83	0.50	16.92	0.49
17.00	0.49	17.08	0.49	17.17	0.49	17.25	0.48
17.33	0.45	17.42	0.42	17.50	0.39	17.58	0.38
17.67	0.37	17.75	0.36	17.83	0.36	17.92	0.36
18.00	0.36	18.08	0.36	18.17	0.36	18.25	0.35
18.33	0.34	18.42	0.32	18.50	0.31	18.58	0.31
18.67	0.30	18.75	0.30	18.83	0.30	18.92	0.30
19.00	0.30	19.08	0.30	19.17	0.30	19.25	0.29
19.33	0.29	19.42	0.28	19.50	0.27	19.58	0.26
19.67	0.26	19.75	0.26	19.83	0.26	19.92	0.26
20.00	0.26	20.08	0.26	20.17	0.26	20.25	0.26
20.33	0.25	20.42	0.25	20.50	0.24	20.58	0.24

Blasland, Bouck Lee, Inc.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
315/446-9120
Mon May 08 14:40:28 2000

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HYDROLOGIC REPORT

20.67	0.24	20.75	0.24	20.83	0.24	20.92	0.24
21.00	0.24	21.08	0.24	21.17	0.24	21.25	0.24
21.33	0.23	21.42	0.22	21.50	0.22	21.58	0.21
21.67	0.21	21.75	0.21	21.83	0.21	21.92	0.21
22.00	0.21	22.08	0.21	22.17	0.21	22.25	0.21
22.33	0.21	22.42	0.21	22.50	0.21	22.58	0.21
22.67	0.21	22.75	0.21	22.83	0.21	22.92	0.21
23.00	0.21	23.08	0.21	23.17	0.21	23.25	0.21
23.33	0.21	23.42	0.21	23.50	0.21	23.58	0.21
23.67	0.21	23.75	0.21	23.83	0.21	23.92	0.21
24.00	0.21	24.08	0.21	24.17	0.20	24.25	0.17
24.33	0.12	24.42	0.08	24.50	0.04	24.58	0.03
24.67	0.01	24.75	0.01	24.83	0.01	24.92	0.00
25.00	0.00	25.08	0.00	25.17	0.00	25.25	0.00

PEAK FLOW = 10.66 CFS
TIME TO PEAK = 12.33 HRS
TOTAL VOLUME = 49901.92 CU FT

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Rating Curve

Blasland, Bouck & Lee, Inc.
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315/446-9120
Tue May 02 01:14:07 2000

PROJECT: X:\TMPROJ\201\20185\20185C.pro

HYDROLOGIC REPORT - POND DEPTH VS STORAGE PROVIDED
POND: 1999 STORMWATER BASIN

ELEV feet	DEPTH feet	AREA sq.ft.	VOLUME cu.ft.	SUMVOL cu.ft.
1008.00		3543.00		0.00
	1.0		4098.5	
1009.00		4654.00		4098.50
	1.0		5250.0	
1010.00		5846.00		9348.50
	1.0		6482.5	
1011.00		7119.00		15831.00
	1.0		7796.0	
1012.00		8473.00		23627.00
	0.7		6195.9	
1012.69		9486.00		29822.90

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HYDROLOGIC REPORT - STAGE, STORAGE, AND DISCHARGE
POND: OPCA

```
 1=RECTANGULAR WEIR
   INVERT 1011.00  C 0.53  W 7.00
   Q = 0.667 * C * W * (H ** 1.5) * 8.02496
 2=CIRCULAR ORIFICE
   INVERT 1008.00  C 0.70  D 0.08
   if (H < D) Q = 3.0 * D * (H ** 1.5)
      if (H >= D) Q = C * A * SQRT(64.4 * (H - RAD)
 3=CIRCULAR ORIFICE
   INVERT 1008.00  C 0.70  D 0.08
   if (H < D) Q = 3.0 * D * (H ** 1.5)
      if (H >= D) Q = C * A * SQRT(64.4 * (H - RAD)
 4=CIRCULAR ORIFICE
   INVERT 1008.00  C 0.70  D 0.08
   if (H < D) Q = 3.0 * D * (H ** 1.5)
      if (H >= D) Q = C * A * SQRT(64.4 * (H - RAD)
```

ELEV	STORAGE (CU.FT.)	OUTFLOW (CFS)	2S/T+O (CFS)
1008.00	0.0	0.0	0.0
1008.13	512.3	0.0	3.4
1008.25	1024.6	0.0	6.9
1008.38	1536.9	0.1	10.3
1008.50	2049.3	0.1	13.7
1008.63	2561.6	0.1	17.1
1008.75	3073.9	0.1	20.6
1008.88	3586.2	0.1	24.0
1009.00	4098.5	0.1	27.4
1009.13	4754.8	0.1	31.8
1009.25	5411.0	0.1	36.2
1009.38	6067.3	0.1	40.6
1009.50	6723.5	0.1	44.9
1009.63	7379.8	0.1	49.3
1009.75	8036.0	0.1	53.7
1009.88	8692.3	0.1	58.1
1010.00	9348.5	0.1	62.5
1010.13	10158.8	0.1	67.9
1010.25	10969.1	0.1	73.3
1010.38	11779.4	0.1	78.7
1010.50	12589.8	0.1	84.1
1010.63	13400.1	0.1	89.5
1010.75	14210.4	0.2	94.9
1010.88	15020.7	0.2	100.3
1011.00	15831.0	0.2	105.7
1011.13	16805.5	1.0	113.1
1011.25	17780.0	2.6	121.2
1011.38	18754.5	4.7	129.8
1011.50	19729.0	7.2	138.7
1011.63	20703.5	10.0	148.0
1011.75	21678.0	13.1	157.6
1011.88	22652.5	16.4	167.4
1012.00	23627.0	20.0	177.6
1012.09	24401.5	22.7	185.3
1012.17	25176.0	25.4	193.2
1012.26	25950.5	28.2	201.2
1012.35	26725.0	31.2	209.3
1012.43	27499.4	34.2	217.5

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HYDROLOGIC REPORT - STAGE, STORAGE, AND DISCHARGE
POND: OPCA

1012.52	28273.9	37.3	225.8
1012.60	29048.4	40.5	234.2
1012.69	29822.9	43.8	242.6

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Outflow Hyrdograph

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Mon May 08 14:40:46 2000

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HYDROLOGIC REPORT

POND OUTFLOW HYDROGRAPH
POND IDENTIFIER 1999 STORMWATER BASIN
25 YEAR STORM FREQUENCY

TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.
7.42	0.00	7.50	0.00	7.58	0.00	7.67	0.00
7.75	0.00	7.83	0.00	7.92	0.00	8.00	0.00
8.08	0.00	8.17	0.00	8.25	0.01	8.33	0.01
8.42	0.01	8.50	0.01	8.58	0.01	8.67	0.01
8.75	0.01	8.83	0.01	8.92	0.01	9.00	0.02
9.08	0.02	9.17	0.02	9.25	0.02	9.33	0.03
9.42	0.03	9.50	0.03	9.58	0.03	9.67	0.03
9.75	0.03	9.83	0.04	9.92	0.04	10.00	0.04
10.08	0.04	10.17	0.04	10.25	0.04	10.33	0.05
10.42	0.05	10.50	0.05	10.58	0.05	10.67	0.06
10.75	0.06	10.83	0.06	10.92	0.06	11.00	0.07
11.08	0.07	11.17	0.07	11.25	0.07	11.33	0.07
11.42	0.08	11.50	0.08	11.58	0.08	11.67	0.09
11.75	0.09	11.83	0.09	11.92	0.10	12.00	0.10
12.08	0.11	12.17	0.12	12.25	0.13	12.33	0.14
12.42	0.16	12.50	3.77	12.58	6.52	12.67	6.91
12.75	6.16	12.83	5.11	12.92	4.23	13.00	3.54
13.08	2.99	13.17	2.57	13.25	2.30	13.33	2.06
13.42	1.87	13.50	1.72	13.58	1.60	13.67	1.50
13.75	1.41	13.83	1.33	13.92	1.26	14.00	1.20
14.08	1.15	14.17	1.10	14.25	1.06	14.33	1.03
14.42	1.01	14.50	0.99	14.58	0.97	14.67	0.95
14.75	0.94	14.83	0.92	14.92	0.90	15.00	0.87
15.08	0.85	15.17	0.82	15.25	0.81	15.33	0.79
15.42	0.77	15.50	0.75	15.58	0.73	15.67	0.72
15.75	0.71	15.83	0.69	15.92	0.69	16.00	0.67
16.08	0.67	16.17	0.66	16.25	0.65	16.33	0.64
16.42	0.62	16.50	0.60	16.58	0.58	16.67	0.56
16.75	0.55	16.83	0.54	16.92	0.53	17.00	0.52
17.08	0.51	17.17	0.51	17.25	0.50	17.33	0.49
17.42	0.48	17.50	0.46	17.58	0.44	17.67	0.43
17.75	0.41	17.83	0.40	17.92	0.39	18.00	0.38
18.08	0.38	18.17	0.37	18.25	0.37	18.33	0.36
18.42	0.35	18.50	0.35	18.58	0.34	18.67	0.33
18.75	0.32	18.83	0.32	18.92	0.31	19.00	0.31
19.08	0.31	19.17	0.30	19.25	0.30	19.33	0.30
19.42	0.29	19.50	0.29	19.58	0.28	19.67	0.28
19.75	0.28	19.83	0.27	19.92	0.27	20.00	0.27
20.08	0.27	20.17	0.26	20.25	0.26	20.33	0.26
20.42	0.26	20.50	0.26	20.58	0.25	20.67	0.25
20.75	0.25	20.83	0.25	20.92	0.24	21.00	0.24
21.08	0.24	21.17	0.24	21.25	0.24	21.33	0.24
21.42	0.23	21.50	0.23	21.58	0.23	21.67	0.22
21.75	0.22	21.83	0.22	21.92	0.21	22.00	0.21
22.08	0.21	22.17	0.21	22.25	0.21	22.33	0.21
22.42	0.21	22.50	0.21	22.58	0.21	22.67	0.21
22.75	0.21	22.83	0.21	22.92	0.21	23.00	0.21
23.08	0.21	23.17	0.21	23.25	0.21	23.33	0.21
23.42	0.21	23.50	0.21	23.58	0.21	23.67	0.21
23.75	0.21	23.83	0.21	23.92	0.21	24.00	0.21
24.08	0.21	24.17	0.21	24.25	0.20	24.33	0.19
24.42	0.17	24.50	0.16	24.58	0.16	24.67	0.16

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HYDROLOGIC REPORT

24.75	0.16	24.83	0.16	24.92	0.16	25.00	0.16
25.08	0.16	25.17	0.16	25.25	0.16	25.33	0.16
25.42	0.16	25.50	0.16	25.58	0.15	25.67	0.15
25.75	0.15	25.83	0.15	25.92	0.15	26.00	0.15
26.08	0.00	26.17	0.00	26.25	0.00	26.33	0.00

PEAK FLOW = 6.91 CFS
TIME TO PEAK = 12.58 HRS
TOTAL VOLUME = 49901.70 CU FT

BLASLAND, BOUCK & LEE, INC.
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Basin Outlet Pipe

Brian M. Stone

1999 Stormwater Basin Outlet Pipe Design

Assuming a 15-inch diameter PVC pipe on a 2.8% slope is used, determine pipe-full capacity (*no tailwater conditions*) and the maximum allowable tailwater condition.

1) Pipe-full capacity is determined using the Darcy-Weisbach Equation and assuming no head or tailwater conditions:

$$S_o = \frac{fV^2}{D2g}$$

$S_o = Pipe\ Slope = 0.028$

$f = Pipe\ Friction\ Factor \cong 0.013$

$D = Pipe\ Diameter = 15" = 1.25'$

$V = Flow Velocity$

$$V = \sqrt{\frac{S_o D2g}{f}}$$

Since $Q = VA$,

$$Q = \frac{\pi D^2}{4}\sqrt{\frac{S_o D2g}{f}} = \sqrt{\frac{\pi^2 g S_o D^5}{8f}} = \sqrt{\frac{\pi^2(32.2)(0.028)(1.25)^5}{8(0.013)}}$$

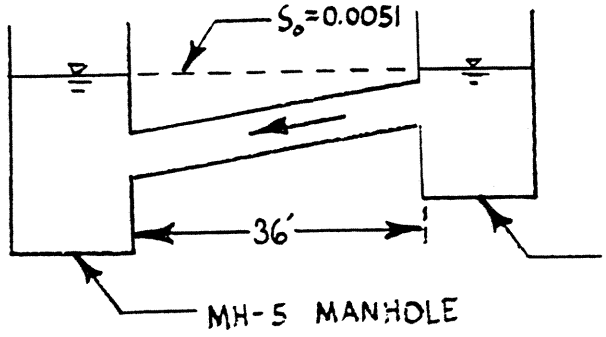
$Q = 16.2cfs$ *(Pipe – flow capacity with no tailwater or headwater conditions)*

2) Maximum allowable tailwater is determined by solving the Darcy-Weisbach Equation for minimum required slope to convey 6.9cfs (i.e., peak discharge from basin outlet structure):

$$S_o = \frac{8fQ^2}{\pi^2 gD^5} = \frac{8(0.013)(6.9cfs)^2}{\pi^2(32.2)(1.25')^5}$$

$S_o = 0.0051 =$ *Minimum required slope to convey* $6.9cfs$

$(0.0051)(36') = 0.18' =$ *Minimum required water surface drop between outlet and MH – 5*



Since outlet pipe drops 1' *between outlet and MH – 5, Maximum allowable tailwater =* 1'–0.18' = 0.82'

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Perimeter Ditch

CLIENT: General Electric Company PROJECT: GE Pittsfield, MA Prepared By: BMS Date: 05-09-00
TITLE: Engineering Design Calculations Reviewed By: PFB Date: 5/8/00
SUBJECT: OPCA - 1999 Stormwater Basin Perimeter Ditch Design

OBJECTIVE:

Determine required flow capacity and size for the 1999 stormwater basin perimeter drainage ditch based on the estimated peak discharge from the 10-year, 24-hour design storm.

REFERENCES:

1. Technical drawings and figures contained in the Detailed Work Plan for On-Plant Consolidation Areas prepared by Blasland, Bouck & Lee, Inc. (BBL), dated June 1999 (Work Plan).

2. Technical Release 55 "Urban Hydrology for Small Watersheds", Soil Conservation Service, June 1986.

3. Quick TR-55 Urban Hydrology for Small Watersheds Version 5.47 (DOS) computer-based implementation of the Soil Conservation Service's TR-55 methodology, Haestad Methods, Inc..

4. "Open Channel Flow," page 100, Henderson, F.M., 1966.

5. "Stormwater Technical Handbook", MA Department of Environmental Protection, and MA Office of Coastal Zone Management, March 1997.

ASSUMPTIONS:

1. Minimum invert grade of drainage ditch is 1%.

2. Drainage ditch is grass-lined.

3. Minimum freeboard is 6 inches.

4. Curve numbers for drainage ditch subarea:

   - Impervious areas such as roadways = 98
   - Developed consolidation areas (grassland, fair condition, hydrologic soil group C) = 79

METHODOLOGY:

1. Delineate drainage subarea for the drainage ditch (refer to Watershed Area Map).

2. Calculate peak stormwater runoff from the drainage ditch subarea using Quick TR-55.

3. Determine geometry and resulting hydraulic conditions for the drainage ditch.

CALCULATIONS:

1. Peak Discharge:

The following table provides a summary of the drainage ditch subarea input data and the resulting runoff conditions. Output data for this analysis is included at the end of this section.

CLIENT: General Electric Company PROJECT: GE Pittsfield, MA Prepared By: BMS Date: 05-09-00
TITLE: Engineering Design Calculations Reviewed By: _____ Date: _____
SUBJECT: OPCA - 1999 Stormwater Basin Perimeter Ditch Design

Drainage Area (acres)	Composite Curve Number, CN	Time of Concentration, Tc (hours)	10-Yr/24-Hr Peak Discharge (cfs)
1.51	82	0.16	4.0

2. Drainage Ditch Geometry and Resulting Hydraulic Conditions

The proposed drainage ditch is trapezoidal in cross section with a bottom width of 2 feet. The following table presents a summary of the drainage ditch geometry and resulting flow conditions based on the estimated peak stormwater runoff. Output data for this analysis is included at the end of this section.

10-Yr/24-Hr Peak Discharge (cfs)	Ditch Depth (in)	Flow Depth at Peak Discharge (in)	Freeboard at Peak Discharge (in)	Flow Velocity at Peak Discharge (ft/s)
4.0	18	12	6	1.76

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Watershed Area Map

SUBAREA BOUNDARY FOR DRAINAGE DITCH

HILL 78 CONSOLIDATION AREA

BUILDING 71 CONSOLIDATION AREA

NEW YORK AVENUE/
MERRILL ROAD
CONSOLIDATION AREA

NEW YORK AVE.

78

78-2

14-E

GENERAL DYNAMICS
PARKING LOT

JUNCTION RD.

LEGEND:

- NON-TSCA/NON-RCRA AREA
- TSCA/RCRA AND NON-TSCA/NON-RCRA AREA
- APPROXIMATE AREA OF PROPOSED CONSOLIDATION AREAS
- EXISTING SECURITY FENCE
- DRAINAGE DITCH SUBAREA BOUNDARY
- FLOW PATH USED FOR TIME OF CONCENTRATION CALCULATION

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. -FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND, BOUCK & LEE, INC. (BBL) CONSTRUCTION PLANS, AND ON OBSERVATIONS DURING A SITE VISIT BY BBL PERSONNEL ON DECEMBER 3, 1997.
2. SITE BOUNDARIES ARE APPROXIMATE.
3. NOT ALL PHYSICAL FEATURES SHOWN.

100' 0 100' 200'
GRAPHIC SCALE

X: 20185X01.DWG
L: ON=*, OFF=*REF*
P: STD-PCP/DL.PCP
6/10/99 SYR-54-KLN GMS
20185003/REPORT/20185806.DWG

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
DETAILED WORK PLAN FOR
ON-PLANT CONSOLIDATION AREAS

FINAL CONFIGURATION OF ON-PLANT CONSOLIDATION AREAS

BBL BLASLAND, BOUCK & LEE, INC.
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FIGURE 5

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Quick TR-55 Analysis

Quick TR-55 Ver.5.47 S/N:
Executed: 12:09:17 05-09-2000

OPCA
1999 PERIMETER DITCH
DEVELOPED CONDITION

RUNOFF CURVE NUMBER SUMMARY

Subarea Description	Area (acres)	CN (weighted)
	1.51	82

Quick TR-55 Ver.5.47 S/N:
Executed: 12:09:17 05-09-2000

OPCA
1999 PERIMETER DITCH
DEVELOPED CONDITION

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
IMPERVIOUS	0.24	98	
PASTURE	1.27	79	
COMPOSITE AREA --->	1.51	82.0	(82)

OPCA
1999 PERIMETER DITCH
DEVELOPED CONDITION

Tc COMPUTATIONS FOR: D99PD

SHEET FLOW (Applicable to Tc only)

Segment ID		1-2	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	40.0	
Two-yr 24-hr rainfall, P2	in	2.700	
Land slope, s	ft/ft	0.3300	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.04	= 0.04

SHALLOW CONCENTRATED FLOW

Segment ID		2-3	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	26.0	
Watercourse slope, s	ft/ft	0.3300	
$Avg.V = Csf * (s)^{0.5}$	ft/s	9.2686	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		3-4	
Cross Sectional Flow Area, a	sq.ft	4.00	
Wetted perimeter, Pw	ft	7.00	
Hydraulic radius, r = a/Pw	ft	0.571	
Channel slope, s	ft/ft	0.0100	
Manning's roughness coeff., n		0.0650	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.5785	
Flow length, L	ft	649	
T = L / (3600*V)	hrs	0.11	= 0.11

TOTAL TIME (hrs) 0.16

Quick TR-55 Version: 5.47 S/N:

>>>>> GRAPHICAL PEAK DISCHARGE METHOD <<<<<

OPCA
1999 PERIMETER DITCH
DEVELOPED CONDITION

CALCULATED .GPD
DISK FILE: x:\tmproj\201\20185\qtr55\D99DITCH.GPD

Drainage Area	(acres)	1.51	--->	0.0024 sq.mi.
Runoff Curve Number	(CN)	82		
Time of Concentration,Tc	(hrs)	0.16		
Rainfall Distribution	(Type)	III		
Pond and Swamp Areas	(%)		--->	0.0 acres

	Storm #1	Storm #2	Storm #3
Frequency (years)	10		
Rainfall, P, 24-hr (in)	4.4		
Initial Abstraction, Ia (in)	0.439	0.439	0.439
Ia/p Ratio	0.100	0.000	0.000
Unit Discharge, * qu (csm/in)	599	0	0
Runoff, Q (in)	2.55	0.00	0.00
Pond & Swamp Adjustment Factor	1.00	1.00	1.00
PEAK DISCHARGE, qp (cfs)	4	0	0

Summary of Computations for qu

Ia/p	#1	0.100	0.000	0.000
C0	#1	2.473	0.000	0.000
C1	#1	-0.518	0.000	0.000
C2	#1	-0.171	0.000	0.000
qu (csm)	#1	599.252	0.000	0.000
Ia/p	#2	0.100	0.000	0.000
C0	#2	2.473	0.000	0.000
C1	#2	-0.518	0.000	0.000
C2	#2	-0.171	0.000	0.000
qu (csm)	#2	599.252	0.000	0.000
* qu (csm)		599	0	0

* Interpolated for computed Ia/p ratio (between Ia/p #1 & Ia/p #2)
If computed Ia/p exceeds Ia/p limits, bounding limit for Ia/p is used.

$$\log(qu) = C0 + (C1 * \log(Tc)) + (C2 * (\log(Tc))^2)$$

qp (cfs) = qu(csm) * Area(sq.mi.) * Q(in.) * (Pond & Swamp Adj.)

BLASLAND, BOUCK & LEE, INC.
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Perimeter Ditch Geometry

Project: GE - Pittsfield
Project No.: 201.85
Subject: 1999 Stormwater Basin Perimeter Ditch Design

Prepared by: BMS
Date: 05/09/00
Checked by: _____
Date: _____

Channel Design (Input)	
Flow Capacity (cfs)	4.00
Base Width (ft)	2.00
Left Side Slope (x:1)	2.00
Right Side Slope (x:1)	3.00
Bed Slope	0.01
Maximum Allowable Velocity (ft/s)	2.00
Manning "n" (grass)	0.10

Flow Conditions (Output)	
Channel Depth (ft)	1.50
Flow Depth (ft)	0.92
Flow Area (ft^2)	3.93
Wetted Perimeter (ft)	6.94
Hydraulic Radius (ft)	0.57
Flowrate from Manning Equation (cfs)	4.00
Flow Velocity (ft/s)	1.02
Freeboard (ft)	0.58
Factor of Safety for Erosion of Soil	1.96

BLASLAND, BOUCK & LEE, INC.
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Culverts

CLIENT: General Electric Company PROJECT: GE Pittsfield, MA Prepared By: BMS Date: 05-09-00
TITLE: Engineering Design Calculations Reviewed By: [illegible] Date: 5/8/00
SUBJECT: OPCA - Drainage Culvert Design

OBJECTIVE:

Determine required flow capacity and size for the drainage culverts based on the estimated peak discharge from the 10-year, 24-hour design storm.

REFERENCES:

1. Technical drawings and figures contained in the Detailed Work Plan for On-Plant Consolidation Areas, prepared by Blasland, Bouck & Lee, Inc. (BBL), June 1999 (Work Plan).

ASSUMPTIONS:

1. Culvert consists of corrugated, smooth-walled HDPE pipe(s) having Manning "n" of approximately 0.011.
2. Minimum invert slope of culvert is 1%.
3. Required culvert capacity is equal to the design capacity of the 1999 perimeter drainage ditch.

METHODOLOGY:

1. Determine required culvert capacity.
2. Determine configuration and resulting hydraulic conditions for the culvert.

CALCULATIONS:

1. Required Culvert Capacity:

The estimated peak discharge for the perimeter drainage ditch from the 10-year, 24-hour design storm is 4 cfs. Since the culvert conveys stormwater runoff from the same watershed as the perimeter ditch, the required culvert capacity is also 4 cfs. Refer to perimeter drainage ditch design for watershed runoff calculations.

2. Culvert Configuration and Resulting Hydraulic Conditions

Using the Manning equation, determine the minimum pipe diameter necessary to convey estimated peak discharge:

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

$$d = \left[\frac{4^{5/3} Qn}{1.49 \pi S^{1/2}} \right]^{3/8},$$

where:

Q = 4 cfs (estimated peak discharge)
n = 0.011 (Manning "n" for HDPE pipe)
S = 0.01 (invert slope of pipe)
d = pipe diameter

$$d = \left[\frac{4^{5/3}(4)(0.011)}{1.49\,\pi(0.01)^{1/2}} \right]^{3/8} = 0.98 \text{ ft} = 12 \text{ in}$$

To provide additional capacity during the development of the consolidation areas, use two 12-inch diameter HDPE pipes.

Attachment 2

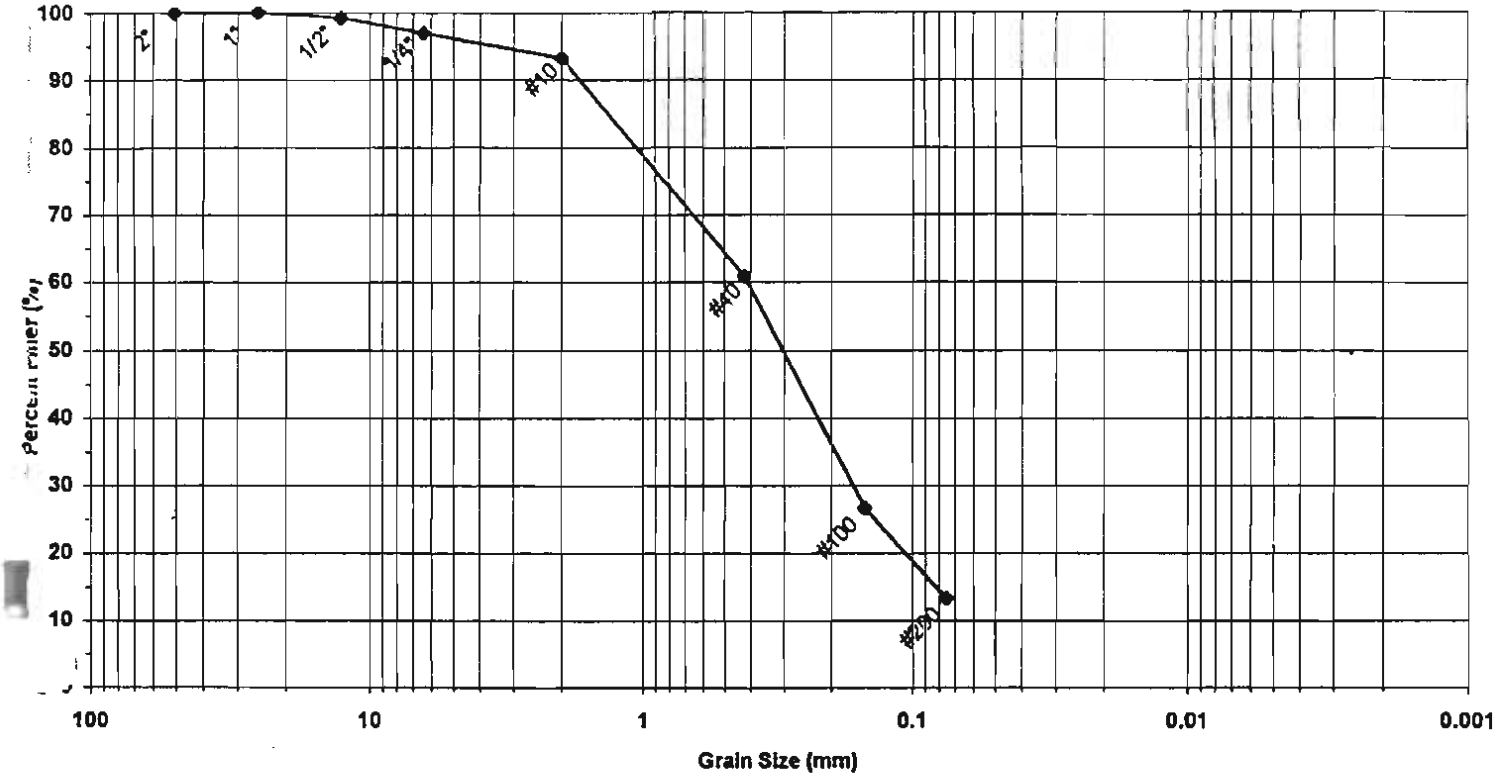
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Subgrade Preparation Information

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Soil & Material Testing, Inc. Compaction Curves and Particle Size Distributions

SOIL & MATERIAL TESTING, INC.



Sample ID: 08-20-99

Sieve	% Passing
2"	100.0
1"	100.0
1/2"	99.2
1/4"	96.9
#10	93.5
#40	61.8
#100	28.5
#200	15.5

Project: G.E. Consolidation
Client: J. H. Maxymillian
MY PO No. 1878 Job No. 99143
SMT Job No. 1525
Date Sampled: 8/20/99

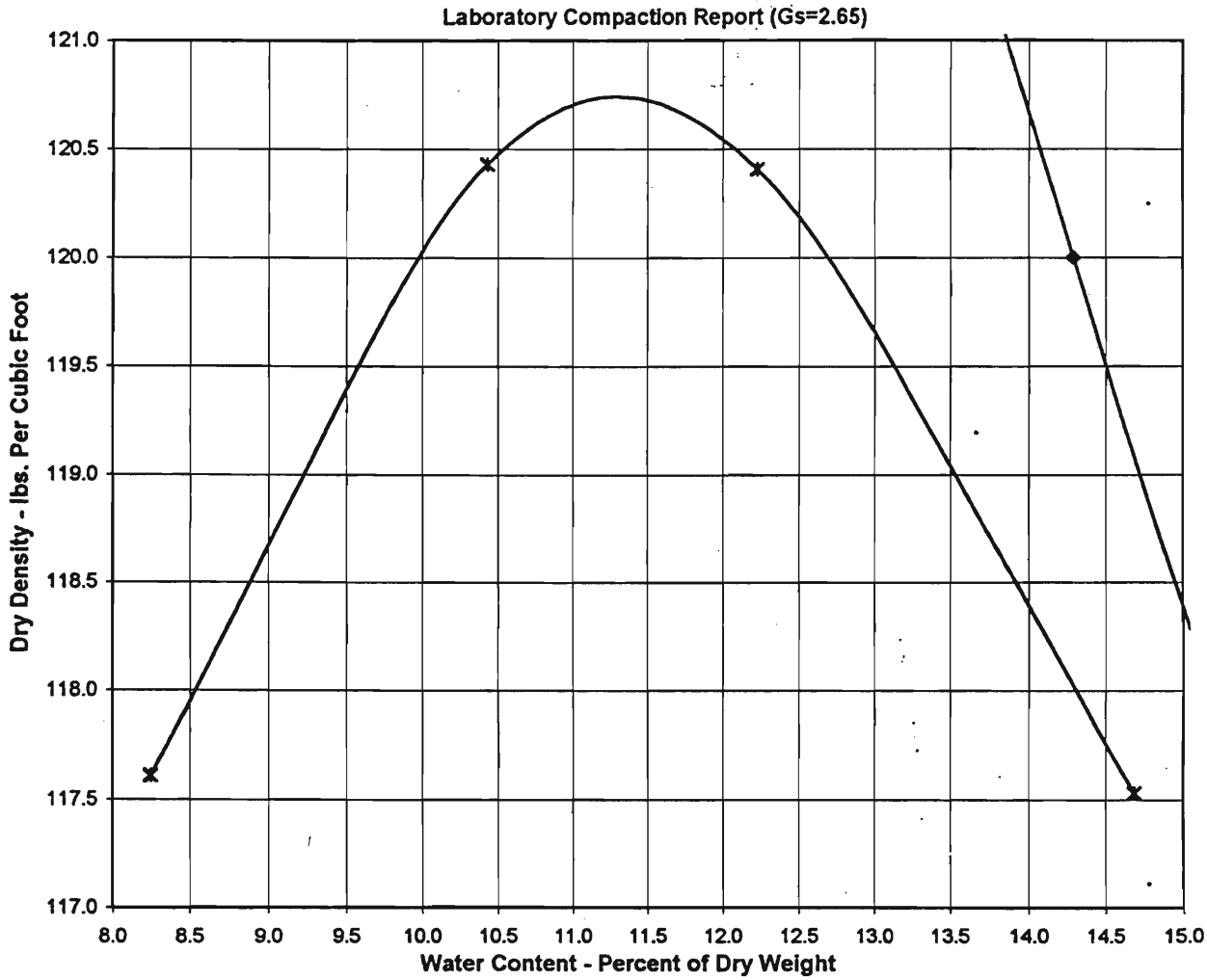
Test Performed By: JA

Test Reviewed By: Jessica Baldwin

Jessica Baldwin
Administrative Lab Manager

Soil & Material Testing, Inc.

Project: GE Consolidation	MY PO No.: 1878
Sample ID: Barn Sample	Job No.: 99143
Sample Description: Sand	SMT Job No.: 1525
Client: Maxymillian	
Test Date: August 20, 1999	



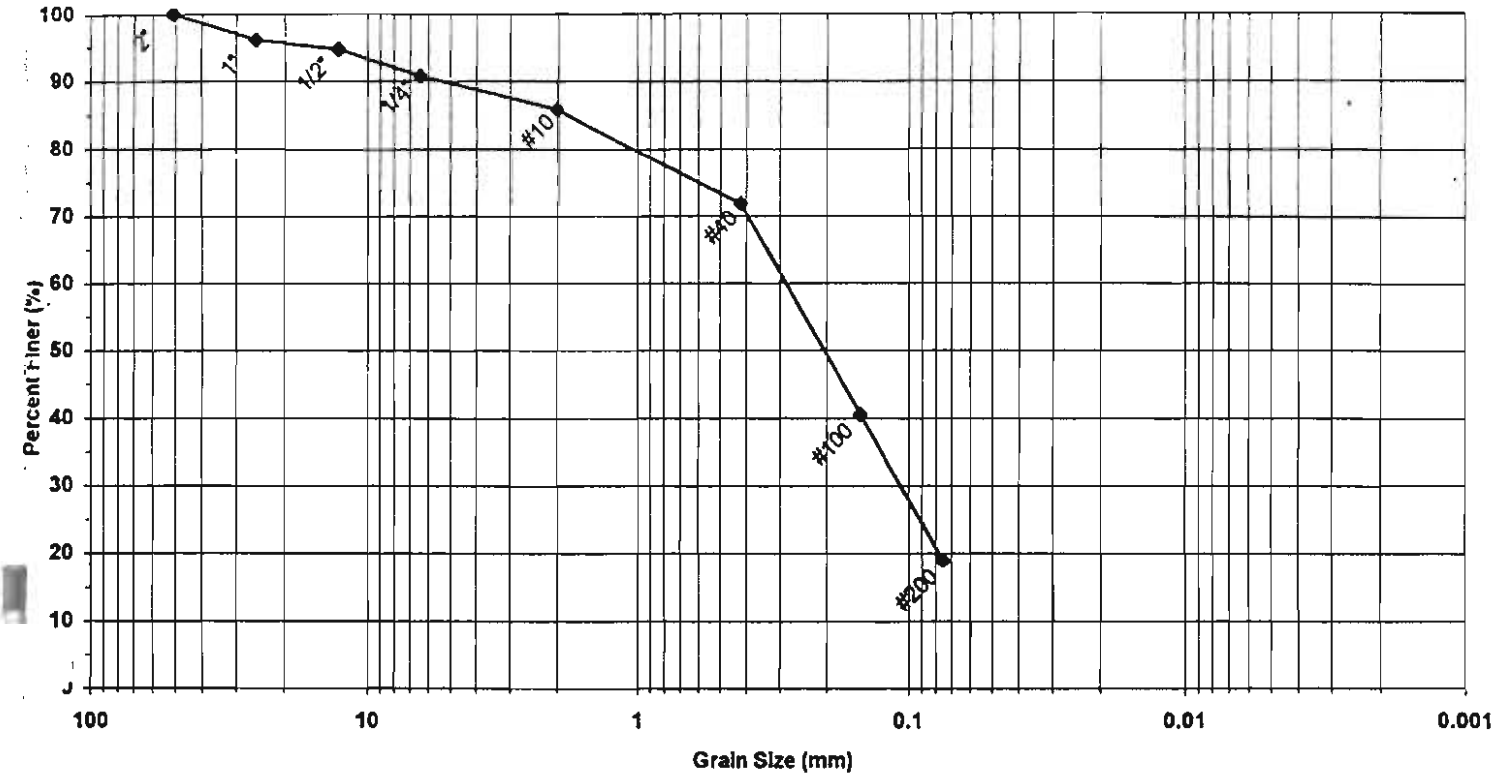
********** Sampled Delivered to SMT on 08/20/99 **********

RESULTS: Maximum Dry Density 122.1 pcf
Optimum Water Content 12.2%

Test Procedure: ASTM D 1557 (A), (Modified Proctor)
* Correction - ASTM D 4718 (4.7% Oversized)

MAXYMILLIAN TECHNOLOGIES, INC.
Reviewed For Submission
SPEC SECT NO _____ TRANS NO 27
DATE 09/16/99 BY JAA

SOIL & MATERIAL TESTING, INC.



Sample ID: 08-27-99

Sieve	% Passing
2"	100.0
1"	96.0
1/2"	94.7
1/4"	90.7
#10	85.8
#40	71.9
#100	40.6
#200	19.0

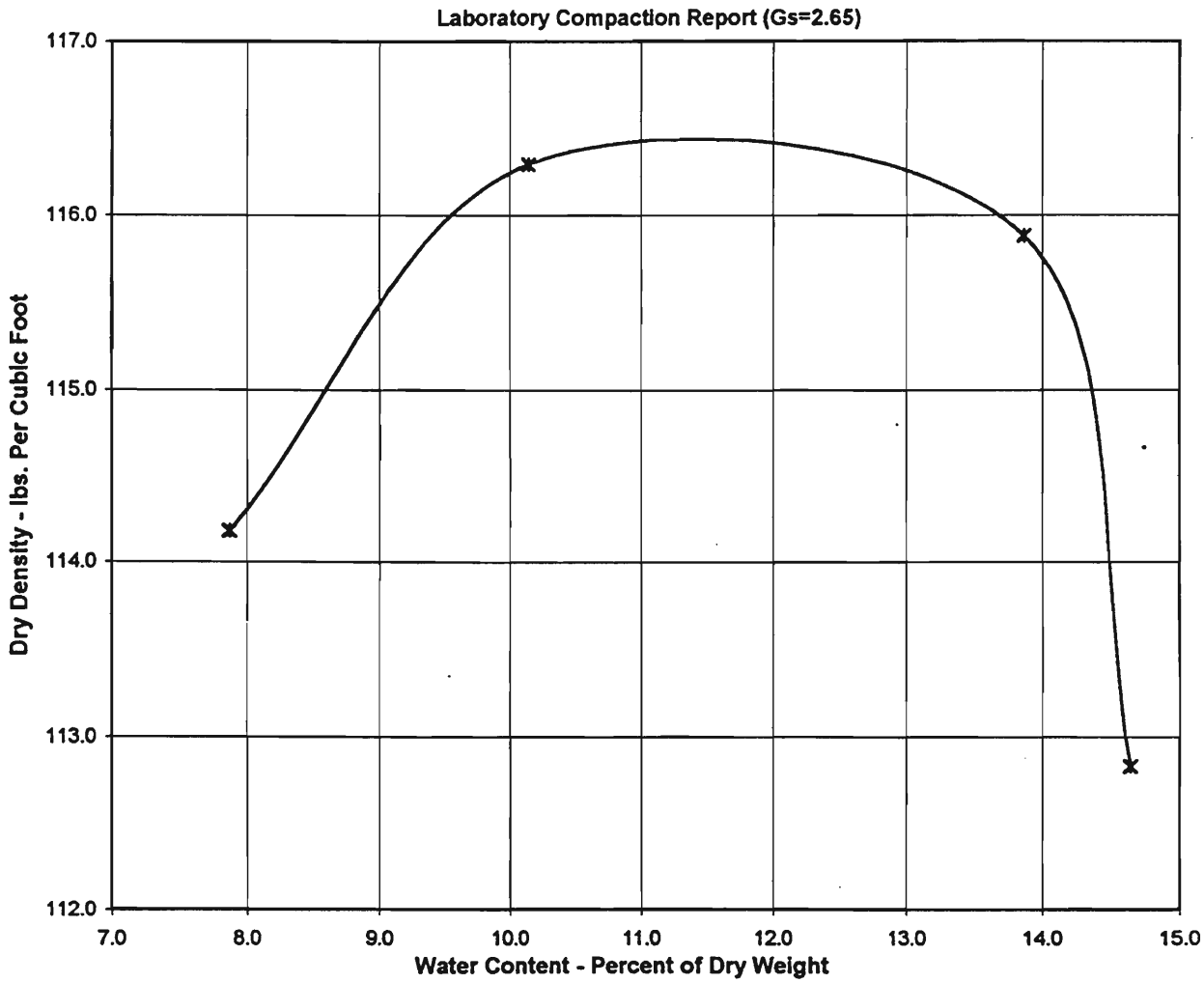
Project: G.E. Consolidation
Client: J. H. Maxymillian
MY PO No. 1878 Job No. 99143
SMT Job No. 1525
Date Sampled: 8/27/99

Test Performed By: JA
Test Reviewed By: Jessica Baldwin

Jessica Baldwin
Administrative Lab Manager

Soil & Material Testing, Inc.

Project: GE Consolidation	MY PO No.: 1878
Sample ID: 08-27-99.	Job No.: 99143
Sample Description: Sand	SMT Job No.: 1525
Client: Maxymillian	
Test Date: August 27, 1999	



********** Sampled Delivered to SMT on 08/27/99 **********

RESULTS: Maximum Dry Density 120.0 pcf
Optimum Water Content 10.1%

Test Procedure: ASTM D 155 (A), (Modified Proctor)
* Correction - ASTM D 4718 (9.9% Oversized)

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

AGP Laboratories, Inc. Geotextile Conformance Testing Results

GeoTesting Express, Inc.
2004 E. RANDOL MILL, SUITE 512
ARLINGTON, TX 76011
817-861-9090 (FAX) 817-861-5400

May 1, 2000

Geo Testing Express
Attn: Mr. Gary Torosian
1145 Massachusetts Ave.
Boxboro, MASS 01720

RE: GTX-2506
AGP Project Number: GTX 3361.003 **Revised to correct units for ASTM D 3776**

Dear Mr. Torosian

One (1) sample was received for testing on 9/13/99. The sample was identified as follows:

SAMPLE I.D.	AGP COMMENTS
GTXT-2	GT

The sample was tested in accordance with the test methods listed below:

ASTM D 3776, "Test Method for Mass per Unit Area (Weight) of Woven Fabric"

ASTM D 3786, "Test Method for Hydraulic Bursting Strength Of Knitted Goods And Nonwoven Fabrics - Diaphragm Strength Tester Method"

ASTM D 4533, "Test Method for Trapezoid Tearing Strength of Geotextiles"

ASTM D 4632, "Test Method for Breaking Load and Elongation of Geotextiles (Grab Method)"

ASTM D 4833, "Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products"

All tests were performed at 73° F ± 3° with a relative humidity of 50% ± 5. Conditioning of the samples, before testing, is standard 40 hours at test temperature and relative humidity unless waived by the client.

The sample material was submitted by Geo Testing Express. AGP Laboratories, Inc. has no specific knowledge as to conditioning, origin, sampling procedure, special use of material, or purpose of material. The testing listed herein is based upon accepted industry practice as well as by the test method listed. AGP Laboratories, neither accepts nor makes claim as to final use and purpose of the material. Results presented apply only to the items tested.

MASS / UNIT AREA
ASTM D 3776

Tested 9/13/99

SAMPLE I.D.	MASS/UNIT AREA (oz/yd^2)
GTXT-2	13.5
	15.7
	11.9
	11.9
	11.3
	12.1
	11.7
	11.7
	11.3
	11.5
AVG.	12.3
S.D.	1.4
C.V. (%)	11.1

MULLEN BURST
ASTM D 3786

Equipment: Motor Driven Hydraulic Diaphragm Bursting Tester

Tested 9/13/99

SAMPLE I.D.	READING	TARE	BURST STRENGTH (psi)
GTXT-2	500	10	490
	500	10	490
	570	10	560
	545	10	535
	560	10	550
	560	10	550
	600	10	590
	570	10	560
	710	10	700
	610	10	600
AVG			563
S.D.			50.2
C.V. (%)			10.7

BLASLAND, BOUCK & LEE, INC.
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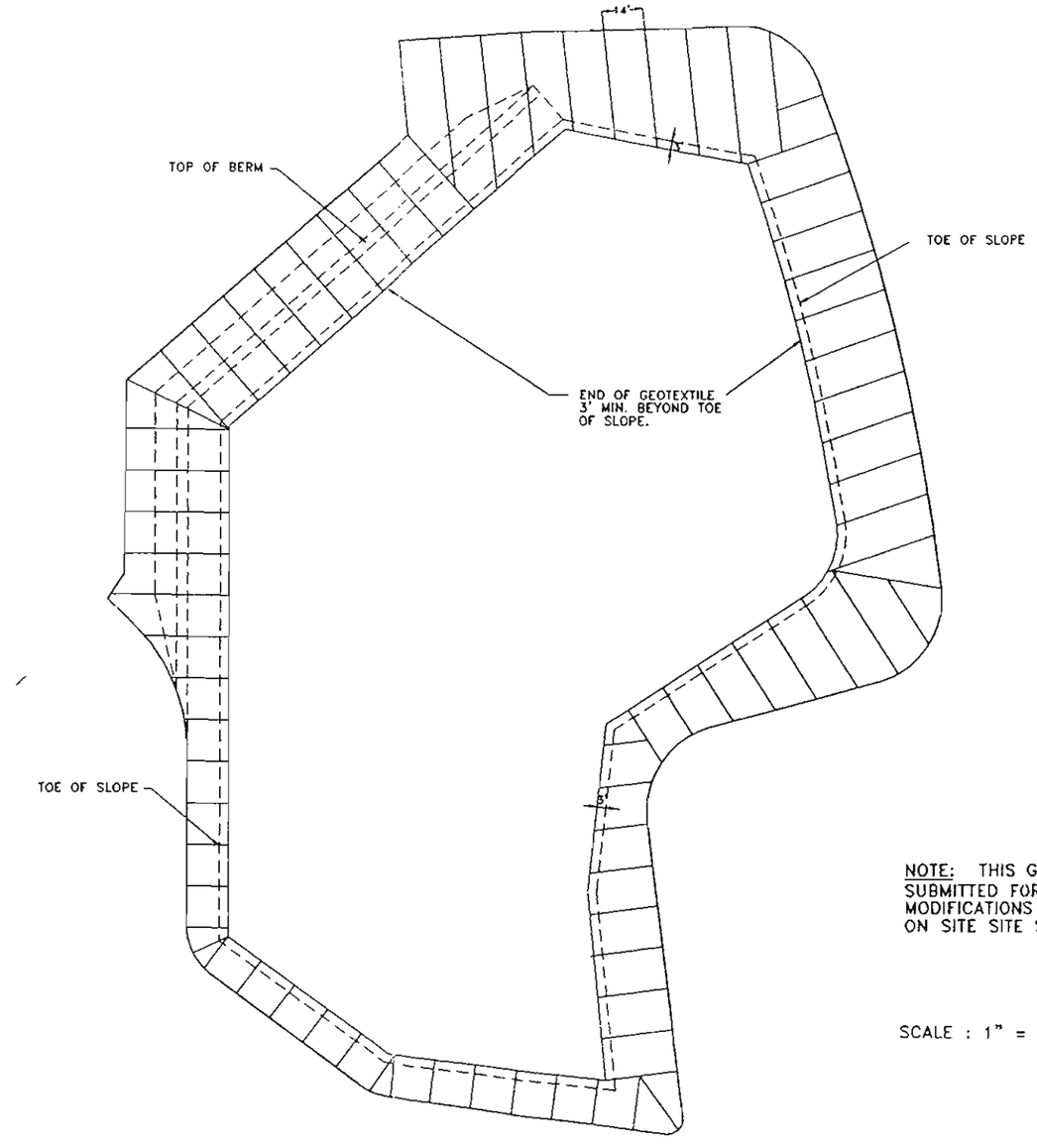
Non-Woven Geotextile Fabric Panel Layout



NOTE: THIS GEOTEXTILE LAYOUT PLAN IS BEING SUBMITTED FOR INFORMATION ONLY. FIELD MODIFICATIONS MAY BE REQUIRED DEPENDING ON SITE SITE SPECIFICS.

SCALE : 1" = 50'

MAXYMILLIAN TECHNOLOGIES, INC.
Reviewed For Submission
SPEC SECT NO 02232 TRANS NO 20
DATE 08/23/99 BY JAA

Maxymillian Technologies

NON-WOVEN GEOTEXTILE FABRIC PANEL LAYOUT

CONSTRUCTION AND OPERATION ON-PLANT CONSOLIDATION
G.E. BUILDING 71 LANDFILL

AUGUST 23, 1999

SHEET 1 OF 1

Attachment 3

BLASLAND, BOUCK & LEE, INC.
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Geomembrane Thickness Information

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

AGP Laboratories, Inc. Geomembrane Conformance Testing Results

AGP Laboratories, Inc.
2004 E. Randol Mill, Suite 512
Arlington, Texas 76011
(817) 861-9090 • (800) AGP-6030
Fax: (817) 861-5400

September 7, 1999

Geo Testing Express
Attn: Mr. Gary Torosian
1145 Massachusetts Ave.
Boxboro, MASS 01720

RE: Client Job - GTX-2506
AGP Project Number: GTX 3361.001

Dear Mr. Torosian:

Two (2) samples were received for testing on 9/3/99. The samples were identified as follows:

SAMPLE I.D.	AGP COMMENTS
60THDPE	GMT
GTXT	GT

The samples were tested in accordance with the test methods listed below:

ASTM D 638, (As modified by NSF 54, Annex A), "Test Method for Tensile Properties Of Plastics"

ASTM D 1505, "Test Method for Density Of Plastics By The Density-Gradient Technique"

ASTM D 1603, "Test Method for Carbon Black in Olefin Plastics"

ASTM D 3776, "Test Method for Mass per Unit Area (Weight) of Woven Fabric"

ASTM D 3786, "Test Method for Hydraulic Bursting Strength Of Knitted Goods And Nonwoven Fabrics - Diaphragm Strength Tester Method"

ASTM D 4533, "Test Method for Trapezoid Tearing Strength of Geotextiles"

ASTM D 4632, "Test Method for Breaking Load and Elongation of Geotextiles (Grab Method)"

ASTM D 4833, "Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products"

ASTM D 5596, "Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics"

ASTM D 5994, "Standard Test Method for Measuring Core Thickness of Textured Geomembrane"

All tests were performed at 73° F ± 3° with a relative humidity of 50% ± 5. Conditioning of the samples, before testing, is standard 40 hours at test temperature and relative humidity unless waived by the client.

The sample material was submitted by Geo Testing Express. AGP Laboratories, Inc. has no specific knowledge as to conditioning, origin, sampling procedure, special use of material, or purpose of material. The testing listed herein is based upon accepted industry practice as well as by the test method listed. AGP Laboratories, neither accepts nor makes claim as to final use and purpose of the material. Results presented apply only to the items tested.

GMT ONLY

CARBON BLACK DISPERSION
ASTM D 5596

Tested
9/7/99

Sample I.D.	Specimen #	Rf_1*	Rf_2*
60THDPE	1	Category 1	Category 1
	2	Category 1	Category 1
	3	Category 1	Category 1
	4	Category 1	Category 1
	5	Category 1	Category 1

***Rf: Random field of view.**

THICKNESS
ASTM D 5994

Type of apparatus : Mitutoyo Digimatic Indicator
Pressure foot : 60° Tapered point with 0.031 in radius
Loading time interval : 5 s

Tested
9/3/99

SAMPLE I.D.	THICKNESS (mil)
60THDPE	68.4
	65.5
	70.0
	63.9
	67.9
	64.3
	64.3
	69.3
	62.2
	63.6
AVG.	65.9
S.D.	2.7

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Solomax International, Inc. Geomembrane Manufacturing Quality Control Test Results

SOLMAX INTERNATIONAL INC

2801 Marie Victorin, Varennes, Quebec, Canada J3X 1P7

List of Geomembrane Rolls

17-Aug-99

Project Name: GE Consolidation Areas

Project No.: SU99056

Reference No. 4678

Date Manufactured	Roll No	Product Code	Lot No	Gauge Average mils	Length ft.	Width ft.
10-Aug-99	13479	Solmax 460T	J061221	58.5	520	22.2
10-Aug-99	13480	Solmax 460T	J061221	56.4	520	22.2
10-Aug-99	13481	Solmax 460T	J061221	58	520	22.1
10-Aug-99	13482	Solmax 460T	J061221	56.9	520	22.2
10-Aug-99	13483	Solmax 460T	J061221	56.3	520	22.2
10-Aug-99	13484	Solmax 460T	J061221	57.3	520	22.2
10-Aug-99	13485	Solmax 460T	J061221	56.6	520	22.1
11-Aug-99	13486	Solmax 460T	J061221	58.4	520	22.1
11-Aug-99	13487	Solmax 460T	J061221	58.5	520	22.1

Average 57.4

Attachment 4

BLASLAND, BOUCK & LEE, INC.
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Leachate Generation Information

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Leachate Collection System Pipe Size Calculation

BBL

CALCULATION SHEET

Project No.: 20185

CLIENT: General Electric Company Prepared By: KFP Date: 05-04-00
PROJECT: Pittsfield RD/RA Work Plan -1999 Checked By: RBB Date: 5/31/00
On-Plant Consolidation Areas
SUBJECT: Leachate Collection Pipe Size Calculations

OBJECTIVE:

1. Determine the required size for the leachate collection pipe to convey the leachate generated during the peak leachate production period. Estimated peak leachate flow generated during the peak production period must be equal to or less than the maximum flow capacity of the collection pipe.

REFERENCES:

1. "Detailed Work Plan for On-Plant Consolidation Areas" drawings, prepared by Blasland, Bouck, & Lee, Inc., dated July 1999.

2. Hydraulic Evaluation of Landfill Performance (HELP) Model Version 3.07a. (Phase1a.OUT, Phase1b.OUT, Phase2a.OUT, and Phase2b.OUT).

3. Technical Paper No. 40 (TP-40), Department of Commerce, May 1961 (rev. December 1982).

ASSUMPTIONS:

1. Collection pipe slope is 0.5% minimum (actual slope may be equal to or greater than 0.5%).

2. Inflow to the collection pipe is based on the estimated GDC flow capacity.

3. The collection pipe is perforated, smooth-walled HDPE.

METHODOLOGY:

1. Calculate the estimated peak inflow to the collection pipe from the GDC within the leachate management system assuming a worst case scenario of a combination of the following two conditions:

   Condition A.) Approximately 75-percent (3.1 acres) of the consolidation area has been filled to capacity with waste (maximum waste depth of 27-feet) and no components of the final cover system have been installed. Approximately 1.9 acres of the 3.1 acres has been covered with an interim soil cover layer supporting vegetation, while the remaining 1.2 acres has interim cover with no vegetation.

   Condition B.) The remaining 25-percent (1.0 acre) of the consolidation area consists of the exposed liner system with the GDC being the uppermost layer. Use the 2-year, 24-hour storm to determine the infiltration rate (from precipitation map). All leachate generated by this event will be collected by the GDC and conveyed to the leachate collection pipe.

2. Calculate the minimum pipe size required based on the estimated peak inflow from the GDC.

CLIENT: General Electric Company Prepared By: KFP Date: 05-04-00
PROJECT: Pittsfield RD/RA Work Plan -1999 Checked By: _____ Date: _____
On-Plant Consolidation Areas
SUBJECT: Leachate Collection Pipe Size Calculations

DEFINITIONS:

$Q_A = 1402 \cdot \frac{ft^3}{day}$	Peak Inflow for Condition A - Sum of HELP Model output from Phase1a.OUT, Phase1b.OUT, Phase2a.OUT, and Phase2b.OUT
$A_B = 1.0 \cdot acre$	Approximate total area for Condition B
$q_B = 2.86 \cdot \frac{in}{day}$	Peak Infiltration Rate for Condition B (2-year, 24-hour storm event)
$n = 0.011$	Manning's friction coefficient for the collection pipe
$S_{pipe} = 0.5 \cdot \%$	Minimum Pipe Slope

CALCULATIONS:

1. Determine the peak inflow (Q_p) into the collection pipe from the GDC Layer.

For Condition "A":

$$Q_A = 0.016 \cdot \frac{ft^3}{sec}$$

For Condition "B":

$$Q_B = A_B \cdot q_B \qquad Q_B = 0.12 \cdot \frac{ft^3}{sec}$$

Total Worst Case Peak Inflow into the Leachate Collection Pipe:

$$Q_{total} = Q_B - Q_A \qquad Q_{total} = 0.136 \cdot \frac{ft^3}{sec}$$

2. Calculate the minimum required collection pipe diameter (D_{min}) size to convey the expected peak flow.

$$D_{min} = \left(\frac{2.159 \cdot Q_{total} \cdot n}{S_{pipe}^{\frac{1}{2}}} \right)^{\frac{3}{8}}$$

$D_{min} = 0.315$ ft $\qquad D_{minr} = D_{min} \cdot 12 \cdot in \qquad D_{minr} = 3.8 \cdot in$ Use 6-inch diameter pipe

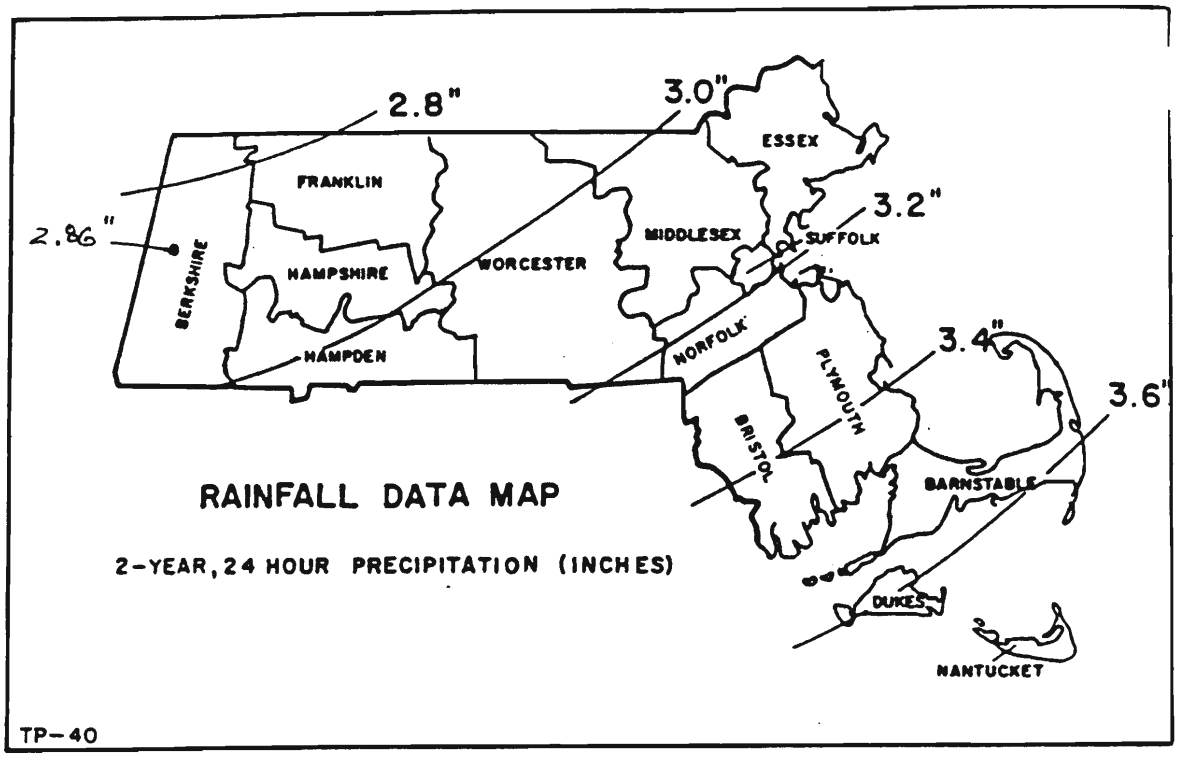
CLIENT: General Electric Company Prepared By: KFP Date: 07-28-99
PROJECT: Pittsfield RD/RA Work Plan -1999 Checked By: _____ Date: _____
On-Plant Consolidation Areas
SUBJECT: Leachate Collection Pipe Size Calculations

CONCLUSIONS:

Use 6-inch diameter perforated HDPE pipe to convey the leachate generated during the peak leachate production period.

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Precipitation Map



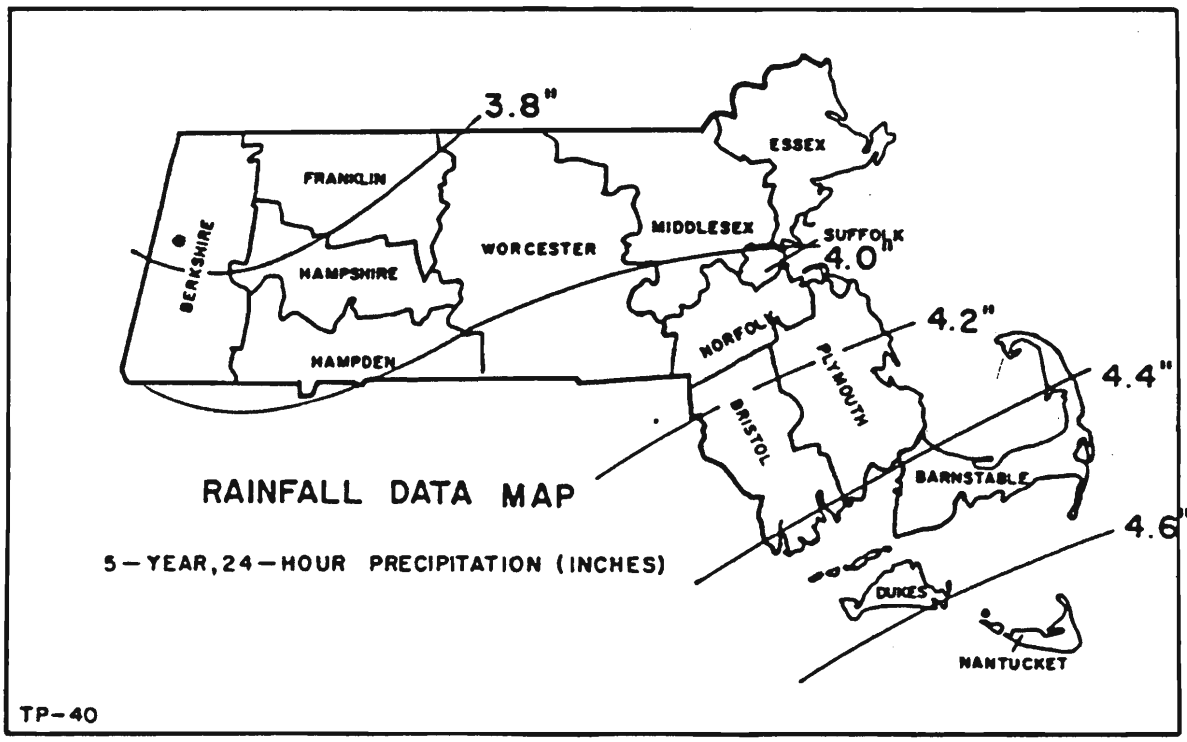


FIGURE B-1, SHEET 1 OF 3

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

HELP Model Output Interim Soil Cover with Vegetation on 33% Slopes

```
**********************************************************************************
**********************************************************************************
**                                                                              **
**                                                                              **
**               HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                  **
**                 HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                   **
**                   DEVELOPED BY ENVIRONMENTAL LABORATORY                      **
**                     USAE WATERWAYS EXPERIMENT STATION                        **
**                FOR USEPA RISK REDUCTION ENGINEERING LABORATORY               **
**                                                                              **
**                                                                              **
**********************************************************************************
**********************************************************************************

PRECIPITATION DATA FILE:     C:\help3\ge\FAIR.D4
TEMPERATURE DATA FILE:       C:\HELP3\ge\FAIR.D7
SOLAR RADIATION DATA FILE:   C:\HELP3\ge\FAIR.D13
EVAPOTRANSPIRATION DATA:     C:\help3\ge\FAIR.D11
SOIL AND DESIGN DATA FILE:   C:\help3\ge\PHASE1A.D10
OUTPUT DATA FILE:            C:\help3\ge\PHASE1A.OUT

TIME:  14:45     DATE:   6/ 1/2000

**********************************************************************************

     TITLE:  GE Pittsfield - Building 71 OPCA

**********************************************************************************

     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
              COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                                  LAYER  1
                                  --------

                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   8
          THICKNESS                     =      6.00   INCHES
          POROSITY                      =      0.4630 VOL/VOL
          FIELD CAPACITY                =      0.2320 VOL/VOL
          WILTING POINT                 =      0.1160 VOL/VOL
          INITIAL SOIL WATER CONTENT    =      0.3947 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     = 0.369999994000E-03 CM/SEC
        NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  3.00
                 FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
```

LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 7

THICKNESS	=	324.00	INCHES
POROSITY	=	0.4730	VOL/VOL
FIELD CAPACITY	=	0.2220	VOL/VOL
WILTING POINT	=	0.1040	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2776	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.520000001000E-03	CM/SEC

LAYER 3

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 63

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0149	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	30.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	65.0	FEET

LAYER 4

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.04	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.50	HOLES/ACRE
FML INSTALLATION DEFECTS	=	1.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 8 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 33.% AND A SLOPE LENGTH OF 60. FEET.

SCS RUNOFF CURVE NUMBER	=	82.40	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.300	ACRES
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.960	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	3.724	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.904	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	92.306	INCHES
TOTAL INITIAL WATER	=	92.306	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM PLAINFIELD MASSACHUSETTS

STATION LATITUDE	=	42.00	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	109	
END OF GROWING SEASON (JULIAN DATE)	=	277	
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	10.60	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	64.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	70.00	%

NOTE: PRECIPITATION DATA FOR PLAINFIELD MASSACHUSETTS WAS ENTERED FROM THE DEFAULT DATA FILE.

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
26.50	24.20	32.20	51.40	63.20	60.10
73.40	75.20	65.30	45.00	30.70	28.40

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS
AND STATION LATITUDE = 42.00 DEGREES

****

ANNUAL TOTALS FOR YEAR 1977

	INCHES	CU. FEET	PERCENT
PRECIPITATION	55.23	260630.359	100.00
RUNOFF	12.031	56773.414	21.78
EVAPOTRANSPIRATION	23.246	109699.797	42.09
DRAINAGE COLLECTED FROM LAYER 3	15.8859	74965.648	28.76
PERC./LEAKAGE THROUGH LAYER 4	0.341046	1609.397	0.62
AVG. HEAD ON TOP OF LAYER 4	0.0008		
CHANGE IN WATER STORAGE	3.726	17582.012	6.75
SOIL WATER AT START OF YEAR	92.308	435600.031	
SOIL WATER AT END OF YEAR	96.033	453182.031	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.086	0.00

****

****

ANNUAL TOTALS FOR YEAR 1978

	INCHES	CU. FEET	PERCENT
PRECIPITATION	47.80	225568.187	100.00
RUNOFF	15.738	74269.711	32.93
EVAPOTRANSPIRATION	22.555	106437.031	47.19
DRAINAGE COLLECTED FROM LAYER 3	14.8292	69978.898	31.02
PERC./LEAKAGE THROUGH LAYER 4	0.341160	1609.934	0.71

AVG. HEAD ON TOP OF LAYER 4	0.0008		
CHANGE IN WATER STORAGE	-5.664	-26727.381	-11.85
SOIL WATER AT START OF YEAR	96.033	453182.031	
SOIL WATER AT END OF YEAR	86.399	407718.375	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	3.970	18736.268	8.31
ANNUAL WATER BUDGET BALANCE	0.0000	-0.015	0.00

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ANNUAL TOTALS FOR YEAR 1979

	INCHES	CU. FEET	PERCENT
PRECIPITATION	59.62	281346.812	100.00
RUNOFF	24.286	114606.703	40.74
EVAPOTRANSPIRATION	25.074	118323.828	42.06
DRAINAGE COLLECTED FROM LAYER 3	9.1913	43373.715	15.42
PERC./LEAKAGE THROUGH LAYER 4	0.255910	1207.641	0.43
AVG. HEAD ON TOP OF LAYER 4	0.0005		
CHANGE IN WATER STORAGE	0.813	3834.839	1.36
SOIL WATER AT START OF YEAR	86.399	407718.375	
SOIL WATER AT END OF YEAR	91.182	430289.500	
SNOW WATER AT START OF YEAR	3.970	18736.268	6.66
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.071	0.00

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ANNUAL TOTALS FOR YEAR 1980

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.25	180501.719	100.00
RUNOFF	12.430	58656.059	32.50
EVAPOTRANSPIRATION	20.485	96669.484	53.56
DRAINAGE COLLECTED FROM LAYER 3	10.2887	48552.414	26.90
PERC./LEAKAGE THROUGH LAYER 4	0.286323	1351.156	0.75
AVG. HEAD ON TOP OF LAYER 4	0.0005		
CHANGE IN WATER STORAGE	-5.240	-24727.385	-13.70
SOIL WATER AT START OF YEAR	91.182	430289.500	
SOIL WATER AT END OF YEAR	84.109	396912.594	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	1.833	8649.516	4.79
ANNUAL WATER BUDGET BALANCE	0.0000	-0.011	0.00

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ANNUAL TOTALS FOR YEAR 1981

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.63	201170.984	100.00
RUNOFF	12.103	57116.258	28.39
EVAPOTRANSPIRATION	23.408	110462.594	54.91
DRAINAGE COLLECTED FROM LAYER 3	5.2143	24606.334	12.23
PERC./LEAKAGE THROUGH LAYER 4	0.200652	946.876	0.47
AVG. HEAD ON TOP OF LAYER 4	0.0003		
CHANGE IN WATER STORAGE	1.704	8038.906	4.00
SOIL WATER AT START OF YEAR	84.109	396912.594	
SOIL WATER AT END OF YEAR	86.219	406869.375	

SNOW WATER AT START OF YEAR	1.833	8649.516	4.30
SNOW WATER AT END OF YEAR	1.427	6731.653	3.35
ANNUAL WATER BUDGET BALANCE	0.0000	0.016	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1977 THROUGH 1981

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	5.78	3.88	4.62	3.81	4.19	3.21
	3.71	4.25	3.93	4.56	3.32	3.44
STD. DEVIATIONS	6.23	4.15	3.08	1.53	1.72	1.57
	1.09	2.40	2.27	1.20	1.43	1.44
RUNOFF						
TOTALS	1.078	1.276	7.438	3.883	0.313	0.021
	0.064	0.311	0.077	0.188	0.022	0.645
STD. DEVIATIONS	0.914	1.859	3.791	5.868	0.375	0.046
	0.143	0.551	0.095	0.117	0.036	0.690
EVAPOTRANSPIRATION						
TOTALS	0.621	0.665	0.757	2.385	3.027	2.563
	3.856	3.089	2.298	1.867	1.156	0.669
STD. DEVIATIONS	0.101	0.168	0.266	0.618	0.639	1.181
	0.503	0.780	0.581	0.121	0.184	0.210
LATERAL DRAINAGE COLLECTED FROM LAYER 3						
TOTALS	1.6645	1.2817	1.1013	0.6421	0.6260	0.8050
	1.0065	0.7658	0.6776	0.6326	0.8173	1.0616
STD. DEVIATIONS	0.9606	0.5775	0.4319	0.2746	0.3495	0.6513
	0.4605	0.3124	0.2369	0.3316	0.7320	0.9887
PERCOLATION/LEAKAGE THROUGH LAYER 4						
TOTALS	0.0342	0.0288	0.0281	0.0191	0.0191	0.0217
	0.0268	0.0225	0.0207	0.0198	0.0199	0.0242

STD. DEVIATIONS	0.0103	0.0068	0.0056	0.0054	0.0069	0.0105
	0.0065	0.0054	0.0054	0.0065	0.0118	0.0121

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 4

AVERAGES	0.0010	0.0009	0.0007	0.0004	0.0004	0.0005
	0.0006	0.0005	0.0004	0.0004	0.0005	0.0007
STD. DEVIATIONS	0.0006	0.0004	0.0003	0.0002	0.0002	0.0004
	0.0003	0.0002	0.0002	0.0002	0.0005	0.0006

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1977 THROUGH 1981

	INCHES		CU. FEET	PERCENT
PRECIPITATION	48.71	(8.786)	229843.6	100.00
RUNOFF	15.318	(5.2461)	72284.43	31.449
EVAPOTRANSPIRATION	22.954	(1.6614)	108318.55	47.127
LATERAL DRAINAGE COLLECTED FROM LAYER 3	11.08188	(4.35181)	52295.402	22.75260
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.28502	(0.05970)	1345.001	0.58518
AVERAGE HEAD ON TOP OF LAYER 4	0.001	(0.000)		
CHANGE IN WATER STORAGE	-0.932	(4.2613)	-4399.80	-1.914

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PEAK DAILY VALUES FOR YEARS 1977 THROUGH 1981

	(INCHES)	(CU. FT.)
PRECIPITATION	4.64	21896.158
RUNOFF	4.117	19427.4512
DRAINAGE COLLECTED FROM LAYER 3	0.12978	612.41193
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.001777	8.38775
AVERAGE HEAD ON TOP OF LAYER 4	0.002	
MAXIMUM HEAD ON TOP OF LAYER 4	0.005	
LOCATION OF MAXIMUM HEAD IN LAYER 3 (DISTANCE FROM DRAIN)	0.0 FEET	
SNOW WATER	15.05	71040.9297

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4319
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1130

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 1981

LAYER	(INCHES)	(VOL/VOL)
1	1.6654	0.2776
2	84.5499	0.2610
3	0.0021	0.0104
4	0.0000	0.0000
SNOW WATER	1.427	

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BLASLAND, BOUCK & LEE, INC.
engineers & scientists

HELP Model Output Interim Soil Cover with Vegetation on 4% Slopes

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**                                                                              **
**                                                                              **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                    **
**                DEVELOPED BY ENVIRONMENTAL LABORATORY                         **
**                USAE WATERWAYS EXPERIMENT STATION                             **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:    C:\help3\ge\FAIR.D4
TEMPERATURE DATA FILE:      C:\HELP3\ge\FAIR.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\ge\FAIR.D13
EVAPOTRANSPIRATION DATA:    C:\help3\ge\FAIR.D11
SOIL AND DESIGN DATA FILE:  C:\help3\ge\PHASE1B.D10
OUTPUT DATA FILE:           C:\help3\ge\PHASE1B.OUT


TIME:  14:45     DATE:   6/ 1/2000


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     TITLE:  GE Pittsfield - Building 71 OPCA

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
            COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                                LAYER  1
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                TYPE 1 - VERTICAL PERCOLATION LAYER
                    MATERIAL TEXTURE NUMBER   8
          THICKNESS                     =      6.00   INCHES
          POROSITY                      =      0.4630 VOL/VOL
          FIELD CAPACITY                =      0.2320 VOL/VOL
          WILTING POINT                 =      0.1160 VOL/VOL
          INITIAL SOIL WATER CONTENT    =      0.3947 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.369999994000E-03 CM/SEC
       NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  3.00
              FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
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LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 7

THICKNESS	=	324.00	INCHES
POROSITY	=	0.4730	VOL/VOL
FIELD CAPACITY	=	0.2220	VOL/VOL
WILTING POINT	=	0.1040	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2780	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.520000001000E-03	CM/SEC

LAYER 3

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 63

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0151	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	30.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	65.0	FEET

LAYER 4

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.04	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.50	HOLES/ACRE
FML INSTALLATION DEFECTS	=	1.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 8 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 4.% AND A SLOPE LENGTH OF 45. FEET.

SCS RUNOFF CURVE NUMBER	=	81.60	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	0.600	ACRES
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.960	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	3.724	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.904	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	92.459	INCHES
TOTAL INITIAL WATER	=	92.459	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM PLAINFIELD MASSACHUSETTS

STATION LATITUDE	=	42.00	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	109	
END OF GROWING SEASON (JULIAN DATE)	=	277	
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	10.60	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	64.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	70.00	%

NOTE: PRECIPITATION DATA FOR PLAINFIELD MASSACHUSETTS WAS ENTERED FROM THE DEFAULT DATA FILE.

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
26.50	24.20	32.20	51.40	63.20	60.10
73.40	75.20	65.30	45.00	30.70	28.40

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS
AND STATION LATITUDE = 42.00 DEGREES

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ANNUAL TOTALS FOR YEAR 1977

	INCHES	CU. FEET	PERCENT
PRECIPITATION	55.23	120290.945	100.00
RUNOFF	11.819	25741.160	21.40
EVAPOTRANSPIRATION	23.240	50616.922	42.08
DRAINAGE COLLECTED FROM LAYER 3	16.1716	35221.742	29.28
PERC./LEAKAGE THROUGH LAYER 4	0.344274	749.830	0.62
AVG. HEAD ON TOP OF LAYER 4	0.0008		
CHANGE IN WATER STORAGE	3.655	7961.269	6.62
SOIL WATER AT START OF YEAR	92.461	201380.672	
SOIL WATER AT END OF YEAR	96.117	209341.953	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.023	0.00

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ANNUAL TOTALS FOR YEAR 1978

	INCHES	CU. FEET	PERCENT
PRECIPITATION	47.80	104108.406	100.00
RUNOFF	15.658	34102.668	32.76
EVAPOTRANSPIRATION	22.555	49124.598	47.19
DRAINAGE COLLECTED FROM LAYER 3	14.9438	32547.564	31.26
PERC./LEAKAGE THROUGH LAYER 4	0.342484	745.931	0.72

AVG. HEAD ON TOP OF LAYER 4	0.0008		
CHANGE IN WATER STORAGE	-5.699	-12412.387	-11.92
SOIL WATER AT START OF YEAR	96.117	209341.953	
SOIL WATER AT END OF YEAR	86.447	188282.047	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	3.970	8647.509	8.31
ANNUAL WATER BUDGET BALANCE	0.0000	0.027	0.00

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ANNUAL TOTALS FOR YEAR 1979

	INCHES	CU. FEET	PERCENT
PRECIPITATION	59.62	129852.383	100.00
RUNOFF	24.077	52440.590	40.38
EVAPOTRANSPIRATION	25.075	54612.637	42.06
DRAINAGE COLLECTED FROM LAYER 3	9.3552	20375.662	15.69
PERC./LEAKAGE THROUGH LAYER 4	0.258175	562.305	0.43
AVG. HEAD ON TOP OF LAYER 4	0.0005		
CHANGE IN WATER STORAGE	0.855	1861.185	1.43
SOIL WATER AT START OF YEAR	86.447	188282.047	
SOIL WATER AT END OF YEAR	91.272	198790.750	
SNOW WATER AT START OF YEAR	3.970	8647.509	6.66
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 1980

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.25	83308.492	100.00
RUNOFF	12.379	26961.404	32.36
EVAPOTRANSPIRATION	20.486	44618.316	53.56
DRAINAGE COLLECTED FROM LAYER 3	10.3676	22580.670	27.10
PERC./LEAKAGE THROUGH LAYER 4	0.287325	625.795	0.75
AVG. HEAD ON TOP OF LAYER 4	0.0005		
CHANGE IN WATER STORAGE	-5.270	-11477.646	-13.78
SOIL WATER AT START OF YEAR	91.272	198790.750	
SOIL WATER AT END OF YEAR	84.169	183321.016	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	1.833	3992.085	4.79
ANNUAL WATER BUDGET BALANCE	0.0000	-0.044	0.00

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ANNUAL TOTALS FOR YEAR 1981

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.63	92848.156	100.00
RUNOFF	12.042	26226.654	28.25
EVAPOTRANSPIRATION	23.411	50989.867	54.92
DRAINAGE COLLECTED FROM LAYER 3	5.2626	11462.048	12.34
PERC./LEAKAGE THROUGH LAYER 4	0.201510	438.888	0.47
AVG. HEAD ON TOP OF LAYER 4	0.0003		
CHANGE IN WATER STORAGE	1.713	3730.703	4.02
SOIL WATER AT START OF YEAR	84.169	183321.016	
SOIL WATER AT END OF YEAR	86.289	187936.891	

SNOW WATER AT START OF YEAR	1.833	3992.085	4.30
SNOW WATER AT END OF YEAR	1.427	3106.917	3.35
ANNUAL WATER BUDGET BALANCE	0.0000	-0.004	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1977 THROUGH 1981

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	5.78	3.88	4.62	3.81	4.19	3.21
	3.71	4.25	3.93	4.56	3.32	3.44
STD. DEVIATIONS	6.23	4.15	3.08	1.53	1.72	1.57
	1.09	2.40	2.27	1.20	1.43	1.44
RUNOFF						
TOTALS	1.078	1.276	7.438	3.877	0.286	0.017
	0.056	0.285	0.061	0.163	0.016	0.640
STD. DEVIATIONS	0.914	1.859	3.791	5.870	0.347	0.037
	0.126	0.520	0.077	0.103	0.029	0.683
EVAPOTRANSPIRATION						
TOTALS	0.621	0.665	0.757	2.386	3.027	2.563
	3.855	3.089	2.298	1.867	1.156	0.669
STD. DEVIATIONS	0.101	0.168	0.266	0.617	0.638	1.181
	0.500	0.780	0.580	0.121	0.185	0.210
LATERAL DRAINAGE COLLECTED FROM LAYER 3						
TOTALS	1.6867	1.2922	1.1110	0.6463	0.6330	0.8160
	1.0133	0.7689	0.6876	0.6417	0.8412	1.0823
STD. DEVIATIONS	0.9715	0.5816	0.4328	0.2766	0.3516	0.6612
	0.4650	0.3159	0.2391	0.3370	0.7620	1.0089
PERCOLATION/LEAKAGE THROUGH LAYER 4						
TOTALS	0.0344	0.0290	0.0282	0.0192	0.0193	0.0219
	0.0269	0.0226	0.0209	0.0200	0.0202	0.0244

STD. DEVIATIONS	0.0104	0.0068	0.0056	0.0054	0.0070	0.0105
	0.0065	0.0055	0.0053	0.0066	0.0122	0.0123

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 4

AVERAGES	0.0010	0.0009	0.0007	0.0004	0.0004	0.0005
	0.0006	0.0005	0.0004	0.0004	0.0005	0.0007
STD. DEVIATIONS	0.0006	0.0004	0.0003	0.0002	0.0002	0.0004
	0.0003	0.0002	0.0002	0.0002	0.0005	0.0006

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1977 THROUGH 1981

	INCHES	CU. FEET	PERCENT
PRECIPITATION	48.71 (8.786)	106081.7	100.00
RUNOFF	15.195 (5.2054)	33094.50	31.197
EVAPOTRANSPIRATION	22.953 (1.6613)	49992.46	47.126
LATERAL DRAINAGE COLLECTED FROM LAYER 3	11.22017 (4.41811)	24437.539	23.03653
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.28675 (0.06020)	624.550	0.58874
AVERAGE HEAD ON TOP OF LAYER 4	0.001 (0.000)		
CHANGE IN WATER STORAGE	-0.949 (4.2653)	-2067.37	-1.949

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PEAK DAILY VALUES FOR YEARS 1977 THROUGH 1981

	(INCHES)	(CU. FT.)
PRECIPITATION	4.64	10105.920
RUNOFF	4.117	8966.5176
DRAINAGE COLLECTED FROM LAYER 3	0.13146	286.32376
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.001789	3.89653
AVERAGE HEAD ON TOP OF LAYER 4	0.003	
MAXIMUM HEAD ON TOP OF LAYER 4	0.005	
LOCATION OF MAXIMUM HEAD IN LAYER 3 (DISTANCE FROM DRAIN)	0.0 FEET	
SNOW WATER	15.05	32788.1289

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4319
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1130

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 1981

LAYER	(INCHES)	(VOL/VOL)
1	1.6654	0.2776
2	84.6193	0.2612
3	0.0021	0.0104
4	0.0000	0.0000
SNOW WATER	1.427	

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BLASLAND, BOUCK & LEE, INC.
engineers & scientists

HELP Model Output Interim Soil Cover with No Vegetation on 33% Slopes

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**                                                                              **
**                                                                              **
**               HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                  **
**                 HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                   **
**                   DEVELOPED BY ENVIRONMENTAL LABORATORY                      **
**                     USAE WATERWAYS EXPERIMENT STATION                        **
**                FOR USEPA RISK REDUCTION ENGINEERING LABORATORY               **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:     C:\help3\ge\BARE.D4
TEMPERATURE DATA FILE:       C:\HELP3\ge\BARE.D7
SOLAR RADIATION DATA FILE:   C:\HELP3\ge\BARE.D13
EVAPOTRANSPIRATION DATA:     C:\help3\ge\BARE.D11
SOIL AND DESIGN DATA FILE:   C:\help3\ge\PHASE2A.D10
OUTPUT DATA FILE:            C:\help3\ge\PHASE2A.OUT


TIME:  14:46     DATE:   6/ 1/2000


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     TITLE:  GE Pittsfield - Building 71 OPCA

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
              COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                                LAYER  1
                                --------

                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   8
          THICKNESS                    =      6.00   INCHES
          POROSITY                     =      0.4630 VOL/VOL
          FIELD CAPACITY               =      0.2320 VOL/VOL
          WILTING POINT                =      0.1160 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.4553 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.369999994000E-03 CM/SEC
```

LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 7

THICKNESS	=	324.00	INCHES
POROSITY	=	0.4730	VOL/VOL
FIELD CAPACITY	=	0.2220	VOL/VOL
WILTING POINT	=	0.1040	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2742	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.520000001000E-03	CM/SEC

LAYER 3

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 63

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0136	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	30.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	65.0	FEET

LAYER 4

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.04	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.50	HOLES/ACRE
FML INSTALLATION DEFECTS	=	1.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT

SOIL DATA BASE USING SOIL TEXTURE # 8 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 33.% AND A SLOPE LENGTH OF 60. FEET.

SCS RUNOFF CURVE NUMBER	=	91.80	
FRACTION OF AREA ALLOWING RUNOFF	=	60.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	0.800	ACRES
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	3.391	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	3.724	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.904	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	91.575	INCHES
TOTAL INITIAL WATER	=	91.575	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
PLAINFIELD MASSACHUSETTS

STATION LATITUDE	=	42.00	DEGREES
MAXIMUM LEAF AREA INDEX	=	0.00	
START OF GROWING SEASON (JULIAN DATE)	=	109	
END OF GROWING SEASON (JULIAN DATE)	=	277	
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	10.60	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	64.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	70.00	%

NOTE: PRECIPITATION DATA FOR PLAINFIELD MASSACHUSETTS
WAS ENTERED FROM THE DEFAULT DATA FILE.

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
26.50	24.20	32.20	51.40	63.20	60.10
73.40	75.20	65.30	45.00	30.70	28.40

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS

AND STATION LATITUDE = 42.00 DEGREES

****

ANNUAL TOTALS FOR YEAR 1977

	INCHES	CU. FEET	PERCENT
PRECIPITATION	55.23	160387.922	100.00
RUNOFF	11.913	34595.070	21.57
EVAPOTRANSPIRATION	23.790	69084.977	43.07
DRAINAGE COLLECTED FROM LAYER 3	15.5527	45165.168	28.16
PERC./LEAKAGE THROUGH LAYER 4	0.342187	993.710	0.62
AVG. HEAD ON TOP OF LAYER 4	0.0008		
CHANGE IN WATER STORAGE	3.633	10549.022	6.58
SOIL WATER AT START OF YEAR	91.577	265939.437	
SOIL WATER AT END OF YEAR	95.210	276488.437	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.026	0.00

****

****

ANNUAL TOTALS FOR YEAR 1978

	INCHES	CU. FEET	PERCENT
PRECIPITATION	47.80	138811.203	100.00
RUNOFF	11.396	33095.348	23.84
EVAPOTRANSPIRATION	22.428	65130.965	46.92
DRAINAGE COLLECTED FROM LAYER 3	18.4540	53590.527	38.61
PERC./LEAKAGE THROUGH LAYER 4	0.386458	1122.274	0.81
AVG. HEAD ON TOP OF LAYER 4	0.0010		

CLIENT: General Electric Company Prepared By: KFP Date: 07-28-99
PROJECT: Pittsfield RD/RA Work Plan -1999 Checked By: _____ Date: _____
On-Plant Consolidation Areas
SUBJECT: Required Leachate Collection Pipe Wall Thickness Calculations

CALCULATIONS:

1. Determine the FS for Wall Crushing

Calculate the total vertical soil pressure at the top of the pipe (P_t):

$$P_t = \gamma_{wc} \cdot t_c + \gamma_{wf} \cdot t_f \qquad P_t = 31.6 \cdot \frac{lb}{in^2}$$

Calculate the actual maximum compressive stress in the pipe (S_A):

$$S_A = \frac{SDR - 1}{2} \cdot P_t \qquad S_A = 252.9 \cdot \frac{lb}{in^2}$$

According to Reference 2, pg. 37, the actual compressive yield strength of Driscopipe is:

$$S_{act} = 1500 \cdot \frac{lb}{in^2}$$ (Reference 2, pg. 37)

Calculate the factor of safety (FS):

$$FS_{wc} = \frac{S_{act}}{S_A} \qquad FS_{wc} = 5.93$$ **<== OK**

2. Calculate the adequacy of the pipe with respect to ring deflection

Due to the "bridging" effect of the stone used to backfill the collection pipe, the vertical elastic strain (i.e. - ring deflection) experienced by the pipe is equal to the vertical elastic strain experienced by the granular fill due to the overburden pressure of the consolidation material.

Calculate the granular fill vertical elastic strain (ε):

$$\varepsilon = \frac{P_t}{E'}$$ Where: $E' = 1000 \cdot \frac{lb}{in^2}$ (Reference 2, pg 36; assuming Soil Type I: crushed stone, loosely placed)

$$\varepsilon = 3.2 \cdot \%$$

Allowable ring deflection (ε_{rd}) for SDR 17 pipe is:

$$\varepsilon_{rd} = 4.2 \cdot \%$$ (Reference 2, Chart 27, pg. 38)

Therefore:

$$\varepsilon < \varepsilon_{rd}$$

3.2%<4.2% **<== OK**

CLIENT: General Electric Company Prepared By: KFP Date: 07-28-99
PROJECT: Pittsfield RD/RA Work Plan -1999 Checked By: _____ Date: _____
On-Plant Consolidation Areas
SUBJECT: Required Leachate Collection Pipe Wall Thickness Calculations

2. Determine the FS for Wall Buckling

Determine the pipe's modulus of elasticity (E) according to Chart 25 of Reference 2, page 37

$E = 26500 \cdot \frac{lb}{in^2}$ (With $S_A = 252.9 \cdot \frac{lb}{in^2}$; and a Design Life = 50 years)

Calculate the pipe's hydrostatic, critical-collapse differential pressure (P_c):

$$P_c = \frac{2.32 \cdot E}{SDR^3} \qquad P_c = 12.5 \cdot \frac{lb}{in^2}$$

Calculate the critical buckling soil pressure at the top of the pipe (P_{cb}):

$$P_{cb} = 0.8 \cdot (E' \cdot P_c)^{\frac{1}{2}} \qquad P_{cb} = 89.5 \cdot \frac{lb}{in^2}$$

Calculate the factor of safety with respect to wall buckling:

$$FS_{wb} = \frac{P_{cb}}{P_t} \qquad FS_{wb} = 2.8$$

The recommended FS for wall buckling is:

$FS_{wbrec} = 2.0$ (Reference 2, pg. 38)

Therefore:

$FS_{wb} > FS_{wbrec}$

2.8 > 2.0 <== OK

CONCLUSIONS:

An SDR 17, 6-inch diameter perforated HDPE pipe meets the manufacturer's recommended minimum design requirements and is therefore selected for the leachate collection pipe wall thickness.

References

TABLE 4-2 Continued

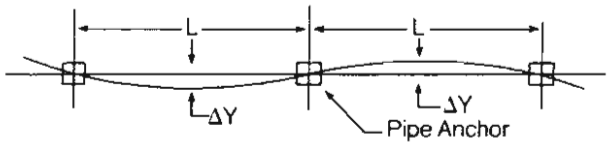
	Density (Mg/m^3)†						
	Dry Density, ρ_d			Wet Density, ρ		Submerged Density, ρ'	
	Min. (loose)	100% Mod. Proctor	Max. (dense)	Min. (loose)	Max. (dense)	Min. (loose)	Max. (dense)
1. Uniform materials:							
(a) Equal spheres (theoretical values)	—	—	—	—	—	—	—
(b) Standard Ottawa sand	1.49	—	1.78	1.51	2.12	0.93	1.12
(c) Clean, uniform sand (fine or medium)	1.35	1.86	1.92	1.37	2.20	0.85	1.18
(d) Uniform, inorganic silt	1.29	—	1.92	1.31	2.20	0.83	1.18
2. Well-graded materials:							
(a) Silty sand	1.41	1.98	2.06	1.43	2.30	0.88	1.28
(b) Clean, fine to course sand	1.38	2.14	2.23	1.40	2.39	0.86	1.40
(c) Micaceous sand	1.23	—	1.95	1.24	2.23	0.77	1.23
(d) Silty sand and gravel	1.44	—	2.36	1.46	2.51	0.91	1.49

†Tabulation is based on $\rho_s = 2.65$ Mg/m^3. Multiply by 62.4 to obtain lbf/ft^3.

If flow is likely to be stopped, the designer may want to provide a means to drain the pipeline partially or completely. If, for some unforeseen reason, the Driscopipe pipeline should plug and freeze, the pipeline will not be damaged. The frozen fluid may swell the diameter of the pipe but it will return to nominal size as the fluid thaws. Due to the nature of polyethylene pipe, a flame (such as a propane or acetylene torch) cannot be used to thaw a frozen section of pipe. Other methods must be used.

The toughness and excellent abrasion resistance of Driscopipe will take the abuse of movement across sand and soil without detrimental effects on its strength or service life. However, in rocky areas, sharp rocks which could cut the pipe should be removed and may be replaced with a bed of sand or soil.

Lateral Deflection Due to Thermal Movement in Overland Pipelines.



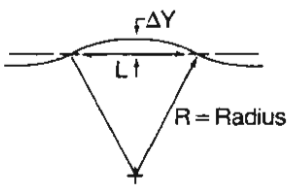
The following formulae will allow the designer to calculate lateral deflection of the pipeline and anchor point spacing.

$$\Delta Y = L\sqrt{.50\alpha\Delta T} \qquad (1)$$

$$L = \frac{\Delta Y}{\sqrt{.50\alpha\Delta T}} \qquad (2)$$

$$L = \frac{D\sqrt{96\alpha\Delta T}}{\varepsilon} \qquad (3)$$

Where: ΔY = Lateral deflection (inches)
L = Length of pipe between anchors (inches)
α = Coefficient of thermal expansion (in/in/°F)
ΔT = Change in temperature (°F)
ε = Strain (inches/inch)
D = Pipe outside dia. (inches)



$$R = \frac{4\Delta Y^2 + L^2}{8\Delta Y}$$

Examination of equation (1) or (2) shows that for any given set of thermal conditions an increase in ΔY will increase L and vice versa. Increasing ΔY and L to the maximum will reduce the number of anchor points needed but may increase wear on the pipe from movement and may increase the possibility of kinking the line if lateral movement does not occur uniformly. One practical approach to design is to calculate L using formula (3) for strain (ε) in the pipe wall equal to 1% and (ε) equal to 5%. The L value at 5% strain will give the shortest distance between anchor points and should be considered maximum for strain (ε) and minimum spacing for L. The spacing for L should be as large as possible considering other installation location factors, such as available right-of-way, slope of the ground, etc. Higher values for L mean less strain (ε) and fewer anchor points and, consequently, lower costs, generally.

Type 3: Buried Pipelines

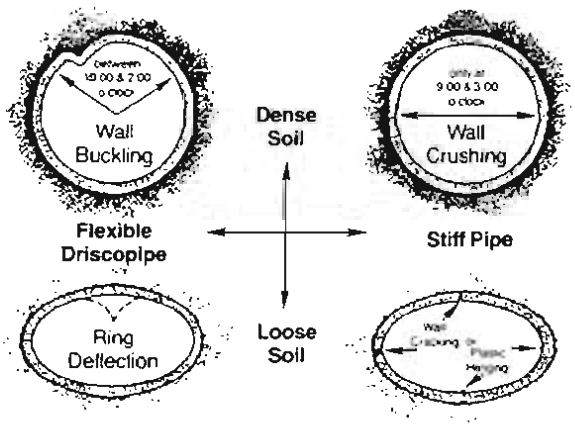
Introduction: When pipelines are buried, they are subjected to external loads. The effect of external pressure on flexible Driscopipe is more complex than the effect of internal pressure only. For design purposes, a distinction is usually made between rigid and flexible pipes. A rigid pipeline (such as concrete) is considered to be the total structure and must be designed to sustain all external loads as well as internal pressure. But, Driscopipe is a flexible pipe and is considered to be only one component of the "pipe-soil" system, as described more fully on page 35.

Thus, in a buried situation, the SDR of the pipe and the strength of the soil envelope must be specified in order to keep the three burial design parameters (wall crushing, wall buckling and ring deflection) within acceptable limits. The pipe and soil envelope become one system. The mutual interaction and strength contribution of the pipe to the soil and the soil to the pipe result in a highly successful integral structure. Correct design centers around two points: a) matching the proper wall thickness to the external soil pressure and b) the analysis of how Driscopipe and the soil surrounding the pipe accept the backfill earthloading and transfer it to the undisturbed walls of the ditch or trench such that the pipeline will deflect slightly into static equilibrium with the soil.

Design Considerations: Driscopipe performs effectively when buried because of its ability to deflect in the interacting pipe-soil system. The pipe actually gains strength from the surrounding soil and can support additional soil loads. The soil envelope surrounding the pipe will compress or deflect slightly under the additional loads of the dry weight of backfill above the pipe, the weight of the water table saturating the soil, the weight of nearby buildings or static structures, the weight of off-the-road trucks and tractors, railroad freight trains or any combination of all these loads. In a flexible "pipe-soil" system, the pipe deflection is the same as the soil deflection under the load of the secondary backfill and any surface loads.

When the pipeline is laid in the trench, the soil envelope is shoveled, washed, flushed or dumped into place, in layers, to an elevation above the top of the pipe. It is usually compacted to a specified Proctor density by mechanical or hydraulic means. As additional layers of soil are backfilled into the trench, the weight of the soil over the primary, compacted backfill is increased. This increased weight slightly compresses (strains downwards) the soil envelope. The amount of soil compression is related to the strength of the soil at a given density and to the intensity of the vertical soil pressure. Since the soil is not an elastic material, this compression or strain of the soil envelope by the final backfill is permanent. As the soil envelope is compressed (strained), it becomes further compacted. In its denser state, the soil develops increased resistance to the vertical soil pressure until it reaches static equilibrium without further compression or strain. This is the reaction of the compacted soil envelope.

Typical Performance Limits of Buried Pipes Due to External Soil Pressure

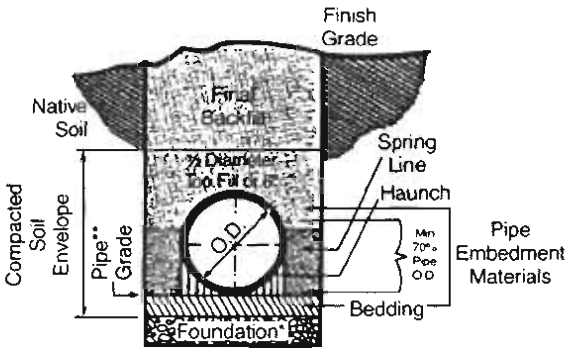


Through mathematical computations presented later, the ring deflection of Driscopipe can be calculated based upon the known properties of the pipe and the measured compressibility of the soil envelopes. As the pipe deflects with the soil, it forms a very slight ellipse by decreasing in the vertical diameter an amount ΔY and by increasing in the horizontal diameter an almost equal (but slightly less) amount ΔX. The horizontal diametrical increase is beneficial because it further compacts the sidefill soil and thus develops lateral support in a fashion similar to the way soil abutments offer support to a masonry arch bridge. The compacted soil actually becomes a masonry arch even though the soil is a low grade masonry using soil particles for bricks. The vertical decrease in diameter is beneficial because it relieves the pipe of vertical soil pressure concentrations and thus forces the soil to support the major share of the vertical load by arching action over the pipe.

Compressibility of the soil envelope is measured by the Soil Modulus, E', which is the ratio of soil pressure (stress) to soil deflection (strain) at a given soil compaction density, as shown in Chart 26. The degree of compaction of the soil envelope can be determined from a family of curves developed from laboratory tests. Chart 26 is typical of such curves and provides a general guide if laboratory data are not available to plot a family of curves for a specific soil type.

Deformation of buried flexible pipe becomes critical only when the pipe reaches that point of ring deflection beyond which it can no longer resist any increase in soil loading. By limiting ring deflection through proper soil compaction, the loading over a pipe is distributed through the soil and across the soil arch around the pipe. Thus the pipeline maintains its circular cross-section in stable soils and is protected against long term collapse.

Trench Construction and Terminology



***In suitable soils the construction of a bedding and/or a foundation may not be required.**

****Gravity flow Driscopipe sewers may be accurately laid to grade using laser-beam scoping.**

Simplified Burial Design: A conservative estimate of the ability of Driscopipe pipelines to perform in a buried environment is found in Chart 24. It is based on a minimum 2:1 safety factor and 50 year design service life. A detailed burial design starts on page 37. The detailed design should be used for critical or marginal applications or whenever a more precise solution is desired.

Detailed Burial Design:
Design by Wall Crushing: Wall crushing would theoretically occur when the stress in a pipe wall, due to the external vertical pressure, exceeded the long-term compressive strength of the pipe material. To ensure that the Driscopipe wall is strong enough to endure the external pressure the following check should be made:

$$S_A = \frac{(SDR - 1)}{2} P_T$$

Values of E'

Based on Soil Type (ASTM D2321) and Degree of Compaction

Soil Type of Initial Backfill Embedment Material	Description	E' (psi) for Degree of Compaction (Proctor Density, %)			
		Loose	Slight (70-85%)	Moderate (85-95%)	High (95%)
I	Manufactured angular, granular materials (crushed stone or rock, broken coral, cinders, etc.)	1,000	3,000	3,000	3,000
II	Coarse grained soils with little or no fines	N.R.	1,000	2,000	3,000
III	Coarse grained soils with fines	N.R.	N.R.	1,000	2,000
IV	Fine-grained soils	N.R.	N.R.	N.R.	N.R.
V	Organic soils (peat, muck, clay, etc.)	N.R.	N.R.	N.R.	N.R.

N.R. = Not Recommended for use by ASTM D2321 for pipe wall support

Chart 24

SDR	Maximum Burial Depth, ft. in dry soil of 100 lbs/cu. ft.			Maximum External Pressure psi			Maximum Deflection, % after installation		
	Soil Modulus, psi*			Soil Modulus, psi*			Soil Modulus, psi*		
	1000	2000	3000	1000	2000	3000	1000	2000	3000
32.5	25	32	37	17	22	26	1.7	0.9	0.6
26	33	45	52	23	31	36	2.3	1.2	0.8
21	46	61	71	32	42	49	3.2	1.6	1.1
19	52	69	81	36	48	56	3.6	1.8	1.2
17	61	121	181	42	84	126	4.2	2.1	1.4
15.5	56	112	168	39	78	117	3.9	2.0	1.3
13.5	49	98	147	34	68	102	3.4	1.7	1.1
11	39	78	117	27	54	81	2.7	1.4	0.9
9.3	33	68	101	23	47	70	2.3	1.2	0.8
8.3	30	61	89	21	42	62	2.1	1.1	0.7
7.3	26	52	79	18	36	55	1.8	0.9	0.6

*assumes no external loads

Where. S_A = Actual compressive stress, psi
SDR = Standard Dimension Ratio
P_T = External Pressure, psi

Safety Factor = 1500 psi ÷ S_A where 1500 psi is the Compressive Yield Strength of Driscopipe.

Design by Wall Buckling: Local wall buckling is a longitudinal wrinkling of the pipe wall. Tests of *non-pressurized* Driscopipe show that buckling and collapse do not occur when the soil envelope is in full contact with the pipe and is compacted to a dense state. However, it can be forced to occur over the long term in *non-pressurized* pipe if the total external soil pressure, P_t, is allowed to exceed the pipe-soil system's critical buckling pressure, P_{cb}. If $P_t > P_{cb}$, gradual collapse may occur over the long term. A calculated, conservative value for the critical buckling pressure may be obtained by the following approximate formula. All pipe diameters with the same SDR in the same burial situation have the same critical collapse and critical buckling endurance

$$P_{cb} = 0.8\sqrt{E' \times P_c}$$

Where:

P_t = Total vertical soil pressure at the top of the pipe, psi

P_{cb} = Critical buckling soil pressure at the top of the pipe, psi

E' = Soil modulus in psi calculated as the ratio of the vertical soil pressure to vertical soil strain at a specified density

P_C = Hydrostatic, critical-collapse differential pressure, psi

$$P_C = \frac{2E\,(t/D)^3\,(D_{MIN}/D_{MAX})^3}{(1-\mu^2)}$$

$$P_c = \frac{2.32\,E}{(SDR)^3}$$

Where: (D_{MIN}/D_{MAX}) = .95
μ = Poission's Ratio
μ = .45 for Driscopipe
E = stress and time dependent tensile modulus of elasticity, psi

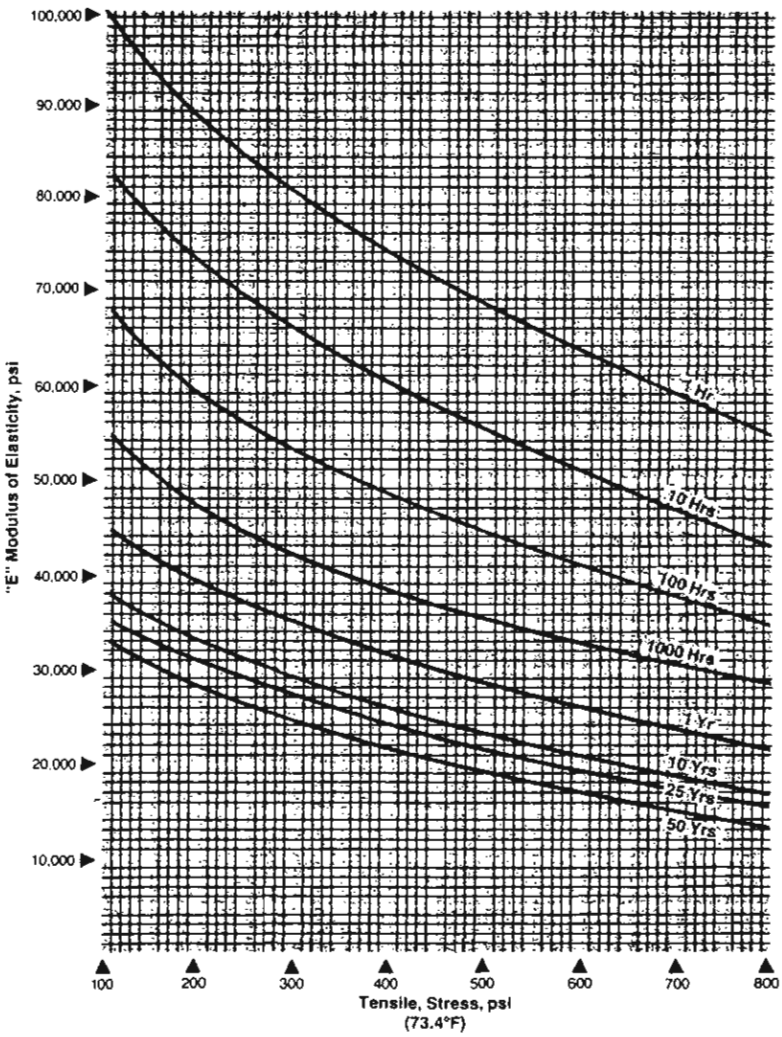
In a direct burial pressurized pipeline, the internal pressure is usually great enough to exceed the external critical-buckling soil pressure. When a pressurized line is to be shut down for a period, wall buckling should be examined.

Design by Wall Buckling Guidelines:
Although wall buckling is seldom the limiting factor in the design of a Driscopipe system, a check of non-pressurized pipelines can be made according to the following steps to insure $P_t < P_{cb}$.

1. Calculate or estimate the total soil pressure, P_t, at the top of the pipe.
2. Calculate the stress "S_A" in the pipe wall according to the formula:
$$S_A = \frac{(SDR - 1)\,P_t}{2}$$
3. Based upon the stress "S_A" and the estimated time duration of non-pressurization, use Chart 25 to find the value of the pipe's modulus of elasticity, E, in psi.

Chart 25

Time Dependent Modulus of Elasticity for Polyethylene Pipe vs. Stress Intensity (73.4°F)



NOTE: The short term modulus of elasticity of Driscopipe per ASTM D 638 is approximately 100,000 psi. Due to the cold flow (creep) characteristic of the pipe material, this modulus is dependent upon the stress intensity and the time duration of the applied stress.

4. Based upon the pipe SDR and the value of the polyethylene modulus of elasticity, E, calculate the pipe's hydrostatic, critical-collapse differential pressure, P_C:

$$P_C = \frac{2\,32\,(E)}{(SDR)^3}$$

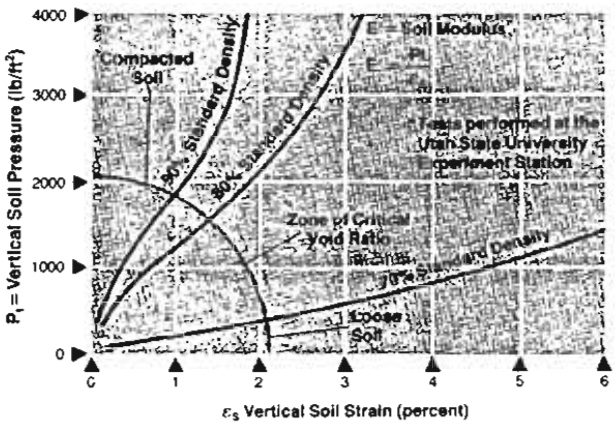
5. Calculate the soil modulus, E', by plotting the total external soil pressure, P_t, against a specified soil density to derive the soil strain as shown in the example problem on Chart 26.
6. Calculate the critical buckling pressure at the top of the pipe by the formula:

$$P_{cb} = 0.8\sqrt{E' \times P_c}$$

7. Calculate the Safety Factor: S.F. = $P_{CB} \div P_t$
   In burial applications, a safety factor of 1.0 may be considered a minimum because of the margin of safety provided by the arching action of the soil. However, Driscopipe endorses using a more conservative value approaching or exceeding a 2.0 safety factor.
8. The above procedures could be reversed to derive the minimum pipe SDR required for a given soil pressure and an estimated soil density. However, this procedure should permit the engineer to optimize the system design quickly by examining several combinations.

Chart 26

Plot of Vertical Stress-Strain Data for Typical Trench Backfill (Except Clay) from Actual Tests*



EXAMPLE

Find: E' @ 2000 PSF and 80% Density
Formula: $E' = P_t/\varepsilon_s$
Calculations: E' = 2000 PSF / .018 = 111111 PSF = 771 psi

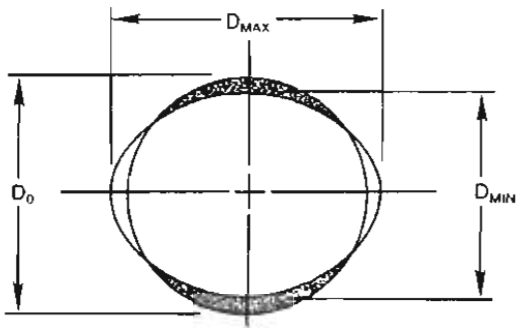
Note: The curves shown on this chart are sample curves for a granular soil. If other types of soil are used for backfill, such as clay or clay loam, curves should be developed from laboratory test data for the material used. Soil pressures greater than 4000 psf may be examined by extrapolating the slope of the curve or by generating curves by testing at those higher soil pressures. Probable error of curves is about half the distance between adjacent lines.

Design by Ring Deflection Ring deflection is defined as the ratio of the vertical change in diameter to the original diameter. It is often expressed as a percentage. Ring deflection for buried Driscopipe is conservatively the same as (no more than) the vertical compression of the soil envelope around the pipe. Design by ring deflection matches the ability of Driscopipe to accommodate, without structural distress, the vertical compression of the soil enveloping the buried pipeline. *Design by ring deflection comprises a calculation of vertical soil strain to ensure it will be less than the allowable ring deflection of the pipe.* See Chart 27. The tabulation shows that with lower values of SDR, the allowable deflection is less. For installations which require this thicker wall to resist the external soil pressure, actual ring deflection can easily be limited to the tabular values by proper compaction of the backfill around the pipe. The recommended allowable deflection for the various SDR s are:

Chart 27

SDR	Allowable Ring Deflection
32.5	8.1%
26.0	6.5%
21.0	5.2%
19.0	4.7%
17.0	4.2%
15.5	3.9%
13.5	3.4%
11.0	2.7%

The allowable ring deflection of polyethylene pipe is a function of the allowable tangential strain in the outer surface of the pipe wall. A conservative limit of 1-1½% tangential strain in the outer surface of the pipe wall due to vertical deflection of the pipe "ring" by soil compression can be understood by comparing two pipes of the same diameter but different wall thickness.



$$\% \text{ Ring Deflection} = \left(1 - \frac{D_{MIN}}{D_0}\right) \times 100\%$$

NOTE: 5% deflection decreases flow-area by ¼%. 10% deflection decreases flow-area by 1%.

Assume each of the pipes is equally deflected under loads required to achieve that result. The tangential surface strain developed in the thickwall pipe is much greater than the surface strain in the thinwall pipe. The tangential strain varies directly as the wall thickness (i.e.: distance from the neutral axis) and is proportional to the amount of ring deflection. For a given ring deflection, the thicker the wall, the higher the strain.

Alternately, assume that each of the pipes is subjected to loads such that the tangential surface strain in the pipe's wall surface is equal for both pipes. For equal surface strain, the degree of vertical deflection of the pipe ring is different for the two pipes. Under these circumstances, the degree of deflection would be less for the thickwall pipe and greater for the thinwall pipe.

The percentage ring deflection based upon strain for a given SDR pipe can be calculated as follows:

$$\frac{\Delta Y}{D} = (0.25)(\varepsilon)(\frac{D}{t})$$

$$\frac{\Delta Y}{D} = (0.25)(\varepsilon)(SDR)$$

$$\frac{\Delta Y}{D} = (.0025)(SDR)$$

Where: ε = Tangential strain in the surface of the pipe ring due to deflection (conservatively 0.01 for Driscopipe)
D = Pipe OD, inches
t = Pipe wall thickness, inches
SDR = Standard Dimension Ratio, D/t
ΔY = Vertical deflection, inches

Driscopipe recognizes a tangential surface strain value of 0.01 due to ring deflection as a conservative yet responsible design parameter. This value is based upon the following:

- Most of the deflection of a flexible pipe occurs within a few hours or a few days after final backfilling and increases very little thereafter. This results in the development of the soil arch over the pipe which relieves the pipe of much of the vertical soil load by the arching action of the soil envelope and by the development of soil restraint at the sides of the pipe.
- With an allowable long term stress of 800 psi and a time of approximately four days (100 hours) to reach the maximum allowable ring deflection, the tangential strain would be 2% to 2½% (See Chart 25 for time and load dependent modulus of elasticity to calculate: strain = stress ÷ modulus.) Therefore, the use of 800 psi incorporates an additional margin of safety of over 2.0.
- An allowable strain value of 0.01 will allow for reasonable additional deflection due to disturbance of the backfill by earthquake, fluctuations of the water table, etc.
- An allowable design strain value of 0.01 allows for the normal deviation of temperature encountered during installation.

In summary, a soil density can be specified for the bedding and initial backfill so that the vertical strain of the sidefill soil under the total soil pressure, P_t, at the top of the pipe will be no greater than the maximum allowable ring deflection for a given SDR pipe.

Test Performance of Direct Burial Driscopipe: The density of the bedding and soil envelope determines the performance capability of the pipe-soil system with regard to ring deflection. Tests conducted on Driscopipe at Utah State University by Dr. Reynold K. Watkins show that Driscopipe will not buckle under ordinary conditions if the soil envelope is compacted and is in full contact with the pipe. A virtual fail-safe installation can be assured if soil density is generally over 85% of Standard Proctor (AASHTO T-99) Density. With the backfill compacted to 90% of standard density, the depth of laying for Driscopipe is almost unlimited. However, in the thinner wall series, due to the flexibility of the pipe, it is difficult to achieve the desired high soil density without buckling of the pipe cross-section, particularly when using backfill material other than sand or gravel.

Soil densities less than 90% are certainly adequate if depth of soil cover is in the range of most installations. Compaction to 75% standard density is relatively easy to achieve even in poor soils. This would cover a large percentage of all installations. However, 85% Standard Proctor Density (AASHTO T-99) should be considered a conservative minimum.

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GDC Minimum Required Transmissivity

CLIENT: General Electric Company PROJECT: GE Pittsfield, MA Prepared By: KFP Date: 05-04-00
TITLE: Engineering Design Calculations Reviewed By: DTB Date: 5/8/00
SUBJECT: OPCA - Geosynthetic Drainage Composite Minimum Required Transmissivity

OBJECTIVE:

Determine the minimum required flow capacity (transmissivity) of the geosynthetic drainage composite (GDC) within the base liner system under anticipated final conditions.

REFERENCES:

1. "Design of Waste Containment Liner and Final Closure Systems," ASCE Seminar Manual, 1998.
2. Hydraulic Evaluation of Landfill Performance (HELP) Model Version 3.07a - (Output File = BASE3.OUT).
3. "Detailed Work Plan for On-Plant Consolidation Areas," drawings, Blasland, Bouck & Lee, Inc., July 1999.
4. "An Introduction to Geotechnical Engineering," Holtz, R.D., page 105, 1981 (included).

ASSUMPTIONS:

1. Base liner GDC must be capable of handling stormwater infiltration for the following condition:

   The first lift of consolidation material (uniform 24 inch thick) has been placed within a 1-acre cell of the Building 71 Consolidation Area.
2. Longest slope length for the base liner GDC is 200 feet at 2%.
3. Soil and climatological parameters derived from the HELP model for Plainfield, Massachusetts.
4. Maximum allowable head above the FML in the base liner system is 12 inches.
5. Normal stress to be utilized during laboratory testing is based on the full design thickness of 29 feet (including waste and final cover thickness).
6. The unit weight of the consolidation and final cover materials above the GDC is 157 lb/ft^3 (from reference 4).
7. 0% of stormwater runoff is allowed from cell area.

METHODOLOGY:

1. For the conditions stated above, perform an iterative HELP model analysis varying the GDC layer saturated hydraulic conductivity to determine the minimum transmissivity that results in a 12 inch head above the base liner system.

CALCULATIONS:

1. Minimum required transmissivity for the GDC layer:

   From the attached HELP model, the minimum hydraulic conductivity that results in a 12 inch head above the base liner system is 30 cm/s.

   Equivalent transmissivity is:

$$\frac{30\text{cm/s}}{\left(\frac{100\text{cm}}{1\text{m}}\right)^2\left(\frac{1}{0.20\text{in}}\right)\left(\frac{1\text{in}}{2.54\text{cm}}\right)} = 1.5\text{x}10^{-3}\ \frac{\text{m}^2}{\text{s}}$$

Determine maximum normal stress, σ_N, and hydraulic gradient, I, associated with the final OPCA condition:

A. Maximum normal stress, σ_N:

$\sigma_N = \gamma t_{waste}$

where:

γ = 157 lb/ft^3 (assumed unit weight of material above GDC)
t_{waste} = 29 ft (thickness of material above GDC)

σ_N = (157 lb/ft^3)(29 ft) = 4553 lb/ft^2

B. Hydraulic gradient, I:

$$I = \frac{h_{max} + B\sin\theta_b}{\frac{B}{\cos\theta_b}}$$

where:

h_{max} = 1 ft (maximum allowable head)
B = 61.8 ft (distance from leachate collection pipe to location of maximum head)
θ_b = 1.1° (base liner slope angle)

$$I = \frac{1 + 61.8\sin(1.1)}{\frac{61.8}{\cos(1.1)}} = 0.035$$

CONCLUSIONS:

The required flow capacity (transmissivity) of the geosynthetic drainage composite (GDC) within the base liner system must be at least 1.5 x 10^{-3} m^2/s under the anticipated final OPCA conditions.

References

TABLE 4-2 Continued

	Density (Mg/m³)†						
	Dry Density, ρ_d			Wet Density, ρ		Submerged Density, ρ'	
	Min. (loose)	100% Mod. Proctor	Max. (dense)	Min. (loose)	Max. (dense)	Min. (loose)	Max. (dense)
1. Uniform materials:							
(a) Equal spheres (theoretical values)	—	—	—	—	—	—	—
(b) Standard Ottawa sand	1.49	—	1.78	1.51	2.12	0.93	1.12
(c) Clean, uniform sand (fine or medium)	1.35	1.86	1.92	1.37	2.20	0.85	1.18
(d) Uniform, inorganic silt	1.29	—	1.92	1.31	2.20	0.83	1.18
2. Well-graded materials:							
(a) Silty sand	1.41	1.98	2.06	1.43	2.30	0.88	1.28
(b) Clean, fine to course sand	1.38	2.14	2.23	1.40	2.39	0.86	1.40
(c) Micaceous sand	1.23	—	1.95	1.24	2.23	0.77	1.23
(d) Silty sand and gravel	1.44	—	2.36	1.46	2.51	0.91	1.49

†Tabulation is based on $\rho_s = 2.65$ Mg/m³. Multiply by 62.4 to obtain lbf/ft³.

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HELP Model Output

```
**********************************************************************
**********************************************************************
**                                                                  **
**                                                                  **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE        **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)        **
**                   DEVELOPED BY ENVIRONMENTAL LABORATORY          **
**                     USAE WATERWAYS EXPERIMENT STATION            **
**              FOR USEPA RISK REDUCTION ENGINEERING LABORATORY      **
**                                                                  **
**                                                                  **
**********************************************************************
**********************************************************************


PRECIPITATION DATA FILE:     C:\help3\p\BARE.D4
TEMPERATURE DATA FILE:       C:\HELP3\p\BARE.D7
SOLAR RADIATION DATA FILE:   C:\HELP3\p\BARE.D13
EVAPOTRANSPIRATION DATA:     C:\help3\p\BARE.D11
SOIL AND DESIGN DATA FILE:   C:\help3\p\BASE2.D10
OUTPUT DATA FILE:            C:\help3\p\base2.OUT


TIME:   8:21     DATE:   5/ 8/2000


**********************************************************************

     TITLE:  Pittsfield

**********************************************************************


     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
              COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                              LAYER  1
                              --------

               TYPE 1 - VERTICAL PERCOLATION LAYER
                    MATERIAL TEXTURE NUMBER   7
          THICKNESS                    =     24.00   INCHES
          POROSITY                     =      0.4730 VOL/VOL
          FIELD CAPACITY               =      0.2220 VOL/VOL
          WILTING POINT                =      0.1040 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.3327 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.520000001000E-03 CM/SEC



                              LAYER  2
                              --------

                 TYPE 2 - LATERAL DRAINAGE LAYER
                    MATERIAL TEXTURE NUMBER  63
          THICKNESS                    =      0.20   INCHES
          POROSITY                     =      0.8500 VOL/VOL
          FIELD CAPACITY               =      0.0100 VOL/VOL
          WILTING POINT                =      0.0050 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.0179 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =   30.0000000000     CM/SEC
          SLOPE                        =      2.00   PERCENT
```

DRAINAGE LENGTH = 200.0 FEET

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.04	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.80	HOLES/ACRE
FML INSTALLATION DEFECTS	=	4.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 7 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2.% AND A SLOPE LENGTH OF 200. FEET.

SCS RUNOFF CURVE NUMBER	=	88.50	
FRACTION OF AREA ALLOWING RUNOFF	=	0.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	3.784	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	3.784	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.832	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	7.988	INCHES
TOTAL INITIAL WATER	=	7.988	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
PLAINFIELD MASSACHUSETTS

STATION LATITUDE	=	42.00	DEGREES
MAXIMUM LEAF AREA INDEX	=	0.00	
START OF GROWING SEASON (JULIAN DATE)	=	109	
END OF GROWING SEASON (JULIAN DATE)	=	277	
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	10.60	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	64.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	70.00	%

NOTE: PRECIPITATION DATA FOR PLAINFIELD MASSACHUSETTS
WAS ENTERED FROM THE DEFAULT DATA FILE.

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
26.50	24.20	32.20	51.40	63.20	60.10
73.40	75.20	65.30	45.00	30.70	28.40

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS
AND STATION LATITUDE = 42.00 DEGREES

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1977 THROUGH 1981

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	5.78	3.88	4.62	3.81	4.19	3.21
	3.71	4.25	3.93	4.56	3.32	3.44
STD. DEVIATIONS	6.23	4.15	3.08	1.53	1.72	1.57
	1.09	2.40	2.27	1.20	1.43	1.44
RUNOFF						
TOTALS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.619	0.666	0.760	2.472	3.066	2.473
	3.419	3.013	2.664	2.223	1.335	0.695
STD. DEVIATIONS	0.101	0.171	0.272	0.629	0.598	1.114
	0.514	0.694	0.780	0.310	0.197	0.244
LATERAL DRAINAGE COLLECTED FROM LAYER 2						
TOTALS	0.5615	1.6499	6.8591	6.0414	1.3757	0.3689
	0.3488	1.2115	1.0066	1.6332	0.9542	1.0642
STD. DEVIATIONS	0.4478	1.6236	3.3978	5.8322	1.1757	0.2706
	0.1391	1.2090	1.2379	1.6838	0.6450	1.0330
PERCOLATION/LEAKAGE THROUGH LAYER 3						
TOTALS	0.1155	0.1720	0.4450	0.3930	0.1753	0.1002
	0.0961	0.1620	0.1172	0.1665	0.1554	0.1581
STD. DEVIATIONS	0.0419	0.0818	0.2619	0.2800	0.0756	0.0429
	0.0166	0.0904	0.1015	0.1296	0.0636	0.0629

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0011	0.0070	0.0935	0.0610	0.0026	0.0007
	0.0007	0.0087	0.0020	0.0031	0.0019	0.0020
STD. DEVIATIONS	0.0008	0.0110	0.1774	0.1120	0.0022	0.0005
	0.0003	0.0163	0.0024	0.0032	0.0013	0.0020

****

****

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1977 THROUGH 1981

	INCHES		CU. FEET	PERCENT
PRECIPITATION	48.71	(8.786)	176802.8	100.00
RUNOFF	0.000	(0.0000)	0.00	0.000
EVAPOTRANSPIRATION	23.405	(1.8836)	84959.22	48.053
LATERAL DRAINAGE COLLECTED FROM LAYER 2	23.07493	(7.51766)	83762.000	47.37595
PERCOLATION/LEAKAGE THROUGH LAYER 3	2.25637	(0.58684)	8190.611	4.63263
AVERAGE HEAD ON TOP OF LAYER 3	0.015	(0.015)		
CHANGE IN WATER STORAGE	-0.030	(1.4519)	-109.05	-0.062

****

PEAK DAILY VALUES FOR YEARS 1977 THROUGH 1981

	(INCHES)	(CU. FT.)
PRECIPITATION	4.64	16843.199
RUNOFF	0.000	0.0000
DRAINAGE COLLECTED FROM LAYER 2	3.02295	10973.30660
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.430936	1564.29712
AVERAGE HEAD ON TOP OF LAYER 3	9.615	
MAXIMUM HEAD ON TOP OF LAYER 3	11.801	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	61.8 FEET	
SNOW WATER	15.05	54646.8750

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4730
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1040

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

****

FINAL WATER STORAGE AT END OF YEAR 1981

LAYER	(INCHES)	(VOL/VOL)
1	6.4078	0.2670
2	0.0036	0.0179
3	0.0000	0.0000
SNOW WATER	1.427	

****
****

BLASLAND, BOUCK & LEE, INC.
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AGP Laboratories, Inc. GDC Conformance Testing Results

AGP Laboratories, Inc.
2004 E. Randol Mill, Suite 512
Arlington, Texas 76011
(817) 861-9090 • (800) AGP-6030
Fax: (817) 861-5400

September 24, 1999

Geo Testing Express
Attn: Mr. Gary Torosian
1145 Massachusetts Ave.
Boxboro, MASS 01720

RE: Client Job - GTX-2506 **Retest of Geocomposite from ETI**
AGP Project Number: GTX 3361.005

Dear Mr. Torosian:

One (1) sample was received for testing on 9/20/99. The sample was dentified as follows:

SAMPLE I.D.	AGP COMMENTS
GCMP	GC

The sample was tested in accordance with the test methods listed below:

ASTM D 4716, "Test Method for Constant Head Hydraulic Transmissivity (In-Plane Flow) Of Geotextiles And Geotextile Related Products"

All tests were performed at 73° F ± 3° with a relative humidity of 50% ± 5. Conditioning of the samples, before testing, is standard 40 hours at test temperature and relative humidity unless waived by the client.

The sample material was submitted by Blasland Bouch & Lee, Inc. AGP Laboratories, Inc. has no specific knowledge as to conditioning, origin, sampling procedure, special use of material, or purpose of material. The testing listed herein is based upon accepted industry practice as well as by the test method listed. AGP Laboratories, neither accepts nor makes claim as to final use and purpose of the material. Results presented apply only to the items tested.

TRANSMISSIVITY
ASTM D 4716

Tested
9/23/99

SAMPLE BOX DIMENSIONS

12 in. width X 12 in. length

TEST CONDITIONS		TEST CROSS-SECTION
Gradient / Slope :	0.033	Solid Metal Plate
Compressive / Normal Stress:	4,250 psf	Shore 00 53 Neoprene
Seating Time:	2 hours	60 mil Smooth Geomembrane
Avg. Temperature of Water:	23° C	Geocomposite
		Shore 00 53 Neoprene
		Solid Metal Plate

SAMPLE I.D.	TRANSMISSIVITY (sq.m / s) x 10^{-4} 1	2	3	AVG (sq.m / s) x 10^{-4}
GCMP	1.56	1.57	1.69	1.61

If there are any questions, please contact us.

Respectfully,

Neelam Asher
Laboratory Manager

Attachment 5

BLASLAND, BOUCK & LEE, INC.
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Slope Stability Calculations

BLASLAND, BOUCK & LEE, INC.
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Development of Cohesive Strength Value

treatments and other lamination processes as thickness of the nonwoven geotextile decreases. Therefore, all nonwoven geotextile used in the production of bonded geocomposites was specified to be at least 10 oz/sy for this project.

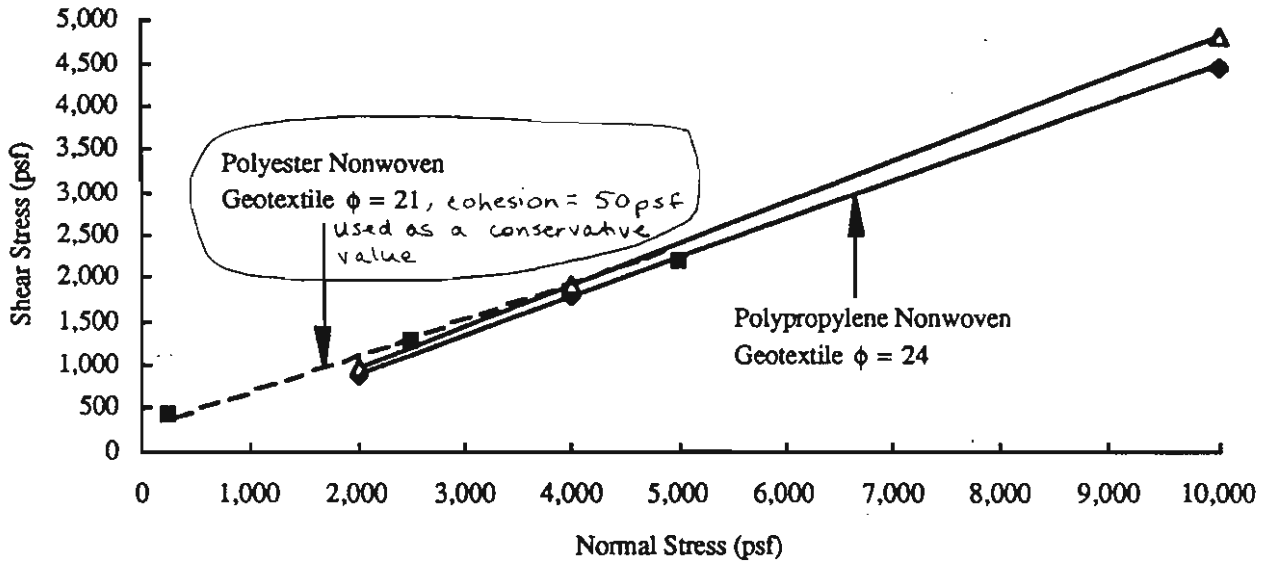

Figure 8. Results of Direct Shear Tests

Effect of Large Loads on Interface Friction: The maximum overburden stresses from overlying waste in the 1.7 hectare area was anticipated to be about 480 kiloPascals (kPa) [10,000 pounds per square foot (psf)]. Prior to this design, direct shear testing on a bonded geocomposite/textured geomembrane interface was typically performed at much lower normal stresses. For this design it was important to evaluate what effect, if any, large normal stresses would have on interface friction. As such, direct shear testing was conducted at 10, 95, 190, 240, and 480 kPa (250, 2,000, 4,000, 5,000, and 10,000 psf) on both continuous filament needlepunched polypropylene and polyester bonded geocomposites.

Test results from this direct shear testing program are provided in Figure 8. Referring to this figure, it is seen that at the higher normal stresses there was essentially no decrease in the slope of the intercept line. This result suggested that the interface friction angle was relatively constant at higher normal stresses, compared to lower normal stresses. This result was somewhat unexpected, since it was assumed that the higher normal stresses would contribute to elastic deformation of the textured surface, with corresponding decrease in interface friction. However, this assumption was not supported by the limited laboratory direct shear test data shown in Figure 8. Even if the results had shown slight differences in interface friction as a function of normal stress, attempting to account for these small differences in the analysis would have been difficult for a 1.7 hectare landfill area, let alone a much larger landfill area.

Effect of Long-Term Loading on Interface Friction: Intuitively, the textured surface on the geomembrane should become slightly smoother with time. This assumption is based on the

References

(NAGS)

(IFAI)

(IGS)

GEOSYNTHETICS '93

CONFERENCE

VANCOUVER, BRITISH COLUMBIA

March 30-April 1, 1993

Vancouver Trade &
Convention Centre

Waterfront Centre Hotel

Vancouver,
British Columbia,
Canada

GEO'93

CONFERENCE PROCEEDINGS

VOLUME

Geosynthetics '93
Conference Proceedings

Volume 3

Waste Containment Case Histories
Landfill Design, Performance and CQA

This volume consists of papers presented at the
Geosynthetics '93 Conference held
March 30 - April 1, 1993 in Vancouver, BC, Canada

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North American Geosynthetics Society
Industrial Fabrics Association International
under the auspices of the International Geotextile Society

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

HDPE/Underlying Soil Interface Slippage Calculation

Infinite Slope Analysis for Textured HDPE/Underlying Soil Interface

Reference:

1. Bhatia, S.K. and G. Katsuri. "A Report on Comparison of PVC and HDPE Geomembrane (Interface Friction Performance)." for PVC Geomembrane Institute. Dept. Of Civil and Environmental Engineering Syracuse University.

Assumptions:

1. Underlying soil is sand.
2. Interface friction angle, ϕ=29 degrees (Bhatia, S.K. and G. Katsuri)
3. 3H:1V slope, β=18.4 degrees

Calculation:

$$FS = \frac{\tan\phi}{\tan\beta}$$

$$FS = \frac{\tan(29)}{\tan(18.4)} = 1.7$$

The factor of safety for a 3H:1V slope with a textured HDPE liner and sand interface is approximately 1.7.

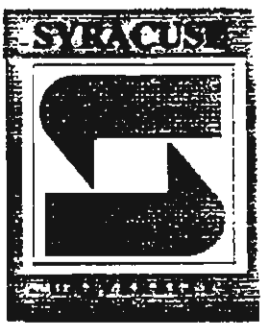
References

A Report
on

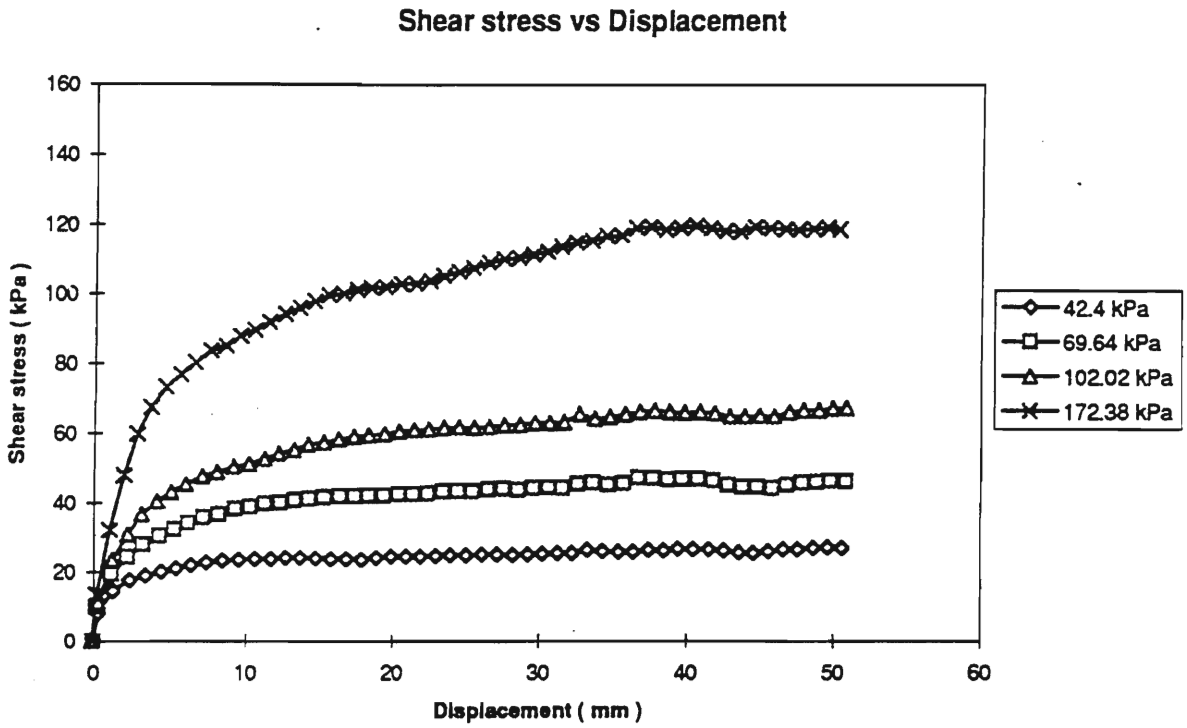
COMPARISON OF PVC and HDPE GEOMEMBRANES (INTERFACE FRICTION PERFORMANCE)

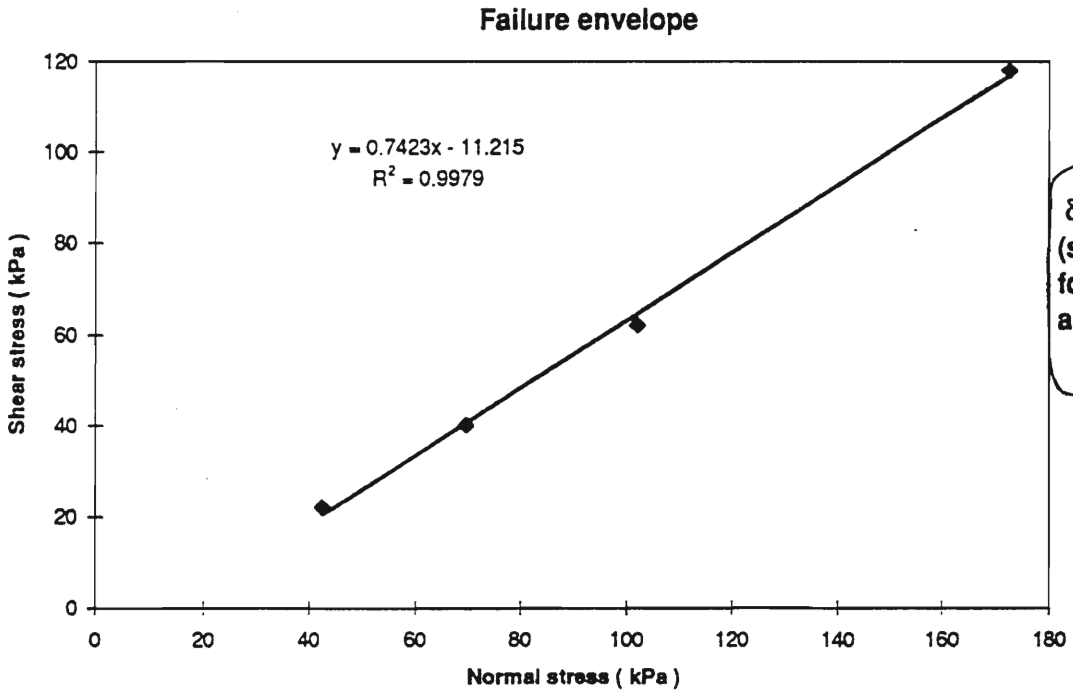
for

PVC GEOMEMBRANE INSTITUTE.



Dr.Shobha K.Bhatia
Gautam Kasturi
Dept. of Civil and Environmental Engineering
SYRACUSE UNIVERSITY





δ = 36.6° ⇒ use 80% (same for peak and 10%) or 29° to be conservative

Figure A5. Fine Sand vs. Textured HDPE a) Stress vs. Displacement b) Friction Angle

Attachment 6

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Veneer Stability Calculations Under Saturated Conditions

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

HELP Model Output

```
**********************************************************************
**********************************************************************
**                                                                  **
**                                                                  **
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE            **
**            HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)            **
**              DEVELOPED BY ENVIRONMENTAL LABORATORY               **
**               USAE WATERWAYS EXPERIMENT STATION                  **
**          FOR USEPA RISK REDUCTION ENGINEERING LABORATORY         **
**                                                                  **
**                                                                  **
**********************************************************************
**********************************************************************

PRECIPITATION DATA FILE:    C:\help3\p\FAIR.D4
TEMPERATURE DATA FILE:      C:\HELP3\p\FAIR.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\p\FAIR.D13
EVAPOTRANSPIRATION DATA:    C:\help3\p\FAIR.D11
SOIL AND DESIGN DATA FILE:  C:\help3\p\CAP.D10
OUTPUT DATA FILE:           C:\help3\p\CAP.OUT

TIME:  16: 9     DATE:   5/ 9/2000

**********************************************************************

     TITLE:  Pittsfield

**********************************************************************

     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
              COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                                LAYER  1
                                --------

                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   8
          THICKNESS                    =      6.00   INCHES
          POROSITY                     =      0.4630 VOL/VOL
          FIELD CAPACITY               =      0.2320 VOL/VOL
          WILTING POINT                =      0.1160 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.3875 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.369999994000E-03 CM/SEC
        NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  3.00
                 FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
```

LAYER 2

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 5

THICKNESS	=	18.00	INCHES
POROSITY	=	0.4570	VOL/VOL
FIELD CAPACITY	=	0.1310	VOL/VOL
WILTING POINT	=	0.0580	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1527	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	50.0	FEET

LAYER 3

Frozen GDC

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.04	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.80	HOLES/ACRE
FML INSTALLATION DEFECTS	=	4.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 8 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 33.% AND A SLOPE LENGTH OF 60. FEET.

SCS RUNOFF CURVE NUMBER	=	82.40	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.801	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	3.692	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.812	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	5.073	INCHES

TOTAL INITIAL WATER	=	5.073	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
PLAINFIELD MASSACHUSETTS

STATION LATITUDE	=	42.00	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	109	
END OF GROWING SEASON (JULIAN DATE)	=	277	
EVAPORATIVE ZONE DEPTH	=	8.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	10.60	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	64.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	70.00	%

NOTE: PRECIPITATION DATA FOR PLAINFIELD MASSACHUSETTS
WAS ENTERED FROM THE DEFAULT DATA FILE.

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
26.50	24.20	32.20	51.40	63.20	60.10
73.40	75.20	65.30	45.00	30.70	28.40

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR PLAINFIELD MASSACHUSETTS
AND STATION LATITUDE = 42.00 DEGREES

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1977 THROUGH 1981

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC

PRECIPITATION						
TOTALS	5.78	3.88	4.62	3.81	4.19	3.21
	3.71	4.25	3.93	4.56	3.32	3.44
STD. DEVIATIONS	6.23	4.15	3.08	1.53	1.72	1.57
	1.09	2.40	2.27	1.20	1.43	1.44
RUNOFF						
TOTALS	1.067	1.270	7.395	3.867	0.269	0.020
	0.050	0.294	0.061	0.175	0.009	0.625
STD. DEVIATIONS	0.908	1.857	3.779	5.862	0.309	0.044
	0.111	0.551	0.076	0.108	0.012	0.669
EVAPOTRANSPIRATION						
TOTALS	0.621	0.664	0.758	2.161	2.960	2.601
	3.661	2.995	2.295	1.882	1.166	0.671
STD. DEVIATIONS	0.101	0.168	0.266	0.625	0.708	1.122
	0.436	0.684	0.597	0.114	0.188	0.212
LATERAL DRAINAGE COLLECTED FROM LAYER 2						
TOTALS	0.0765	0.1885	0.2612	1.4776	1.2707	0.4834
	0.3278	0.8858	1.0276	1.9890	1.3814	1.1666
STD. DEVIATIONS	0.0771	0.4185	0.4069	0.7087	0.7864	0.5213
	0.2796	0.8960	1.1882	1.8954	0.8978	0.9864
PERCOLATION/LEAKAGE THROUGH LAYER 3						
TOTALS	0.0063	0.0084	0.0124	0.0652	0.0581	0.0262
	0.0195	0.0408	0.0456	0.0824	0.0639	0.0543
STD. DEVIATIONS	0.0056	0.0181	0.0178	0.0271	0.0305	0.0234
	0.0134	0.0386	0.0479	0.0672	0.0343	0.0396

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3						
AVERAGES	0.0732	0.1995	0.2497	1.4597	1.2148	0.4775
	0.3134	0.8468	1.0151	1.9015	1.3646	1.1153
STD. DEVIATIONS	0.0737	0.4429	0.3890	0.7001	0.7518	0.5150
	0.2673	0.8566	1.1738	1.8120	0.8870	0.9430

****

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1977 THROUGH 1981

	INCHES	CU. FEET	PERCENT
PRECIPITATION	48.71 (8.786)	176802.8	100.00
RUNOFF	15.103 (5.1395)	54823.31	31.009
EVAPOTRANSPIRATION	22.434 (1.6241)	81436.12	46.060
LATERAL DRAINAGE COLLECTED FROM LAYER 2	10.53598 (6.50359)	38245.605	21.63179
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.48302 (0.25640)	1753.363	0.99171
AVERAGE HEAD ON TOP OF LAYER 3	0.853 (0.528)		
CHANGE IN WATER STORAGE	0.149 (2.4281)	542.38	0.307

****

PEAK DAILY VALUES FOR YEARS 1977 THROUGH 1981

	(INCHES)	(CU. FT.)
PRECIPITATION	4.64	16843.199
RUNOFF	4.114	14935.3877
DRAINAGE COLLECTED FROM LAYER 2	0.26200	951.06293
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.008876	32.22000
AVERAGE HEAD ON TOP OF LAYER 3	7.765	
MAXIMUM HEAD ON TOP OF LAYER 3	13.368	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	2.3 FEET	
SNOW WATER	15.05	54646.8750

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4184
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1015

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

****

****

FINAL WATER STORAGE AT END OF YEAR 1981

LAYER	(INCHES)	(VOL/VOL)
1	1.6358	0.2726
2	2.7580	0.1532
3	0.0000	0.0000
SNOW WATER	1.427	

****
****

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Slope Stability Calculations

Sand/Nonwoven Needlepunched Geotextile (GDC) Interface

Reference:

Koerner, R.M. *Designing with Geosynthetics.* Upper Saddle River, New Jersey: Prentice Hall, 1998.

Landslides Investigation and Mitigation Special Report 247. Turner, A.K. and R. L. Schuster Ed. Washington, D.C.: Academy Press, 1996.

Assumptions:

1. Interface friction angle, ϕ=30 degrees (Koerner, 1998 see attached)
2. 3H:1V slope, β=18.4 degrees
3. 14 inches of head
4. 2 feet of sand cover

Calculation (*Landslides*, 1996 - see attached):

$$FS = A\frac{\tan\phi}{\tan\beta}$$

Estimating the A parameter:

$$r_u = \frac{u}{\gamma H} = \frac{62.4pcf * (\frac{14inches}{12inches})}{125pcf * 2ft} = 0.29$$

$$b = \cot\beta = 3.0$$

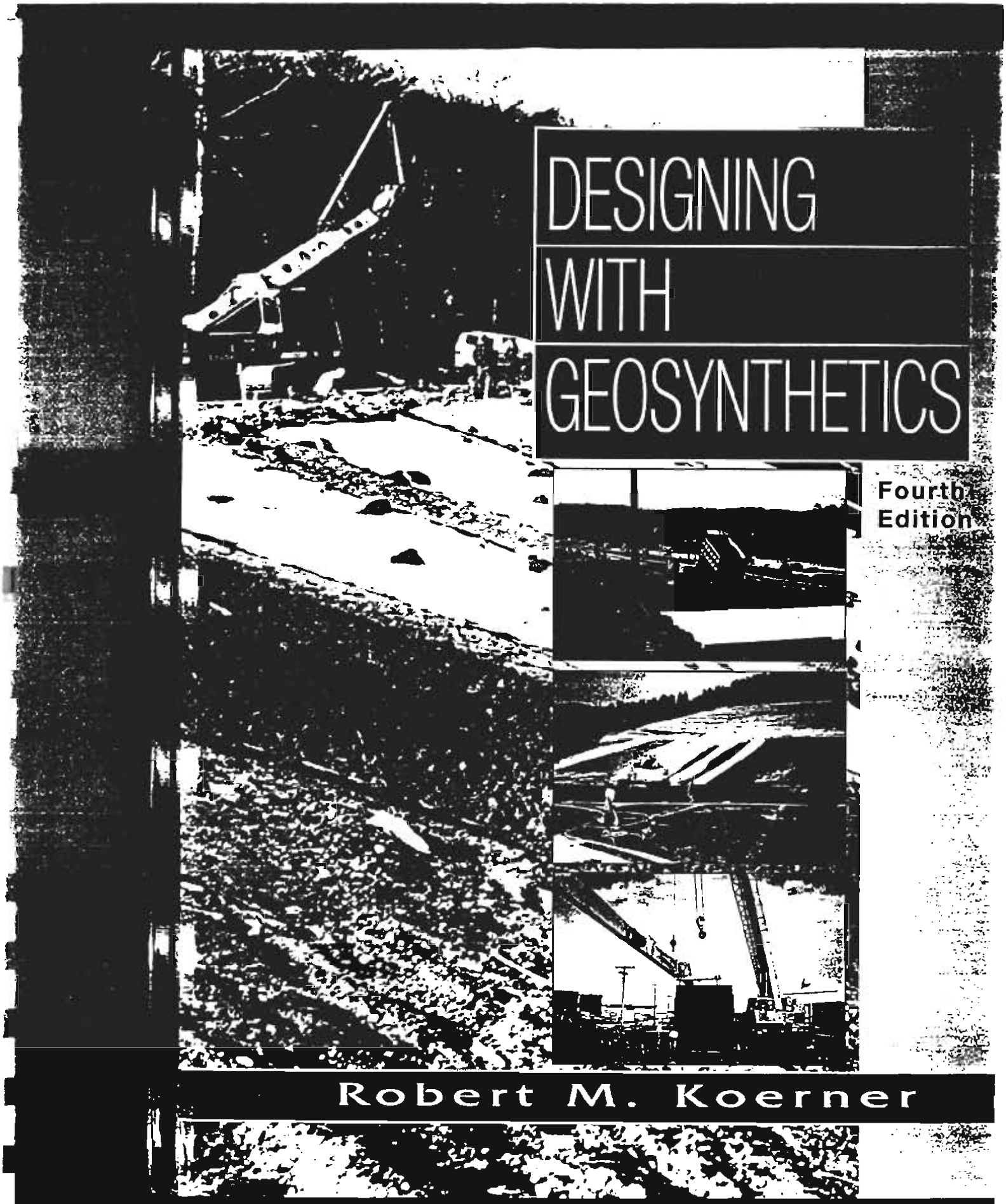
from Figure 13-8 (see attached), a r_u value of 0.29 and a b value of 3.0 correspond to an A parameter of 0.69.

$$FS = \frac{0.69 * tan30}{\tan 18.4} = 1.2$$

The factor of safety for a sand/nonwoven needlepunched geotextile interface on a 3H:1V slope with 14 inches of head is approximately 1.2

5/10/00
U:\57201543.

References



DESIGNING WITH GEOSYNTHETICS

Fourth Edition

Robert M. Koerner

TABLE 5.7 PEAK FRICTION VALUES AND EFFICIENCIES*

Soil-to-Geomembrane Friction Angles

Geomembrane	Soil type: Concrete sand (ϕ = 30°)		Ottawa sand (ϕ = 28°)		Mica schist sand (ϕ = 26°)	
HDPE (smooth)	18°	(0.56)	18°	(0.61)	17°	(0.63)
PVC						
rough	27°	(0.88)	—	—	25°	(0.96)
smooth	25°	(0.81)	—	—	21°	(0.79)
CSPE-R	25°	(0.81)	21°	(0.72)	23°	(0.87)

Geomembrane-to-Geotextile Friction Angles

Geotextile	Geomembrane: HDPE (smooth)	PVC: Rough	PVC: Smooth	CSPE-R
Nonwoven needle-punched	8°	23°	21°	15°
Nonwoven heat-bonded	11°	20°	18°	21°
Woven monofilament	6°	11°	10°	9°
Woven slit-film	10°	28°	24°	13°

Soil-to-Geotextile Friction Angles

Geomembrane	Soil type: Concrete sand (ϕ = 30°)		Ottawa sand (ϕ = 28°)		Mica schist sand (ϕ = 26°)	
Nonwoven needle-punched	30°	(1.00)	26°	(0.92)	25°	(0.96)
Nonwoven heat-bonded	26°	(0.84)	—	—	—	—
Woven monofilament	26°	(0.84)	—	—	—	—
Woven slit-film	24°	(0.77)	24°	(0.84)	23°	(0.87)

*Efficiency values (in parentheses) are based on the relationship $E = (\tan \delta)/(\tan \phi)$.

Source: After Martin et al. [17]

The frictional behavior of geomembranes placed on clay soils is of considerable importance for composite liners containing solid or liquid wastes. The current requirements are for the clay to have a hydraulic conductivity equal to or less than 1×10^{-7} cm/s and for the geomembrane to be placed directly upon the clay. While an indication of the shear strength parameters has been investigated (e.g., [18]), the data are so sensitive to the variables discussed previously that site-specific and material-specific tests should always be performed. *In such cases, literature values should never be used for final design purposes.*

Much of the direct shear literature data is for peak shear strengths (e.g., the data in Table 5.7). Stark and Poeppel [19] have challenged this situation by testing various geosynthetic interfaces in a ring-shear device. In using such a device, significantly larger

LANDSLIDES
INVESTIGATION AND MITIGATION

SPECIAL REPORT 247

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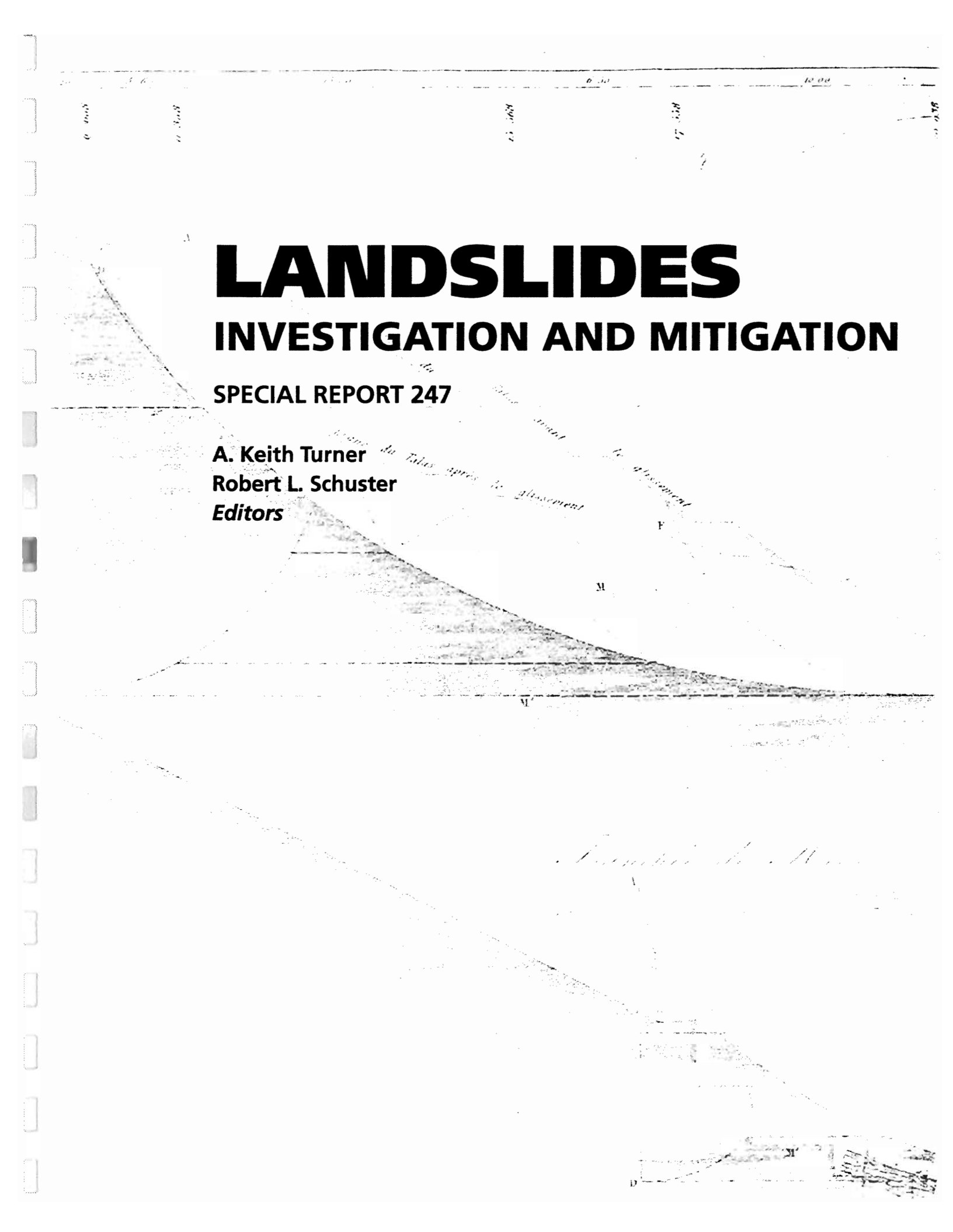
National Research Council



LANDSLIDES

INVESTIGATION AND MITIGATION

SPECIAL REPORT 247

A. Keith Turner
Robert L. Schuster
Editors

5.4 Infinite Slope Analyses

Conditions are sometimes encountered in which a layer of firm soil or rock lies parallel to the surface of the slope at shallow depth. In such conditions the slip surface is constrained to parallel the slope, as shown in Figure 13-8. When such slip surfaces are long compared with their depth, they can be approximated accurately by infinite slope analyses. Such analyses ignore the driving force at the upper end of the slide mass and the resisting force at the lower end. The resisting force is ordinarily greater, and infinite slope analyses are therefore somewhat conservative.

The factor of safety for infinite slope analyses can be expressed as

$$F = A\,\frac{\tan\phi'}{\tan\beta} + B\,\frac{c'}{\gamma H} \qquad (13.15)$$

where

A, B = dimensionless stability coefficients given in Figure 13-8,
ϕ', c' = effective stress strength parameters for slip surface,
β = slope angle,
γ = unit weight of sliding mass (force per length cubed), and

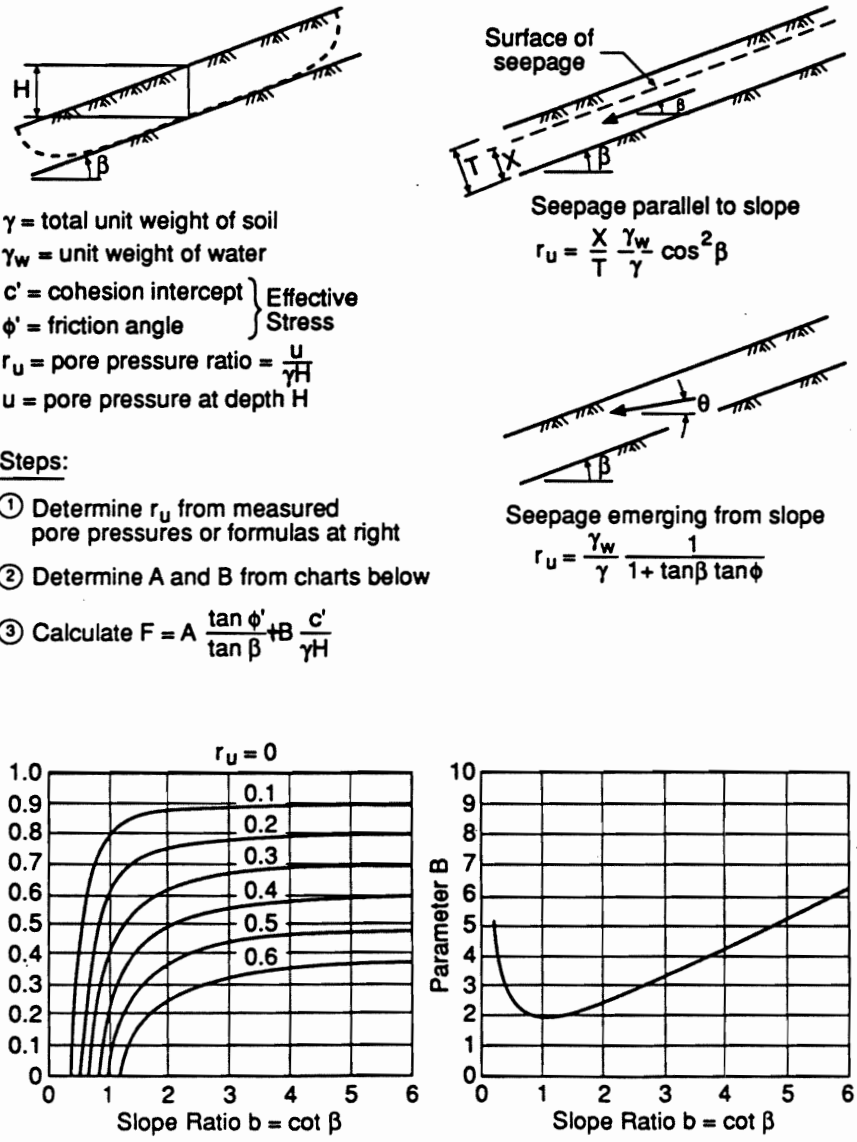


FIGURE 13-8
Stability charts for infinite slopes (modified from Duncan et al. 1987).

Attachment 7

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Laboratory Analytical Data Sheets

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G029

DATE: May 18, 2000

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed. Release of the data contained in the hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Submitted by,

Michele L. Rose

Michele L. Rose
Project Manager

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02

CT&E Laboratory Number: G39-F0-G029

DATE: May 18, 2000

SAMPLE RECEIPT OBSERVATIONS:

The samples were received June 15, 1999 at 9:15 via FedEx in good condition. The receipt temperature was 5°C. The dioxin analysis was sub-contracted to Columbia Analytical Services with the approval of BBL. There was no volatiles analysis performed per the client.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02

CT&E Laboratory Number: G39-F0-G029

DATE: May 18, 2000

SEMIVOLATILES REPORT:
The samples were analyzed for GE App. IX + 3 Semivolatiles in accordance to the guidelines of method SW8270C.

The tunes, initial calibration and continuing calibration verifications met acceptance criteria.

The internal standard areas were within quality control criteria.

The surrogate standard percent recoveries were within quality control criteria.

The laboratory control sample met acceptance criteria.

The method blank was free of interference.

The PRRL's (reporting limits) are adjusted for percent solids and extraction volumes as applicable.

The sampling to extraction holding time of fourteen days and extraction to analysis holding time of forty days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G029

DATE: May 18, 2000

PCB REPORT:
The samples were analyzed according to the guidelines of Method 8082.

The PCB responses were quantitated by the Aroclor multi-component analysis, using at a minimum three unique peaks of the pattern.

All initial calibration and continuing calibration verifications met acceptance criteria. The 5 pt. initial calibration consists of PCB 1016, 1260 and 1254/Surrogates. Single point pattern recognition's were performed on Aroclors 1221, 1232, 1242 and 1248.

The surrogate standard percent recoveries met acceptance criteria.

The method blanks were free of interference.

The matrix spike/matrix spike duplicate of a sample was not requested.

The laboratory control samples met acceptance criteria.

The PRRL's are adjusted for percent solids, dilution factors and extraction volumes as applicable.

The sampling to extraction holding time of fourteen days and extraction to analysis holding time of forty days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G029

DATE: May 18, 2000

METALS REPORT:
The samples were analyzed for GE Apdx IX + 3 Metals by Method 6010A and Mercury by SW7470A.

The initial and continuing calibration verifications met acceptance criteria.

The LCS was acceptable.

The method blank was free of interference.

The sampling to analysis holding times were met for all samples.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

SULFIDE REPORT:
The samples were analyzed for Sulfide by Method SW9030A. The result reported represents the total of soluble and in-soluble sulfide.

The LCS's met acceptance criteria.

The method blanks were free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

CYANIDE REPORT:
The samples were analyzed for Cyanide by Method SW9012.

The LCS's met acceptance criteria.

The method blanks were free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
6723 Towpath Road, P.O. Box 66
Syracuse, New York 13214-0066
TEL: (315) 446-9120

G39-FO-6029-43

1 of 1

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME
201.85.02	ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

	LAB ID	~~CUSTODY SEAL NUMBER~~	DATE	TIME	COMP.	GRAB	SAMPLE TYPE: SOLID	SAMPLE TYPE: WIPE	SAMPLE TYPE: WATER	Number of Containers	App IX+3 evaluating pesticides PCBs			TEMP		REMARKS
1	NY-4		6/14/99	1235		X			X	6	X	X				-7-DAY turn
2	78-1			1505		X			X	6	X	X				requested
3	OPCA-MW-8			1605		X			X	6	X	X				
	TEMP BLANK		6/14/99	—		X			X	1				X		
																6/15/99 No volatiles per client. - MW Work

Sampled by: (Signature)	DATE 6/14/99	TIME 1500	**Received by:** (Signature)	**Relinquished by:** (Signature)		DATE	TIME	**Received by:** (Signature)			
Relinquished by: (Signature)	DATE	TIME	**Received by:** (Signature)	**Relinquished by:** (Signature)		DATE	TIME	**Received by:** (Signature)			
Relinquished by: (Signature)	DATE	TIME	**Received for Laboratory by:** (Signature) C. Rhodes	DATE 6-15-99	TIME 09:15	**Remarks:** TO CTEC ENVIRONMENTAL 58 VIA FEDEX #: 811257179272					

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Collected: 06/14/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 13:47 JWJ (12459) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

NY-4	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			F
- 7d						Spike	
9F0G029001 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .020		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/14/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:04 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

NY-4	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			F
- 7d						Spike	
9F0G029001 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/14/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:10 jam (12494) Method SW8082
Analytical Run: 001 EDD Method Code: 8082 WATER

NY-4	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			F
- 7d						Spike	
9F0G029001 8082W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND .00010	U	mg/L			.00010		12674-11-2
Analyte.... AROCLOR-1221	ND .00010	U	mg/L			.00010		11104-28-2
Analyte.... AROCLOR-1232	ND .00010	U	mg/L			.00010		11141-16-5
Analyte.... AROCLOR-1242	ND .00010	U	mg/L			.00010		53469-21-9
Analyte.... AROCLOR-1248	ND .00010	U	mg/L			.00010		12672-29-6
Analyte.... AROCLOR-1254	<Hit> .00012		mg/L			.00010		11097-69-1
Analyte.... AROCLOR-1260	ND .00010	U	mg/L			.00010		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc- .00012		mg/L				.00025	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc- 50		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc- .00020		mg/L				.00025	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc- 81		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Collected: 06/14/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 14:07 ra (12462) Method
Analytical Run: **001** EDD Method Code: **8270B** WATER
Dilution Factor: **1.00** %Solid:

					Recovery				
NY-4					Acceptance			Spike	F
- 7d									
9F0G029001 8270W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			*.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			*.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.021	U	mg/L			*.021		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.052	U	mg/L			*.052		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.052	U	mg/L			*.052		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.052	U	mg/L			*.052		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.052	U	mg/L			*.052		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.052	U	mg/L			*.052		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.021	U	mg/L			*.021		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			*.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.052	U	mg/L			*.052		91-59-8
Analyte.... 2-NITROANILINE	ND	.052	U	mg/L			*.052		88-74-4
Analyte.... 2-NITROPHENOL	ND	.021	U	mg/L			*.021		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.052	U	mg/L			*.052		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.052	U	mg/L			*.052		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.021	U	mg/L			*.021		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND	.052	U	mg/L			*.052		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			*.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.052	U	mg/L			*.052		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010		7005-72-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	4-NITROANILINE	ND	.052	U	mg/L			*.052	100-01-6
Analyte....	4-NITROPHENOL	ND	.052	U	mg/L			*.052	100-02-7
Analyte....	4-NITROQUINOLINE-1-OXIDE	ND	.052	U	mg/L			*.052	56-57-5
Analyte....	4-PHENYLENEDIAMINE	ND	.052	U	mg/L			*.052	106-50-3
Analyte....	5-NITRO-O-TOLUIDINE	ND	.052	U	mg/L			*.052	99-55-8
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.021	U	mg/L			*.021	57-97-6
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.052	U	mg/L			*.052	122-09-8
Analyte....	ACENAPHTHENE	ND	.010	U	mg/L			*.010	83-32-9
Analyte....	ACENAPHTHYLENE	ND	.010	U	mg/L			*.010	208-96-8
Analyte....	ACETOPHENONE	ND	.010	U	mg/L			*.010	98-86-2
Analyte....	ANILINE	ND	.010	U	mg/L			*.010	62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010	120-12-7
Analyte....	ARAMITE	ND	.021	U	mg/L			*.021	140-57-8
Analyte....	BENZIDINE	ND	.021	U	mg/L			*.021	92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010	56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010	50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010	205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010	191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010	207-08-9
Analyte....	BENZYL ALCOHOL	ND	.021	U	mg/L			*.021	100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010	111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010	111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010	108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010	117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021	85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010	218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010	84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010	117-84-0
Analyte....	DIALLATE	ND	.021	U	mg/L			*.021	2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021	53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010	132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010	84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010	131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010	122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010	62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010	206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010	86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010	118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021	87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010	77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010	67-72-1
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021	70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010	1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021	193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010	465-73-6
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021	78-59-1

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020			120-58-1
Analyte....	METHAPYRILENE	ND	.052	U	mg/L			*.052			91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010			66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021			924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021			621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010			55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021			62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010			86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021			10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010			59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010			100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021			930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			*.010			91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			*.010			98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010			126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			*.010			95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.052	U	mg/L			*.052			60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010			608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			*.010			46-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.052	U	mg/L			*.052			82-68-8
Analyte....	PENTACHLOROPHENOL	ND	.052	U	mg/L			*.052			87-86-5
Analyte....	PHENACETIN	ND	.052	U	mg/L			*.052			62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Analyte....	PHENOL	ND	.010	U	mg/L			*.010			108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-2
Analyte....	PYRENE	ND	.010	U	mg/L			*.010			129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.076		mg/L					.12	4165-60-0
% recovery	NITROBENZENE-D5	-qc-	61		% REC	35.0	114.0				4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.081		mg/L					.12	321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	65		% REC	43.0	116.0				321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.12		mg/L					.12	98904-43-9
% recovery	TERPHENYL-D14	-qc-	95		% REC	33.0	141.0				98904-43-9
Surrogate..	PHENOL-D5	-qc-	.031		mg/L					.12	4165-62-2
% recovery	PHENOL-D5	-qc-	25		% REC	10.0	94.0				4165-62-2
Surrogate..	2-FLUOROPHENOL	-qc-	.046		mg/L					.12	367-12-4
% recovery	2-FLUOROPHENOL	-qc-	37		% REC	21.0	100.0				367-12-4
Surrogate..	2,4,6-TRIBROMOPHENOL	-qc-	.095		mg/L					.12	118-79-6
% recovery	2,4,6-TRIBROMOPHENOL	-qc-	76		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Collected: 06/14/99 Prepared: 06/18/99 (12433) Analyzed: 06/18/99 10:00 TB (12433) Method

Analytical Run: *001* EDD Method Code: **9012** WATER

NY-4 Dilution Factor: *1.00* %Solid:

\- 7d

		Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G029001	9012W-BBL001								
Analyte....	CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/14/99 Prepared: 06/17/99 (12472) Analyzed: 06/17/99 15:00 CBS (12472) Method

Analytical Run: *001* EDD Method Code: **9030** WATER

NY-4 Dilution Factor: *1.00* %Solid:

\- 7d

		Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G029001	9030W-BBL001								
Analyte....	SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

Collected: 06/14/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 13:57 JWJ (12459) Method

Analytical Run: *001* EDD Method Code: **6/7000** WATER

78-1 Dilution Factor: *1.00* %Solid:

\- 7d

		Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G029002	6010W-BBL001								
Analyte....	SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte....	ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte....	BARIUM, TOTAL	<Hit> .025		mg/L			.0060		7440-39-3
Analyte....	BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte....	CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte....	COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte....	CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte....	COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte....	NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte....	LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte....	ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte....	TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte....	SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte....	THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte....	VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte....	ZINC, TOTAL	<Hit> .029		mg/L			.026		7440-66-6

Collected: 06/14/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:05 (12437) Method SW7470

Analytical Run: *001* EDD Method Code: **7470A** WATER

78-1 Dilution Factor: *1.00* %Solid:

\- 7d

		Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G029002	7470W-CWP001								
Analyte....	MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Collected: 06/14/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:27 jam (12494) Method SW8082

Analytical Run: **001** EDD Method Code: **8082** WATER

Dilution Factor: **1.00** %Solid:

78-1 - 7d					Recovery Acceptance			Spike	F
9F0G029002 8082W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND	.00010	U	mg/L			.00010		12674-11-2
Analyte.... AROCLOR-1221	ND	.00010	U	mg/L			.00010		11104-28-2
Analyte.... AROCLOR-1232	ND	.00010	U	mg/L			.00010		11141-16-5
Analyte.... AROCLOR-1242	ND	.00010	U	mg/L			.00010		53469-21-9
Analyte.... AROCLOR-1248	ND	.00010	U	mg/L			.00010		12672-29-6
Analyte.... AROCLOR-1254	ND	.00010	U	mg/L			.00010		11097-69-1
Analyte.... AROCLOR-1260	ND	.00010	U	mg/L			.00010		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc-	.00011		mg/L				.00025	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc-	45		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc-	.00018		mg/L				.00025	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc-	72		% REC	36.0	144.0			2051-24-3

Collected: 06/14/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 14:53 ra (12462) Method

Analytical Run: **001** EDD Method Code: **8270B** WATER

Dilution Factor: **1.00** %Solid:

78-1 - 7d					Recovery Acceptance			Spike	F
9F0G029002 8270W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010	95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050	91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050	88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020	88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010	109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050	119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050	91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020	
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020	56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050	99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010	534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020	92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010	101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			.010	59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020	106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050	510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010	7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050	100-01-6
Analyte.... 4-NITROPHENOL	ND	.050	U	mg/L			.050	100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050	56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050	106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050	99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020	57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050	122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			.010	83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010	208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010	98-86-2
Analyte.... ANILINE	ND	.010	U	mg/L			.010	62-53-3
Analyte.... ANTHRACENE	ND	.010	U	mg/L			.010	120-12-7
Analyte.... ARAMITE	ND	.020	U	mg/L			.020	140-57-8
Analyte.... BENZIDINE	ND	.020	U	mg/L			.020	92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010	56-55-3
Analyte.... BENZO(A)PYRENE	ND	.010	U	mg/L			.010	50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010	205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010	191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010	207-08-9
Analyte.... BENZYL ALCOHOL	ND	.020	U	mg/L			.020	100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010	111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010	111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010	108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010	117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020	85-68-7
Analyte.... CHRYSENE	ND	.010	U	mg/L			.010	218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010	84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010	117-84-0
Analyte.... DIALLATE	ND	.020	U	mg/L			.020	2303-16-4

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020	53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010	132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010	84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010	131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010	122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010	62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010	206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			.010	86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010	118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020	87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010	77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010	67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020	70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010	1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020	193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			.010	465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020	78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050	91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010	66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020	924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020	621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010	55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020	62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010	86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020	10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010	59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010	100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020	930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			.010	91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			.010	98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010	126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			.010	95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050	60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			.010	608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			.010	46-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050	82-68-8
Analyte....	PENTACHLOROPHENOL	ND	.050	U	mg/L			.050	87-86-5
Analyte....	PHENACETIN	ND	.050	U	mg/L			.050	62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			.010	85-01-8
Analyte....	PHENOL	ND	.010	U	mg/L			.010	108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			.010	23950-58-2
Analyte....	PYRENE	ND	.010	U	mg/L			.010	129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			.010	110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			.010	94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			.010	297-97-2

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Surrogate.. NITROBENZENE-D5	-qc-	.044		mg/L				.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	35		% REC	35.0	114.0			4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.056		mg/L				.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	45		% REC	43.0	116.0			321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.061		mg/L				.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	49		% REC	33.0	141.0			98904-43-9
Surrogate.. PHENOL-D5	-qc-	.026		mg/L				.12	4165-62-2
% recovery PHENOL-D5	-qc-	20		% REC	10.0	94.0			4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.038		mg/L				.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	30		% REC	21.0	100.0			367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.059		mg/L				.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	47		% REC	10.0	123.0			118-79-6

Collected: 06/14/99 Prepared: 06/18/99 (12433) Analyzed: 06/18/99 10:00 TB (12433) Method

Analytical Run: ***001*** EDD Method Code: **9012** WATER Recovery F

78-1 Dilution Factor: ***1.00*** %Solid: Acceptance Spike

\- 7d

9F0G029002 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/14/99 Prepared: 06/17/99 (12472) Analyzed: 06/17/99 15:00 CBS (12472) Method

Analytical Run: ***001*** EDD Method Code: **9030** WATER Recovery F

78-1 Dilution Factor: ***1.00*** %Solid: Acceptance Spike

\- 7d

9F0G029002 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

Collected: 06/14/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 14:06 JWJ (12459) Method

Analytical Run: ***001*** EDD Method Code: **6/7000** WATER Recovery F

OPCA-MW-8 Dilution Factor: ***1.00*** %Solid: Acceptance Spike

\- 7d

9F0G029003 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .086		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5

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Analyte.... SELENIUM, TOTAL	ND	.0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND	.013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND	.060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND	.026	U	mg/L			.026		7440-66-6

Collected: 06/14/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:06 (12437) Method SW7470

Analytical Run: ***001*** EDD Method Code: **7470A** WATER

				Recovery				
OPCA-MW-8	Dilution Factor: ***1.00*** %Solid:			Acceptance			Spike	
- 7d								
9F0G029003 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/14/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:44 jam (12494) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER

				Recovery				
OPCA-MW-8	Dilution Factor: ***1.00*** %Solid:			Acceptance			Spike	
- 7d								
9F0G029003 8082W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND .00010	U	mg/L			.00010		12674-11-2
Analyte.... AROCLOR-1221	ND .00010	U	mg/L			.00010		11104-28-2
Analyte.... AROCLOR-1232	ND .00010	U	mg/L			.00010		11141-16-5
Analyte.... AROCLOR-1242	ND .00010	U	mg/L			.00010		53469-21-9
Analyte.... AROCLOR-1248	ND .00010	U	mg/L			.00010		12672-29-6
Analyte.... AROCLOR-1254	ND .00010	U	mg/L			.00010		11097-69-1
Analyte.... AROCLOR-1260	ND .00010	U	mg/L			.00010		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc- .00012		mg/L				.00025	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc- 49		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc- .00019		mg/L				.00025	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc- 77		% REC	36.0	144.0			2051-24-3

Collected: 06/14/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 15:38 ra (12462) Method

Analytical Run: ***001*** EDD Method Code: **8270B** WATER

				Recovery				
OPCA-MW-8	Dilution Factor: ***1.00*** %Solid:			Acceptance			Spike	
- 7d								
9F0G029003 8270W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .010	U	mg/L			*.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .010	U	mg/L			*.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND .010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND .020	U	mg/L			*.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND .010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND .051	U	mg/L			*.051		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND .010	U	mg/L			*.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND .051	U	mg/L			*.051		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND .051	U	mg/L			*.051		134-32-7

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010	58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010	95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010	88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010	120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010	105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.051	U	mg/L			*.051	51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.051	U	mg/L			*.051	121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010	87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010	608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			*.020	53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010	91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			*.010	95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010	91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010	95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.051	U	mg/L			*.051	91-59-8
Analyte.... 2-NITROANILINE	ND	.051	U	mg/L			*.051	88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			*.020	88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010	109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.051	U	mg/L			*.051	119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.051	U	mg/L			*.051	91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			*.020	
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			*.020	56-49-5
Analyte.... 3-NITROANILINE	ND	.051	U	mg/L			*.051	99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010	534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			*.020	92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010	101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			*.010	59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			*.020	106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.051	U	mg/L			*.051	510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010	7005-72-3
Analyte.... 4-NITROANILINE	ND	.051	U	mg/L			*.051	100-01-6
Analyte.... 4-NITROPHENOL	ND	.051	U	mg/L			*.051	100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.051	U	mg/L			*.051	56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.051	U	mg/L			*.051	106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.051	U	mg/L			*.051	99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			*.020	57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.051	U	mg/L			*.051	122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			*.010	83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			*.010	208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			*.010	98-86-2
Analyte.... ANILINE	ND	.010	U	mg/L			*.010	62-53-3
Analyte.... ANTHRACENE	ND	.010	U	mg/L			*.010	120-12-7
Analyte.... ARAMITE	ND	.020	U	mg/L			*.020	140-57-8
Analyte.... BENZIDINE	ND	.020	U	mg/L			*.020	92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010	56-55-3
Analyte.... BENZO(A)PYRENE	ND	.010	U	mg/L			*.010	50-32-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010	205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010	191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010	207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			*.020	100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010	111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010	111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010	108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010	117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			*.020	85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010	218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010	84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010	117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			*.020	2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			*.020	53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010	132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010	84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010	131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010	122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010	62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010	206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010	86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010	118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			*.020	87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010	77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010	67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			*.020	70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010	1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			*.020	193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010	465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020	78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte....	METHAPYRILENE	ND	.051	U	mg/L			*.051	91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010	66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			*.020	924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			*.020	621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010	55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			*.020	62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010	86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			*.020	10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010	59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010	100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			*.020	930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			*.010	91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			*.010	98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010	126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			*.010	95-53-4

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.051	U	mg/L			*.051			60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010			608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			*.010			76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.051	U	mg/L			*.051			82-68-8
Analyte....	PENTACHLOROPHENOL	ND	.051	U	mg/L			*.051			87-86-5
Analyte....	PHENACETIN	ND	.051	U	mg/L			*.051			62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Analyte....	PHENOL	ND	.010	U	mg/L			*.010			108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-5
Analyte....	PYRENE	ND	.010	U	mg/L			*.010			129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.064		mg/L				.12		4165-60-0
% recovery	NITROBENZENE-D5	-qc-	51		% REC	35.0	114.0				4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.069		mg/L				.12		321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	55		% REC	43.0	116.0				321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.12		mg/L				.12		98904-43-9
% recovery	TERPHENYL-D14	-qc-	97		% REC	33.0	141.0				98904-43-9
Surrogate..	PHENOL-D5	-qc-	.030		mg/L				.12		4165-62-2
% recovery	PHENOL-D5	-qc-	24		% REC	10.0	94.0				4165-62-2
Surrogate..	2-FLUOROPHENOL	-qc-	.044		mg/L				.12		367-12-4
% recovery	2-FLUOROPHENOL	-qc-	36		% REC	21.0	100.0				367-12-4
Surrogate..	2,4,6-TRIBROMOPHENOL	-qc-	.086		mg/L				.12		118-79-6
% recovery	2,4,6-TRIBROMOPHENOL	-qc-	69		% REC	10.0	123.0				118-79-6

Collected: 06/14/99 Prepared: 06/18/99 (12433) Analyzed: 06/18/99 10:00 TB (12433) Method

Analytical Run: *001* EDD Method Code: **9012** WATER

OPCA-MW-8 Dilution Factor: *1.00* %Solid:

\- 7d

		Recovery								F
		Acceptance							Spike	
9F0G029003	9012W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	CYANIDE, TOTAL	ND	.020	U	mg/L			.020		57-12-5

Collected: 06/14/99 Prepared: 06/17/99 (12472) Analyzed: 06/17/99 15:00 CBS (12472) Method

Analytical Run: *001* EDD Method Code: **9030** WATER

OPCA-MW-8 Dilution Factor: *1.00* %Solid:

\- 7d

		Recovery								F
		Acceptance							Spike	
9F0G029003	9030W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	SULFIDE	ND	5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

LABORATORY QC

Collected: 06/17/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 13:28 JWJ (12459) Method
Analytical Run: *001* EDD Method Code: 6/7000 WATER

TOTAL METALS IN A WATER MB Dilution Factor: *1.00* %Solid:

9F0G001283 6010W-BBL001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MB CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/17/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 13:37 JWJ (12459) Method
Analytical Run: *001* EDD Method Code: 6/7000 WATER

TOTAL METALS IN A WATER LCS Dilution Factor: *1.00* %Solid:

9F0G001284 6010W-BBL001-LCS	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	LCS CAS:
Spike..... SILVER, TOTAL	-qc- 2.1		mg/L				2.0	7440-22-4
% recovery SILVER, TOTAL	-qc- 106		% REC	80.0	120.0			7440-22-4
Spike..... ARSENIC, TOTAL	-qc- 2.0		mg/L				2.0	7440-38-2
% recovery ARSENIC, TOTAL	-qc- 102		% REC	80.0	120.0			7440-38-2
Spike..... BARIUM, TOTAL	-qc- 2.1		mg/L				2.0	7440-39-3
% recovery BARIUM, TOTAL	-qc- 104		% REC	80.0	120.0			7440-39-3
Spike..... BERYLLIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-41-7
% recovery BERYLLIUM, TOTAL	-qc- 100		% REC	80.0	120.0			7440-41-7
Spike..... CADMIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-43-9
% recovery CADMIUM, TOTAL	-qc- 102		% REC	80.0	120.0			7440-43-9
Spike..... COBALT, TOTAL	-qc- 2.0		mg/L				2.0	7440-48-4
% recovery COBALT, TOTAL	-qc- 102		% REC	80.0	120.0			7440-48-4
Spike..... CHROMIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-47-3
% recovery CHROMIUM, TOTAL	-qc- 102		% REC	80.0	120.0			7440-47-3

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Spike..... COPPER, TOTAL	-qc-	2.1		mg/L			2.0	7440-50-8
% recovery COPPER, TOTAL	-qc-	103		% REC	80.0	120.0		7440-50-8
Spike..... NICKEL, TOTAL	-qc-	2.0		mg/L			2.0	7440-02-0
% recovery NICKEL, TOTAL	-qc-	102		% REC	80.0	120.0		7440-02-0
Spike..... LEAD, TOTAL	-qc-	2.0		mg/L			2.0	7439-92-1
% recovery LEAD, TOTAL	-qc-	101		% REC	80.0	120.0		7439-92-1
Spike..... ANTIMONY, TOTAL	-qc-	2.0		mg/L			2.0	7440-36-0
% recovery ANTIMONY, TOTAL	-qc-	101		% REC	80.0	120.0		7440-36-0
Spike..... TIN, TOTAL	-qc-	1.7		mg/L			2.0	7440-31-5
% recovery TIN, TOTAL	-qc-	85		% REC	80.0	120.0		7440-31-5
Spike..... SELENIUM, TOTAL	-qc-	2.0		mg/L			2.0	7782-49-2
% recovery SELENIUM, TOTAL	-qc-	101		% REC	80.0	120.0		7782-49-2
Spike..... THALLIUM, TOTAL	-qc-	2.0		mg/L			2.0	7440-28-0
% recovery THALLIUM, TOTAL	-qc-	102		% REC	80.0	120.0		7440-28-0
Spike..... VANADIUM, TOTAL	-qc-	2.0		mg/L			2.0	7440-62-2
% recovery VANADIUM, TOTAL	-qc-	102		% REC	80.0	120.0		7440-62-2
Spike..... ZINC, TOTAL	-qc-	2.1		mg/L			2.0	7440-66-6
% recovery ZINC, TOTAL	-qc-	104		% REC	80.0	120.0		7440-66-6

Collected: 06/18/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:01 (12437) Method SW7470

Analytical Run: *001* EDD Method Code: **7470A** WATER

TOTAL HG IN WATER Dilution Factor: *1.00* %Solid:

				Recovery Acceptance				MB Spike
9F0G001294 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/18/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:03 (12437) Method SW7470

Analytical Run: *001* EDD Method Code: **7470A** WATER

TOTAL HG IN WATER Dilution Factor: *1.00* %Solid:

				Recovery Acceptance				LCS Spike
9F0G001295 7470W-CWP001-LCS	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Spike..... MERCURY, TOTAL	-qc- .0024		mg/L				.0020	7439-97-6
% recovery MERCURY, TOTAL	-qc- 118		% REC	80.0	120.0			7439-97-6

Collected: 06/18/99 Prepared: 06/18/99 (12433) Analyzed: 06/18/99 10:00 TB (12433) Method

Analytical Run: *001* EDD Method Code: **9012** WATER

CYANIDE IN WATER Dilution Factor: *1.00* %Solid:

				Recovery Acceptance				MB Spike
9F0G001296 9012W-BBL001-MB	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Collected: 06/18/99 Prepared: 06/18/99 (12433) Analyzed: 06/18/99 10:00 TB (12433) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

CYANIDE IN WATER	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike
9F0G001297 9012W-BBL001-LCS	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:
Spike..... CYANIDE, TOTAL	-qc- .10		mg/L				.10
% recovery CYANIDE, TOTAL	-qc- 101		% REC	90.0	110.0		

Collected: 06/17/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 11:04 ra (12462) Method
Analytical Run: 001 EDD Method Code: 8270B WATER

METHOD BLANK BNA	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike
9F0G001325 8270W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,2-DICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .011	U	mg/L			*.011	
Analyte.... 1,3,5-TRINITROBENZENE	ND .021	U	mg/L			*.021	
Analyte.... 1,3-DICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,3-DINITROBENZENE	ND .053	U	mg/L			*.053	
Analyte.... 1,4-DICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,4-NAPHTHOQUINONE	ND .053	U	mg/L			*.053	
Analyte.... 1-NAPHTHHYLAMINE	ND .053	U	mg/L			*.053	
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4-DICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4-DIMETHYLPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4-DINITROPHENOL	ND .053	U	mg/L			*.053	
Analyte.... 2,4-DINITROTOLUENE	ND .053	U	mg/L			*.053	
Analyte.... 2,6-DICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,6-DINITROTOLUENE	ND .011	U	mg/L			*.011	
Analyte.... 2-ACETYLAMINOFLUORENE	ND .021	U	mg/L			*.021	
Analyte.... 2-CHLORONAPHTHALENE	ND .011	U	mg/L			*.011	
Analyte.... 2-CHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2-METHYLNAPHTHALENE	ND .011	U	mg/L			*.011	
Analyte.... 2-METHYLPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2-NAPHTHYLAMINE	ND .053	U	mg/L			*.053	
Analyte.... 2-NITROANILINE	ND .053	U	mg/L			*.053	
Analyte.... 2-NITROPHENOL	ND .021	U	mg/L			*.021	
Analyte.... 2-PICOLINE	ND .011	U	mg/L			*.011	
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .053	U	mg/L			*.053	
Analyte.... 3,3-DICHLOROBENZIDINE	ND .053	U	mg/L			*.053	
Analyte.... 3- & 4-METHYLPHENOL	ND .021	U	mg/L			*.021	

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte.... 3-METHYLCHOLANTHRENE	ND	.021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND	.053	U	mg/L			*.053		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.011	U	mg/L			*.011		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.011	U	mg/L			*.011		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.011	U	mg/L			*.011		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.053	U	mg/L			*.053		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.011	U	mg/L			*.011		7005-72-3
Analyte.... 4-NITROANILINE	ND	.053	U	mg/L			*.053		100-01-6
Analyte.... 4-NITROPHENOL	ND	.053	U	mg/L			*.053		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.053	U	mg/L			*.053		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.053	U	mg/L			*.053		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.053	U	mg/L			*.053		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.021	U	mg/L			*.021		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.053	U	mg/L			*.053		122-09-8
Analyte.... ACENAPHTHENE	ND	.011	U	mg/L			*.011		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.011	U	mg/L			*.011		208-96-8
Analyte.... ACETOPHENONE	ND	.011	U	mg/L			*.011		98-86-2
Analyte.... ANILINE	ND	.011	U	mg/L			*.011		62-53-3
Analyte.... ANTHRACENE	ND	.011	U	mg/L			*.011		120-12-7
Analyte.... ARAMITE	ND	.021	U	mg/L			*.021		140-57-8
Analyte.... BENZIDINE	ND	.021	U	mg/L			*.021		92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.011	U	mg/L			*.011		56-55-3
Analyte.... BENZO(A)PYRENE	ND	.011	U	mg/L			*.011		50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.011	U	mg/L			*.011		205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.011	U	mg/L			*.011		191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.011	U	mg/L			*.011		207-08-9
Analyte.... BENZYL ALCOHOL	ND	.021	U	mg/L			*.021		100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.011	U	mg/L			*.011		111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.011	U	mg/L			*.011		111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.011	U	mg/L			*.011		108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.011	U	mg/L			*.011		117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021		85-68-7
Analyte.... CHRYSENE	ND	.011	U	mg/L			*.011		218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.011	U	mg/L			*.011		84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.011	U	mg/L			*.011		117-84-0
Analyte.... DIALLATE	ND	.021	U	mg/L			*.021		2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021		53-70-3
Analyte.... DIBENZOFURAN	ND	.011	U	mg/L			*.011		132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.011	U	mg/L			*.011		84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.011	U	mg/L			*.011		131-11-3
Analyte.... DIPHENYLAMINE	ND	.011	U	mg/L			*.011		122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		62-50-0
Analyte.... FLUORANTHENE	ND	.011	U	mg/L			*.011		206-44-0
Analyte.... FLUORENE	ND	.011	U	mg/L			*.011		86-73-7

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	HEXACHLOROBENZENE	ND	.011	U	mg/L			*.011		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.011	U	mg/L			*.011		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.011	U	mg/L			*.011		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.011	U	mg/L			*.011		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021		193-39-5
Analyte....	ISODRIN	ND	.011	U	mg/L			*.011		465-73-6
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.053	U	mg/L			*.053		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021		924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021		621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.011	U	mg/L			*.011		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.011	U	mg/L			*.011		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.011	U	mg/L			*.011		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.011	U	mg/L			*.011		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021		930-55-2
Analyte....	NAPHTHALENE	ND	.011	U	mg/L			*.011		91-20-3
Analyte....	NITROBENZENE	ND	.011	U	mg/L			*.011		98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.011	U	mg/L			*.011		126-68-1
Analyte....	O-TOLUIDINE	ND	.011	U	mg/L			*.011		95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.053	U	mg/L			*.053		60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.011	U	mg/L			*.011		608-93-5
Analyte....	PENTACHLOROETHANE	ND	.011	U	mg/L			*.011		76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.053	U	mg/L			*.053		82-68-8
Analyte....	PENTACHLOROPHENOL	ND	.053	U	mg/L			*.053		87-86-5
Analyte....	PHENACETIN	ND	.053	U	mg/L			*.053		62-44-2
Analyte....	PHENANTHRENE	ND	.011	U	mg/L			*.011		85-01-8
Analyte....	PHENOL	ND	.011	U	mg/L			*.011		108-95-2
Analyte....	PRONAMIDE	ND	.011	U	mg/L			*.011		23950-58-5
Analyte....	PYRENE	ND	.011	U	mg/L			*.011		129-00-0
Analyte....	PYRIDINE	ND	.011	U	mg/L			*.011		110-86-1
Analyte....	SAFROLE	ND	.011	U	mg/L			*.011		94-59-7
Analyte....	THIONAZIN	ND	.011	U	mg/L			*.011		297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.085		mg/L				.12	4165-60-0
% recovery	NITROBENZENE-D5	-qc-	68		% REC	35.0	114.0			4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.070		mg/L				.12	321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	56		% REC	43.0	116.0			321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.13		mg/L				.12	1718-51-0
% recovery	TERPHENYL-D14	-qc-	106		% REC	33.0	141.0			1718-51-0
Surrogate..	PHENOL-D5	-qc-	.035		mg/L				.12	4165-62-2
% recovery	PHENOL-D5	-qc-	28		% REC	10.0	94.0			4165-62-2

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Surrogate.. 2-FLUOROPHENOL	-qc-	.051		mg/L				.14	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	41		% REC	21.0	100.0			367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.10		mg/L				.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	82		% REC	10.0	123.0			118-79-6

Collected: 06/17/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 12:36 ra (12462) Method

Analytical Run: *001* EDD Method Code: **8270B** WATER

LAB CONTROL SPIKE BNA Dilution Factor: *1.00* %Solid:

					Recovery Acceptance				
9F0G001326 8270W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PRQL:	Spike Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			*.010		95-94-3
Spike..... 1,2,4-TRICHLOROBENZENE	-qc-	.027		mg/L				.062	120-82-1
% recovery 1,2,4-TRICHLOROBENZENE	-qc-	43		% REC	40.0	95.0			120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			*.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.051	U	mg/L			*.051		99-65-0
Spike..... 1,4-DICHLOROBENZENE	-qc-	.027		mg/L				.062	106-46-7
% recovery 1,4-DICHLOROBENZENE	-qc-	43		% REC	40.0	95.0			106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.051	U	mg/L			*.051		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.051	U	mg/L			*.051		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.051	U	mg/L			*.051		51-28-5
Spike..... 2,4-DINITROTOLUENE	-qc-	.033		mg/L				.062	121-14-2
% recovery 2,4-DINITROTOLUENE	-qc-	53		% REC	25.0	95.0			121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			*.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010		91-58-7
Spike..... 2-CHLOROPHENOL	-qc-	.084		mg/L				.12	95-57-8
% recovery 2-CHLOROPHENOL	-qc-	68		% REC	30.0	120.0			95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.051	U	mg/L			*.051		91-59-8
Analyte.... 2-NITROANILINE	ND	.051	U	mg/L			*.051		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			*.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.051	U	mg/L			*.051		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.051	U	mg/L			*.051		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			*.020		

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			*.020		56-49-5
Analyte....	3-NITROANILINE	ND	.051	U	mg/L			*.051		99-09-2
Analyte....	4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010		534-52-1
Analyte....	4-AMINOBIPHENYL	ND	.020	U	mg/L			*.020		92-67-1
Analyte....	4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010		101-55-3
Spike.....	4-CHLORO-3-METHYLPHENOL	-qc-	.092		mg/L				.12	59-50-7
% recovery	4-CHLORO-3-METHYLPHENOL	-qc-	74		% REC	25.0	95.0			59-50-7
Analyte....	4-CHLOROANILINE	ND	.020	U	mg/L			*.020		106-47-8
Analyte....	4-CHLOROBENZILATE	ND	.051	U	mg/L			*.051		510-15-6
Analyte....	4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010		7005-72-3
Analyte....	4-NITROANILINE	ND	.051	U	mg/L			*.051		100-01-6
Spike.....	4-NITROPHENOL	-qc-	.022		mg/L				.12	100-02-7
% recovery	4-NITROPHENOL	-qc-	18		% REC	10.0	80.0			100-02-7
Analyte....	4-NITROQUINOLINE-1-OXIDE	ND	.051	U	mg/L			*.051		56-57-5
Analyte....	4-PHENYLENEDIAMINE	ND	.051	U	mg/L			*.051		106-50-3
Analyte....	5-NITRO-O-TOLUIDINE	ND	.051	U	mg/L			*.051		99-55-8
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			*.020		57-97-6
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.051	U	mg/L			*.051		122-09-8
Spike.....	ACENAPHTHENE	-qc-	.039		mg/L				.062	83-32-9
% recovery	ACENAPHTHENE	-qc-	63		% REC	50.0	115.0			83-32-9
Analyte....	ACENAPHTHYLENE	ND	.010	U	mg/L			*.010		208-96-8
Analyte....	ACETOPHENONE	ND	.010	U	mg/L			*.010		98-86-2
Analyte....	ANILINE	ND	.010	U	mg/L			*.010		62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010		120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			*.020		140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			*.020		92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010		56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010		50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010		205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010		191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010		207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			*.020		100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010		111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010		111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010		108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010		117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			*.020		85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010		218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010		84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010		117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			*.020		2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			*.020		53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010		132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010		84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010		131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010		122-39-4

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010		206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010		86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			*.020		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			*.020		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			*.020		193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010		465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.051	U	mg/L			*.051		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			*.020		924-16-3
Spike.....	N-NITROSODI-N-PROPYLAMINE	-qc-	.036		mg/L				.062	621-64-7
% recovery	N-NITROSODI-N-PROPYLAMINE	-qc-	57		% REC	45.0	115.0			621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			*.020		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			*.020		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			*.020		930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			*.010		91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			*.010		98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010		126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			*.010		95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.051	U	mg/L			*.051		60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010		608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			*.010		76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.051	U	mg/L			*.051		82-68-8
Spike.....	PENTACHLOROPHENOL	-qc-	.11		mg/L				.12	87-86-5
% recovery	PENTACHLOROPHENOL	-qc-	85		% REC	10.0	100.0			87-86-5
Analyte....	PHENACETIN	ND	.051	U	mg/L			*.051		62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			*.010		85-01-8
Spike.....	PHENOL	-qc-	.040		mg/L				.12	108-95-2
% recovery	PHENOL	-qc-	32		mg/L	15.0	110.0			108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			*.010		23950-58-2
Spike.....	PYRENE	-qc-	.057		mg/L				.062	129-00-0
% recovery	PYRENE	-qc-	92		% REC	30.0	135.0			129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			*.010		110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			*.010		94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			*.010		297-97-2

Surrogate.. NITROBENZENE-D5	-qc-	.075		mg/L				.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	60		% REC	35.0	114.0			4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.066		mg/L				.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	52		% REC	43.0	116.0			321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.11		mg/L				.12	1718-51-0
% recovery TERPHENYL-D14	-qc-	89		% REC	33.0	141.0			1718-51-0
Surrogate.. PHENOL-D5	-qc-	.032		mg/L				.12	4165-62-2
% recovery PHENOL-D5	-qc-	26		% REC	10.0	94.0			4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.050		mg/L				.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	40		% REC	21.0	100.0			367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.11		mg/L				.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	86		% REC	10.0	123.0			118-79-6

Collected: 06/17/99 Prepared: 06/17/99 (12472) Analyzed: 06/17/99 15:00 CBS (12472) Method

Analytical Run: *001* EDD Method Code: **9030** WATER

TOTAL SULFIDE IN WATER MB Dilution Factor: ***1.00*** %Solid:

				Recovery				MB
				Acceptance			Spike	
9F0G001362 9030W-BBL001-MB	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND	5.0	U	mg/L			5.0		18496-25-8

Collected: 06/17/99 Prepared: 06/17/99 (12472) Analyzed: 06/17/99 15:00 CBS (12472) Method

Analytical Run: *001* EDD Method Code: **9030** WATER

TOTAL SULFIDE IN WATER LCS Dilution Factor: ***1.00*** %Solid:

				Recovery				LCS
				Acceptance			Spike	
9F0G001363 9030W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Spike..... SULFIDE	-qc-	64.0		mg/L				72.0	18496-25-8
% recovery SULFIDE	-qc-	89		mg/L	80.0	120.0			18496-25-8

Collected: 06/21/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:08 jam (12524) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER

METHOD BLANK PCB Dilution Factor: ***1.00*** %Solid:

					Recovery				MB
					Acceptance			Spike	
9F0G001373 8082W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte.... AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte.... AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte.... AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte.... AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte.... AROCLOR-1254	ND	.050	U	ug/L			*.050		11097-69-1
Analyte.... AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc-	50		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc-	.17		ug/L				.25	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc-	66		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G029 05/17/00 16:46:15 Received: 06/15/99 9:15

ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

Client: BLASLAND BOUCK & LEE INC. COC: CTE0615990952

Collected: 06/21/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:58 jam (12524) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER

LAB CONTROL SPIKE PCB Dilution Factor: *1.00* %Solid:

						Recovery				LCS
						Acceptance			Spike	
9F0G001374	8082W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Spike.....	AROCLOR-1254	-qc-	1.3		ug/L				1.2	11097-69-1
% recovery	AROCLOR-1254	-qc-	104		% REC	60.0	130.0			11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	48		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.17		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	70		% REC	36.0	144.0			2051-24-3

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02

CT&E Laboratory Number: G39-F0-G030

DATE: May 18, 2000

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed. Release of the data contained in the hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Submitted by,

Michele L. Rose

Michele L. Rose
Project Manager

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02

CT&E Laboratory Number: G39-F0-G030

DATE: May 18, 2000

SAMPLE RECEIPT OBSERVATIONS:

The samples were received June 16, 1999 at 9:00 via FedEx in good condition. The receipt temperature was 5°C. The dioxin analysis was sub-contracted to Columbia Analytical Services with the approval of BBL. Additional volatile samples were received which were sampled June 14, 1999. They were not received with original Appendix IX + 3 samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G030

DATE: May 18, 2000

SEMIVOLATILES REPORT:
The samples were analyzed for GE App. IX + 3 Semivolatiles in accordance to the guidelines of method SW8270C.

The tunes, initial calibration and continuing calibration verifications met acceptance criteria.

The internal standard areas were within quality control criteria.

The surrogate standard percent recoveries were within quality control criteria.

The laboratory control sample met acceptance criteria.

The method blank was free of interference.

The PRRL's (reporting limits) are adjusted for percent solids and extraction volumes as applicable.

The sampling to extraction holding time of fourteen days and extraction to analysis holding time of forty days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G030

DATE: May 18, 2000

VOLATILES REPORT:
The samples were analyzed for GE App. IX + 3 Volatiles in accordance to the guidelines of Method SW8260B.

The tunes, initial calibration and continuing calibration verifications met acceptance criteria.

The surrogate standard percent recoveries and internal standard areas met acceptance criteria.

The laboratory control sample met acceptance criteria.

The method blank was free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The sampling to analysis holding time of fourteen days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G030

DATE: May 18, 2000

PCB REPORT
The samples were analyzed according to the guidelines of Method 8082.

The PCB responses were quantitated by the Aroclor multi-component analysis, using at a minimum three unique peaks of the pattern.

All initial calibration and continuing calibration verifications met acceptance criteria. The 5 pt. initial calibration consists of PCB 1016, 1260 and 1254/Surrogates. Single point pattern recognition's were performed on Aroclors 1221, 1232, 1242 and 1248.

The surrogate standard percent recoveries met acceptance criteria.

The method blanks were free of interference.

The laboratory control samples met acceptance criteria.

The PRRL's are adjusted for percent solids, dilution factors and extraction volumes as applicable.

The sampling to extraction holding time of fourteen days and extraction to analysis holding time of forty days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G030

DATE: May 18, 2000

METALS REPORT:
The samples were analyzed for GE App. IX + 3 Metals by Method 6010A and Mercury by SW7470A.

The initial and continuing calibration verifications met acceptance criteria.

The LCS met acceptance criteria.

The method blank was free of interference.

The sampling to analysis holding times were met for all samples.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

SULFIDE REPORT:
The samples were analyzed for Sulfide by Method SW9030A. The result reported represents the total of soluble and in-soluble sulfide.

The LCS's met acceptance criteria.

The method blanks were free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

CYANIDE REPORT:
The samples were analyzed for Cyanide by Method SW9012.

The LCS's met acceptance criteria.

The method blanks were free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
6723 Towpath Road, P.O. Box 66
Syracuse, New York 13214-0066
TEL: (315) 446-9120

CHAIN OF CUSTODY RECORD

G39-EO-0030-1/10

PROJECT NO. 201.85.02 | PROJECT NAME ON SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

	LAB ID	CUSTODY TAPE NUMBER	DATE	TIME	COMP.	GRAB	SAMPLE TYPE: SOLID	SAMPLE TYPE: WIPE	SAMPLE TYPE: WATER	Number of Containers	App. IV's Excluding Pesticides + Herbs	PCBs	TCLP			REMARKS
1	NY-4		6/14/99	1235		X			X	2	X					VOC's FROM 6/14/99
2	78-1			1505		X			X	2	X					VOC's from 6/14/99
3	OPCA-MW-8			1605		X			X	2	X					VOC's FROM 6/14/99
4	OPCA-MW-7		6/15/99	0845		X			X	8	X	X				
5	OPCA-MW-6			0955		X			X	8	X	X				7 DAY TURNAROUND
6	OPCA-MW-5			1210		X			X	9	X	X				TIME REQUESTED
7	OPCA-MW-4			1400		X			X	8	X	X				
8	OPCA-MW-2			1515		X			X	8	X	X				
9	Dup-1			—		X			X	8	X	X				
	TEMP BLANK			—		X			X	1			X			
10	Trip Blank															

Sampled by: (Signature)	DATE 6/15/99	TIME 1700	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received for Laboratory by: (Signature)	DATE 6-16	TIME 09:00	Remarks: TO CTE ENVIRONMENTAL VIA FED EX # 811257179206 5°C	

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/14/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 10:51 mam (12500) Method

Analytical Run: *001* EDD Method Code: *8260AC* WATER

NY-4 GRAB Dilution Factor: *1.00* %Solid:

9FOG030001 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PPQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte....	TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte....	TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte....	TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte....	VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate..	TOLUENE-D8	-qc-	.051		mg/L				.050		2037-26-5
% recovery	TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate..	4-BROMOFLUOROBENZENE	-qc-	.050		mg/L				.050		460-00-4
% recovery	4-BROMOFLUOROBENZENE	-qc-	99		% REC	74.0	121.0				460-00-4
Surrogate..	1,2-DICHLOROETHANE-D4	-qc-	.053		mg/L				.050		17060-07-0
% recovery	1,2-DICHLOROETHANE-D4	-qc-	106		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/14/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 11:29 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

78-1 GRAB Dilution Factor: *1.00* %Solid:

9F0G030002 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.049		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	98		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.055		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	110		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/14/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 12:08 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-8 GRAB Dilution Factor: *1.00* %Solid:

9F0G030003 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.049		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.050		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	101		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.052		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	105		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 15:40 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: 8082 WATER | Recovery | | | F

OPCA-MW-7 GRAB Dilution Factor: *1.00* %Solid: | Acceptance | | Spike |

9F0G030004 8082W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND	.051	U	ug/L			*.051		12674-11-2
Analyte.... AROCLOR-1221	ND	.051	U	ug/L			*.051		11104-28-2
Analyte.... AROCLOR-1232	ND	.051	U	ug/L			*.051		11141-16-5
Analyte.... AROCLOR-1242	ND	.051	U	ug/L			*.051		53469-21-9
Analyte.... AROCLOR-1248	ND	.051	U	ug/L			*.051		12672-29-6
Analyte.... AROCLOR-1254	ND	.051	U	ug/L			*.051		11097-69-1
Analyte.... AROCLOR-1260	ND	.051	U	ug/L			*.051		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc-	47		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc-	.18		ug/L				.25	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc-	70		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 12:47 mam (12500) Method
Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-7 GRAB Dilution Factor: *1.00* %Solid:

9F0G030004 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.051		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.047		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	94		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.046		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	92		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/18/99 (12450) Analyzed: 06/22/99 00:02 ra (12491) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

OPCA-MW-7 GRAB Dilution Factor: *1.00* %Solid:

9F0G030004 8270W-BBL001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .011	U	mg/L			*.011		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .011	U	mg/L			*.011		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND .011	U	mg/L			*.011		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .011	U	mg/L			*.011		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND .022	U	mg/L			*.022		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND .011	U	mg/L			*.011		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND .054	U	mg/L			*.054		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND .011	U	mg/L			*.011		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND .054	U	mg/L			*.054		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND .054	U	mg/L			*.054		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .011	U	mg/L			*.011		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .011	U	mg/L			*.011		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .011	U	mg/L			*.011		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND .011	U	mg/L			*.011		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND .011	U	mg/L			*.011		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND .054	U	mg/L			*.054		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND .054	U	mg/L			*.054		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND .011	U	mg/L			*.011		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND .011	U	mg/L			*.011		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND .022	U	mg/L			*.022		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND .011	U	mg/L			*.011		91-58-7
Analyte.... 2-CHLOROPHENOL	ND .011	U	mg/L			*.011		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND .011	U	mg/L			*.011		91-57-6
Analyte.... 2-METHYLPHENOL	ND .011	U	mg/L			*.011		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND .054	U	mg/L			*.054		91-59-8
Analyte.... 2-NITROANILINE	ND .054	U	mg/L			*.054		88-74-4
Analyte.... 2-NITROPHENOL	ND .022	U	mg/L			*.022		88-75-5
Analyte.... 2-PICOLINE	ND .011	U	mg/L			*.011		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .054	U	mg/L			*.054		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND .054	U	mg/L			*.054		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND .022	U	mg/L			*.022		
Analyte.... 3-METHYLCHOLANTHRENE	ND .022	U	mg/L			*.022		56-49-5
Analyte.... 3-NITROANILINE	ND .054	U	mg/L			*.054		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND .011	U	mg/L			*.011		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND .022	U	mg/L			*.022		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND .011	U	mg/L			*.011		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND .011	U	mg/L			*.011		59-50-7
Analyte.... 4-CHLOROANILINE	ND .022	U	mg/L			*.022		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND .054	U	mg/L			*.054		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND .011	U	mg/L			*.011		7005-72-3
Analyte.... 4-NITROANILINE	ND .054	U	mg/L			*.054		100-01-6
Analyte.... 4-NITROPHENOL	ND .054	U	mg/L			*.054		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND .054	U	mg/L			*.054		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND .054	U	mg/L			*.054		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND .054	U	mg/L			*.054		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .022	U	mg/L			*.022		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND .054	U	mg/L			*.054		122-09-8
Analyte.... ACENAPHTHENE	ND .011	U	mg/L			*.011		83-32-9
Analyte.... ACENAPHTHYLENE	ND .011	U	mg/L			*.011		208-96-8
Analyte.... ACETOPHENONE	ND .011	U	mg/L			*.011		98-86-2

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Analyte.... ANILINE	ND	.011	U	mg/L			*.011	62-53-3
Analyte.... ANTHRACENE	ND	.011	U	mg/L			*.011	120-12-7
Analyte.... ARAMITE	ND	.022	U	mg/L			*.022	140-57-8
Analyte.... BENZIDINE	ND	.022	U	mg/L			*.022	92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.011	U	mg/L			*.011	56-55-3
Analyte.... BENZO(A)PYRENE	ND	.011	U	mg/L			*.011	50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.011	U	mg/L			*.011	205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.011	U	mg/L			*.011	191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.011	U	mg/L			*.011	207-08-9
Analyte.... BENZYL ALCOHOL	ND	.022	U	mg/L			*.022	100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.011	U	mg/L			*.011	111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.011	U	mg/L			*.011	111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.011	U	mg/L			*.011	108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.011	U	mg/L			*.011	117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.022	U	mg/L			*.022	85-68-7
Analyte.... CHRYSENE	ND	.011	U	mg/L			*.011	218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.011	U	mg/L			*.011	84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.011	U	mg/L			*.011	117-84-0
Analyte.... DIALLATE	ND	.022	U	mg/L			*.022	2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.022	U	mg/L			*.022	53-70-3
Analyte.... DIBENZOFURAN	ND	.011	U	mg/L			*.011	132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.011	U	mg/L			*.011	84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.011	U	mg/L			*.011	131-11-3
Analyte.... DIPHENYLAMINE	ND	.011	U	mg/L			*.011	122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.011	U	mg/L			*.011	62-50-0
Analyte.... FLUORANTHENE	ND	.011	U	mg/L			*.011	206-44-0
Analyte.... FLUORENE	ND	.011	U	mg/L			*.011	86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.011	U	mg/L			*.011	118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.022	U	mg/L			*.022	87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.011	U	mg/L			*.011	77-47-4
Analyte.... HEXACHLOROETHANE	ND	.011	U	mg/L			*.011	67-72-1
Analyte.... HEXACHLOROPHENE	ND	.022	U	mg/L			*.022	70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.011	U	mg/L			*.011	1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.022	U	mg/L			*.022	193-39-5
Analyte.... ISODRIN	ND	.011	U	mg/L			*.011	465-73-6
Analyte.... ISOPHORONE	ND	.022	U	mg/L			*.022	78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte.... METHAPYRILENE	ND	.054	U	mg/L			*.054	91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.011	U	mg/L			*.011	66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.022	U	mg/L			*.022	924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.022	U	mg/L			*.022	621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.011	U	mg/L			*.011	55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.022	U	mg/L			*.022	62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.011	U	mg/L			*.011	86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.022	U	mg/L			*.022	10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.011	U	mg/L			*.011	59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.011	U	mg/L			*.011	100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.022	U	mg/L			*.022	930-55-2
Analyte.... NAPHTHALENE	ND	.011	U	mg/L			*.011	91-20-3
Analyte.... NITROBENZENE	ND	.011	U	mg/L			*.011	98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.011	U	mg/L			*.011	126-68-1
Analyte.... O-TOLUIDINE	ND	.011	U	mg/L			*.011	95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.054	U	mg/L			*.054	60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.011	U	mg/L			*.011	608-93-5
Analyte.... PENTACHLOROETHANE	ND	.011	U	mg/L			*.011	76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.054	U	mg/L			*.054	82-68-8

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Analyte.... PENTACHLOROPHENOL	ND	.054	U	mg/L			*.054			87-86-5
Analyte.... PHENACETIN	ND	.054	U	mg/L			*.054			62-44-2
Analyte.... PHENANTHRENE	ND	.011	U	mg/L			*.011			85-01-8
Analyte.... PHENOL	ND	.011	U	mg/L			*.011			108-95-2
Analyte.... PRONAMIDE	ND	.011	U	mg/L			*.011			23950-58-5
Analyte.... PYRENE	ND	.011	U	mg/L			*.011			129-00-0
Analyte.... PYRIDINE	ND	.011	U	mg/L			*.011			110-86-1
Analyte.... SAFROLE	ND	.011	U	mg/L			*.011			94-59-7
Analyte.... THIONAZIN	ND	.011	U	mg/L			*.011			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.11		mg/L				.12		4165-60-0
% recovery NITROBENZENE-D5	-qc-	85		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.10		mg/L				.12		321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	82		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.053		mg/L				.12		98904-43-9
% recovery TERPHENYL-D14	-qc-	42		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.041		mg/L				.12		4165-62-2
% recovery PHENOL-D5	-qc-	33		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.057		mg/L				.12		367-12-4
% recovery 2-FLUOROPHENOL	-qc-	45		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.11		mg/L				.12		118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	87		% REC	10.0	123.0				118-79-6

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Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 14:16 JWJ (12459) Method
Analytical Run: *001* EDD Method Code: **6/7000** WATER Dilution Factor: *1.00* %Solid:

OPCA-MW-7 GRAB	Result:	QF:	Units:	Recovery Low:	Recovery High:	PRQL:	Spike Amount:	F CAS:
9F0G030004 6010W-BBL001								
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .027		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/15/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:08 (12437) Method SW7470
Analytical Run: *001* EDD Method Code: **7470A** WATER Dilution Factor: *1.00* %Solid:

OPCA-MW-7 GRAB	Result:	QF:	Units:	Recovery Low:	Recovery High:	PRQL:	Spike Amount:	F CAS:
9F0G030004 7470W-CWP001								
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/15/99 Prepared: 06/18/99 (12434) Analyzed: 06/18/99 10:00 TB (12434) Method
Analytical Run: *001* EDD Method Code: **9012** WATER Dilution Factor: *1.00* %Solid:

OPCA-MW-7 GRAB	Result:	QF:	Units:	Recovery Low:	Recovery High:	PRQL:	Spike Amount:	F CAS:
9F0G030004 9012W-BBL001								
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/15/99 Prepared: 06/17/99 (12484) Analyzed: 06/17/99 15:00 CBS (12484) Method
Analytical Run: *001* EDD Method Code: **9030** WATER Dilution Factor: *1.00* %Solid:

OPCA-MW-7 GRAB	Result:	QF:	Units:	Recovery Low:	Recovery High:	PRQL:	Spike Amount:	F CAS:
9F0G030004 9030W-BBL001								
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 15:56 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER | Recovery | | | F

OPCA-MW-6 GRAB Dilution Factor: *1.00* %Solid: | Acceptance | | Spike |

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9FOG030005 8082W-BBL001	Result:	QF:	Units:	Low:	High:	PPQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND .050	U	ug/L			*.050		12674-11-2
Analyte.... AROCLOR-1221	ND .050	U	ug/L			*.050		11104-28-2
Analyte.... AROCLOR-1232	ND .050	U	ug/L			*.050		11141-16-5
Analyte.... AROCLOR-1242	ND .050	U	ug/L			*.050		53469-21-9
Analyte.... AROCLOR-1248	ND .050	U	ug/L			*.050		12672-29-6
Analyte.... AROCLOR-1254	<Hit> .12		ug/L			*.050		11097-69-1
Analyte.... AROCLOR-1260	ND .050	U	ug/L			*.050		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc- .12		ug/L				.25	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc- 46		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc- .13		ug/L				.25	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc- 54		% REC	36.0	144.0			2051-24-3

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Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 13:25 mam (12500) Method
Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-6 GRAB Dilution Factor: *1.00* %Solid:

9F0G030005 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

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Analyte....	PROPIONITRILE	ND	.050	U	mg/L			.050		107-12-0
Analyte....	TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		156-60-5
Analyte....	TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010		110-57-6
Analyte....	TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050		75-69-4
Analyte....	VINYL ACETATE	ND	.010	U	mg/L			.010		108-05-4
Surrogate..	TOLUENE-D8	-qc-	.049		mg/L				.050	2037-26-5
% recovery	TOLUENE-D8	-qc-	98		% REC	81.0	117.0			2037-26-5
Surrogate..	4-BROMOFLUOROBENZENE	-qc-	.048		mg/L				.050	460-00-4
% recovery	4-BROMOFLUOROBENZENE	-qc-	95		% REC	74.0	121.0			460-00-4
Surrogate..	1,2-DICHLOROETHANE-D4	-qc-	.057		mg/L				.050	17060-07-0
% recovery	1,2-DICHLOROETHANE-D4	-qc-	114		% REC	70.0	121.0			17060-07-0

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/18/99 (12450) Analyzed: 06/22/99 00:48 ra (12491) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

OPCA-MW-6 GRAB Dilution Factor: *1.00* %Solid:

9F0G030005 8270W-BBL001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			*.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			*.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.021	U	mg/L			*.021		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.052	U	mg/L			*.052		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.052	U	mg/L			*.052		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.052	U	mg/L			*.052		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.052	U	mg/L			*.052		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.052	U	mg/L			*.052		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.021	U	mg/L			*.021		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			*.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.052	U	mg/L			*.052		91-59-8
Analyte.... 2-NITROANILINE	ND	.052	U	mg/L			*.052		88-74-4
Analyte.... 2-NITROPHENOL	ND	.021	U	mg/L			*.021		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.052	U	mg/L			*.052		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.052	U	mg/L			*.052		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.021	U	mg/L			*.021		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND	.052	U	mg/L			*.052		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			*.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.052	U	mg/L			*.052		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.052	U	mg/L			*.052		100-01-6
Analyte.... 4-NITROPHENOL	ND	.052	U	mg/L			*.052		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.052	U	mg/L			*.052		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.052	U	mg/L			*.052		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.052	U	mg/L			*.052		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.021	U	mg/L			*.021		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.052	U	mg/L			*.052		122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			*.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			*.010		208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			*.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	ANILINE	ND	.010	U	mg/L			*.010	62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010	120-12-7
Analyte....	ARAMITE	ND	.021	U	mg/L			*.021	140-57-8
Analyte....	BENZIDINE	ND	.021	U	mg/L			*.021	92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010	56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010	50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010	205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010	191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010	207-08-9
Analyte....	BENZYL ALCOHOL	ND	.021	U	mg/L			*.021	100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010	111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010	111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010	108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010	117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021	85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010	218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010	84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010	117-84-0
Analyte....	DIALLATE	ND	.021	U	mg/L			*.021	2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021	53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010	132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010	84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010	131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010	122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010	62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010	206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010	86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010	118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021	87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010	77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010	67-72-1
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021	70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010	1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021	193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010	465-73-6
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021	78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte....	METHAPYRILENE	ND	.052	U	mg/L			*.052	91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010	66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021	924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021	621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010	55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021	62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010	86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021	10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010	59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010	100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021	930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			*.010	91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			*.010	98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010	126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			*.010	95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.052	U	mg/L			*.052	60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010	608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			*.010	76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.052	U	mg/L			*.052	82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	PENTACHLOROPHENOL	ND	.052	U	mg/L			*.052			87-86-5
Analyte....	PHENACETIN	ND	.052	U	mg/L			*.052			62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Analyte....	PHENOL	ND	.010	U	mg/L			*.010			108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-5
Analyte....	PYRENE	ND	.010	U	mg/L			*.010			129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.094		mg/L				.12		4165-60-0
% recovery	NITROBENZENE-D5	-qc-	76		% REC	35.0	114.0				4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.097		mg/L				.12		321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	78		% REC	43.0	116.0				321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.056		mg/L				.12		98904-43-9
% recovery	TERPHENYL-D14	-qc-	44		% REC	33.0	141.0				98904-43-9
Surrogate..	PHENOL-D5	-qc-	.042		mg/L				.12		4165-62-2
% recovery	PHENOL-D5	-qc-	34		% REC	10.0	94.0				4165-62-2
Surrogate..	2-FLUOROPHENOL	-qc-	.060		mg/L				.12		367-12-4
% recovery	2-FLUOROPHENOL	-qc-	48		% REC	21.0	100.0				367-12-4
Surrogate..	2,4,6-TRIBROMOPHENOL	-qc-	.11		mg/L				.12		118-79-6
% recovery	2,4,6-TRIBROMOPHENOL	-qc-	88		% REC	10.0	123.0				118-79-6

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 15:35 JWJ (12459) Method
Analytical Run: *001* EDD Method Code: 6/7000 WATER

OPCA-MW-6 GRAB	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9FOG030005 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .030		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/15/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:09 (12437) Method SW7470
Analytical Run: *001* EDD Method Code: 7470A WATER

OPCA-MW-6 GRAB	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9FOG030005 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/15/99 Prepared: 06/18/99 (12434) Analyzed: 06/18/99 10:00 TB (12434) Method
Analytical Run: *001* EDD Method Code: 9012 WATER

OPCA-MW-6 GRAB	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9FOG030005 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/15/99 Prepared: 06/17/99 (12484) Analyzed: 06/17/99 15:00 CBS (12484) Method
Analytical Run: *001* EDD Method Code: 9030 WATER

OPCA-MW-6 GRAB	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9FOG030005 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 16:13 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER

OPCA-MW-5 GRAB Dilution Factor: *1.00* %Solid:

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PROL:	Spike Amount:	F CAS:
9F0G030006	8082W-BBL001									
Analyte....	AROCLOR-1016	ND	.051	U	ug/L			*.051		12674-11-2
Analyte....	AROCLOR-1221	ND	.051	U	ug/L			*.051		11104-28-2
Analyte....	AROCLOR-1232	ND	.051	U	ug/L			*.051		11141-16-5
Analyte....	AROCLOR-1242	ND	.051	U	ug/L			*.051		53469-21-9
Analyte....	AROCLOR-1248	ND	.051	U	ug/L			*.051		12672-29-6
Analyte....	AROCLOR-1254	ND	.051	U	ug/L			*.051		11097-69-1
Analyte....	AROCLOR-1260	ND	.051	U	ug/L			*.051		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	48		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.19		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	75		% REC	36.0	144.0			2051-24-3

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 14:04 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-5 GRAB Dilution Factor: *1.00* %Solid:

9F0G030006 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.049		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.052		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	103		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.056		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	112		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/18/99 (12450) Analyzed: 06/22/99 15:10 ra (12502) Method
Analytical Run: 001 EDD Method Code: 8270B WATER

OPCA-MW-5 GRAB Dilution Factor: 1.00 %Solid:

9F0G030006 8270W-BBL001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .010	U	mg/L			*.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .010	U	mg/L			*.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND .010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND .020	U	mg/L			*.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND .010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND .051	U	mg/L			*.051		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND .010	U	mg/L			*.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND .051	U	mg/L			*.051		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND .051	U	mg/L			*.051		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND .010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND .010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND .051	U	mg/L			*.051		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND .051	U	mg/L			*.051		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND .010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND .010	U	mg/L			*.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND .020	U	mg/L			*.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND .010	U	mg/L			*.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND .010	U	mg/L			*.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND .010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND .010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND .051	U	mg/L			*.051		91-59-8
Analyte.... 2-NITROANILINE	ND .051	U	mg/L			*.051		88-74-4
Analyte.... 2-NITROPHENOL	ND .020	U	mg/L			*.020		88-75-5
Analyte.... 2-PICOLINE	ND .010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .051	U	mg/L			*.051		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND .051	U	mg/L			*.051		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND .020	U	mg/L			*.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND .020	U	mg/L			*.020		56-49-5
Analyte.... 3-NITROANILINE	ND .051	U	mg/L			*.051		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND .010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND .020	U	mg/L			*.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND .010	U	mg/L			*.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND .010	U	mg/L			*.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND .020	U	mg/L			*.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND .051	U	mg/L			*.051		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND .010	U	mg/L			*.010		7005-72-3
Analyte.... 4-NITROANILINE	ND .051	U	mg/L			*.051		100-01-6
Analyte.... 4-NITROPHENOL	ND .051	U	mg/L			*.051		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND .051	U	mg/L			*.051		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND .051	U	mg/L			*.051		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND .051	U	mg/L			*.051		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .020	U	mg/L			*.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND .051	U	mg/L			*.051		122-09-8
Analyte.... ACENAPHTHENE	ND .010	U	mg/L			*.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND .010	U	mg/L			*.010		208-96-8
Analyte.... ACETOPHENONE	ND .010	U	mg/L			*.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... ANILINE	ND	.010	U	mg/L			*.010		62-53-3
Analyte.... ANTHRACENE	ND	.010	U	mg/L			*.010		120-12-7
Analyte.... ARAMITE	ND	.020	U	mg/L			*.020		140-57-8
Analyte.... BENZIDINE	ND	.020	U	mg/L			*.020		92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010		56-55-3
Analyte.... BENZO(A)PYRENE	ND	.010	U	mg/L			*.010		50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010		205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010		191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010		207-08-9
Analyte.... BENZYL ALCOHOL	ND	.020	U	mg/L			*.020		100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010		111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010		111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010		108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010		117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			*.020		85-68-7
Analyte.... CHRYSENE	ND	.010	U	mg/L			*.010		218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010		84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010		117-84-0
Analyte.... DIALLATE	ND	.020	U	mg/L			*.020		2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			*.020		53-70-3
Analyte.... DIBENZOFURAN	ND	.010	U	mg/L			*.010		132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010		84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010		131-11-3
Analyte.... DIPHENYLAMINE	ND	.010	U	mg/L			*.010		122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		62-50-0
Analyte.... FLUORANTHENE	ND	.010	U	mg/L			*.010		206-44-0
Analyte.... FLUORENE	ND	.010	U	mg/L			*.010		86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010		118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.020	U	mg/L			*.020		87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010		77-47-4
Analyte.... HEXACHLOROETHANE	ND	.010	U	mg/L			*.010		67-72-1
Analyte.... HEXACHLOROPHENE	ND	.020	U	mg/L			*.020		70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010		1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			*.020		193-39-5
Analyte.... ISODRIN	ND	.010	U	mg/L			*.010		465-73-6
Analyte.... ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte.... METHAPYRILENE	ND	.051	U	mg/L			*.051		91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			*.020		924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			*.020		621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010		55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			*.020		62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010		86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			*.020		10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010		59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010		100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			*.020		930-55-2
Analyte.... NAPHTHALENE	ND	.010	U	mg/L			*.010		91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			*.010		98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010		126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			*.010		95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.051	U	mg/L			*.051		60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010		608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			*.010		76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.051	U	mg/L			*.051		82-68-8

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PENTACHLOROPHENOL	ND	.051	U	mg/L			*.051			87-86-5
Analyte.... PHENACETIN	ND	.051	U	mg/L			*.051			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			*.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-5
Analyte.... PYRENE	ND	.010	U	mg/L			*.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.085		mg/L				.12		4165-60-0
% recovery NITROBENZENE-D5	-qc-	68		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.096		mg/L				.12		321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	76		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.14		mg/L				.12		98904-43-9
% recovery TERPHENYL-D14	-qc-	108		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.026		mg/L				.12		4165-62-7
% recovery PHENOL-D5	-qc-	20		% REC	10.0	94.0				4165-62-7
Surrogate.. 2-FLUOROPHENOL	-qc-	.037		mg/L				.12		367-12-4
% recovery 2-FLUOROPHENOL	-qc-	30		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.061		mg/L				.12		118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	49		% REC	10.0	123.0				118-79-6

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 15:15 JWJ (12459) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

OPCA-MW-5 GRAB	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G030006 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .029		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/15/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:10 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

OPCA-MW-5 GRAB	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G030006 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/15/99 Prepared: 06/18/99 (12434) Analyzed: 06/18/99 10:00 TB (12434) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

OPCA-MW-5 GRAB	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G030006 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/15/99 Prepared: 06/17/99 (12484) Analyzed: 06/17/99 15:00 CBS (12484) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

OPCA-MW-5 GRAB	Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G030006 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 16:29 jam (12503) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER

OPCA-MW-4 GRAB Dilution Factor: ***1.00*** %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G030007 8082W-BBL001									
Analyte.... AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte.... AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte.... AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte.... AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte.... AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte.... AROCLOR-1254	<Hit>	.89		ug/L			*.050		11097-69-1
Analyte.... AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc-	.13		ug/L				.29	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc-	51		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc-	.19		ug/L				.29	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc-	78		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 14:42 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-4 GRAB Dilution Factor: *1.00* %Solid:

9F0G030007 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	100		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.050		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	99		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.056		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	112		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/18/99 (12450) Analyzed: 06/19/99 17:54 ra (12462) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

OPCA-MW-4 GRAB Dilution Factor: *1.00* %Solid:

9F0G030007 8270W-BBL001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .010	U	mg/L			*.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .010	U	mg/L			*.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND .010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND .021	U	mg/L			*.021		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND .010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND .052	U	mg/L			*.052		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND .010	U	mg/L			*.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND .052	U	mg/L			*.052		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND .052	U	mg/L			*.052		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND .010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND .010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND .052	U	mg/L			*.052		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND .052	U	mg/L			*.052		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND .010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND .010	U	mg/L			*.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND .021	U	mg/L			*.021		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND .010	U	mg/L			*.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND .010	U	mg/L			*.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND .010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND .010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND .052	U	mg/L			*.052		91-59-8
Analyte.... 2-NITROANILINE	ND .052	U	mg/L			*.052		88-74-4
Analyte.... 2-NITROPHENOL	ND .021	U	mg/L			*.021		88-75-5
Analyte.... 2-PICOLINE	ND .010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .052	U	mg/L			*.052		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND .052	U	mg/L			*.052		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND .021	U	mg/L			*.021		
Analyte.... 3-METHYLCHOLANTHRENE	ND .021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND .052	U	mg/L			*.052		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND .010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND .021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND .010	U	mg/L			*.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND .010	U	mg/L			*.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND .021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND .052	U	mg/L			*.052		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND .010	U	mg/L			*.010		7005-72-3
Analyte.... 4-NITROANILINE	ND .052	U	mg/L			*.052		100-01-6
Analyte.... 4-NITROPHENOL	ND .052	U	mg/L			*.052		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND .052	U	mg/L			*.052		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND .052	U	mg/L			*.052		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND .052	U	mg/L			*.052		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .021	U	mg/L			*.021		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND .052	U	mg/L			*.052		122-09-8
Analyte.... ACENAPHTHENE	ND .010	U	mg/L			*.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND .010	U	mg/L			*.010		208-96-8
Analyte.... ACETOPHENONE	ND .010	U	mg/L			*.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	ANILINE	ND	.010	U	mg/L			*.010		62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010		120-12-7
Analyte....	ARAMITE	ND	.021	U	mg/L			*.021		140-57-8
Analyte....	BENZIDINE	ND	.021	U	mg/L			*.021		92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010		56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010		50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010		205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010		191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010		207-08-9
Analyte....	BENZYL ALCOHOL	ND	.021	U	mg/L			*.021		100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010		111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010		111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010		108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010		117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021		85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010		218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010		84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010		117-84-0
Analyte....	DIALLATE	ND	.021	U	mg/L			*.021		2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021		53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010		132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010		84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010		131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010		122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010		206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010		86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021		193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010		465-73-6
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.052	U	mg/L			*.052		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021		924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021		621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021		930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			*.010		91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			*.010		98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010		126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			*.010		95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.052	U	mg/L			*.052		60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010		608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			*.010		46-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.052	U	mg/L			*.052		82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PENTACHLOROPHENOL	ND	.052	U	mg/L			*.052			87-86-5
Analyte.... PHENACETIN	ND	.052	U	mg/L			*.052			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			*.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-2
Analyte.... PYRENE	ND	.010	U	mg/L			*.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.086		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	69		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.095		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	76		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.13		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	102		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.037		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	30		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.055		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	44		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.099		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	79		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 15:24 JWJ (12459) Method
Analytical Run: ***001*** EDD Method Code: **6/7000** WATER

				Recovery			
OPCA-MW-4 GRAB	Dilution Factor: ***1.00*** %Solid:			Acceptance		Spike	F
-							
9F0G030007 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .037		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/15/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:11 (12437) Method SW7470
Analytical Run: ***001*** EDD Method Code: **7470A** WATER

				Recovery			
OPCA-MW-4 GRAB	Dilution Factor: ***1.00*** %Solid:			Acceptance		Spike	F
-							
9F0G030007 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/15/99 Prepared: 06/18/99 (12434) Analyzed: 06/18/99 10:00 TB (12434) Method
Analytical Run: ***001*** EDD Method Code: **9012** WATER

				Recovery			
OPCA-MW-4 GRAB	Dilution Factor: ***1.00*** %Solid:			Acceptance		Spike	F
-							
9F0G030007 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/15/99 Prepared: 06/21/99 (12484) Analyzed: 06/21/99 09:00 CBS (12484) Method
Analytical Run: ***001*** EDD Method Code: **9030** WATER

				Recovery			
OPCA-MW-4 GRAB	Dilution Factor: ***1.00*** %Solid:			Acceptance		Spike	F
-							
9F0G030007 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 16:45 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER

OPCA-MW-2 GRAB Dilution Factor: *1.00* %Solid:

					Recovery				F
					Acceptance			Spike	
9F0G030008	8082W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND .050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND .050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND .050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND .050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND .050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	ND .050	U	ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND .050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc- .12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc- 48		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc- .20		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc- 78		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 15:21 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-2 GRAB Dilution Factor: *1.00* %Solid:

9F0G030008 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.048		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	95		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	107		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/18/99 (12450) Analyzed: 06/19/99 18:40 ra (12462) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

OPCA-MW-2 GRAB Dilution Factor: *1.00* %Solid:

9F0G030008 8270W-BBL001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS.
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Analyte.... 4-NITROPHENOL	ND	.050	U	mg/L			.050		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050		122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010		208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	ANILINE	ND	.010	U	mg/L			.010		62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			.010		120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			.020		140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			.020		92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010		56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			.010		50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010		205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010		191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010		207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			.020		100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010		111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010		111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010		108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010		117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020		85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			.010		218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010		84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010		117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			.020		2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020		53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010		132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010		84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010		131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010		122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010		62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010		206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			.010		86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020		193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			.010		465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020		924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020		621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020		930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			.010		91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			.010		98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010		126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			.010		95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050		60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			.010		608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			.010		46-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050		82-68-8

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-5
Analyte.... PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.076		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	61		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.096		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	77		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.091		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	73		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.038		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	31		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.059		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	47		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.098		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	78		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 15:45 JWJ (12459) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

					Recovery				F
OPCA-MW-2 GRAB	Dilution Factor: 1.00 %Solid:				Acceptance			Spike	
-									
9F0G030008 6010W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND	.013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND	.0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit>	.032		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND	.060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND	.013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND	.033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND	.060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND	.13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND	.060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND	.30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND	.0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND	.013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND	.060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND	.026	U	mg/L			.026		7440-66-6

Collected: 06/15/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:15 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

					Recovery				F
OPCA-MW-2 GRAB	Dilution Factor: 1.00 %Solid:				Acceptance			Spike	
-									
9F0G030008 7470W-CWP001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND	.00050	U	mg/L			.00050		7439-97-6

Collected: 06/15/99 Prepared: 06/18/99 (12434) Analyzed: 06/18/99 10:00 TB (12434) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

					Recovery				F
OPCA-MW-2 GRAB	Dilution Factor: 1.00 %Solid:				Acceptance			Spike	
-									
9F0G030008 9012W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND	.020	U	mg/L			.020		57-12-5

Collected: 06/15/99 Prepared: 06/21/99 (12484) Analyzed: 06/21/99 09:00 CBS (12484) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

					Recovery				F
OPCA-MW-2 GRAB	Dilution Factor: 1.00 %Solid:				Acceptance			Spike	
-									
9F0G030008 9030W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND	5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 17:02 jam (12503) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER

DUP-1 Dilution Factor: ***1.00*** %Solid:

					Recovery				F
					Acceptance			Spike	
9F0G030009	8082W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	ND	.050	U	ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.13		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	51		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.20		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	82		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 16:00 mam (12500) Method

Analytical Run: ***001*** EDD Method Code: **8260AC** WATER

DUP-1 Dilution Factor: ***1.00*** %Solid:

9F0G030009 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

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Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.051		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	102		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.051		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	102		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.053		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	106		% REC	70.0	121.0				17060-07-0

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12501) Analyzed: 06/22/99 18:59 ra (12502) Method

Analytical Run: *001* EDD Method Code: **8270B** WATER

DUP-1 Dilution Factor: *1.00* %Solid:

9F0G030009 8270W-BBL001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Analyte.... 4-NITROPHENOL	ND	.050	U	mg/L			.050		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050		122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010		208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	ANILINE	ND	.010	U	mg/L			.010		62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			.010		120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			.020		140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			.020		92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010		56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			.010		50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010		205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010		191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010		207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			.020		100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010		111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010		111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010		108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010		117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020		85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			.010		218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010		84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010		117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			.020		2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020		53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010		132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010		84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010		131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010		122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010		62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010		206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			.010		86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020		193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			.010		465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020		924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020		621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020		930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			.010		91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			.010		98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010		126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			.010		95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050		60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			.010		608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			.010		76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050		82-68-8

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-2
Analyte.... PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.080		mg/L				.12		4165-60-0
% recovery NITROBENZENE-D5	-qc-	64		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.085		mg/L				.12		321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	68		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.16		mg/L				.12		98904-43-9
% recovery TERPHENYL-D14	-qc-	125		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.036		mg/L				.12		4165-62-2
% recovery PHENOL-D5	-qc-	29		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.057		mg/L				.12		367-12-4
% recovery 2-FLUOROPHENOL	-qc-	45		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.092		mg/L				.12		118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	74		% REC	10.0	123.0				118-79-6

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 15:55 JWJ (12459) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

DUP-1	Dilution Factor: 1.00 %Solid:			Recovery Acceptance		Spike	F
9F0G030009 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .034		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/15/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:16 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

DUP-1	Dilution Factor: 1.00 %Solid:			Recovery Acceptance		Spike	F
9F0G030009 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/15/99 Prepared: 06/18/99 (12434) Analyzed: 06/18/99 10:00 TB (12434) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

DUP-1	Dilution Factor: 1.00 %Solid:			Recovery Acceptance		Spike	F
9F0G030009 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/15/99 Prepared: 06/21/99 (12484) Analyzed: 06/21/99 09:00 CBS (12484) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

DUP-1	Dilution Factor: 1.00 %Solid:			Recovery Acceptance		Spike	F
9F0G030009 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/15/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 16:38 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

TRIP BLANK Dilution Factor: *1.00* %Solid:

9F0G030010 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte....	TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte....	TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte....	TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte....	VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate..	TOLUENE-D8	-qc-	.051		mg/L					.050	2037-26-5
% recovery	TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate..	4-BROMOFLUOROBENZENE	-qc-	.050		mg/L					.050	460-00-4
% recovery	4-BROMOFLUOROBENZENE	-qc-	99		% REC	74.0	121.0				460-00-4
Surrogate..	1,2-DICHLOROETHANE-D4	-qc-	.055		mg/L					.050	17060-07-0
% recovery	1,2-DICHLOROETHANE-D4	-qc-	109		% REC	70.0	121.0				17060-07-0

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

LABORATORY QC

Collected: 06/17/99 Prepared: 06/17/99 (12484) Analyzed: 06/17/99 15:00 CBS (12484) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

TOTAL SULFIDE IN WATER MB Dilution Factor: 1.00 %Solid:

-	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MB CAS:
9F0G001388 9030W-BBL001-MB								
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

Collected: 06/17/99 Prepared: 06/17/99 (12484) Analyzed: 06/17/99 15:00 CBS (12484) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

TOTAL SULFIDE IN WATER LCS Dilution Factor: 1.00 %Solid:

-	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	LCS CAS:
9F0G001389 9030W-BBL001-LCS								
Analyte.... SULFIDE	<Hit> 64.0		mg/L			5.0		18496-25-8
% recovery SULFIDE	-qc- 89		mg/L	80.0	120.0			18496-25-8

Collected: 06/17/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 13:28 JWJ (12459) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

TOTAL METALS IN A WATER MB Dilution Factor: 1.00 %Solid:

-	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MB CAS:
9F0G001283 6010W-BBL001								
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/17/99 Prepared: 06/17/99 (12425) Analyzed: 06/18/99 13:37 JWJ (12459) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

TOTAL METALS IN A WATER LCS Dilution Factor: 1.00 %Solid:

-	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	LCS CAS:
9F0G001284 6010W-BBL001-LCS								
Spike..... SILVER, TOTAL	-qc- 2.1		mg/L				2.0	7440-22-4
% recovery SILVER, TOTAL	-qc- 106		% REC	80.0	120.0			7440-22-4
Spike..... ARSENIC, TOTAL	-qc- 2.0		mg/L				2.0	7440-38-2
% recovery ARSENIC, TOTAL	-qc- 102		% REC	80.0	120.0			7440-38-2
Spike..... BARIUM, TOTAL	-qc- 2.1		mg/L				2.0	7440-39-3
% recovery BARIUM, TOTAL	-qc- 104		% REC	80.0	120.0			7440-39-3
Spike..... BERYLLIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-41-7
% recovery BERYLLIUM, TOTAL	-qc- 100		% REC	80.0	120.0			7440-41-7
Spike..... CADMIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-43-9

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% recovery CADMIUM, TOTAL	-qc-	102		% REC	80.0	120.0			7440-43-9
Spike..... COBALT, TOTAL	-qc-	2.0		mg/L				2.0	7440-48-4
% recovery COBALT, TOTAL	-qc-	102		% REC	80.0	120.0			7440-48-4
Spike..... CHROMIUM, TOTAL	-qc-	2.0		mg/L				2.0	7440-47-3
% recovery CHROMIUM, TOTAL	-qc-	102		% REC	80.0	120.0			7440-47-3
Spike..... COPPER, TOTAL	-qc-	2.1		mg/L				2.0	7440-50-8
% recovery COPPER, TOTAL	-qc-	103		% REC	80.0	120.0			7440-50-8
Spike..... NICKEL, TOTAL	-qc-	2.0		mg/L				2.0	7440-02-0
% recovery NICKEL, TOTAL	-qc-	102		% REC	80.0	120.0			7440-02-0
Spike..... LEAD, TOTAL	-qc-	2.0		mg/L				2.0	7439-92-1
% recovery LEAD, TOTAL	-qc-	101		% REC	80.0	120.0			7439-92-1
Spike..... ANTIMONY, TOTAL	-qc-	2.0		mg/L				2.0	7440-36-0
% recovery ANTIMONY, TOTAL	-qc-	101		% REC	80.0	120.0			7440-36-0
Spike..... TIN, TOTAL	-qc-	1.7		mg/L				2.0	7440-31-5
% recovery TIN, TOTAL	-qc-	85		% REC	80.0	120.0			7440-31-5
Spike..... SELENIUM, TOTAL	-qc-	2.0		mg/L				2.0	7782-49-2
% recovery SELENIUM, TOTAL	-qc-	101		% REC	80.0	120.0			7782-49-2
Spike..... THALLIUM, TOTAL	-qc-	2.0		mg/L				2.0	7440-28-0
% recovery THALLIUM, TOTAL	-qc-	102		% REC	80.0	120.0			7440-28-0
Spike..... VANADIUM, TOTAL	-qc-	2.0		mg/L				2.0	7440-62-2
% recovery VANADIUM, TOTAL	-qc-	102		% REC	80.0	120.0			7440-62-2
Spike..... ZINC, TOTAL	-qc-	2.1		mg/L				2.0	7440-66-6
% recovery ZINC, TOTAL	-qc-	104		% REC	80.0	120.0			7440-66-6

Collected: 06/18/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:01 (12437) Method SW7470

Analytical Run: ***001*** EDD Method Code: **7470A** WATER

TOTAL HG IN WATER Dilution Factor: ***1.00*** %Solid:

		Recovery						MB
		Acceptance					Spike	
9F0G001294 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/18/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:03 (12437) Method SW7470

Analytical Run: ***001*** EDD Method Code: **7470A** WATER

TOTAL HG IN WATER Dilution Factor: ***1.00*** %Solid:

		Recovery						LCS
		Acceptance					Spike	
9F0G001295 7470W-CWP001-LCS	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Spike..... MERCURY, TOTAL	-qc- .0024		mg/L				.0020	7439-97-6
% recovery MERCURY, TOTAL	-qc- 118		% REC	80.0	120.0			7439-97-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/18/99 Prepared: 06/18/99 (12450) Analyzed: 06/21/99 22:30 ra (12491) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER
METHOD BLANK BNA Dilution Factor: *1.00* %Solid:

				Recovery				
				Acceptance				MB
9FOG001328 8270W-BBL001	Result:		QF:	Units:	Low:	High:	PROL:	Spike Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.011	U	mg/L			*.011		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.011	U	mg/L			*.011		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.011	U	mg/L			*.011		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.011	U	mg/L			*.011		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.021	U	mg/L			*.021		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.011	U	mg/L			*.011		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.053	U	mg/L			*.053		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.011	U	mg/L			*.011		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.053	U	mg/L			*.053		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.053	U	mg/L			*.053		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.011	U	mg/L			*.011		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.011	U	mg/L			*.011		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.011	U	mg/L			*.011		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.011	U	mg/L			*.011		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.011	U	mg/L			*.011		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.053	U	mg/L			*.053		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.053	U	mg/L			*.053		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.011	U	mg/L			*.011		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.011	U	mg/L			*.011		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.021	U	mg/L			*.021		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.011	U	mg/L			*.011		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.011	U	mg/L			*.011		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.011	U	mg/L			*.011		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.011	U	mg/L			*.011		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.053	U	mg/L			*.053		91-59-8
Analyte.... 2-NITROANILINE	ND	.053	U	mg/L			*.053		88-74-4
Analyte.... 2-NITROPHENOL	ND	.021	U	mg/L			*.021		88-75-5
Analyte.... 2-PICOLINE	ND	.011	U	mg/L			*.011		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.053	U	mg/L			*.053		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.053	U	mg/L			*.053		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.021	U	mg/L			*.021		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND	.053	U	mg/L			*.053		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.011	U	mg/L			*.011		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.011	U	mg/L			*.011		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.011	U	mg/L			*.011		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.053	U	mg/L			*.053		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.011	U	mg/L			*.011		7005-72-3
Analyte.... 4-NITROANILINE	ND	.053	U	mg/L			*.053		100-01-6
Analyte.... 4-NITROPHENOL	ND	.053	U	mg/L			*.053		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.053	U	mg/L			*.053		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.053	U	mg/L			*.053		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.053	U	mg/L			*.053		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.021	U	mg/L			*.021		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.053	U	mg/L			*.053		122-09-8
Analyte.... ACENAPHTHENE	ND	.011	U	mg/L			*.011		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.011	U	mg/L			*.011		208-96-8
Analyte.... ACETOPHENONE	ND	.011	U	mg/L			*.011		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... ANILINE	ND	.011	U	mg/L			*.011		62-53-3
Analyte.... ANTHRACENE	ND	.011	U	mg/L			*.011		120-12-7
Analyte.... ARAMITE	ND	.021	U	mg/L			*.021		140-57-8
Analyte.... BENZIDINE	ND	.021	U	mg/L			*.021		92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.011	U	mg/L			*.011		56-55-3
Analyte.... BENZO(A)PYRENE	ND	.011	U	mg/L			*.011		50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.011	U	mg/L			*.011		205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.011	U	mg/L			*.011		191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.011	U	mg/L			*.011		207-08-9
Analyte.... BENZYL ALCOHOL	ND	.021	U	mg/L			*.021		100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.011	U	mg/L			*.011		111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.011	U	mg/L			*.011		111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.011	U	mg/L			*.011		108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.011	U	mg/L			*.011		117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021		85-68-7
Analyte.... CHRYSENE	ND	.011	U	mg/L			*.011		218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.011	U	mg/L			*.011		84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.011	U	mg/L			*.011		117-84-0
Analyte.... DIALLATE	ND	.021	U	mg/L			*.021		2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021		53-70-3
Analyte.... DIBENZOFURAN	ND	.011	U	mg/L			*.011		132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.011	U	mg/L			*.011		84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.011	U	mg/L			*.011		131-11-3
Analyte.... DIPHENYLAMINE	ND	.011	U	mg/L			*.011		122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		62-50-0
Analyte.... FLUORANTHENE	ND	.011	U	mg/L			*.011		206-44-0
Analyte.... FLUORENE	ND	.011	U	mg/L			*.011		86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.011	U	mg/L			*.011		118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021		87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.011	U	mg/L			*.011		77-47-4
Analyte.... HEXACHLOROETHANE	ND	.011	U	mg/L			*.011		67-72-1
Analyte.... HEXACHLOROPHENE	ND	.021	U	mg/L			*.021		70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.011	U	mg/L			*.011		1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021		193-39-5
Analyte.... ISODRIN	ND	.011	U	mg/L			*.011		465-73-6
Analyte.... ISOPHORONE	ND	.021	U	mg/L			*.021		78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte.... METHAPYRILENE	ND	.053	U	mg/L			*.053		91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021		924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021		621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.011	U	mg/L			*.011		55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021		62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.011	U	mg/L			*.011		86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021		10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.011	U	mg/L			*.011		59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.011	U	mg/L			*.011		100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021		930-55-2
Analyte.... NAPHTHALENE	ND	.011	U	mg/L			*.011		91-20-3
Analyte.... NITROBENZENE	ND	.011	U	mg/L			*.011		98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.011	U	mg/L			*.011		126-68-1
Analyte.... O-TOLUIDINE	ND	.011	U	mg/L			*.011		95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.053	U	mg/L			*.053		60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.011	U	mg/L			*.011		608-93-5
Analyte.... PENTACHLOROETHANE	ND	.011	U	mg/L			*.011		76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.053	U	mg/L			*.053		82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PENTACHLOROPHENOL	ND	.053	U	mg/L			*.053			87-86-5
Analyte.... PHENACETIN	ND	.053	U	mg/L			*.053			62-44-2
Analyte.... PHENANTHRENE	ND	.011	U	mg/L			*.011			85-01-8
Analyte.... PHENOL	ND	.011	U	mg/L			*.011			108-95-2
Analyte.... PRONAMIDE	ND	.011	U	mg/L			*.011			23950-58-5
Analyte.... PYRENE	ND	.011	U	mg/L			*.011			129-00-0
Analyte.... PYRIDINE	ND	.011	U	mg/L			*.011			110-86-1
Analyte.... SAFROLE	ND	.011	U	mg/L			*.011			94-59-7
Analyte.... THIONAZIN	ND	.011	U	mg/L			*.011			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.11		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	88		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.10		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	83		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.15		mg/L					.12	92904-43-9
% recovery TERPHENYL-D14	-qc-	123		% REC	33.0	141.0				92904-43-9
Surrogate.. PHENOL-D5	-qc-	.042		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	34		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.060		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	48		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.11		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	91		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/18/99 Prepared: 06/18/99 (12450) Analyzed: 06/21/99 23:16 ra (12491) Method

Analytical Run: 001 EDD Method Code: 8270B WATER

LAB CONTROL SPIKE BNA Dilution Factor: 1.00 %Solid:

					Recovery Acceptance				
9FOG001329 8270W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PRQL:	Spike Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			*.010		95-94-3
Spike..... 1,2,4-TRICHLOROBENZENE	-qc-	.040		mg/L				.0[illegible]	120-82-1
% recovery 1,2,4-TRICHLOROBENZENE	-qc-	64		% REC	40.0	95.0			120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			*.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.051	U	mg/L			*.051		99-65-0
Spike..... 1,4-DICHLOROBENZENE	-qc-	.035		mg/L				.062	106-46-7
% recovery 1,4-DICHLOROBENZENE	-qc-	56		% REC	40.0	95.0			106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.051	U	mg/L			*.051		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.051	U	mg/L			*.051		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.051	U	mg/L			*.051		51-28-5
Spike..... 2,4-DINITROTOLUENE	-qc-	.034		mg/L				.0[illegible]	121-14-2
% recovery 2,4-DINITROTOLUENE	-qc-	54		% REC	25.0	95.0			121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			*.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010		91-58-7
Spike..... 2-CHLOROPHENOL	-qc-	.089		mg/L				.12	95-57-8
% recovery 2-CHLOROPHENOL	-qc-	71		% REC	30.0	120.0			95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.051	U	mg/L			*.051		91-59-8
Analyte.... 2-NITROANILINE	ND	.051	U	mg/L			*.051		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			*.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.051	U	mg/L			*.051		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.051	U	mg/L			*.051		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			*.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			*.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.051	U	mg/L			*.051		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			*.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010		101-55-3
Spike..... 4-CHLORO-3-METHYLPHENOL	-qc-	.094		mg/L				.12	59-50-7
% recovery 4-CHLORO-3-METHYLPHENOL	-qc-	76		% REC	25.0	95.0			59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			*.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.051	U	mg/L			*.051		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.051	U	mg/L			*.051		100-01-6
Spike..... 4-NITROPHENOL	-qc-	.021		mg/L				.12	100-02-7
% recovery 4-NITROPHENOL	-qc-	17		% REC	10.0	80.0			100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.051	U	mg/L			*.051		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.051	U	mg/L			*.051		106-50-3

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	5-NITRO-O-TOLUIDINE	ND	.051	U	mg/L			*.051		[illegible]
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.051	U	mg/L			*.051		[illegible]
Spike.....	ACENAPHTHENE	-qc-	.050		mg/L				.062	[illegible]
% recovery	ACENAPHTHENE	-qc-	80		% REC	50.0	115.0			[illegible]
Analyte....	ACENAPHTHYLENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	ACETOPHENONE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	ANILINE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	ARAMITE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	BENZIDINE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	DIALLATE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		[illegible]
Analyte....	METHAPYRILENE	ND	.051	U	mg/L			*.051		[illegible]
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			*.020		[illegible]
Spike.....	N-NITROSODI-N-PROPYLAMINE	-qc-	.043		mg/L				.062	[illegible]
% recovery	N-NITROSODI-N-PROPYLAMINE	-qc-	69		% REC	45.0	115.0			[illegible]
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			*.020		[illegible]
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010		[illegible]
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			*.020		[illegible]

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	NAPHTHALENE	ND	.010	U	mg/L			*.010			91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			*.010			98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010			126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			*.010			95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.051	U	mg/L			*.051			60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010			608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			*.010			76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.051	U	mg/L			*.051			82-68-8
Spike.....	PENTACHLOROPHENOL	-qc-	.11		mg/L					.12	87-86-5
% recovery	PENTACHLOROPHENOL	-qc-	85		% REC	10.0	100.0				87-86-5
Analyte....	PHENACETIN	ND	.051	U	mg/L			*.051			62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Spike.....	PHENOL	-qc-	.043		mg/L					.12	108-95-2
% recovery	PHENOL	-qc-	35		mg/L	15.0	110.0				108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-5
Spike.....	PYRENE	-qc-	.065		mg/L					.062	129-00-0
% recovery	PYRENE	-qc-	104		% REC	30.0	135.0				129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.099		mg/L					.12	4165-60-0
% recovery	NITROBENZENE-D5	-qc-	80		% REC	35.0	114.0				4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.095		mg/L					.12	321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	76		% REC	43.0	116.0				321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.13		mg/L					.12	92064-43-9
% recovery	TERPHENYL-D14	-qc-	100		% REC	33.0	141.0				92064-43-9
Surrogate..	PHENOL-D5	-qc-	.040		mg/L					.12	4165-62-2
% recovery	PHENOL-D5	-qc-	32		% REC	10.0	94.0				4165-62-2
Surrogate..	2-FLUOROPHENOL	-qc-	.059		mg/L					.12	367-12-4
% recovery	2-FLUOROPHENOL	-qc-	47		% REC	21.0	100.0				367-12-4
Surrogate..	2,4,6-TRIBROMOPHENOL	-qc-	.12		mg/L					.12	118-79-6
% recovery	2,4,6-TRIBROMOPHENOL	-qc-	95		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/21/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:08 jam (12524) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER | Recovery | | | DF

METHOD BLANK PCB Dilution Factor: *1.00* %Solid: | Acceptance | | Spike |

-

9F0G001373	8082W-BBL001	Result:		QF:	Units:	Low:	High:	PQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	ND	.050	U	ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	50		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.17		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	66		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/21/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:58 jam (12524) Method SW8082

Analytical Run: *001* EDD Method Code: 8082 WATER | Recovery | | LCS

LAB CONTROL SPIKE PCB Dilution Factor: *1.00* %Solid: | Acceptance | | Spike |

9F0G001374	8082W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PPQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Spike.....	AROCLOR-1254	-qc-	1.3		ug/L				1.2	11097-69-1
% recovery	AROCLOR-1254	-qc-	104		% REC	60.0	130.0			11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	48		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.17		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	70		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/21/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 09:34 mam (12500) Method

Analytical Run: *001* EDD Method Code: 8260AC WATER

METHOD BLANK Dilution Factor: *1.00* %Solid:

9F0G001401 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MB CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.051		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.051		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	102		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.053		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	107		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/21/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 07:38 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

LABORATORY CONTROL SAMPLE Dilution Factor: *1.00* %Solid:

9F0G001399 8260W-APP001-LCS	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	LCS CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Spike..... 1,1-DICHLOROETHENE	-qc-	.027		mg/L				.025	75-35-4
% recovery 1,1-DICHLOROETHENE	-qc-	109		% REC	75.0	125.0			75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Spike..... TRICHLOROETHENE	-qc-	.027		mg/L				.025	79-01-6
% recovery TRICHLOROETHENE	-qc-	109		% REC	75.0	125.0			79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Spike..... BENZENE	-qc-	.027		mg/L				.025	71-43-2
% recovery BENZENE	-qc-	108		% REC	75.0	125.0			71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Spike..... TOLUENE	-qc-	.027		mg/L				.025	108-88-3
% recovery TOLUENE	-qc-	110		% REC	75.0	125.0			108-88-3
Spike..... CHLOROBENZENE	-qc-	.027		mg/L				.025	108-90-7
% recovery CHLOROBENZENE	-qc-	109		% REC	75.0	125.0			108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010			97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050			74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20			78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010			126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010			80-62-6
Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.048		mg/L				.050		460-00-1
% recovery 4-BROMOFLUOROBENZENE	-qc-	95		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.050		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	99		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/22/99 Prepared: 06/22/99 (12501) Analyzed: 06/22/99 20:30 ra (12502) Method

Analytical Run: *001* EDD Method Code: **8270B** WATER

METHOD BLANK BNA Dilution Factor: *1.00* %Solid:

					Recovery				MB
					Acceptance			Spike	
9F0G001402	8270W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	1,2,4,5-TETRACHLOROBENZENE	ND .010	U	mg/L			.010		95-94-3
Analyte....	1,2,4-TRICHLOROBENZENE	ND .010	U	mg/L			.010		120-82-1
Analyte....	1,2-DICHLOROBENZENE	ND .010	U	mg/L			.010		95-50-1
Analyte....	1,2-DIPHENYLHYDRAZINE	ND .010	U	mg/L			.010		122-66-7
Analyte....	1,3,5-TRINITROBENZENE	ND .020	U	mg/L			.020		99-35-4
Analyte....	1,3-DICHLOROBENZENE	ND .010	U	mg/L			.010		541-73-1
Analyte....	1,3-DINITROBENZENE	ND .050	U	mg/L			.050		99-65-0
Analyte....	1,4-DICHLOROBENZENE	ND .010	U	mg/L			.010		106-46-7
Analyte....	1,4-NAPHTHOQUINONE	ND .050	U	mg/L			.050		130-15-4
Analyte....	1-NAPHTHHYLAMINE	ND .050	U	mg/L			.050		134-32-7
Analyte....	2,3,4,6-TETRACHLOROPHENOL	ND .010	U	mg/L			.010		58-90-2
Analyte....	2,4,5-TRICHLOROPHENOL	ND .010	U	mg/L			.010		95-95-4
Analyte....	2,4,6-TRICHLOROPHENOL	ND .010	U	mg/L			.010		88-06-2
Analyte....	2,4-DICHLOROPHENOL	ND .010	U	mg/L			.010		120-83-2
Analyte....	2,4-DIMETHYLPHENOL	ND .010	U	mg/L			.010		105-67-9
Analyte....	2,4-DINITROPHENOL	ND .050	U	mg/L			.050		51-28-5
Analyte....	2,4-DINITROTOLUENE	ND .050	U	mg/L			.050		121-14-2
Analyte....	2,6-DICHLOROPHENOL	ND .010	U	mg/L			.010		87-65-0
Analyte....	2,6-DINITROTOLUENE	ND .010	U	mg/L			.010		606-20-2
Analyte....	2-ACETYLAMINOFLUORENE	ND .020	U	mg/L			.020		53-96-3
Analyte....	2-CHLORONAPHTHALENE	ND .010	U	mg/L			.010		91-58-7
Analyte....	2-CHLOROPHENOL	ND .010	U	mg/L			.010		95-57-8
Analyte....	2-METHYLNAPHTHALENE	ND .010	U	mg/L			.010		91-57-6
Analyte....	2-METHYLPHENOL	ND .010	U	mg/L			.010		95-48-7
Analyte....	2-NAPHTHYLAMINE	ND .050	U	mg/L			.050		91-59-8
Analyte....	2-NITROANILINE	ND .050	U	mg/L			.050		88-74-4
Analyte....	2-NITROPHENOL	ND .020	U	mg/L			.020		88-75-5
Analyte....	2-PICOLINE	ND .010	U	mg/L			.010		109-06-8
Analyte....	3,3'-DIMETHYLBENZIDINE	ND .050	U	mg/L			.050		119-93-7
Analyte....	3,3-DICHLOROBENZIDINE	ND .050	U	mg/L			.050		91-94-1
Analyte....	3- & 4-METHYLPHENOL	ND .020	U	mg/L			.020		
Analyte....	3-METHYLCHOLANTHRENE	ND .020	U	mg/L			.020		56-49-5
Analyte....	3-NITROANILINE	ND .050	U	mg/L			.050		99-09-2
Analyte....	4,6-DINITRO-2-METHYLPHENOL	ND .010	U	mg/L			.010		534-52-1
Analyte....	4-AMINOBIPHENYL	ND .020	U	mg/L			.020		92-67-1
Analyte....	4-BROMOPHENYL PHENYL ETHER	ND .010	U	mg/L			.010		101-55-3
Analyte....	4-CHLORO-3-METHYLPHENOL	ND .010	U	mg/L			.010		59-50-7
Analyte....	4-CHLOROANILINE	ND .020	U	mg/L			.020		106-47-8
Analyte....	4-CHLOROBENZILATE	ND .050	U	mg/L			.050		510-15-6
Analyte....	4-CHLORODIPHENYLETHER	ND .010	U	mg/L			.010		7005-72-3
Analyte....	4-NITROANILINE	ND .050	U	mg/L			.050		100-01-6
Analyte....	4-NITROPHENOL	ND .050	U	mg/L			.050		100-02-7
Analyte....	4-NITROQUINOLINE-1-OXIDE	ND .050	U	mg/L			.050		56-57-5
Analyte....	4-PHENYLENEDIAMINE	ND .050	U	mg/L			.050		106-50-3
Analyte....	5-NITRO-O-TOLUIDINE	ND .050	U	mg/L			.050		99-55-8
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .020	U	mg/L			.020		57-97-6
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND .050	U	mg/L			.050		122-09-8
Analyte....	ACENAPHTHENE	ND .010	U	mg/L			.010		83-32-9
Analyte....	ACENAPHTHYLENE	ND .010	U	mg/L			.010		208-96-8
Analyte....	ACETOPHENONE	ND .010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	ANILINE	ND	.010	U	mg/L			.010	
Analyte....	ANTHRACENE	ND	.010	U	mg/L			.010	
Analyte....	ARAMITE	ND	.020	U	mg/L			.020	
Analyte....	BENZIDINE	ND	.020	U	mg/L			.020	
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010	
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			.010	
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010	
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010	
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010	
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			.020	
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010	
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010	
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010	
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010	
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020	
Analyte....	CHRYSENE	ND	.010	U	mg/L			.010	
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010	
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010	
Analyte....	DIALLATE	ND	.020	U	mg/L			.020	
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020	
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010	
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010	
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010	
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010	
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010	
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010	
Analyte....	FLUORENE	ND	.010	U	mg/L			.010	
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010	
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020	
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010	
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010	
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020	
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010	
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020	
Analyte....	ISODRIN	ND	.010	U	mg/L			.010	
Analyte....	ISOPHORONE	ND	.020	U	mg/L			.020	
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020	
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050	
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010	
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020	
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020	
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010	
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020	
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010	
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020	
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010	
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010	
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020	
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			.010	
Analyte....	NITROBENZENE	ND	.010	U	mg/L			.010	
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010	
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			.010	
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050	
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			.010	
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			.010	
Analyte....	PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050	

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ON SITE CONSOLIDATION AREA

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Analyte....	PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte....	PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte....	PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte....	PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte....	PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-5
Analyte....	PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte....	PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte....	SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte....	THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.086		mg/L				.12		4165-60-0
% recovery	NITROBENZENE-D5	-qc-	69		% REC	35.0	114.0				4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.097		mg/L				.12		321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	77		% REC	43.0	116.0				321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.13		mg/L				.12		92903-43-3
% recovery	TERPHENYL-D14	-qc-	101		% REC	33.0	141.0				92903-43-3
Surrogate..	PHENOL-D5	-qc-	.034		mg/L				.12		4165-62-2
% recovery	PHENOL-D5	-qc-	27		% REC	10.0	94.0				4165-62-2
Surrogate..	2-FLUOROPHENOL	-qc-	.052		mg/L				.12		367-12-4
% recovery	2-FLUOROPHENOL	-qc-	42		% REC	21.0	100.0				367-12-4
Surrogate..	2,4,6-TRIBROMOPHENOL	-qc-	.093		mg/L				.12		118-79-6
% recovery	2,4,6-TRIBROMOPHENOL	-qc-	75		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/22/99 Prepared: 06/22/99 (12501) Analyzed: 06/22/99 19:45 ra (12502) Method

Analytical Run: *001* EDD Method Code: **8270B** WATER

LAB CONTROL SPIKE ,BNA Dilution Factor: *1.00* %Solid:

					Recovery			Spike	LCS
					Acceptance				
9F0G001403 8270W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PPQL:	Amount:	%REC:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Spike..... 1,2,4-TRICHLOROBENZENE	-qc-	.040		mg/L				.062	120-82-1
% recovery 1,2,4-TRICHLOROBENZENE	-qc-	63		% REC	40.0	95.0			120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Spike..... 1,4-DICHLOROBENZENE	-qc-	.033		mg/L				.062	106-46-7
% recovery 1,4-DICHLOROBENZENE	-qc-	52		% REC	40.0	95.0			106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Spike..... 2,4-DINITROTOLUENE	-qc-	.031		mg/L				.062	121-14-2
% recovery 2,4-DINITROTOLUENE	-qc-	50		% REC	25.0	95.0			121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Spike..... 2-CHLOROPHENOL	-qc-	.089		mg/L				.12	95-57-8
% recovery 2-CHLOROPHENOL	-qc-	71		% REC	30.0	120.0			95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Spike..... 4-CHLORO-3-METHYLPHENOL	-qc-	.089		mg/L				.12	59-50-7
% recovery 4-CHLORO-3-METHYLPHENOL	-qc-	72		% REC	25.0	95.0			59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Spike..... 4-NITROPHENOL	-qc-	.015		mg/L				.12	100-02-7
% recovery 4-NITROPHENOL	-qc-	12		% REC	10.0	80.0			100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3

CT&E Environmental Services Inc: Charleston, WV

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Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050			99-55-8
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020			57-97-6
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050			122-09-8
Spike.....	ACENAPHTHENE	-qc-	.051		mg/L					.062	83-32-9
% recovery	ACENAPHTHENE	-qc-	82		% REC	50.0	115.0				83-32-9
Analyte....	ACENAPHTHYLENE	ND	.010	U	mg/L			.010			208-96-8
Analyte....	ACETOPHENONE	ND	.010	U	mg/L			.010			98-86-2
Analyte....	ANILINE	ND	.010	U	mg/L			.010			62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			.010			120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			.020			140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			.020			92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010			56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			.010			50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010			205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010			191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010			207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			.020			100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010			111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010			111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010			108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010			117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020			85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			.010			218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010			84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010			117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			.020			2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020			53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010			132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010			84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010			131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010			122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010			62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010			206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			.010			86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010			118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020			87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010			77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010			67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020			70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010			1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020			193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			.010			465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020			78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020			120-58-1
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050			91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010			66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020			924-16-3
Spike.....	N-NITROSODI-N-PROPYLAMINE	-qc-	.032		mg/L					.062	621-64-7
% recovery	N-NITROSODI-N-PROPYLAMINE	-qc-	51		% REC	45.0	115.0				621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010			55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020			62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010			86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020			10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010			59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010			100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020			930-55-2

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... NAPHTHALENE	ND	.010	U	mg/L			.010			91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			.010			98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010			126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			.010			95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050			60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			.010			608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			.010			76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050			82-68-8
Spike..... PENTACHLOROPHENOL	-qc-	.084		mg/L					.12	87-86-5
% recovery PENTACHLOROPHENOL	-qc-	67		% REC	10.0	100.0				87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Spike..... PHENOL	-qc-	.041		mg/L					.12	108-95-2
% recovery PHENOL	-qc-	33		mg/L	15.0	110.0				108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-5
Spike..... PYRENE	-qc-	.047		mg/L					.062	129-00-0
% recovery PYRENE	-qc-	76		% REC	30.0	135.0				129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.078		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	62		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.080		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	64		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.16		mg/L					.12	92904-43-9
% recovery TERPHENYL-D14	-qc-	124		% REC	33.0	141.0				92904-43-9
Surrogate.. PHENOL-D5	-qc-	.035		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	28		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.054		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	43		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.11		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	85		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9F0G030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/17/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 11:04 ra (12462) Method

Analytical Run: *001* EDD Method Code: *8270B* WATER

METHOD BLANK BNA Dilution Factor: *1.00* %Solid:

				Recovery			
				Acceptance			Spike
9F0G001325 8270W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,2-DICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .011	U	mg/L			*.011	
Analyte.... 1,3,5-TRINITROBENZENE	ND .021	U	mg/L			*.021	
Analyte.... 1,3-DICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,3-DINITROBENZENE	ND .053	U	mg/L			*.053	
Analyte.... 1,4-DICHLOROBENZENE	ND .011	U	mg/L			*.011	
Analyte.... 1,4-NAPHTHOQUINONE	ND .053	U	mg/L			*.053	
Analyte.... 1-NAPHTHHYLAMINE	ND .053	U	mg/L			*.053	
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4-DICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4-DIMETHYLPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,4-DINITROPHENOL	ND .053	U	mg/L			*.053	
Analyte.... 2,4-DINITROTOLUENE	ND .053	U	mg/L			*.053	
Analyte.... 2,6-DICHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2,6-DINITROTOLUENE	ND .011	U	mg/L			*.011	
Analyte.... 2-ACETYLAMINOFLUORENE	ND .021	U	mg/L			*.021	
Analyte.... 2-CHLORONAPHTHALENE	ND .011	U	mg/L			*.011	
Analyte.... 2-CHLOROPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2-METHYLNAPHTHALENE	ND .011	U	mg/L			*.011	
Analyte.... 2-METHYLPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 2-NAPHTHYLAMINE	ND .053	U	mg/L			*.053	
Analyte.... 2-NITROANILINE	ND .053	U	mg/L			*.053	
Analyte.... 2-NITROPHENOL	ND .021	U	mg/L			*.021	
Analyte.... 2-PICOLINE	ND .011	U	mg/L			*.011	
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .053	U	mg/L			*.053	
Analyte.... 3,3-DICHLOROBENZIDINE	ND .053	U	mg/L			*.053	
Analyte.... 3- & 4-METHYLPHENOL	ND .021	U	mg/L			*.021	
Analyte.... 3-METHYLCHOLANTHRENE	ND .021	U	mg/L			*.021	
Analyte.... 3-NITROANILINE	ND .053	U	mg/L			*.053	
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 4-AMINOBIPHENYL	ND .021	U	mg/L			*.021	
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND .011	U	mg/L			*.011	
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND .011	U	mg/L			*.011	
Analyte.... 4-CHLOROANILINE	ND .021	U	mg/L			*.021	
Analyte.... 4-CHLOROBENZILATE	ND .053	U	mg/L			*.053	
Analyte.... 4-CHLORODIPHENYLETHER	ND .011	U	mg/L			*.011	
Analyte.... 4-NITROANILINE	ND .053	U	mg/L			*.053	
Analyte.... 4-NITROPHENOL	ND .053	U	mg/L			*.053	
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND .053	U	mg/L			*.053	
Analyte.... 4-PHENYLENEDIAMINE	ND .053	U	mg/L			*.053	
Analyte.... 5-NITRO-O-TOLUIDINE	ND .053	U	mg/L			*.053	
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .021	U	mg/L			*.021	
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND .053	U	mg/L			*.053	
Analyte.... ACENAPHTHENE	ND .011	U	mg/L			*.011	
Analyte.... ACENAPHTHYLENE	ND .011	U	mg/L			*.011	
Analyte.... ACETOPHENONE	ND .011	U	mg/L			*.011	

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Analyte....	ANILINE	ND	.011	U	mg/L			*.011	62-53-3
Analyte....	ANTHRACENE	ND	.011	U	mg/L			*.011	120-12-7
Analyte....	ARAMITE	ND	.021	U	mg/L			*.021	140-57-8
Analyte....	BENZIDINE	ND	.021	U	mg/L			*.021	92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.011	U	mg/L			*.011	56-55-3
Analyte....	BENZO(A)PYRENE	ND	.011	U	mg/L			*.011	50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.011	U	mg/L			*.011	205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.011	U	mg/L			*.011	191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.011	U	mg/L			*.011	207-08-9
Analyte....	BENZYL ALCOHOL	ND	.021	U	mg/L			*.021	100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.011	U	mg/L			*.011	111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.011	U	mg/L			*.011	111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.011	U	mg/L			*.011	108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.011	U	mg/L			*.011	117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021	85-68-7
Analyte....	CHRYSENE	ND	.011	U	mg/L			*.011	218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.011	U	mg/L			*.011	84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.011	U	mg/L			*.011	117-84-0
Analyte....	DIALLATE	ND	.021	U	mg/L			*.021	2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021	53-70-3
Analyte....	DIBENZOFURAN	ND	.011	U	mg/L			*.011	132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.011	U	mg/L			*.011	84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.011	U	mg/L			*.011	131-11-3
Analyte....	DIPHENYLAMINE	ND	.011	U	mg/L			*.011	122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.011	U	mg/L			*.011	62-50-0
Analyte....	FLUORANTHENE	ND	.011	U	mg/L			*.011	206-44-0
Analyte....	FLUORENE	ND	.011	U	mg/L			*.011	86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.011	U	mg/L			*.011	118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021	87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.011	U	mg/L			*.011	77-47-4
Analyte....	HEXACHLOROETHANE	ND	.011	U	mg/L			*.011	67-72-1
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021	70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.011	U	mg/L			*.011	1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021	193-39-5
Analyte....	ISODRIN	ND	.011	U	mg/L			*.011	465-73-6
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021	78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte....	METHAPYRILENE	ND	.053	U	mg/L			*.053	91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.011	U	mg/L			*.011	66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021	924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021	621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.011	U	mg/L			*.011	55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021	62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.011	U	mg/L			*.011	86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021	10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.011	U	mg/L			*.011	59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.011	U	mg/L			*.011	100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021	930-55-2
Analyte....	NAPHTHALENE	ND	.011	U	mg/L			*.011	91-20-3
Analyte....	NITROBENZENE	ND	.011	U	mg/L			*.011	98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.011	U	mg/L			*.011	126-68-1
Analyte....	O-TOLUIDINE	ND	.011	U	mg/L			*.011	95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.053	U	mg/L			*.053	60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.011	U	mg/L			*.011	608-93-5
Analyte....	PENTACHLOROETHANE	ND	.011	U	mg/L			*.011	76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.053	U	mg/L			*.053	82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	PENTACHLOROPHENOL	ND	.053	U	mg/L			*.053			87-86-5
Analyte....	PHENACETIN	ND	.053	U	mg/L			*.053			62-44-2
Analyte....	PHENANTHRENE	ND	.011	U	mg/L			*.011			85-01-8
Analyte....	PHENOL	ND	.011	U	mg/L			*.011			108-95-2
Analyte....	PRONAMIDE	ND	.011	U	mg/L			*.011			23950-58-5
Analyte....	PYRENE	ND	.011	U	mg/L			*.011			129-00-0
Analyte....	PYRIDINE	ND	.011	U	mg/L			*.011			110-86-1
Analyte....	SAFROLE	ND	.011	U	mg/L			*.011			94-59-7
Analyte....	THIONAZIN	ND	.011	U	mg/L			*.011			297-97-2
Surrogate..	NITROBENZENE-D5	-qc-	.085		mg/L				.12		4165-60-0
% recovery	NITROBENZENE-D5	-qc-	68		% REC	35.0	114.0				4165-60-0
Surrogate..	2-FLUOROBIPHENYL	-qc-	.070		mg/L				.12		321-60-8
% recovery	2-FLUOROBIPHENYL	-qc-	56		% REC	43.0	116.0				321-60-8
Surrogate..	TERPHENYL-D14	-qc-	.13		mg/L				.12		98901-43-9
% recovery	TERPHENYL-D14	-qc-	106		% REC	33.0	141.0				98904-43-9
Surrogate..	PHENOL-D5	-qc-	.035		mg/L				.12		4165-62-2
% recovery	PHENOL-D5	-qc-	28		% REC	10.0	94.0				4165-62-2
Surrogate..	2-FLUOROPHENOL	-qc-	.051		mg/L				.12		367-12-4
% recovery	2-FLUOROPHENOL	-qc-	41		% REC	21.0	100.0				367-12-4
Surrogate..	2,4,6-TRIBROMOPHENOL	-qc-	.10		mg/L				.12		118-79-6
% recovery	2,4,6-TRIBROMOPHENOL	-qc-	82		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Collected: 06/17/99 Prepared: 06/17/99 (12449) Analyzed: 06/19/99 12:36 ra (12462) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

LAB CONTROL SPIKE BNA Dilution Factor: *1.00* %Solid:

					Recovery				LCS
					Acceptance			Spike	
9F0G001326 8270W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			*.010		95-94-3
Spike..... 1,2,4-TRICHLOROBENZENE	-qc-	.027		mg/L				.062	120-82-1
% recovery 1,2,4-TRICHLOROBENZENE	-qc-	43		% REC	40.0	95.0			120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			*.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.051	U	mg/L			*.051		99-65-0
Spike..... 1,4-DICHLOROBENZENE	-qc-	.027		mg/L				.062	106-46-7
% recovery 1,4-DICHLOROBENZENE	-qc-	43		% REC	40.0	95.0			106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.051	U	mg/L			*.051		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.051	U	mg/L			*.051		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.051	U	mg/L			*.051		51-28-5
Spike..... 2,4-DINITROTOLUENE	-qc-	.033		mg/L				.062	121-14-2
% recovery 2,4-DINITROTOLUENE	-qc-	53		% REC	25.0	95.0			121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			*.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010		91-58-7
Spike..... 2-CHLOROPHENOL	-qc-	.084		mg/L				.12	95-57-8
% recovery 2-CHLOROPHENOL	-qc-	68		% REC	30.0	120.0			95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.051	U	mg/L			*.051		91-59-8
Analyte.... 2-NITROANILINE	ND	.051	U	mg/L			*.051		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			*.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.051	U	mg/L			*.051		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.051	U	mg/L			*.051		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			*.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			*.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.051	U	mg/L			*.051		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			*.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010		101-55-3
Spike..... 4-CHLORO-3-METHYLPHENOL	-qc-	.092		mg/L				.12	59-50-7
% recovery 4-CHLORO-3-METHYLPHENOL	-qc-	74		% REC	25.0	95.0			59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			*.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.051	U	mg/L			*.051		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.051	U	mg/L			*.051		100-01-6
Spike..... 4-NITROPHENOL	-qc-	.022		mg/L				.12	100-02-7
% recovery 4-NITROPHENOL	-qc-	18		% REC	10.0	80.0			100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.051	U	mg/L			*.051		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.051	U	mg/L			*.051		106-50-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte....	5-NITRO-O-TOLUIDINE	ND	.051	U	mg/L			*.051		99-55-8
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			*.020		57-97-6
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.051	U	mg/L			*.051		122-09-8
Spike.....	ACENAPHTHENE	-qc-	.039		mg/L				.062	83-32-9
% recovery	ACENAPHTHENE	-qc-	63		% REC	50.0	115.0			83-32-9
Analyte....	ACENAPHTHYLENE	ND	.010	U	mg/L			*.010		208-96-8
Analyte....	ACETOPHENONE	ND	.010	U	mg/L			*.010		98-86-2
Analyte....	ANILINE	ND	.010	U	mg/L			*.010		62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010		120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			*.020		140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			*.020		92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010		56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010		50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010		205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010		191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010		207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			*.020		100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010		111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010		111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010		108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010		117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			*.020		85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010		218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010		84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010		117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			*.020		2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			*.020		53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010		132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010		84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010		131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010		122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010		206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010		86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			*.020		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			*.020		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			*.020		193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010		465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.051	U	mg/L			*.051		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			*.020		924-16-3
Spike.....	N-NITROSODI-N-PROPYLAMINE	-qc-	.036		mg/L				.062	621-64-7
% recovery	N-NITROSODI-N-PROPYLAMINE	-qc-	57		% REC	45.0	115.0			621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			*.020		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			*.020		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			*.020		930-55-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG030 05/17/00 16:47:34 Received: 06/16/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO616991018

Analyte.... NAPHTHALENE	ND	.010	U	mg/L			*.010			91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			*.010			98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010			126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			*.010			95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.051	U	mg/L			*.051			60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010			608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			*.010			76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.051	U	mg/L			*.051			82-68-8
Spike..... PENTACHLOROPHENOL	-qc-	.11		mg/L				.12		87-86-5
% recovery PENTACHLOROPHENOL	-qc-	85		% REC	10.0	100.0				87-86-5
Analyte.... PHENACETIN	ND	.051	U	mg/L			*.051			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Spike..... PHENOL	-qc-	.040		mg/L				.12		108-95-2
% recovery PHENOL	-qc-	32		mg/L	15.0	110.0				108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-2
Spike..... PYRENE	-qc-	.057		mg/L				.062		129-00-0
% recovery PYRENE	-qc-	92		% REC	30.0	135.0				129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.075		mg/L				.12		4165-60-0
% recovery NITROBENZENE-D5	-qc-	60		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.066		mg/L				.12		321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	52		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.11		mg/L				.12		98904-43-9
% recovery TERPHENYL-D14	-qc-	89		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.032		mg/L				.12		4165-62-2
% recovery PHENOL-D5	-qc-	26		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.050		mg/L				.12		367-12-4
% recovery 2-FLUOROPHENOL	-qc-	40		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.11		mg/L				.12		118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	86		% REC	10.0	123.0				118-79-6

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02

CT&E Laboratory Number: G39-F0-G033

DATE: May 18, 2000

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed. Release of the data contained in the hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Submitted by,

Michele L. Rose

Michele L. Rose
Project Manager

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G033

DATE: May 18, 2000

SAMPLE RECEIPT OBSERVATIONS:

The samples were received June 17, 1999 at 9:00 via FedEx. One 40 ml vial for OPCA-MW-3 and one 40 ml vial for Rinse Blank was received broken. One amber liter for Rinse Blank and 2 amber liters for OPCA-MW-1 were received broken, also. All broken containers were replaced by the client. Per Steve Lewitt of BBL, CT&E was authorized to use the same sample date and time for replacement containers. The receipt temperature was 5°C. The dioxin analysis was sub-contracted to Columbia Analytical Services with the approval of BBL.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G033

DATE: May 18, 2000

SEMIVOLATILES REPORT:
The samples were analyzed for GE App. IX + 3 Semivolatiles in accordance to the guidelines of method SW8270C.

The tunes, initial calibration and continuing calibration verifications met acceptance criteria.

The internal standard areas were within quality control criteria.

The surrogate standard percent recoveries were within quality control criteria.

The LCS met acceptance criteria.

The method blank was free of interference.

The PRRL's (reporting limits) are adjusted for percent solids and extraction volumes as applicable.

The sampling to extraction holding time of fourteen days and extraction to analysis holding time of forty days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G033

DATE: May 18, 2000

VOLATILES REPORT:
The samples were analyzed for GE App. IX + 3 Volatiles in accordance to the guidelines of Method SW8260B.

The tunes, initial calibration and continuing calibration verifications met acceptance criteria.

The surrogate standard percent recoveries and internal standard areas met acceptance criteria.

The LCS met acceptance criteria.

The method blank was free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The sampling to analysis holding time of fourteen days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G033

DATE: May 18, 2000

PCB REPORT
The samples were analyzed according to the guidelines of Method 8082.

The PCB responses were quantitated by the Aroclor multi-component analysis, using at a minimum three unique peaks of the pattern.

All initial calibration and continuing calibration verifications met acceptance criteria. The 5 pt. initial calibration consists of PCB 1016, 1260 and 1254/Surrogates. Single point pattern recognition's were performed on Aroclors 1221, 1232, 1242 and 1248.

The surrogate standard percent recoveries met acceptance criteria.

The method blanks were free of interference.

The LCS met acceptance criteria.

The PRRL's are adjusted for percent solids, dilution factors and extraction volumes as applicable.

The sampling to extraction holding time of fourteen days and extraction to analysis holding time of forty days was met for all samples.

CASE NARRATIVE
ON SITE CONSOLIDATION
Project No: 201.85.02
CT&E Laboratory Number: G39-F0-G033

DATE: May 18, 2000

METALS REPORT:
The samples were analyzed for GE App. IX + 3 Metals by Method 6010A and Mercury by SW7470A.

The initial and continuing calibration verifications met acceptance criteria.

The LCS was met acceptance criteria.

The method blank was free of interference.

The matrix spike/duplicate of the sample met all acceptance criteria with the exception of Tin, which failed low with a recovery of 72%. The matrix spike was not reanalyzed due to the method blank, sample and duplicate being free of interference and the laboratory control sample meeting acceptance criteria.

The sampling to analysis holding times were met for all samples.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

SULFIDE REPORT:
The samples were analyzed for Sulfide by Method SW9030A. The result reported represents the total of soluble and in-soluble sulfide.

The LCS met acceptance criteria.

The method blanks were free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

CYANIDE REPORT:
The samples were analyzed for Cyanide by Method SW9012.

The LCS met acceptance criteria.

The method blanks were free of interference.

The PRRL's (reporting limits) are adjusted for percent solids as applicable.

The holding time was met for all the samples.

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
6723 Towpath Road, P.O. Box 66
Syracuse, New York 13214-0066
TEL: (315) 446-9120

G39-FO-G033-1/9 1 of 1

CHAIN OF CUSTODY RECORD

PROJECT NO. 20.85.02 | PROJECT NAME ON-SITE CONSOLIDATION AREA GROUNDWATER SAMPLING

	LAB ID	CUSTODY TAPE NUMBER	DATE	TIME	COMP.	GRAB	SAMPLE TYPE: SOLID	SAMPLE TYPE: WIPE	SAMPLE TYPE: WATER	Number of Containers	App IX+3 Explosives (8330 or HE/8095)	PCBs	App IX+3 (ms/ms/D)	PCBs (ms/msD)	TCL/Benzene	REMARKS
1/4	OPCA-MW-1		6/1/99	0830		X			X	24	X	X	X	X		7 DAY TURNAROUND
5	OPCA-MW-3			1050		X			X	8	X	X				TIME REQUESTED
6	H78B-15			1345		X			X	8	X	X				
7	78-6			1515		X			X	8	X	X				
8	RINSE BLANK			1630		X			X	8	X	X				1 vial Rcvd broken 1 Amber Rcvd broken VS 6-17
9	TRIP BLANK		↓	—		X			X	2	X				6-17	
															MR	* Per Steve at BBL, will
	TEMP BLANK					X			X	3					X	resample for broken containers — use same date & time.
																1 vial for OPCA MW3 rcvd broken
																2 Ambers for OPCA MW-1 Rcvd Broken VS 6-17

	DATE	TIME			DATE	TIME	
Sampled by: (Signature)	6/1/99	1710	Received by: (Signature)	Relinquished by: (Signature)			Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received for Laboratory by: (Signature)	DATE: 6/1-2	TIME: 9:00 S.	Remarks: TO CTEC ENVIRONMENTAL LAB FEDEX #: 8092195315	

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 15:08 JWJ (12520) Method
Analytical Run: *001* EDD Method Code: **6/7000** WATER

OPCA-MW-1 - 7d		Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9F0G033001	6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte....	ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte....	BARIUM, TOTAL	<Hit> .062		mg/L			.0060		7440-39-3
Analyte....	BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte....	CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte....	COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte....	CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte....	COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte....	NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte....	LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte....	ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte....	TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte....	SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte....	THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte....	VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte....	ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:18 (12437) Method SW7470
Analytical Run: *001* EDD Method Code: **7470A** WATER

OPCA-MW-1 - 7d		Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9F0G033001	7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: *001* EDD Method Code: **9012** WATER

OPCA-MW-1 - 7d		Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9F0G033001	9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/16/99 Prepared: 06/22/99 (12516) Analyzed: 06/22/99 14:00 CBS (12516) Method
Analytical Run: *001* EDD Method Code: **9030** WATER

OPCA-MW-1 - 7d		Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9F0G033001	9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 15:22 mam (12506) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-1 Dilution Factor: *1.00* %Solid:

\- 7d

9F0G033001 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.051		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	102		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	109		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 02:19 ra (12491) Method
Analytical Run: *001* EDD Method Code: 8270B WATER
Dilution Factor: *1.00* %Solid:

OPCA-MW-1 - 7d					Recovery Acceptance			Spike	F
9F0G033001 8270W-BBL001	Result:		QF:	Units:	Low:	High:	PEQL:	Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.012	U	mg/L			*.012		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.012	U	mg/L			*.012		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.012	U	mg/L			*.012		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.012	U	mg/L			*.012		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.024	U	mg/L			*.024		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.012	U	mg/L			*.012		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.059	U	mg/L			*.059		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.012	U	mg/L			*.012		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.059	U	mg/L			*.059		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.059	U	mg/L			*.059		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.012	U	mg/L			*.012		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.012	U	mg/L			*.012		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.012	U	mg/L			*.012		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.012	U	mg/L			*.012		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.012	U	mg/L			*.012		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.059	U	mg/L			*.059		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.059	U	mg/L			*.059		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.012	U	mg/L			*.012		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.012	U	mg/L			*.012		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.024	U	mg/L			*.024		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.012	U	mg/L			*.012		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.012	U	mg/L			*.012		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.012	U	mg/L			*.012		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.012	U	mg/L			*.012		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.059	U	mg/L			*.059		91-59-8
Analyte.... 2-NITROANILINE	ND	.059	U	mg/L			*.059		88-74-4
Analyte.... 2-NITROPHENOL	ND	.024	U	mg/L			*.024		88-75-5
Analyte.... 2-PICOLINE	ND	.012	U	mg/L			*.012		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.059	U	mg/L			*.059		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.059	U	mg/L			*.059		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.024	U	mg/L			*.024		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.024	U	mg/L			*.024		56-49-5
Analyte.... 3-NITROANILINE	ND	.059	U	mg/L			*.059		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.012	U	mg/L			*.012		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.024	U	mg/L			*.024		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.012	U	mg/L			*.012		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.012	U	mg/L			*.012		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.024	U	mg/L			*.024		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.059	U	mg/L			*.059		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.012	U	mg/L			*.012		7005-72-3
Analyte.... 4-NITROANILINE	ND	.059	U	mg/L			*.059		100-01-6
Analyte.... 4-NITROPHENOL	ND	.059	U	mg/L			*.059		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.059	U	mg/L			*.059		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.059	U	mg/L			*.059		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.059	U	mg/L			*.059		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.024	U	mg/L			*.024		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.059	U	mg/L			*.059		122-09-8
Analyte.... ACENAPHTHENE	ND	.012	U	mg/L			*.012		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.012	U	mg/L			*.012		208-96-8
Analyte.... ACETOPHENONE	ND	.012	U	mg/L			*.012		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ANILINE	ND	.012	U	mg/L			*.012		62-53-3
Analyte.... ANTHRACENE	ND	.012	U	mg/L			*.012		120-12-7
Analyte.... ARAMITE	ND	.024	U	mg/L			*.024		140-57-8
Analyte.... BENZIDINE	ND	.024	U	mg/L			*.024		92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.012	U	mg/L			*.012		56-55-3
Analyte.... BENZO(A)PYRENE	ND	.012	U	mg/L			*.012		50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.012	U	mg/L			*.012		205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.012	U	mg/L			*.012		191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.012	U	mg/L			*.012		207-08-9
Analyte.... BENZYL ALCOHOL	ND	.024	U	mg/L			*.024		100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.012	U	mg/L			*.012		111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.012	U	mg/L			*.012		111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.012	U	mg/L			*.012		108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.012	U	mg/L			*.012		117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.024	U	mg/L			*.024		85-68-7
Analyte.... CHRYSENE	ND	.012	U	mg/L			*.012		218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.012	U	mg/L			*.012		84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.012	U	mg/L			*.012		117-84-0
Analyte.... DIALLATE	ND	.024	U	mg/L			*.024		2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.024	U	mg/L			*.024		53-70-3
Analyte.... DIBENZOFURAN	ND	.012	U	mg/L			*.012		132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.012	U	mg/L			*.012		84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.012	U	mg/L			*.012		131-11-3
Analyte.... DIPHENYLAMINE	ND	.012	U	mg/L			*.012		122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.012	U	mg/L			*.012		62-50-0
Analyte.... FLUORANTHENE	ND	.012	U	mg/L			*.012		206-44-0
Analyte.... FLUORENE	ND	.012	U	mg/L			*.012		86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.012	U	mg/L			*.012		118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.024	U	mg/L			*.024		87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.012	U	mg/L			*.012		77-47-4
Analyte.... HEXACHLOROETHANE	ND	.012	U	mg/L			*.012		67-72-1
Analyte.... HEXACHLOROPHENE	ND	.024	U	mg/L			*.024		70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.012	U	mg/L			*.012		1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.024	U	mg/L			*.024		193-39-5
Analyte.... ISODRIN	ND	.012	U	mg/L			*.012		465-73-6
Analyte.... ISOPHORONE	ND	.024	U	mg/L			*.024		78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte.... METHAPYRILENE	ND	.059	U	mg/L			*.059		91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.012	U	mg/L			*.012		66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.024	U	mg/L			*.024		924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.024	U	mg/L			*.024		621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.012	U	mg/L			*.012		55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.024	U	mg/L			*.024		62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.012	U	mg/L			*.012		86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.024	U	mg/L			*.024		10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.012	U	mg/L			*.012		59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.012	U	mg/L			*.012		100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.024	U	mg/L			*.024		930-55-2
Analyte.... NAPHTHALENE	ND	.012	U	mg/L			*.012		91-20-3
Analyte.... NITROBENZENE	ND	.012	U	mg/L			*.012		98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.012	U	mg/L			*.012		126-68-1
Analyte.... O-TOLUIDINE	ND	.012	U	mg/L			*.012		95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.059	U	mg/L			*.059		60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.012	U	mg/L			*.012		608-93-5
Analyte.... PENTACHLOROETHANE	ND	.012	U	mg/L			*.012		76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.059	U	mg/L			*.059		82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PENTACHLOROPHENOL	ND	.059	U	mg/L			*.059		87-86-5
Analyte.... PHENACETIN	ND	.059	U	mg/L			*.059		62-44-2
Analyte.... PHENANTHRENE	ND	.012	U	mg/L			*.012		85-01-8
Analyte.... PHENOL	ND	.012	U	mg/L			*.012		108-95-2
Analyte.... PRONAMIDE	ND	.012	U	mg/L			*.012		23950-58-5
Analyte.... PYRENE	ND	.012	U	mg/L			*.012		129-00-0
Analyte.... PYRIDINE	ND	.012	U	mg/L			*.012		110-86-1
Analyte.... SAFROLE	ND	.012	U	mg/L			*.012		94-59-7
Analyte.... THIONAZIN	ND	.012	U	mg/L			*.012		297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.086		mg/L				.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	69		% REC	35.0	114.0			4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.099		mg/L				.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	79		% REC	43.0	116.0			321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.14		mg/L				.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	112		% REC	33.0	141.0			98904-43-9
Surrogate.. PHENOL-D5	-qc-	.033		mg/L				.12	4165-62-2
% recovery PHENOL-D5	-qc-	27		% REC	10.0	94.0			4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.048		mg/L				.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	39		% REC	21.0	100.0			367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.077		mg/L				.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	62		% REC	10.0	123.0			118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 18:07 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: 8082 WATER

OPCA-MW-1 Dilution Factor: *1.00* %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9FOG033001	8082W-BBL001									
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	<Hit>	.054		ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	46		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.19		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	76		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 15:27 JWJ (12520) Method
Analytical Run: *001* EDD Method Code: **6/7000** WATER

OPCA-MW-1 MS - 7d	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			MS Spike (0002)
9F0G033001 6010W-BBL001-SPIKE	Result:	QF:	Units:	Low:	High:	PROL:	Amount:	CAS:
Spike..... SILVER, TOTAL	-qc- 2.0		mg/L				2.0	7440-22-4
% recovery SILVER, TOTAL	-qc- 100		% REC	75.0	125.0			7440-22-4
Spike..... ARSENIC, TOTAL	-qc- 2.0		mg/L				2.0	7440-38-2
% recovery ARSENIC, TOTAL	-qc- 100		% REC	75.0	125.0			7440-38-2
Spike..... BARIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-39-3
% recovery BARIUM, TOTAL	-qc- 101		% REC	75.0	125.0			7440-39-3
Spike..... BERYLLIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-41-7
% recovery BERYLLIUM, TOTAL	-qc- 99		% REC	75.0	125.0			7440-41-7
Spike..... CADMIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-43-9
% recovery CADMIUM, TOTAL	-qc- 99		% REC	75.0	125.0			7440-43-9
Spike..... COBALT, TOTAL	-qc- 2.0		mg/L				2.0	7440-48-4
% recovery COBALT, TOTAL	-qc- 98		% REC	75.0	125.0			7440-48-4
Spike..... CHROMIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-47-3
% recovery CHROMIUM, TOTAL	-qc- 100		% REC	75.0	125.0			7440-47-3
Spike..... COPPER, TOTAL	-qc- 2.0		mg/L				2.0	7440-50-8
% recovery COPPER, TOTAL	-qc- 98		% REC	75.0	125.0			7440-50-8
Spike..... NICKEL, TOTAL	-qc- 2.0		mg/L				2.0	7440-02-0
% recovery NICKEL, TOTAL	-qc- 100		% REC	75.0	125.0			7440-02-0
Spike..... LEAD, TOTAL	-qc- 2.0		mg/L				2.0	7439-92-1
% recovery LEAD, TOTAL	-qc- 98		% REC	75.0	125.0			7439-92-1
Spike..... ANTIMONY, TOTAL	-qc- 2.0		mg/L				2.0	7440-36-0
% recovery ANTIMONY, TOTAL	-qc- 98		% REC	75.0	125.0			7440-36-0
Spike..... TIN, TOTAL	-qc- 1.4		mg/L				2.0	7440-31-5
% recovery TIN, TOTAL	-qc- 72	*	% REC	75.0	125.0			7440-31-5
Spike..... SELENIUM, TOTAL	-qc- 2.0		mg/L				2.0	7782-49-2
% recovery SELENIUM, TOTAL	-qc- 98		% REC	75.0	125.0			7782-49-2
Spike..... THALLIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-28-0
% recovery THALLIUM, TOTAL	-qc- 98		% REC	75.0	125.0			7440-28-0
Spike..... VANADIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-62-2
% recovery VANADIUM, TOTAL	-qc- 100		% REC	75.0	125.0			7440-62-2
Spike..... ZINC, TOTAL	-qc- 2.0		mg/L				2.0	7440-66-6
% recovery ZINC, TOTAL	-qc- 100		% REC	75.0	125.0			7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:19 (12437) Method SW7470
Analytical Run: *001* EDD Method Code: **7470A** WATER

OPCA-MW-1 MS - 7d	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			MS Spike (0002)
9F0G033001 7470W-CWP001-SPIKE	Result:	QF:	Units:	Low:	High:	PROL:	Amount:	CAS:
Spike..... MERCURY, TOTAL	-qc- .0022		mg/L				.0020	7439-97-6
% recovery MERCURY, TOTAL	-qc- 108		% REC	75.0	125.0			7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: *001* EDD Method Code: **9012** WATER

OPCA-MW-1 MS - 7d	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			MS Spike (0002)
9F0G033001 9012W-BBL001-SPIKE	Result:	QF:	Units:	Low:	High:	PROL:	Amount:	CAS:
Spike..... CYANIDE, TOTAL	-qc- .10		mg/L				.10	57-12-5
% recovery CYANIDE, TOTAL	-qc- 100		% REC	90.0	110.0			57-12-5

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/22/99 (12516) Analyzed: 06/22/99 14:00 CBS (12516) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

				Recovery			MS
OPCA-MW-1 MS	Dilution Factor: 1.00 %Solid:			Acceptance		Spike	(D07)
- 7d							
9F0G033001 9030W-BBL001-SPIKE	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	<Hit> 51.2		mg/L			5.0		18496-25-8
% recovery SULFIDE	-qc- 114		mg/L	75.0	125.0			18496-25-8

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 15:36 JWJ (12520) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

				Recovery			DUP
OPCA-MW-1 DUP	Dilution Factor: 1.00 %Solid:			Acceptance		Spike	(D04)
- 7d							
9F0G033001 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .065		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:20 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

				Recovery			DUP
OPCA-MW-1 DUP	Dilution Factor: 1.00 %Solid:			Acceptance		Spike	(D04)
- 7d							
9F0G033001 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

				Recovery			DUP
OPCA-MW-1 DUP	Dilution Factor: 1.00 %Solid:			Acceptance		Spike	(D04)
- 7d							
9F0G033001 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/16/99 Prepared: 06/22/99 (12516) Analyzed: 06/22/99 14:00 CBS (12516) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

				Recovery			DUP
OPCA-MW-1 DUP	Dilution Factor: 1.00 %Solid:			Acceptance		Spike	(D04)
- 7d							
9F0G033001 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 16:01 mam (12506) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

OPCA-MW-1 MS Dilution Factor: *1.00* %Solid:

\- 7d

9FOG033001 8260W-APP001-SPIKE	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MS (002) CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Spike..... 1,1-DICHLOROETHENE	-qc-	.028		mg/L				.025	75-35-4
% recovery 1,1-DICHLOROETHENE	-qc-	114		% REC	61.0	145.0			75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Spike..... TRICHLOROETHENE	-qc-	.028		mg/L				.025	79-01-6
% recovery TRICHLOROETHENE	-qc-	110		% REC	71.0	120.0			79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Spike..... BENZENE	-qc-	.026		mg/L				.025	71-43-2
% recovery BENZENE	-qc-	106		% REC	76.0	127.0			71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Spike..... TOLUENE	-qc-	.027		mg/L				.025	108-88-3
% recovery TOLUENE	-qc-	109		% REC	76.0	125.0			108-88-3
Spike..... CHLOROBENZENE	-qc-	.028		mg/L				.025	108-90-7
% recovery CHLOROBENZENE	-qc-	114		% REC	75.0	130.0			108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010			97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050			74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20			78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010			126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010			80-62-6
Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.051		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	102		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.052		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	103		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	107		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 03:05 ra (12491) Method

Analytical Run: *001* EDD Method Code: **8270B** WATER

OPCA-MW-1 MS Dilution Factor: *1.00* %Solid:

7d

					Recovery Acceptance				
9FOG033001 8270W-BBL001-SPIKE	Result:		QF:	Units:	Low:	High:	PPQL:	Spike Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			*.010		95-94-3
Spike..... 1,2,4-TRICHLOROBENZENE	-qc-	.044		mg/L				.0[illegible]	120-82-1
% recovery 1,2,4-TRICHLOROBENZENE	-qc-	70		% REC	39.0	98.0			120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			*.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.021	U	mg/L			*.021		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			*.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.052	U	mg/L			*.052		99-65-0
Spike..... 1,4-DICHLOROBENZENE	-qc-	.039		mg/L				.062	106-46-7
% recovery 1,4-DICHLOROBENZENE	-qc-	62		% REC	36.0	97.0			106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.052	U	mg/L			*.052		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.052	U	mg/L			*.052		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			*.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			*.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			*.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.052	U	mg/L			*.052		51-28-5
Spike..... 2,4-DINITROTOLUENE	-qc-	.033		mg/L				.06[illegible]	121-14-2
% recovery 2,4-DINITROTOLUENE	-qc-	52		% REC	24.0	96.0			121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			*.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			*.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.021	U	mg/L			*.021		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			*.010		91-58-7
Spike..... 2-CHLOROPHENOL	-qc-	.086		mg/L				.12	95-57-8
% recovery 2-CHLOROPHENOL	-qc-	69		% REC	27.0	123.0			95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			*.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			*.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.052	U	mg/L			*.052		91-59-8
Analyte.... 2-NITROANILINE	ND	.052	U	mg/L			*.052		88-74-4
Analyte.... 2-NITROPHENOL	ND	.021	U	mg/L			*.021		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			*.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.052	U	mg/L			*.052		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.052	U	mg/L			*.052		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.021	U	mg/L			*.021		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND	.052	U	mg/L			*.052		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			*.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			*.010		101-55-3
Spike..... 4-CHLORO-3-METHYLPHENOL	-qc-	.079		mg/L				.12	59-50-7
% recovery 4-CHLORO-3-METHYLPHENOL	-qc-	63		% REC	23.0	97.0			59-50-7
Analyte.... 4-CHLOROANILINE	ND	.021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.052	U	mg/L			*.052		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			*.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.052	U	mg/L			*.052		100-01-6
Spike..... 4-NITROPHENOL	-qc-	.022		mg/L				.12	100-02-7
% recovery 4-NITROPHENOL	-qc-	18		% REC	10.0	80.0			100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.052	U	mg/L			*.052		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.052	U	mg/L			*.052		106-50-3

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Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	5-NITRO-O-TOLUIDINE	ND	.052	U	mg/L			*.052			88-55-8
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.021	U	mg/L			*.021			57-97-6
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.052	U	mg/L			*.052			122-09-8
Spike.....	ACENAPHTHENE	-qc-	.048		mg/L					.062	83-32-9
% recovery	ACENAPHTHENE	-qc-	77		% REC	46.0	118.0				83-32-9
Analyte....	ACENAPHTHYLENE	ND	.010	U	mg/L			*.010			208-96-8
Analyte....	ACETOPHENONE	ND	.010	U	mg/L			*.010			98-86-2
Analyte....	ANILINE	ND	.010	U	mg/L			*.010			62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			*.010			120-12-7
Analyte....	ARAMITE	ND	.021	U	mg/L			*.021			140-57-8
Analyte....	BENZIDINE	ND	.021	U	mg/L			*.021			92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			*.010			56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			*.010			50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			*.010			205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			*.010			191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			*.010			207-08-9
Analyte....	BENZYL ALCOHOL	ND	.021	U	mg/L			*.021			100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			*.010			111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			*.010			111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			*.010			108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			*.010			117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021			85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			*.010			218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			*.010			84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			*.010			117-84-0
Analyte....	DIALLATE	ND	.021	U	mg/L			*.021			2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021			53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			*.010			132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			*.010			84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			*.010			131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			*.010			122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			*.010			62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			*.010			206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			*.010			86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			*.010			118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021			87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			*.010			77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			*.010			67-72-1
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021			70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			*.010			1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021			193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			*.010			465-73-6
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021			78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020			120-58-1
Analyte....	METHAPYRILENE	ND	.052	U	mg/L			*.052			91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			*.010			66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021			924-16-3
Spike.....	N-NITROSODI-N-PROPYLAMINE	-qc-	.033		mg/L					.062	621-64-7
% recovery	N-NITROSODI-N-PROPYLAMINE	-qc-	53		% REC	41.0	116.0				621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			*.010			55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021			62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			*.010			86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021			10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			*.010			59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			*.010			100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021			930-55-2

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... NAPHTHALENE	ND	.010	U	mg/L			*.010			91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			*.010			98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			*.010			126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			*.010			95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.052	U	mg/L			*.052			60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			*.010			608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			*.010			46-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.052	U	mg/L			*.052			82-68-8
Spike..... PENTACHLOROPHENOL	-qc-	.060		mg/L					.12	87-86-5
% recovery PENTACHLOROPHENOL	-qc-	48		% REC	9.0	103.0				87-86-5
Analyte.... PHENACETIN	ND	.052	U	mg/L			*.052			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			*.010			85-01-8
Spike..... PHENOL	-qc-	.037		mg/L					.12	108-95-2
% recovery PHENOL	-qc-	29		% REC	12.0	110.0				108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			*.010			23950-58-2
Spike..... PYRENE	-qc-	.056		mg/L					.062	129-00-0
% recovery PYRENE	-qc-	90		% REC	26.0	137.0				129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			*.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			*.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			*.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.086		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	68		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.084		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	67		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.14		mg/L					.12	08904-43-9
% recovery TERPHENYL-D14	-qc-	113		% REC	33.0	141.0				08904-43-9
Surrogate.. PHENOL-D5	-qc-	.030		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	24		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.051		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	41		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.092		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	74		% REC	10.0	123.0				118-79-6

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 19:29 jam (12503) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER

OPCA-MW-1 MS Dilution Factor: ***1.00*** %Solid:

\- 7d

						Recovery				MS
						Acceptance			Spike	(002)
9F0G033001	8082W-BBL001-SPIKE	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Spike.....	AROCLOR-1254	-qc-	1.1		ug/L				1.2	11097-69-1
% recovery	AROCLOR-1254	-qc-	90		% REC	50.0	130.0			11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	50		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.19		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	76		% REC	36.0	144.0			2051-24-3

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 16:39 mam (12506) Method
Analytical Run: ***001*** EDD Method Code: **8260AC** WATER

OPCA-MW-1 MSD Dilution Factor: ***1.00*** %Solid:

\- 7d

9F0G033001 8260W-APP001-SPIKE	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MSD (003) CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Spike..... 1,1-DICHLOROETHENE	-qc- .026		mg/L				.025	75-35-4
% recovery 1,1-DICHLOROETHENE	-qc- 106		% REC	61.0	145.0			75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Spike..... TRICHLOROETHENE	-qc- .027		mg/L				.025	79-01-6
% recovery TRICHLOROETHENE	-qc- 107		% REC	71.0	120.0			79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Spike..... BENZENE	-qc- .026		mg/L				.025	71-43-2
% recovery BENZENE	-qc- 102		% REC	76.0	127.0			71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Spike..... TOLUENE	-qc- .026		mg/L				.025	108-88-3
% recovery TOLUENE	-qc- 104		% REC	76.0	125.0			108-88-3
Spike..... CHLOROBENZENE	-qc- .027		mg/L				.025	108-90-7
% recovery CHLOROBENZENE	-qc- 106		% REC	75.0	130.0			108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3

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Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010			97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050			74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20			78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010			126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010			80-62-6
Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	100		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.051		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	102		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	107		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 03:50 ra (12491) Method

Analytical Run: ***001*** EDD Method Code: **8270B** WATER

OPCA-MW-1 MSD Dilution Factor: ***1.00*** %Solid:

\- 7d

9F0G033001 8270W-BBL001-SPIKE	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MSD (003) CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Spike..... 1,2,4-TRICHLOROBENZENE	-qc-	.051		mg/L				.062	120-82-1
% recovery 1,2,4-TRICHLOROBENZENE	-qc-	82		% REC	39.0	98.0			120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Spike..... 1,4-DICHLOROBENZENE	-qc-	.042		mg/L				.062	106-46-7
% recovery 1,4-DICHLOROBENZENE	-qc-	67		% REC	36.0	97.0			106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Spike..... 2,4-DINITROTOLUENE	-qc-	.034		mg/L				.062	121-14-2
% recovery 2,4-DINITROTOLUENE	-qc-	54		% REC	24.0	96.0			121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Spike..... 2-CHLOROPHENOL	-qc-	.088		mg/L				.12	95-57-8
% recovery 2-CHLOROPHENOL	-qc-	70		% REC	27.0	123.0			95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Spike..... 4-CHLORO-3-METHYLPHENOL	-qc-	.085		mg/L				.12	59-50-7
% recovery 4-CHLORO-3-METHYLPHENOL	-qc-	68		% REC	23.0	97.0			59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Spike..... 4-NITROPHENOL	-qc-	.022		mg/L				.12	100-02-7
% recovery 4-NITROPHENOL	-qc-	18		% REC	10.0	80.0			100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050			99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020			57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050			122-09-8
Spike..... ACENAPHTHENE	-qc-	.054		mg/L					.062	83-32-9
% recovery ACENAPHTHENE	-qc-	86		% REC	46.0	118.0				83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010			208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010			98-86-2
Analyte.... ANILINE	ND	.010	U	mg/L			.010			62-53-3
Analyte.... ANTHRACENE	ND	.010	U	mg/L			.010			120-12-7
Analyte.... ARAMITE	ND	.020	U	mg/L			.020			140-57-8
Analyte.... BENZIDINE	ND	.020	U	mg/L			.020			92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010			56-55-3
Analyte.... BENZO(A)PYRENE	ND	.010	U	mg/L			.010			50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010			205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010			191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010			207-08-9
Analyte.... BENZYL ALCOHOL	ND	.020	U	mg/L			.020			100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010			111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010			111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010			108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010			117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020			85-68-7
Analyte.... CHRYSENE	ND	.010	U	mg/L			.010			218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010			84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010			117-84-0
Analyte.... DIALLATE	ND	.020	U	mg/L			.020			2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020			53-70-3
Analyte.... DIBENZOFURAN	ND	.010	U	mg/L			.010			132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.010	U	mg/L			.010			84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010			131-11-3
Analyte.... DIPHENYLAMINE	ND	.010	U	mg/L			.010			122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010			62-50-0
Analyte.... FLUORANTHENE	ND	.010	U	mg/L			.010			206-44-0
Analyte.... FLUORENE	ND	.010	U	mg/L			.010			86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.010	U	mg/L			.010			118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020			87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010			77-47-4
Analyte.... HEXACHLOROETHANE	ND	.010	U	mg/L			.010			67-72-1
Analyte.... HEXACHLOROPHENE	ND	.020	U	mg/L			.020			70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.010	U	mg/L			.010			1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020			193-39-5
Analyte.... ISODRIN	ND	.010	U	mg/L			.010			465-73-6
Analyte.... ISOPHORONE	ND	.020	U	mg/L			*.020			78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020			120-58-1
Analyte.... METHAPYRILENE	ND	.050	U	mg/L			.050			91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.010	U	mg/L			.010			66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020			924-16-3
Spike..... N-NITROSODI-N-PROPYLAMINE	-qc-	.038		mg/L					.052	621-64-7
% recovery N-NITROSODI-N-PROPYLAMINE	-qc-	61		% REC	41.0	116.0				621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010			55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020			62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010			86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020			10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010			59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010			100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020			930-55-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... NAPHTHALENE	ND	.010	U	mg/L			.010			91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			.010			98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010			126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			.010			95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050			60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			.010			608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			.010			46-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050			82-68-8
Spike..... PENTACHLOROPHENOL	-qc-	.080		mg/L					.12	87-86-5
% recovery PENTACHLOROPHENOL	-qc-	64		% REC	9.0	103.0				87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Spike..... PHENOL	-qc-	.039		mg/L					.12	108-95-2
% recovery PHENOL	-qc-	31		% REC	12.0	110.0				108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-2
Spike..... PYRENE	-qc-	.061		mg/L					.062	129-00-0
% recovery PYRENE	-qc-	98		% REC	26.0	137.0				129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.091		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	73		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.095		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	76		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.14		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	115		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.034		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	27		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.047		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	38		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.094		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	76		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 19:45 jam (12503) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER | Recovery | | | MSD

OPCA-MW-1 MSD Dilution Factor: ***1.00*** %Solid: | Acceptance | | Spike | (003)

\- 7d | | | |

9F0G033001 8082W-BBL001-SPIKE	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND .050	U	ug/L			*.050		12674-11-2
Analyte.... AROCLOR-1221	ND .050	U	ug/L			*.050		11104-28-2
Analyte.... AROCLOR-1232	ND .050	U	ug/L			*.050		11141-16-5
Analyte.... AROCLOR-1242	ND .050	U	ug/L			*.050		53469-21-9
Analyte.... AROCLOR-1248	ND .050	U	ug/L			*.050		12672-29-6
Spike..... AROCLOR-1254	-qc- 1.4		ug/L				1.2	11097-69-1
% recovery AROCLOR-1254	-qc- 112		% REC	50.0	130.0			11097-69-1
Analyte.... AROCLOR-1260	ND .050	U	ug/L			*.050		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc- .13		ug/L				.25	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc- 50		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc- .21		ug/L				.25	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc- 84		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 15:46 JWJ (12520) Method
Analytical Run: ***001*** EDD Method Code: **6/7000** WATER

OPCA-MW-3 Dilution Factor: ***1.00*** %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G033005	6010W-BBL001									
Analyte....	SILVER, TOTAL	ND	.013	U	mg/L			.013		7440-22-4
Analyte....	ARSENIC, TOTAL	ND	.0060	U	mg/L			.0060		7440-38-2
Analyte....	BARIUM, TOTAL	<Hit>	.0095		mg/L			.0060		7440-39-3
Analyte....	BERYLLIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-41-7
Analyte....	CADMIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-43-9
Analyte....	COBALT, TOTAL	ND	.060	U	mg/L			.060		7440-48-4
Analyte....	CHROMIUM, TOTAL	ND	.013	U	mg/L			.013		7440-47-3
Analyte....	COPPER, TOTAL	ND	.033	U	mg/L			.033		7440-50-8
Analyte....	NICKEL, TOTAL	ND	.060	U	mg/L			.060		7440-02-0
Analyte....	LEAD, TOTAL	ND	.13	U	mg/L			.13		7439-92-1
Analyte....	ANTIMONY, TOTAL	ND	.060	U	mg/L			.060		7440-36-0
Analyte....	TIN, TOTAL	ND	.30	U	mg/L			.30		7440-31-5
Analyte....	SELENIUM, TOTAL	ND	.0060	U	mg/L			.0060		7782-49-2
Analyte....	THALLIUM, TOTAL	ND	.013	U	mg/L			.013		7440-28-0
Analyte....	VANADIUM, TOTAL	ND	.060	U	mg/L			.060		7440-62-2
Analyte....	ZINC, TOTAL	<Hit>	.088		mg/L			.026		7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:21 (12437) Method SW7470
Analytical Run: ***001*** EDD Method Code: **7470A** WATER

OPCA-MW-3 Dilution Factor: ***1.00*** %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G033005	7470W-CWP001									
Analyte....	MERCURY, TOTAL	ND	.00050	U	mg/L			.00050		7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: ***001*** EDD Method Code: **9012** WATER

OPCA-MW-3 Dilution Factor: ***1.00*** %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G033005	9012W-BBL001									
Analyte....	CYANIDE, TOTAL	ND	.020	U	mg/L			.020		57-12-5

Collected: 06/16/99 Prepared: 06/21/99 (12516) Analyzed: 06/21/99 09:00 CBS (12516) Method
Analytical Run: ***001*** EDD Method Code: **9030** WATER

OPCA-MW-3 Dilution Factor: ***1.00*** %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G033005	9030W-BBL001									
Analyte....	SULFIDE	ND	5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 14:43 mam (12506) Method
Analytical Run: ***001*** EDD Method Code: **8260AC** WATER

OPCA-MW-3 Dilution Factor: ***1.00*** %Solid:

\- 7d

9F0G033005 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte....	TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte....	TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte....	TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte....	VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate..	TOLUENE-D8	-qc-	.052		mg/L					.050	2037-26-5
% recovery	TOLUENE-D8	-qc-	103		% REC	81.0	117.0				2037-26-5
Surrogate..	4-BROMOFLUOROBENZENE	-qc-	.053		mg/L					.050	460-00-4
% recovery	4-BROMOFLUOROBENZENE	-qc-	105		% REC	74.0	121.0				460-00-4
Surrogate..	1,2-DICHLOROETHANE-D4	-qc-	.052		mg/L					.050	17060-07-0
% recovery	1,2-DICHLOROETHANE-D4	-qc-	104		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 14:25 ra (12502) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

OPCA-MW-3 Dilution Factor: *1.00* %Solid:

\- 7d

9F0G033005 8270W-BBL001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .011	U	mg/L			*.011		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .011	U	mg/L			*.011		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND .011	U	mg/L			*.011		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .011	U	mg/L			*.011		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND .021	U	mg/L			*.021		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND .011	U	mg/L			*.011		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND .054	U	mg/L			*.054		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND .011	U	mg/L			*.011		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND .054	U	mg/L			*.054		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND .054	U	mg/L			*.054		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .011	U	mg/L			*.011		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .011	U	mg/L			*.011		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .011	U	mg/L			*.011		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND .011	U	mg/L			*.011		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND .011	U	mg/L			*.011		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND .054	U	mg/L			*.054		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND .054	U	mg/L			*.054		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND .011	U	mg/L			*.011		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND .011	U	mg/L			*.011		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND .021	U	mg/L			*.021		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND .011	U	mg/L			*.011		91-58-7
Analyte.... 2-CHLOROPHENOL	ND .011	U	mg/L			*.011		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND .011	U	mg/L			*.011		91-57-6
Analyte.... 2-METHYLPHENOL	ND .011	U	mg/L			*.011		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND .054	U	mg/L			*.054		91-59-8
Analyte.... 2-NITROANILINE	ND .054	U	mg/L			*.054		88-74-4
Analyte.... 2-NITROPHENOL	ND .021	U	mg/L			*.021		88-75-5
Analyte.... 2-PICOLINE	ND .011	U	mg/L			*.011		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .054	U	mg/L			*.054		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND .054	U	mg/L			*.054		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND .021	U	mg/L			*.021		
Analyte.... 3-METHYLCHOLANTHRENE	ND .021	U	mg/L			*.021		56-49-5
Analyte.... 3-NITROANILINE	ND .054	U	mg/L			*.054		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND .011	U	mg/L			*.011		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND .021	U	mg/L			*.021		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND .011	U	mg/L			*.011		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND .011	U	mg/L			*.011		59-50-7
Analyte.... 4-CHLOROANILINE	ND .021	U	mg/L			*.021		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND .054	U	mg/L			*.054		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND .011	U	mg/L			*.011		7005-72-3
Analyte.... 4-NITROANILINE	ND .054	U	mg/L			*.054		100-01-6
Analyte.... 4-NITROPHENOL	ND .054	U	mg/L			*.054		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND .054	U	mg/L			*.054		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND .054	U	mg/L			*.054		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND .054	U	mg/L			*.054		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .021	U	mg/L			*.021		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND .054	U	mg/L			*.054		122-09-8
Analyte.... ACENAPHTHENE	ND .011	U	mg/L			*.011		83-32-9
Analyte.... ACENAPHTHYLENE	ND .011	U	mg/L			*.011		208-96-8
Analyte.... ACETOPHENONE	ND .011	U	mg/L			*.011		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ANILINE	ND	.011	U	mg/L			*.011		62-53-3
Analyte.... ANTHRACENE	ND	.011	U	mg/L			*.011		120-12-7
Analyte.... ARAMITE	ND	.021	U	mg/L			*.021		140-57-8
Analyte.... BENZIDINE	ND	.021	U	mg/L			*.021		92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.011	U	mg/L			*.011		56-55-3
Analyte.... BENZO(A)PYRENE	ND	.011	U	mg/L			*.011		50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.011	U	mg/L			*.011		205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.011	U	mg/L			*.011		191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.011	U	mg/L			*.011		207-08-9
Analyte.... BENZYL ALCOHOL	ND	.021	U	mg/L			*.021		100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.011	U	mg/L			*.011		111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.011	U	mg/L			*.011		111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.011	U	mg/L			*.011		108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.011	U	mg/L			*.011		117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021		85-68-7
Analyte.... CHRYSENE	ND	.011	U	mg/L			*.011		218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.011	U	mg/L			*.011		84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.011	U	mg/L			*.011		117-84-0
Analyte.... DIALLATE	ND	.021	U	mg/L			*.021		2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021		53-70-3
Analyte.... DIBENZOFURAN	ND	.011	U	mg/L			*.011		132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.011	U	mg/L			*.011		84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.011	U	mg/L			*.011		131-11-3
Analyte.... DIPHENYLAMINE	ND	.011	U	mg/L			*.011		122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		62-50-0
Analyte.... FLUORANTHENE	ND	.011	U	mg/L			*.011		206-44-0
Analyte.... FLUORENE	ND	.011	U	mg/L			*.011		86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.011	U	mg/L			*.011		118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021		87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.011	U	mg/L			*.011		77-47-4
Analyte.... HEXACHLOROETHANE	ND	.011	U	mg/L			*.011		67-72-1
Analyte.... HEXACHLOROPHENE	ND	.021	U	mg/L			*.021		70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.011	U	mg/L			*.011		1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021		193-39-5
Analyte.... ISODRIN	ND	.011	U	mg/L			*.011		465-73-6
Analyte.... ISOPHORONE	ND	.021	U	mg/L			*.021		78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte.... METHAPYRILENE	ND	.054	U	mg/L			*.054		91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021		924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.021	U	mg/L			*.021		621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.011	U	mg/L			*.011		55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021		62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.011	U	mg/L			*.011		86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021		10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.011	U	mg/L			*.011		59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.011	U	mg/L			*.011		100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021		930-55-2
Analyte.... NAPHTHALENE	ND	.011	U	mg/L			*.011		91-20-3
Analyte.... NITROBENZENE	ND	.011	U	mg/L			*.011		98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.011	U	mg/L			*.011		126-68-1
Analyte.... O-TOLUIDINE	ND	.011	U	mg/L			*.011		95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.054	U	mg/L			*.054		60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.011	U	mg/L			*.011		608-93-5
Analyte.... PENTACHLOROETHANE	ND	.011	U	mg/L			*.011		46-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.054	U	mg/L			*.054		82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PENTACHLOROPHENOL	ND	.054	U	mg/L			*.054			87-86-5
Analyte.... PHENACETIN	ND	.054	U	mg/L			*.054			62-44-2
Analyte.... PHENANTHRENE	ND	.011	U	mg/L			*.011			85-01-8
Analyte.... PHENOL	ND	.011	U	mg/L			*.011			108-95-2
Analyte.... PRONAMIDE	ND	.011	U	mg/L			*.011			23950-58-2
Analyte.... PYRENE	ND	.011	U	mg/L			*.011			129-00-0
Analyte.... PYRIDINE	ND	.011	U	mg/L			*.011			110-86-1
Analyte.... SAFROLE	ND	.011	U	mg/L			*.011			94-59-7
Analyte.... THIONAZIN	ND	.011	U	mg/L			*.011			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.086		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	68		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.096		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	77		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.13		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	108		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.028		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	22		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.044		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	35		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.068		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	55		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 18:23 jam (12503) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER

OPCA-MW-3 Dilution Factor: ***1.00*** %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
9F0G033005	8082W-BBL001									
Analyte....	AROCLOR-1016	ND	.051	U	ug/L			*.051		12674-11-2
Analyte....	AROCLOR-1221	ND	.051	U	ug/L			*.051		11104-28-2
Analyte....	AROCLOR-1232	ND	.051	U	ug/L			*.051		11141-16-5
Analyte....	AROCLOR-1242	ND	.051	U	ug/L			*.051		53469-21-9
Analyte....	AROCLOR-1248	ND	.051	U	ug/L			*.051		12672-29-6
Analyte....	AROCLOR-1254	<Hit>	.040	J	ug/L			*.051		11097-69-1
Analyte....	AROCLOR-1260	ND	.051	U	ug/L			*.051		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	48		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.20		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	82		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 16:00 JWJ (12520) Method
Analytical Run: ***001*** EDD Method Code: **6/7000** WATER

H78B-15 - 7d	Dilution Factor: ***1.00*** %Solid:			Recovery Acceptance			Spike	F
9F0G033006 6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	<Hit> .057		mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	<Hit> .083		mg/L			.026		7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:23 (12437) Method SW7470
Analytical Run: ***001*** EDD Method Code: **7470A** WATER

H78B-15 - 7d	Dilution Factor: ***1.00*** %Solid:			Recovery Acceptance			Spike	F
9F0G033006 7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: ***001*** EDD Method Code: **9012** WATER

H78B-15 - 7d	Dilution Factor: ***1.00*** %Solid:			Recovery Acceptance			Spike	F
9F0G033006 9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/16/99 Prepared: 06/21/99 (12516) Analyzed: 06/21/99 09:00 CBS (12516) Method
Analytical Run: ***001*** EDD Method Code: **9030** WATER

H78B-15 - 7d	Dilution Factor: ***1.00*** %Solid:			Recovery Acceptance			Spike	F
9F0G033006 9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 14:04 mam (12506) Method

Analytical Run: ***001*** EDD Method Code: **8260AC** WATER

H78B-15 Dilution Factor: ***1.00*** %Solid:

\- 7d

9F0G033006 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

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Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.052		mg/L					.050	2037-26-5
% recovery TOLUENE-D8	-qc-	103		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.051		mg/L					.050	460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	102		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L					.050	17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	108		% REC	70.0	121.0				17060-07-0

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ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 05:21 ra (12491) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

H78B-15 - 7d	Dilution Factor: *1.00* %Solid:			Recovery Acceptance			Spike	F
9F0G033006 8270W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND .010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND .010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND .010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND .010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND .020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND .010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND .050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND .010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND .050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND .050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND .010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND .010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND .010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND .010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND .010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND .050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND .050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND .010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND .010	U	mg/L			.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND .020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND .010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND .010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND .010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND .010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND .050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND .050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND .020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND .010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND .050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND .050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND .020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND .020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND .050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND .010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND .020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND .010	U	mg/L			.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND .010	U	mg/L			.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND .020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND .050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND .010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND .050	U	mg/L			.050		100-01-6
Analyte.... 4-NITROPHENOL	ND .050	U	mg/L			.050		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND .050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND .050	U	mg/L			.050		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND .050	U	mg/L			.050		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND .020	U	mg/L			.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND .050	U	mg/L			.050		122-09-8
Analyte.... ACENAPHTHENE	ND .010	U	mg/L			.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND .010	U	mg/L			.010		208-96-8
Analyte.... ACETOPHENONE	ND .010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

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Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ANILINE	ND	.010	U	mg/L			.010		62-53-3
Analyte.... ANTHRACENE	ND	.010	U	mg/L			.010		120-12-7
Analyte.... ARAMITE	ND	.020	U	mg/L			.020		140-57-8
Analyte.... BENZIDINE	ND	.020	U	mg/L			.020		92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010		56-55-3
Analyte.... BENZO(A)PYRENE	ND	.010	U	mg/L			.010		50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010		205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010		191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010		207-08-9
Analyte.... BENZYL ALCOHOL	ND	.020	U	mg/L			.020		100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010		111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010		111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010		108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010		117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020		85-68-7
Analyte.... CHRYSENE	ND	.010	U	mg/L			.010		218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010		84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010		117-84-0
Analyte.... DIALLATE	ND	.020	U	mg/L			.020		2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020		53-70-3
Analyte.... DIBENZOFURAN	ND	.010	U	mg/L			.010		132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.010	U	mg/L			.010		84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010		131-11-3
Analyte.... DIPHENYLAMINE	ND	.010	U	mg/L			.010		122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010		62-50-0
Analyte.... FLUORANTHENE	ND	.010	U	mg/L			.010		206-44-0
Analyte.... FLUORENE	ND	.010	U	mg/L			.010		86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.010	U	mg/L			.010		118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020		87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010		77-47-4
Analyte.... HEXACHLOROETHANE	ND	.010	U	mg/L			.010		67-72-1
Analyte.... HEXACHLOROPHENE	ND	.020	U	mg/L			.020		70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.010	U	mg/L			.010		1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020		193-39-5
Analyte.... ISODRIN	ND	.010	U	mg/L			.010		465-73-6
Analyte.... ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte.... METHAPYRILENE	ND	.050	U	mg/L			.050		91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.010	U	mg/L			.010		66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020		924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020		621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010		55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020		62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010		86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020		10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010		59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010		100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020		930-55-2
Analyte.... NAPHTHALENE	ND	.010	U	mg/L			.010		91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			.010		98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010		126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			.010		95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050		60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			.010		608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			.010		46-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050		82-68-8

CT&E Environmental Services Inc: Charleston, WV

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Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-2
Analyte.... PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.065		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	52		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.080		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	64		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.12		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	97		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.031		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	25		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.041		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	32		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.070		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	56		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 18:40 jam (12503) Method SW8082

Analytical Run: ***001*** EDD Method Code: **8082** WATER

H78B-15 Dilution Factor: ***1.00*** %Solid:

\- 7d

						Recovery				F
						Acceptance			Spike	
9F0G033006	8082W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	<Hit>	.035	J	ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	46		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.20		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	79		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 16:09 JWJ (12520) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

78-6 - 7d		Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G033007	6010W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte....	ARSENIC, TOTAL	<Hit> .032		mg/L			.0060		7440-38-2
Analyte....	BARIUM, TOTAL	<Hit> .083		mg/L			.0060		7440-39-3
Analyte....	BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte....	CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte....	COBALT, TOTAL	ND .060	U	mg/L			.050		7440-48-4
Analyte....	CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte....	COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte....	NICKEL, TOTAL	ND .060	U	mg/L			.050		7440-02-0
Analyte....	LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte....	ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte....	TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte....	SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte....	THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte....	VANADIUM, TOTAL	ND .060	U	mg/L			.050		7440-62-2
Analyte....	ZINC, TOTAL	<Hit> .033		mg/L			.026		7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:24 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

78-6 - 7d		Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G033007	7470W-CWP001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	MERCURY, TOTAL	ND .00050	U	mg/L			.00050		7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

78-6 - 7d		Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G033007	9012W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	CYANIDE, TOTAL	ND .020	U	mg/L			.020		57-12-5

Collected: 06/16/99 Prepared: 06/21/99 (12516) Analyzed: 06/21/99 09:00 CBS (12516) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

78-6 - 7d		Dilution Factor: 1.00 %Solid:			Recovery Acceptance			Spike	F
9F0G033007	9030W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	SULFIDE	ND 5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 13:25 mam (12506) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

78-6 Dilution Factor: *1.00* %Solid:

\- 7d

9F0G033007 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte....	TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte....	TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte....	TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte....	VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate..	TOLUENE-D8	-qc-	.050		mg/L					.050	2037-26-5
% recovery	TOLUENE-D8	-qc-	100		% REC	81.0	117.0				2037-26-5
Surrogate..	4-BROMOFLUOROBENZENE	-qc-	.050		mg/L					.050	460-00-4
% recovery	4-BROMOFLUOROBENZENE	-qc-	100		% REC	74.0	121.0				460-00-4
Surrogate..	1,2-DICHLOROETHANE-D4	-qc-	.055		mg/L					.050	17060-07-0
% recovery	1,2-DICHLOROETHANE-D4	-qc-	110		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 06:07 ra (12491) Method

Analytical Run: ***001*** EDD Method Code: **8270B** WATER

78-6 Dilution Factor: ***1.00*** %Solid:

\- 7d

9F0G033007 8270W-BBL001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		608-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Analyte.... 4-NITROPHENOL	ND	.050	U	mg/L			.050		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050		122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010		208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	ANILINE	ND	.010	U	mg/L			.010		62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			.010		120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			.020		140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			.020		92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010		56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			.010		50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010		205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010		191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010		207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			.020		100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010		111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010		111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010		108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010		117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020		85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			.010		218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010		84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010		117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			.020		2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020		53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010		132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010		84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010		131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010		122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010		62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010		206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			.010		86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010		118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020		87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010		77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010		67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020		70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010		1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020		193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			.010		465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			*.020		78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		120-58-1
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050		91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010		66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020		924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020		621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010		55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020		62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010		86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020		10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010		59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010		100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020		930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			.010		91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			.010		98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010		126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			.010		95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050		60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			.010		608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			.010		46-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050		82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-5
Analyte.... PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.059		mg/L				.12		4165-60-0
% recovery NITROBENZENE-D5	-qc-	47		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.078		mg/L				.12		321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	63		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.083		mg/L				.12		92904-43-9
% recovery TERPHENYL-D14	-qc-	66		% REC	33.0	141.0				92904-43-9
Surrogate.. PHENOL-D5	-qc-	.030		mg/L				.12		4165-62-2
% recovery PHENOL-D5	-qc-	24		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.036		mg/L				.12		367-12-4
% recovery 2-FLUOROPHENOL	-qc-	29		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.066		mg/L				.12		118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	53		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 18:56 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: 8082 WATER

78-6 Dilution Factor: *1.00* %Solid:

\- 7d

		Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PQL:	Spike Amount:	F CAS:
9F0G033007	8082W-BBL001									
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	ND	.050	U	ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	46		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.21		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	82		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 16:19 JWJ (12520) Method
Analytical Run: 001 EDD Method Code: 6/7000 WATER

					Recovery			
RINSE BLANK	Dilution Factor: 1.00 %Solid:				Acceptance			Spike
- 7d								
9FOG033008 6010W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SILVER, TOTAL	ND	.013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND	.0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND	.0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND	.060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND	.013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND	.033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND	.060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND	.13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND	.060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND	.30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND	.0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND	.013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND	.060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND	.026	U	mg/L			.026		7440-66-6

Collected: 06/16/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:25 (12437) Method SW7470
Analytical Run: 001 EDD Method Code: 7470A WATER

					Recovery			
RINSE BLANK	Dilution Factor: 1.00 %Solid:				Acceptance			Spike
- 7d								
9FOG033008 7470W-CWP001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... MERCURY, TOTAL	ND	.00050	U	mg/L			.00050		7439-97-6

Collected: 06/16/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method
Analytical Run: 001 EDD Method Code: 9012 WATER

					Recovery			
RINSE BLANK	Dilution Factor: 1.00 %Solid:				Acceptance			Spike
- 7d								
9FOG033008 9012W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... CYANIDE, TOTAL	ND	.020	U	mg/L			.020		57-12-5

Collected: 06/16/99 Prepared: 06/22/99 (12516) Analyzed: 06/22/99 14:00 CBS (12516) Method
Analytical Run: 001 EDD Method Code: 9030 WATER

					Recovery			
RINSE BLANK	Dilution Factor: 1.00 %Solid:				Acceptance			Spike
- 7d								
9FOG033008 9030W-BBL001	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... SULFIDE	ND	5.0	U	mg/L			5.0		18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 12:47 mam (12506) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

RINSE BLANK Dilution Factor: *1.00* %Solid:

~ 7d

9F0G033008 8260W-APP001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PROL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	<Hit> .0093		mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND .0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND .0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND .0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND .0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND .0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND .010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND .0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND .20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND .010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND .010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte....	TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte....	TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte....	TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte....	VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate..	TOLUENE-D8	-qc-	.050		mg/L					.050	2037-26-5
% recovery	TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate..	4-BROMOFLUOROBENZENE	-qc-	.050		mg/L					.050	460-00-4
% recovery	4-BROMOFLUOROBENZENE	-qc-	100		% REC	74.0	121.0				460-00-4
Surrogate..	1,2-DICHLOROETHANE-D4	-qc-	.052		mg/L					.050	17060-07-0
% recovery	1,2-DICHLOROETHANE-D4	-qc-	105		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 13:39 ra (12502) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

RINSE BLANK Dilution Factor: *1.00* %Solid:

\- 7d

9FOG033008 8270W-BBL001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PPQL:	Spike Amount:	F CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Analyte.... 4-NITROPHENOL	ND	.050	U	mg/L			.050		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050		122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010		208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	ANILINE	ND	.010	U	mg/L			.010	62-53-3
Analyte....	ANTHRACENE	ND	.010	U	mg/L			.010	120-12-7
Analyte....	ARAMITE	ND	.020	U	mg/L			.020	140-57-8
Analyte....	BENZIDINE	ND	.020	U	mg/L			.020	92-87-5
Analyte....	BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010	56-55-3
Analyte....	BENZO(A)PYRENE	ND	.010	U	mg/L			.010	50-32-8
Analyte....	BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010	205-99-2
Analyte....	BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010	191-24-2
Analyte....	BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010	207-08-9
Analyte....	BENZYL ALCOHOL	ND	.020	U	mg/L			.020	100-51-6
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010	111-91-1
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010	111-44-4
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010	108-60-1
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010	117-81-7
Analyte....	BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020	85-68-7
Analyte....	CHRYSENE	ND	.010	U	mg/L			.010	218-01-9
Analyte....	DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010	84-74-2
Analyte....	DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010	117-84-0
Analyte....	DIALLATE	ND	.020	U	mg/L			.020	2303-16-4
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020	53-70-3
Analyte....	DIBENZOFURAN	ND	.010	U	mg/L			.010	132-64-9
Analyte....	DIETHYLPHTHALATE	ND	.010	U	mg/L			.010	84-66-2
Analyte....	DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010	131-11-3
Analyte....	DIPHENYLAMINE	ND	.010	U	mg/L			.010	122-39-4
Analyte....	ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010	62-50-0
Analyte....	FLUORANTHENE	ND	.010	U	mg/L			.010	206-44-0
Analyte....	FLUORENE	ND	.010	U	mg/L			.010	86-73-7
Analyte....	HEXACHLOROBENZENE	ND	.010	U	mg/L			.010	118-74-1
Analyte....	HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020	87-68-3
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010	77-47-4
Analyte....	HEXACHLOROETHANE	ND	.010	U	mg/L			.010	67-72-1
Analyte....	HEXACHLOROPHENE	ND	.020	U	mg/L			.020	70-30-4
Analyte....	HEXACHLOROPROPENE	ND	.010	U	mg/L			.010	1888-71-7
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020	193-39-5
Analyte....	ISODRIN	ND	.010	U	mg/L			.010	465-73-6
Analyte....	ISOPHORONE	ND	.020	U	mg/L			.020	78-59-1
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte....	METHAPYRILENE	ND	.050	U	mg/L			.050	91-80-5
Analyte....	METHYL METHANESULFONATE	ND	.010	U	mg/L			.010	66-27-3
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020	924-16-3
Analyte....	N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020	621-64-7
Analyte....	N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010	55-18-5
Analyte....	N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020	62-75-9
Analyte....	N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010	86-30-6
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020	10595-95-6
Analyte....	N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010	59-89-2
Analyte....	N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010	100-75-4
Analyte....	N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020	930-55-2
Analyte....	NAPHTHALENE	ND	.010	U	mg/L			.010	91-20-3
Analyte....	NITROBENZENE	ND	.010	U	mg/L			.010	98-95-3
Analyte....	O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010	126-68-1
Analyte....	O-TOLUIDINE	ND	.010	U	mg/L			.010	95-53-4
Analyte....	P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050	60-11-7
Analyte....	PENTACHLOROBENZENE	ND	.010	U	mg/L			.010	608-93-5
Analyte....	PENTACHLOROETHANE	ND	.010	U	mg/L			.010	76-01-7
Analyte....	PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050	82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-5
Analyte.... PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.098		mg/L				.12		4165-60-0
% recovery NITROBENZENE-D5	-qc-	78		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.098		mg/L				.12		321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	78		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.14		mg/L				.12		1718-51-0
% recovery TERPHENYL-D14	-qc-	114		% REC	33.0	141.0				1718-51-0
Surrogate.. PHENOL-D5	-qc-	.026		mg/L				.12		4165-62-2
% recovery PHENOL-D5	-qc-	21		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.043		mg/L				.12		367-12-4
% recovery 2-FLUOROPHENOL	-qc-	35		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.064		mg/L				.12		118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	52		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/21/99 (12479) Analyzed: 06/22/99 19:13 jam (12503) Method SW8082

Analytical Run: *001* EDD Method Code: 8082 WATER | Recovery | | | F

RINSE BLANK Dilution Factor: *1.00* %Solid: | Acceptance | | Spike |

\- 7d | | | |

9F0G033008 8082W-BBL001	Result:	QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte.... AROCLOR-1016	ND .25	U	ug/L			*.25		12674-11-2
Analyte.... AROCLOR-1221	ND .25	U	ug/L			*.25		11104-28-2
Analyte.... AROCLOR-1232	ND .25	U	ug/L			*.25		11141-16-5
Analyte.... AROCLOR-1242	ND .25	U	ug/L			*.25		53469-21-9
Analyte.... AROCLOR-1248	ND .25	U	ug/L			*.25		12672-29-6
Analyte.... AROCLOR-1254	ND .25	U	ug/L			*.25		11097-69-1
Analyte.... AROCLOR-1260	ND .25	U	ug/L			*.25		11096-82-5
Surrogate.. TETRACHLORO-M-XYLENE	-qc- .50		ug/L				1.2	877-09-8
% recovery TETRACHLORO-M-XYLENE	-qc- 40		% REC	30.0	132.0			877-09-8
Surrogate.. DECACHLOROBIPHENYL	-qc- .29		ug/L				1.2	2051-24-3
% recovery DECACHLOROBIPHENYL	-qc- 24	*	% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/16/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 17:17 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

TRIP BLANK Dilution Factor: *1.00* %Solid:

\- 7d

9F0G033009 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PEQL:	Spike Amount:	F CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			[illegible]
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			[illegible]
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			[illegible]
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			[illegible]
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			[illegible]
Surrogate.. TOLUENE-D8	-qc-	.051		mg/L				.050		[illegible]
% recovery TOLUENE-D8	-qc-	102		% REC	81.0	117.0				[illegible]
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.047		mg/L				.050		[illegible]
% recovery 4-BROMOFLUOROBENZENE	-qc-	95		% REC	74.0	121.0				[illegible]
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.055		mg/L				.050		[illegible]
% recovery 1,2-DICHLOROETHANE-D4	-qc-	110		% REC	70.0	121.0				[illegible]

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

LABORATORY QC

Collected: 06/18/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 14:50 JWJ (12520) Method
Analytical Run: *001* EDD Method Code: **6/7000** WATER

TOTAL METALS IN WATER MB Dilution Factor: *1.00* %Solid:

9F0G001288 6010W-BBL001	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MB CAS:
Analyte.... SILVER, TOTAL	ND .013	U	mg/L			.013		7440-22-4
Analyte.... ARSENIC, TOTAL	ND .0060	U	mg/L			.0060		7440-38-2
Analyte.... BARIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-39-3
Analyte.... BERYLLIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-41-7
Analyte.... CADMIUM, TOTAL	ND .0060	U	mg/L			.0060		7440-43-9
Analyte.... COBALT, TOTAL	ND .060	U	mg/L			.060		7440-48-4
Analyte.... CHROMIUM, TOTAL	ND .013	U	mg/L			.013		7440-47-3
Analyte.... COPPER, TOTAL	ND .033	U	mg/L			.033		7440-50-8
Analyte.... NICKEL, TOTAL	ND .060	U	mg/L			.060		7440-02-0
Analyte.... LEAD, TOTAL	ND .13	U	mg/L			.13		7439-92-1
Analyte.... ANTIMONY, TOTAL	ND .060	U	mg/L			.060		7440-36-0
Analyte.... TIN, TOTAL	ND .30	U	mg/L			.30		7440-31-5
Analyte.... SELENIUM, TOTAL	ND .0060	U	mg/L			.0060		7782-49-2
Analyte.... THALLIUM, TOTAL	ND .013	U	mg/L			.013		7440-28-0
Analyte.... VANADIUM, TOTAL	ND .060	U	mg/L			.060		7440-62-2
Analyte.... ZINC, TOTAL	ND .026	U	mg/L			.026		7440-66-6

Collected: 06/18/99 Prepared: 06/18/99 (12430) Analyzed: 06/22/99 14:58 JWJ (12520) Method
Analytical Run: *001* EDD Method Code: **6/7000** WATER

TOTAL METALS IN WATER LCS Dilution Factor: *1.00* %Solid:

9F0G001289 6010W-BBL001-LCS	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	LCS CAS:
Spike..... SILVER, TOTAL	-qc- 2.0		mg/L				2.0	7440-22-4
% recovery SILVER, TOTAL	-qc- 102		% REC	80.0	120.0			7440-22-4
Spike..... ARSENIC, TOTAL	-qc- 2.1		mg/L				2.0	7440-38-2
% recovery ARSENIC, TOTAL	-qc- 104		% REC	80.0	120.0			7440-38-2
Spike..... BARIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-39-3
% recovery BARIUM, TOTAL	-qc- 101		% REC	80.0	120.0			7440-39-3
Spike..... BERYLLIUM, TOTAL	-qc- 2.0		mg/L				2.0	7440-41-7
% recovery BERYLLIUM, TOTAL	-qc- 102		% REC	80.0	120.0			7440-41-7
Spike..... CADMIUM, TOTAL	-qc- 2.1		mg/L				2.0	7440-43-9
% recovery CADMIUM, TOTAL	-qc- 106		% REC	80.0	120.0			7440-43-9
Spike..... COBALT, TOTAL	-qc- 2.0		mg/L				2.0	7440-48-4
% recovery COBALT, TOTAL	-qc- 102		% REC	80.0	120.0			7440-48-4
Spike..... CHROMIUM, TOTAL	-qc- 2.1		mg/L				2.0	7440-47-3
% recovery CHROMIUM, TOTAL	-qc- 104		% REC	80.0	120.0			7440-47-3
Spike..... COPPER, TOTAL	-qc- 2.0		mg/L				2.0	7440-50-8
% recovery COPPER, TOTAL	-qc- 100		% REC	80.0	120.0			7440-50-8
Spike..... NICKEL, TOTAL	-qc- 2.1		mg/L				2.0	7440-02-0
% recovery NICKEL, TOTAL	-qc- 106		% REC	80.0	120.0			7440-02-0
Spike..... LEAD, TOTAL	-qc- 2.1		mg/L				2.0	7439-92-1
% recovery LEAD, TOTAL	-qc- 103		% REC	80.0	120.0			7439-92-1
Spike..... ANTIMONY, TOTAL	-qc- 2.0		mg/L				2.0	7440-36-0
% recovery ANTIMONY, TOTAL	-qc- 102		% REC	80.0	120.0			7440-36-0
Spike..... TIN, TOTAL	-qc- 1.6		mg/L				2.0	7440-31-5
% recovery TIN, TOTAL	-qc- 80		% REC	80.0	120.0			7440-31-5
Spike..... SELENIUM, TOTAL	-qc- 2.0		mg/L				2.0	7782-49-2
% recovery SELENIUM, TOTAL	-qc- 102		% REC	80.0	120.0			7782-49-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Spike..... THALLIUM, TOTAL	-qc-	2.1		mg/L				2.0	7440-28-0
% recovery THALLIUM, TOTAL	-qc-	104		% REC	80.0	120.0			7440-28-0
Spike..... VANADIUM, TOTAL	-qc-	2.1		mg/L				2.0	7440-62-2
% recovery VANADIUM, TOTAL	-qc-	103		% REC	80.0	120.0			7440-62-2
Spike..... ZINC, TOTAL	-qc-	2.1		mg/L				2.0	7440-66-6
% recovery ZINC, TOTAL	-qc-	106		% REC	80.0	120.0			7440-66-6

Collected: 06/18/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:01 (12437) Method SW7470

Analytical Run: *001* EDD Method Code: **7470A** WATER

TOTAL HG IN WATER Dilution Factor: *1.00* %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	MB CAS:
9F0G001294 7470W-CWP001									
Analyte.... MERCURY, TOTAL	ND	.00050	U	mg/L			.00050		7439-97-6

Collected: 06/18/99 Prepared: 06/18/99 (12436) Analyzed: 06/18/99 13:03 (12437) Method SW7470

Analytical Run: *001* EDD Method Code: **7470A** WATER

TOTAL HG IN WATER Dilution Factor: *1.00* %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	LCS CAS:
9F0G001295 7470W-CWP001-LCS									
Spike..... MERCURY, TOTAL	-qc-	.0024		mg/L				.0020	7439-97-6
% recovery MERCURY, TOTAL	-qc-	118		% REC	80.0	120.0			7439-97-6

Collected: 06/18/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method

Analytical Run: *001* EDD Method Code: **9012** WATER

WATER Dilution Factor: *1.00* %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	MB CAS:
9F0G001339 9012W-BBL001-MB									
Analyte.... CYANIDE, TOTAL	ND	.020	U	mg/L			.020		57-12-5

Collected: 06/18/99 Prepared: 06/18/99 (12435) Analyzed: 06/18/99 10:00 TB (12435) Method

Analytical Run: *001* EDD Method Code: **9012** WATER

WATER Dilution Factor: *1.00* %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	LCS CAS:
9F0G001340 9012W-BBL001-LCS									
Spike..... CYANIDE, TOTAL	-qc-	.10		mg/L				.10	57-12-5
% recovery CYANIDE, TOTAL	-qc-	100		% REC	90.0	110.0			57-12-5

Collected: 06/17/99 Prepared: 06/17/99 (12516) Analyzed: 06/17/99 15:00 CBS (12516) Method

Analytical Run: *001* EDD Method Code: **9030** WATER

TOTAL SULFIDE IN WATER MB Dilution Factor: *1.00* %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	MB CAS:
9F0G001431 9030W-BBL001-MB									
Analyte.... SULFIDE	ND	5.0	U	mg/L			5.0		18496-25-8

Collected: 06/17/99 Prepared: 06/17/99 (12516) Analyzed: 06/17/99 15:00 CBS (12516) Method

Analytical Run: *001* EDD Method Code: **9030** WATER

TOTAL SULFIDE IN WATER LCS Dilution Factor: *1.00* %Solid:

	Result:		QF:	Units:	Recovery Acceptance Low:	Recovery Acceptance High:	PRQL:	Spike Amount:	LCS CAS:
9F0G001432 9030W-BBL001-LCS									
Analyte.... SULFIDE	<Hit>	64.0		mg/L			5.0		18496-25-8
% recovery SULFIDE	-qc-	89		mg/L	80.0	120.0			18496-25-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/19/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 12:54 ra (12502) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

METHOD BLANK BNA Dilution Factor: *1.00* %Solid:

9F0G001334 8270W-BBL001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	CAS:
Analyte.... 1,2,4,5-TETRACHLOROBENZENE	ND	.010	U	mg/L			.010		95-94-3
Analyte.... 1,2,4-TRICHLOROBENZENE	ND	.010	U	mg/L			.010		120-82-1
Analyte.... 1,2-DICHLOROBENZENE	ND	.010	U	mg/L			.010		95-50-1
Analyte.... 1,2-DIPHENYLHYDRAZINE	ND	.010	U	mg/L			.010		122-66-7
Analyte.... 1,3,5-TRINITROBENZENE	ND	.020	U	mg/L			.020		99-35-4
Analyte.... 1,3-DICHLOROBENZENE	ND	.010	U	mg/L			.010		541-73-1
Analyte.... 1,3-DINITROBENZENE	ND	.050	U	mg/L			.050		99-65-0
Analyte.... 1,4-DICHLOROBENZENE	ND	.010	U	mg/L			.010		106-46-7
Analyte.... 1,4-NAPHTHOQUINONE	ND	.050	U	mg/L			.050		130-15-4
Analyte.... 1-NAPHTHHYLAMINE	ND	.050	U	mg/L			.050		134-32-7
Analyte.... 2,3,4,6-TETRACHLOROPHENOL	ND	.010	U	mg/L			.010		58-90-2
Analyte.... 2,4,5-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		95-95-4
Analyte.... 2,4,6-TRICHLOROPHENOL	ND	.010	U	mg/L			.010		88-06-2
Analyte.... 2,4-DICHLOROPHENOL	ND	.010	U	mg/L			.010		120-83-2
Analyte.... 2,4-DIMETHYLPHENOL	ND	.010	U	mg/L			.010		105-67-9
Analyte.... 2,4-DINITROPHENOL	ND	.050	U	mg/L			.050		51-28-5
Analyte.... 2,4-DINITROTOLUENE	ND	.050	U	mg/L			.050		121-14-2
Analyte.... 2,6-DICHLOROPHENOL	ND	.010	U	mg/L			.010		87-65-0
Analyte.... 2,6-DINITROTOLUENE	ND	.010	U	mg/L			.010		606-20-2
Analyte.... 2-ACETYLAMINOFLUORENE	ND	.020	U	mg/L			.020		53-96-3
Analyte.... 2-CHLORONAPHTHALENE	ND	.010	U	mg/L			.010		91-58-7
Analyte.... 2-CHLOROPHENOL	ND	.010	U	mg/L			.010		95-57-8
Analyte.... 2-METHYLNAPHTHALENE	ND	.010	U	mg/L			.010		91-57-6
Analyte.... 2-METHYLPHENOL	ND	.010	U	mg/L			.010		95-48-7
Analyte.... 2-NAPHTHYLAMINE	ND	.050	U	mg/L			.050		91-59-8
Analyte.... 2-NITROANILINE	ND	.050	U	mg/L			.050		88-74-4
Analyte.... 2-NITROPHENOL	ND	.020	U	mg/L			.020		88-75-5
Analyte.... 2-PICOLINE	ND	.010	U	mg/L			.010		109-06-8
Analyte.... 3,3'-DIMETHYLBENZIDINE	ND	.050	U	mg/L			.050		119-93-7
Analyte.... 3,3-DICHLOROBENZIDINE	ND	.050	U	mg/L			.050		91-94-1
Analyte.... 3- & 4-METHYLPHENOL	ND	.020	U	mg/L			.020		
Analyte.... 3-METHYLCHOLANTHRENE	ND	.020	U	mg/L			.020		56-49-5
Analyte.... 3-NITROANILINE	ND	.050	U	mg/L			.050		99-09-2
Analyte.... 4,6-DINITRO-2-METHYLPHENOL	ND	.010	U	mg/L			.010		534-52-1
Analyte.... 4-AMINOBIPHENYL	ND	.020	U	mg/L			.020		92-67-1
Analyte.... 4-BROMOPHENYL PHENYL ETHER	ND	.010	U	mg/L			.010		101-55-3
Analyte.... 4-CHLORO-3-METHYLPHENOL	ND	.010	U	mg/L			.010		59-50-7
Analyte.... 4-CHLOROANILINE	ND	.020	U	mg/L			.020		106-47-8
Analyte.... 4-CHLOROBENZILATE	ND	.050	U	mg/L			.050		510-15-6
Analyte.... 4-CHLORODIPHENYLETHER	ND	.010	U	mg/L			.010		7005-72-3
Analyte.... 4-NITROANILINE	ND	.050	U	mg/L			.050		100-01-6
Analyte.... 4-NITROPHENOL	ND	.050	U	mg/L			.050		100-02-7
Analyte.... 4-NITROQUINOLINE-1-OXIDE	ND	.050	U	mg/L			.050		56-57-5
Analyte.... 4-PHENYLENEDIAMINE	ND	.050	U	mg/L			.050		106-50-3
Analyte.... 5-NITRO-O-TOLUIDINE	ND	.050	U	mg/L			.050		99-55-8
Analyte.... 7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.020	U	mg/L			.020		57-97-6
Analyte.... A,A'-DIMETHYLPHENETHYLAMINE	ND	.050	U	mg/L			.050		122-09-8
Analyte.... ACENAPHTHENE	ND	.010	U	mg/L			.010		83-32-9
Analyte.... ACENAPHTHYLENE	ND	.010	U	mg/L			.010		208-96-8
Analyte.... ACETOPHENONE	ND	.010	U	mg/L			.010		98-86-2

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ANILINE	ND	.010	U	mg/L			.010	62-53-3
Analyte.... ANTHRACENE	ND	.010	U	mg/L			.010	120-12-7
Analyte.... ARAMITE	ND	.020	U	mg/L			.020	140-57-8
Analyte.... BENZIDINE	ND	.020	U	mg/L			.020	92-87-5
Analyte.... BENZO(A)ANTHRACENE	ND	.010	U	mg/L			.010	56-55-3
Analyte.... BENZO(A)PYRENE	ND	.010	U	mg/L			.010	50-32-8
Analyte.... BENZO(B)FLUORANTHENE	ND	.010	U	mg/L			.010	205-99-2
Analyte.... BENZO(G,H,I)PERYLENE	ND	.010	U	mg/L			.010	191-24-2
Analyte.... BENZO(K)FLUORANTHENE	ND	.010	U	mg/L			.010	207-08-9
Analyte.... BENZYL ALCOHOL	ND	.020	U	mg/L			.020	100-51-6
Analyte.... BIS(2-CHLOROETHOXY) METHANE	ND	.010	U	mg/L			.010	111-91-1
Analyte.... BIS(2-CHLOROETHYL)ETHER	ND	.010	U	mg/L			.010	111-44-4
Analyte.... BIS(2-CHLOROISOPROPYL)ETHER	ND	.010	U	mg/L			.010	108-60-1
Analyte.... BIS(2-ETHYLHEXYL) PHTHALATE	ND	.010	U	mg/L			.010	117-81-7
Analyte.... BUTYL BENZYL PHTHALATE	ND	.020	U	mg/L			.020	85-68-7
Analyte.... CHRYSENE	ND	.010	U	mg/L			.010	218-01-9
Analyte.... DI-N-BUTYLPHTHALATE	ND	.010	U	mg/L			.010	84-74-2
Analyte.... DI-N-OCTYLPHTHALATE	ND	.010	U	mg/L			.010	117-84-0
Analyte.... DIALLATE	ND	.020	U	mg/L			.020	2303-16-4
Analyte.... DIBENZO(A,H)ANTHRACENE	ND	.020	U	mg/L			.020	53-70-3
Analyte.... DIBENZOFURAN	ND	.010	U	mg/L			.010	132-64-9
Analyte.... DIETHYLPHTHALATE	ND	.010	U	mg/L			.010	84-66-2
Analyte.... DIMETHYLPHTHALATE	ND	.010	U	mg/L			.010	131-11-3
Analyte.... DIPHENYLAMINE	ND	.010	U	mg/L			.010	122-39-4
Analyte.... ETHYL METHANESULFONATE	ND	.010	U	mg/L			.010	62-50-0
Analyte.... FLUORANTHENE	ND	.010	U	mg/L			.010	206-44-0
Analyte.... FLUORENE	ND	.010	U	mg/L			.010	86-73-7
Analyte.... HEXACHLOROBENZENE	ND	.010	U	mg/L			.010	118-74-1
Analyte.... HEXACHLOROBUTADIENE	ND	.020	U	mg/L			.020	87-68-3
Analyte.... HEXACHLOROCYCLOPENTADIENE	ND	.010	U	mg/L			.010	77-47-4
Analyte.... HEXACHLOROETHANE	ND	.010	U	mg/L			.010	67-72-1
Analyte.... HEXACHLOROPHENE	ND	.020	U	mg/L			.020	70-30-4
Analyte.... HEXACHLOROPROPENE	ND	.010	U	mg/L			.010	1888-71-7
Analyte.... INDENO(1,2,3-CD)PYRENE	ND	.020	U	mg/L			.020	193-39-5
Analyte.... ISODRIN	ND	.010	U	mg/L			.010	465-73-6
Analyte.... ISOPHORONE	ND	.020	U	mg/L			.020	78-59-1
Analyte.... ISOSAFROLE	ND	.020	U	mg/L			.020	120-58-1
Analyte.... METHAPYRILENE	ND	.050	U	mg/L			.050	91-80-5
Analyte.... METHYL METHANESULFONATE	ND	.010	U	mg/L			.010	66-27-3
Analyte.... N-NITROSO-DI-N-BUTYLAMINE	ND	.020	U	mg/L			.020	924-16-3
Analyte.... N-NITROSODI-N-PROPYLAMINE	ND	.020	U	mg/L			.020	621-64-7
Analyte.... N-NITROSODIETHYLAMINE	ND	.010	U	mg/L			.010	55-18-5
Analyte.... N-NITROSODIMETHYLAMINE	ND	.020	U	mg/L			.020	62-75-9
Analyte.... N-NITROSODIPHENYLAMINE	ND	.010	U	mg/L			.010	86-30-6
Analyte.... N-NITROSOMETHYLETHYLAMINE	ND	.020	U	mg/L			.020	10595-95-6
Analyte.... N-NITROSOMORPHOLINE	ND	.010	U	mg/L			.010	59-89-2
Analyte.... N-NITROSOPIPERIDINE	ND	.010	U	mg/L			.010	100-75-4
Analyte.... N-NITROSOPYRROLIDINE	ND	.020	U	mg/L			.020	930-55-2
Analyte.... NAPHTHALENE	ND	.010	U	mg/L			.010	91-20-3
Analyte.... NITROBENZENE	ND	.010	U	mg/L			.010	98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.010	U	mg/L			.010	126-68-1
Analyte.... O-TOLUIDINE	ND	.010	U	mg/L			.010	95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.050	U	mg/L			.050	60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.010	U	mg/L			.010	608-93-5
Analyte.... PENTACHLOROETHANE	ND	.010	U	mg/L			.010	76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.050	U	mg/L			.050	82-68-8

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/21/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:58 jam (12524) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER | Recovery | | LCS

LAB CONTROL SPIKE PCB Dilution Factor: *1.00* %Solid: | Acceptance | | Spike |

9F0G001374	8082W-BBL001-LCS	Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Spike.....	AROCLOR-1254	-qc-	1.3		ug/L				1.2	11097-69-1
% recovery	AROCLOR-1254	-qc-	104		% REC	60.0	130.0			11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	48		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.17		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	70		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/21/99 Prepared: 06/21/99 (12479) Analyzed: 06/21/99 13:08 jam (12524) Method SW8082

Analytical Run: *001* EDD Method Code: **8082** WATER

METHOD BLANK PCB Dilution Factor: *1.00* %Solid:

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	MR
9F0G001373	8082W-BBL001									
Analyte....	AROCLOR-1016	ND	.050	U	ug/L			*.050		12674-11-2
Analyte....	AROCLOR-1221	ND	.050	U	ug/L			*.050		11104-28-2
Analyte....	AROCLOR-1232	ND	.050	U	ug/L			*.050		11141-16-5
Analyte....	AROCLOR-1242	ND	.050	U	ug/L			*.050		53469-21-9
Analyte....	AROCLOR-1248	ND	.050	U	ug/L			*.050		12672-29-6
Analyte....	AROCLOR-1254	ND	.050	U	ug/L			*.050		11097-69-1
Analyte....	AROCLOR-1260	ND	.050	U	ug/L			*.050		11096-82-5
Surrogate..	TETRACHLORO-M-XYLENE	-qc-	.12		ug/L				.25	877-09-8
% recovery	TETRACHLORO-M-XYLENE	-qc-	50		% REC	30.0	132.0			877-09-8
Surrogate..	DECACHLOROBIPHENYL	-qc-	.17		ug/L				.25	2051-24-3
% recovery	DECACHLOROBIPHENYL	-qc-	66		% REC	36.0	144.0			2051-24-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/21/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 07:38 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

LABORATORY CONTROL SAMPLE Dilution Factor: *1.00* %Solid:

9F0G001399 8260W-APP001-LCS	Result:	QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike Amount:	CAS:
Analyte.... CHLOROMETHANE	ND .010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND .010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND .010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND .010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND .0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND .10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND .010	U	mg/L			.010		75-15-0
Spike..... 1,1-DICHLOROETHENE	-qc- .027		mg/L				.025	75-35-4
% recovery 1,1-DICHLOROETHENE	-qc- 109		% REC	75.0	125.0			75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND .0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND .0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND .0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND .10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND .0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND .0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND .0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-01-5
Spike..... TRICHLOROETHENE	-qc- .027		mg/L				.025	79-01-6
% recovery TRICHLOROETHENE	-qc- 109		% REC	75.0	125.0			79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND .0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND .0050	U	mg/L			.0050		79-00-5
Spike..... BENZENE	-qc- .027		mg/L				.025	71-43-2
% recovery BENZENE	-qc- 108		% REC	75.0	125.0			71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND .0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND .0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND .010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND .010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND .0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		79-34-5
Spike..... TOLUENE	-qc- .027		mg/L				.025	108-88-3
% recovery TOLUENE	-qc- 110		% REC	75.0	125.0			108-88-3
Spike..... CHLOROBENZENE	-qc- .027		mg/L				.025	108-90-7
% recovery CHLOROBENZENE	-qc- 109		% REC	75.0	125.0			108-90-7
Analyte.... ETHYLBENZENE	ND .0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND .0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND .0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND .0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND .0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND .0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND .0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND .20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND .0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND .0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND .010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND .10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND .10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND .010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND .010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND .0050	U	mg/L			.0050		74-95-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010			97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050			74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20			78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010			126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010			80-62-6
Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.048		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	95		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.050		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	99		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PENTACHLOROPHENOL	ND	.050	U	mg/L			.050			87-86-5
Analyte.... PHENACETIN	ND	.050	U	mg/L			.050			62-44-2
Analyte.... PHENANTHRENE	ND	.010	U	mg/L			.010			85-01-8
Analyte.... PHENOL	ND	.010	U	mg/L			.010			108-95-2
Analyte.... PRONAMIDE	ND	.010	U	mg/L			.010			23950-58-5
Analyte.... PYRENE	ND	.010	U	mg/L			.010			129-00-0
Analyte.... PYRIDINE	ND	.010	U	mg/L			.010			110-86-1
Analyte.... SAFROLE	ND	.010	U	mg/L			.010			94-59-7
Analyte.... THIONAZIN	ND	.010	U	mg/L			.010			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.085		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	68		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.091		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	73		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.14		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	114		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.039		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	31		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.056		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	45		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.093		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	74		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/21/99 Prepared: 06/22/99 (12500) Analyzed: 06/22/99 09:34 mam (12500) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

METHOD BLANK Dilution Factor: *1.00* %Solid:

9F0G001401 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PPQL:	Spike Amount:	MB CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.051		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	101		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.051		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	102		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.053		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	107		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... NAPHTHALENE	ND	.011	U	mg/L			*.011			91-20-3
Analyte.... NITROBENZENE	ND	.011	U	mg/L			*.011			98-95-3
Analyte.... O,O,O-TRIETHYLPHOSPHOROTHIOATE	ND	.011	U	mg/L			*.011			126-68-1
Analyte.... O-TOLUIDINE	ND	.011	U	mg/L			*.011			95-53-4
Analyte.... P-DIMETHYLAMINOAZOBENZENE	ND	.054	U	mg/L			*.054			60-11-7
Analyte.... PENTACHLOROBENZENE	ND	.011	U	mg/L			*.011			608-93-5
Analyte.... PENTACHLOROETHANE	ND	.011	U	mg/L			*.011			76-01-7
Analyte.... PENTACHLORONITROBENZENE	ND	.054	U	mg/L			*.054			82-68-8
Spike..... PENTACHLOROPHENOL	-qc-	.11		mg/L					.12	87-86-5
% recovery PENTACHLOROPHENOL	-qc-	88		% REC	10.0	100.0				87-86-5
Analyte.... PHENACETIN	ND	.054	U	mg/L			*.054			62-44-2
Analyte.... PHENANTHRENE	ND	.011	U	mg/L			*.011			85-01-8
Spike..... PHENOL	-qc-	.044		mg/L					.12	108-95-2
% recovery PHENOL	-qc-	35		mg/L	15.0	110.0				108-95-2
Analyte.... PRONAMIDE	ND	.011	U	mg/L			*.011			23950-58-5
Spike..... PYRENE	-qc-	.066		mg/L					.062	129-00-0
% recovery PYRENE	-qc-	106		% REC	30.0	135.0				129-00-0
Analyte.... PYRIDINE	ND	.011	U	mg/L			*.011			110-86-1
Analyte.... SAFROLE	ND	.011	U	mg/L			*.011			94-59-7
Analyte.... THIONAZIN	ND	.011	U	mg/L			*.011			297-97-2
Surrogate.. NITROBENZENE-D5	-qc-	.10		mg/L					.12	4165-60-0
% recovery NITROBENZENE-D5	-qc-	81		% REC	35.0	114.0				4165-60-0
Surrogate.. 2-FLUOROBIPHENYL	-qc-	.11		mg/L					.12	321-60-8
% recovery 2-FLUOROBIPHENYL	-qc-	87		% REC	43.0	116.0				321-60-8
Surrogate.. TERPHENYL-D14	-qc-	.16		mg/L					.12	98904-43-9
% recovery TERPHENYL-D14	-qc-	126		% REC	33.0	141.0				98904-43-9
Surrogate.. PHENOL-D5	-qc-	.035		mg/L					.12	4165-62-2
% recovery PHENOL-D5	-qc-	28		% REC	10.0	94.0				4165-62-2
Surrogate.. 2-FLUOROPHENOL	-qc-	.055		mg/L					.12	367-12-4
% recovery 2-FLUOROPHENOL	-qc-	44		% REC	21.0	100.0				367-12-4
Surrogate.. 2,4,6-TRIBROMOPHENOL	-qc-	.10		mg/L					.12	118-79-6
% recovery 2,4,6-TRIBROMOPHENOL	-qc-	81		% REC	10.0	123.0				118-79-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/19/99 Prepared: 06/19/99 (12451) Analyzed: 06/22/99 15:56 ra (12502) Method
Analytical Run: *001* EDD Method Code: **8270B** WATER

LAB CONTROL SPIKE BNA Dilution Factor: *1.00* %Solid:

		Result:		QF:	Units:	Recovery Acceptance Low:	High:	PRQL:	Spike	LCS
9FOG001335	8270W-BBL001-LCS									
Analyte....	1,2,4,5-TETRACHLOROBENZENE	ND	.011	U	mg/L			*.011		95-94-3
Spike.....	1,2,4-TRICHLOROBENZENE	-qc-	.044		mg/L				.062	120-82-1
% recovery	1,2,4-TRICHLOROBENZENE	-qc-	70		% REC	40.0	95.0			120-82-1
Analyte....	1,2-DICHLOROBENZENE	ND	.011	U	mg/L			*.011		95-50-1
Analyte....	1,2-DIPHENYLHYDRAZINE	ND	.011	U	mg/L			*.011		122-66-7
Analyte....	1,3,5-TRINITROBENZENE	ND	.021	U	mg/L			*.021		99-35-4
Analyte....	1,3-DICHLOROBENZENE	ND	.011	U	mg/L			*.011		541-73-1
Analyte....	1,3-DINITROBENZENE	ND	.054	U	mg/L			*.054		99-65-0
Spike.....	1,4-DICHLOROBENZENE	-qc-	.038		mg/L				.062	106-46-7
% recovery	1,4-DICHLOROBENZENE	-qc-	61		% REC	40.0	95.0			106-46-7
Analyte....	1,4-NAPHTHOQUINONE	ND	.054	U	mg/L			*.054		130-15-4
Analyte....	1-NAPHTHHYLAMINE	ND	.054	U	mg/L			*.054		134-32-7
Analyte....	2,3,4,6-TETRACHLOROPHENOL	ND	.011	U	mg/L			*.011		58-90-2
Analyte....	2,4,5-TRICHLOROPHENOL	ND	.011	U	mg/L			*.011		95-95-4
Analyte....	2,4,6-TRICHLOROPHENOL	ND	.011	U	mg/L			*.011		88-06-2
Analyte....	2,4-DICHLOROPHENOL	ND	.011	U	mg/L			*.011		120-83-2
Analyte....	2,4-DIMETHYLPHENOL	ND	.011	U	mg/L			*.011		105-67-9
Analyte....	2,4-DINITROPHENOL	ND	.054	U	mg/L			*.054		51-28-5
Spike.....	2,4-DINITROTOLUENE	-qc-	.037		mg/L				.062	121-14-2
% recovery	2,4-DINITROTOLUENE	-qc-	58		% REC	25.0	95.0			121-14-2
Analyte....	2,6-DICHLOROPHENOL	ND	.011	U	mg/L			*.011		87-65-0
Analyte....	2,6-DINITROTOLUENE	ND	.011	U	mg/L			*.011		606-20-2
Analyte....	2-ACETYLAMINOFLUORENE	ND	.021	U	mg/L			*.021		53-96-3
Analyte....	2-CHLORONAPHTHALENE	ND	.011	U	mg/L			*.011		91-58-7
Spike.....	2-CHLOROPHENOL	-qc-	.094		mg/L				.12	95-57-8
% recovery	2-CHLOROPHENOL	-qc-	75		% REC	30.0	120.0			95-57-8
Analyte....	2-METHYLNAPHTHALENE	ND	.011	U	mg/L			*.011		91-57-6
Analyte....	2-METHYLPHENOL	ND	.011	U	mg/L			*.011		95-48-7
Analyte....	2-NAPHTHYLAMINE	ND	.054	U	mg/L			*.054		91-59-8
Analyte....	2-NITROANILINE	ND	.054	U	mg/L			*.054		88-74-4
Analyte....	2-NITROPHENOL	ND	.021	U	mg/L			*.021		88-75-5
Analyte....	2-PICOLINE	ND	.011	U	mg/L			*.011		109-06-8
Analyte....	3,3'-DIMETHYLBENZIDINE	ND	.054	U	mg/L			*.054		119-93-7
Analyte....	3,3-DICHLOROBENZIDINE	ND	.054	U	mg/L			*.054		91-94-1
Analyte....	3- & 4-METHYLPHENOL	ND	.021	U	mg/L			*.021		
Analyte....	3-METHYLCHOLANTHRENE	ND	.021	U	mg/L			*.021		56-49-5
Analyte....	3-NITROANILINE	ND	.054	U	mg/L			*.054		99-09-2
Analyte....	4,6-DINITRO-2-METHYLPHENOL	ND	.011	U	mg/L			*.011		534-52-1
Analyte....	4-AMINOBIPHENYL	ND	.021	U	mg/L			*.021		92-67-1
Analyte....	4-BROMOPHENYL PHENYL ETHER	ND	.011	U	mg/L			*.011		101-55-3
Spike.....	4-CHLORO-3-METHYLPHENOL	-qc-	.086		mg/L				.12	59-50-7
% recovery	4-CHLORO-3-METHYLPHENOL	-qc-	68		% REC	25.0	95.0			59-50-7
Analyte....	4-CHLOROANILINE	ND	.021	U	mg/L			*.021		106-47-8
Analyte....	4-CHLOROBENZILATE	ND	.054	U	mg/L			*.054		510-15-6
Analyte....	4-CHLORODIPHENYLETHER	ND	.011	U	mg/L			*.011		7005-72-3
Analyte....	4-NITROANILINE	ND	.054	U	mg/L			*.054		100-01-6
Spike.....	4-NITROPHENOL	-qc-	.025		mg/L				.12	100-02-7
% recovery	4-NITROPHENOL	-qc-	20		% REC	10.0	80.0			100-02-7
Analyte....	4-NITROQUINOLINE-1-OXIDE	ND	.054	U	mg/L			*.054		56-57-5
Analyte....	4-PHENYLENEDIAMINE	ND	.054	U	mg/L			*.054		106-50-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte....	5-NITRO-O-TOLUIDINE	ND	.054	U	mg/L			*.054		[illegible]
Analyte....	7,12-DIMETHYLBENZ(A)ANTHRACENE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	A,A'-DIMETHYLPHENETHYLAMINE	ND	.054	U	mg/L			*.054		[illegible]
Spike.....	ACENAPHTHENE	-qc-	.058		mg/L				.062	[illegible]
% recovery	ACENAPHTHENE	-qc-	93		% REC	50.0	115.0			[illegible]
Analyte....	ACENAPHTHYLENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	ACETOPHENONE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	ANILINE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	ANTHRACENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	ARAMITE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	BENZIDINE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	BENZO(A)ANTHRACENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BENZO(A)PYRENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BENZO(B)FLUORANTHENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BENZO(G,H,I)PERYLENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BENZO(K)FLUORANTHENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BENZYL ALCOHOL	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	BIS(2-CHLOROETHOXY) METHANE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BIS(2-CHLOROETHYL)ETHER	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BIS(2-CHLOROISOPROPYL)ETHER	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BIS(2-ETHYLHEXYL) PHTHALATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	BUTYL BENZYL PHTHALATE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	CHRYSENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	DI-N-BUTYLPHTHALATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	DI-N-OCTYLPHTHALATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	DIALLATE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	DIBENZO(A,H)ANTHRACENE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	DIBENZOFURAN	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	DIETHYLPHTHALATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	DIMETHYLPHTHALATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	DIPHENYLAMINE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	ETHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	FLUORANTHENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	FLUORENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	HEXACHLOROBENZENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	HEXACHLOROBUTADIENE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	HEXACHLOROCYCLOPENTADIENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	HEXACHLOROETHANE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	HEXACHLOROPHENE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	HEXACHLOROPROPENE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	INDENO(1,2,3-CD)PYRENE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	ISODRIN	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	ISOPHORONE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	ISOSAFROLE	ND	.020	U	mg/L			.020		[illegible]
Analyte....	METHAPYRILENE	ND	.054	U	mg/L			*.054		[illegible]
Analyte....	METHYL METHANESULFONATE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	N-NITROSO-DI-N-BUTYLAMINE	ND	.021	U	mg/L			*.021		[illegible]
Spike.....	N-NITROSODI-N-PROPYLAMINE	-qc-	.040		mg/L				.060	[illegible]
% recovery	N-NITROSODI-N-PROPYLAMINE	-qc-	63		% REC	45.0	115.0			[illegible]
Analyte....	N-NITROSODIETHYLAMINE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	N-NITROSODIMETHYLAMINE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	N-NITROSODIPHENYLAMINE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	N-NITROSOMETHYLETHYLAMINE	ND	.021	U	mg/L			*.021		[illegible]
Analyte....	N-NITROSOMORPHOLINE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	N-NITROSOPIPERIDINE	ND	.011	U	mg/L			*.011		[illegible]
Analyte....	N-NITROSOPYRROLIDINE	ND	.021	U	mg/L			*.021		[illegible]

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/23/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 12:08 mam (12506) Method
Analytical Run: *001* EDD Method Code: **8260AC** WATER

METHOD BLANK Dilution Factor: *1.00* %Solid:

9F0G001417 8260W-APP001	Result:		QF:	Units:	Recovery Acceptance Low:	High:	PROL:	Spike Amount:	CAS:
Analyte.... CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte.... BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte.... VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte.... CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte.... METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte.... ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte.... CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Analyte.... 1,1-DICHLOROETHENE	ND	.0050	U	mg/L			.0050		75-35-4
Analyte.... 1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte.... CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte.... 1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte.... 2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte.... 1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte.... CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte.... BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte.... 1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte.... CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Analyte.... TRICHLOROETHENE	ND	.0050	U	mg/L			.0050		79-01-6
Analyte.... DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte.... 1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Analyte.... BENZENE	ND	.0050	U	mg/L			.0050		71-43-2
Analyte.... TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte.... BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte.... 4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte.... 2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte.... TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte.... 1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Analyte.... TOLUENE	ND	.0050	U	mg/L			.0050		108-88-3
Analyte.... CHLOROBENZENE	ND	.0050	U	mg/L			.0050		108-90-7
Analyte.... ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte.... STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte.... 1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte.... XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte.... 1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte.... 1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte.... 1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte.... 1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte.... 2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte.... 2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte.... 3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte.... ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte.... ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte.... ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte.... DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte.... DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3
Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010		97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050		74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20		78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010		126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010		80-62-6

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	100		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.052		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	103		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	109		% REC	70.0	121.0				17060-07-0

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Collected: 06/23/99 Prepared: 06/23/99 (12506) Analyzed: 06/23/99 10:13 mam (12506) Method

Analytical Run: *001* EDD Method Code: **8260AC** WATER

LAB CONTROL SAMPLE Dilution Factor: *1.00* %Solid:

					Recovery			Spike	LCS
		Result:		QF:	Units:	Low:	High:	PRQL:	Amount:	CAS:
9FOG001415	8260W-APP001-LCS					Acceptance				
Analyte....	CHLOROMETHANE	ND	.010	U	mg/L			.010		74-87-3
Analyte....	BROMOMETHANE	ND	.010	U	mg/L			.010		74-83-9
Analyte....	VINYL CHLORIDE	ND	.010	U	mg/L			.010		75-01-4
Analyte....	CHLOROETHANE	ND	.010	U	mg/L			.010		75-00-3
Analyte....	METHYLENE CHLORIDE	ND	.0050	U	mg/L			.0050		75-09-2
Analyte....	ACETONE	ND	.10	U	mg/L			.10		67-64-1
Analyte....	CARBON DISULFIDE	ND	.010	U	mg/L			.010		75-15-0
Spike.....	1,1-DICHLOROETHENE	-qc-	.028		mg/L				.025	75-35-4
% recovery	1,1-DICHLOROETHENE	-qc-	114		% REC	75.0	125.0			75-35-4
Analyte....	1,1-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		75-34-3
Analyte....	CHLOROFORM	ND	.0050	U	mg/L			.0050		67-66-3
Analyte....	1,2-DICHLOROETHANE	ND	.0050	U	mg/L			.0050		107-06-2
Analyte....	2-BUTANONE	ND	.10	U	mg/L			.10		78-93-3
Analyte....	1,1,1-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		71-55-6
Analyte....	CARBON TETRACHLORIDE	ND	.0050	U	mg/L			.0050		56-23-5
Analyte....	BROMODICHLOROMETHANE	ND	.0050	U	mg/L			.0050		75-27-4
Analyte....	1,2-DICHLOROPROPANE	ND	.0050	U	mg/L			.0050		78-87-5
Analyte....	CIS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-01-5
Spike.....	TRICHLOROETHENE	-qc-	.026		mg/L				.025	79-01-6
% recovery	TRICHLOROETHENE	-qc-	105		% REC	75.0	125.0			79-01-6
Analyte....	DIBROMOCHLOROMETHANE	ND	.0050	U	mg/L			.0050		124-48-1
Analyte....	1,1,2-TRICHLOROETHANE	ND	.0050	U	mg/L			.0050		79-00-5
Spike.....	BENZENE	-qc-	.026		mg/L				.025	71-43-2
% recovery	BENZENE	-qc-	105		% REC	75.0	125.0			71-43-2
Analyte....	TRANS-1,3-DICHLOROPROPENE	ND	.0050	U	mg/L			.0050		10061-02-6
Analyte....	BROMOFORM	ND	.0050	U	mg/L			.0050		75-25-2
Analyte....	4-METHYL-2-PENTANONE	ND	.010	U	mg/L			.010		108-10-1
Analyte....	2-HEXANONE	ND	.010	U	mg/L			.010		591-78-6
Analyte....	TETRACHLOROETHENE	ND	.0050	U	mg/L			.0050		127-18-4
Analyte....	1,1,2,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		79-34-5
Spike.....	TOLUENE	-qc-	.026		mg/L				.025	108-88-3
% recovery	TOLUENE	-qc-	103		% REC	75.0	125.0			108-88-3
Spike.....	CHLOROBENZENE	-qc-	.027		mg/L				.025	108-90-7
% recovery	CHLOROBENZENE	-qc-	106		% REC	75.0	125.0			108-90-7
Analyte....	ETHYLBENZENE	ND	.0050	U	mg/L			.0050		100-41-4
Analyte....	STYRENE	ND	.0050	U	mg/L			.0050		100-42-5
Analyte....	1,1,1,2-TETRACHLOROETHANE	ND	.0050	U	mg/L			.0050		630-20-6
Analyte....	XYLENE (TOTAL)	ND	.0050	U	mg/L			.0050		1330-20-7
Analyte....	1,2,3-TRICHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-18-4
Analyte....	1,2-DIBROMO-3-CHLOROPROPANE	ND	.0050	U	mg/L			.0050		96-12-8
Analyte....	1,2-DIBROMOETHANE	ND	.0050	U	mg/L			.0050		106-93-4
Analyte....	1,4-DIOXANE	ND	.20	U	mg/L			.20		123-91-1
Analyte....	2-CHLORO-1,3-BUTADIENE	ND	.0050	U	mg/L			.0050		126-99-8
Analyte....	2-CHLOROETHYL VINYL ETHER	ND	.0050	U	mg/L			.0050		110-75-8
Analyte....	3-CHLOROPROPENE	ND	.010	U	mg/L			.010		107-05-1
Analyte....	ACETONITRILE	ND	.10	U	mg/L			.10		75-05-8
Analyte....	ACROLEIN	ND	.10	U	mg/L			.10		107-02-8
Analyte....	ACRYLONITRILE	ND	.010	U	mg/L			.010		107-13-1
Analyte....	DICHLORODIFLUOROMETHANE	ND	.010	U	mg/L			.010		75-71-8
Analyte....	DIBROMOMETHANE	ND	.0050	U	mg/L			.0050		74-95-3

CT&E Environmental Services Inc: Charleston, WV

Laboratory Delivery Group: 9FOG033 05/18/00 11:27:14 Received: 06/17/99 9:00

ON SITE CONSOLIDATION AREA

Client: BLASLAND BOUCK & LEE INC. COC: CTEO617991004

Analyte.... ETHYL METHACRYLATE	ND	.010	U	mg/L			.010			97-63-2
Analyte.... IODOMETHANE	ND	.0050	U	mg/L			.0050			74-88-4
Analyte.... ISOBUTANOL	ND	.20	U	mg/L			.20			78-83-1
Analyte.... METHACRYLONITRILE	ND	.010	U	mg/L			.010			126-98-7
Analyte.... METHYL METHACRYLATE	ND	.010	U	mg/L			.010			80-62-6
Analyte.... PROPIONITRILE	ND	.050	U	mg/L			.050			107-12-0
Analyte.... TRANS-1,2-DICHLOROETHENE	ND	.0050	U	mg/L			.0050			156-60-5
Analyte.... TRANS-1,4-DICHLORO-2-BUTENE	ND	.010	U	mg/L			.010			110-57-6
Analyte.... TRICHLOROFLUOROMETHANE	ND	.0050	U	mg/L			.0050			75-69-4
Analyte.... VINYL ACETATE	ND	.010	U	mg/L			.010			108-05-4
Surrogate.. TOLUENE-D8	-qc-	.050		mg/L				.050		2037-26-5
% recovery TOLUENE-D8	-qc-	99		% REC	81.0	117.0				2037-26-5
Surrogate.. 4-BROMOFLUOROBENZENE	-qc-	.050		mg/L				.050		460-00-4
% recovery 4-BROMOFLUOROBENZENE	-qc-	100		% REC	74.0	121.0				460-00-4
Surrogate.. 1,2-DICHLOROETHANE-D4	-qc-	.054		mg/L				.050		17060-07-0
% recovery 1,2-DICHLOROETHANE-D4	-qc-	108		% REC	70.0	121.0				17060-07-0