



Catherine E. Heigel, Director

*Promoting and protecting the health of the public and the environment*

March 22, 2016

SARAH GALLOWAY  
RYDER SYSTEM  
800 E FAIRFIELD RD  
GREENVILLE SC 29605

Re: Ryder Truck Rental 0377A, 945 Idlewild Blvd, Columbia, SC  
UST Permit # 07504  
Release #1 reported January 15, 1992  
Release #3 reported April 2, 1992  
CASE Report received October 23, 2015  
Richland County

Dear Ms. Galloway:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced CASE Report received October 23, 2015 submitted by Terracon. Active corrective action is necessary to remediate the subsurface and ensure there is no potential impact to human health or the environment at the receptor locations.

The site's priority classification is **2B**. Therefore, funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account are currently available for implementation of an acceptable method of corrective action. The selected technology must completely reduce the petroleum chemicals of concern to those concentrations listed in the Corrective Action Solicitation package. All rehabilitation activities associated with a release from an UST must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98 and in accordance with the UST Quality Assurance Program Plan (QAPP), Revision 3.0.

The Division understands that Ryder System wishes to select the rehabilitation contractor to perform the corrective action. In addition to the three solicitation responses Ryder System will personally obtain as outlined below, the Agency will announce the Corrective Action Solicitation in the South Carolina Business Opportunities. This announcement is to ensure enough responses are received to establish a fair and competitive price to initiate corrective action in a timely manner. This announcement will clearly indicate that the UST owner/operator will make the contractor selection to receive financial and technical approval.

### **Procedures**

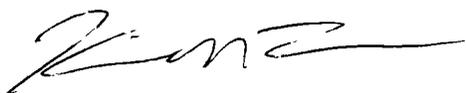
The following steps should be followed as you secure responses to the Corrective Action Solicitation.

- Step 1. Select a minimum of three (3) certified site rehabilitation contractors to complete the enclosed Financial Approval Form. A list of currently certified contractors is enclosed.
- Step 2. Please provide each of the proposed site rehabilitation contractors a copy of this letter. The Corrective Action Solicitation package is available at <http://www.scdhec.gov/environment/lwm/usthome/OOBid.htm>.
- Step 3. Direct each of the proposed site rehabilitation contractors to submit their Financial Approval Form, addressed to the attention of Lee A. Monts, by the date specified in the table on Page 1 of the attached solicitation. The form may be hand delivered or mailed in a sealed envelope to SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC 29201. The envelope must be marked as Financial Approval Form for UST Permit # 07504.

Ryder System will be provided copies of all the solicitation response forms submitted. Upon review of the responses, you will be required to complete a Corrective Action Solicitation Proposal - Summary form that designates which site rehabilitation contractor you wish to use. Once you select a contractor, the Agency strongly suggests that a written contract between you and the contractor be developed. The only parties to this contract would be you and the contractor you choose. Since the Agency's only function would be to monitor the corrective action activities to ensure progress toward achieving defined corrective actions goals, rather than perform and/or oversee the associated activities, the Agency would not be party to your contract. Please note that under R.61-92, Part 280: Underground Storage Tank Control Regulations, you as the owner/operator are ultimately responsible to the Agency for the actions of your contractor.

On all future correspondence, please reference the **UST Permit #07504**. Please note that approval from the Agency must be issued before corrective action begins. If you have questions concerning this correspondence, please contact me by telephone at (803) 898-0634, by fax at (803) 898-0673, or by email at [kuhnkm@dhec.sc.gov](mailto:kuhnkm@dhec.sc.gov).

Sincerely,



Kimberly M Kuhn, Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

Enc: Corrective Action Solicitation Package  
List of Certified Site Rehabilitation Contractors

Cc: Technical File (Cover letter and solicitation package)

**I. FINANCIAL APPROVAL FORM****A. ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the solicitation and subject to all conditions thereof, the Offeror agrees, if selected by the UST Owner/Operator within \_\_\_\_\_ days from the date of financial approval form submittal, to complete the corrective action as specified at the price set forth for the site as stated below. For the purpose of this submittal and possible acceptance of financial approval, I certify that this company understands the nature of the release(s) and the geologic conditions at the site as documented in the technical file and this solicitation. **Any quantities listed in the corrective action method(s) below are estimates and changes to those quantities or to the listed method(s) will not affect the financial approval amount.** Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

\_\_\_\_\_  
Offeror (Print)

\_\_\_\_\_  
UST Site Rehabilitation Contractor Certification #

\_\_\_\_\_  
Registered Professional Name (Print)

\_\_\_\_\_  
Registered Professional Signature (required)

P.G.  P.E.  (check appropriate box)

Professional Certification # \_\_\_\_\_

**B. CORRECTIVE ACTION SOLICITATION RESPONSE**

**Please respond to the following questions for *Ryder Truck Rental 0377A, 945 Idlewild Blvd, Columbia, SC 29202 UST Permit #07504*:**

1. State and briefly describe the corrective action method(s) or technology(ies) that will be discussed in detail in the CAP to achieve completion in five years, should financial approval occur. Attach an additional sheet if necessary.
2. The Corrective Action Completion Time, in months, to complete the corrective action from the date of corrective action plan implementation until the final corrective action goal has been achieved and maintained for 2 consecutive quarters is \_\_\_\_\_ months. All activities must be completed within 5 years of the date of financial approval unless otherwise approved in writing by the Agency.
3. The Corrective Action Cost, in whole dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern shown in the Appendix such that FPP thicknesses do not exceed 0.01' at any point in the area of concern; complete all associated monitoring and post-corrective action verification; prepare all plans, reports, and correspondence; obtain and meet all terms and conditions of all required permits and licenses; design, install, monitor, operate, maintain, and when completed, properly abandon or remove all assessment and corrective action components; and complete other items outlined in this solicitation is:

\$ \_\_\_\_\_

## II. SCOPE OF WORK

### A. DEFINITIONS:

**For the purposes of this solicitation the following terms and definitions shall apply:**

1. **Area of Concern**: The horizontal and vertical area in which concentrations of petroleum chemicals of concern have been quantified and/or can be relatively determined by actual data and subsequent interpretation using accepted scientific principles.
2. **Catastrophic Occurrence**: An event (e.g., hurricane) that results in a declared state of emergency and directly and substantially affects the Contractor's operations at a site.
3. **Chemicals of Concern (CoC)**: Specific petroleum constituents that are identified for monitoring and corrective action.
4. **Corrective Action Completion Time**: The time in months, submitted by the Contractor, necessary to reduce FPP thicknesses to at or below 0.01', verify attainment of corrective action goals, and remove and/or properly abandon assessment and corrective action components (wells, treatment lines, etc.). All activities must be completed within 5 years of the date of financial approval unless otherwise approved in writing by the Agency.
5. **Corrective Action Cost**: The total amount established via the procurement process to complete the scope of work/specifications detailed in the solicitation.
6. **Corrective Action Plan (CAP)**: A document submitted by the Contractor that outlines and details proposed corrective action(s) and contains a timetable consistent with the Corrective Action Completion Time.
7. **Corrective Action Plan Implementation Date**: The date on which the Contractor initiates corrective action (i.e., physical treatment activities such as excavation, extraction, injection, etc.) under the approved Corrective Action Plan. The date must be within 30 days of receipt of a Notice to Proceed issued by the Agency.
8. **Day**: For the purpose of this solicitation, any reference to day(s) will be intended as calendar day(s) and not business day(s).
9. **Free-Phase Product (FPP)**: Petroleum lighter than water non-aqueous phase liquid (LNAPL) identified for monitoring and corrective action.
10. **QAPP**: UST Management Division Quality Assurance Program Plan.
11. **Site Incentive Period**: The period of time in months established by the Agency during which the Contractor must achieve the corrective action goals (see Solicitation Item III.A.9.) in order to qualify for the Early Completion Incentive.

**B. SOLICITATION STATEMENT**

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) is seeking services on behalf of Ryder System, Inc. to perform corrective action of a petroleum release at a regulated underground storage tank site in accordance with defined corrective action goals. The objectives are to prevent significant further migration of FPP and to remove measurable ( $>0.01'$ ) thicknesses of FPP. All Offerors must be South Carolina-Certified Class I Site Rehabilitation Contractors.

**C. SCHEDULE OF DELIVERABLES**

The following table summarizes the deadlines for deliverables associated with this solicitation:

<b>DELIVERABLE DUE</b>	<b>DEADLINE</b>
Questions	By April 7, 2016
Financial Approval Form	By April 21, 2016 in sealed envelope
QAPP Contractor Addendum or Site-Specific Work Plan for Initial Monitoring Report	15 days from date of financial approval
Corrective Action Plan and QAPP Contractor Addendum or Site-Specific Work Plan for Corrective Action	30 days from date of financial approval
Initial Monitoring Report	45 days from approval of QAPP Contractor Addendum or Site-Specific Work Plan for Initial Monitoring Report
CAP Implementation	30 days from Notice to Proceed
CAP Implementation Report	60 days from Notice to Proceed
Notify Project Manager of Sampling	At least 2 weeks prior to sampling event
Corrective Action System Evaluation Report (CASE)	Quarterly from date of CAP Implementation Report or other schedule approved by the Agency
Groundwater Sampling Results	Annually from date of CAP Implementation Report or other schedule approved by the Agency
Water Supply Well Sampling Results	Quarterly from date of CAP Implementation Report or other schedule approved by the Agency
Update QAPP Contractor Addendum or Site-Specific Work Plan for Corrective Action	First quarter of each year or as needed until completion of corrective action
Abandon and/or Remove Assessment and Corrective Action Components	Within 60 days from notice by the Agency

#### D. SITE SPECIFIC INFORMATION

The scope of work defined in this solicitation is to be implemented at *Ryder Truck Rental 0377A, 945 Idlewild Blvd, Columbia, SC 29202 UST Permit #07504* for the releases reported on January 15, 1992 and April 2, 1992. A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids/> until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information (FOI) Office located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC (803-898-3882). Ryder Systems may require written confirmation from contractors that all Agency file material has been reviewed.

### III. SOLICITATION REQUIREMENTS

#### A. GENERAL REQUIREMENTS

1. **PAYMENT PERIOD:** The payment period will be effective from the date of financial approval until corrective action is complete as outlined in this solicitation.
2. **EQUAL OPPORTUNITY EMPLOYMENT:** Contractor must agree to make positive efforts to employ women, other minorities, and minority-owned businesses.
3. **AMENDMENTS:** All amendments to this solicitation shall be in writing from the Agency. The Agency shall not be legally bound by any amendment, interpretation or settlement that is not in writing.
4. **RESTRICTION . . . THE ONLY OFFICIAL CONTACT PERSON AT THE AGENCY DURING THE SOLICITATION AND FINANCIAL APPROVAL PROCESS IS Lee Monts. OFFERORS ARE NOT TO CONTACT ANY OTHER AGENCY PERSONNEL OR OTHER CONTRACTORS.**
5. **FINANCIAL APPROVAL:** The UST Owner/Operator has the right to select an SCDHEC-certified Class I Site Rehabilitation Contractor to perform corrective action in accordance with SUPERB Act (Title 44, Chapter 2 of the Code of Laws of South Carolina), and is not limited to Contractors who respond to this solicitation. Therefore, financial approval may be made to a Contractor who has been selected by the Owner/Operator but has not responded to this solicitation. The financial approval will be for the reasonable cost as defined in Solicitation Item III.A.6. The selected Contractor must agree to make positive efforts to employ women, other minorities, and minority-owned businesses. **The Agency strongly suggests that a written contract be developed between the Owner/Operator and the selected Contractor following completion of the solicitation process. The Agency will not be a party to this contract. If the selected Contractor does not or cannot complete the corrective action in accordance with the specifications outlined in this solicitation, the Owner/Operator will be required to find another SCDHEC-certified Class I Site Rehabilitation Contractor to complete the corrective action for the remainder of the existing financial approval amount. Additional SUPERB funding in excess of financial approval amount may not be allowed.**

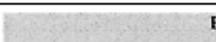
**Per the Underground Storage Tank Control Regulations R. 61-92, Part 280, the Owner/Operator is ultimately responsible to the Agency for the actions of their selected Contractor. Therefore, the Agency will pursue enforcement actions against the Owner/Operator if their selected Contractor does not make satisfactory progress towards achieving corrective action goals as outlined in Solicitation Item III.A.9.**

6. **REASONABLE COST:** The lowest Corrective Action Cost submitted on a Financial Approval Form in response to this solicitation will be considered the reasonable or SUPERB-allowable cost to complete corrective action as defined by the solicitation. The Agency reserves the right to reject any and all submitted Financial Approval Forms that propose Corrective Action Costs that are not advantageous to the State of South Carolina, that propose a Corrective Action Completion Time that is not protective of public health and the environment, and that propose remediation technology(ies) or method(s) that cannot be permitted in the State of South Carolina and/or that are not protective of public health and the environment.
  - a. The Corrective Action Completion Time for the site shall be determined by the Offeror and entered on the Financial Approval Form in Solicitation Item I.B.
    - 1) Time is of the essence in completing the site work to restore the aquifer and protect human health and the environment. Therefore, the Offeror is encouraged to strive for efficient corrective action methods and to propose the shortest practical completion time for the site.
    - 2) The Offeror shall enter the number of months in the space provided for the site in Solicitation Item I.B.
7. **SITE WORK VERIFICATION:** The Contractor will be required to treat the area of concern as defined in Solicitation Item II.A.1. and as shown in the Appendix (Figure 2). Verification that interim corrective action goals have been achieved will be based upon gauging results from the site-specific target level (SSTL) wells and gauging points listed in the Appendix. Verification that the final corrective action goal has been achieved will be based upon gauging results from all wells and gauging points listed in the Appendix, all injection and/or extraction wells installed as part of corrective action, and all verification wells to be installed at locations and depths designated by the Agency (see Solicitation Item IV.B.11. for more details). It is understood that seasonal fluctuations in FPP thicknesses will occur. It is the intent of this corrective action to prevent further degradation of the aquifer(s) by continued migration of FPP into areas not previously impacted. If the corrective action allows FPP to migrate into areas not previously impacted, the Contractor will be responsible for completing assessment activities necessary to re-define the impacted areas and for providing amendments to their Corrective Action Plan (CAP) to address the additional impact.
8. **REPORTS:** Reports are to be submitted to the Agency on, or prior to, established due dates unless otherwise approved in writing by the Agency. Deliver one paper copy and one electronic copy of each plan and report to: SCDHEC, Bureau of Land and Waste Management, UST Management Division 2600 Bull Street, Columbia, SC 29201. The electronic copy should be submitted on compact disk (CD) in Personal Data Format (PDF). All data tables should be

in MS Excel or comparable format. One copy of each plan or report must be delivered to each party listed on the Distribution List included in the Appendix. The distribution copies may be electronic or paper as agreed upon by the party and the Contractor. Based on permitting and other requirements, additional copies of plans and reports may be required by the Agency. The Agency will notify the Owner/Operator of the exact number of copies of each document to be submitted.

9. **INVOICING:** Invoices will be submitted to SCDHEC, Bureau of Land and Waste Management, UST Management Division, ATTN: Financial Section, 2600 Bull Street, Columbia, SC 29201, using the Corrective Action (CA) Invoice form. The initial invoice must be received at the above address within 4 months of CAP approval or funds will be uncommitted as required by the Section 44-2-40(B) of the SUPERB Act. If funds are uncommitted, the invoice will be held until funds become available. **Payment will only be made for achieving corrective action goals as specified below. No partial payments will be made, except as outlined in Solicitation Item IV B 4.** Payment to the Contractor will be on a pay-for-performance basis as follows:
- a. Payment of 40% of the total Corrective Action Cost will be made within 90 days following receipt of an invoice and documentation that the Contractor has completed Corrective Action Plan implementation. All corrective action activities must be as described in the CAP and are subject to the limitations of Section 44-2-40 of the SUPERB Act. The implementation should be documented in the Corrective Action Plan Implementation Report. The Corrective Action Plan Implementation Report must include the construction logs for all injection and/or extraction wells installed in accordance with the CAP.
  - b. Payment of 30% of the total Corrective Action Cost will be made based on achieving interim and final FPP thickness reduction goals as verified in the SSSL wells and gauging points listed in the Appendix, in all injection and/or extraction wells, and in all verification wells. Payments will be made upon receipt of invoices and documentation that the Contractor has achieved interim and final goals of 60, 90 and 100% reduction of the total FPP thickness above 0.01' **by the implementation of corrective action.** The FPP thicknesses are listed in the Appendix.
    - 1) The first interim thickness reduction goal will be achieved when 60% of the total FPP thickness above 0.01' in the SSSL wells and gauging points listed in the Appendix is removed. The following formula will be used to calculate the percent total thickness reduction: 
$$\frac{\text{sum of FPP thicknesses above 0.01' from initial gauging} - \text{sum of FPP thicknesses above 0.01' from subsequent gauging}}{\text{sum of FPP thicknesses above 0.01' from initial gauging}}$$
 Payment of 10% of the total Corrective Action Cost will be made upon confirmation by CASE report or by verification (see Solicitation Item IV.B.11. for the method of verification) that at least 60% of the total FPP thickness above 0.01' has been removed.

The following is an example to demonstrate the FPP Thickness Reduction Calculation:

Well		Thickness	Thickness > Target
MW-1	Initial <sup>A</sup>	0.11	 <sup>A</sup>
	Target <sup>B</sup>	0.01	 <sup>B</sup>
	Initial > Target <sup>C</sup>	0.10	0.10 <sup>C</sup>
	Subsequent <sup>D</sup>	0.08	 <sup>D</sup>
	Target <sup>E</sup>	0.01	 <sup>E</sup>
	Subsequent > Target <sup>F</sup>	0.07	0.07 <sup>F</sup>
MW-4	Initial <sup>G</sup>	2.40	 <sup>G</sup>
	Target <sup>H</sup>	0.01	 <sup>H</sup>
	Initial > Target <sup>I</sup>	2.39	2.39 <sup>I</sup>
	Subsequent <sup>J</sup>	1.80	 <sup>J</sup>
	Target <sup>K</sup>	0.01	 <sup>K</sup>
	Subsequent > Target <sup>L</sup>	1.79	1.79 <sup>L</sup>
Totals	Initial > Target	(C+I)	2.49 <sup>M</sup>
	Subsequent > Target	(F+L)	1.86 <sup>N</sup>

$$\text{FPP Thickness Reduction} = \frac{(M-N)}{(M)} = \frac{(2.49-1.86)}{(2.49)} = 0.25 * 100 = 25\%$$

- 2) The second interim thickness reduction goal will be achieved when 90% of the total FPP thickness above 0.01' in the SSTL wells and gauging points listed in the Appendix is removed. The formula outlined in Solicitation Item III.A.9.b.1 will be used to calculate the percent total thickness reduction. Payment of 10% of the total Corrective Action Cost will be made upon verification (see Solicitation Item IV.B.11. for the method of verification) that at least 90% of the total FPP thickness above 0.01' has been removed. **Achievement of this goal must be verified by gauging conducted by the Agency.**
- 3) The final thickness reduction goal will be achieved when 100% of the total FPP thickness above 0.01' in the SSTL wells and gauging points listed in the Appendix is removed. The formula outlined in Solicitation Item III.A.9.b.1 will be used to calculate the percent total thickness reduction. Payment of 10% of the total Corrective Action

Cost will be made upon verification (see Solicitation Item IV.B.11. for the method of verification) that 100% of the total FPP thickness above 0.01' has been removed. **The 100% payment milestone must be verified following two consecutive quarters with all corrective action activities completely ceased prior to payment eligibility. Achievement of this goal must be verified by gauging conducted by the Agency (to be completed during the 2<sup>nd</sup> 100% verification quarter).** FPP thicknesses must not exceed 0.01' in all wells and gauging points listed in the Appendix, in all injection and/or extraction wells, in all verification wells, and at any point in the area of concern.

- c. The final 30% of the total Corrective Action Cost will be paid upon receipt of an invoice and verification that all assessment and corrective action components (e.g., piping, wells, trenches, etc.) have been removed from the site or properly abandoned (see Solicitation Items IV.B.11-14. for more details), and the facility and associated adjacent properties have been restored to the condition that existed prior to assessment and corrective action (Solicitation Item IV.B. 13.). If 100% FPP thickness reduction is not achieved, the final payment may be reduced accordingly (e.g., 98% paid for 98% final reduction) as mutually agreed upon by the Agency and the Contractor.
10. **LIMITATIONS:** The approved Corrective Action Cost will be final and will not be increased or cancelled for any reason (e.g., unanticipated iron fouling of a system, wells clogging because of biological activity or sediments, damage by lightning, increased subcontractor costs, loss of utilities, modification to the system to meet the remediation goals, etc.) with the exception of: 1) unforeseen subsurface conditions as determined solely at the discretion of the Agency; or 2) identification of additional FPP from a confirmed release that occurs subsequent to financial approval and that adversely impacts corrective action as determined by the Agency. Payment will only be made for achieving the corrective action goals as specified in this solicitation. No interim or partial payments will be made once corrective action is initiated, except as outlined in Solicitation Item IV.B.4. Once corrective action has been initiated and in the event of a cancellation due to any of the conditions described in this solicitation Item, final payment, if appropriate, will be a percentage of the Corrective Action Cost. The percentage will be equal to the actual percent total FPP thickness reduction based upon last gauging results, as verified by the Agency, from all wells and gauging points listed in the Appendix, all injection and/or extraction wells, and all verification wells, less the amount previously paid. Contractor-owned items used on-site for the corrective action that are damaged or destroyed by common acts of nature, improper maintenance or handling, theft or vandalism will not be replaced or reimbursed by the SUPERB Account. The Contractor cannot delay progress or suspend corrective action activities at the site based upon a claim of a suspected new petroleum release from the UST system. Unless directed otherwise by the Agency, the Contractor must continue to perform corrective action activities under this solicitation during any period of time during which a new petroleum release from the UST system is being investigated. The Contractor must clearly demonstrate sufficient evidence of the release in the form of analytical test results or other demonstrative evidence to the Agency. The determination that a new petroleum release from the UST system has occurred that post-dates the financial approval, and that adversely impacts corrective action at the site, is the sole discretion of the Agency.

**B. SPECIFIC REQUIREMENTS**

1. **SCOPE OF SOLICITATION:** This solicitation is for corrective action at one site in South Carolina.
2. **INQUIRIES:** A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids/> until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information (FOI) Office located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC (803-898-3882). All questions or requests for information must be submitted in writing to Lee Monts, FAX number (803) 898-0673, in accordance with the date specified in Solicitation Item II.C. After this date, no further questions or requests for information will be addressed. A written response to any received questions will be provided. A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids>
3. **PROVISION FOR EARLY COMPLETION INCENTIVE:** The Agency will pay the Contractor an incentive of 10% of the Corrective Action Cost for early completion, subject solely to the conditions set forth in this provision. Payment will be made if the corrective action goals have been met in accordance with the terms and conditions of this solicitation prior to the end of the Site Incentive Period, as established by the Agency and verified in accordance with Solicitation Item IV.B.11.

The Site Incentive Period will commence on the Corrective Action Plan Implementation Date. A month starts at 12:00 Midnight on the Corrective Action Plan Implementation Date and ends at Midnight preceding the same day of the following month. Months will be counted consecutively from the Corrective Action Plan Implementation Date. Following implementation, the Agency will notify the Contractor in writing of the closing date of the Site Incentive Period.

The Site Incentive Period will not be adjusted for any reason, cause, or circumstance whatsoever, regardless of fault, save and except: 1) in the instance of a catastrophic occurrence (e.g., hurricane) that results in a declared state of emergency and that directly and substantially affects the Contractor's operations at a site and results in unavoidable delay of the corrective action, or 2) an unforeseen condition that could not have been anticipated following financial award to which the Agency has been notified in writing by the Contractor and as the Agency has approved in writing. In the event of a catastrophic occurrence or unforeseen condition on a specific site, the Agency shall determine the number of months reasonably necessary to extend the Site Incentive Period due solely to such catastrophic occurrence. Any amendments to the Site Incentive Period will be provided to the Contractor in writing.

The parties anticipate that routine delays may be caused by or arise from any number of events during the course of corrective action, including, but not limited to: work performed, work deleted, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors, or other Contractors, actions by third parties, revision of the work

scope by the Contractor, weather, weekends, holidays, suspensions of the Contractor's operations, or any other such events, forces or factors experienced in environmental work. Such delays or events, and their potential impacts on performance by the Contractor are specifically contemplated and acknowledged by the Contractor upon entering into this contract, and shall not affect the Site Incentive Period or incentives set forth in this contract item. Further, any and all costs or impacts whatsoever incurred by the Contractor to complete corrective action within the Site Incentive Period, whether successful or not, shall be the sole responsibility of the Contractor in every instance.

The Contractor shall have no rights under the contract to make any claim arising out of this incentive provision except as is expressly set forth in this provision.

The Site Incentive Period for *Ryder Truck Rental 0377A, 945 Idlewild Blvd, Columbia, SC 29202 UST Permit #07504* is 48 months.

4. **SITE-SPECIFIC DETAILS:** A brief technical summary, including maps and data tables, is attached in the Appendix. A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids/> until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information Office (FOI) located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC. Appointment(s) to view the technical file may be scheduled on weekdays between the hours of 8:30 A.M. to 5:00 P.M. by calling FOI at 803-898-3882. **Offerors are strongly encouraged to review the file(s) to ensure a complete understanding of corrective action requirements. The selected Contractor will be responsible for all information in the technical file(s).**

#### IV. SPECIFICATIONS for CORRECTIVE ACTION

##### A. GENERAL SPECIFICATIONS

1. **SUBMITTALS:** All offerors must submit a completed Financial Approval Form. All submittals must be either hand-delivered or mailed in a sealed envelope to SCDHEC, UST Management Division, 2600 Bull Street, Columbia, SC 29201, ATTN: Lee A. Monts. The envelope must be marked as a Financial Approval Form for **Ryder Truck Rental 0377A, 945 Idlewild Blvd, Columbia, SC 29202 UST Permit #07504**. The completed Form outlines an approach to achieve the corrective action goals (i.e., reduction of FPP to at or below 0.01') and contains the following elements:
  - a. A description of the proposed treatment method(s) or technology(ies) for corrective action.
  - b. The amount of time in months to meet the corrective action goals, install verification wells, and remove or abandon all assessment and corrective action components.
  - c. The total Corrective Action Cost (in U.S. dollars) to meet the corrective action goals and to remove or abandon all assessment and corrective action components.

2. **MINIMUM REQUIREMENTS:** Corrective action will be considered complete when: 1) the FPP thickness are verified to be at or below 0.01' in all wells and gauging points listed in the Appendix, in all injection and/or extraction wells, in all verification wells, and at any point in the area of concern **for two consecutive quarters**; 2) all assessment and corrective action components (e.g., piping, wells, trenches, etc.) have been removed from the site or are properly abandoned; and 3) the facility and associated adjacent properties have been restored to the condition that existed prior to assessment and corrective action in accordance with Solicitation Item IV.B.13. See Solicitation Item IV.B.11. for the method of verification. Per R. 61-98, all site rehabilitation activities associated with a UST release must be performed by an SCDHEC-certified Class I Site Rehabilitation Contractor. The Contractor will be required to adhere to all applicable portions of the QAPP. See <http://www.scdhec.gov/Environment/docs/QAPPRevision3.0.pdf> and follow the link for UST Quality Assurance Program Plan for the most up-to-date version. All corrective action plans and reports must be sealed by a Professional Engineer or Professional Geologist registered in the State of South Carolina. All engineering reports, drawings and plans must be sealed by a Professional Engineer registered in the State of South Carolina. All laboratory analysis for CoC must be performed by an SC-certified laboratory. All monitoring, verification, injection, and extraction wells must be installed and abandoned by an SC-certified well driller. All applicable certification, training, permits, applications, and fees associated with well installation; injection, discharge, treatment, or transportation of groundwater, air, or soil; construction or operation of a corrective action system; and any other action requiring a permit are the responsibility of the Contractor. Any required business or occupation license and occupational safety and health training (e.g., OSHA) as defined by the laws and regulations of the United States of America, the State of South Carolina, the county or city is also the responsibility of the Contractor. The terms and conditions of all applicable permits will be met. Any contaminated soil or construction debris, contaminated water, and FPP must be properly transported and disposed of, or treated at, an approved facility with prior approval from the Agency. Any costs for utilities construction and service (electric, telephone, sewer, etc.) required by the corrective action are the responsibility of the Contractor.

## **B. PERFORMANCE REQUIREMENTS**

1. **QAPP CONTRACTOR ADDENDA/SITE-SPECIFIC WORK PLANS:** The Contractor must submit a QAPP Contractor Addendum or Site-Specific Work Plan for the Initial Monitoring Report **within 15 days** from the date of financial approval. The Addendum or Work Plan for the Initial Monitoring Report must be approved by the Agency prior to initiation of work at the site. A QAPP Contractor Addendum or Site-Specific Work Plan for corrective action must be submitted with the Corrective Action Plan (CAP). The Addendum or Work Plan for corrective action must be updated during the first quarter of each year or as needed until completion of corrective action.
2. **CORRECTIVE ACTION PLAN:** The Contractor must complete and submit a detailed Corrective Action Plan and QAPP Contractor Addendum or Site-Specific Work Plan for corrective action within 30 days from the date of financial approval. Copies of the CAP must be distributed in accordance with Solicitation Item III.A.8. The CAP must define the method(s) and technology(ies) proposed to achieve corrective action goals in a manner that is consistent

with the Corrective Action Completion Time submitted by the Contractor. **The corrective action method(s) or technology(ies) must be designed to prevent vapors from entering onsite or adjacent structures.** It must be shown, by use of scientific models, computations, or discussion, how FPP thicknesses will be reduced by each method and technology proposed. Any assumptions used in a model will be listed or shown, as well as appropriate references. **The use of monitoring well(s) for injection, extraction, or FPP recovery purposes is not allowed.** Accordingly, the CAP may propose installation of additional injection, extraction, or compliance wells. General construction details will be included in the CAP (e.g., install 4 extraction wells, install 8 injection wells, excavate 3,000 cubic yards of impacted soils, etc.) as well as details of assessment and corrective action component abandonment and/or removal.

A corrective action timetable that includes demobilization and site restoration (Solicitation Items IV. B. 12-14.) will be provided by the Contractor. As corrective action is required to be completed within 5 years from CAP implementation, the submitted timetable shall not exceed 5 years in any case. The timetable shall itemize when the Contractor expects to meet the 60%, 90%, and 100% interim payment milestones. During corrective action implementation, this timetable may be adjusted (as approved in writing by the Agency) if circumstances beyond the control of the Contractor arise. If the Contractor fails to meet the interim goals in the proposed time frames, a remedy will be sought through the procedures outlined in Solicitation Item III.A.5.

The Agency will review the CAP and initiate a public notice period for a maximum of 30 days. The names and addresses of the owners of all impacted properties and all properties located adjacent to the impacted properties are provided in the Appendix. The Contractor may be required to attend and provide input at one or more public meetings upon request by the Agency. Any CAP amendments and modifications resulting from the public notice must be submitted within 15 days of notification by the Agency. The CAP and any amendments or modifications must be sealed by a qualified Professional Geologist or Engineer registered in the State of South Carolina. The UST Owner/Operator and any other affected property owners will be consulted and will approve the location of the corrective action system. Any aboveground part of the system that is to remain on-site for longer than 30 contiguous days must be secured within a fenced area or building.

3. **PERMIT APPLICATIONS:** The Contractor must complete and submit all applications for permits (injection, NPDES, BAQC modeling form, thermal treatment, construction, etc.) with the CAP. All submitted applications must comply with the requirements of the respective permitting program. Any required permit changes or corrections will be submitted within 15 days of notification by the Agency.
4. **INITIAL MONITORING REPORT:** Prior to Corrective Action Plan implementation, the Contractor must submit an Initial Monitoring Report to the Agency documenting CoC concentrations, FPP thicknesses, and potentiometric conditions in all wells and gauging points listed in the Appendix. The report will be due **within 45 days** after QAPP Contractor Addendum or Site-Specific Work Plan approval. The report should include color photographs with date stamp of the facility/site and surrounding properties to provide documentation of the condition of the facility/site prior to implementation of any corrective action activities. Copies

of the Initial Monitoring Report must be distributed in accordance with Solicitation Item III.A.8.

Naturally occurring conditions may cause FPP thicknesses to increase or decrease. For the purpose of this solicitation, the total FPP thickness for all wells and gauging points listed in the Appendix may reasonably increase up to 150% or decrease as much as 50%. If the total FPP thickness in all wells and gauging points listed in the Appendix increases more than 150% based on initial gauging and sampling, or if measurable (>.01') FPP that has not been previously documented in any report is detected during the initial sampling event, the Contractor may request in writing that financial approval be cancelled. **If any of these conditions is identified during initial sampling, the Contractor will notify the Agency within 2 days of identification and will submit written documentation within 5 days of notification.** Financial approval will be cancelled and the Contractor will be reimbursed based on the following rate schedule:

Subcontract Costs*	Invoice + 12%
Personnel mobilization	\$423.00
Groundwater sample collection-purge	\$60.00 per well
Groundwater sample collection-no-purge	\$28.00 per well
Field blank	\$24.60
Gauging FPP	\$7.00 per well
Contaminated water disposal	\$0.56 per gallon
FPP disposal	\$0.50 per gallon
CAP preparation and associated costs	\$6,000.00
QAPP Contractor Addendum preparation	\$250.00
Site-Specific Work Plan preparation	\$150.00

\* Includes laboratory analysis, drilling, electrical, etc.

If the total FPP thickness in all wells and gauging points listed in the Appendix decreases more than 50% based on initial gauging and sampling, the Agency may cancel financial approval. The Contractor will be notified of the cancellation by certified letter and must submit an invoice for the appropriate items listed in the rate schedule within 20 days from receipt of the letter. If financial approval is cancelled prior to the Corrective Action Plan Implementation Date due to any of the conditions described in this Solicitation Item, final payment will not exceed 40% of the Corrective Action Cost under any circumstances as no FPP thickness reduction will have been accomplished by implementation of corrective action. If the CAP has been implemented and physical treatment activities performed, the Contractor will be required to complete the corrective action unless conditions described in Solicitation Item III.A.10. are encountered.

5. **CORRECTIVE ACTION PLAN IMPLEMENTATION:** After the CAP, QAPP Contractor Addendum or Site-Specific Work Plan, and all permit applications are reviewed and approved in accordance with the QAPP and R.61-92, Section 280.66, the Agency will issue a Notice to Proceed with CAP implementation. The Contractor will implement the CAP within 30 days of receipt of the Notice to Proceed and any required permit to construct. A penalty of \$100 per day will be assessed for each calendar day late if the CAP is not implemented in 30 days unless

the Contractor obtains written approval from the Agency regarding a change in the implementation schedule. Any assessed penalty amounts will be deducted from the initial payment. If any problem with CAP implementation occurs, the Contractor will notify the Agency within 24 hours of problem identification and will submit written documentation within 5 days of notification. Disruption to the normal business at the site will be kept to a minimum. Any modification, relocation, disturbance, or destruction of physical structures or features as a result of CAP implementation must be approved in writing by the affected property owner prior to CAP implementation. Upon completion of any required construction, the Agency will inspect the corrective action system and issue a permit to operate. The Contractor will, at all times, keep the site free from waste materials and rubbish related to corrective action and maintain the site in a neat and workmanlike condition for the duration of the corrective action. All contaminated soil and construction debris, contaminated water, and FPP generated on-site will be removed from the site promptly. Manifests documenting the proper disposal of contaminated soil and construction debris, contaminated water, and FPP must be included in the appropriate report. The Contractor will repair and/or restore the site/facility to the condition that existed prior to CAP implementation and as documented by the photographs included in the Initial Monitoring Report in accordance with IV.B.4. Any deviation in returning the site/facility to the condition that existed prior to CAP implementation must be documented in writing by the Contractor and signed by the Owner/Operator and property owner.

Implementation of the CAP is not authorized until the Contractor receives a Notice to Proceed from the Agency. If unauthorized implementation occurs, the Agency will not reimburse related costs incurred by the Contractor from the SUPERB Account, and the Corrective Action Cost will be reduced by the amount of the incurred costs. If the Agency agrees with early implementation to better protect human health in an emergency and provides approval in writing, early implementation without any reduction to the Corrective Action Cost will be authorized.

A Corrective Action Plan Implementation Report will be due 60 days from the Notice to Proceed and shall include a description of work sufficient to document CAP implementation activities and the associated dates of work.

6. **PROPERTY ACCESS:** The Contractor will secure access to the site and adjacent properties to gauge wells and gauging points, and to install any corrective action components, as required. The Contractor will be responsible for corrective action components installed on adjacent properties. Costs to repair or replace components of the corrective action system damaged due to the actions of adjacent property owners cannot be paid by the SUPERB Account.
7. **START-UP:** The Contractor will initiate corrective action within 15 days of receipt of a permit to operate, if required. Corrective action as defined in the CAP will begin upon start-up. **NOTE: The application of corrective action technologies or natural fluctuations in the water table can mobilize FPP and cause possible appearance of FPP in non-SSTL wells and gauging points.**
8. **REPORTING:** The Contractor must complete and submit a Corrective Action Plan (CAP) Implementation Report within 60 days of the Notice to Proceed. The Contractor must also

complete and submit a Corrective Action System Evaluation (CASE) report on a quarterly schedule. The CAP Implementation Report and CASE reports will be distributed in accordance with Solicitation Item III.A.8. The first CASE report is due within 90 days of the CAP Implementation Report. **CASE reports must be submitted regardless of the status of corrective action activities.**

All wells and gauging points listed in the Appendix will be gauged on a quarterly schedule and sampled on an annual schedule (see Solicitation Item IV.B. 9 for sampling details) following submittal of the CAP Implementation Report. The Contractor must submit a written request for a change in the protocol to the Agency. **Approval for any reduction in the number of wells and gauging points to be gauged/sampled, or for any lengthening of the reporting interval, is at the sole discretion of the Agency.**

CASE reports must include, at a minimum, all items stipulated in the Documents and Records section and Active Site Rehabilitation Procedures section of the QAPP. CASE reports must also include any additional data required by permits (e.g., air analyses, wastewater effluent analyses, etc.). The Contractor will be provided with the proper report forms and reporting format prior to CAP Implementation. The Agency will notify the Contractor regarding any revisions to the forms or format 60 days prior to the due date for the next CASE report.

9. **SAMPLING:** The Contractor must collect water samples from all wells and gauging points listed in the Appendix on an annual schedule. **Do not sample wells and gauging points containing measurable (> 0.01') FPP.** If measurable FPP is present, the thickness of product and depth to groundwater must be recorded to the nearest 0.01'. The sampling will be conducted in accordance with applicable portions of the QAPP. Additional samples (air, groundwater, effluent, soil) required by permits must be collected in accordance with established QA/QC protocol and submitted to an SC-certified laboratory for analysis. The samples will be analyzed for parameters stipulated in the permits. Sampling and analytical data for each sample (e.g., field sampling logs, chain of custody forms, certificates of analysis, lab certification number) will be included in the CASE report.

**The Contractor must submit a written request to the Agency for a change in the gauging/sampling protocol. Approval for any reduction in the number of wells and gauging points to be gauged/sampled is at the sole discretion of the Agency. The Contractor may choose to conduct gauging/sampling more frequently in order to document that a reduction milestone has been achieved.**

10. **DISPOSAL:** The Contractor must properly dispose of all contaminated water, contaminated soil, and FPP generated during corrective action. The Owner/Operator of the UST facility will be considered the generator. In the case of an orphan site, the Contractor will be considered the generator. Treatment and disposal must be conducted at an SCDHEC-approved facility, and must be documented in the CASE reports.
11. **QUALITY ASSURANCE & VERIFICATION:** Once gauging data indicate 100% FPP thickness reduction, the Contractor must completely suspend corrective action and provide notification to the Agency. After 30 days, the Contractor will gauge all wells and gauging

points listed in the Appendix and all injection and/or extraction wells to verify that the final (100%) FPP thickness reduction goal has been achieved and maintained. If the goal is maintained, the date of the 30-day sampling event will be considered the start of the two-quarter, post-corrective action verification period. During the verification period, the Contractor will conduct quarterly sampling of all wells and gauging points listed in the Appendix and all verification wells, and conduct quarterly gauging of all injection and/or extraction wells after the start of the verification period. **Do not sample wells and gauging points containing measurable (>0.01') FPP.** If measurable FPP is present, the thickness of product and depth to groundwater must be recorded to the nearest 0.01'. The samples should be analyzed for the parameters listed in the Appendix, and for dissolved oxygen, ferrous iron, methane, nitrate, and sulfate using the analytical methods and reporting limits detailed in the QAPP.

If gauging results show that the final FPP thickness reduction goal has not been maintained, and/or the FPP thickness exceeds 0.01' in any injection, extraction, or verification well, corrective action must be resumed. The Agency may require the Contractor to propose a revised corrective action strategy and timetable to achieve and maintain the goal. The strategy may require modification of the existing corrective action system. The post-corrective action period will be suspended and corrective action will continue until the final (100%) FPP thickness reduction goal is again achieved. The Contractor will again suspend corrective action and gauge all wells and sampling points, and all injection and/or extraction wells after 30 days. If the goal is maintained, a new post-corrective action verification period will begin. The aforementioned cycle of activity must be repeated until the FPP thicknesses remain at or below 0.01' in all wells and gauging points listed in the Appendix, in all injection and/or extraction wells, and in all verification wells for 2 consecutive quarters.

The Agency may require installation of 8 verification well(s) during the post-corrective action verification period at designated locations and depths. Costs for the verification wells will be considered part of the Corrective Action Cost. The SSTL for any verification well will be an FPP thickness of 0.01'.

The Agency will conduct gauging to verify achievement of the second (90%) interim FPP thickness reduction goal, and may conduct gauging to verify achievement of the first (60%) interim FPP thickness reduction goal and to confirm the start of the two-quarter, post-corrective action verification period. The Agency will also conduct gauging during the two-quarter, post-corrective action verification period to confirm that corrective action goals have been maintained.

**If the Contractor anticipates that gauging by the Agency is warranted, and desires to participate or is required to participate, the Agency must be allowed at least 2 weeks to schedule a mutually agreeable time for the gauging event.**

12. **DEMobilization:** The Contractor will disassemble and remove the corrective action system and associated components including utilities from the site within 60 days of notification by the Agency that the final FPP thickness reduction goal has been achieved and maintained for 2 consecutive quarters. Disruption to the UST Owner/Operator's or property owner's business

must be kept to a minimum.

13. **SITE RESTORATION:** The Contractor must remove or properly abandon all assessment and corrective action components (piping, monitoring wells, injection and/or extraction wells, trenches, etc.) within 60 days of notification by the Agency that the final FPP thickness reduction goal has been achieved and maintained for 2 consecutive quarters. Abandonment will be in accordance with the South Carolina Well Standards and Regulations R. 61-71, the UST Management Division QAPP, and accepted industry standards for abandonment of trenches and piping/utility runs. Disruption to the Owner/Operator's or property owner's business must be kept to a minimum. The Contractor must provide the Agency with documentation of the abandonment and disposal of any remaining contaminated soil, contaminated groundwater, and FPP. **The Contractor will restore the site and adjacent properties to the condition that existed prior to assessment and corrective action (e.g., repaving, reseeding, etc.) as documented by the photographs included in the Initial Monitoring Report or other written documentation detailing a variance from the conditions documented by the photographs. Neither the Agency nor the SUPERB Account will be liable for any damages caused by the Contractor. As required by Section IV.A.4c. of the SUPERB Site Rehabilitation and Fund Access Regulations R.61-98, the Contractor shall be required to indemnify the property owner, UST Owner/Operator and the State of South Carolina from and against all claims, damages, losses and expenses arising out of or resulting from activity conducted by the Contractor, its agents, employees or subcontractors.**
  
14. **COMPLETION NOTICE:** Written notice must be provided to the Agency at least 2 weeks prior to completion of site restoration. This will allow the Agency and the Contractor time to jointly inspect the site and adjacent properties, and compile a list of tasks to be finished. Task items may include, but are not limited to, well abandonment, pavement repair, debris removal, etc. **Site restoration will be complete once all the tasks are finished; the site passes a final inspection by the Agency, and the Agency issues written notice that the corrective action is complete.**

Ryder Truck Rental 0377A, UST Permit #07504  
Richland County

# APPENDIX

## Brief site summary for UST#07504 Ryder Truck Rental 0377A

1. UST Release # 1 was reported on 1/15/92 and was determined to be a diesel release. Release # 3 was reported on 4/2/92 and determined to be a motor oil release. (Note: due to a database entry issue there is no Release #2.)

2. One 10,000 gallon motor oil UST, one 20,000 gallon gasoline UST, and two 20,000 gallon diesel USTs were removed in March 1992. One 20,000 gallon diesel UST and one 4,000 gallon unleaded gasoline UST were installed in March 1992, and are currently operational. The unleaded gasoline UST was converted to diesel storage in 2007.

3. Visual observations during tank removal and subsequent soil and ground water sample results in 1992 indicated a diesel line leak at island No. 4. An approximate 900 gallon diesel release was reported based on initial inventory control (subsequently revised to 6,000 to 8,000 gallons of diesel released).

4. Multiple assessment and recovery wells were installed at the site from 1992 to 2004 to delineate the free phase product (FPP) plume. Typically 1 foot to 7 feet of FPP were measured in wells at the site. Groundwater sampling indicated dissolved petroleum VOCs in source area wells. Product recovery was initiated with a pumping system at select wells.

5. SCDHEC solicited Owner/Operator bids in December 2004 for Corrective Action (Pay for Performance) of Release #1 for FPP only, with a target thickness of 0.01 foot or less in six monitoring wells designated as Site Specific Target Level (SSTL) wells. The total initial FPP thickness above site specific target levels (SSTLs) at the six wells was 17.79 feet.

6. Southeast Technical Services (STS) was awarded the Correction Action (CA) Contract in 2005, and a Corrective Action Plan (CAP) was submitted in April 2005. The CAP detailed the design/implementation of a multi-phase extraction (MPE) system to remove FPP. Multiple MPE events were performed and multiple Correction Action System Evaluation (CASE) reports were submitted to provide site status updates through September 2011. A reported total of 209,000 gallons of impacted water and FPP was removed at the site. (Note, no specific total of FPP recovered was reported). Over 6.5 feet of FPP was measured at the six SSTL wells in December 2010 (75% SSTL reduction). However, approximately 24 feet total of FPP was measured in nine other monitoring and recovery wells on site in December 2010.

7. Fingerprint (GC) analysis was performed in 2004, 2008, and 2010 at seven wells; MW-8, MW-17, MW-20, MW-23 and MW-24 indicated diesel fuel, and wells MW-16, MW-22 and RW-4 indicated motor oil or lube oil. SCDHEC assessed the data and confirmed the previously reported motor oil release in September 2011, after the Pay for Performance award was issued in 2005.

8. The last CASE report (prepared by STS) was submitted to SCDHEC in September 2011.

9. Bensinger & Garrison (B&G) prepared an Expanded Assessment Report (May 2013) that evaluated dissolved PHC and FPP in the source (former UST) areas and ground water quality site wide. B&G recommended additional assessment northeast of RW-

Brief site summary for UST#07504 Ryder Truck Rental 0377A

4/MW-22 and down gradient of MW-20 to define the diesel FPP and the extent of heavier oil FPP. The report can be found in this appendix.

10. Terracon Consultants, Inc. was retained by Ryder System, Inc. to perform FPP gauging of the onsite monitoring wells. The gauging results from September 15, 2015 can be found in this appendix.

11. SCDHEC personnel gauged the onsite monitoring wells on January 6, 2016 for Active Corrective Action baseline levels. The gauging results can be located in Table 1 of this appendix.

Ryder Truck Rental 0377A, UST Permit #07504

Richland County

### **Distribution List for Plans and Reports\***

1. Ryder Truck Rental, Inc., Environmental Services Group, 800 E Fairfield Rd, Greenville, SC 29605. Tax map # R11112-01-16 (site), # R11112-01-42
  2. Sonoco Recyclin, LLC, 1 N 2nd St. B04, Hartsville, SC 29550. Tax map # R11111-01-51. Monitoring well MW-15 is located on property.
  3. Steve L. Littlejohn, 118 Alexander Circle, Columbia, SC 29206. Tax map # R11111-01-48
  4. RH Bluff Park, LLC, 2730 Transit Rd, West Seneca, NY 14224. Tax map # R11112-01-15
  5. Oak Glen Investments, LLC, P.O. Box 16046, Greensboro, NC 27416. Tax map # R11112-01-12
  6. Tucker Oil Co., Inc., P.O. Box 50127, Columbia, SC 29250. Tax map # R11112-01-18
  7. Old Dairy Road, LLC, 3135 Millwood Ave, Columbia, SC 29205. Tax map # R11112-01-47
  8. Milton L. Brazell, 220 Loraine Ct, West Columbia, SC 29169. Tax map # R11112-01-21
  9. Mechanical and Industrial Properties, P.O. Box 116, Columbia, SC 29202. Tax map # R11112-01-28
- \* Information is subject to change due to sale or other exchange of property.

### **List of Adjacent Facilities**

There are no adjacent UST facilities.



Ryder Truck Rental 0377A, UST Permit #07504  
 Richland County

<b>RW-4</b>	2.85	NS									
<b>RW-5</b>	0.57	NS									
RW-6		NS									

\* CoC concentrations may vary due to seasonal fluctuations in the groundwater.

\* CoC SSTL concentrations to be set a levels detected after the removal of free phase product.

NS: not sampled

NA: not analyzed

**Bold:** SSTL wells

**Table of SSTLs**

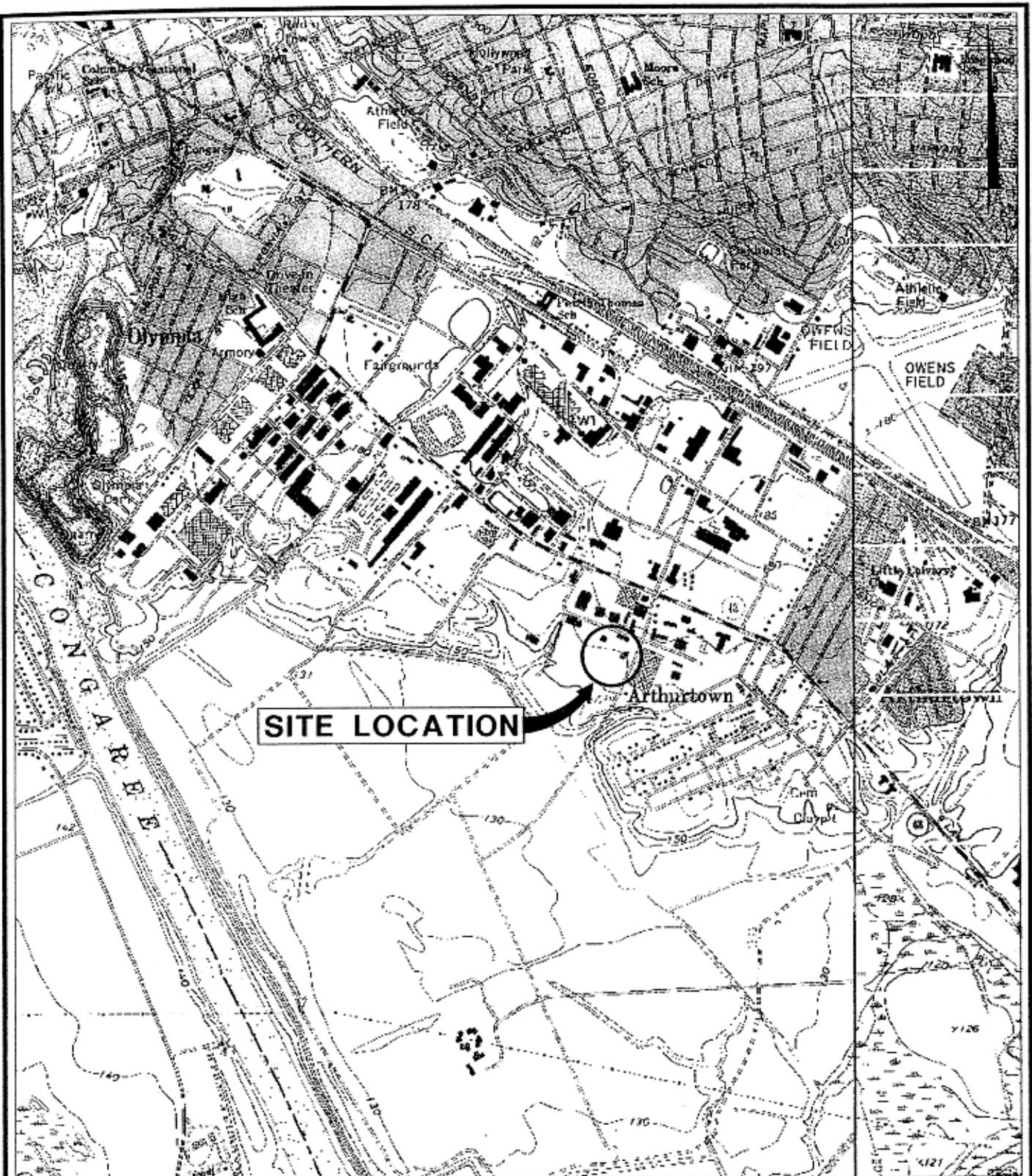
Site-specific target levels (SSTLs) for interim payment under this solicitation.

<b>Monitoring Well</b>	<b>Free Product Thickness (feet)</b>
MW-1	0.01
MW-2	0.01
MW-3	0.01
MW-4	0.01
MW-6	0.01
MW-8	0.01
MW-17	0.01
MW-20	0.01
MW-22	0.01
MW-23	0.01
MW-24	0.01
MW-27	0.01
MW-29	0.01
RW-3	0.01
RW-4	0.01
RW-5	0.01
<b>Total Initial Thickness</b>	<b>42.55</b>
<b>Total SSTL Thickness</b>	<b>0.16</b>
<b>Total Initial Thickness Above SSTL</b>	<b>42.39</b>

**Table of Well Construction Data**

Well	Depth (ft)	Screen Interval (ft)	TOC Elevation (ft)
MW-1A	27	12-27	
<b>MW-1</b>	23.5	13.5-23.50	161.80
<b>MW-2</b>	25	10-25	160.74
<b>MW-3</b>	25	10-25	160.80
<b>MW-4</b>	22.5	12.5-22.5	160.00
MW-5D	60	55-60	160.77
<b>MW-6</b>	25	15-25	160.42
MW-7	23.5	13.5-23.5	159.37
<b>MW-8</b>	25	15-25	158.22
MW-9	24	14-24	158.62
MW-10	23.5	13.5-23.5	160.11
MW-11	25	15-25	162.86
MW-12	15	5-15	161.78
MW-13	15	5-15	159.93
MW-14	21.5	11.5-21.5	160.68
MW-15	20	10-20	156.11
<b>MW-17</b>	20	10-20	162.10
MW-18	20	10-20	159.99
MW-19	20	10-20	158.92
<b>MW-20</b>	19	9-19	157.34
MW-21	20	10-20	159.03
<b>MW-22</b>	20	10-20	162.00
<b>MW-23</b>	20	10-20	161.95
<b>MW-24</b>	20	10-20	162.00
MW-25	25	10-25	163.40
MW-26	25	10-25	162.58
<b>MW-27</b>	25	10-25	162.60
MW-28	25	10-25	162.60
<b>MW-29</b>	25	10-25	162.62
RW-1	28.5	18.5-28.5	160.40
RW-2	14.5	9.5-14.5	161.51
<b>RW-3</b>	24.5	14.5-24.5	161.66
<b>RW-4</b>	17.5	12.5-17.5	162.03
<b>RW-5</b>	17.5	12.5-17.5	159.27
RW-6	17.5	12.5-17.5	158.33

## **Maps / Figures**



SOURCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLES: FORT JACKSON SOUTH, SOUTH CAROLINA, AND SOUTHWEST COLUMBIA, SOUTH CAROLINA, BOTH 1972, PHOTOREVISED 1982.

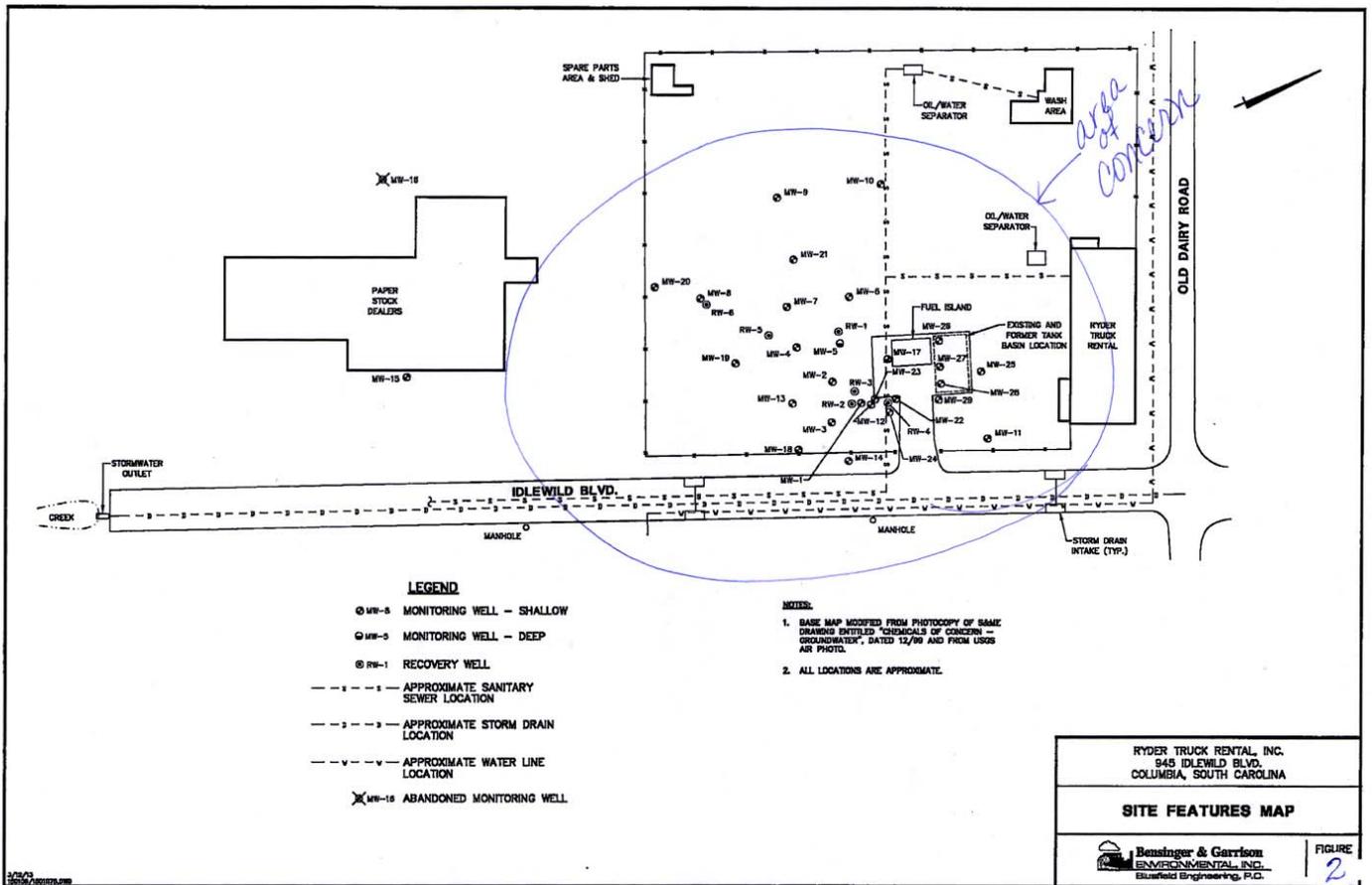
RYDER TRUCK RENTAL, INC.  
 945 IDLEWILD BLVD.  
 COLUMBIA, SOUTH CAROLINA

**SITE LOCATION MAP**



Southeast Technical Services, P.C.  
 Engineering • Construction • Environmental Services

FIGURE  
**1**

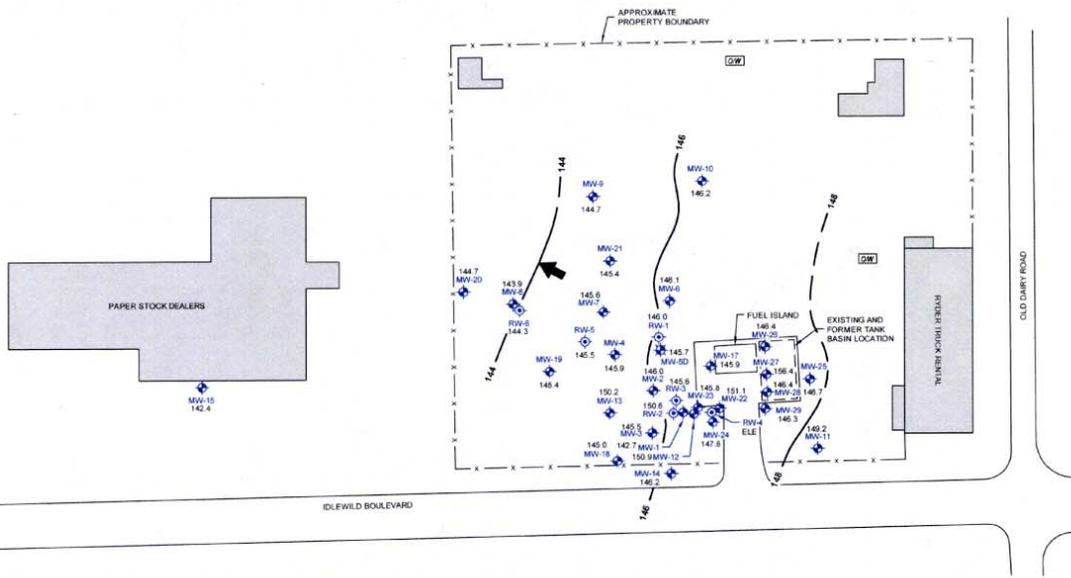




**EXPLANATION**

- MONITORING WELL
- DEEP MONITORING WELL
- RECOVERY WELL
- GROUND WATER SURFACE CONTOUR IN FEET
- GROUND WATER FLOW DIRECTION

**NOTES**  
 1) GROUND WATER ELEVATIONS WERE RECORDED ON SEPTEMBER 18, 2015.



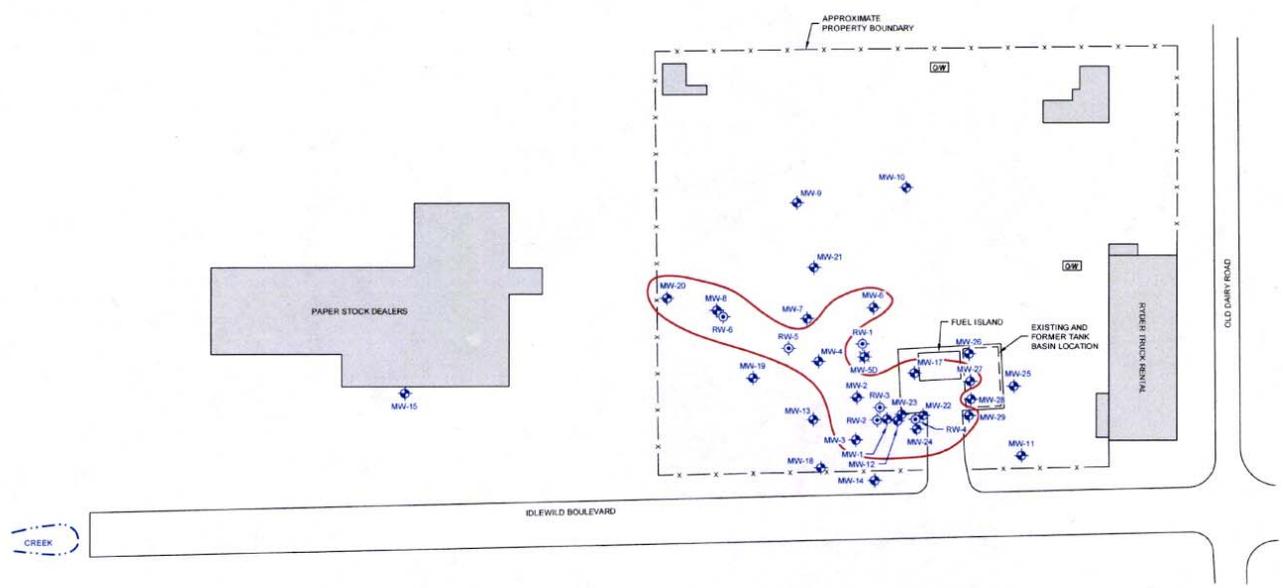
Property:	CRC	Project:	73157035
Drawn by:	PKR	Scale:	AS SHOWN
Checked by:	CRC	Date:	7/31/2015
Approved by:	CRC	Date:	OCTOBER 2015

**Terracon**  
 Consulting Engineers and Scientists  
 32 COLUMBIA ROAD, COLUMBIA, SC 29202  
 781.883.1416 FAX: 803.761.8882

<b>POTENTIOMETRIC SURFACE MAP</b> RYDER TRUCK RENTAL 845 IDLEWILD BOULEVARD COLUMBIA, SOUTH CAROLINA UST PERMIT #07504	Figure <b>3</b>
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DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

EXPLANATION	
	MONITORING WELL
	DEEP MONITORING WELL
	RECOVERY WELL
	ESTIMATED EXTENT OF FPP



Project Mgr:	CRC	Project No:	73157035
Drawn By:	PKX	Scale:	AS SHOWN
Checked By:	CRC	Date:	7/31/2015
Approved By:	CRC	Date:	OCTOBER 2015

**Terracon**  
 Consulting Engineers and Scientists  
 521 CLEMSON ROAD COLUMBIA, SC 29205  
 PH: (803) 741-0200 FAX: (803) 741-0202

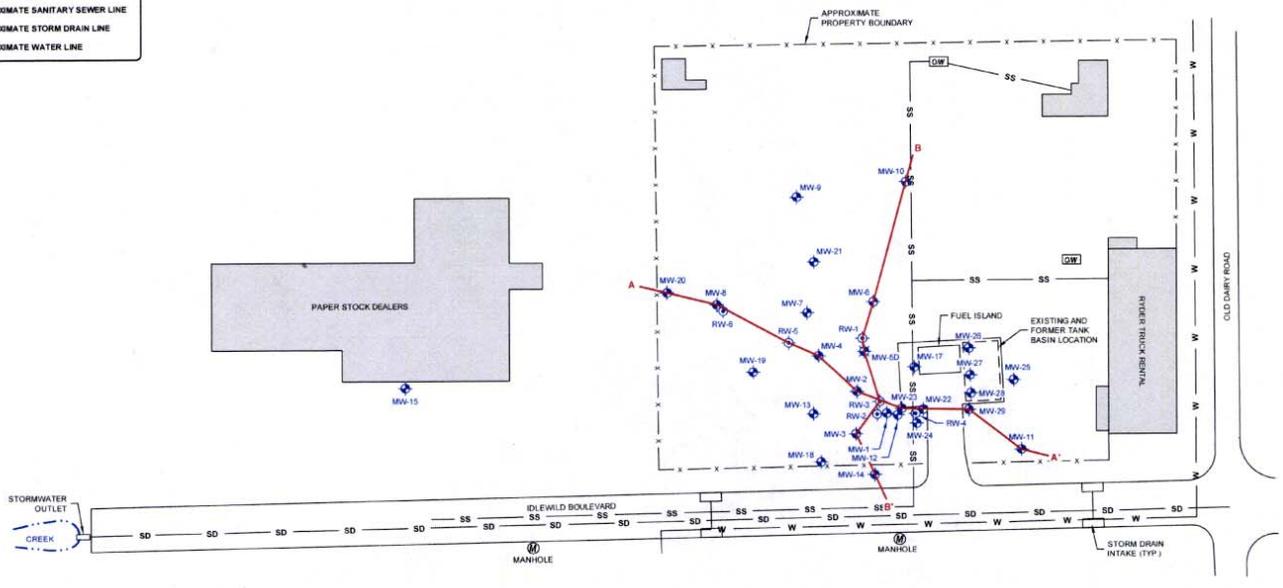
FPP PLUME MAP
RYDER TRUCK RENTAL
945 IDLEWILD BOULEVARD
COLUMBIA, SOUTH CAROLINA
UST PERMIT #07504

Figure  
4

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES



- EXPLANATION**
- ◆ MONITORING WELL
  - ◆ DEEP MONITORING WELL
  - ◆ RECOVERY WELL
  - CROSS SECTION TRANSECTS
  - GW OIL / WATER SEPARATOR
  - SS — APPROXIMATE SANITARY SEWER LINE
  - SD — APPROXIMATE STORM DRAIN LINE
  - W — APPROXIMATE WATER LINE

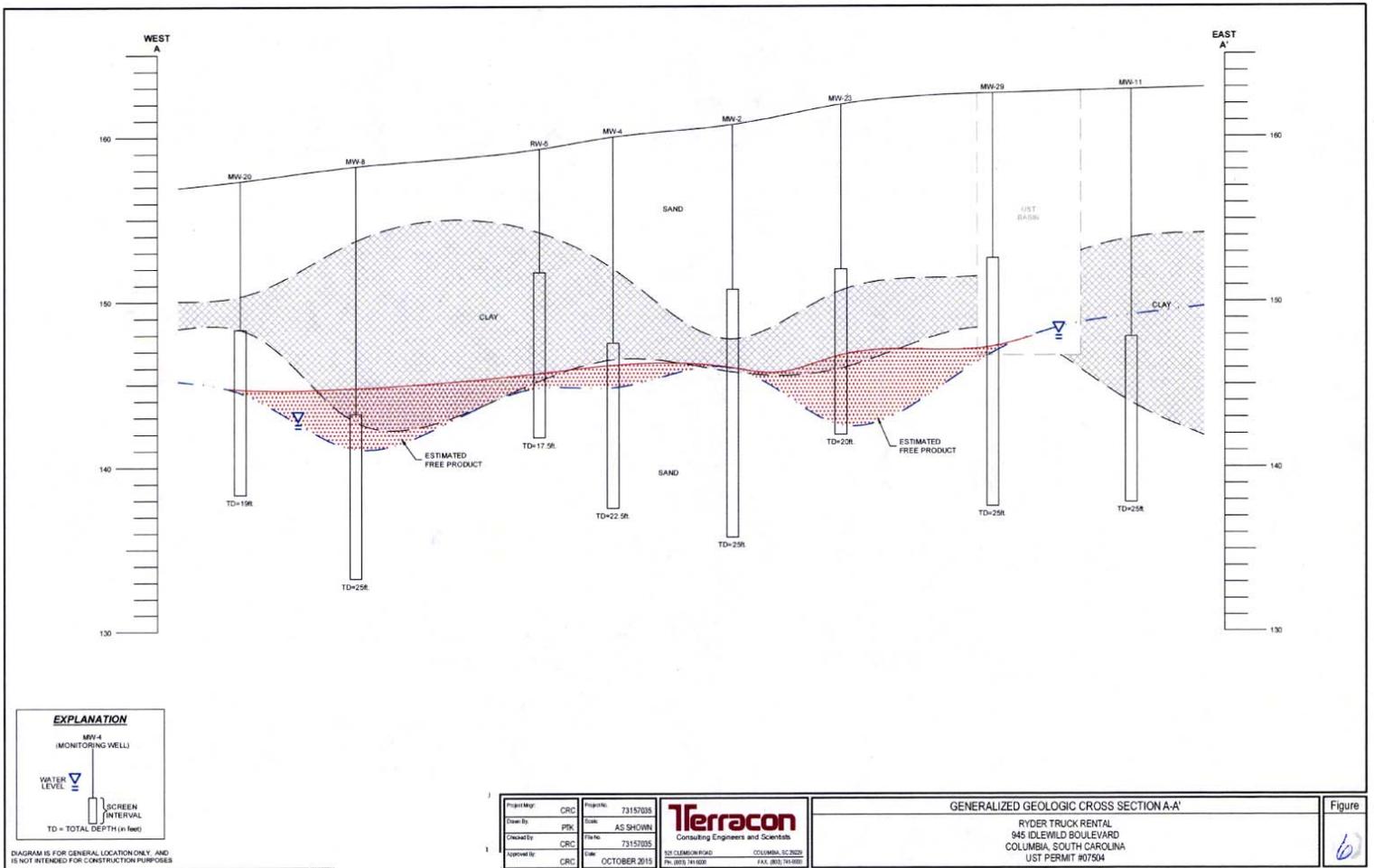


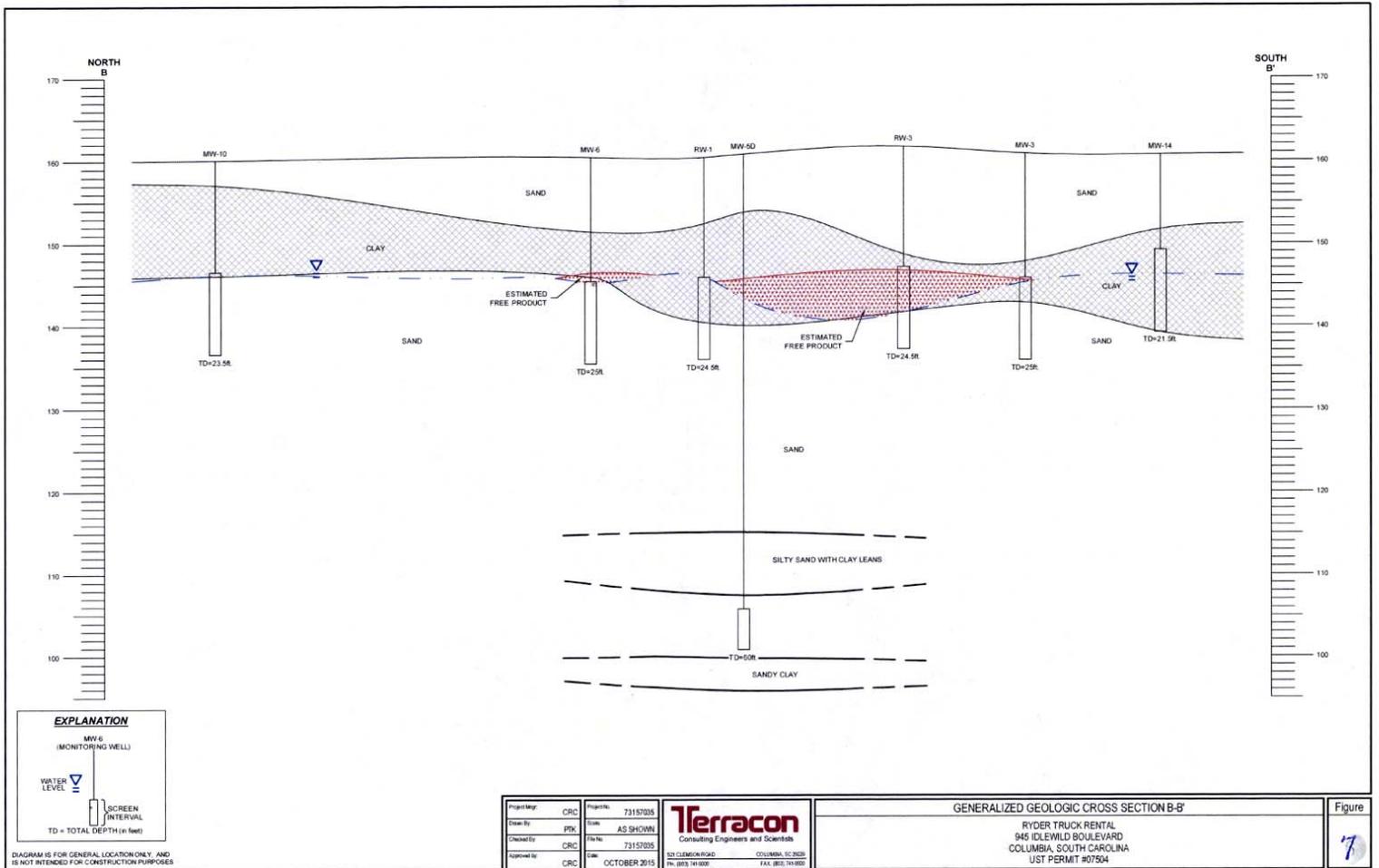
NOTE  
BASE MAP OBTAINED FROM BENSINGER & GARRISON ENVIRONMENTAL, INC.

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Prepared by:	CRC	Project No.:	73157035	<p><b>Terracon</b> Consulting Engineers and Scientists</p> <p>301 CLEMSON ROAD      COLUMBIA, SC 29223 PH: 803.799.6200      FAX: 803.799.6800</p>
Drawn by:	PKK	Date:	AS SHOWN	
Checked by:	CRC	Title:	73157035	
Approved by:	CRC	Date:	OCTOBER 2015	

<p><b>SITE MAP WITH CROSS SECTION TRANSECTS</b></p> <p>RYDER TRUCK RENTAL 945 IDELWILD BOULEVARD COLUMBIA, SOUTH CAROLINA UST PERMIT #07504</p>	<p>Figure</p> <p style="font-size: 2em; border: 1px solid black; border-radius: 50%; padding: 5px;">5</p>
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## Slug Test Data

MV-1

$$\begin{aligned}
 H &= 6.94' \\
 L &= 7.5' \\
 D &= 47' \\
 r_c &= 0.168' \\
 r_w &= 0.427' \\
 Y_0 &= 4.0' \\
 Y_e &= 0.93' \\
 t &= 10 \text{ min} \\
 A &= 1.55 \\
 B &= 0.35
 \end{aligned}$$

$$L/r_w = 17.56$$

$$\begin{aligned}
 \ln R_e/r_w &= \left[ \frac{1.1}{\ln(6.94/0.427)} + \frac{1.55 + 0.35 \left[ \frac{47 - 6.94}{47} \right]}{7.5/0.427} \right]^{-1} \\
 &= \left[ \frac{1.1}{2.79} + \frac{3.14 \pm 5.9}{34.34} \right]^{-1} \\
 &= \left[ 0.39 + \frac{0.179}{1.96} \right]^{-1} \\
 &= \left[ \frac{0.569}{1.96} \right]^{-1} \\
 &= 0.4261.75
 \end{aligned}$$

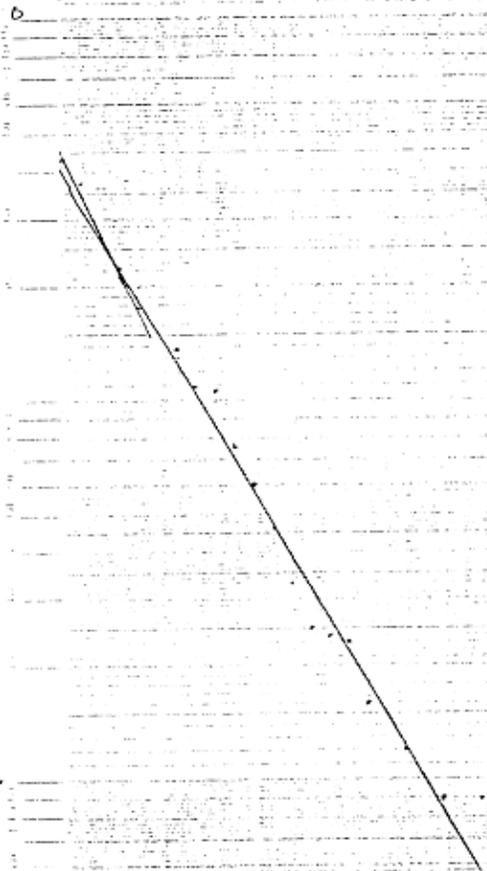
$$K = \frac{(0.168)^{1.76} (0.426)}{2(0.5)} \cdot \frac{1}{10} \ln \frac{4.0}{0.93}$$

$$K = \frac{0.00508}{7.32} \text{ ft/min}$$

$$K = 0.177 \text{ ft/day}$$

$$T = 8.30 \text{ ft}^2/\text{day}$$

$$343.8$$



# MW-6

$$H = 10.53$$

$$L = 10$$

$$D = 48.5$$

$$r_c = 0.166'$$

$$r_w = 0.417'$$

$$Y_0 = 17'$$

$$Y_t = 9.7$$

$$t = 10$$

$$(23.98) \quad A = 2.55$$

$$B = 0.46$$

17.0 - Y<sub>0</sub>

Y<sub>t</sub> 9.7

$$L \ln Re/r_w = \left[ \frac{1.1}{1.0(10.53/0.417)} \right] + \frac{2.55 + 0.46 \ln[(48.5' - 10.53')/0.417]}{1.0/0.417}$$

$$\left[ 0.3906 + \frac{4.63}{23.98} \right] = 1$$

$$L \ln Re/r_w = 1.87$$

$$\frac{(0.166')^2 (1.87)}{2.0} \cdot \frac{1}{10} \cdot \left( \frac{1}{10} \frac{17}{4.7} \right)$$

$$K = 0.00258 \times \sqrt{\dots}$$

$$K = 0.00532 \dots$$

$$K = 4.78 \text{ ft/day}$$

$$T = 64 \text{ gal/day}$$

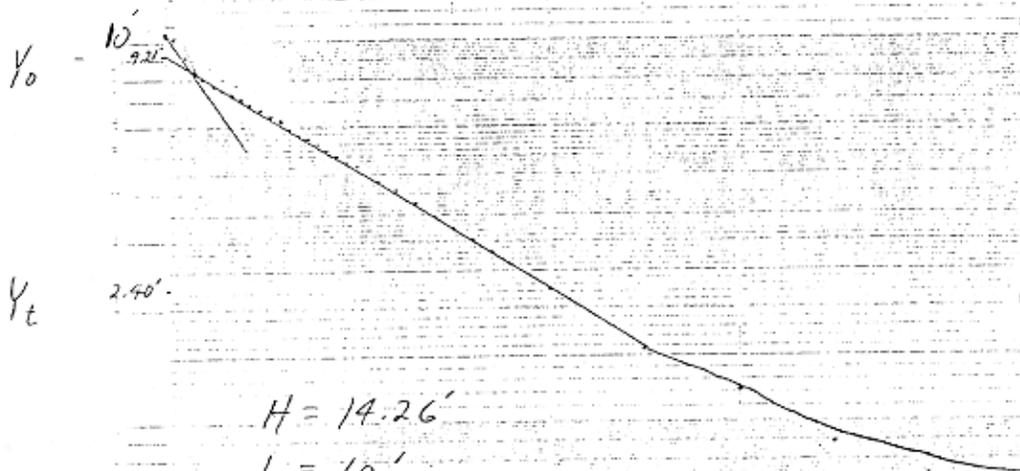
RW-1

.000197

CF 324-1, T. 6

Analysis By Dave Hunter

Analysis Date: 12/3/43



$H = 14.26'$

$L = 10'$

$D = 43'$  - Assumed MW-5 - clay @ 63'  
RW-1 - upper clay @ 20'

$r_e = 2.0' = 0.166'$

$r_w = 6.0' = 0.50'$

$Y_0 = 9.21'$

$Y_t = 2.40'$

$t = 20 \text{ min}$

$A = 2.1$

$B = 0.30$

$$\ln R_e/r_w = \left[ \frac{1.1}{\ln(H/r_w)} + \frac{A + B \ln[(D-H)/r_w]}{L/r_w} \right]^{-1}$$

$$K = \frac{r_e^2 \ln(R_e/r_w)}{2L} \frac{1}{t} \ln \frac{Y_0}{Y_t}$$

$$\ln R_e/r_w = \left[ \frac{1.1}{\ln(14.26/0.50)} + \frac{2.1 + 0.30 \ln[43 - 14.26/0.50]}{10/0.50} \right]^{-1}$$

$$\ln R_e/r_w = \left[ \frac{1.1}{3.35} + \frac{3.32}{20} \right]^{-1} = 2.02$$

$$= \left[ 0.328 + 0.166 \right]^{-1}$$

$$K = \frac{0.166^2 (2.02)}{20} \frac{1}{20} \ln \frac{9.21}{2.40}$$

.000134 x 1.34

$K = 1.87 \times 10^{-4} \text{ ft/min}$

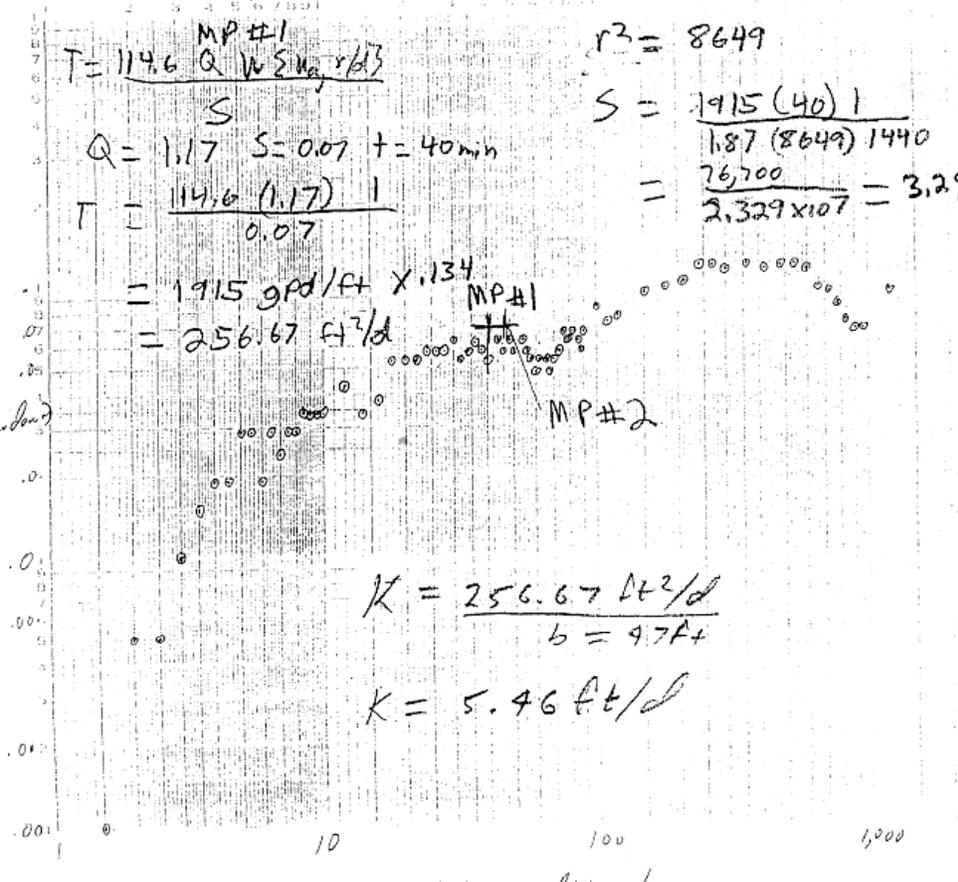
$K = .269 \text{ ft/day} = .11571$

Walton  
~~Prickett~~ Non Equilibrium Type Curve

MW-4 C 324-1

Analysis By: LAG/DAH

Analysis Date: 12/10/93



$$T = \frac{114.6 \text{ MP\#1}}{S} \quad Q = W \Sigma W_p r^2 / b^3$$

$$Q = 1.17 \quad S = 0.07 \quad t = 40 \text{ min}$$

$$T = \frac{114.6 (1.17)}{0.07}$$

$$= 1915 \text{ gpd/ft} \times 1.34$$

$$= 256.67 \text{ ft}^2/\text{d}$$

$$K = \frac{256.67 \text{ ft}^2/\text{d}}{b = 47 \text{ ft}}$$

$$K = 5.46 \text{ ft/d}$$

$$r^2 = 8649$$

$$S = \frac{1915 (40)}{1.87 (8649) 1440}$$

$$= \frac{76700}{2.329 \times 10^7} = 3.29 \times 10^{-3}$$

$$\text{MP\#}$$

$$S = 0.07 \quad t = 46 \text{ min}$$

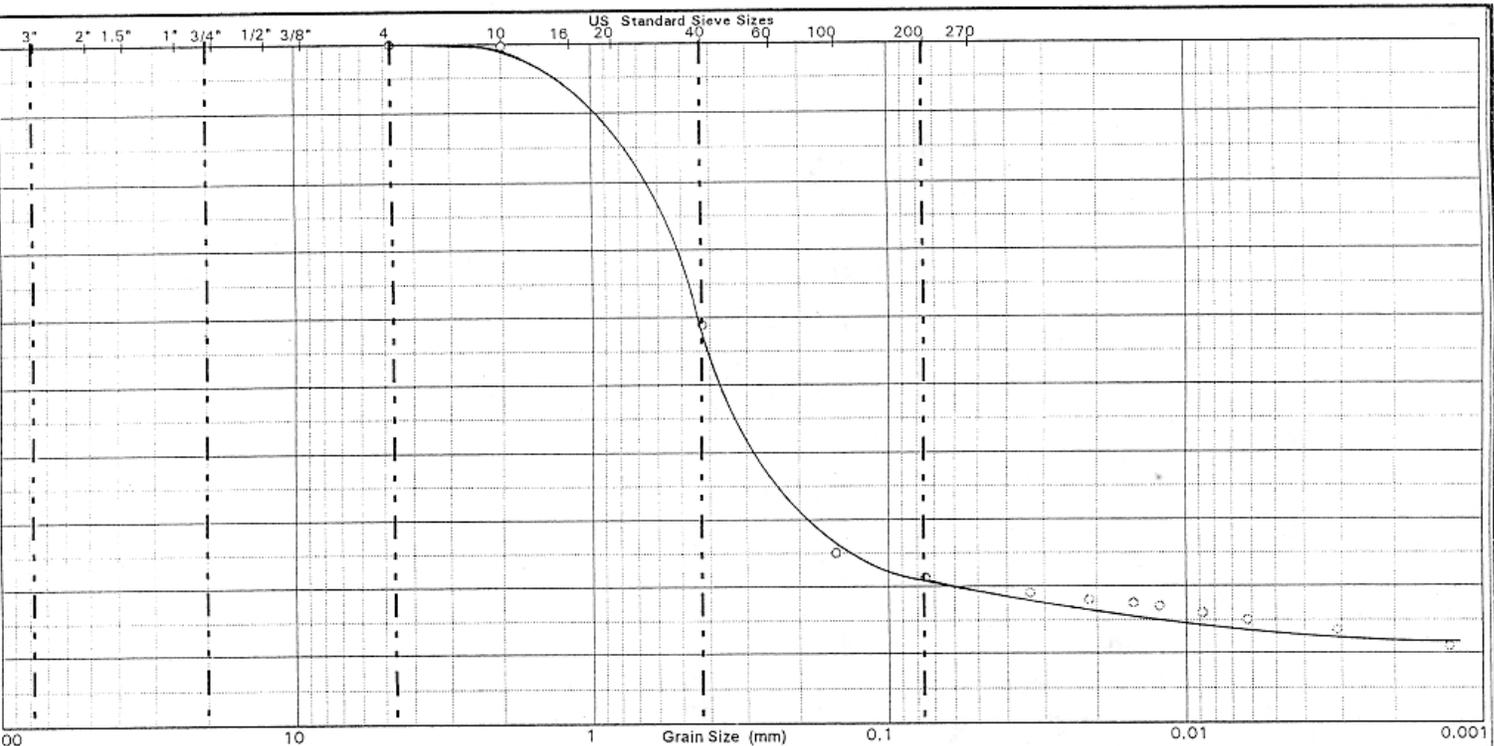
$$S_y = \frac{1915 (46)}{1.87 (8649) 1440}$$

$$= \frac{88090}{2.329 \times 10^7}$$

$$= 3.78 \times 10^{-3}$$

## **Free Product Recovery Test**





Gravel		Sand			Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt Sizes	Clay Sizes

Name	Ryder Idlewild	Nat. Moist.	%
Number	1264-96-250		
Tag Number		LL	
Depth	10 feet	PL	
		PI	
Soil Description/Classification			

GRAIN SIZE DISTRIBUTION  
ASTM D-422



**Ground Water / Soil Data**

FRIEDMAN & BRUYA, INC.

07504

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

November 3, 2004

Debra Thoma, Project Manager  
SCDHEC, UST Program  
2600 Bull St.  
Columbia, SC 29201

64-~~7224~~

Dear Ms. Thoma:

Included are the results from the testing of material submitted on October 15, 2004 from the Ryder Truck 377A/07504, PO# 473053, F&BI 410147 project. The product samples submitted for forensic evaluation arrived in good condition. Upon arrival, the samples MW-8 and MW-16 were placed in a refrigerator maintained at 4°C until removed for sample processing.

The samples MW-8 and MW-16 were diluted and analyzed using a gas chromatograph with a flame ionization detector (GC/FID) and an electron capture detector (ECD). The data generated yielded information on the boiling range and general chemical composition of the material present. The GC/FID and GC/ECD traces are enclosed. A GC/FID trace of a standard consisting of normal alkanes is also provided for reference purposes.

In addition, the sample MW-8 was analyzed for organometallic compounds using GC/ECD as well as an inductively coupled plasma atomic emission spectrometer (ICP-AES). The results of this testing, including the associated quality assurance, are also enclosed. Please note that insufficient product was present in the sample MW-16 to complete the GC/ECD and ICP-AES testing.

Please contact us if additional consultation is needed by our firm in the interpretation of the analytical results provided. We appreciate this opportunity to be of service to you and hope you will call if you should have any questions. We will hold your samples for 30 days before disposal unless directed otherwise.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson  
Chemist

Enclosures  
SCD1103R.DOC

RECEIVED

NOV 08 2004

UNDERGROUND STORAGE  
TANK PROGRAM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

Date Extracted: 10/22/04

Date Analyzed: 10/22/04

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR FORENSIC EVALUATION  
BY CAPILLARY GAS CHROMATOGRAPHY  
USING A FLAME IONIZATION DETECTOR (FID)  
AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID

GC Characterization

MW-8

The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or heating oil.

The medium boiling compounds appear as a regular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C<sub>9</sub> to *n*-C<sub>24</sub> showing a maximum near *n*-C<sub>15</sub>. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C.

Within this range, the dominant peaks present are indicative of normal alkanes. Secondary peaks are also present which are indicative of the isoprenoids including norpristane, pristane, and phytane. The relative abundance of the normal alkanes and isoprenoids indicates that little to no biological degradation has occurred to the fuel.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

RECEIVED

NOV 08 2004

UNDERGROUND STORAGE  
TANK PROGRAM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

Date Extracted: 10/22/04

Date Analyzed: 10/28/04

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR FORENSIC EVALUATION  
BY CAPILLARY GAS CHROMATOGRAPHY  
USING A FLAME IONIZATION DETECTOR (FID)  
AND ELECTRON CAPTURE DETECTOR (ECD)**

Sample ID

GC Characterization

MW-16

The GC trace using the flame ionization detector (FID) showed the presence of medium to high boiling compounds. The material present in this sample is consistent with a mixture of high boiling products such as hydraulic oil, lube oil, or similar materials.

The medium to high boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from  $n-C_{14}$  to  $n-C_{36}$  showing a maximum near  $n-C_{22}$ . This correlates with a temperature range of approximately 250°C to 500°C with a maximum near 370°C.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chloroendate.

RECEIVED  
NOV 08 2004  
UNDERGROUND STORAGE  
TANK PROGRAM

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

Date Extracted: 10/28/04

Date Analyzed: 10/29/04

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR ORGANIC LEAD SPECIATION AND MANGANESE  
BY METHOD 8082 MODIFIED**

Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u> Laboratory ID	<u>TML</u>	<u>TMEL</u>	<u>DMDEL</u>	<u>MTEL</u>	<u>TEL</u>	<u>MMT</u>	<u>Surrogate</u> (% Recovery)
MW-8 410147-01	<5	<5	<5	<5	<5	<5	72
Method Blank	<5	<5	<5	<5	<5	<5	82

TML        Tetramethyl Lead  
TMEL      Trimethylethyl Lead  
DMDEL    Dimethyldiethyl Lead  
MTEL      Methyltriethyl Lead  
TEL        Tetraethyl Lead  
MMT       Methylcyclopentadienyl Manganese Tricarbonyl

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

Date Extracted: 10/29/04

Date Analyzed: 10/29/04

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR ORGANIC LEAD AND MANGANESE BY ICP  
(METHOD 6010)**

Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u> Laboratory ID	<u>Organic Lead</u>	<u>Organic Manganese</u>
MW-8 410147-01	<1	<1
Method Blank	<1	<1

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF THE PRODUCT  
SAMPLES FOR TOTAL ORGANIC LEAD BY METHOD 8082 MODIFIED**

Laboratory Code: 410147-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Tetramethyl lead	µg/g (ppm)	<5	<5	nm
Tetraethyl lead	µg/g (ppm)	<5	<5	nm
MMT	µg/g (ppm)	<5	<5	nm

Laboratory Code: 410147-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Tetramethyl lead	µg/g (ppm)	50	<5	73	50-150
Tetraethyl lead	µg/g (ppm)	50	<5	93	50-150
MMT	µg/g (ppm)	50	<5	147	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	5	88	86	70-130	2
Tetraethyl lead	µg/g (ppm)	5	99	99	70-130	1
MMT	µg/g (ppm)	5	75	74	70-130	1

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

**QUALITY ASSURANCE RESULTS  
FOR ORGANIC LEAD AND MANGANESE  
BY METHOD 6010 MODIFIED**

Laboratory Code: 410147-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Organic Lead	ug/g (ppm)	<1	<1	nm	0-20
Organic Manganese	ug/g (ppm)	<1	<1	nm	0-20

Laboratory Code: 410147-01 (Matrix)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Organic Lead	ug/g (ppm)	11.8	<1	114	50-150
Organic Manganese	ug/g (ppm)	2.1	<1	94	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Organic Lead	ug/g (ppm)	11.8	149 vo	166 vo	70-130	11
Organic Manganese	ug/g (ppm)	2.1	132 vo	147 vo	70-130	11

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

vo - The value reported fell outside the control limits established for this analyte.

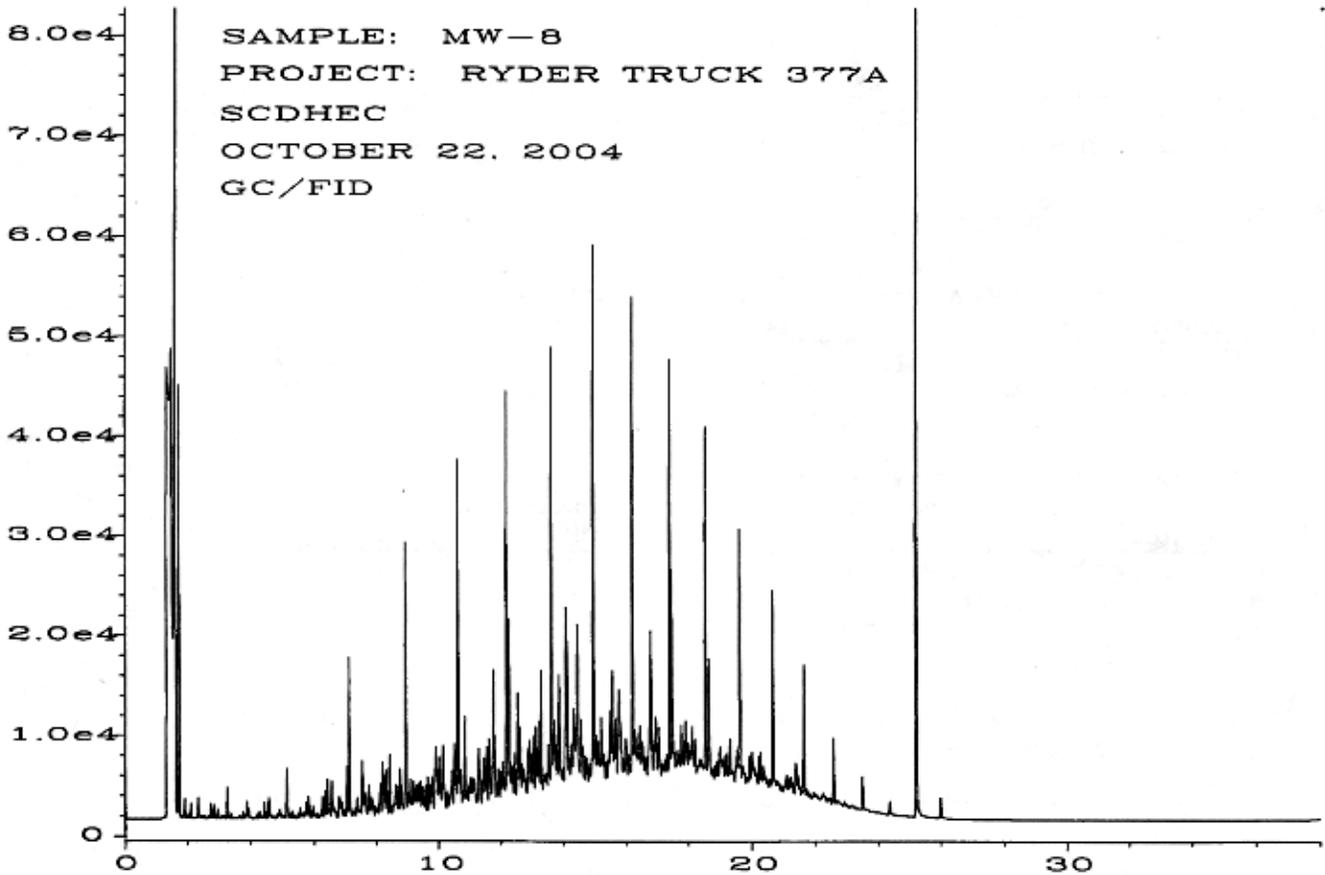


Fig. 1 in C:\HPCHEM\1\DATA\10-22-04\025F1101.D

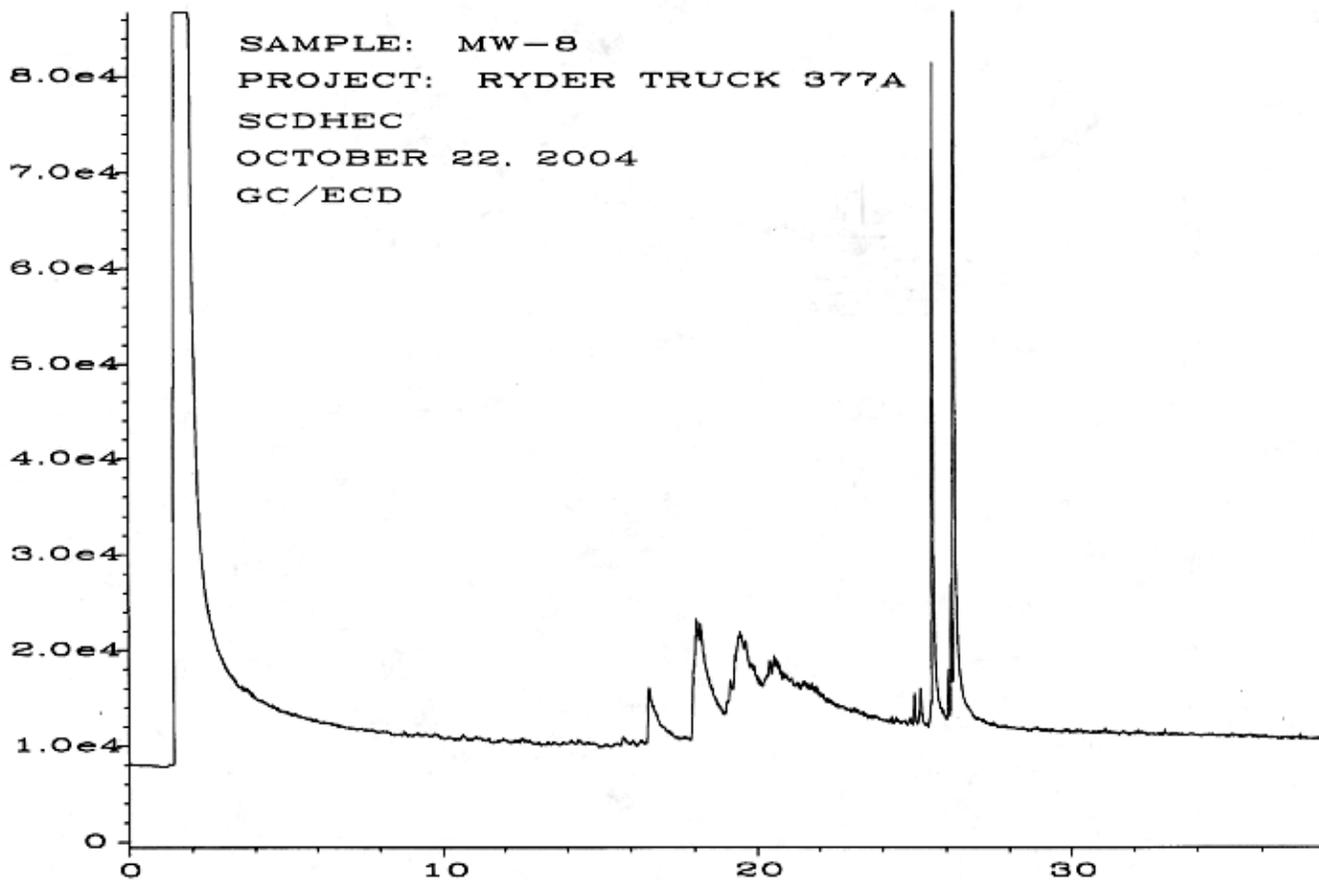


Fig. 2 in C:\HPCHEM\1\DATA\10-22-04\026R1101.D

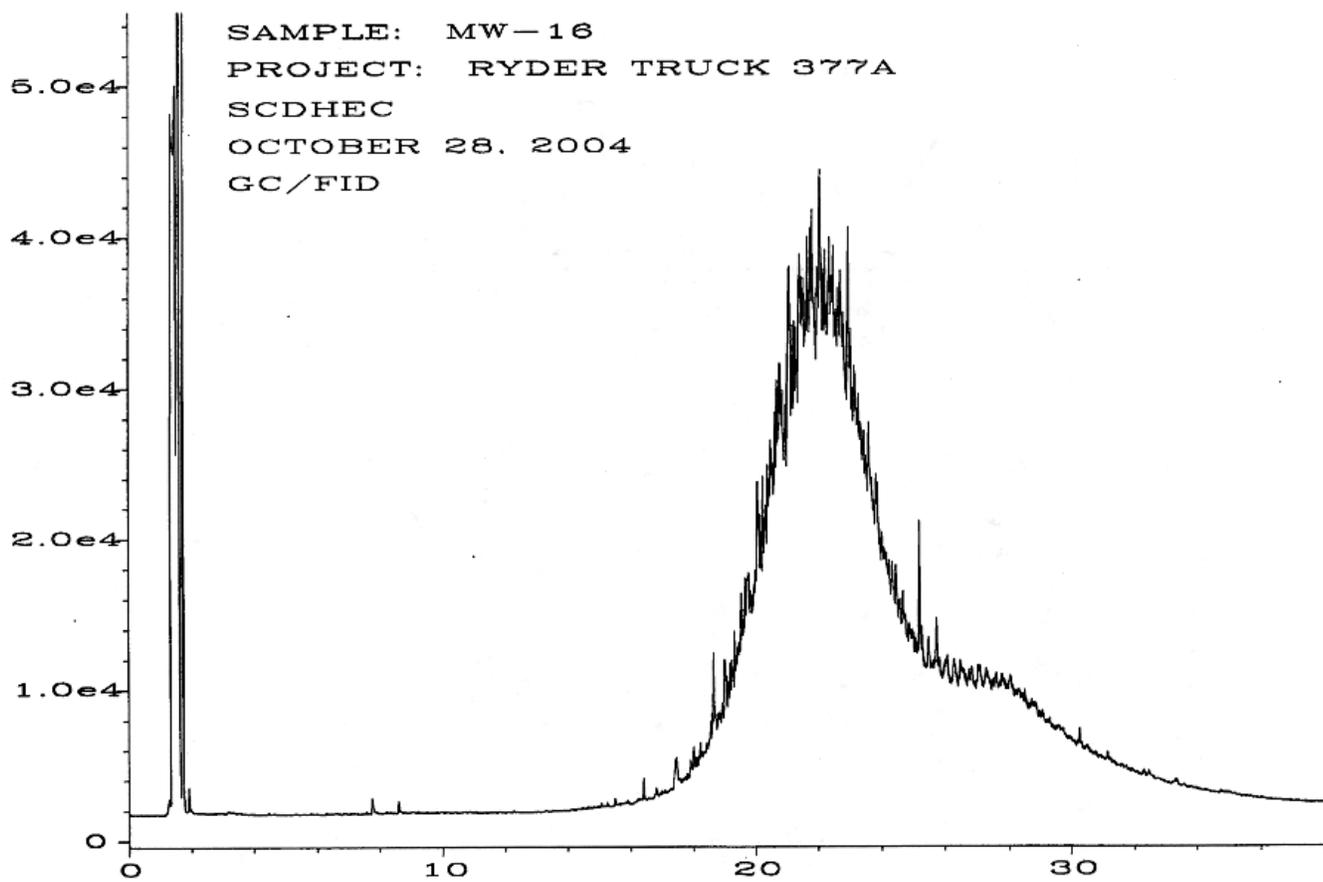


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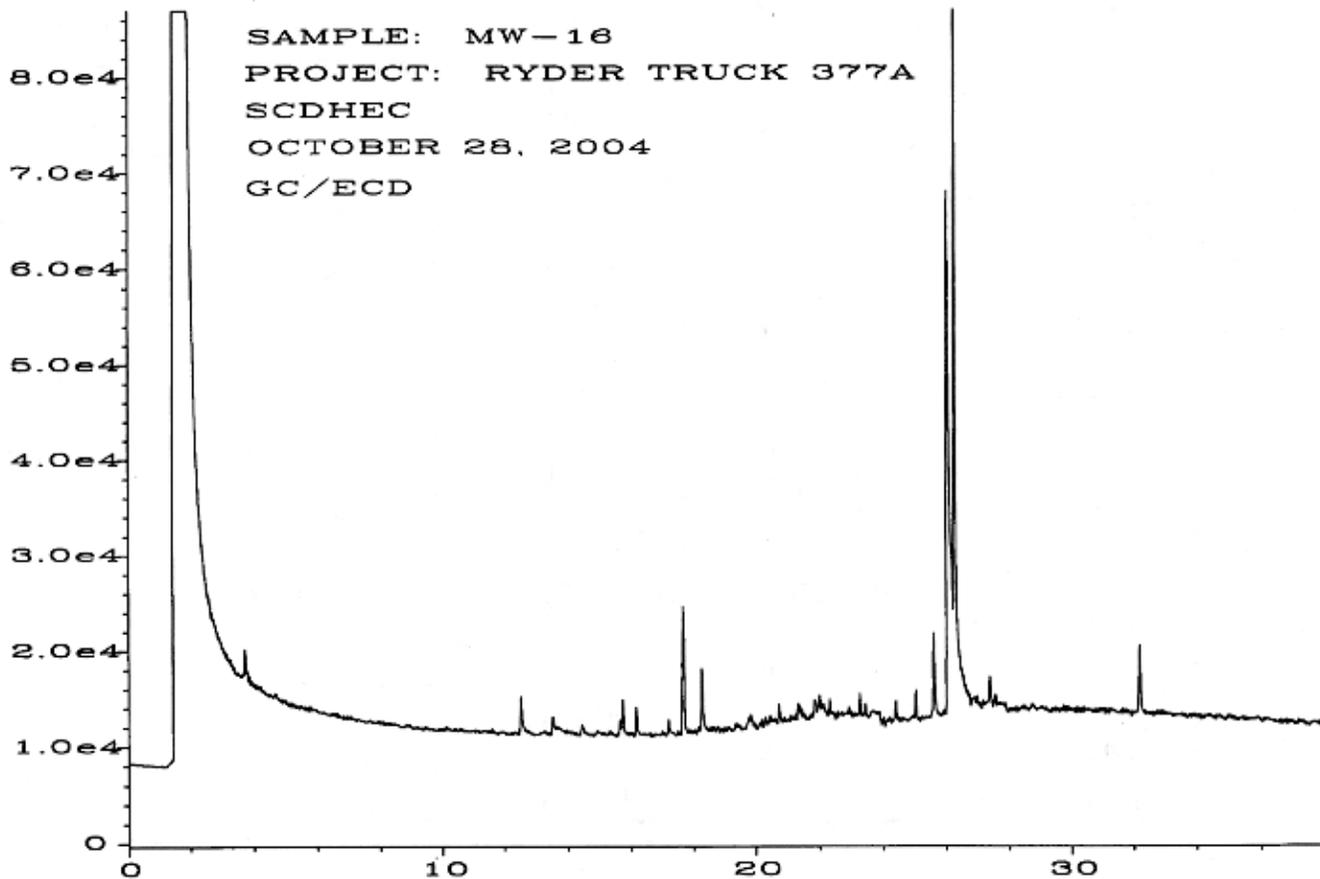


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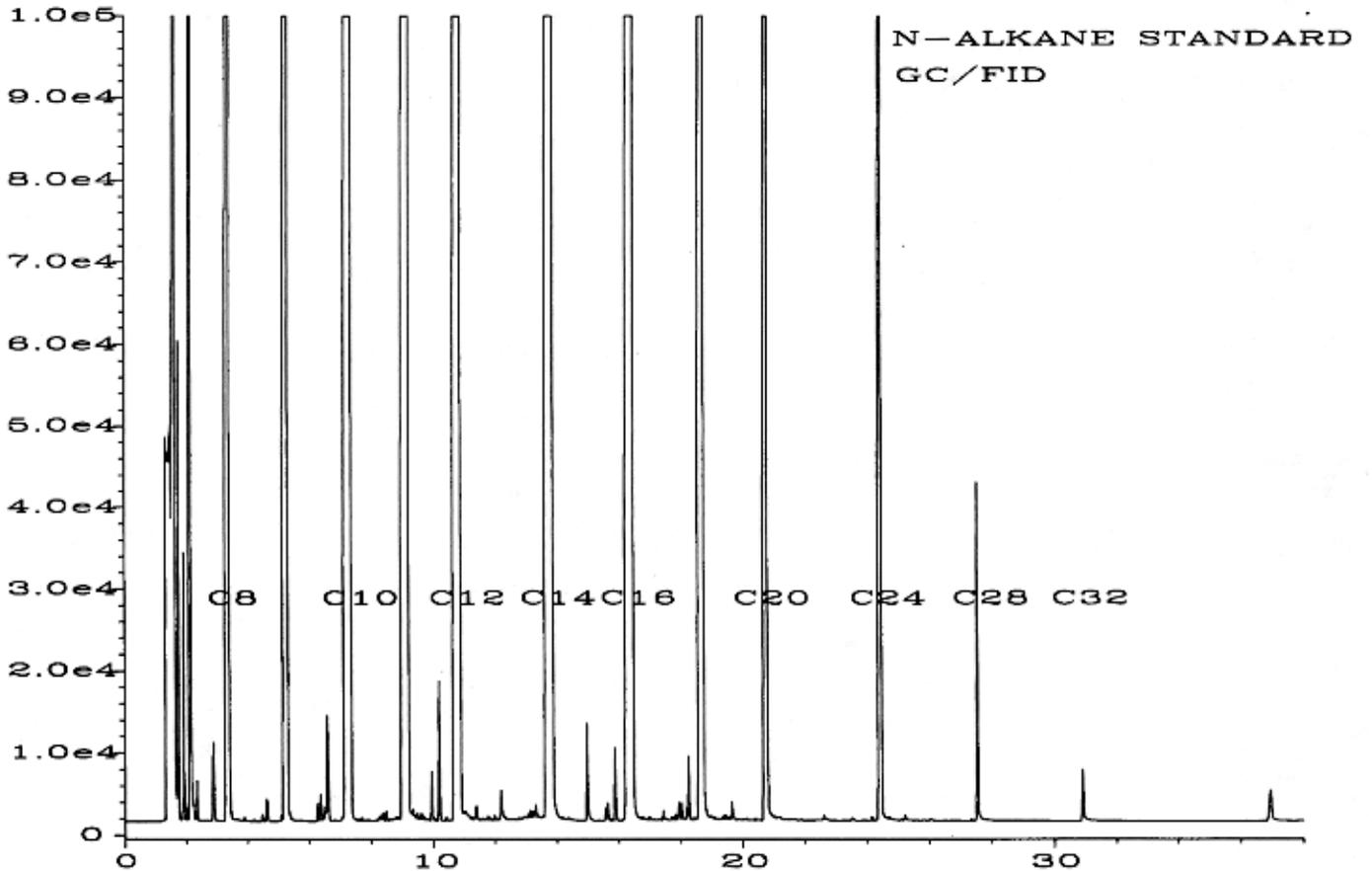


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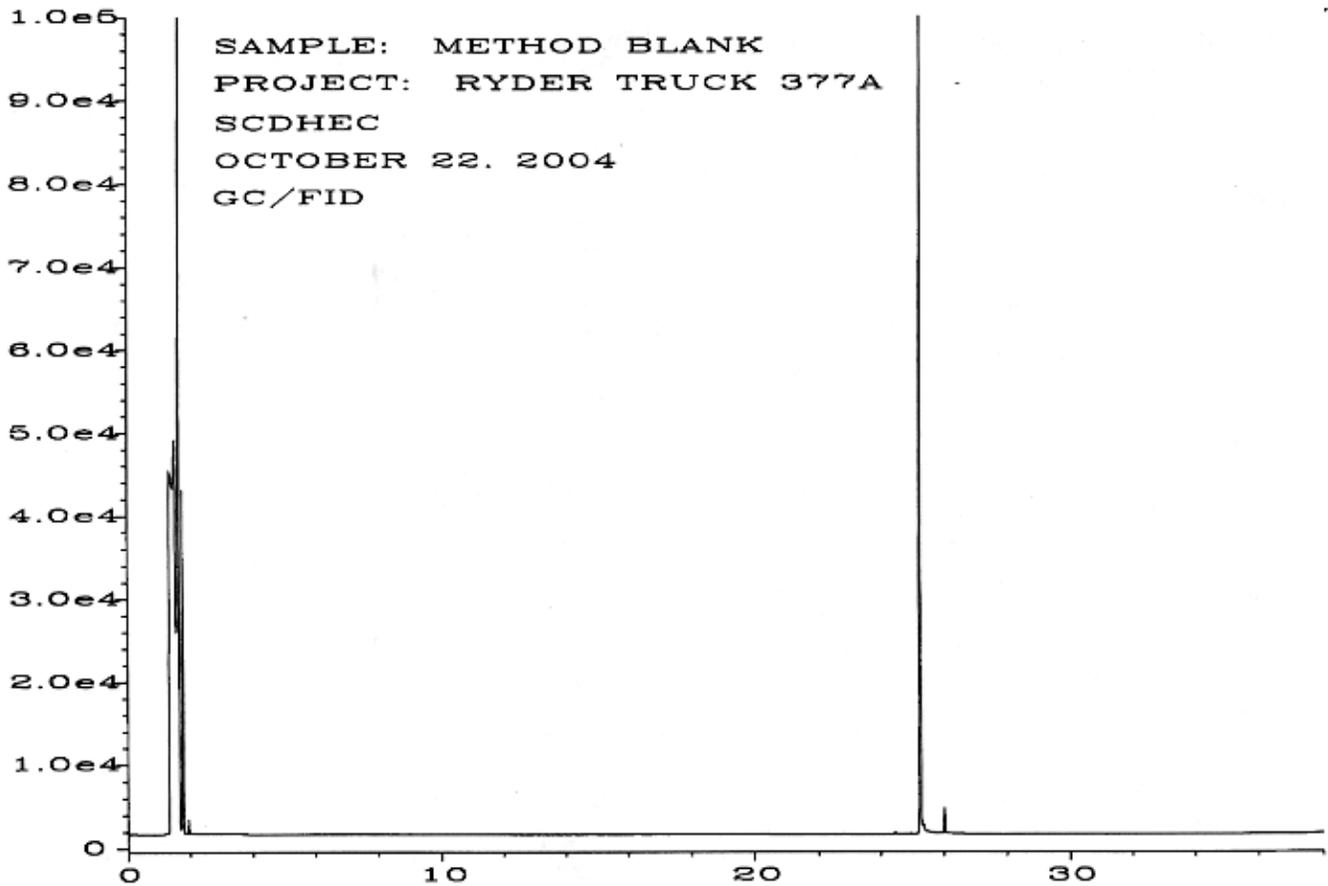


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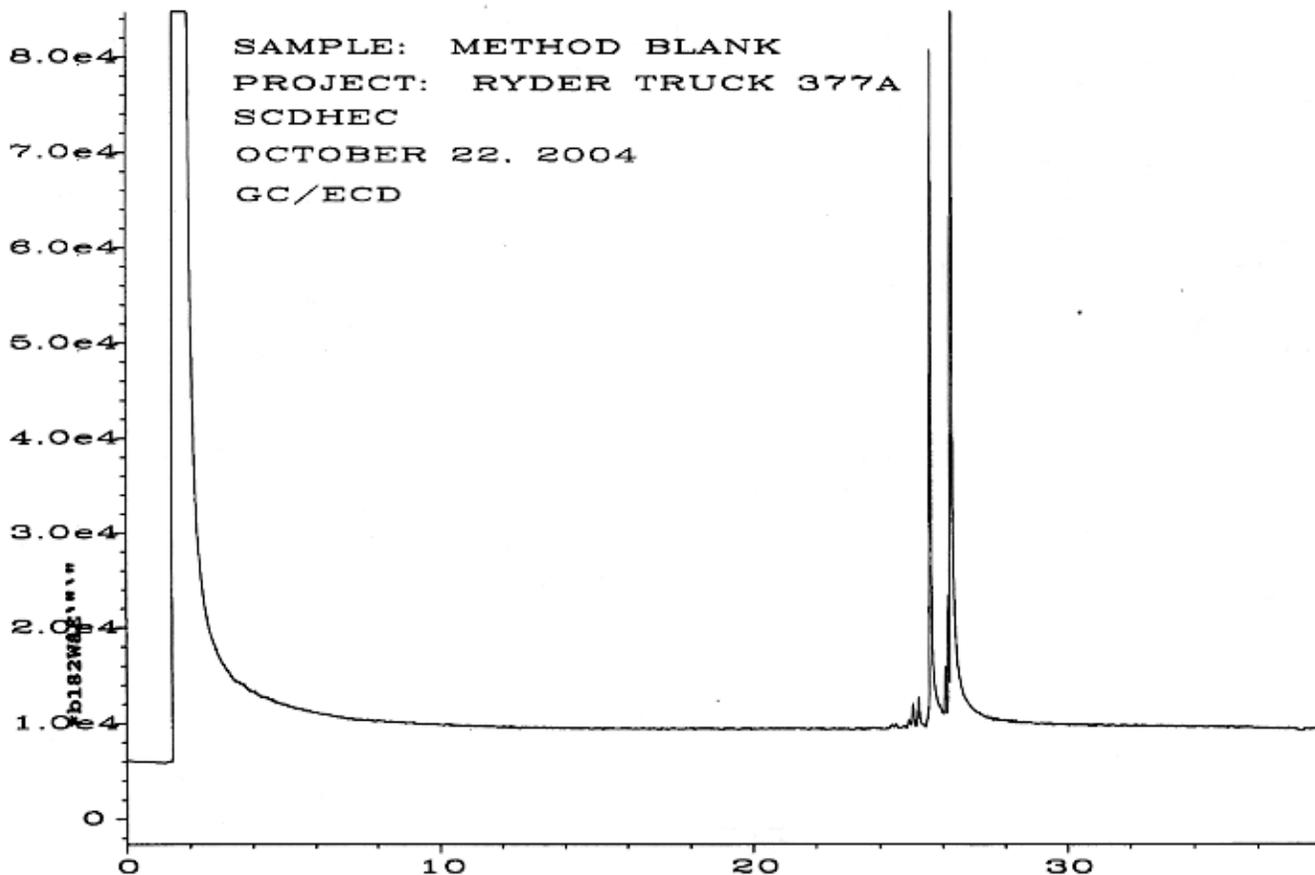


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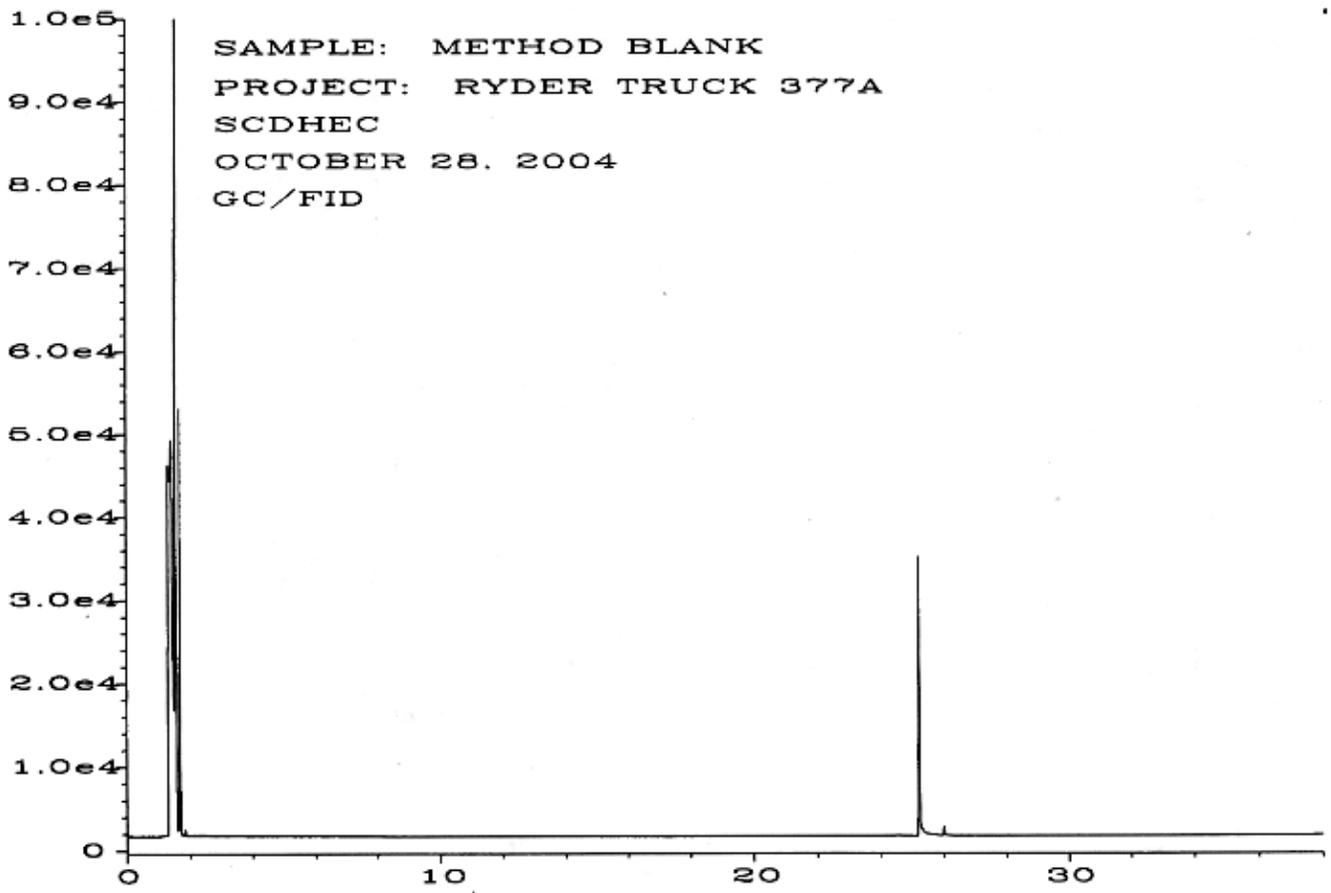


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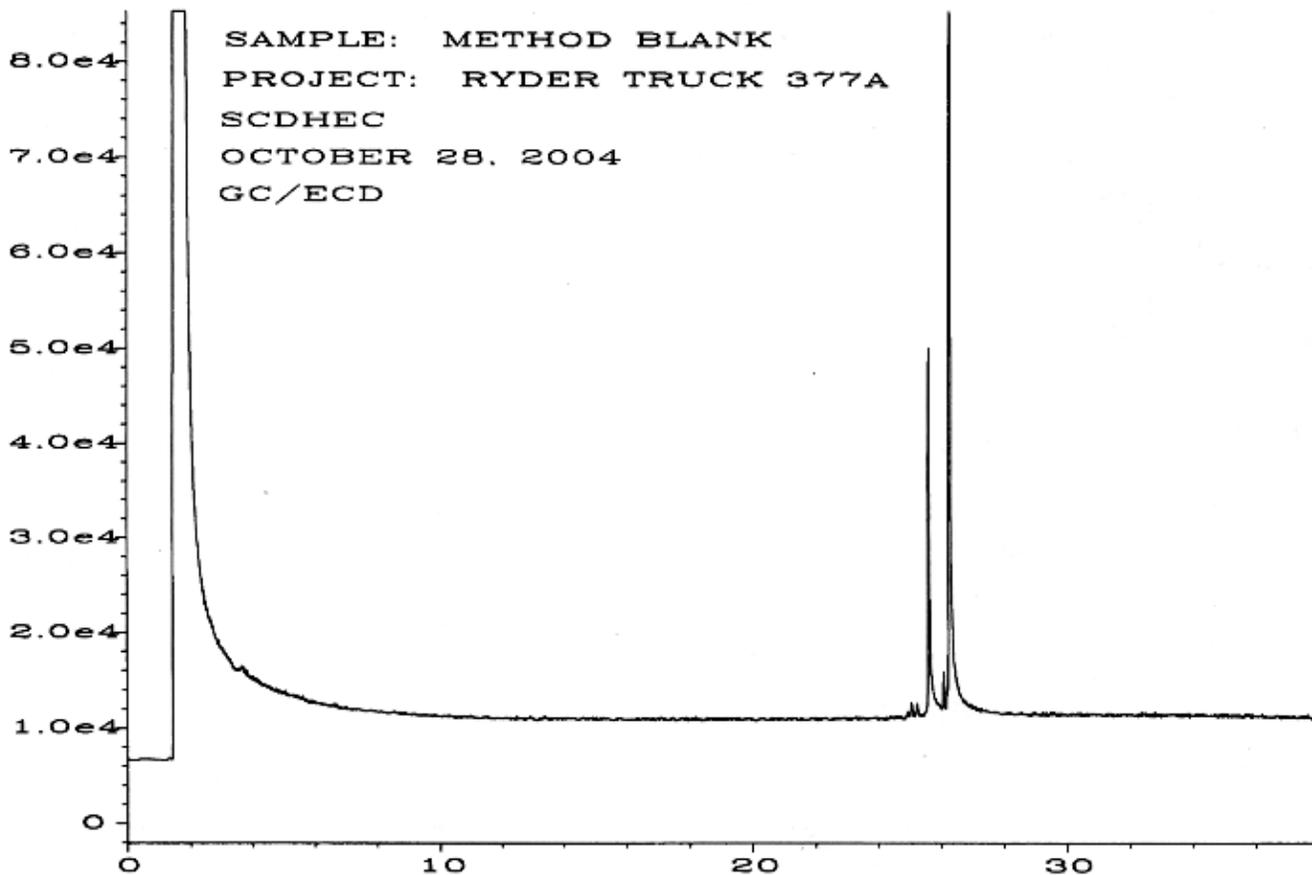


Fig. 2 in C:\HPCHEM\1\DATA\10-28-04\002R0201.D

Form No. TR-D422-3  
 Revision No. 0  
 Revision Date: 02/20/08

Particle Size Analysis of Soils

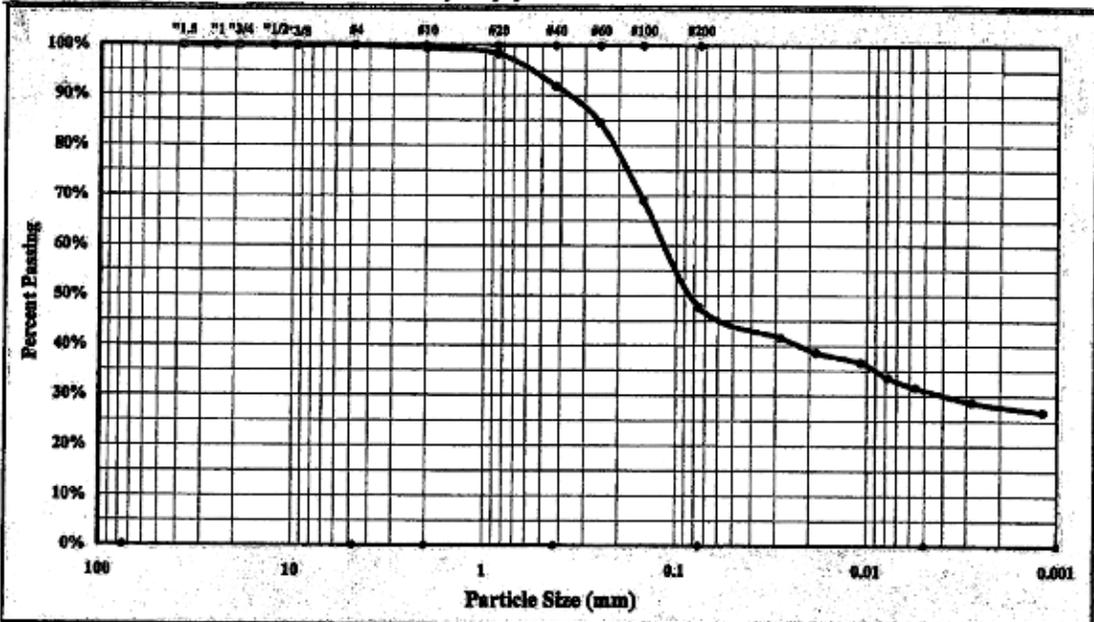


ASTM D422

Quality Assurance

S&ME, Inc. Raleigh, 3201 Spring Forest Road, Raleigh, North Carolina 27616

S&ME Project #:	1053-13-	Report Date:	4/4/13
Project Name:	Southeast Technical Services - Lab Services	Test Date(s):	3/28 - 4/4/13
Client Name:	Southeast Technical Services, P.C.		
Address:	400 Cross Lake Drive, Fuquay-Varina, NC		
Boring #:	N/A	Sample #:	S-1
		Sample Date:	3/28/13
Location:	Site-Borehole	Offset:	N/A
		Depth (ft):	N/A
Sample Description:	Tan-Brown Silty Clayey SAND		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:	3/8"	Gravel:	0.0%	Silt	16.1%
Silt & Clay (% Passing #200):	47.6%	Total Sand:	52.4%	Clay	31.5%
Apparent Relative Density	2.667	Moisture Content		Colloids	26.8%
Liquid Limit	ND	Plastic Limit	ND	Plastic Index	ND
Coarse Sand:	0.5%	Medium Sand:	7.6%	Fine Sand:	44.3%

Description of Sand and Gravel	Rounded <input checked="" type="checkbox"/> Angular <input checked="" type="checkbox"/>	Hard & Durable <input checked="" type="checkbox"/> Soft <input type="checkbox"/>	Weathered & Friable <input type="checkbox"/>
Mechanical Stirring Apparatus A	Dispersion Period: 1 min.	Dispersing Agent:	Sodium Hexametaphosphate: 40 g/ Liter
References / Comments / Deviations:	ND=Not Determined.		

Mal Krajan, ET  
 Technical Responsibility

Signature

Laboratory Manager

Position

Date

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**Table 2. Soil Analytical Data (CJ324-1)**

Organic Constituent	Concentration	RW-1	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
Benzene	ppb*	1	ND	1	ND	1	1	ND	95	ND
Toluene	ppb	2	1	2	1	1	2	2	360	2
Ethylbenzene	ppb	2	2	ND	ND	3	1	ND	8,300	ND
Xylenes	ppb	5	5	4	3	7	2	2	32,000	2
Total BTEX	ppb	10	8	7	4	12	6	4	40,755	4
Naphthalene	ppb	7	34	7	6	27	2	1	57,000	6
TPH-Diesel	ppm**	ND^	ND	ND	ND	ND	ND	ND	480	ND
TPH-Gasoline	ppm	0.4	2.8	0.5	0.6	2.1	0.2	0.2	63	1.0

Note:

\*ppb = parts per billion

\*\*ppm = parts per million

^ND = not detected

• The MW-5 boring was not sampled for soil analytical due to its proximity to RW-1.

**Table 1**  
**Historic Water Table Elevations**  
**Ryder Truck Rental, Inc.**  
**Columbia, South Carolina**  
**UST Permit # 07504**

Monitoring Well ID	Well Depth (ft)	Screened Interval (ft)	Date	Reference Point Elevation	Depth To Ground Water	Depth To Free Product	Free Product Thickness	Groundwater Elevation
MW-1	25.0	13.5-23.5	10/06/93	161.80	16.54	15.69	0.85	145.97
			8/13/96		Pump	Pump	Pump	Pump
			12/3/96		Pump	Pump	Pump	Pump
			8/31/98		Pump	Pump	Pump	Pump
			11/16/99		Pump	Pump	Pump	Pump
			2/11/03		Pump	Pump	Pump	Pump
			4/28/04		20.31	14.32	5.99	Product
			8/16/04		20.08	13.91	6.17	Product
MW-2	25.0	10.0-25.0	10/06/93	160.74	19.01	14.18	4.83	145.74
			8/13/96		Pump	Pump	Pump	Pump
			12/3/96		Pump	Pump	Pump	Pump
			8/31/98		Pump	Pump	Pump	Pump
			11/16/99		Pump	Pump	Pump	Pump
			2/11/03		Pump	Pump	Pump	Pump
			4/28/04		15.98	13.85	2.13	Product
			8/16/04		15.90	13.48	2.42	Product
MW-3	25.0	10.0-25.0	10/06/93	160.80	18.64	14.23	4.41	145.82
			8/13/96		Pump	Pump	Pump	Pump
			12/3/96		Pump	Pump	Pump	Pump
			8/31/98		Pump	Pump	Pump	Pump
			11/16/99		Pump	Pump	Pump	Pump
			2/11/03		Pump	Pump	Pump	Pump
			4/28/04		15.38	13.35	2.03	Product
			8/16/04		14.27	12.88	1.39	Product
MW-4	25.0	12.5-22.5	10/06/93	160.00	18.73	13.65	5.08	145.08
			8/13/96		Pump	Pump	Pump	Pump
			12/3/96		Pump	Pump	Pump	Pump
			8/31/98		Pump	Pump	Pump	Pump
			11/16/99		Pump	Pump	Pump	Pump
			2/11/03		Pump	Pump	Pump	Pump
			4/28/04		15.26	13.28	1.98	Product
			8/16/04		15.16	12.88	2.28	Product

Table 1 (Continued)

Monitoring Well ID	Well Depth (ft)	Screened Interval (ft)	Date	Reference Point Elevation	Depth To Ground Water	Depth To Free Product	Free Product Thickness	Groundwater Elevation
MW-5	66.0	55.0-60.0	10/6/93	160.77	15.33	--	--	145.44
			8/13/96		14.59	--	--	146.18
			12/3/96		14.85	--	--	145.92
			8/31/98		14.58	--	--	146.19
			11/16/99		15.28	--	--	145.49
			2/11/03		14.38	--	--	146.39
			4/28/04		14.68	--	--	146.09
			8/16/04		14.30	--	--	146.47
MW-6	26.0	15.0-25.0	10/6/93	160.42	14.64	--	--	145.78
			8/13/96		17.90	13.08	4.82	146.14
			12/3/96		17.80	13.55	4.25	145.81
			8/31/98		16.99	13.34	3.65	146.17
			11/16/99		16.78	14.19	2.59	145.58
			2/11/03		14.97	13.48	1.49	Product
			4/28/04		15.19	13.66	1.53	Product
			8/16/04		14.86	13.38	1.48	Product
MW-7	23.5	13.5-23.5	10/6/93	159.37	14.06	--	--	145.31
			8/13/96		13.22	--	--	146.15
			12/3/96		13.90	--	--	145.47
			8/31/98		13.19	--	--	146.18
			11/16/99		13.95	--	--	145.42
			2/11/03		13.13	--	--	146.24
			4/28/04		13.33	--	--	146.04
			8/16/04		13.01	--	--	146.36
MW-8	25.0	15.0-25.0	10/6/93	158.22	14.45	--	--	143.77
			8/13/96		16.80	13.44	3.36	143.94
			12/3/96		18.00	13.22	4.78	143.81
			8/31/98		17.89	12.92	4.97	144.06
			11/16/99		18.08	13.72	4.36	143.41
			2/11/03		16.23	12.99	3.24	Product
			4/28/04		16.65	12.97	3.68	Product
			8/16/04		16.87	12.76	4.11	Product
MW-9	25.0	14.0-24.0	10/6/93	158.62	14.28	--	--	144.34
			8/13/96		13.78	--	--	144.84
			12/3/96		13.88	--	--	144.74
			8/31/98		13.54	--	--	145.08
			11/16/99		14.10	--	--	144.52
			2/11/03		13.34	--	--	145.28
			4/28/04		13.63	--	--	144.99
			8/16/04		13.27	--	--	145.35

Table 1 (Continued)

Monitoring Well ID	Well Depth (ft)	Screened Interval (ft)	Date	Reference Point Elevation	Depth To Ground Water	Depth To Free Product	Free Product Thickness	Groundwater Elevation
MW-10	25.0	13.0-23.0	10/6/93	160.11	14.25	--	--	145.86
			8/13/96		13.48	--	--	146.63
			12/3/96		13.84	--	--	146.27
			8/31/98		13.62	--	--	146.49
			11/16/99		14.15	--	--	145.96
			2/11/03		13.37	--	--	146.74
			4/28/04		13.58	--	--	146.53
			8/16/04		13.24	--	--	146.87
MW-11	25.0	15.0-25.0	10/6/93	162.86	15.73	--	--	147.13
			8/13/96		14.81	--	--	148.05
			12/3/96		13.65	--	--	149.21
			8/31/98		14.13	--	--	148.73
			11/16/99		Inaccessible	Inaccessible	Inaccessible	Inaccessible
			2/11/03		14.46	--	--	148.40
			4/28/04		14.19	--	--	148.67
			8/16/04		14.24	--	--	148.62
MW-12	15.0	5.0-15.0	10/6/93	161.78	11.11	10.58	0.53	151.07
			8/13/96		11.26	10.75	0.51	150.90
			12/3/96		11.58	11.28	0.30	150.43
			8/31/98		10.60	10.58	0.02	151.20
			11/16/99		12.00	11.31	0.69	150.30
			2/11/03		10.89	10.86	0.03	Product
			4/28/04		10.76	--	--	151.02
			8/16/04		10.21	--	--	151.57
MW-13	15.0	5.0-15.0	10/6/93	159.93	8.47	--	--	151.46
			8/13/96		9.42	--	--	150.51
			12/3/96		10.44	--	--	149.49
			8/31/98		9.21	--	--	150.72
			11/16/99		10.58	--	--	149.35
			2/11/03		9.49	--	--	150.44
			4/28/04		9.51	--	--	150.42
			8/16/04		8.40	--	--	151.53
MW-14	21.5	11.5-21.5	10/6/93	160.68	13.28	--	--	147.40
			8/31/98		13.89	--	--	146.79
			11/16/99		14.60	--	--	146.08
			2/11/03		13.62	--	--	147.06
			4/28/04		13.90	--	--	146.78
			8/16/04		13.60	--	--	147.08

Table 1 (Continued)

Monitoring Well ID	Well Depth (ft)	Screened Interval (ft)	Date	Reference Point Elevation	Depth To Ground Water	Depth To Free Product	Free Product Thickness	Groundwater Elevation
MW-15	20.0	10.0-20.0	10/6/93	156.11	13.56	--	--	142.55
			8/31/98		13.30	--	--	142.81
			11/16/99		13.80	--	--	142.31
			2/11/03		13.05	--	--	143.06
			4/28/04		13.36	--	--	142.75
			8/16/04		13.03	--	--	143.08
MW-16	19.0	9.0-19.0	10/6/93	155.53	13.69	--	--	141.84
			8/31/98		--	CNL	CNL	CNL
			11/16/99		13.99	--	--	141.54
			2/11/03		13.18	--	--	142.35
			4/28/04		14.02	--	--	141.51
			8/16/04		13.31	13.18	0.13	Product
MW-17	20.0	10.0-20.0	8/16/04	162.10	15.06	--	--	147.04
MW-18	20.0	10.0-20.0	8/16/04	159.99	13.04	--	--	146.95
MW-19	20.0	10.0-20.0	8/16/04	158.92	12.83	--	--	146.09
MW-20	19.0	9.0-19.0	8/16/04	157.34	13.08	--	--	144.26
MW-21	20.0	10.0-20.0	8/16/04	159.03	12.68	--	--	146.35
RW-1	30.0	18.5-28.5	2/11/03	160.40	13.68	--	--	146.72
			4/28/04		13.90	--	--	146.50
			8/16/04		13.59	--	--	146.81

Notes:

Historical ground-water elevation data was taken from the January 2000 *Groundwater Analytical Report*, prepared by S&ME.

Pump A pump was in the monitoring well, which prevented measurement of ground-water elevations

CNL Could not locate the well

Inaccessible The well was inaccessible at the time of sampling.



Table 2 (Continued)

Compound	Date Sampled	RBSL	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	MW-20	MW-21	RW-1		
TOTAL PAHs	9/30/93	25	Product	Product	Product	Product	ND	ND	ND	ND	ND	ND	ND	Product	ND	-	-	-	-	-	-	-	-	-	NS	
	8/13/96		Pump	Pump	Pump	Pump	ND	Product	ND	Product	ND	ND	ND	Product	ND	-	-	-	-	-	-	-	-	-	-	NS
	12/3/96		Pump	Pump	Pump	Pump	NS	Product	ND	Product	NS	NS	NS	Product	NS	ND	ND	ND	CNL	-	-	-	-	-	-	NS
	8/31/98		Pump	Pump	Pump	Pump	ND	Product	ND	Product	ND	ND	ND	Product	ND	ND	ND	ND	CNL	-	-	-	-	-	-	NS
	11/16/99		Pump	Pump	Pump	Pump	ND	Product	ND	Product	ND	ND	ND	Product	ND	ND	ND	ND	ND	-	-	-	-	-	-	NS
2/11/03	Pump	Pump	Pump	Pump	ND	Product	ND	Product	ND	ND	ND	Product	ND	ND	ND	ND	*NS	-	-	-	-	-	-	ND		
Lead by EPA Method 239.2																										
Lead	2/11/03	15	Pump	Pump	Pump	Pump	9.62	Product	15.8 (15.9)	Product	17.6	91.8	29.3	Product	3.2	77.2	60.2	102	-	-	-	-	-	-	5.95	
Ethylene Dibromide by EPA Method 504.1																										
Ethylene Dibromide	2/11/03 8/16/04	0.005	Pump Product	Pump Product	Pump Product	Pump Product	ND ND	Product Product	ND (ND) ND	Product Product	ND ND	ND ND	ND ND	Product Product	ND ND	ND ND	ND ND	ND *NS	- ND	- ND	- ND	- ND	- ND	- ND	0.13 ND	

Notes  
 Concentrations in bold exceed the SCDHEC Risk Based Screening Levels (RBSLs) for constituents of concern in ground-water (Table B-1)  
 Concentrations in parentheses ( ) denote duplicate sample concentrations  
 ND = Not detected  
 NS = Not sampled  
 CNL = Monitoring well could not be located at the time of sampling  
 - = Well did not exist at the time of sampling  
 \*Monitoring Well MW-16 was not sampled on 8/16/04 due to presence of a petroleum based product in the well  
 All concentrations reported in micrograms per liter (µg/L) unless otherwise noted

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/04  
Date Received: 10/15/04  
Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147  
Date Extracted: 10/22/04  
Date Analyzed: 10/22/04

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR FORENSIC EVALUATION  
BY CAPILLARY GAS CHROMATOGRAPHY  
USING A FLAME IONIZATION DETECTOR (FID)  
AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID

GC Characterization

MW-8

The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or heating oil.

The medium boiling compounds appear as a regular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C<sub>9</sub> to *n*-C<sub>24</sub> showing a maximum near *n*-C<sub>15</sub>. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C.

Within this range, the dominant peaks present are indicative of normal alkanes. Secondary peaks are also present which are indicative of the isoprenoids including norpristane, pristane, and phytane. The relative abundance of the normal alkanes and isoprenoids indicates that little to no biological degradation has occurred to the fuel.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/04

Date Received: 10/15/04

Project: Ryder Truck 377A/07504, PO# 473053, F&BI 410147

Date Extracted: 10/22/04

Date Analyzed: 10/28/04

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR FORENSIC EVALUATION  
BY CAPILLARY GAS CHROMATOGRAPHY  
USING A FLAME IONIZATION DETECTOR (FID)  
AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID

GC Characterization

MW-16

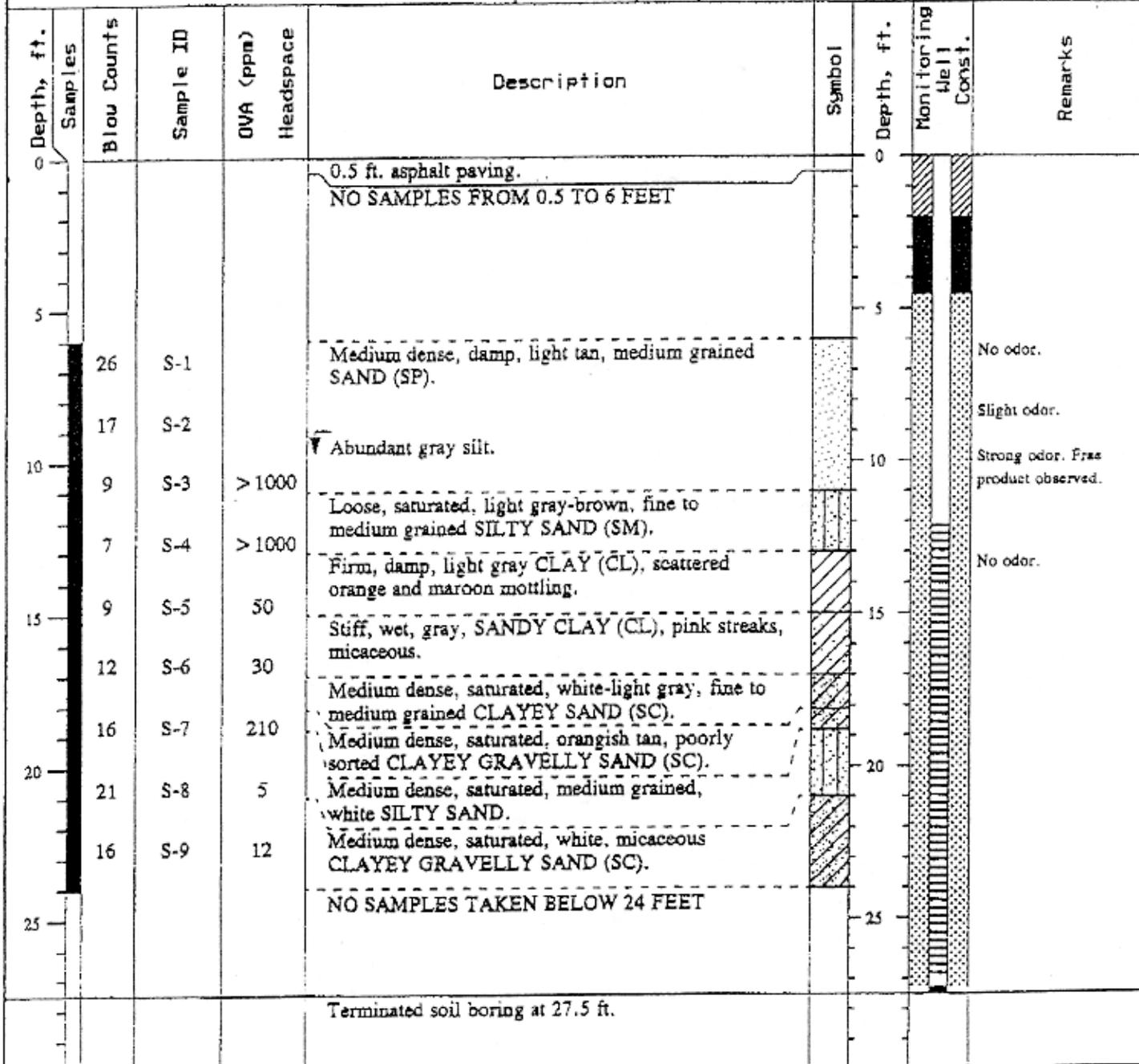
The GC trace using the flame ionization detector (FID) showed the presence of medium to high boiling compounds. The material present in this sample is consistent with a mixture of high boiling products such as hydraulic oil, lube oil, or similar materials.

The medium to high boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from  $n\text{-C}_{14}$  to  $n\text{-C}_{36}$  showing a maximum near  $n\text{-C}_{22}$ . This correlates with a temperature range of approximately 250°C to 500°C with a maximum near 370°C.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

## **Boring Logs**

Date Started: 1/31/92	Datum:	Ground Elev:
Date Completed: 2/1/92	Casing Elev:	Total Depth: 27.5-ft
Logged By: B. Atkinson      Checked By: JAW	Perforation: 0.010-in slotted PVC	from 12-ft to 27-ft
Drilling Co: ED & S      Driller: J. Lawson	Pack: FX-50 Foster Dixiana	from 4.5-ft to 27.5
Drilling Method: Mud Rotary	Seal: Hydrated bentonite	from 2.0-ft to 4.5-ft
Drilling Equipment: Davey-Kent 5	Cement grout	from Surface to 2.0-ft
Weather: Clear	Casing: 6-in schedule 40 PVC	Drill Bit Diameter: 10.25-in
Boring Location: 26 ft. west and 22 ft. south of the center of D-3.	Sampler: 1.5-in X 24-in split spoon	
	Groundwater	Date
	Observations	Time
		Depth

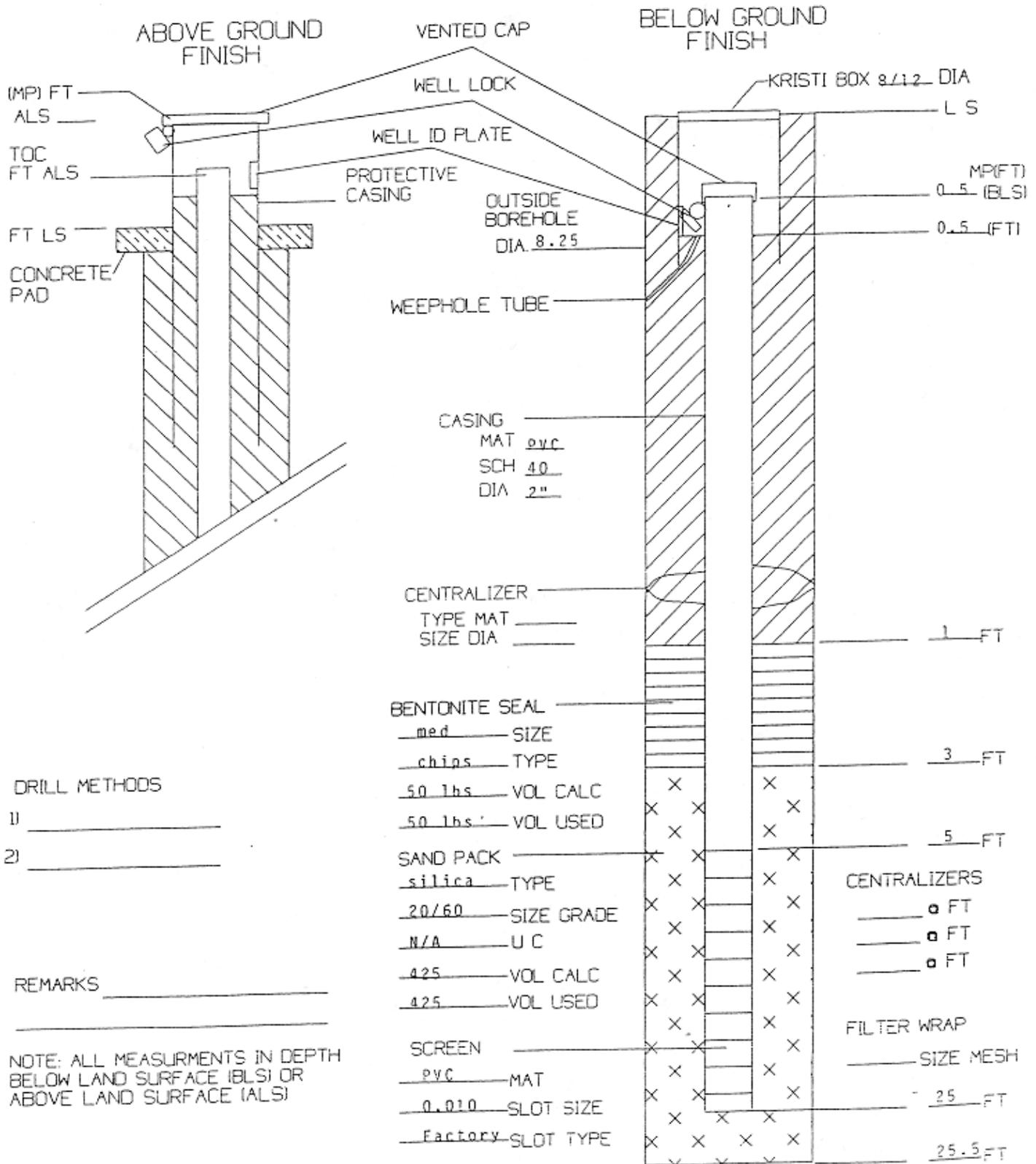


Project: Ryder Truck Rental/Columbia S.C.-Idewild  
Project Number: 92CR5003

LOG OF BORING RW-1  
*(renamed MW-1)*



ESE BIOSCIENCES INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG TYPE III EBO FORM 32-4	WELL # <u>MW-2</u> JOB # <u>CJ324-1</u> CLIENT <u>Ryder</u>
PROJECT LOCATION <u>Columbia</u>	COUNTY <u>Richland</u> STATE <u>S.C.</u>	LOG BY <u>EBH/DAH</u>
LAND SURFACE ELEVATION	MEASURING POINT ELEV. <u>MP1</u>	DATE BEGAN <u>7/27/92</u> DATE COMPLETED <u>7/27/92</u>
WELL DEV. METHOD <u>Bailer</u>	VOLUME EVAC <u>40 gallons</u> APPEARANCE <u>cloudy/clear</u>	MONITORED FORMATION <u>aquifer</u> <u>unconfined, saprolite,</u>



DRILL METHODS  
1) \_\_\_\_\_  
2) \_\_\_\_\_

REMARKS \_\_\_\_\_  
\_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH  
BELOW LAND SURFACE (BLS) OR  
ABOVE LAND SURFACE (ALS)

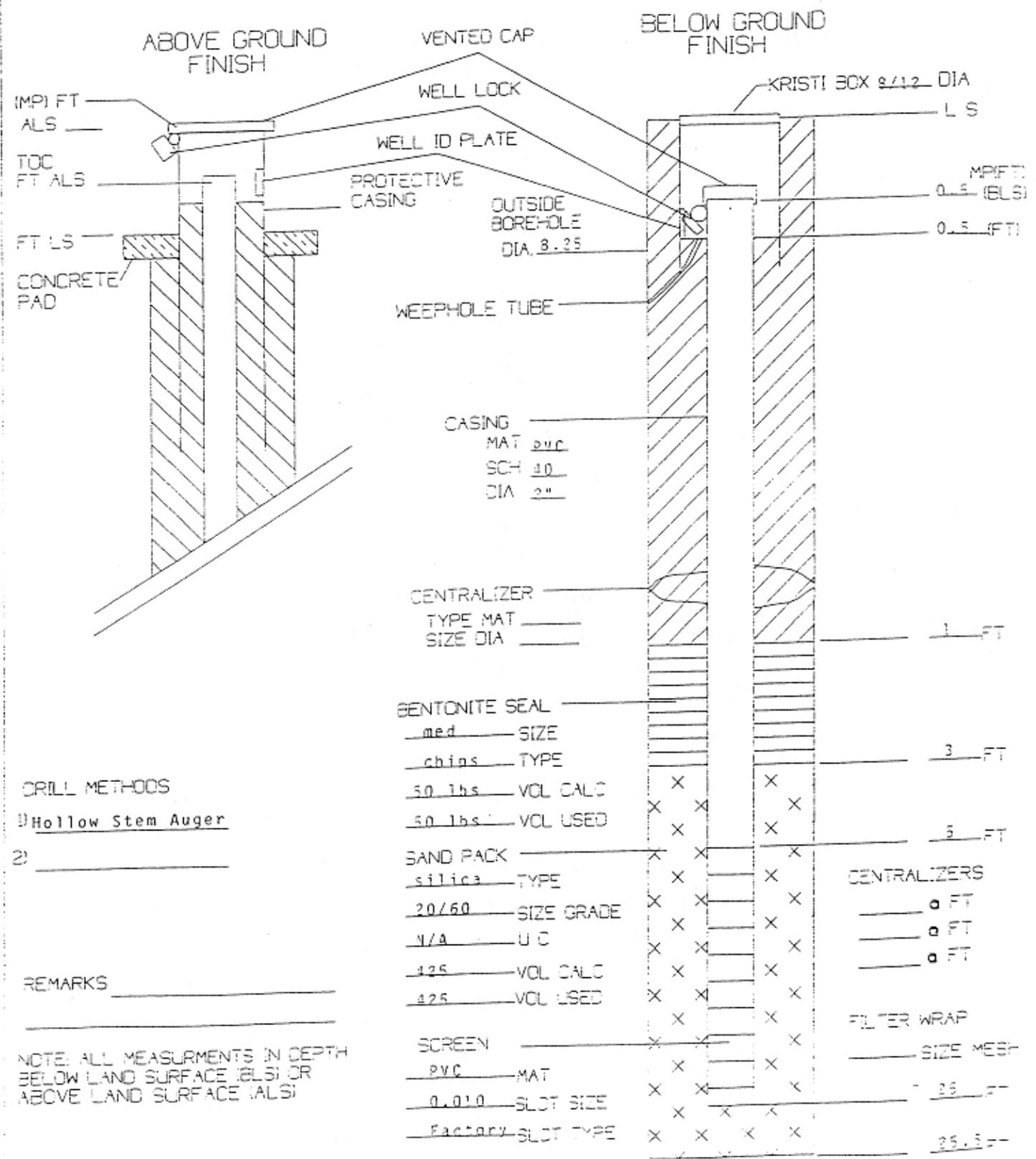


<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>MW-3</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
---	--	--

Project Location: Columbia State: SC Total Depth: 25.0'  
 Logged By: EBH Soil Sample Method: Split Spoon Date Began: 7/27/92 Date Complete: 7/27/92  
 Driller: Lake Norman Drill Method: RHSA Equipment Type: Canterra 250 Boring Diameter: 8.25"  
 Soil Gas Sample Method: Head Space w/ PID in ppm Groundwater (bmp): 0 hrs 20.19 24 hrs N/A  
 Land Surface Elevation (LS): \_\_\_\_\_ Measuring Point Elev. (MP): \_\_\_\_\_ Remarks: \_\_\_\_\_

Elev.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	Log	Comments
	0.5			Asphalt/Crush and Run				
	3.0							
	5.0	7-8-10-16	004	Medium Dense Orange Tan Silty Sand			D	
	8.0							
	10.0	8-10-15-16	005	Dense Orange Tan Medium Fine Grained Silty Sand w/ Gray Clay Nodules			D/M	
	13.0							
	15.0	10-14-17-22	006	Hard Dark Gray Fine Grained Kaolinitic Clay w/ Brown Sand Nodules			M	Strong Petroleum Odor
	18.0							
	20.0	14-19-21-27	007	Dense Orange Tan Silty Sand w/ Kaolinitic Lens			W	
	23.0							
	25.0							
				Boring Terminated @ 25.0' by Project Hydrogeologist				Set Type II Well @ 25.0'

ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG TYPE II EBO FORM 3244	WELL # MW-3 JOB #CJ324-1 CLIENT Rydex
PROJECT LOCATION Columbia	COUNTY Richland STATE S.C.	LOG BY EBH/DAH
LAND SURFACE ELEVATION	MEASURING POINT ELEV. (MPI)	DATE BEGAN 7/27/92 DATE COMPLETED 7/27/92
WELL DEV. METHOD Bailer	VOLUME EVAC. 43 gallons APPEARANCE cloudy/clear	MONITORED FORMATION aquifer unconfined, saprolite,



DRILL METHODS  
 1) Hollow Stem Auger  
 2) \_\_\_\_\_

REMARKS \_\_\_\_\_  
 \_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH  
 BELOW LAND SURFACE (BLS) OR  
 ABOVE LAND SURFACE (ALS)

CASING  
 MAT pvc  
 SCH 40  
 DIA 2"

CENTRALIZER  
 TYPE MAT \_\_\_\_\_  
 SIZE DIA \_\_\_\_\_

BENTONITE SEAL  
med SIZE  
chips TYPE

50 lbs VCL CALC X X  
 50 lbs VCL USED X X

SAND PACK X X X  
silica TYPE X X X  
20/60 SIZE GRADE X X X  
N/A U C X X X

425 VCL CALC X X X  
 425 VCL USED X X X

SCREEN X X X X  
pvc MAT X X X X  
0.010 SLOT SIZE X X X X  
Factory SLOT TYPE X X X X

CENTRALIZERS  
 \_\_\_\_\_ 0 FT  
 \_\_\_\_\_ 0 FT  
 \_\_\_\_\_ 0 FT

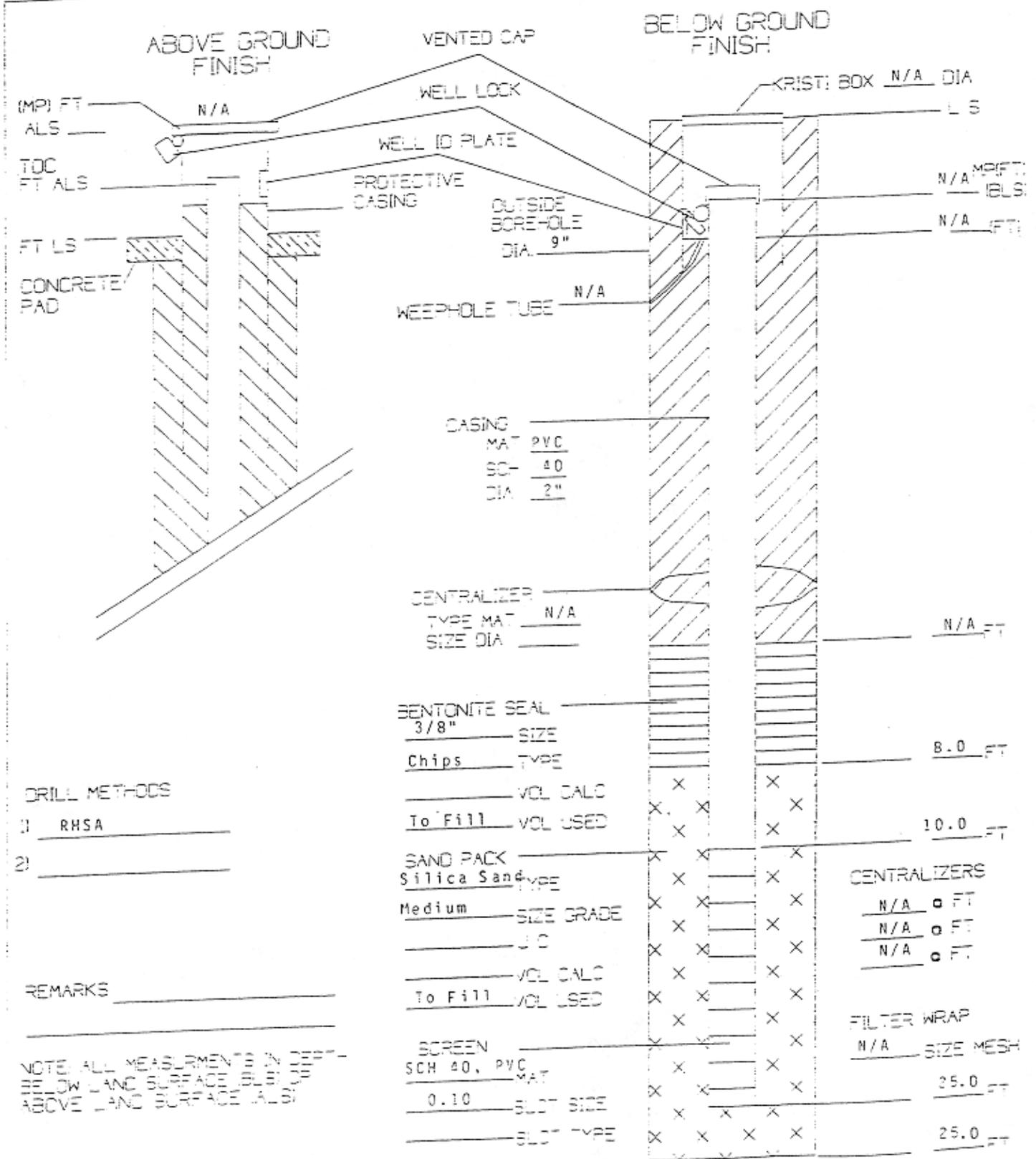
FILTER WRAP  
 \_\_\_\_\_ SIZE MESH

25 FT  
 25.5 FT





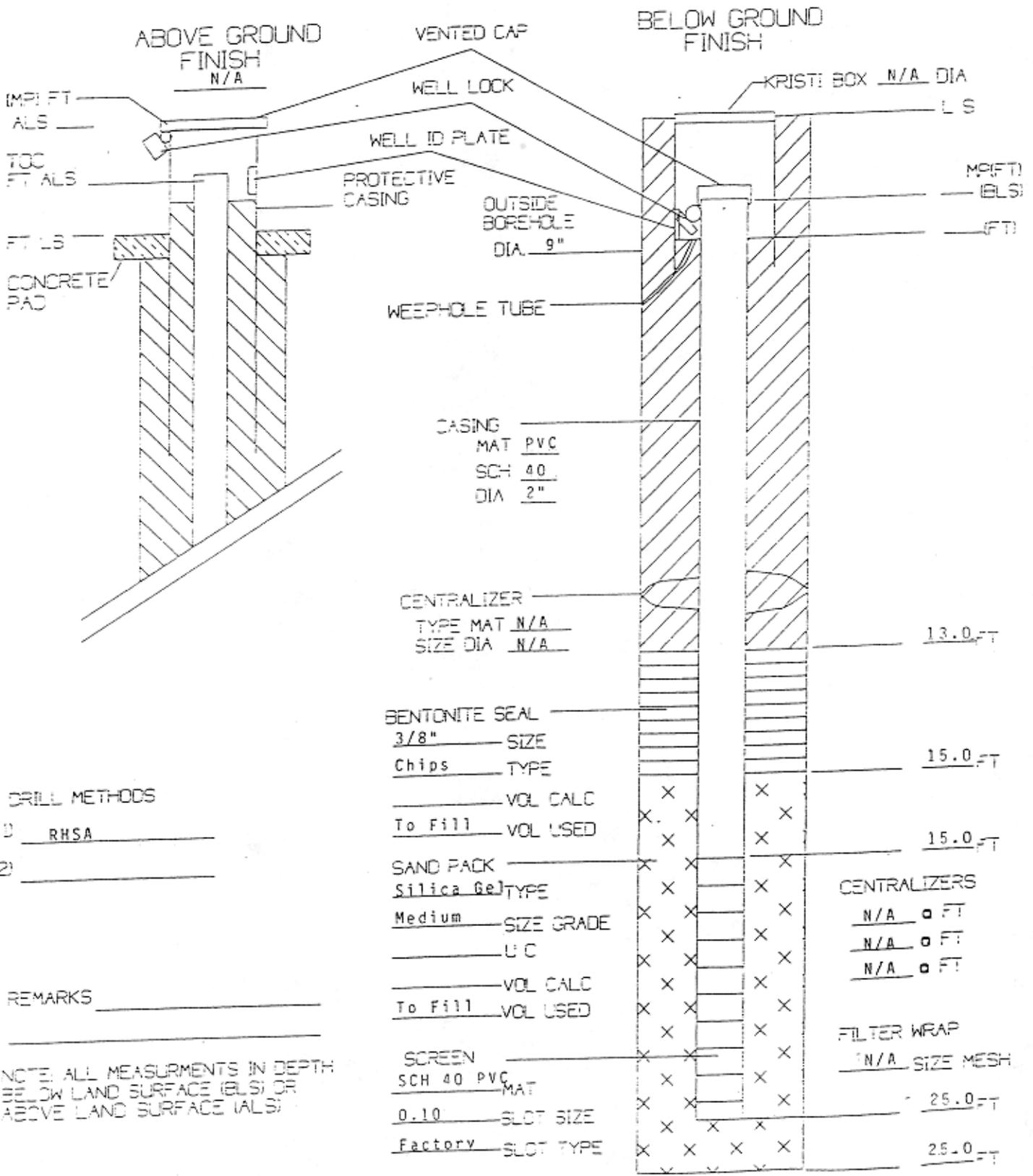
ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG REQ FORM 32-1	TYPE OF	WELL # TMW-1	JOB # CJ324-1
PROJECT LOCATION Idlewild Blvd., Columbia, SC	COUNTY Richland	STATE SC	CLIENT Ryder	
LAND SURFACE ELEVATION 98.57'	MEASURING POINT ELEV. (MPI) 99.74'		JOB BY DAH	
WELL DEV. METHOD Bail	VOLUME EVAC. Approx. 25 gal		DATE BEGAN 6/14/93	DATE COMPLETED 6/17/93
	APPEARANCE Cloudy to Clear		MONITORED FORMATION Middendorf Formation	



NOTE: ALL MEASUREMENTS IN DEEP...  
BELOW LAND SURFACE (BLE) ...  
ABOVE LAND SURFACE (ALS)



ESB BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG JOB NO. 244	TYPE (B)	WELL # <u>TMW-2</u> JOB # <u>CJ324-</u>
PROJECT LOCATION Columbia (Idlewild Blvd.)	COUNTY Richland	STATE SC	CLIENT <u>Ryder Truck Rental, I</u>
LAND SURFACE ELEVATION 99.56'	MEASURING POINT ELEV. (MPI) 100.51'		LOG BY <u>DAH</u>
WELL DEV. METHOD Bail	VOLUME EVAC. <u>Approx. 25 gal</u> APPEARANCE <u>Cloudy to Clear</u>		DATE BEGAN <u>6/14/93</u> DATE COMPLETED <u>6/16/93</u>
			MONITORED FORMATION Middendorf Formation







**ESE BIOSCIENCES, INC.**  
RALEIGH & CHARLOTTE, NC

**LITHOLOGIC LOG**  
EBIO Form No. 324.2

Boring No: TMW-4 (MW-4) Job No: CJ324-1  
Client: Ryder Truck Rental, Inc.

Project Location: Colubmia (Idlewild Boulevard) State: SC Total Depth: 25.0'  
Logged By: DAH Soil Sample Method: Split Spoon Date Started: 6/14/93 Date Complete: 6/16/93 (abandoned)  
Driller: Badger Drilling Drill Method: RHSA Equipment Type: Canterra 250 Boring Diameter: 9"  
Soil Gas Sample Method: PID, headspace screening Groundwater (bmp): 0 hrs N/A 24 hrs 17.52'  
Land Surface Elevation (LS): 99.29' Measuring Point Elev. (MP): 101.64' Remarks: Depth to product 15.42'

Elevation (feet)	Depth (feet)	SPT Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt and sandy GRAVEL. (subgrade)			GP	
94.29	5.0	2528 1825	018	Very dense, white to tan clayey SAND	32.0	D	SC	
89.29	10.0	78 1316	019	Stiff, light brown to orange-mottled, white silty CLAY (kaolinite)	32.0	M	CL	
84.29	15.0	1010 812	020	Very stiff, gray and brown silty CLAY Medium dense, gray slightly clayey fine SAND	22.0	W	SC	
79.29	20.0	67 108	021	Medium dense, white sandy GRAVEL interbedded with silty coarse SAND and slight clay (kaolinite)	15.6		GP/SM	
74.29	25.0	1010 1213	022	Moderately dense, light gray to white slightly silty coarse SAND with gravel	26.0			
				Boring terminated @ 25.0' by project hydrogeologist				



**ESE BIOSCIENCES, INC.**  
RALEIGH & CHARLOTTE, NC

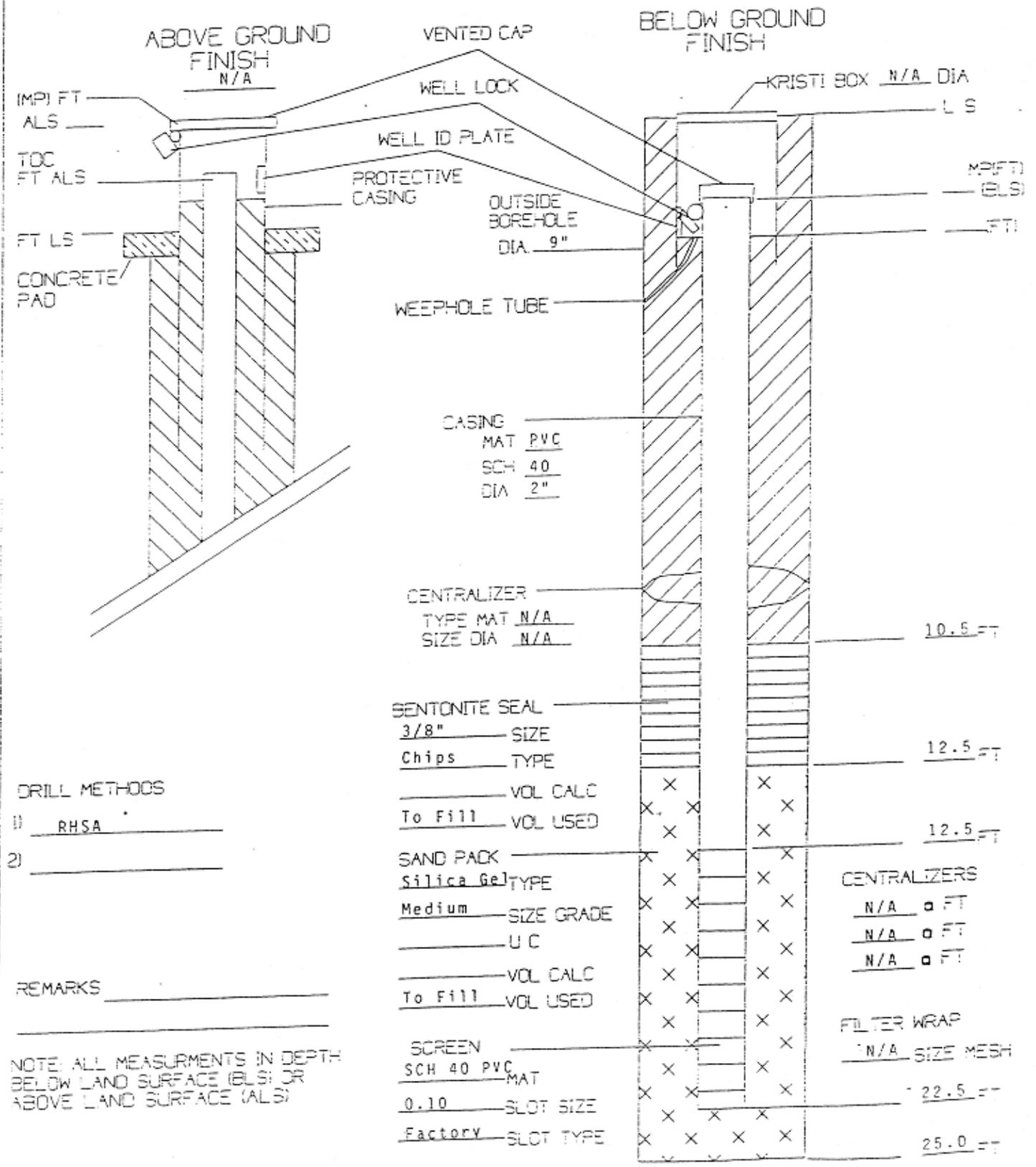
**LITHOLOGIC LOG**  
EBJO Form No. 324.2

Boring No: TMW-5 Job No: CJ324-1  
Client: Ryder Truck Rental, Inc.

Project Location: Columbia (Idlewild Boulevard) State: SC Total Depth: 25.0'  
 Logged By: DAH Soil Sample Method: Split Spoon Date Started: 6/15/93 Date Complete: 6/16/93 (abandoned)  
 Driller: Badger Drilling Drill Method: RHSA Equipment Type: Canterra 250 Boring Diameter: 9"  
 Soil Gas Sample Method: PID, headspace screening Groundwater (bmp): 0 hrs N/A 24 hrs 15.89'  
 Land Surface Elevation (LS): 96.89' Measuring Point Elev. (MP): 99.27' Remarks: Elevations to site reference

Elevation (feet)	Depth (feet)	SPT Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt and sandy GRAVEL (subgrade)			GP	
91.89	5.0	108 77	023	Medium dense, tan, fine to medium grained SAND with slight gravel	28.0	D	SP	
86.89	10.0	88 1017	024	Medium dense, tan to light brown clayey SAND becoming Very stiff, light gray orange-mottled silty CLAY	10.0	M	SC	
81.89	15.0	67 1112	025	Medium dense, light gray silty CLAY Medium dense, tan clayey medium grained SAND	44.0	W	CL SC	
76.89	20.0	67 87	026	Medium dense, orange and white slightly clayey silty coarse SAND	70.0		SM	
71.89	25.0	1221 505*	027	Dense to very dense, medium brown slightly clayey silty SAND with cobbles	30.0		SM/GP	
			027	Boring terminated @ 25.0' by project hydrogeologist				Temporary well set @ 25.0'

ESB BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG TYPE III BSC FORM 32-1	WELL # <u>TMW-5</u> JOB # <u>CJ324-</u> CLIENT <u>Ryder Truck Rental, II</u>
PROJECT LOCATION Columbia (Idlewild Blvd.)	COUNTY <u>Richland</u> STATE <u>SC</u>	LOG BY <u>LDL</u>
LAND SURFACE ELEVATION <u>96.89'</u>	MEASURING POINT ELEV. (MPI) <u>99.27'</u>	DATE BEGAN <u>6/15/93</u> DATE COMPLETED <u>6/16/93</u>
WELL DEV. METHOD <u>Ball</u>	VOLUME EVAC <u>Approx. 30 gal</u> APPEARANCE <u>Cloudy to Clear</u>	MONITORED FORMATION <u>Middendorf Formation</u>



DRILL METHODS

- 1) RHSA
- 2) \_\_\_\_\_

REMARKS

\_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH BELOW LAND SURFACE (ELS) OR ABOVE LAND SURFACE (ALS)

CASING	MAT	PVC
	SCH	40
	DIA	2"

CENTRALIZER	TYPE	MAT	N/A
	SIZE	DIA	N/A

BENTONITE SEAL	3/8"	SIZE
	Chips	TYPE

VOL CALC	X	X	X
To Fill VOL USED	X	X	X

SAND PACK	X	X	X
Silica Gel TYPE	X	X	X
Medium SIZE GRADE	X	X	X
U C	X	X	X

VOL CALC	X	X	X
To Fill VOL USED	X	X	X

SCREEN	X	X	X
SCH 40 PVC MAT	X	X	X
0.10 SLOT SIZE	X	X	X
Factory SLOT TYPE	X	X	X

CENTRALIZERS	N/A	0 FT
	N/A	0 FT
	N/A	0 FT

FILTER WRAP	N/A	SIZE MESH
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- 10.5 FT
- 12.5 FT
- 12.5 FT
- 22.5 FT
- 25.0 FT

<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>TMW-6</u> Job No: <u>CJ324-1</u>	Client: <u>Ryder Truck Rental, Inc.</u>
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Project Location: <u>Columbia (Idlewild Boulevard)</u>	State: <u>SC</u>	Total Depth: <u>25.0'</u>
Logged By: <u>DAH</u>	Soil Sample Method: <u>Split Spoon</u>	Date Started: <u>6/15/93</u>
Driller: <u>Badger Drilling</u>	Drill Method: <u>RHSA</u>	Equipment Type: <u>Canterra 250</u>
Soil Gas Sample Method: <u>PID, headspace screening</u>	Groundwater (bmp): <u>0 hrs</u>	N/A      24 hrs: <u>15.94'</u>
Land Surface Elevation (LS): <u>96.71'</u>	Measuring Point Elev. (MP): <u>100.19'</u>	Remarks: <u>Elevations to site reference</u>

Elevation (feet)	Depth (feet)	SPT Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt and sandy GRAVEL (subgrade)			GP	
91.71	5.0	68 1714	028	Hard, light gray and orange-mottled silty CLAY	1.0	M	CL	
86.71	10.0	810 1012	029	Very stiff, light gray to tan silty CLAY Very stiff, light gray to tan slightly sandy CLAY	0.6	M	CL	
81.71	15.0	811 1012	030	Very stiff, light gray to tan slightly sandy CLAY Medium dense, tan clayey medium grained SAND	2.2	W	SC	
76.71	20.0	69 1214	031	Medium dense, tan clayey medium grained SAND Medium dense, white slightly clayey silty coarse grained SAND	1.0		SM	
71.71	25.0	67 914	032	Medium dense, white to light gray slightly clayey fine grained SAND	1.0		SC	
				Boring terminated @ 25.0' by project hydrogeologist				Temporary well set @ 25.0'

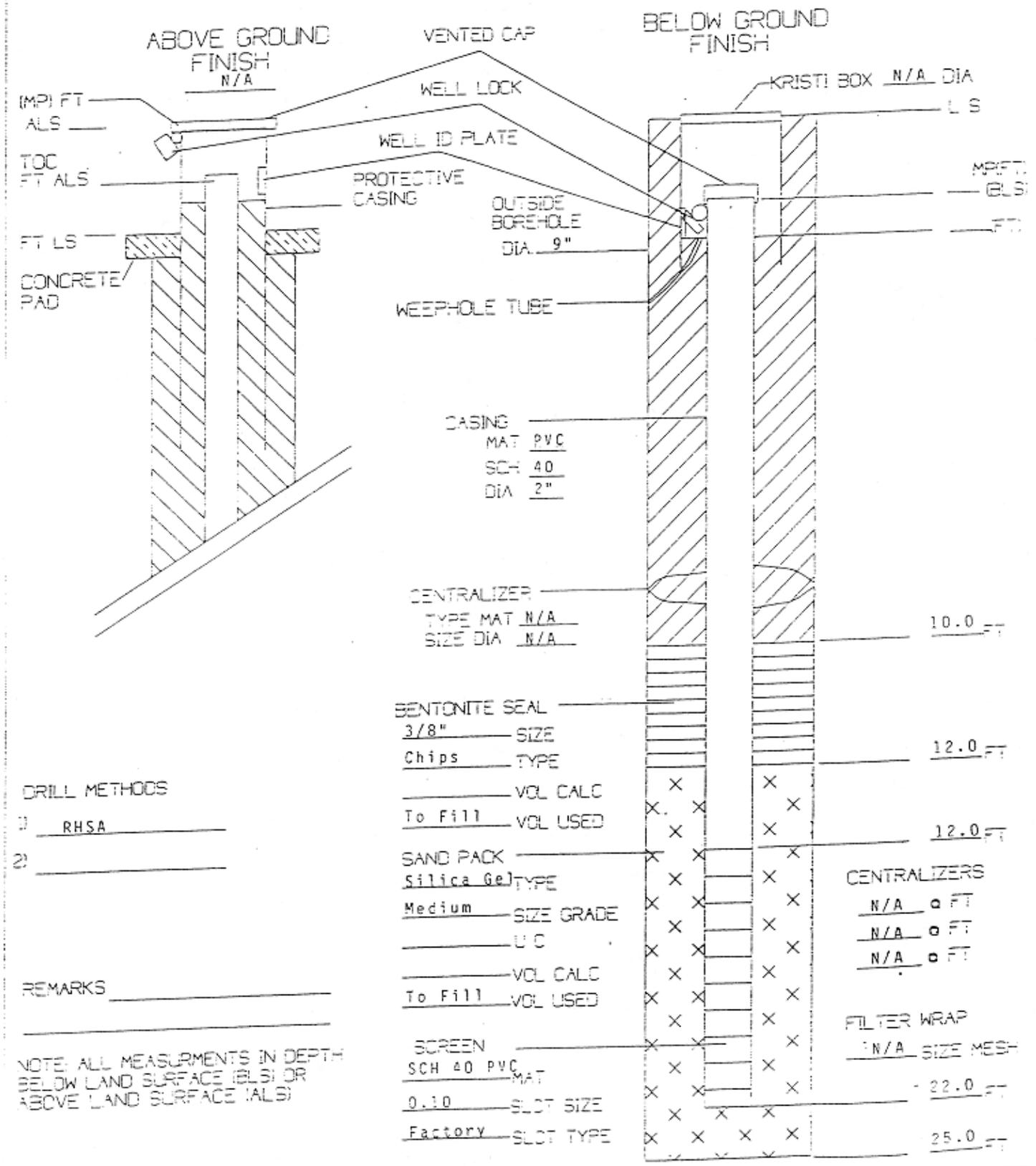


<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>TMW-7</u> Job No: <u>CJ324-1</u>	Client: <u>Ryder Truck Rental, Inc.</u>
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Project Location: <u>Columbia (Idlewild Boulevard)</u>	State: <u>SC</u>	Total Depth: <u>25.0'</u>
Logged By: <u>DAH</u>	Soil Sample Method: <u>Split Spoon</u>	Date Started: <u>6/15/93</u>
Driller: <u>Badger Drilling</u>	Drill Method: <u>RHSA</u>	Equipment Type: <u>Canterra 250</u>
Soil Gas Sample Method: <u>PID, headspace screening</u>	Groundwater (bmp): <u>0 hrs</u>	N/A      24 hrs <u>15.47'</u>
Land Surface Elevation (LS): <u>97.26'</u>	Measuring Point Elev. (MP): <u>99.88'</u>	Remarks: <u>Elevations to site reference</u>

Elevation (feet)	Depth (feet)	SPT Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt and sandy GRAVEL (subgrade)			GP	
92.26	5.0	8\11 14\14	035	Very stiff, light gray and orange-mottled silty CLAY	3.0		D CL	
87.26	10.0	8\13 13\17	036	Very stiff, light gray and orange silty CLAY Medium dense, tan to orange clayey SAND	2.2		M	
82.26	15.0	8\10 13\20	037	Medium dense, tan to orange clayey SAND	2.0		W SC	
77.26	20.0	8\10 10\31	038	Medium dense, white to light gray clayey SAND Dense, orange slightly silty coarse SAND with quartz cobbles	5.4			SM
72.26	25.0	11\31 50\5"	039	Dense, orange slightly silty coarse SAND with quartz cobbles Hard, gray to orange-mottled silty CLAY	6.2		CL	
				Boring terminated @ 25.0' by project hydrogeologist				Temporary well set @ 25.0'

ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG ISO FORM 3244	TYPE II	WELL # <u>TMW-7</u> JOB # <u>CJ324-</u>
PROJECT LOCATION Columbia (Idlewild Blvd.)	COUNTY Richland	STATE SC	CLIENT <u>Ryder Truck Rental, I</u>
LAND SURFACE ELEVATION 97.26'	MEASURING POINT ELEV. (MPI) 99.88'		LOG BY LDL
WELL DEV. METHOD Bail	VOLUME EVAC. Approx. 25 gal		DATE BEGAN <u>6/15/93</u> DATE COMPLETED <u>6/16/93</u>
	APPEARANCE <u>Cloudy to Clear</u>		MONITORED FORMATION Middendorf Formation



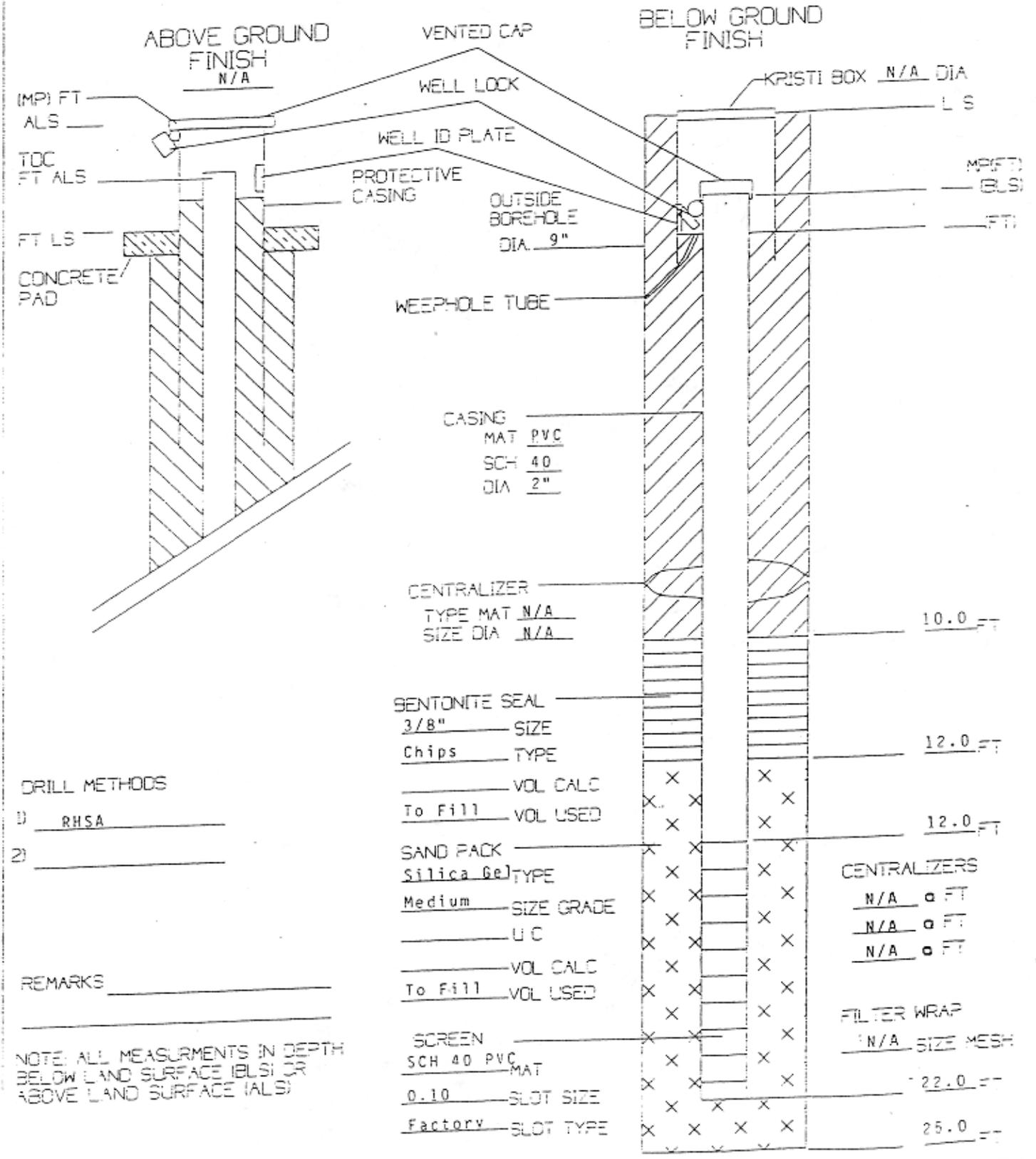
NOTE: ALL MEASUREMENTS IN DEPTH  
BELOW LAND SURFACE (BLS) OR  
ABOVE LAND SURFACE (ALS)

<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>TMW-8</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
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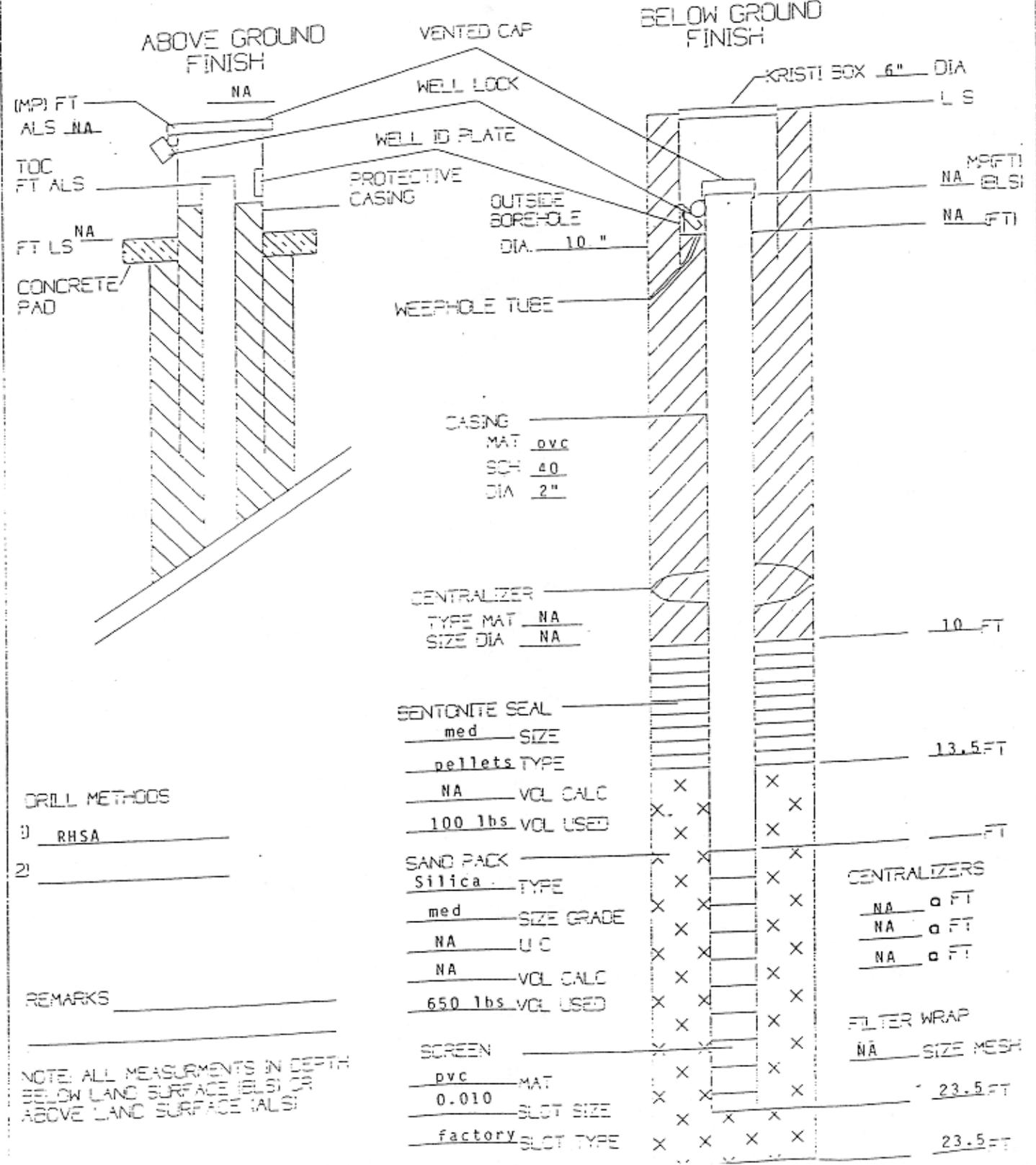
Project Location: <u>Columbia (Idlewild Boulevard)</u>	State: <u>SC</u>	Total Depth: <u>25.0'</u>
Logged By: <u>DAH</u>	Soil Sample Method: <u>Split Spoon</u>	Date Started: <u>6/15/93</u>
Driller: <u>Badger Drilling</u>	Drill Method: <u>RHSA</u>	Equipment Type: <u>Canterra 250</u>
Soil Gas Sample Method: <u>PID, headspace screening</u>	Groundwater (bmp): <u>0 hrs</u>	<u>N/A</u> 24 hrs: <u>14.84'</u>
Land Surface Elevation (LS): <u>98.85'</u>	Measuring Point Elev. (MP): <u>101.33'</u>	Remarks: <u>Elevations to site reference</u>

Elevation (feet)	Depth (feet)	SPT Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt and sandy GRAVEL (subgrade)			GP	
93.85	5.0	58 13\12	040	Medium dense, tan and orange medium-grained SAND	0.8		D SW	
88.85	10.0	37\50\5"	041	Hard, gray and tan-mottled silty CLAY	1.3		W CL	
83.85	15.0	8\1 21\33	042	Very stiff, gray and tan silty CLAY grading into Very dense, tan and orange clayey medium grained SAND	3.2		W SC	
78.85	20.0	9\10 17\20	043	Medium dense, white coarse SAND with cobbles Dense, orange, tan, and white coarse SAND with cobbles	6.0		GP	
73.85	25.0	8\10 12\18	044	Medium dense white coarse grained silty SAND with large cobbles	18.0			
				Boring terminated @ 25.0' by project hydrogeologist				Temporary well set @ 25.0'

ESE BIOSCIENCES INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG JOB FOR 3244	TYPE II	WELL # <u>TMW-8</u> JOB # <u>CJ324-</u>
PROJECT LOCATION Columbia (Idlewild Blvd.)	COUNTY Richland	STATE SC	CLIENT <u>Ryder Truck Rental, Inc</u>
LAND SURFACE ELEVATION 98.85'	MEASURING POINT ELEV. (MPI) 101.33'		LOG BY <u>LDL</u>
WELL DEV. METHOD Bail	VOLUME EVAC <u>Approx. 25 gal</u>		DATE BEGAN <u>6/15/93</u>
	APPEARANCE <u>Cloudy to Clear</u>		DATE COMPLETED <u>6/16/93</u>
			MONITORED FORMATION Middendorf Formation



ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG	TYPE III	WELL # <u>NW-1</u>	JOB # <u>CJ324-1</u>
	PROJECT LOCATION <u>Columbia</u>	COUNTY <u>Richland</u>	STATE <u>SC</u>	CLIENT <u>Ryder Truck Rental</u>
LAND SURFACE ELEVATION <u>162.17'</u>	MEASURING POINT ELEV. (MPI) <u>161.80'</u>	VOLUME EVAC <u>22 gal</u>	LOG BY <u>LAG</u>	DATE BEGAN <u>9/28/93</u>
WELL DEV. METHOD <u>Pump</u>	APPEARANCE <u>clear</u>	MONITORED FORMATION <u>Confined Middendorf</u>		



DRILL METHODS

- 1) RHSA
- 2) \_\_\_\_\_

REMARKS \_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH BELOW LAND SURFACE (ELS) OR ABOVE LAND SURFACE (ALS)

<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: MW-1	Job No: CJ324-1
		Client: Ryder Truck Rental, Inc.	

Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 27.5'  
 Logged By: B. Atkinson Soil Sample Method: Split spoon Date Started: 1/31/92 Date Complete: 2/1/93  
 Driller: J. Lawson Drill Method: Mud Rotary Equipment Type: CME 75 Boring Diameter: 10.25"  
 Soil Gas Sample Method: Headspace screening with PID in ppm Groundwater (bmp): 0 hrs 19.0' 24 hrs 14.64'  
 Land Surface Elevation (LS): 162.17' Measuring Point Elev. (MP): 161.80' Remarks: Retrofit of well drilled in 1992

Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt/Subgrade No samples to 6.0'				Original log by Woodward Clyde Consultants
	5.0							
		26	S-1	Medium dense, damp light tan, medium grained SAND		M	SP	No Odor
		17	S-2					Slight Odor
	10.0			Abundant gray SILT				
		9	S-3		>1000		SM	Strong Odor
				Loose, saturated, light gray-brown fine to medium-grained silty SAND				Free Product
		7	S-4		>1000			
	15.0			Firm, damp, light gray CLAY, scattered orange and maroon mottles				
		9	S-5		50		CL	No Odor
				Stiff, wet, gray, sandy CLAY, pink streaks, micaceous				
		12	S-6	Medium dense, saturated white to light gray fine to medium grained clayey SAND	30			
	20.0			Medium dense, saturated grained tan poorly sorted clayey gravelly SAND	10			
				Medium dense, saturated medium-grained white silty SAND				
		21	S-8		5			
				Medium dense, saturated white micaceous clayey gravelly SAND			SC	
		16	S-9		12			
	25.0			No samples taken below 24.0'				ESE retrofit set
				ESE boring terminated @ 25.0'				with screen from 13.5-23.5
	30.0			Soil boring terminated @ 27.5' (Woodward Clyde Consultants)				

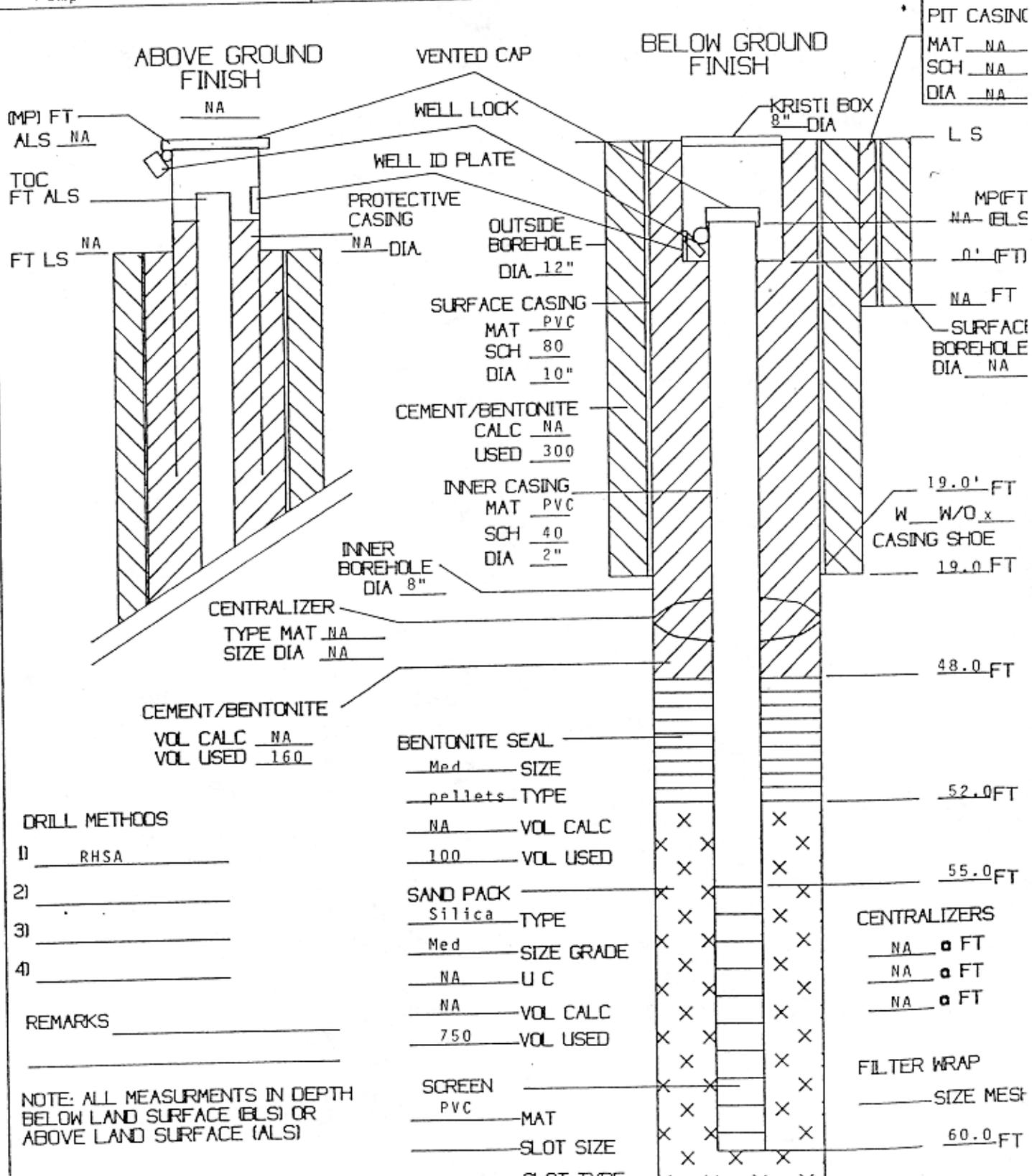


<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: RW-1	Job No: CJ324-1
		Client: Ryder Truck Rental, Inc.	

Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 30.0'  
 Logged By: DAH Soil Sample Method: Split spoon Date Started: 9/27/93 Date Complete: 9/27/93  
 Driller: Mike Trimble Drill Method: RHSA Equipment Type: CME 75 Boring Diameter: 12"  
 Soil Gas Sample Method: Headspace screening with PID in ppm Groundwater (bmp): 0 hrs 19.0' 24 hrs 14.64'  
 Land Surface Elevation (LS) 160.94' Measuring Point Elev. (MP): 160.40' Remarks:

Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt/Subgrade				
	5.0	410 159	049	Medium dense, tan to orange silty SAND	0	D	SM	
				Clay begins				
	10.0	44 58	050	Stiff, light gray slightly silty CLAY with occasional orange mottles	0			
						M	CL	
	15.0	45 57	051	Stiff, light gray to orange-mottled CLAY	0			
	20.0	43 34	052	Medium stiff, brown, silty sandy CLAY beside Loose, brown, clayey silty SAND	1.2	W		
						W	SM	
	25.0	66 75	053	Medium dense, brown slightly silty SAND Medium dense, light gray to white slightly clayey coarse SAND	34			
						W	SC	
	30.0	66 75	054	Medium dense, tan to white poorly sorted SAND to GRAVEL	13	W	SP	
				Boring terminated @ 30.0'				Set Type I recovery well @ 28.5'

ESE BIOSCIENCES, INC. RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG ENR FORM # 3243	TYPE (00)	WELL # MW-5	JOB # CJ324-
PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	CLIENT	LOG BY LAG
LAND SURFACE ELEV. 161.04'	MEASURING PT. ELEV. (MPI) 160.77'		DATE BEGAN 7/27/93	DATE COMPLETED 7/28/93
WELL DEV. METHOD Pump	VOLUME EVAC. 30.0 gallons		MONITORED FORMATION Confined Middendorf	



DRILL METHODS

1) RHSA

2) \_\_\_\_\_

3) \_\_\_\_\_

4) \_\_\_\_\_

REMARKS \_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH  
BELOW LAND SURFACE (BLS) OR  
ABOVE LAND SURFACE (ALS)

BENTONITE SEAL

Med SIZE

pellets TYPE

NA VOL CALC

100 VOL USED

SAND PACK

Silica TYPE

Med SIZE GRADE

NA U C

NA VOL CALC

750 VOL USED

SCREEN

PVC MAT

\_\_\_\_\_ SLOT SIZE

CENTRALIZERS

NA # FT

NA # FT

NA # FT

FILTER WRAP

\_\_\_\_\_ SIZE MESH

60.0 FT

<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>MW-5</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
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Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 66.0'  
 Logged By: EBH Soil Sample Method: Grab Date Started: 9/27/93 Date Complete: 9/28/93  
 Driller: George Flinton Drill Method: RHSA Equipment Type: CME 75 Boring Diameter: 12"  
 Soil Gas Sample Method: Soil gas performed on adjacent RW-1 Groundwater (bmp): 0 hrs -18.0' 24 hrs 15.33'  
 Land Surface Elevation (LS) 161.04' Measuring Point Elev. (MP): 160.77' Remarks: Soil samples taken from adjacent RW-1

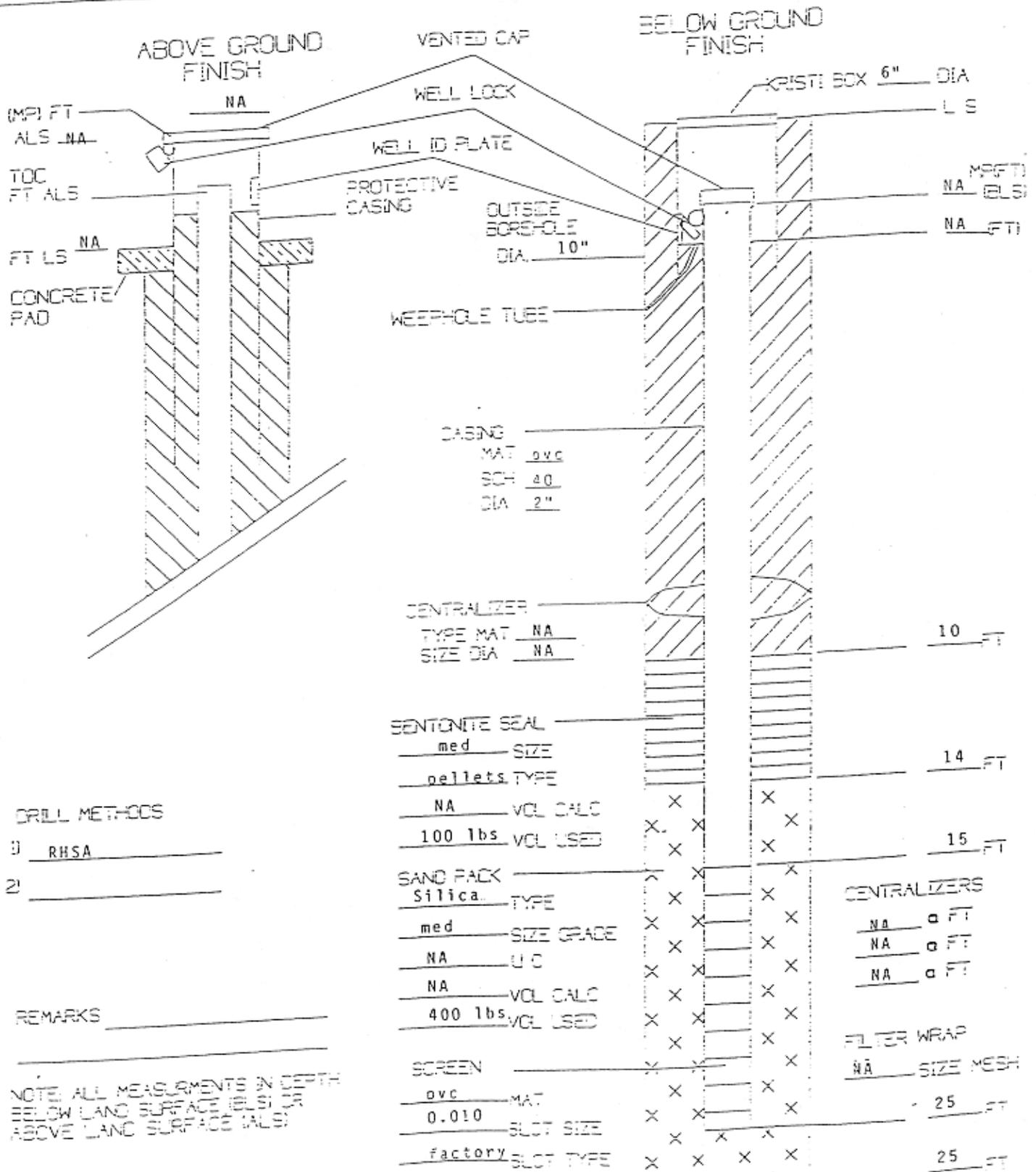
Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
		No Samples		Asphalt Subgrade				
	5.0		*NS	Tan to orangish silty SAND	NS	D	SM	*NS = not sampled
	10.0			Light gray silty CLAY with occassional orange mottles				
	15.0				NS	M	CL	
				Tan medium to coarse grained SAND		W	SW	
	20.0	12/12		Set surface casing @ 19.0' No material retrieved by split spoon				
	25.0	23	NS	Very loose tan to white medium to coarse grained slightly clayey SAND	NS			No lab samples
		23				W	SW	
	30.0	43	NS	Very loose tan to white medium to coarse grained slightly clayey SAND	NS			
		32						
	35.0	5/17	NS	Dense tan to white coarse SAND to GRANULES with graded structure	NS		SP	
		40/32						End Page

<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>MW-5</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
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Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 66.0'  
 Logged By: EBH Soil Sample Method: Grab Date Started: 9/27/93 Date Complete: 9/28/93  
 Driller: George Flinton Drill Method: RHSA Equipment Type: CME 75 Boring Diameter: 12"  
 Soil Gas Sample Method: Soil gas performed on adjacent RW-1 Groundwater (bmp): 0 hrs -18.0' 24 hrs 15.33'  
 Land Surface Elevation (LS) 161.04' Measuring Point Elev. (MP): 160.77' Remarks: Soil samples taken from adjacent RW-1

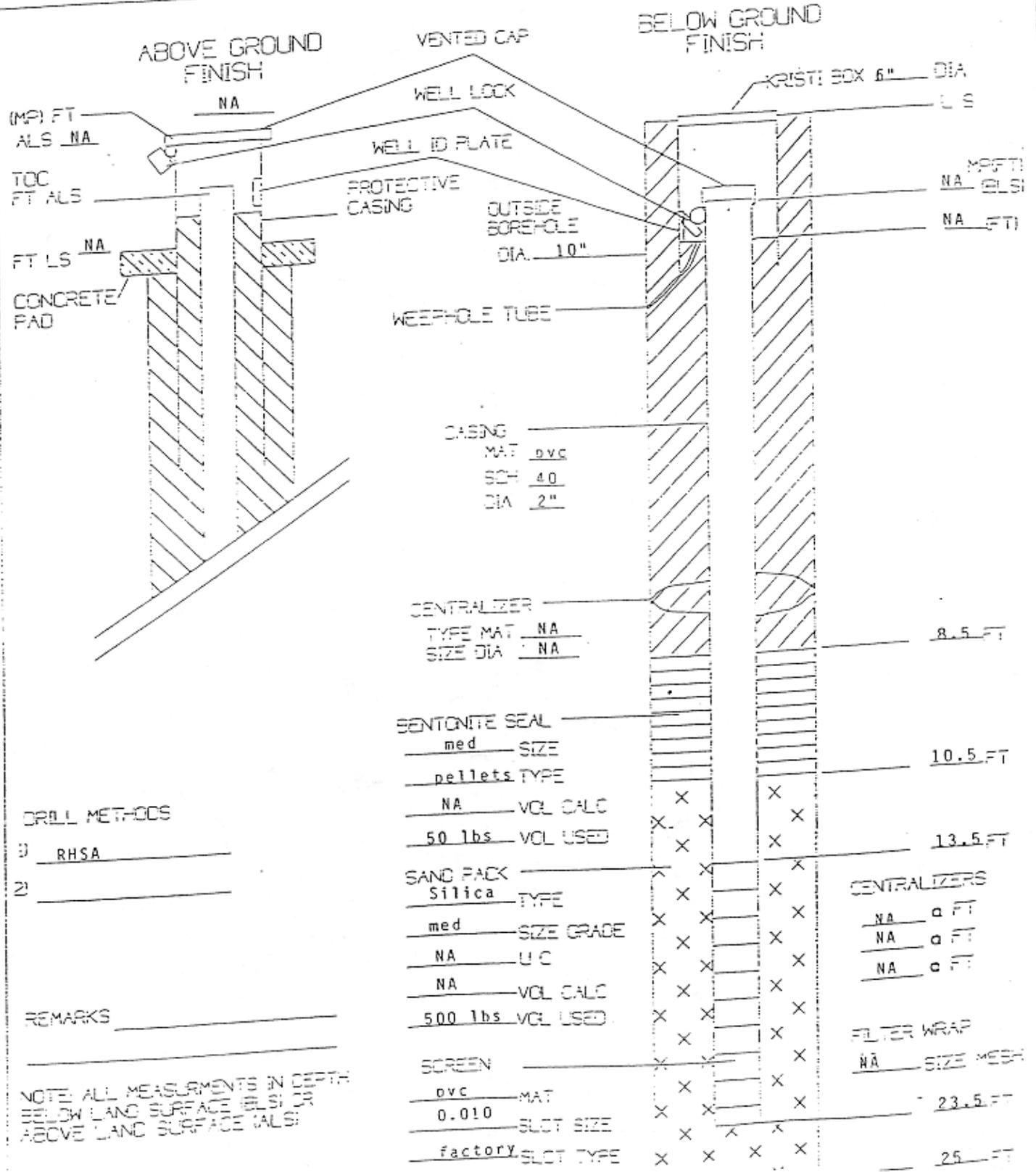
Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
								Begin Page
	40.0	11N16 1921	NS	Dense, orange to tan poorly sorted SAND with clay lenses	NS			
	45.0	220 2736	NS	Very dense, tan to gray medium grained silty SAND with thin clay zones	NS			
		88 1417	NS	Dense, tan to gray medium grained silty SAND with thin clay zones	NS			
	50.0	8N11 1627	NS	Dense, tan to gray medium grained silty SAND with thin clay zones	NS			
	55.0	8N13 2739	NS	Very dense, tan to gray medium grained silty SAND with thin clay zones	NS			
	60.0	78 1017	NS	Medium dense, tan to gray medium grained silty SAND with 3" of very stiff sandy silty CLAY	NS			
	65.0	926 3450	NS	Hard, light tan sandy CLAY	NS			
	70.0			Boring terminated @ 66.0'				Type III well screen set from 55.0'-60.0'

ESE BIOSCIENCES, INC DANFORTH & CHARLOTTE, NC PROJECT LOCATION Columbia	WELL COMPLETION LOG EST. FOR BH# COUNTY Richland STATE SC	TYPE ID MW-6 LOG BY LAG	LES = CJ324-1 Ryder Truck Rental DATE BEGAN 9/28/93 DATE COMPLETED 9/28/93
LAND SURFACE ELEVATION 160.66'	MEASURING POINT ELEV. (MP) 160.42'	MONITORED FORMATION Confined Middendorf	
WELL DEV. METHOD Pump	VOLUME EVAC 25.0 gal APPEARANCE clear		





ESB BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG SEE FORM 3844	TYPE ID	NO. MW-7	JOB - CJ324-1
PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	CLIENT Ryder Truck Rental	
LAND SURFACE ELEVATION 159.67'	MEASURING POINT ELEV. (MP) 159.37'		LOG BY LAG	
WELL DEV. METHOD Pump	VOLUME EVAC 25.0 gal		DATE BEGAN 9/28/93	DATE COMPLETED 9/28/93
	APPEARANCE clear		MONITORED FORMATION Confined Middendorf	

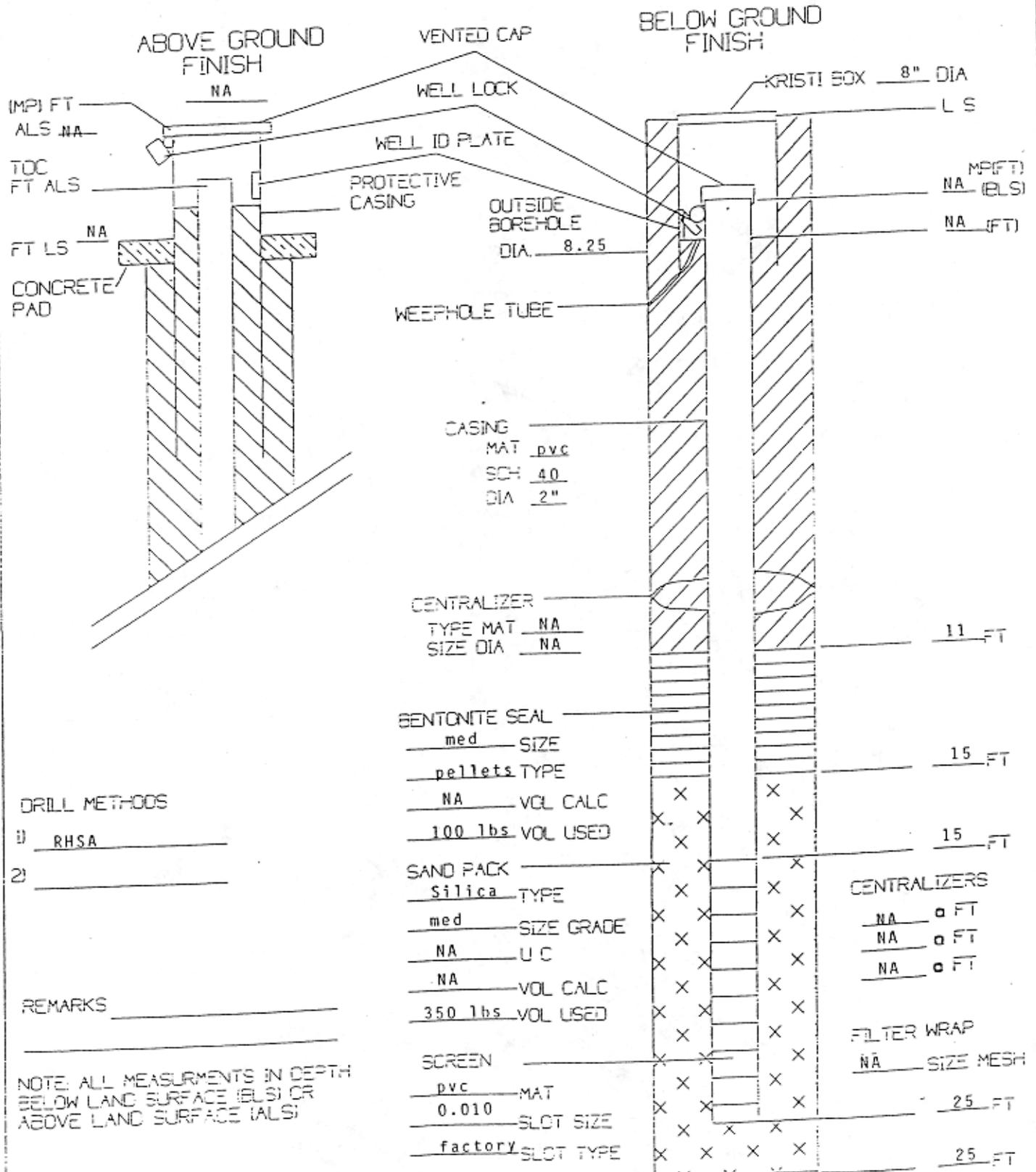


<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>MW-7</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
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Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 25.0'  
 Logged By: EBH Soil Sample Method: Split spoon Date Started: 9/28/93 Date Complete: 9/28/93  
 Driller: George Flinton Drill Method: RHSA Equipment Type: CME 75 Boring Diameter: 12"  
 Soil Gas Sample Method: Headspace screening with PID in ppm Groundwater (bmp): 0 hrs -19.0' 24 hrs 14.06'  
 Land Surface Elevation (LS) 159.67' Measuring Point Elev. (MP): 159.37' Remarks: \_\_\_\_\_

Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt Subgrade				
	5.0	45 810	061	Very stiff, light gray slightly silty CLAY	200	D		
	10.0	42 46	062	Medium stiff, orange, yellow, and pink-mottled slightly silty CLAY	210	D	CL	
	15.0	44 44	063	Medium stiff, light gray (with pink mottles) slightly sandy CLAY Medium stiff, light olive green sandy CLAY	60	M		
	20.0	32 23	064	Medium stiff, light olive green slightly sandy CLAY Loose, tan to white clayey, silty, poorly sorted SAND	75	M		
	25.0	77 1013	065	Medium dense, tan to white clayey, silty, poorly sorted SAND to GRAVEL	5.0		SP/GM	
				Boring terminated @ 25.0'				Set Type I well @ 23.5'

ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG EBO FORM 32-44	TYPE ID	WELL # <u>MH-8</u> JOB # <u>CJ324-1</u>
PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	CLIENT Ryder Truck Rental
LAND SURFACE ELEVATION 158.46'	MEASURING POINT ELEV. (MPI) 158.22'		LOG BY LAG
WELL DEV. METHOD Bailer	VOLUME EVAC. <u>12.0 gal</u> APPEARANCE <u>clear</u>		DATE BEGAN <u>9/28/93</u> DATE COMPLETED <u>9/28/93</u>
			MONITORED FORMATION Confined Middendorf



DRILL METHODS

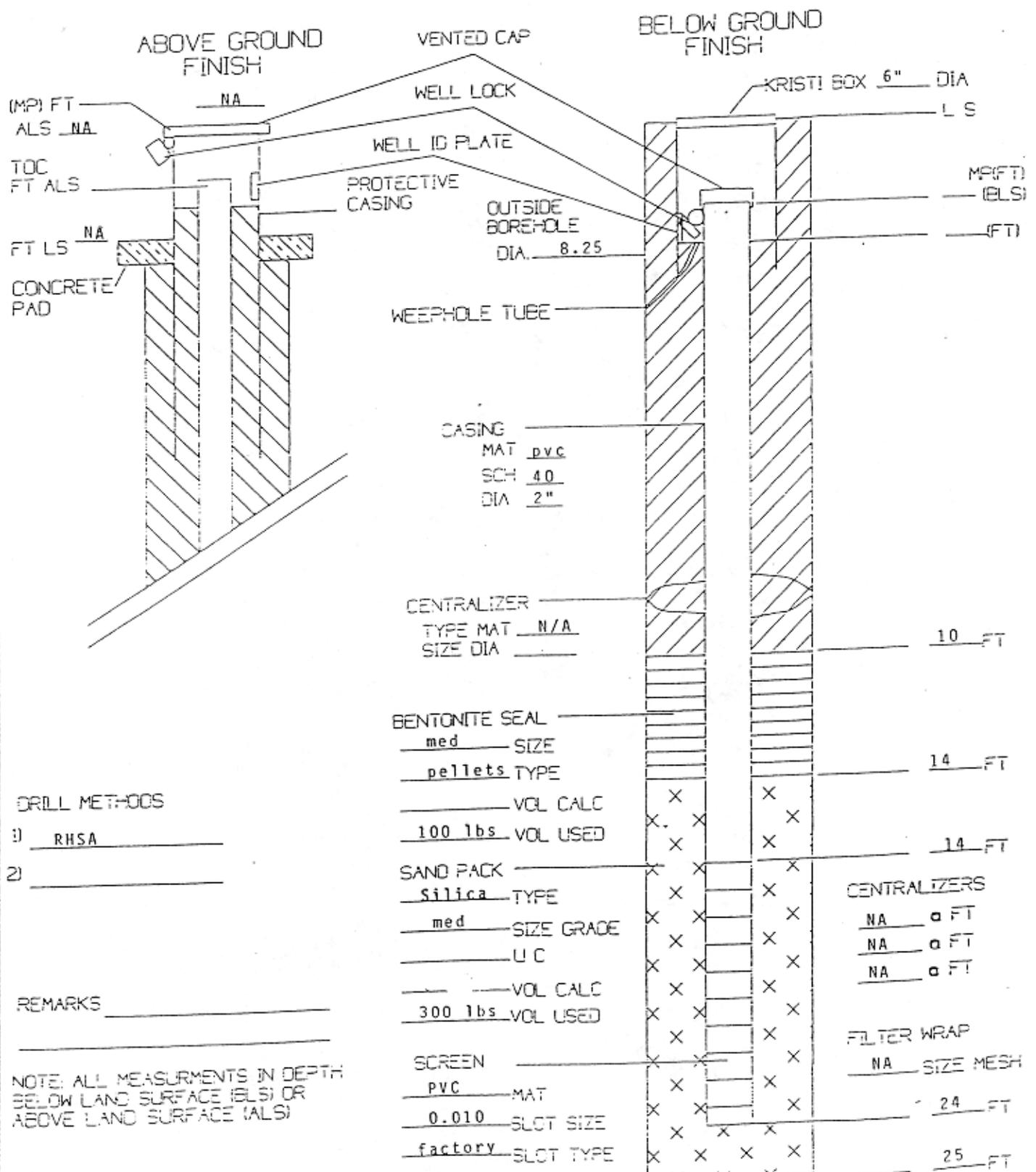
- 1) RHSA
- 2) \_\_\_\_\_

REMARKS \_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH BELOW LAND SURFACE (ELS) OR ABOVE LAND SURFACE (ALS)



ESB BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG ESB FORM 3244	TYPE (1)	WELL = MW-9 CLIENT = Ryder Truck Rental
PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	LOG BY LAG
LAND SURFACE ELEVATION 158.77'	MEASURING POINT ELEV. (MPI) 158.62'		DATE BEGAN 9/28/93 DATE COMPLETED 9/28/93
WELL DEV. METHOD Bailer	VOLUME EVAC. 12.0 gal APPEARANCE Clear		MONITORED FORMATION Confined Middendorf

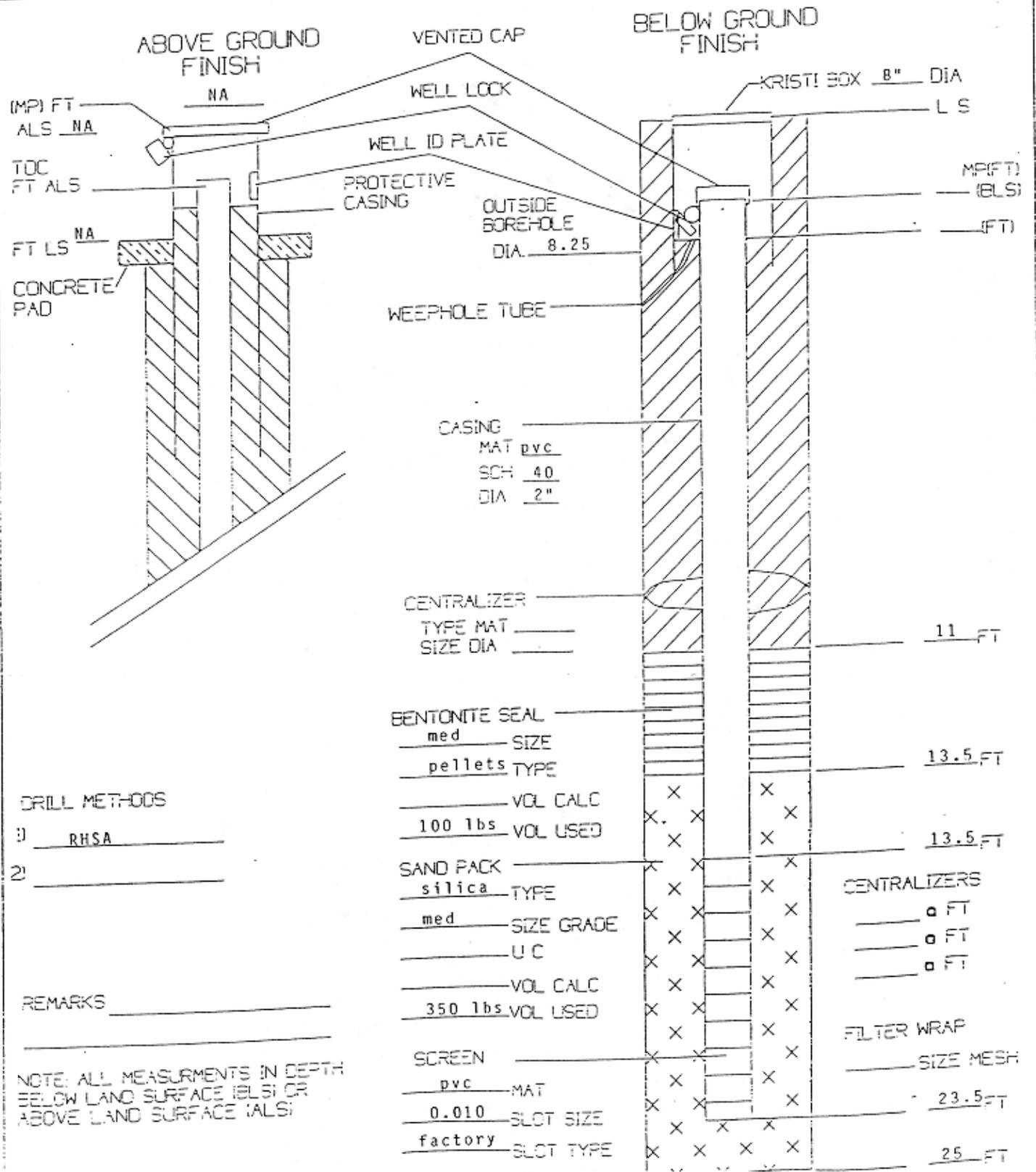


<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>MW-9</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
---	--	--

Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 25.0'  
 Logged By: EBH Soil Sample Method: Split Spoon Date Started: 9/27/93 Date Complete: 9/28/93  
 Driller: George Flinton Drill Method: RHSA Equipment Type: CME 45 Boring Diameter: 8"  
 Soil Gas Sample Method: Headspace screening with PID in ppm Groundwater (bmp): 0 hrs 14.0' 24 hrs 14.45'  
 Land Surface Elevation (LS): 158.77' Measuring Point Elev. (MP): 158.62' Remarks: \_\_\_\_\_

Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt/ABC Stone				
	5.0	56 910	079	Very stiff, tan to orange then gray silty CLAY	<1.0	D		
	10.0	59 56	080	Stiff, white to gray sandy silty CLAY then orange to red and gray silty CLAY	<1.0	D/M	CL	
	15.0	23 35	081	Medium stiff, orange to tan then gray silty CLAY Loose, white to gray silty SAND	<1.0	D/M W		
	20.0	12 23	082	Loose, white to gray silty SAND with quartz pebbles	<1.0	W	SM	
	25.0	43 37	083	Loose, white to gray silty SAND with quartz pebbles	<1.0	W		
				Boring terminated @ 25.0' by project hydrogeologist				Set Type I well @ 13.0'-23.0'

ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG TYPE III SSD FORM 32-4	WELL # MW-10 JOB # C1324-1 CLIENT Ryder Truck Rental
PROJECT LOCATION Columbia	COUNTY Richland STATE SC	LOG BY LAG
LAND SURFACE ELEVATION 160.35'	MEASURING POINT ELEV. (MPI) 160.11'	DATE BEGAN 9/28/93 DATE COMPLETED 9/28/93
WELL DEV. METHOD Bailer	VOLUME EVAC 12.0 gal APPEARANCE Clear	MONITORED FORMATION Confined Middendorf



VOL CALC	X	X	X
100 lbs VOL USED	X	X	X
SAND PACK	X	X	X
med SIZE GRADE	X	X	X
U C	X	X	X
VOL CALC	X	X	X
350 lbs VOL USED	X	X	X
SCREEN	X	X	X
pvc MAT	X	X	X
0.010 SLOT SIZE	X	X	X
factory SLOT TYPE	X	X	X

CENTRALIZERS

o FT

o FT

o FT

FILTER WRAP

SIZE MESH

23.5 FT

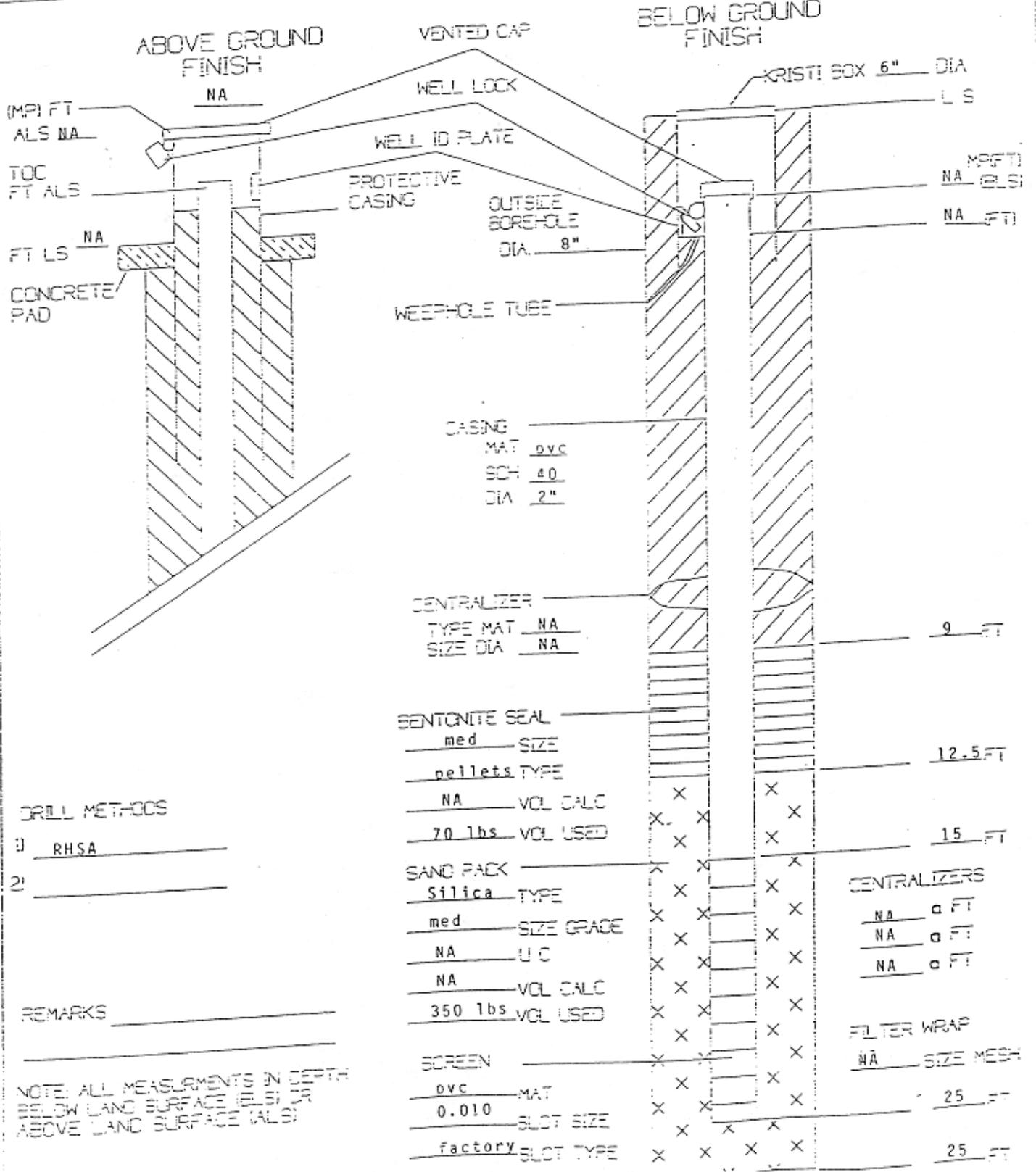
25 FT

<b>ESE BIOSCIENCES, INC.</b> RALEIGH & CHARLOTTE, NC	<b>LITHOLOGIC LOG</b> EBIO Form No. 324.2	Boring No: <u>MW-10</u> Job No: <u>CJ324-1</u> Client: <u>Ryder Truck Rental, Inc.</u>
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Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 25.0'  
 Logged By: EBH Soil Sample Method: Split Spoon Date Started: 9/27/93 Date Complete: 9/28/93  
 Driller: George Flinton Drill Method: RHSA Equipment Type: CME45 Boring Diameter: 8"  
 Soil Gas Sample Method: Headspace screening with PID in ppm Groundwater (bmp): 0 hrs 14.0' 24 hrs 14.25'  
 Land Surface Elevation (LS) 160.35' Measuring Point Elev. (MP): 160.11' Remarks: \_\_\_\_\_

Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt/Subgrade				
	5.0	612 1611	069	Very stiff, tan to gray sandy CLAY	0	M		
	10.0	32 56	070	Stiff, tan to orange and gray slightly silty CLAY	0	W	CL	
	15.0	34 34	071	Medium stiff, tan to orange and gray slightly silty CLAY Loose, orange and gray silty fine SAND	0	W		
	20.0	22 22	072	Loose, white to gray silty fine to medium SAND with quartz pebbles	0	W	SM	
	25.0	22 33	073	Loose, white to gray silty fine to medium SAND with quartz pebbles	0			
				Boring terminated @ 25.0' by project hydrogeologist				Set Type I well @ 23.0'

ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG	TYPE ID	REF = MW-11	JOB = CJ124-1
	PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	CLIENT Ryder Truck Rental
LAND SURFACE ELEVATION 163.13'	MEASURING POINT ELEV. (MPI)		LOG BY LAG	
WELL DEV. METHOD Bailer	VOLUME EVAC 14.0 gal	APPEARANCE clear	DATE BEGAN 9/28/93	DATE COMPLETED 9/28/93
			MONITORED FORMATION Confined Middendorf	



DRILL METHODS

- 1) RHSA
- 2) \_\_\_\_\_

REMARKS \_\_\_\_\_

NOTE: ALL MEASUREMENTS IN DEPTH  
BELOW LAND SURFACE (BLS) \_\_\_\_\_  
ABOVE LAND SURFACE (ALS) \_\_\_\_\_

CASING  
MAT ovc  
SCH 40  
DIA 2"

CENTRALIZER  
TYPE MAT NA  
SIZE DIA NA

BENTONITE SEAL  
med SIZE  
pellets TYPE

NA VOL CALC  
70 lbs VOL USED

SAND PACK  
Silica TYPE  
med SIZE GRADE  
NA U/C

NA VOL CALC  
350 lbs VOL USED

SCREEN  
ovc MAT  
0.010 SLOT SIZE  
factory SLOT TYPE

CENTRALIZERS  
NA a FT  
NA a FT  
NA a FT

FILTER WRAP  
NA SIZE MESH

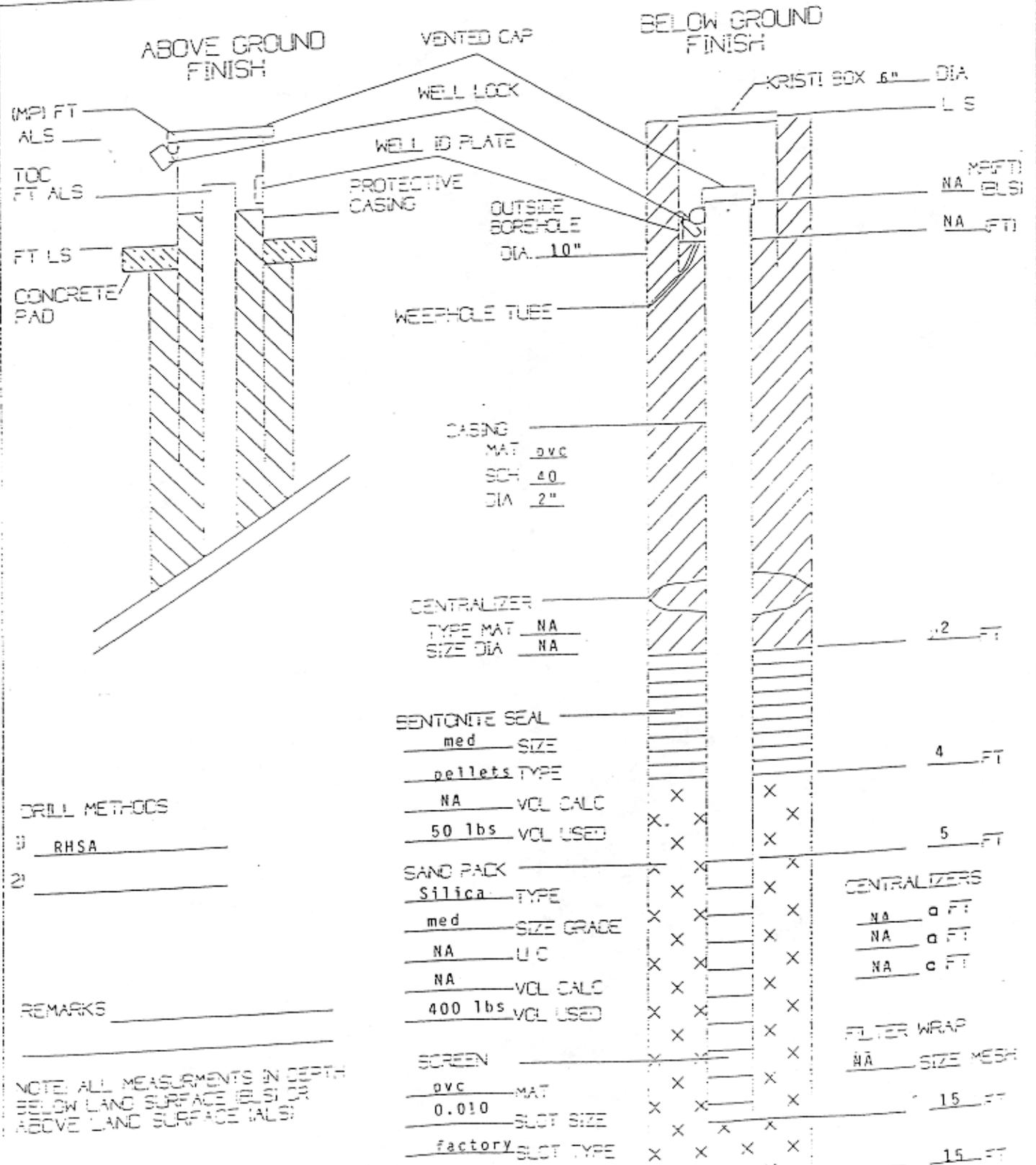
25 FT  
25 FT

ESE BIOSCIENCES, INC. RALEIGH & CHARLOTTE, NC	LITHOLOGIC LOG EBIO Form No. 324.2	Boring No: MW-11	Job No: CJ324-1
		Client: Ryder Truck Rental, Inc.	

Project Location: 945 Idlewild Boulevard, Columbia State: South Carolina Total Depth: 26.0'  
 Logged By: EBH Soil Sample Method: Split spoon Date Started: 9/28/93 Date Complete: 9/28/93  
 Driller: Mike Trinkle Drill Method: RHSA Equipment Type: CME 45 Boring Diameter: 8"  
 Soil Gas Sample Method: Headspace screening with PID in ppm Groundwater (bmp): 0 hrs 18.0' 24 hrs 15.73'  
 Land Surface Elevation (LS): 163.13' Measuring Point Elev. (MP): 162.86' Remarks:

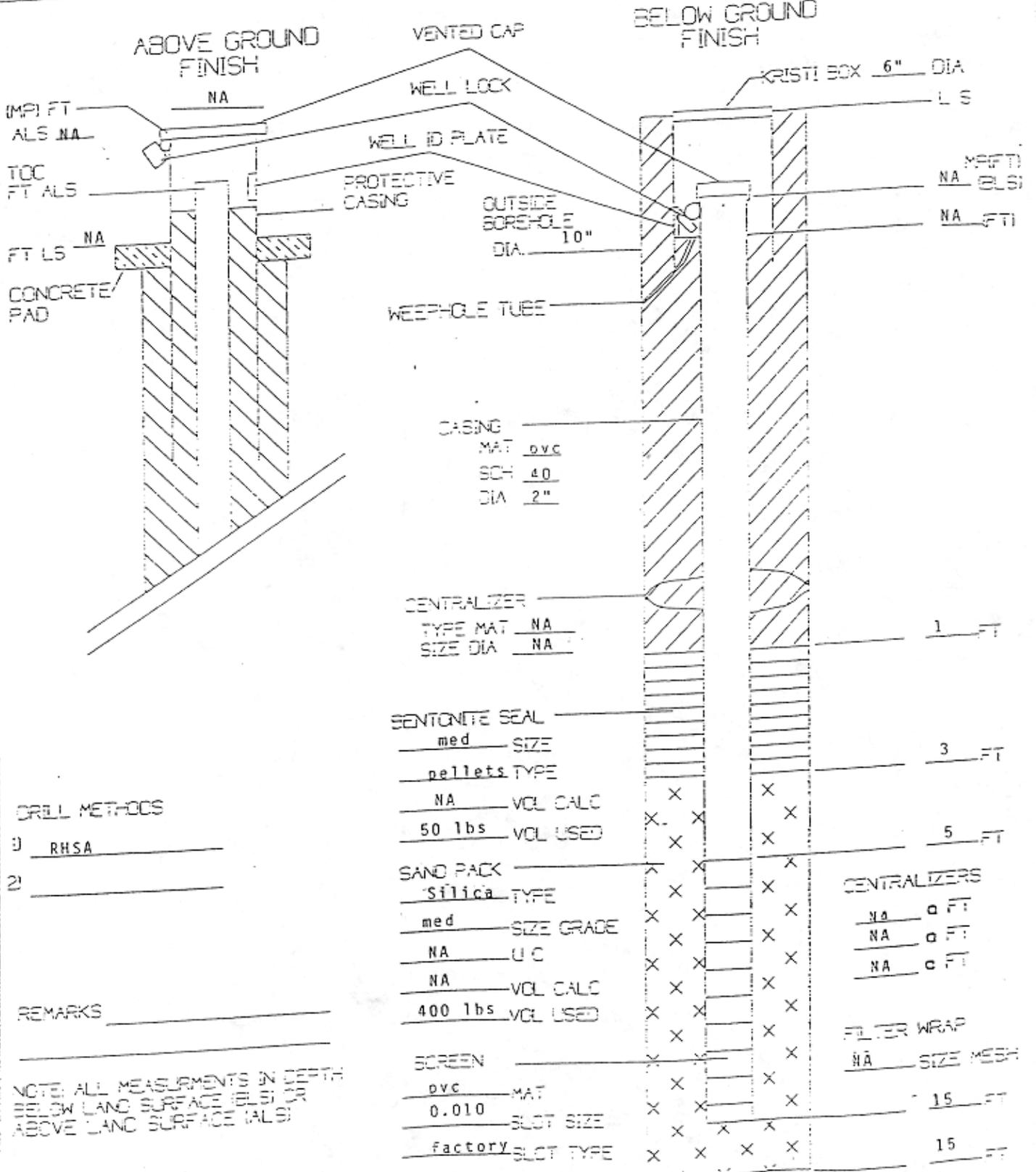
Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt/Subgrade				
	5.0	3/4 8/9	074	Medium dense, tan to orange silty SAND	0.0		D SM	
	10.0	7/8 7/5	075	Stiff, tan to orange slightly clayey SILT	0.0		D/M ML	
	15.0	3/2 1/1	076	Soft, tan to orange silty CLAY	0.0		CL	
	20.0	2/1 3/2	077	Medium stiff, tan to orange sandy SILT	0.0		W ML	
	25.0	Weight of Hammer	078	Very loose, tan and white poorly sorted silty SAND	0.0		SM	
				Boring terminated @ 25.0'; Sampler penetration to 26.0'				Set Type I well @ 25.0'

ESB BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG SECTION 844	TYPE III	WELL # MW-12	LOG # CJ324-1
PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	CLIENT Ryder Truck Rental	
LAND SURFACE ELEVATION 162.26'	MEASURING POINT ELEV. (MPI) 161.78'		LOG BY LAG	
WELL DEV. METHOD Bailer	VOLUME EVAL 15.0 gal		DATE BEGAN 9/28/93	
	APPEARANCE Clear		DATE COMPLETED 9/28/93	
			MONITORED FORMATION Unconfined Middendorf	





ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG	TYPE ID	WELL NO. MW-13	LOG # CJ324-1
	PROJECT LOCATION Columbia	COUNTY Richland	STATE SC	CLIENT Ryder Truck Rental
LAND SURFACE ELEVATION 160.45'	MEASURING POINT ELEV. (MPI)		LOG BY LAG	
WELL DEV. METHOD Bailer	VOLUME EVAC 13.0 gal	APPEARANCE Clear	DATE BEGAN 9/28/93	DATE COMPLETED 9/28/93
			MONITORED FORMATION unconfined Middendorf	









PROJECT: **Ryder Truck Rental** WELL LOG **MW-14**

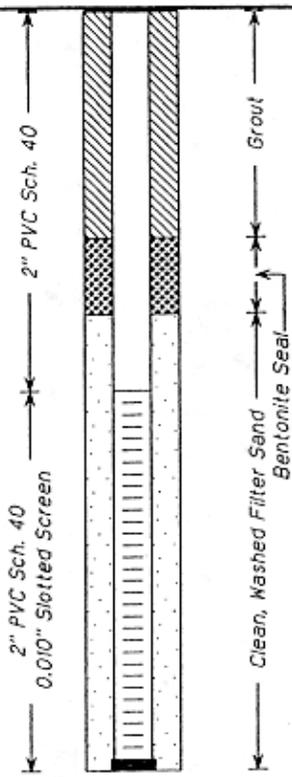
PROJECT NO. : 1264-96-250	ELEVATION:	NOTES:
LOGGED BY: M. Roldan	BORING DEPTH: FEET	
DATE DRILLED: 11/25/96	WATER LEVEL: 14.5 feet	
DRILLING METHOD: HSA	DRILL RIG:	

DEPTH (ft)	GRAPHIC LOG	Description & Remarks	SAMPLE NUMBER	SAMPLE	OVM (ppm)	SPR	ELEV.	WELL DIAGRAM
0	[Hatched Pattern]	Three inch asphalt, 2 inch stone.						<p style="font-size: small;">2" PVC Sch. 40 0.010" Slotted Screen Clean, Washed Filter Sand Bentonite Seal Grout</p>
5	[Dotted Pattern]	Medium dense medium to fine clayey SAND	1	[X]	0.0	23		
10	[Diagonal Hatching]	Very stiff tan gray fine to medium sandy CLAY	2	[X]	0.0	17		
15	[Diagonal Hatching]	Very stiff red and tan and grey medium sandy CLAY	3	[X]	0.0	19		
20	[Diagonal Hatching]		4	[X]	0.0	5		
21.5		Boring terminated at 21.5 feet						
25								
30								
35								

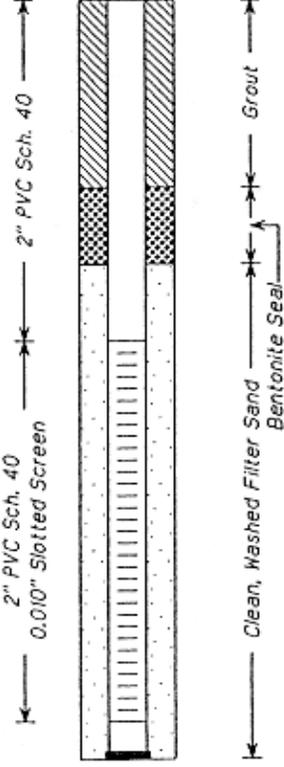
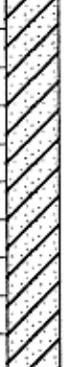
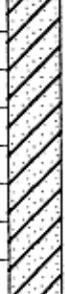


PROJECT: <b>Ryder Truck Rental</b>		WELL LOG		MW-15
PROJECT NO. : 1264-96-250	ELEVATION:	NOTES:		
LOGGED BY: M. Roldan	BORING DEPTH: 20 FEET			
DATE DRILLED: 11/25/96	WATER LEVEL: 14.5 feet			
DRILLING METHOD: HSA	DRILL RIG:			

DEPTH (ft)	GRAPHIC LOG	Description & Remarks	SAMPLE NUMBER	SAMPLE	OVM (ppm)	SPR	ELEV.	WELL DIAGRAM	
								2" PVC Sch. 40	0.010" Slotted Screen
0-2	[Hatched pattern]	Six inch asphalt. Two inch stone.							
2-7	[Dotted pattern]	Dense grey and tan clayey coarse SAND	1	[X symbol]	0.0	37			
7-12	[Diagonal hatching]	Very stiff to firm tan grey to white micaceous coarse to fine sandy CLAY	2	[X symbol]	0.0	22			
12-16	[Diagonal hatching]	Loose tan clayey coarse SAND	3	[X symbol]	0.0	5			
16-20	[Dotted pattern]	Loose tan clayey coarse SAND	4	[X symbol]	0.0	17			
20-35		Boring terminated at 20 feet.							



PROJECT NO. : 1264-96-250	ELEVATION:	NOTES:
LOGGED BY: M. Roldan	BORING DEPTH: 20 FEET	
DATE DRILLED: 11/25/96	WATER LEVEL:	
DRILLING METHOD: HSA	DRILL RIG:	

DEPTH (ft)	GRAPHIC LOG	Description & Remarks	SAMPLE NUMBER	SAMPLE	QVM (ppm)	SPR	ELEV.	WELL DIAGRAM
0		Six inches asphalt and four inches stone.						 <p style="text-align: center;">2" PVC Sch. 40 0.010" Slotted Screen</p> <p style="text-align: center;">Clean, Washed Filter Sand Bentonite Seal</p> <p style="text-align: center;">Grout</p>
5		Very stiff red, tan and grey coarse sandy <b>CLAY</b>	1		0	27		
10		Loose to medium dense tan clayey coarse <b>SAND</b>	2		0	16		
15			3		0	10		
20			4		0	17		
20		Boring terminated at 20 feet						
25								
30								
35								





**Water Well Record  
Bureau of Water**

MW-17

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**

Name: RYDER TRUCK RENTAL, INC.  
(last) (first)  
 Address: 3600 NW 82<sup>ND</sup> AVENUE  
 City: MIAMI State: FL Zip: 33166  
 Telephone: Work: 615-890-6229 Home: \_\_\_\_\_

**2. LOCATION OF WELL:**

COUNTY: RICHLAND

Name: RYDER TRUCK RENTAL, INC.  
 Street Address: 945 IDLEWILD BLVD.  
 City: COLUMBIA Zip: 29201  
 Latitude: 33° 58' 3" Longitude: -81° 0' 30"

**3. PUBLIC SYSTEM NAME:**

**PUBLIC SYSTEM NUMBER:**

**4. ABANDONMENT:**

Yes  No

Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
ORANGE + TAN FN-MED SAND	1.5	2.0
ORANGE + GRAY MOTTLED CLAY	0.5	2.5
ORANGE, TAN, WHITE FN-MED SAND	3.5	6.0
LT GRAY FN SANDY SILT	3.0	9.0
GRAY SILT - DENSE/HARD	4.6	13.6
GRAY + ORANGE SILTY CLAY	5.4	19.0
GRAY + ORANGE CLAYEY SAND	1+	20+

\*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

**5. REMARKS:**

WELL # MW-17  
 BENTONITE SEAL 6-8'

RECEIVED  
 AUG 11 2004  
 PRIVATE WELL SECTION

**6. TYPE:**

- Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

**7. PERMIT NUMBER:**

UST 07504; MWA#UMW-18323

**8. USE:**

- Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**9. WELL DEPTH (completed)**

Date Started: 7/22/04

20' ft.

Date Completed: 7/22/04

**10. CASING:**  Threaded  Welded

Diam.: 2"

Height: Above  Below

Type:  PVC  Galvanized

Surface 0.3' ft.

Steel  Other

Weight \_\_\_\_\_ lb./ft.

0 in. to 10 ft. depth

Drive Shoe?  Yes  No

\_\_\_\_\_ in. to \_\_\_\_\_ ft. depth

**11. SCREEN:**

Type: PVC Diam.: 2"

Slot/Gauge: 0.010" Length: 10'

Set Between: 10 ft. and 20 ft. NOTE: MULTIPLE SCREENS

\_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET

Sieve Analysis  Yes (please enclose)  No

**12. STATIC WATER LEVEL**

14.86 ft. below land surface after 24 hours

**13. PUMPING LEVEL Below Land Surface.**

\_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.

Pumping Test:  Yes (please enclose)  No

Yield: \_\_\_\_\_

**14. WATER QUALITY**

Chemical Analysis  Yes  No Bacterial Analysis  Yes  No

Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**

Yes  No

Installed from 8 ft. to 20 ft.

Effective size #2 SILICA Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**  Yes  No

Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_

Depth: From 0.5' ft. to 6 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:**

50 ft. SW direction

Type DIESEL

Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed

Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_

H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm

TYPE:  Submersible  Jet (shallow)  Turbine

Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER: MICHAEL SMALL**

CERT. NO.: 1443

Address: (Print) 822 RED LIGHTHOUSE RD.

Level:  A  B  C  D (circle one)

WILMINGTON, NC 28412

Telephone No.: 910-793-0799

Fax No.: \_\_\_\_\_

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under

my direction and this report is true to the best of my knowledge and belief.

Signed: Michael Small  
 Well Driller

Date: 8-9-04

If D Level Driller, provide supervising driller's name:

# STS

## LOG OF BORING MW-17

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

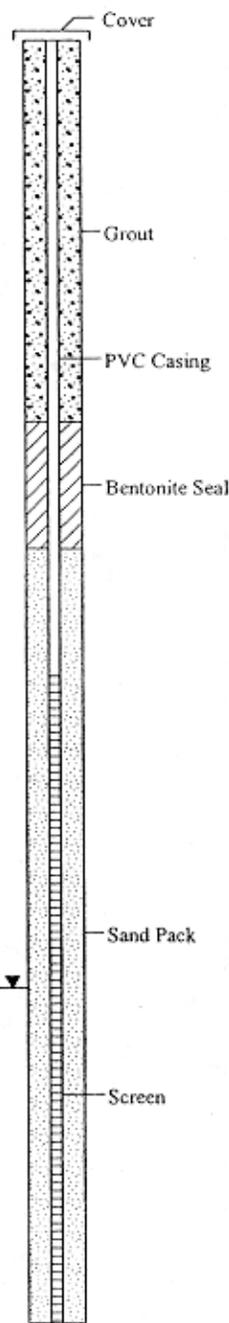
Date Started : 7/22/04  
Date Completed : 7/22/04  
Drilling Method : Hollow Stem Auger  
Driller : Mike Small  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : John G. Cargill, IV

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 162.31	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 162.31
0	162			Concrete			0	162
1	161	SP		Orange and tan fine to medium SAND.	1	0	1	161
2	160	CL		Mottled orange and gray CLAY.			2	160
3	159			Orange, tan and white fine to medium SAND.			3	159
4	158	SP			2	0	4	158
5	157						5	157
6	156			Light gray fine SANDY SILT.	3	0	6	156
7	155	SM					7	155
8	154				4	0	8	154
9	153			Gray SILT; Hard.			9	153
10	152						10	152
11	151	ML			5	NR	11	151
12	150						12	150
13	149						13	149
14	148			Gray and orange SILTY CLAY.	6	0	14	148
15	147						15	147
16	146	CL			7	NR	16	146
17	145						17	145
18	144						18	144
19	143	SC		Gray and orange CLAYEY fine to medium SAND.	8	341	19	143
20							20	

Well: MW-17  
Elev.: 162.10





**Water Well Record**  
**Bureau of Water**  
 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

MW-18

**1. WELL OWNER INFORMATION:**  
 Name: RYDER TRUCK RENTAL, INC.  
(last) (first)  
 Address: 3600 NW 82<sup>ND</sup> AVENUE  
 City: MIAMI State: FL Zip: 33166  
 Telephone: Work: 615-890-6229 Home:

**7. PERMIT NUMBER:**  
UST 07504 ; MWA# UMW-18323

**2. LOCATION OF WELL:** COUNTY: RICHLAND  
 Name: RYDER TRUCK RENTAL, INC.  
 Street Address: 945 IDLEWILD BLVD.  
 City: COLUMBIA Zip: 29201  
 Latitude: 33° 58' 3" Longitude: -81° 0' 30"

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**3. PUBLIC SYSTEM NAME:** PUBLIC SYSTEM NUMBER:

**9. WELL DEPTH (completed)** Date Started: 7/22/04  
20 ft. Date Completed: 7/22/04

**4. ABANDONMENT:**  Yes  No  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**10. CASING:**  Threaded  Welded  
 Diam.: 2"  
 Type:  PVC  Galvanized  
 Steel  Other  
0 in. to 10 ft. depth  
 \_\_\_\_\_ in. to \_\_\_\_\_ ft. depth  
 Height: Above  Below   
 Surface 0.3 ft.  
 Weight \_\_\_\_\_ lb./ft.  
 Drive Shoe?  Yes  No

**5. REMARKS:**  
WELL # MW-18  
BENTONITE SEAL 6-8'

**11. SCREEN:**  
 Type: PVC Diam.: 2"  
 Slot/Gauge: 0.010" Length: 10'  
 Set Between: 10 ft. and 20 ft.  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft.  
 Sieve Analysis  Yes (please enclose)  No  
 NOTE: MULTIPLE SCREENS  
 USE SECOND SHEET

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

**12. STATIC WATER LEVEL** 12.83 ft. below land surface after 24 hours  
**13. PUMPING LEVEL** Below Land Surface.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
ASPHALT ! GRAVEL	0.5	0.5
TAN FN-MED SAND	2.4	2.9
ORANGE FN-MED SAND	1.4	4.3
LT GRAY SILTY CLAY	0.7	5.0
MOTTLED ORANGE + GRAY SILTY CLAY - DENSE/HARD	12.6	17.6
BROWN ! ORANGE FN-MED SAND	0.9	18.4
GRAY FN SANDY CLAY	1.4	19.8
LT GRAY FN-MED SAND	0.2 +	20.0 +

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**  Yes  No  
 Installed from 8 ft. to 20 ft.  
 Effective size # 2 SILICA Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUDED?**  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other  
 Depth: From 0.5 ft. to 6 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** 60 ft. NE direction  
 Type DIESEL  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER:** MICHAEL SMALL CERT. NO.: 1443  
 Address: (Print) BZZ RED LIGHTHOUSE RD. Level:  A  B  C  D (circle one)  
WILMINGTON, NC 28412  
 Telephone No.: 910-793-0799 Fax No.: \_\_\_\_\_

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under my direction and this report is true to the best of my knowledge and belief.

\*Indicate Water Bearing Zones  
 (Use a 2nd sheet if needed)

Signed: Michael Small Date: 8-9-04  
 Well Driller

PRIVATE WELL SECTION

If D Level Driller, provide supervising driller's name:

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 AUG 11 2004

5. REMARKS:  
WELL # MW-18  
BENTONITE SEAL 6-8'

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

# STS

## LOG OF BORING MW-18

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

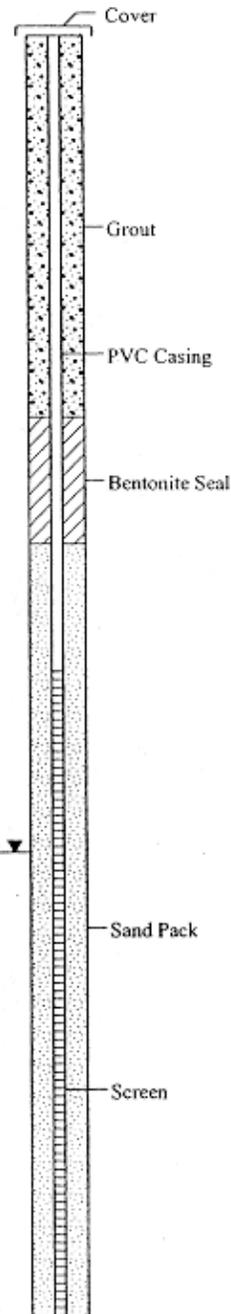
Date Started : 7/22/04  
Date Completed : 7/22/04  
Drilling Method : Hollow Stem Auger  
Driller : Mike Small  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : John G. Cargill, IV

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 160.42	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 160.42
0	160			Asphalt and gravel.			0	160
1	159	SP		Tan fine to medium SAND.	1	0	1	159
2	158						2	158
3	157	SP		Orange fine to medium SAND.	2	0	3	157
4	156						4	156
5	155			Light gray SILTY CLAY.			5	155
6	154			Mottled orange and gray SILTY CLAY. Hard.	3	0	6	154
7	153						7	153
8	152				4	0	8	152
9	151						9	151
10	150						10	150
11	149				5	2.6	11	149
12	148						12	148
13	147						13	147
14	146				6	0	14	146
15	145						15	145
16	144				7	6.7	16	144
17	143						17	143
18	142	SP		Brown and orange fine to medium SAND.			18	142
19	141			Gray fine SANDY CLAY.	8	2.2	19	141
20		SP					20	

Well: MW-18  
Elev.: 159.99





**Water Well Record**  
**Bureau of Water**  
 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

MW-19

**1. WELL OWNER INFORMATION:**  
 Name: RYDER TRUCK RENTAL, INC.  
(last) (first)  
 Address: 3600 NW 82<sup>ND</sup> AVE.  
 City: MIAMI State: FL Zip: 33166  
 Telephone: Work: 615-890-6229 Home: \_\_\_\_\_

**7. PERMIT NUMBER:**  
UST 07504 ; MWA# UMW - 10323

**2. LOCATION OF WELL:** COUNTY: RICHLAND  
 Name: RYDER TRUCK RENTAL, INC.  
 Street Address: 945 IDLEWILD BLVD.  
 City: COLUMBIA Zip: 29201  
 Latitude: 33° 58' 3" Longitude: -81° 0' 30"

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**3. PUBLIC SYSTEM NAME:** \_\_\_\_\_ **PUBLIC SYSTEM NUMBER:** \_\_\_\_\_

**9. WELL DEPTH (completed)** \_\_\_\_\_ ft. Date Started: 7/22/04  
 \_\_\_\_\_ ft. Date Completed: 7/22/04

**4. ABANDONMENT:**  Yes  No  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**10. CASING:**  Threaded  Welded  
 Diam.: 2" Height: Above  Below   
 Type:  PVC  Galvanized Surface: 0.3 ft.  
 Steel  Other Weight: \_\_\_\_\_ lb./ft.  
0 in. to 10 ft. depth Drive Shoe?  Yes  No  
 \_\_\_\_\_ in. to \_\_\_\_\_ ft. depth

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
ASPHALT / GRAVEL	.5	.5
LT BROWN / TAN FN-MED SAND	5.7	6.2
WHITE/TAN FN-MED SAND	1.9	8.1
GRAY SILTY FN-MED SAND	4.4	12.5
GRAY + ORANGE SILTY CLAY - Dense	5.7	18.2
LT GRAY CLAYEY FN-MED SAND	0.3	18.5
Mottled orange + gray SILTY FN-MED SAND	1.5	20.0
TAN/BUFF FN-CSE SAND	2.7	22.7
ORANGE + BROWN FN-MED SAND w/ TRACE SILT	0.3 +	23 +

**11. SCREEN:**  
 Type: PVC Diam.: 2"  
 Slot/Gauge: 0.010" Length: 10'  
 Set Between: 10 ft. and 20 ft. NOTE: MULTIPLE SCREENS  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET  
 Sieve Analysis  Yes (please enclose)  No

**12. STATIC WATER LEVEL** 12.48 ft. below land surface after 24 hours

**13. PUMPING LEVEL Below Land Surface.**  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**  Yes  No  
 Installed from 8 ft. to 20 ft.  
 Effective size #2 SILICA Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.5 ft. to 6 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** 130 ft. WNW direction  
 Type DIESEL  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER:** MICHAEL SMALL CERT. NO.: 1443  
 Address: (Print) BZZ RED LIGHTHOUSE RD. Level: A  B  C  D (circle one)  
WILMINGTON, NC 28412  
 Telephone No.: 910-793-0799 Fax No.: \_\_\_\_\_

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under my direction and this report is true to the best of my knowledge and belief.

**5. REMARKS:**  
WELL # MW-19  
BENTONITE SEAL 6-8'

Signed: Michael Small Date: 8-9-04  
 Well Driller

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

If D Level Driller, provide supervising driller's name: \_\_\_\_\_

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 AUG 11 2004  
 PRIVATE WELL SECTION

# STS

## LOG OF BORING MW-19

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

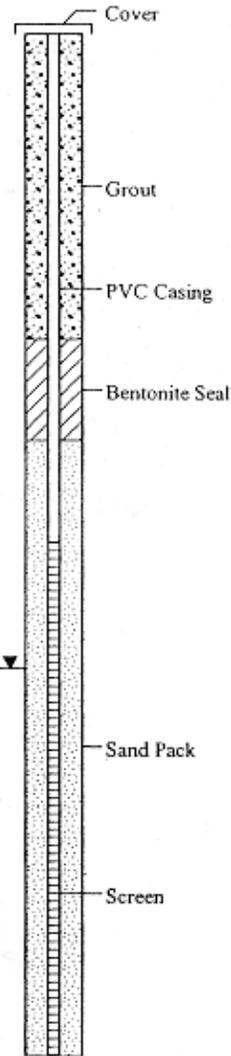
Date Started : 7/22/04  
Date Completed : 7/22/04  
Drilling Method : Hollow Stem Auger  
Driller : Mike Small  
Sampling Method : Continuous Core

Borehole Depth : 23 feet  
Geologist : John G. Cargill, IV

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 159.24	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 159.24
0	159			Asphalt and gravel.			0	159
1	158			Light brown and tan fine to medium SAND.	1	0	1	158
2	157						2	157
3	156	SP			2	0.6	3	156
4	155						4	155
5	154						5	154
6	153			White and tan fine to medium SAND.	3	0	6	153
7	152	SP					7	152
8	151			Gray SILTY fine to medium SAND with traces of clay.	4	0	8	151
9	150						9	150
10	149	SM					10	149
11	148				5	1.7	11	148
12	147						12	147
13	146			Gray and orange SILTY CLAY. Hard.	6	0	13	146
14	145						14	145
15	144						15	144
16	143				7	NR	16	143
17	142						17	142
18	141	SC		Light gray CLAYEY fine to medium SAND.	8	0.6	18	141
19	140	SM		Mottled orange and gray SILTY fine to medium SAND.			19	140
20	139			Buff fine to coarse SAND.			20	139
21	138	SP			9	5.2	21	138
22	137						22	137
23	136	SP		Orange and brown fine to medium SAND with trace silt.			23	136
24	135						24	135
25							25	

Well: MW-19  
Elev.: 158.92







# LOG OF BORING MW-20

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

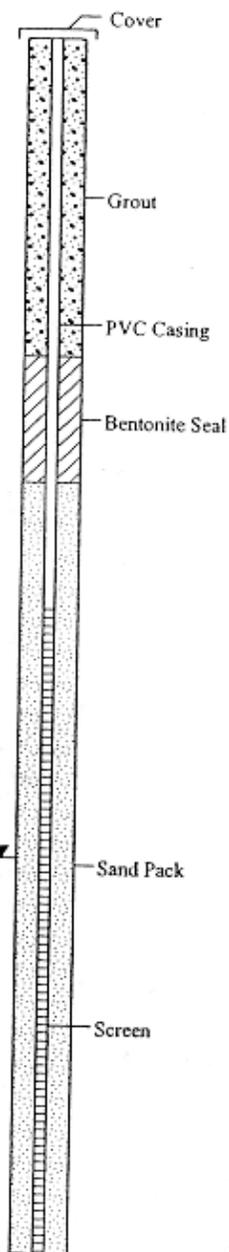
Date Started : 7/21/04  
Date Completed : 7/21/04  
Drilling Method : Hollow Stem Auger  
Driller : Mike Small  
Sampling Method : Continuous Core

Borehole Depth : 15 feet  
Geologist : John G. Cargill, IV

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 157.70	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 157.70
0				Grass and topsoil			0	
1	157	SM		Brown SILTY SAND.	1	0	1	157
2	156			Light brown fine to medium SAND.			2	156
3	155	SP					3	155
4	154				2	0	4	154
5	153			Dark brown CLAYEY SAND.			5	153
6	152	SC			3	0	6	152
7	151			Gray and orange CLAY with traces of fine sand.			7	151
8	150	CL					8	150
9	149			Tan, gray, orange and red CLAYEY SAND.	4	0	9	149
10	148						10	148
11	147				5	NR	11	147
12	146						12	146
13	145						13	145
14	144	SC			6	1.7	14	144
15	143						15	143
16	142						16	142
17	141						17	141
18	140						18	140
19	139						19	139
20	138						20	138

Well: MW-20  
Elev.: 157.34





**Water Well Record  
Bureau of Water**

MW-21

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**

Name: RYDER TRUCK RENTAL, INC.  
(last) (first)  
 Address: 3600 NW 82<sup>ND</sup> AVE.  
 City: MIAMI State: FL Zip: 33166  
 Telephone: Work: 615-890-6229 Home:

**2. LOCATION OF WELL:**

COUNTY: RICHLAND

Name: RYDER TRUCK RENTAL, INC.  
 Street Address: 945 IDLEWILD BLVD.  
 City: COLUMBIA Zip: 29201  
 Latitude: 33° 58' 3" Longitude: -81° 0' 30"

**3. PUBLIC SYSTEM NAME:**

**PUBLIC SYSTEM NUMBER:**

**4. ABANDONMENT:**

Yes  No

Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
ASPHALT   GRAVEL	0.5	0.5
BROWN + GRAY SILTY FN-MED SAND W/ TRACE CLAY	4.0	4.5
Lt GRAY SILT - DENSE/HARD	0.5	5.0
Lt GRAY + ORANGE SILT W/ TRACE FN SAND - DENSE/HARD	5.0	10.0
GRAY   TAN SILT	4.7	14.7
GRAY   ORANGE MOTTLED SILT	3.2	17.9
WHITE + GRAY FN-MED SAND W/ TRACE SILT	2.1+	20+

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TANK FILLING **RECEIVED**

AUG 11 2004

\*Indicate Water Bearing Zones  
(Use a 2nd sheet if needed)

PRIVATE WELL SECTION

**5. REMARKS:**

WELL # MW-21  
BENTONITE SEAL 6-8'

**6. TYPE:**

- Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

**7. PERMIT NUMBER:**

UST 07504 ; MWA # UMW-18323

**8. USE:**

- Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**9. WELL DEPTH (completed)**

20 ft.

Date Started: 7/21/04

Date Completed: 7/21/04

**10. CASING:**

Threaded  Welded  
 Diam.: 2"  
 Type:  PVC  Galvanized  
 Steel  Other  
0 in. to 10 ft. depth  
\_\_\_\_\_ in. to \_\_\_\_\_ ft. depth

Height: Above  Below   
 Surface 0.3 ft.  
 Weight \_\_\_\_\_ lb./ft.  
 Drive Shoe?  Yes  No

**11. SCREEN:**

Type: PVC Diam.: 2"  
 Slot/Gauge: 0.010" Length: 10'  
 Set Between: 10 ft. and 20 ft.  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft.  
 Sieve Analysis  Yes (please enclose)  No

NOTE: MULTIPLE SCREENS  
USE SECOND SHEET

**12. STATIC WATER LEVEL**

12.64 ft. below land surface after 24 hours

**13. PUMPING LEVEL** Below Land Surface.

\_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**

Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**

Yes  No  
 Installed from 9 ft. to 20 ft.  
 Effective size #2 SILICA Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**

Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.5 ft. to 6 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:**

180 ft. SSE direction  
 Type DIESEL  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:**

Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER: MICHAEL SMALL**

CERT. NO.: 1443

Address: (Print)  
822 RED LIGHTHOUSE RD.  
WILMINGTON, NC 28412  
 Telephone No.: 910-793-0799

Level: A B C D (circle one)

Fax No.:

**20. WATER WELL DRILLER'S CERTIFICATION:**

This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Michael Small  
 Well Driller

Date: 8-9-04

If D Level Driller, provide supervising driller's name:



# LOG OF BORING MW-21

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

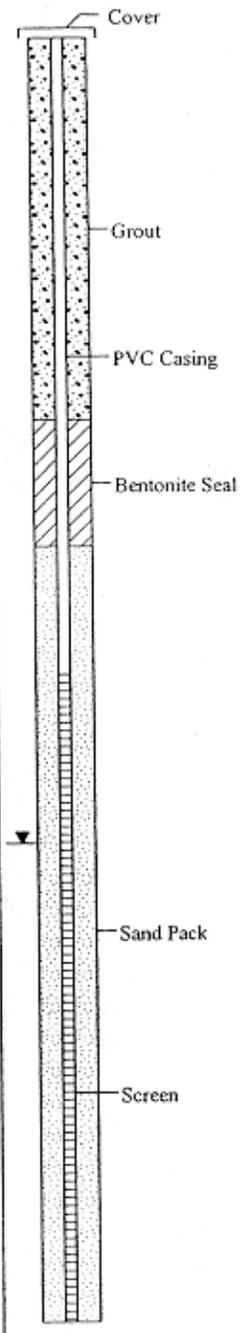
Date Started : 7/21/04  
Date Completed : 7/21/04  
Drilling Method : Hollow Stem Auger  
Driller : Mike Small  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : John G. Cargill, IV

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 159.39	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 159.39
0	159			Asphalt and gravel.			0	159
1	158			Brown and gray SILTY fine to medium SAND with trace clay.	1	0	1	158
2	157	SM					2	157
3	156				2	0	3	156
4	155						4	155
5	154	ML		Light gray SILT. Hard.			5	154
6	153			Light gray and orange SILT with trace fine to medium SAND.	3	0	6	153
7	152	ML					7	152
8	151				4	0	8	151
9	150						9	150
10	149			Gray and tan SILT.			10	149
11	148				5	8	11	148
12	147	ML					12	147
13	146				6	13.2	13	146
14	145						14	145
15	144			Mottled gray and orange SILT.			15	144
16	143	ML			7	3.2	16	143
17	142						17	142
18	141			White and gray fine to medium SAND with trace SILT.			18	141
19	140	SP			8	3.2	19	140
20							20	

Well: MW-21  
Elev.: 159.03





**Water Well Record**  
**Bureau of Water**  
 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**  
 Name: Ryder Truck Rental, Inc.  
(last) (first)  
 Address: 3600 NW 82nd Ave.  
 City: Miami State: FL Zip: 33166-0000  
 Telephone: Work: (615) 890-6229 Home: \_\_\_\_\_

**2. LOCATION OF WELL:** COUNTY: Richland  
 Name: Ryder Truck Rental, Inc.  
 Street Address: 945 Idlewild Blvd.  
 City: Columbia, SC Zip: 29201-0000  
 Latitude: N33.57,866 Longitude: W81.00,647

**3. PUBLIC SYSTEM NAME:** \_\_\_\_\_ **PUBLIC SYSTEM NUMBER:** \_\_\_\_\_

**4. ABANDONMENT:**  Yes  No  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Asphaltic Concrete	0'	0.3'
Coarse Aggregate Base Course	0.3'	1.7'
Yellow Slightly Clayey-Fine to Medium Sand (P) mixed with Asphalt Debris 4" to 12"	1.7'	4.6'
Two-Orange Mottled slightly Clayey Fine to Medium Sand (P) mixed with Asphalt Debris & Gravel	4.6'	9.1'
White-Grey Silty-Medium to Fine Sand (DPT Sample Refused due to Debris)	9.1'	10'
DPT Sample Collected & Retention of Sample Below 10' Prohibited Due to Debris in PDI		
Whit-Grey Silty-Medium to Fine Sand*	10'	17'
Grey-Silty-Clay Interbedded with Silty-Medium to Fine Sand Lenses*	17'	22'
White Silty-Coarse to Medium Sand/Sandy-Silt*	22'	25'

\*Indicate Water Bearing Zones  
 (Use a 2nd sheet if needed)

**5. REMARKS:**  
 Well ID: MW-25  
Bentonite Seal 5' to 7'  
HSA Drilling Type

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

**7. PERMIT NUMBER:** 07504 Approval #UMW-24839

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**9. WELL DEPTH (completed)** \_\_\_\_\_ **Date Started:** 1/30/13  
25 ft. **Date Completed:** 1/31/13

**10. CASING:**  Threaded  Welded  
 Diam.: 2" Height: Above /Below ✓ \_\_\_\_\_ ft.  
 Type:  PVC  Galvanized Surface 0.2 \_\_\_\_\_ ft.  
 Steel  Other Weight \_\_\_\_\_ lb./ft.  
0.2 in. to 10 ft. depth Drive Shoe?  Yes  No  
 \_\_\_\_\_ in. to \_\_\_\_\_ ft. depth

**11. SCREEN:**  
 Type: PVC Diam.: 2"  
 Slot/Gauge: 0.035" Length: 15'  
 Set Between: 10 ft. and 25 ft. NOTE: MULTIPLE SCREENS  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET  
 Sieve Analysis  Yes (please enclose)  No

**12. STATIC WATER LEVEL:** 15.98' ft. below land surface after 24 hours

**13. PUMPING LEVEL:** Below Land Surface.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**  Yes  No  
 Installed from 7 ft. to 25 ft.  
 Effective size #2 Gravel Pack Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.83 ft. to 5 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** 100 ft. SE direction  
 Type Dioxin/OC Mixtures  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER:** Stone Cribbs **CERT. NO.:** 1359 SC  
 Address: (Print) \_\_\_\_\_ **Level:** A B C D (circle one)  
 Stone Well & Supply, Inc.  
 6942 Douglas Dr.  
 Milledgeville, SC 29574  
 Telephone No.: 803-464-4230 Fax No.: 803-464-4230

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Stone Cribbs Date: 3-15-13  
 Well Driller

If D Level Driller, provide supervising driller's name:

**STS**

**LOG OF BORING MW-25**

(Page 1 of 1)

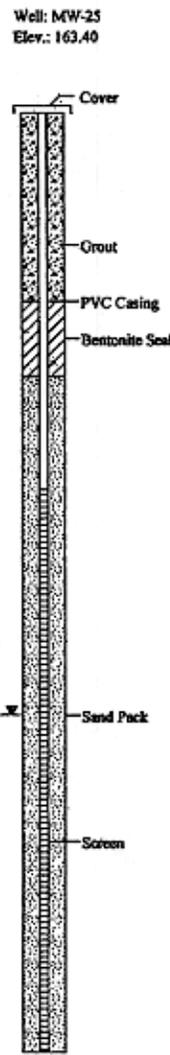
Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

Date Started : 1/30/13  
Date Completed : 1/31/13  
Drilling Method : Follow Stem Auger  
Driller : Shana Cribbs SC #1359  
Sampling Method : Continuous Core

Borehole Depth : 25 feet  
Geologist : James Wallace

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 163.61	USCS	GRAPHIC	DESCRIPTION	Samples	FTD (ppm)	Depth in Feet	Surf. Elev. 163.61
0	163			Asphalt and gravel.			0	163
1	162	GW		Aggregate Base Course.	1	0	1	162
2	161			Yellow fine to medium SAND Fill with trace clay mixed with gravel & asphalt debris.			2	161
3	160				2	9.3	3	160
4	159	SC					4	159
5	158						5	158
6	157				3	9.0	6	157
7	156						7	156
8	155						8	155
9	154			Light gray and orange grading to tan-brown silty-fine to medium SAND.	4	8.6	9	154
10	153						10	153
11	152						11	152
12	151	SM					12	151
13	150				5	8	13	150
14	149						14	149
15	148						15	148
16	147						16	147
17	146			Gray and tan silty-CLAY.			17	146
18	145	CL					18	145
19	144				6	0	19	144
20	143						20	143
21	142						21	142
22	141			White and gray silty-fine to medium SAND.			22	141
23	140	SP/SM			7	0	23	140
24	139						24	139
25							25	



03-28-2013 1:26:03 PM C:\Users\jwallace\Documents\1301\_060419723\_BOR



**STS**

**LOG OF BORING MW-26**

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Milewild Boulevard  
Columbia, South Carolina

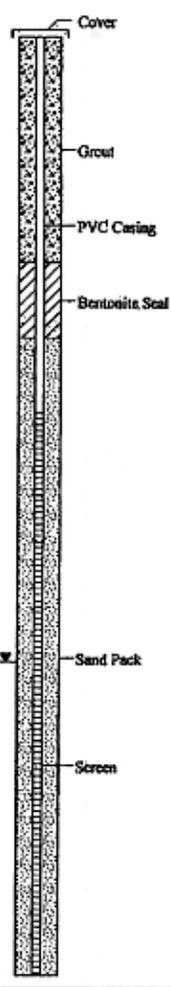
Date Started : 1/30/13  
Date Completed : 1/31/13  
Drilling Method : Hollow Stem Auger  
Driller : Shane Cribbs SC #1339  
Sampling Method : Continuous Core

Borehole Depth : 25 feet  
Geologist : James Wallace

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 162.75	USCS	GRAPHIC	DESCRIPTION	Samples	FTD (ppm)	Depth in Feet	Surf. Elev. 162.75
0		CONCRETE		Reinforced Concrete.	1	0	0	
1	162	GW		Aggregate Base Course.	2	0	1	162
2	161			Yellow fine to medium SAND Fill with trace clay mixed with gravel & asphalt debris.			2	161
3	160						3	160
4	159						4	159
5	158						5	158
6	157						6	157
7	156	SC			3	0	7	156
8	155						8	155
9	154						9	154
10	153						10	153
11	152						11	152
12	151						12	151
13	150						13	150
14	149	SM		Light gray silty-fine to medium SAND.	4	0	14	149
15	148			Red-Gray mottled fine to medium sandy-silty-CLAY.			15	148
16	147	CL			5	0	16	147
17	146						17	146
18	145						18	145
19	144			Gray silty-fine to medium SAND/sandy-Silt.			19	144
20	143	SP/SM			6	0	20	143
21	142						21	142
22	141	CL		Orange-gray mottled silty-CLAY.			22	141
23	140						23	140
24	139	SM		White silty-fine to medium SAND/sandy-SILT	7	0	24	139
25	138						25	138

Well: MW-26  
Elev.: 162.58



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**STS**

**LOG OF BORING MW-27**

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

Date Started : 1/30/13  
Date Completed : 1/31/13  
Drilling Method : Hollow Stem Auger  
Driller : Shane Cribbe SC #1359  
Sampling Method : Continuous Core

Borehole Depth : 25 feet  
Geologist : James Wallace

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 162.73	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 162.73
0		CO	CONCRETE	Reinforced Concrete.	1	0	0	
1	162	GW		Aggregate Base Course.	2	0	1	162
2	161			Yellow fine to medium SAND FILL with trace clay mixed with gravel & asphalt debris.	3	0	2	161
3	160						3	160
4	159						4	159
5	158				4	8.2	5	158
6	157			6			157	
7	156			7			156	
8	155	SC		8			155	
9	154				5	21.1	9	154
10	153			10			153	
11	152			11			152	
12	151				6	573.3	12	151
13	150			13			150	
14	149	SM		Grey silty-fine to medium SAND saturated (Diesel Odor).	6	573.3	14	149
15	148			Red-Gray mottled fine sandy-silty-CLAY with light blue streaking (Degraded Diesel Odor).	7	373.3	15	148
16	147	CL					16	147
17	146				8	952.7	17	146
18	145			18			145	
19	144			Light gray silty-fine to medium SAND (Strong Diesel Odor).	9	952.7	19	144
20	143						20	143
21	142	SP/SM			8	952.7	21	142
22	141			Orange-Gray mottled silty-CLAY.	9	952.7	22	141
23	140	CL					23	140
24	139	SM		White silty-fine to medium SAND/sandy-SILT.	10	952.7	24	139
25	138						25	138

Well: MW-27  
Elev.: 162.60



01-28-2013 1:58:43 PM 151.08040972.MXD





# LOG OF BORING MW-28

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

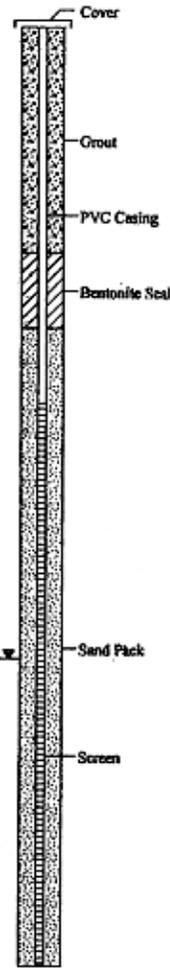
Date Started : 1/09/13  
Date Completed : 1/31/13  
Drilling Method : Hollow Stem Auger  
Driller : Shane Cribbs SC #1359  
Sampling Method : Continuous Core

Borehole Depth : 25 feet  
Geologist : James Wallace

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 162.70	USCS	GRAPHIC	DESCRIPTION	Samples	PIE (ppm)	Depth in Feet	Surf. Elev. 162.70
0		CONCRETE		Reinforced Concrete.	1	0	0	
1	162	GW		Aggregate Base Course.	2	0	1	162
2	161			Yellow fine to medium SAND FILL. with trace clay mixed with gravel & asphalt debris.			2	161
3	160	SC		Orange-tan medium to fine SAND FILL mixed with silty-clay.	3	0	3	160
4	159						4	159
5	158						5	158
6	157						6	157
7	156						7	156
8	155	SP		Red-Gray mottled fine sandy-silty-CLAY.	4	9.3	8	155
9	154						9	154
10	153						10	153
11	152						11	152
12	151	SC		Red-grey mottled silty-CLAY (moist).	5	11.5	12	151
13	150						13	150
14	149	CL		Tan fine to medium SAND.	6	165.8	14	149
15	148	SM		Orange-brown silty-fine to medium SAND.	7	165.8	15	148
16	147	CL		Red-grey mottled silty-CLAY (moist).	9	83.5	16	147
17	146						17	146
18	145	SM		Tan-grey silty-CLAY grading to yellow-orange silty-fine to medium SAND.	10	83.5	18	145
19	144						19	144
20	143	CL/SM		White with orange streaking silty-medium to coarse SAND with occasional angular pebbles.	11	8.2	20	143
21	142						21	142
22	141						22	141
23	140	SP			12	8.2	23	140
24	139						24	139
25	138						25	138

Well: MW-28  
Elev.: 162.60



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**Water Well Record**  
**Bureau of Water**  
 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

<b>1. WELL OWNER INFORMATION:</b> Name: <u>Ryder Truck Rental, Inc.</u> (last) (first) Address: <u>3600 NW 82nd Ave.</u> City: <u>Miami</u> State: <u>FL</u> Zip: <u>33166-0000</u> Telephone: Work: <u>(615) 890-6229</u> Home: _____			<b>7. PERMIT NUMBER:</b> <u>07504 Approval #UMW-24839</u>																																												
<b>2. LOCATION OF WELL:</b> COUNTY: <u>Richland</u> Name: <u>Ryder Truck Rental, Inc.</u> Street Address: <u>945 Idlewild Blvd.</u> City: <u>Columbia, SC</u> Zip: <u>29201-0000</u> Latitude: <u>N33.57.855'</u> Longitude: <u>W81.00.642'</u>			<b>8. USE:</b> <input type="checkbox"/> Residential <input type="checkbox"/> Public Supply <input type="checkbox"/> Process <input type="checkbox"/> Irrigation <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Emergency <input type="checkbox"/> Test Well <input checked="" type="checkbox"/> Monitor Well <input type="checkbox"/> Replacement																																												
<b>3. PUBLIC SYSTEM NAME:</b> _____ <b>PUBLIC SYSTEM NUMBER:</b> _____			<b>9. WELL DEPTH (completed)</b> Date Started: <u>1/29/13</u> <u>25</u> ft. Date Completed: <u>1/31/13</u>																																												
<b>4. ABANDONMENT:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Grouted Depth: from _____ ft. to _____ ft.			<b>10. CASING:</b> <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded Diam.: <u>2"</u> Type: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Galvanized <input type="checkbox"/> Steel <input type="checkbox"/> Other _____ <u>0.2</u> in. to <u>10</u> ft. depth in. to _____ ft. depth																																												
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Formation Description</th> <th style="width: 15%;">*Thickness of Stratum</th> <th style="width: 15%;">Depth to Bottom of Stratum</th> </tr> </thead> <tbody> <tr><td>Concrete with Reinforcing</td><td>0'</td><td>0.83'</td></tr> <tr><td>Coarse Aggregate Base Course</td><td>0.83'</td><td>1.5'</td></tr> <tr><td>Yellow Slightly Clayey-Fine to Medium Sand Fill</td><td>1.5'</td><td>4.6'</td></tr> <tr><td>Orange-Tan Medium to Fine Sand cased with Gray Clay Liner</td><td>4.6'</td><td>11'</td></tr> <tr><td>Red-Gray Mottled Fine Sandy-Silty-Clay</td><td>11'</td><td>13'</td></tr> <tr><td>Red-Gray Mottled Silty-clay (Moist)</td><td>13'</td><td>14.3'</td></tr> <tr><td>Tan-Fine to Medium Sand</td><td>14.3'</td><td>14.8'</td></tr> <tr><td>Orange-Brown Silty-Fine to Medium Sand</td><td>14.8'</td><td>15'</td></tr> <tr><td>Red-Gray Mottled Silty-Clay (Moist)*</td><td>15'</td><td>17.3'</td></tr> <tr><td>Tan-Gray Silty-Fine to Medium Sand*</td><td>17.3'</td><td>18'</td></tr> <tr><td>Red-Gray Mottled Silty-Clay grading to Yellow-Orange Silty-Fine to Medium Sand*</td><td>18'</td><td>21.5'</td></tr> <tr><td>White with Orange Strating Silty-Medium to Coarse Sand with Occasional Angular Gravel*</td><td>21.5'</td><td>25'</td></tr> <tr><td>*Indicate Water Bearing Zones (Use a 2nd sheet if needed)</td><td></td><td></td></tr> </tbody> </table>			Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum	Concrete with Reinforcing	0'	0.83'	Coarse Aggregate Base Course	0.83'	1.5'	Yellow Slightly Clayey-Fine to Medium Sand Fill	1.5'	4.6'	Orange-Tan Medium to Fine Sand cased with Gray Clay Liner	4.6'	11'	Red-Gray Mottled Fine Sandy-Silty-Clay	11'	13'	Red-Gray Mottled Silty-clay (Moist)	13'	14.3'	Tan-Fine to Medium Sand	14.3'	14.8'	Orange-Brown Silty-Fine to Medium Sand	14.8'	15'	Red-Gray Mottled Silty-Clay (Moist)*	15'	17.3'	Tan-Gray Silty-Fine to Medium Sand*	17.3'	18'	Red-Gray Mottled Silty-Clay grading to Yellow-Orange Silty-Fine to Medium Sand*	18'	21.5'	White with Orange Strating Silty-Medium to Coarse Sand with Occasional Angular Gravel*	21.5'	25'	*Indicate Water Bearing Zones (Use a 2nd sheet if needed)			<b>11. SCREEN:</b> Type: <u>PVC</u> Diam.: <u>2"</u> Size/Gauge: <u>0.035"</u> Length: <u>15'</u> Set Between: <u>10</u> ft. and <u>25</u> ft. ft. and _____ ft. <b>NOTE: MULTIPLE SCREENS USE SECOND SHEET</b> Sieve Analysis <input type="checkbox"/> Yes (please enclose) <input checked="" type="checkbox"/> No		
Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum																																													
Concrete with Reinforcing	0'	0.83'																																													
Coarse Aggregate Base Course	0.83'	1.5'																																													
Yellow Slightly Clayey-Fine to Medium Sand Fill	1.5'	4.6'																																													
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*Indicate Water Bearing Zones (Use a 2nd sheet if needed)																																															
<b>5. REMARKS:</b> Well ID: <u>MW-29</u> <u>Bentonite Seal 5' to 7'</u> <u>HSA Drilling Type</u>			<b>12. STATIC WATER LEVEL:</b> <u>16.91'</u> ft. below land surface after 24 hours <b>13. PUMPING LEVEL:</b> Below Land Surface _____ ft. after _____ hrs. Pumping _____ G.P.M. Pumping Test: <input type="checkbox"/> Yes (please enclose) <input checked="" type="checkbox"/> No Yield: _____																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>14. WATER QUALITY</b> Chemical Analysis <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No      Bacterial Analysis <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Please enclose lab results.																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>15. ARTIFICIAL FILTER (filter pack)</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Installed from <u>7</u> ft. to <u>25</u> ft. Effective size: <u>#30 Gritvol Pack</u> Uniformity Coefficient: _____																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>16. WELL GROUTED?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Neat Cement <input type="checkbox"/> Bentonite <input type="checkbox"/> Bentonite/Cement <input type="checkbox"/> Other _____ Depth: From <u>0.83'</u> ft. to <u>5</u> ft.																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:</b> <u>70</u> ft. <u>S</u> direction Type: <u>Disposal Mounds</u> Well Disinfected <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No      Type: _____      Amount: _____																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>18. PUMP:</b> Date Installed: _____ Not Installed <input checked="" type="checkbox"/> Mfg. Name: _____ Model No.: _____ H.P. _____ Volts _____ Length of drop pipe _____ ft. Capacity _____ gpm TYPE: <input type="checkbox"/> Submersible <input type="checkbox"/> Jet (shallow) <input type="checkbox"/> Turbine <input type="checkbox"/> Jet (deep) <input type="checkbox"/> Reciprocating <input type="checkbox"/> Centrifugal																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>19. WELL DRILLER:</b> <u>Shane Cribbs</u> CERT. NO.: <u>1359 SC</u> Address (Print): _____      Level: <u>A</u> B C D (circle one) <small>Cable Well &amp; Supply, Inc.          3823 Douglas Dr.          MGS, SC 29204</small> Telephone No.: <u>803-464-4330</u> Fax No.: _____																																												
<b>6. TYPE:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/> Dug <input type="checkbox"/> Air Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Cable tool <input checked="" type="checkbox"/> Other			<b>20. WATER WELL DRILLER'S CERTIFICATION:</b> This well was drilled under my direction and this report is true to the best of my knowledge and belief.  Signed: <u>[Signature]</u> Date: <u>3-15-13</u> If D Level Driller, provide supervising driller's name: _____																																												

**STS**

**LOG OF BORING MW-29**

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

Date Started : 1/29/13  
Date Completed : 1/31/13  
Drilling Method : Hollow Stem Auger  
Driller : Shane Corbis SC #1359  
Sampling Method : Continuous Core

Borehole Depth : 25 feet  
Geologist : James Wallace

Ryder Location Code : 0377

Depth in Feet	Surf. Elev. 162.73	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	Surf. Elev. 162.73
0		CO	Reinforced Concrete	Reinforced Concrete	1	0	0	
1	162	GW	Aggregate Base Course	Aggregate Base Course	2	0	1	162
2	161		Yellow fine to medium SAND FILL with trace clay mixed with gravel & asphalt debris.				2	161
3	160	SC			3	0	3	160
4	159		Orange-tan medium to fine SAND FILL mixed with silty-clay.				4	159
5	158						5	158
6	157						6	157
7	156						7	156
8	155	SP			4	0	8	155
9	154						9	154
10	153						10	153
11	152		Red-Grey mottled fine sandy-silty-CLAY.				11	152
12	151	SC			5	0	12	151
13	150		Red-grey mottled silty-CLAY (moist).				13	150
14	149	CL			6	0	14	149
15	148	SP			7	0	15	148
16	147	CL			9	0	16	147
17	146		Tan-grey silty-CLAY grading to yellow-orange silty-fine to medium SAND.				17	146
18	145	SM			10	0	18	145
19	144		White with orange streaking silty-medium to coarse SAND with occasional angular pebbles.				19	144
20	143	CL/SM			11	0	20	143
21	142						21	142
22	141						22	141
23	140	SP			12	0	23	140
24	139						24	139
25	138						25	138

Well: MW-29  
Elev.: 162.62



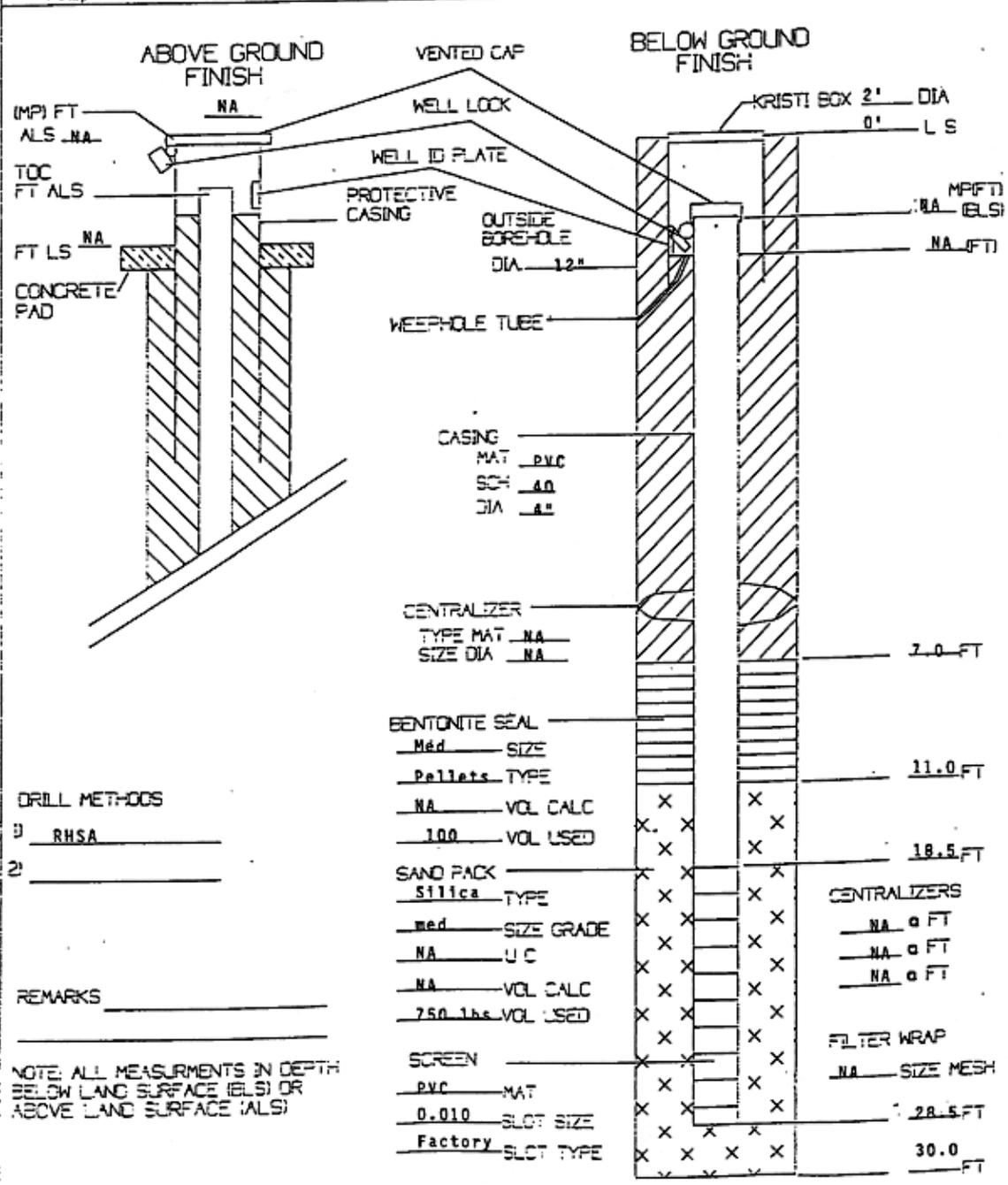
03-28-2013 8:58:53 AM C:\Users\jwallace\Documents\130106\LOG\MW29.LOG

ESE BIOSCIENCES, INC. RALEIGH & CHARLOTTE, NC	LITHOLOGIC LOG EDIO Form No. 324.2	Boring No: RW-1	Job No: CJ324-1
		Client: Ryder Truck Rental, Inc.	

Project Location: 945 Killwild Boulevard, Columbia State: South Carolina Total Depth: 30.0'  
 Logged By: DAH Soil Sample Method: Split spoon Date Started: 9/27/93 Date Complete: 9/27/93  
 Driller: Mike Trimble Drill Method: RHSA Equipment Type: CME 75 Boring Diameter: 12"  
 Soil Gas Sample Method: Headspace screening with FID in ppm Groundwater (temp): 0 hrs 19.0' 24 hrs 14.64'  
 Land Surface Elevation (LS): 160.94' Measuring Point Elev. (MP): 160.40' Remarks:

Elevation ft.	Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
				Asphalt/Bitgrade				
	5.0	410 159	049	Medium dense, tan to orange silty SAND	0	D	SM	
				Clay begins				
	10.0	44 38	050	Stiff, light gray slightly silty CLAY with occasional orange mottles	0	M	CL	
	15.0	45 37	051	Stiff, light gray to orange-mottled CLAY	0			
	20.0	43 34	052	Medium stiff, brown, silty sandy CLAY beside Loose, brown, clayey silty SAND	1.2	W	SM	
	25.0	46 75	053	Medium dense, brown slightly silty SAND Medium dense, light gray to white slightly clayey coarse SAND	34	W	SC	
	30.0	66 75	054	Medium dense, tan to white poorly sorted SAND to GRAVEL	13	W	SP	
				Boring terminated @ 30.0'				Set Type I recovery well @ 28.5'

ESE BIOSCIENCES, INC RALEIGH & CHARLOTTE, NC	WELL COMPLETION LOG TYPE 01	WELL # <u>RN-1</u> JOB # <u>C1324-1</u>
PROJECT LOCATION <u>Columbia</u>	COUNTY <u>Richland</u> STATE <u>SC</u>	CLIENT <u>Ryder Truck Rental</u>
LAND SURFACE ELEVATION <u>160.94'</u>	MEASURING POINT ELEV. (MPI) <u>160.40'</u>	LOG BY <u>EBH</u>
WELL DEV. METHOD <u>Pump</u>	VOLUME EVAC <u>35.0 gal</u> APPEARANCE <u>cloudy to clear</u>	DATE BEGAN <u>9/27/93</u> DATE COMPLETED <u>9/27/93</u>
		MONITORED FORMATION <u>Confined Middendorf</u>





**STS**

**LOG OF BORING RW-2**

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

Date Started : 7/26/03  
Date Completed : 7/26/03  
Drilling Method : Hollow Stem Auger  
Driller : Wallace-Lee Consultants, L.L.C.  
Sampling Method :

Borehole Depth : 15 feet  
Geologist : John G. Cargill, IV

Ryder Location Code : 0377

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	Well: RW-2 Elev.:	FID (ppm)	Depth in Feet
0			Asphalt and gravel.		Cover		0
1	SM		Light brown SILTY SAND.		GROUT		1
2			Orange and tan fine to medium SAND.		4" Casing		2
3					Bentonite Seal		3
4							4
5	SP						5
6							6
7							7
8							8
9	SP		White and light brown fine to medium SAND.				9
10			Dark brown fine to medium SAND				10
11	SP				#2 Filter Sand		11
12	SP		Gray and brown to buff fine to medium SAND. Free Product noticeable.		0.010 Slot Screen		12
13			Orange, light gray and red mottled CLAY. Petroleum odor.				13
14	CL						14
15							15

08-01-2005 C:\METRO\3127\Program\3101\_06RW2.BOR



**STS**

**LOG OF BORING RW-3**

(Page 1 of 1)

Ryder Truck Rental, Inc.  
945 Idlewild Boulevard  
Columbia, South Carolina

Date Started : 8/18/05  
Date Completed : 8/18/05  
Drilling Method : Hollow Stem Auger  
Driller : Wallace-Lee Consultants, L.L.C.  
Sampling Method :

Borehole Depth : 24.5 feet  
Geologist : Tom Whitehead

Ryder Location Code : 0377

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	Well: RW-3 Elev.:	FID (ppm)	Depth in Feet
0			Asphalt and gravel.		Cover		0
1	SM		Light brown SILTY SAND.				1
2			Orange and tan fine to medium SAND.				2
3							3
4							4
5	SP				Grout		5
6							6
7					4" Casing		7
8							8
9	SP		White and light brown fine to medium SAND.				9
10			Dark brown fine to medium SAND				10
11	SP						11
12					Bentonite Seal		12
13	SP		Gray and brown to buff fine to medium SAND. Free Product noticeable.				13
14			Orange, light gray and red mottled CLAY. Petroleum odor.				14
15							15
16	CL						16
17							17
18							18
19					#2 Filter Sand		19
20					0.010 Slot Screen		20
21			Brown SILTY SAND with trace clay.				21
22	SM						22
23							23
24							24
25							25
26							26
27							27
28							28
29							29
30							30

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# LOG OF BORING RW-4

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Ryder Truck Rental, Inc. 945 Idlewild Boulevard Columbia, South Carolina	Date Started : 9/8/05	Borehole Depth : 25 feet
	Date Completed : 9/8/05	Geologist : John G. Cargill, IV
Ryder Location Code : 0377	Drilling Method : Hollow Stem Auger	
	Driller : Tom Whitehead	
	Sampling Method : DPT	

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Well: RW-4 Elev.:	Depth in Feet
0			Asphalt and gravel.			Cover	0
1			Red and orange CLAYEY SAND.	1	111.6	Grout	1
2	SC						2
3			Orange fine to medium SAND.	2	71.8		3
4	SP		Orange and gray CLAY.				4
5			Orange fine to medium SAND.	3	43.6	4" Casing	5
6	SP					Bentonite Seal	6
7							7
8							8
9							9
10			Light gray SILTY fine to medium SAND. Petroleum odor.	4	140		10
11	SM						11
12							12
13							13
14			Light gray CLAYEY SAND. Greasy feel from approximately 13 to 15 feet. Possible product. Very heavy petroleum odor.	6	17,078	#2 Filter Sand	14
15						0.010 Slot Screen	15
16							16
17							17
18							18
19	SC		Increase in clay content.	8	2,533		19
20							20
21							21
22							22
23							23
24				10	2,081		24
25			Color change to white/yellow around 25 feet.				25

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