GSI ENVIRONMENTAL

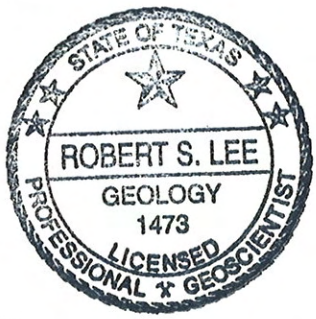
CERTIFICATION OF GEOSCIENCE

Preliminary Site Investigation Results, Amerson Tract

Charlie Burch Site, Spring, Texas
Rohm and Haas Texas, Inc., Deer Park, Texas
VCP Site No. 421

I, Robert S. Lee, a licensed geologist in the State of Texas, certify that I have reviewed the geosciences portions of the "Preliminary Site Investigation Results, Amerson Tract," issued 25 October 2006.

Robert S. Lee, P.G.
State of Texas
Registration No. 1473



October 25, 2006
GSI Job No. G-3040

GROUNDWATER
SERVICES, INC.

Mr. Ed Tokarski
Rohm and Haas
3100 State Road
Croydon, PA 19021

Re: Preliminary Site Investigation Results, Amerson Tract, Charlie Burch Site, Spring, Texas. VCP Site No. 421.

Dear Mr. Tokarski:

At the request of Rohm and Haas, Groundwater Services, Inc. (GSI), has conducted an investigation to define plume conditions on the Amerson tract located south of the Charlie Burch site in Spring, Texas. Results confirm that the 1,2-dichloroethane (1,2-DCA) plume is moving southward across the Amerson tract. This letter report provides a preliminary summary of the procedures and results of groundwater investigation activities conducted during September and October 2006.

WORKPLAN OBJECTIVES AND STRATEGY

Groundwater samples were collected during September and October 2006 in order to define the horizontal and vertical extent of the affected groundwater plume south of the 13-acre tract owned by Rohm and Haas (see Figure 1). The investigation involved two phases, as follows:

1. *Preliminary Plume Delineation:* Samples were collected from temporary sampling locations and analyzed for 1,2-DCA. Results from the temporary locations were used to select optimum locations for permanent monitoring wells.

2. *Monitoring Well Installation:* Permanent monitoring wells were installed at the assumed edges and the centerline of the plume as indicated by results of the preliminary plume delineation.

Additional information for each of these activities is provided below.

PRELIMINARY PLUME DELINEATION

Sample Collection

During the period September 11-18, 2006, a total of 27 groundwater samples from 13 temporary sampling locations (see Figure 1) were collected and analyzed for 1,2-DCA. In order to provide information about 1,2-DCA concentrations near the top and center of the uppermost groundwater bearing unit (i.e., Zone A), groundwater samples were

typically collected from the depth intervals of 39-43 ft below ground surface (bgs) and 51-55 ft bgs. In some cases, the depth interval of 39-43 ft bgs did not produce sufficient water to collect a sample. At some locations, based on results from the 51-55 ft bgs interval, an additional sample was collected from the deeper interval of 61-65 ft bgs.

Groundwater sampling was performed using a track-mounted 6610-DT Geoprobe™ rig, operated under the supervision of a Texas licensed water well driller, and overseen by a GSI project geologist. Groundwater samples were collected using a sampling device consisting of a 4-ft length of stainless steel well screen encased in a water-tight sheath, and deployed on the Geoprobe sampling rods. The sampler was driven to the required depth and the rods retracted to expose the screen to the formation. Groundwater samples were then collected using 0.25-in diameter Waterra inertial pumps consisting of a hand-activated foot-valve deployed on dedicated HDPE tubing lowered within the rods to the screen depth.

The sample screen and drill rods were removed from the ground and decontaminated using a pressurized steam cleaner after collection of each sample. At sample locations where more than one depth interval was targeted, a new borehole was completed within one foot of the original sampling location. Each borehole was plugged with granular bentonite following completion of sampling.

Sample Analysis

Groundwater samples were retained in laboratory supplied 40-ml vials pre-preserved with hydrochloric acid (HCl). The samples were not filtered prior to preservation. After collection, the samples were stored in a wet ice cooler and submitted under chain-of-custody control for laboratory analysis by Kap Technologies, Inc., The Woodlands, Texas. Groundwater samples were analyzed for 1,2-DCA by USEPA Method 8260B. Laboratory results for 1,2-DCA were compared to the Protective Concentration Level (PCL) of 0.005 mg/L published in the Texas Risk Reduction Program (TRRP) under 30 TAC 350 Subchapter D. Results are summarized on Table 1.

MONITORING WELL INSTALLATION

Well Installation

Based on the results from the temporary groundwater sampling points, seven locations were selected for installation of permanent monitoring wells. At each of the seven locations, a well was installed and screened over the shallow portion of the groundwater bearing unit. In addition, at each of two locations in the center of the plume near the northern and southern extremity of the Amerson tract, an additional well was installed and screened in the deeper portion of the groundwater bearing unit to provide information about the variation of plume concentration with depth. In addition, prior to installing these deeper wells, the boring was drilled to determine the depth of the underlying clay.

Well drilling and installation was performed using a drilling rig, operated under the supervision of a Texas licensed water well driller, and overseen by a GSI project scientist. Shallow wells were installed using the rig in hollow stem auger mode and deeper wells in rotary wash mode. Samples were collected continuously with depth to describe stratigraphy. Drill cuttings were retained in a hopper and transferred to a roll-off box located on the 13-ac tract owned by Rohm and Haas for subsequent disposal by Rohm and Haas.

Shallow wells (i.e., MW-CB-36, 37S, 38, 39, 40, 41S, and 42) were drilled to a depth of 50 ft bgs. Deep wells (i.e., MW-CB-37D and 41D) were drilled to a depth at which the underlying clay was encountered (i.e., 68 ft bgs and 69 ft bgs, respectively). Each well was constructed of flush-jointed PVC casing with a 10-ft length of No. 10 gauge (0.010 inch) slotted well screen. Wells were constructed of 2-inch diameter casing and screen except for wells MW-CB-37S and 41S which were constructed of 4-inch diameter PVC casing and screen. After drilling was complete, each well was developed by pumping and/or surging. Development fluids were transported to Rohm and Haas' groundwater remediation system located north of Richards Road for treatment and discharge. An above-grade well cover, concrete pad, and protective posts were installed to protect each well.

Severe storms in the Spring area on October 16, 2006, have flooded portions of the site and limited access in the vicinity of wells MW-CB-39, 40, 41S, and 42. For this reason, surveyors have been unable to survey well locations, ground surface elevations, and casing elevations. However, after the water levels have receded, surveying will be conducted by a surveyor registered in the state of Texas.

Sample Collection and Analysis

On October 11, 2006, shallow wells (i.e., MW-CB-36, 37S, 38, 39, 40, 41S, and 42) were purged to remove three casing volumes of groundwater using dedicated 5/8-inch diameter manual Waterra inertial pumps, each comprised of a foot valve attached to HDPE tubing. Samples were collected with the same dedicated Waterra pumps. Field indicators, which included pH, temperature, specific conductance, and turbidity, were recorded before purging, after purging, and after sample collection. Deep wells (i.e., MW-CB-37D and 41D) were sampled on October 20, 2006; therefore, results are not yet available.

Note that typical sampling procedures included measurement of static water level elevations prior to collection of groundwater samples. However, as mentioned above, flooded site conditions prevented access to all wells for gauging water levels. Currently, a site-wide static water level survey is planned for October 23, 2006.

Sample Analysis

Groundwater samples were retained in laboratory-supplied 40-ml vials pre-preserved with hydrochloric acid (HCl). The samples were not filtered prior to preservation. After collection, the samples were stored in a wet ice cooler and submitted under chain-of-custody control for laboratory analysis by Severn Trent Laboratories (STL), Houston,

October 25, 2006

Texas. As indicated on Table 2, the only VOC detected in any sample was 1,2-DCA. Comparison of laboratory results for 1,2-DCA to the PCL of 0.005 mg/L published under TRRP indicates that the monitoring wells are located near the lateral extent of the plume (see Figure 1).

Should you have any questions concerning this letter, please contact me at 713-522-6300. We look forward to continuing our work together.

Sincerely,

Elaine A. Higgins

Elaine A. Higgins, P.E.
Environmental Engineer

EAH/hs
Attachments.

Preliminary
GSI Job No. G-3040
Issued: 10/25/06

GROUNDWATER SERVICES, INC.

TABLE 1
RESULTS OF GROUNDWATER SAMPLING
TEMPORARY GROUNDWATER SAMPLING LOCATIONS

Amerson Tract, Charlie Burch Site, Spring, Texas
Rohm and Haas, Texas, Inc.

	1,2-DCA			
SAMPLE LOCATION:	CB-DP-A3	CB-DP-A1	CB-DP-A2	CB-DP-A4
DATE SAMPLED:	9/13/06	9/12-18/06	9/13/06	9/18/06
DATE ANALYZED:	9/14/06	9/12-18/06	9/13/06	9/18/06
SCREENED INTERVAL (ft bgs)	mg/L	mg/L	mg/L	mg/L
39-43	Dry	Dry	**0.0544**	**0.0061**
51-55	<0.0010	**0.0368**	**0.0014**	**0.0013**
61-65	NS	<0.0010	NS	NS

	1,2-DCA			
SAMPLE LOCATION:	CB-DP-B1	CB-DP-B2	CB-DP-B4	CB-DP-B6
DATE SAMPLED:	9/11/06	9/11/06	9/12-13/06	9/12-13/06
DATE ANALYZED:	9/11/06	9/11-12/06	9/12-13/06	9/12-13/06
SCREENED INTERVAL (ft bgs)	mg/L	mg/L	mg/L	mg/L
39-43	<0.0010	**0.019**	**0.0094**	**0.0034**
51-55	<0.0010	**0.0018**	**0.012**	<0.0010
61-65	NS	NS	**0.0028**	NS

	1,2-DCA				
SAMPLE LOCATION:	CB-DP-C1	CB-DP-C2	CB-DP-C4	CB-DP-C6	CB-DP-C8
DATE SAMPLED:	9/15/06	9/15/06	9/14/06	9/14-15/06	9/15/06
DATE ANALYZED:	9/16/06	9/16/06	9/14/06	9/14-16/06	9/16/06
SCREENED INTERVAL (ft bgs)	mg/L	mg/L	mg/L	mg/L	mg/L
36-40	NS	NS	NS	**0.0334**	NS
39-43	<0.0010	**0.0591**	**0.0726**	NS	<0.0010
51-55	<0.0010	**0.0072**	**0.0051**	**0.0132**	<0.0010
61-65	NS	NS	NS	<0.0010	NS

Notes:
1. Samples collected using direct push rig (Geoprobe) at locations shown on Figure 1.
2. Samples analyzed by Kap Technologies, The Woodlands, Texas, in accordance with U.S. EPA Method 8260B.
3. Dry = Groundwater not encountered at this location and depth.
   NS = Depth not sampled at this location.
   < = Analyte not detected at detection limit indicated.
   Values in **bold** indicate concentrations above detection limits.
   0.0368 Highlighted values indicate concentrations above Protective Concentration Level (PCL) for 1,2-DCA of 0.005 mg/L.

GROUNDWATER SERVICES, INC.

TABLE 2
RESULTS OF GROUNDWATER SAMPLING
MONITORING WELLS

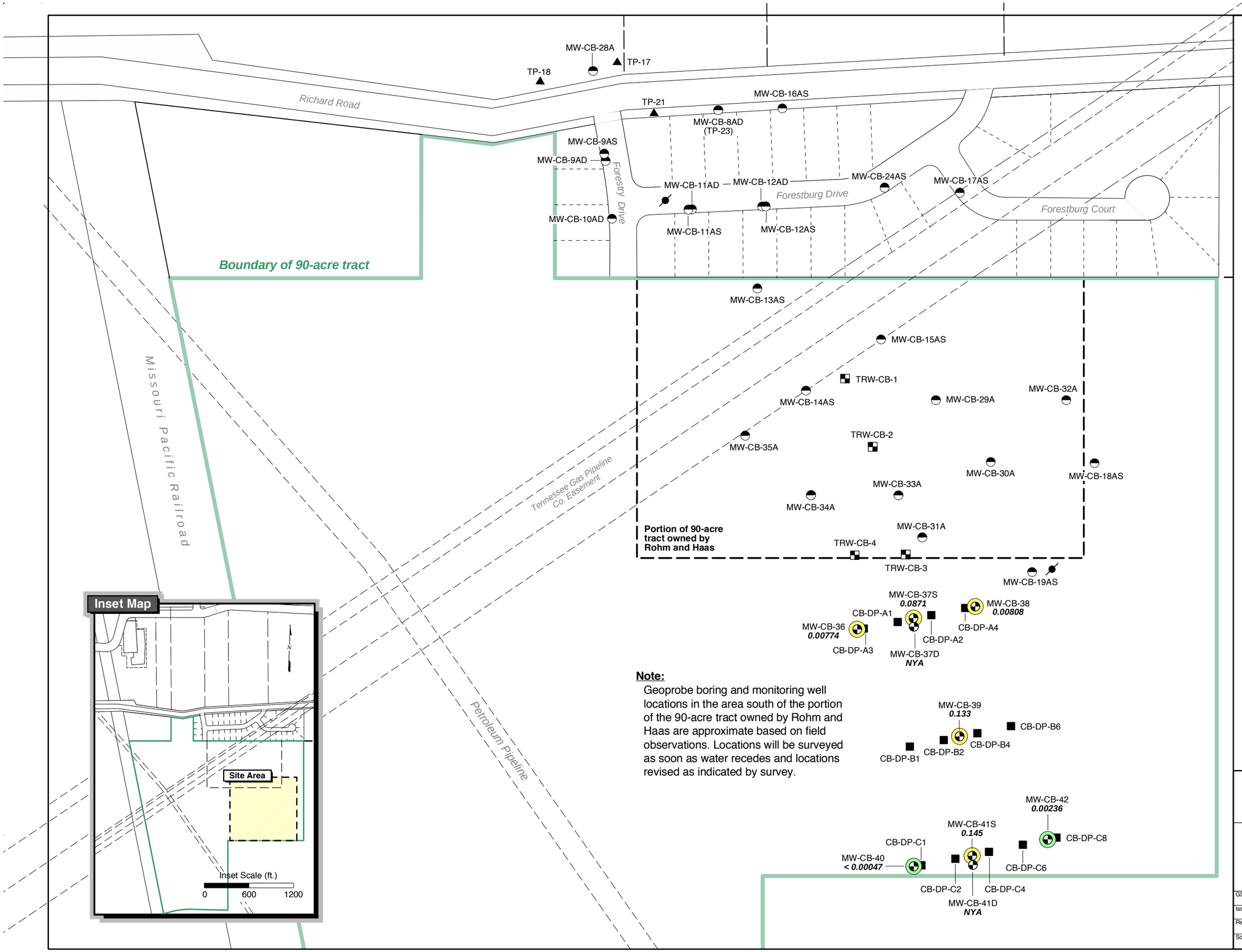
Amerson Tract, Charlie Burch Site, Spring, Texas
Rohm and Haas, Texas, Inc.

SAMPLE LOCATION:	MW-CB-36	MW-CB-37S	MW-CB-37D	MW-CB-38
DATE SAMPLED:	10/11/06	10/11/06		10/11/06
DATE ANALYZED:	10/13/06	10/13/06		10/13/06
SCREENED INTERVAL (ft bgs)	40-50	40-50	58-68	40-50
ANALYTE	mg/L	mg/L	mg/L	mg/L
1,2-Dichloroethane	**0.00774**	**0.0871**	NYA	**0.00808**

SAMPLE LOCATION:	MW-CB-39
DATE SAMPLED:	10/11/06
DATE ANALYZED:	10/13/06
SCREENED INTERVAL (ft bgs)	40-50
ANALYTE	mg/L
1,2-Dichloroethane	**0.133**

SAMPLE LOCATION:	MW-CB-40	MW-CB-41S	MW-CB-41D	MW-CB-42
DATE SAMPLED:	10/11/06	10/11/06		10/11/06
DATE ANALYZED:	10/13/06	10/16/06		10/16/06
SCREENED INTERVAL (ft bgs)	40-50	40-50	59-69	40-50
ANALYTE	mg/L	mg/L	mg/L	mg/L
1,2-Dichloroethane	<0.00047	**0.145**	NYA	**0.00236**

Notes:
1. Samples collected at locations shown on Figure 2.
2. Samples analyzed by STL, Inc., Houston, Texas, in accordance with U.S. EPA Method 8260B. Samples analyzed for full scan of volatile organic chemicals (VOCs); however, no VOCs detected except 1,2-dichloroethane.
3. < = Analyte not detected at detection limit indicated.
   NYA = Sampling data not yet available; wells sampled on 10/20/06.
   Values in **bold** indicate concentrations above detection limits.
   0.0368 Highlighted values indicate concentrations above Protective Concentration Level (PCL) for 1,2-DCA of 0.005 mg/L.



Note:

Geoprobe boring and monitoring well locations in the area south of the portion of the 90-acre tract owned by Rohm and Haas are approximate based on field observations. Locations will be surveyed as soon as water recedes and locations revised as indicated by survey.

LEGEND

- Monitoring well location (Zone A)
  AS = Screen less than 40 ft depth
  AD = Screen greater than 40 ft depth
- Temporary piezometer location (installed Aug-Sept 1997 and May-June 1998). All plugged and abandoned except TP-15 and TP-21
- Recovery well location
- Monitoring well location, installed 9/26-10/13/06
- 1,2-dichloroethane concentration less than Protective Concentration Level (PCL) of 0.005 mg/L on 10/11/06
- 1,2-dichloroethane concentration greater than Protective Concentration Level (PCL) of 0.005 mg/L on 10/11/06
- Abandoned oil well
- Temporary Geoprobe sampling location, installed 9/11-18/06
- ***0.0871*** 1,2-Dichloroethane concentration, mg/L, as sampled on 10/11/06
- ***NYA*** Results not yet available. Not sampled on 10/11/06. Sampling completed on 10/20/06.

SCALE (ft.)
0 100 200

PRELIMINARY

GROUNDWATER SERVICES, INC.

RESULTS OF GROUNDWATER SAMPLING: OCTOBER 2006

Charlie Burch Site, Spring, Texas
Rohm and Haas, Texas. Inc.

GSI Job No:	G-3040	Drawn By:	DLB
Issued:	10/25/06	Chk'd By:	EAH
Revised:	———	Appv'd By:	
Scale:	As Shown	**FIGURE 1**	