

# **WORK PLAN**

## **FOR THE COLLECTION OF OFF-SITE SOIL VAPOR SAMPLES**

**TNT RED STAR EXPRESS SITE  
97 INDUSTRIAL PARK DRIVE  
KIRKWOOD  
BROOME COUNTY, NEW YORK  
NYSDEC SITE #704028**

**Prepared for:**

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## **1.0 Introduction**

The purpose of this Work Plan is to provide the procedures needed for the collection of soil vapor samples to investigate the potential for volatile organic compounds ("VOCs") to be in the soil vapor at the Harris Assembly property ("the Site"). The Harris Assembly property is located next to the "Former TNT Red Star Express Site," which is on the New York State Department of Environmental Conservation's ("NYSDEC") Inactive Hazardous Waste Site registry as number #704028. Figure 1 shows the Harris Assembly property relative to the Former TNT Red Star Express Site.

Leader Professional Services, Inc. ("Leader") has prepared this Work Plan to document the scope of work, procedures, goals and reporting responsibilities of this project. Since many of the protocols (Quality Assurance and Control Project Plan, and Health and Safety Plan) to be used during the project have been approved for use on the Former TNT Red Star Express Site in the Work Plan for the "Collection of Soil Vapor and Ambient Air Samples at the Former TNT Red Star Express Site, dated March 2006," this project Work Plan will refer to this document for those accepted protocols.

## **2.0 Background**

A spill of approximately 100 gallons of Perchloroethylene ("Perc") resulted in the contamination of soil and groundwater beneath the Former TNT Red Star Express property. A remedial investigation conducted to delineate the extent of contamination also found an oil/water separator to be a second source of contaminants, which include: 1,1,1-Trichloroethane, Toluene, Ethylbenzene, and Xylene, to the groundwater.

Since the writing of the Record of Decision ("ROD"), the NYSDEC and the New York State Department of Health ("NYSDOH") have required YRC Worldwide Enterprise Services ("YRC"), a wholly-owned subsidiary of Yellow Roadway Corporation, which acquired USF Corporation, to investigate the potential for soil vapor to migrate from the source areas and the contaminated groundwater plume into the indoor air of occupied buildings. The investigation of the Former TNT Red Star Site occurred in March 2006. The March study found elevated levels of the contaminants of concern in the soil vapor along the property line, thus requiring YRC to investigate the off-site property operated by the Harris Assembly Group and owned by Kelbritish Realty LLC. The Harris Assembly Group is a manufacturer of wiring harnesses. The groundwater contaminant plume from the Site appears to be near or slightly beneath the northern limit of the building.

### **3.0 Scope of Work**

#### **3.1 Purpose**

The purpose of this sampling is to produce soil vapor data from the off-site property. The data will be used to determine the need to evaluate the sub-slab areas of the Harris Assembly Group building.

### **4.0 Sampling**

Sampling will be completed to collect soil vapor samples from the four outdoor locations shown on Figure 2. These locations are at the perimeter of the groundwater contaminant plume and adjacent to the Harris Assembly building. The locations were selected to determine the concentration of contaminants in the soil vapor and to evaluate the potential for contaminant action levels to be reached beneath the building floor slab. All sampling will be completed on the same day and once a Summa canister has started sampling, the sampling will continue uninterrupted. Quality control and assurance protocols for this project have been accepted by NYSDEC and NYSDOH for the sampling completed on the former TNT-Red Star Site. The reader and users of this Work Plan should consult the Work Plan for the "Collection of Soil Vapor and Ambient Air Samples at the Former TNT Red Star Express Site, dated March 2006," for the quality control and quality assurance protocols being used for this work. Similarly, project health and safety protocols for this project will follow those established in the Health and Safety Plan for the "Collection of Soil Vapor and Ambient Air Samples at the Former TNT Red Star Express Site, dated March 2006."

#### **4.1 Sampling Procedures**

##### ***4.1.1 Sampling Equipment***

The soil vapor samples will be collected from temporary sampling locations placed into the ground using direct push ("DP") sampling equipment. Sampling locations will be placed in areas where there is lawn and pavement. Soil probes will be extended to a point approximately 5 feet below the ground surface. The water table in this area of the off-site property has been measured at 13 feet below the ground surface.

Each sample location will be built using the following procedure:

- A Site utility location survey will be requested from local utilities to identify where utilities enter and cross the property. Utility locations will also be reviewed against existing facility drawings, if available, to determine the location of possible underground utility conduits and pipes.
- A 2-inch diameter DP hole will be advanced to the targeted depth using Geoprobe DP rods or casing. The DP tools will be pulled and a 0.5-foot slotted PVC screen



attached to a 0.25-inch outside diameter PVC or polyethylene food grade tubing will be placed into the hole (see Figure 3 for additional construction details).

- The hole will be backfilled with clean quartz sand to a point approximately 6 inches above the top of the vapor well intake. On top of the sand and to the ground surface, the open hole will be backfilled with a grout slurry mixture of 2 to 3 percent Bentonite and Portland cement. The 0.25-inch diameter tubing will extend above the grout approximately 3 feet so it can be accessed for sampling.
- The tubing will then be purged to remove gases trapped in the sand and in the monitoring point during placement. A plug will then be placed into the tubing unless sampling will begin immediately. Purging will be done for a period of 5 minutes or until one to three open space (pore) volumes have been removed at a rate not to exceed 0.2 liters per minute. Ideally, the soil vapor sample point will have a volume of approximately 0.2 liters. After purging the tubing will be plugged.

#### ***4.1.2 Sample Collection***

Prior to the start of sampling time, weather conditions, air temperature, barometric pressure, wind direction and approximate wind velocity will be noted. In addition, each location will be tested with a tracer gas, consisting of Helium gas, to determine if ambient air is infiltrating the sample. The tracer test will be conducted using the following steps:

- Sample tubing will be connected to the brass fitting on the in-place sample tubing. The tubing will be of sufficient length to extend beyond a bucket placed over the sample location.
- A ring of hydrated Bentonite clay will be placed around the sample location. The Bentonite ring will act as a seal between the ground and the bucket, which will be used to enclose the sample location and to confine the tracer gas.
- A bucket will be placed over the sample location and a hole placed into the top of the bucket with a diameter equal to the sample tubing. The sample tubing will be placed through the hole and inserted into a sampling pump. The sample pump will be connected to a Helium detector. A second hole will be placed on the side of the bucket near the ground surface. A second tube connected to a Helium gas cylinder will be threaded through the bucket and placed next to the sample location. The tubing will be taped or sealed to the bucket using Silicone or modeling clay. The Helium will be released into the bucket, the sample pump started and the Helium detector monitored.
- The test will be performed for 10 minutes. If Helium is not detected in the sampled gas, the sub-slab sample will be collected. If Helium is detected, the surface seal and tubing connections will be examined and either repaired or replaced and the tracer test completed again until a successful test is performed.

Prior to sample collection, the time, weather conditions, air temperature, barometric pressure, and wind direction and approximate velocity will be noted. Ideally, sample collection will start at 10:00 AM and continue uninterrupted for one hour. During the sample collection period, the sampling technician will inspect the sampling train and gauges several times to ensure the regulator and sampling train are operating properly. Sampling of the soil vapor will follow these procedures:

- The sampling technician will label the Summa canister with a unique sample number and record the sample number in the field notebook. The sampling technician will record the identification number of each canister and assign a canister to each sampling location. The technician will also not have or use permanent markers or use other products containing VOCs during sampling.
- The technician will then connect the Summa canister to the sample tubing. The technician will note the time and open the Summa canister regulator. The laboratory will specify the collection time for the sample flow rate and the desired detection limit needed for the Site. At this time, a 6 liter Summa Canister will be used and the sample will be collected for a period of 1 hour at a flow rate of 0.1 Liters per minute.
- When the sampling is completed the technician will close the regulator noting the time and vacuum, and disconnect the sample canister from the sample tubing. The technician will label the canister with the sample time on the Summa canister and then complete the chain of custody and the field notebook with the sample information.
- The sampling technician will plug the sample tubing and place the Summa canister into the shipping container.
- The samples will be shipped overnight so the laboratory will receive the samples the next day.

## **5.0 Sample Analysis**

Samples will be analyzed for Perc and 1, 1, 1-Trichloroethane, the two main contaminants on the Former TNT Red Star Express Site. All samples will be analyzed for target compound list volatile organic compounds using USEPA TO-15 analytical methods. All samples will be analyzed by a laboratory, which is certified by the New York State Department of Health to complete the requested analysis. The reporting limits for the air sample contaminants will be 5 micrograms per cubic meter for all soil vapor samples. The laboratory will also provide certification that the Summa canisters are clean.

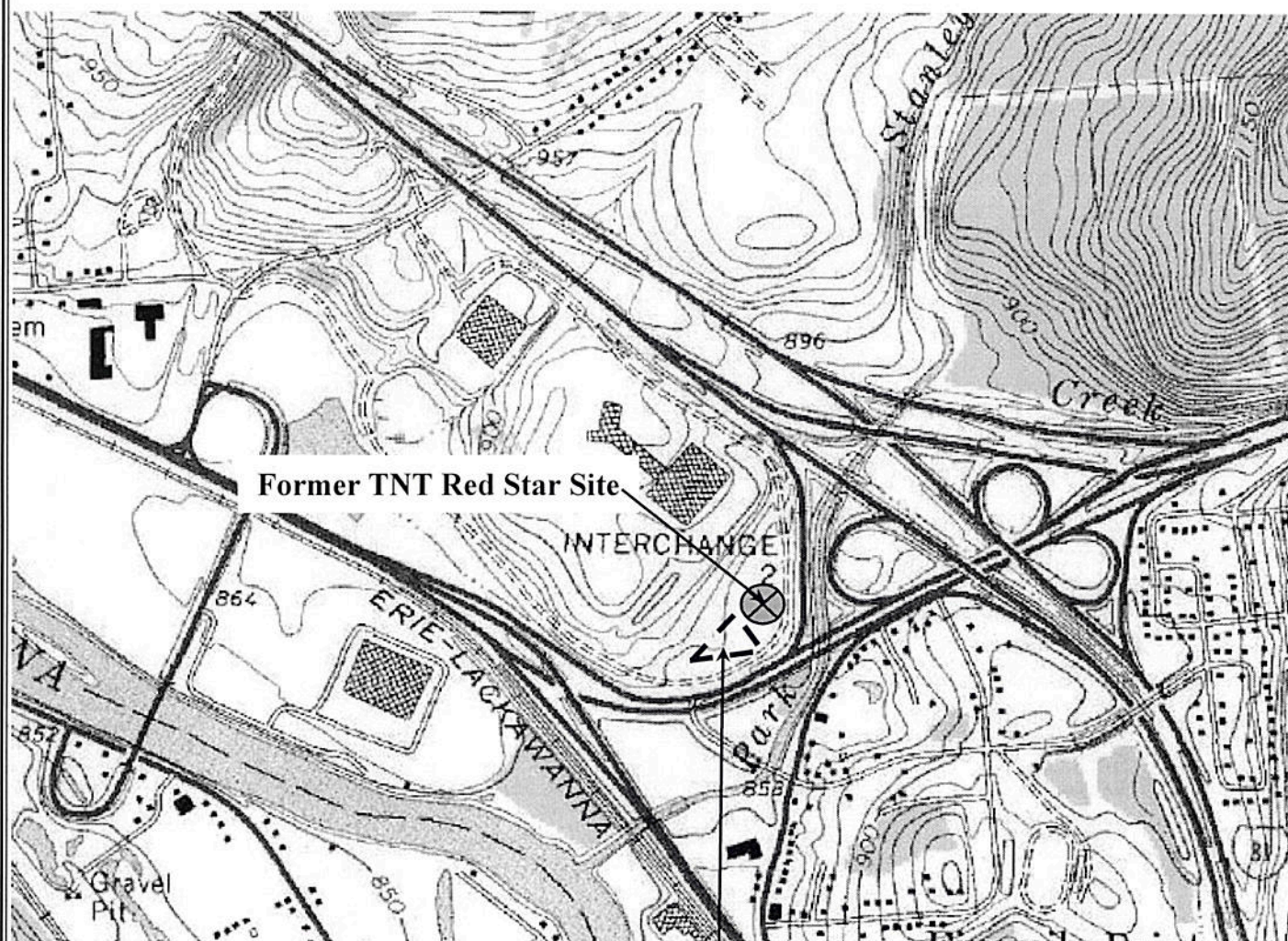
## **6.0 Quality Assurance and Quality Control Samples**

The analyzing laboratory will perform needed quality assurance and quality control ("QA/QC") analyses commensurate with the analytical method (TO-15), the laboratory's certifications and the laboratory's internal QA/QC standards. All QA/QC results will be reported. Additional QA/QC information may be obtained in the Work Plan for the "Collection of Soil Vapor and Ambient Air Samples at the Former TNT Red Star Express Site, dated March 2006."

## **7.0 Reporting**

A sample report will be prepared once the data has been received and reviewed. The sample report will include a summary of the field activities, a data usability analysis, and a summary of the results. Any changes to the work plan will also be identified and how the problem causing the change was resolved. In addition, how the change may impact the results will be discussed. Data usability will also be discussed. Problems with the sampling and analysis will be reviewed and the possible impact to the data analyzed.





## Approx. Location Of the Harris Assembly Site

Title: Harris Assembly Site Location  
Off-Site Soil Vapor Sampling – Harris Assembly Property  
Kirkwood, NY

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Overland Park, Kansas



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Project  
250.012

Date  
8/06

Scale  
NTS

Drawn  
PVS

Checked  
MPR

File Name  
Site Map

Figure

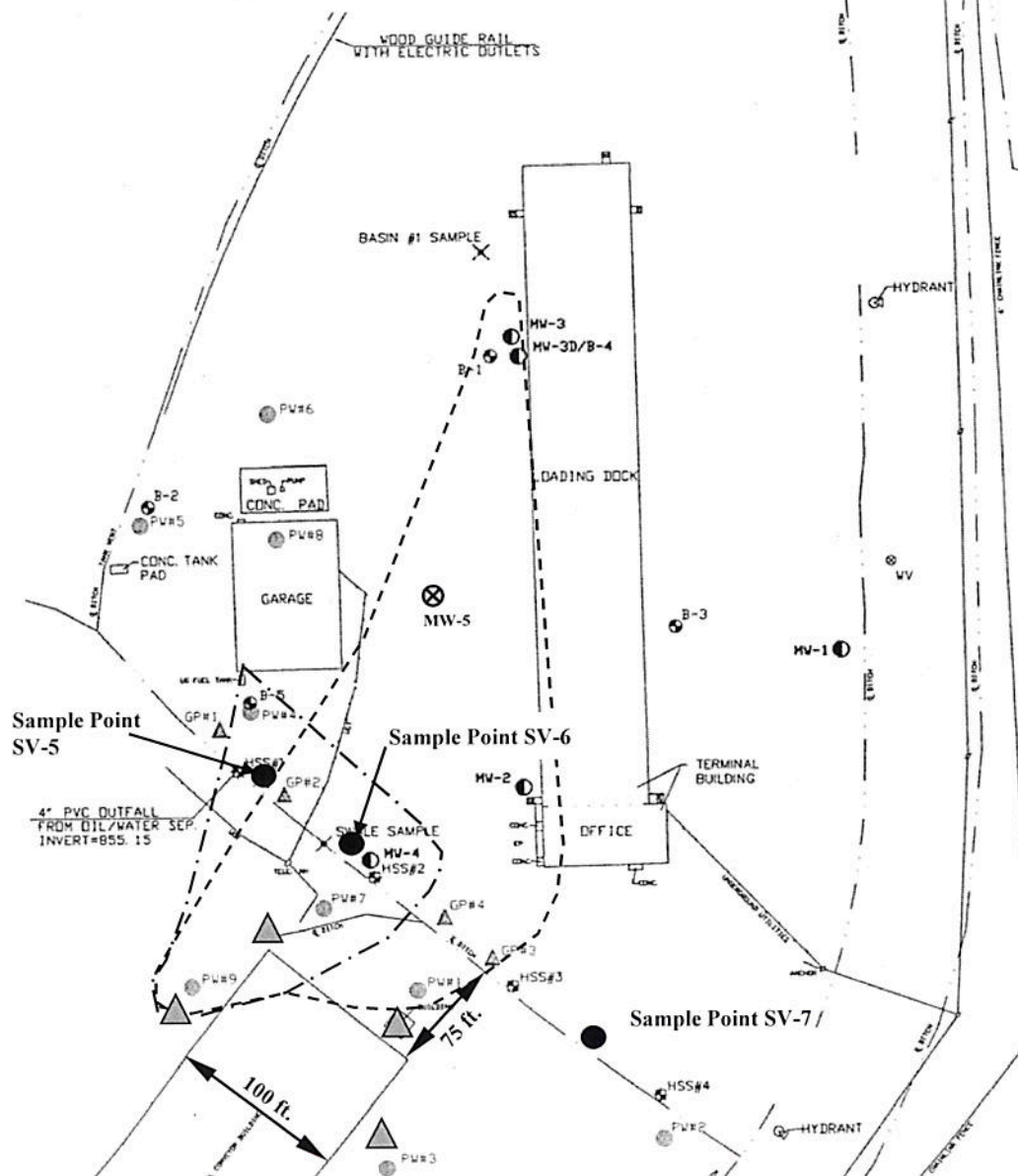
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# Proposed Sampling Locations:

- On Site Soil Vapor Locations Sampled March 2006
- ▲ Off-Site Soil Vapor Sampling Locations

- Approximate Perc Plume Limit
- .-.-.-.- Approximate TCA Plume Limit



Title: Proposed Soil Vapor Sampling Locations  
Off-Site Soil Vapor Sampling – Harris Assembly Property  
Kirkwood, NY

Prepared For:  
Yellow Transportation Corporation  
Overland Park, Kansas



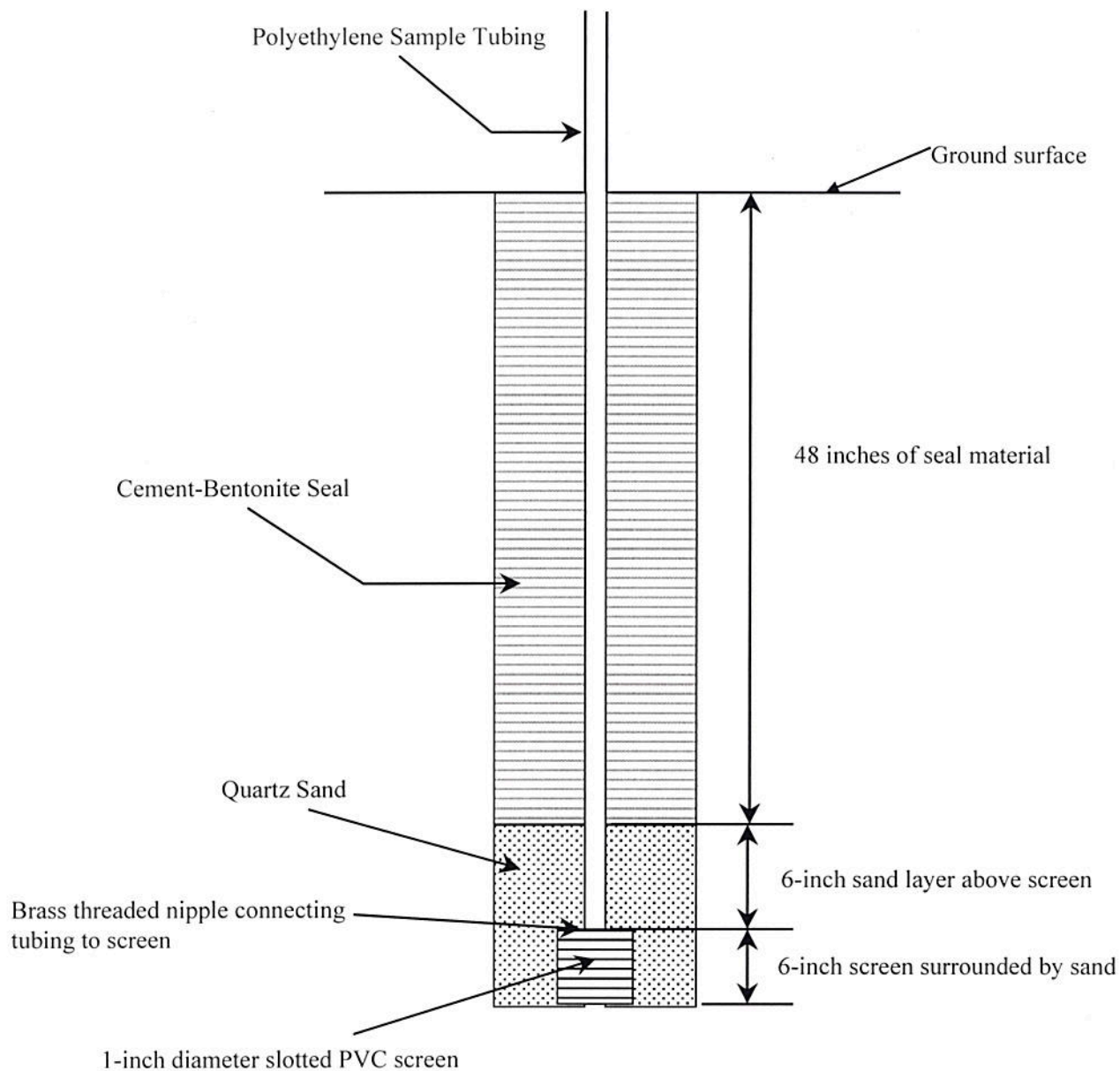
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File Name  
Site Map

Figure

2



Title Proposed Sampling Point Construction  
Off-Site Soil Vapor Sampling – Harris Assembly Property  
Kirkwood, New York

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Scale

As Shown

Drawn

PVS

Checked

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File Name

Figure

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