Solutions-IES
Industrial & Environmental Services

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February 11, 2014

Mr. Terry Fox, L.G.
North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Reference: **Preliminary Site Assessment**
Johnny and Linda Hess Property (Parcel #027)
7745 US 52
Rockwell, Rowan County, North Carolina
NCDOT Tip No. W-5316
WBS Element 46139.1.1
SIES Project No. 2013.0077.NDOT

Dear Mr. Fox:

Solutions-IES, Inc., (SIES) has completed the Preliminary Site Assessment conducted at the above-referenced property. The work was performed in accordance with the Technical and Cost proposal dated November 26, 2013, and the North Carolina Department of Transportation's (NCDOT's) Notice to Proceed dated December 3, 2013. Activities associated with the assessment consisted of conducting a geophysical investigation, collecting soil samples for laboratory analysis, and reviewing applicable North Carolina Department of Environment and Natural Resources (NCDENR) records. The purpose of this report is to document the field activities, present the laboratory analyses, and provide recommendations regarding the property.

Location and Description

The Johnny and Linda Hess Property (Parcel #027) is located at 7745 US 52 in Rockwell, Rowan County, North Carolina. The property is situated on the east side of US 52 approximately 750 feet north of the intersection of US 52 and Crescent Road (**Figure 1**). Based on NCDOT-supplied information and a site visit, SIES understands that the site is a former gas station (NCDOT confirmed with 1965 aerial photography) where an unknown number of underground storage tanks (USTs) were used. As of the date of the site visit, the property

accommodates a church (**Figure 2**). The structures on the site consist of one building housing the church and two small sheds. A sign on one shed indicates that antique furniture refinishing was conducted on the property. The second shed appears to be a former workshop, but is now a storage area. A gravel drive encircles the church building. A porch has been constructed between the building and what may be the former pump island. The NCDOT has advised that the property will be taken in its entirety. Because of the site history as a former gas station, the NCDOT requested a Preliminary Site Assessment. The scope of work as defined in the Request for Technical and Cost Proposal was to evaluate the site with respect to the presence of known and unknown USTs and assess where contamination exists on the property. An estimate of the quantity of impacted soil was to be provided.

SIES reviewed the on-line NCDENR Incident Management database and no Incident Number has been assigned to the property. SIES also examined the UST registration database to obtain UST ownership information. According to the database, no USTs have been registered for this address.

Geophysical Survey

Prior to SIES's mobilization to the site, Pyramid Environmental conducted a geophysical survey as part of this project to evaluate if USTs were present on the property. The geophysical survey consisted of an electromagnetic survey using a Geonics EM61 time-domain electromagnetic induction meter to locate buried metallic objects, specifically USTs. A survey grid was laid out at the property with the X-axis oriented approximately perpendicular to US 52 and the Y-axis oriented approximately parallel to US 52. The grid was located to cover the accessible portions of the property. The area below the porch could not be accessed and no conclusions as to the presence or absence of USTs below the porch could be ascertained. The survey lines were spaced 5 feet apart and magnetic data was collected continuously along each survey line with a data logger. After collection, the data was reviewed in the field with graphical computer software. Following the electromagnetic survey, a ground penetrating radar (GPR) survey was conducted to further evaluate any significant metallic anomalies if such a survey was considered necessary.

Access was available to all areas of the property, except as noted above, and several anomalies were detected with the geophysical survey. Three of these anomalies were attributed to possible or probable USTs. The remainder of the anomalies was interpreted as buried utility lines or conduits, or vehicles. All three potential tanks were located on the south side of the building and oriented east-west. The GPR data suggest that the anomaly identified as a probable UST was approximately 9 feet long and 5 feet wide. The other anomalies were located immediately east of the probable UST and were classified as possible USTs because the GPR signature was inconclusive. The GPR data suggest that the anomalies were about 5 feet long and 3 feet wide. The survey concluded that no other metallic USTs were present on the property. A detailed report of findings and interpretations is presented in **Attachment A**. Based on this information, SIES revised the sampling plan to incorporate borings at the identified anomalies.

Site Assessment Activities

On January 8 and 9, 2014, SIES mobilized to the site to conduct a Geoprobe® direct push investigation to evaluate subsurface soil conditions on the property. Continuous sampling using SIES's Geoprobe® resulted in generally good recovery of soil samples from the direct-push holes. Soil samples were collected and contained in 4-foot long acetate sleeves inside the direct push sampler. Each of these sleeves was divided into 2-foot long sections for soil sample screening. Each 2-foot interval was placed in a resealable plastic bag and the bag was set aside for a sufficient amount of time to allow volatilization of organic compounds from the soil to the bag headspace. The probe of a flame ionization detector (FID) was inserted into the bag and the reading was recorded. After terminating the sample hole, the soil sample from the depth interval with the highest FID reading was submitted for analysis to Pace Analytical in Huntersville, North Carolina, using standard chain-of-custody procedures. The laboratory analyzed the soil samples for total petroleum hydrocarbons (TPH) in the diesel range organics (DRO) and gasoline range organics (GRO). At the direction of the NCDOT, SIES split the soil samples and submitted a second set to KB Mobile Labs to evaluate the DRO and GRO concentrations using QROS's ultraviolet fluorescence (UVF) technology. In addition, the soil samples from the two sheds were submitted for analysis of volatile organic compounds (VOCs) using EPA Method 8260.

Six direct-push holes (27-1 through 27-6) were advanced throughout the property to depths

ranging from 8 to 16 feet below ground surface (ft bgs) as shown in **Figure 2** and **Attachment B**. Borings 27-1 and 27-2 were located to evaluate the subsurface area at the geophysical anomalies. Borings 27-3 and 27-4 were placed to assess soil conditions at the porch in front of the building. Borings 27-5 and 27-6 were situated to evaluate subsurface soil at the two sheds at the rear of the property (**Attachment C**). The lithology encountered by the direct-push samples generally was consistent throughout the site. The ground surface was covered with about 0.5 feet of topsoil. Below the surface was a red to orange clayey silt saprolite. Boring 27-5 encountered a silty gravel at a depth of 4 to 4.5 ft bgs. No bedrock was encountered in any of the borings. The "Geologic Map of North Carolina" dated 1985 indicates that the site is underlain by a metamorphosed volcanic sequence of interbedded tuffs and flowrocks. The saprolite observed at the site is consistent with this parent rock. Boring 27-1 was terminated at a depth of 16 ft bgs and groundwater observed at about 13.5 ft bgs. Based on this observation, borings 27-2 through 27-4 were terminated at 12 ft bgs. Because the potential for contamination at the sheds was primarily at shallow depths, borings 27-5 and 27-6 were terminated at 8 ft bgs. In boring 27-5, groundwater was noted in the gravel lens encountered at 4 ft bgs. Based on field screening, soil samples were submitted for laboratory analyses, which are summarized in **Table 1**. Following the completion of each boring, it was backfilled in accordance with 15A NCAC 2C.

Analytical Results

Based on the laboratory reports, summarized in **Table 1** and presented in **Attachment D (**the laboratory reports inadvertently included other sites, so only the results attributable to the Hess site have been included), no petroleum hydrocarbon compounds identified as DRO and/or GRO by UVF or EPA Method 8015 were detected in any of the six soil samples collected from the site. The soil samples from borings 27-5 and 27-6 were analyzed for VOCs and soil sample 27-5 contained acetone at a concentration of 0.11 mg/kg. However, the laboratory report contained a qualifier (explanation) for the detection. According to the laboratory, "the qualifier definition is that the sodium bisulfate in the vial is known to react with humic acids in the soils and produce ketones. Based upon method blank results, the laboratory feels the ketones in this sample are due to that reaction. So, the acetone detection in the sample is not likely due to occurrence in the soil but is instead due to this reaction." Consequently, the acetone has been disregarded in this

report. No VOC compounds were detected in soil sample 27-6. Because no compounds were detected that were attributable to the site, no action levels were exceeded.

Conclusions and Recommendations

A Preliminary Site Assessment was conducted to evaluate the Johnny and Linda Hess Property (Parcel #027) located at 7745 US 52 in Rockwell, Rowan County, North Carolina. A geophysical survey conducted at the site indicated that one probable and two possible USTs were detected at the property. All of the potential tanks were located in the same area on the south side of the building. Six soil borings were advanced to evaluate the subsurface soil conditions throughout the property. The laboratory reports of the soil samples from these borings suggest that no DRO, GRO, or VOC concentrations were present above the action level in any of the six soil samples analyzed.

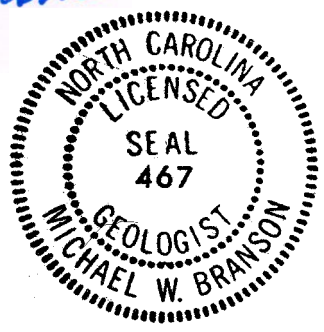
To evaluate the volume of soil requiring potential remediation, SIES considered the soil samples with TPH concentrations above 10 mg/kg. The analytical results of the soil samples suggest that none of the soil samples contained DRO or GRO concentrations above the action level.

SIES appreciates the opportunity to work with the NCDOT on this project. Because no compounds were present above the detection limit in the soil samples, no report is required to be submitted to the Division of Waste Management in the Fayetteville Regional Office. If you have any questions, please contact us at (919) 873-1060.

Sincerely,

Michael W. Branson

Jessica L. Keener



Michael W. Branson, P.G.
Project Manager

Jessica Keener, P.G.
Senior Hydrogeologist

Attachments

cc: Project File

TABLE 1

SOIL FIELD SCREENING AND ANALYTICAL RESULTS
HESS PROPERTY (PARCEL #027)
ROCKWELL, ROWAN COUNTY, NORTH CAROLINA
NCDOT PROJECT NO. W-5316
WBS ELEMENT 46139.1.1
SIES PROJECT NO. 2013.0077.NDOT

LOCATION	DEPTH (ft)	FID READING (ppm)	SAMPLE ID	ANALYTICAL RESULTS (mg/kg)	ACTION LEVEL (mg/kg)
27-1	0 - 2	0			
	2 - 4	0			
	4 - 6	0			
	6 - 8	0			
	8 - 10	0			
	10 - 12	0	27-1	8015 DRO (<6.8)	10
				8015 GRO (<6.4)	10
				UVF DRO (<0.5)	10
				UVF GRO (<0.5)	10
	12 - 14	0			
	14 - 15	0			
27-2	0 - 2	0			
	2 - 4	0			
	4 - 6	0			
	6 - 8	0			
	8 - 10	0			
	10 - 12	0	27-2	8015 DRO (<6.5)	10
				8015 GRO (<5.8)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
27-3	0 - 2	0			
	2 - 4	0			
	4 - 6	0			
	6 - 8	0			
	8 - 10	0			
	10 - 12	0	27-3	8015 DRO (<6.5)	10
				8015 GRO (<6.0)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
27-4	0 - 2	0			
	2 - 4	0			
	4 - 6	0			
	6 - 8	0			
	8 - 10	0			
	10 - 12	0	27-4	8015 DRO (<6.4)	10
				8015 GRO (<5.3)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
27-5	0 - 2	0	27-5	8015 DRO (<6.45)	10
				8015 GRO (<6.1)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
				8260 Acetone (0.11) [(1)]	NA
	2 - 4	0			
	4 - 6	0			
	6 - 8	0			
27-6	0 - 2	0			
	2 - 4	0			
	4 - 6	0			
	6 - 8	0	27-6	8015 DRO (<6.6)	10
				8015 GRO (<6.9)	10
				UVF DRO (<0.7)	10
				UVF GRO (<0.7)	10
				8260 All compounds (<DL)	NA

Soil samples were collected on January 8 and 9, 2014.

(1) Acording to the laboratory, acetone is a laboratory remnant and is not considered part of the site geochemistry.
8015 DRO - Diesel range organics by Method 8015.
8015 GRO - Gasoline range organics by Method 8015.
UVF DRO - Diesel range organics by UVF.
UVF GRO - Gasoline range organics by UVF.
8260 - Volatile organic compounds by EPA Method 8260.
ppm - parts per million.
mg/kg - milligrams per kilogram.
DL - Detection limit.
NA - Not applicable.

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Industrial & Environmental Services

FIGURES

PROJECT NUMBER 2013.0077.NDOT

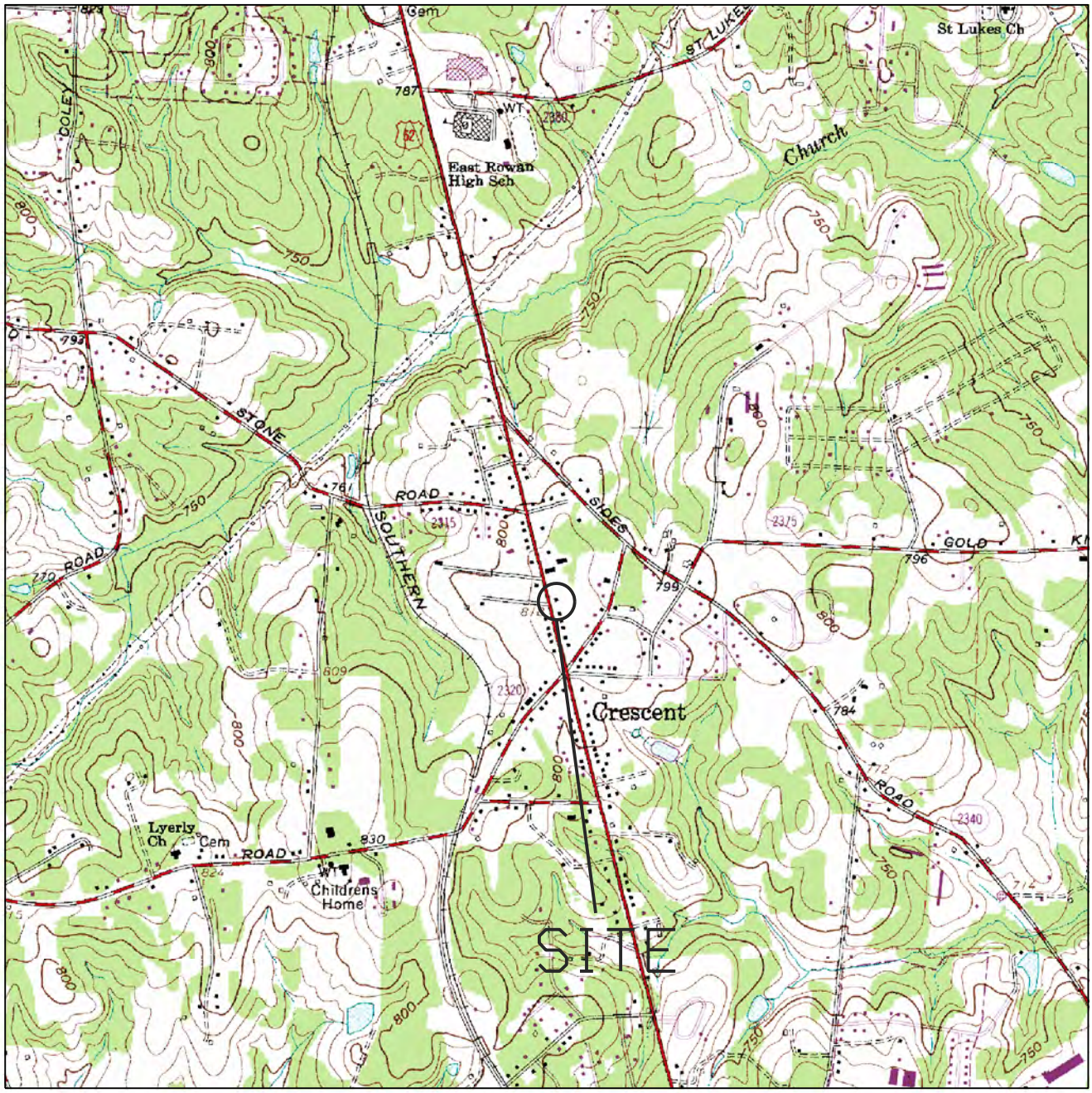
CHECKED BY MWB

PROJECT MANAGER MWB

DATE JANUARY 2013

ROWAN COUNTY PSA

FILE



SCALE 1:24,000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

SOURCE: U.S. GEOLOGICAL SURVEY 7.5 MIN QUADRANGLE: ROCKWELL, NC (REV 2013)

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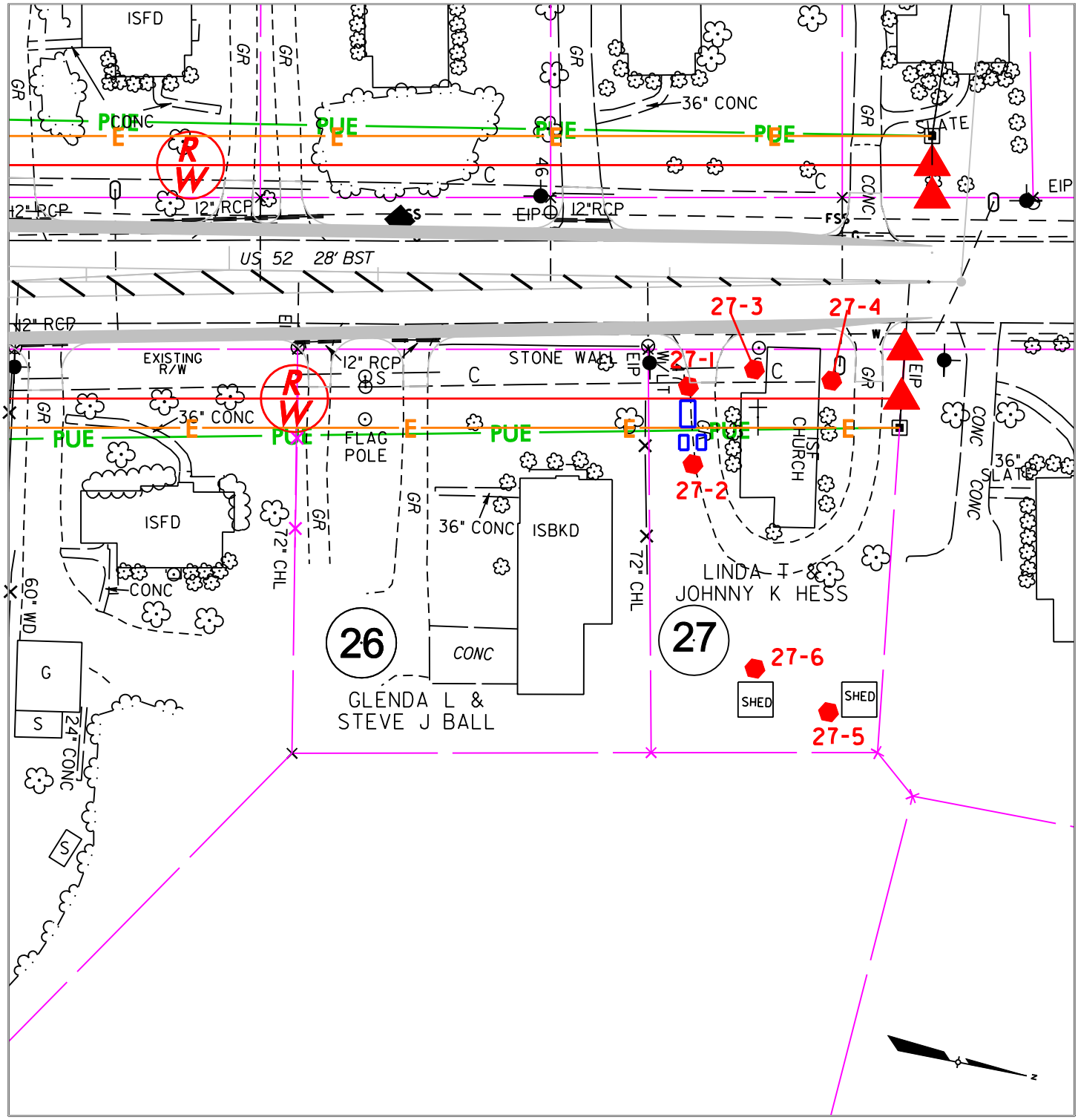
VICINITY MAP

JOHNNY & LINDA HESS PROPERTY (PARCEL #027)
ROCKWELL, ROWAN COUNTY NORTH CAROLINA

FIGURE 1

PROJECT NUMBER 2013.0077.NDOT
DRAFTER MWB
CHECKED BY
PROJECT MANAGER MWB
DATE JANUARY 2013
FILE ROWAN CO PSA



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SITE MAP

JOHNNY & LINDA HESS PROPERTY (PARCEL #027)

ROCKWELL, ROWAN COUNTY, NORTH CAROLINA

FIGURE 2

...\W5316_Rdy_psh4 figures.dgn 2/7/2014 3:20:41 PM

ATTACHMENT A

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2013-290)

GEOPHYSICAL SURVEY

PARCEL 027 –
U.S. HWY 52
NCDOT PROJECT W-5316

ROCKWELL, ROWAN COUNTY, NC

JANUARY 3, 2013

Report prepared for: **Mike Branson**
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GEOPHYSICAL INVESTIGATION REPORT
Parcel 027, U.S. Hwy 52
Rockwell, Rowan County, North Carolina

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Figures

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Solutions, IES at Parcel 027, located on the east side of U.S. 52, north of Crescent Road in Rockwell, Rowan County, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project W-5316). Solutions, IES directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to include all accessible areas across the entire parcel. The geophysical investigation consisted of an electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys.

Geophysical Results: The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as metal debris and the buildings, or were associated with utilities. A suspected water line was observed to extend across the majority of the west survey boundary. A probable metallic UST was observed on the south side of the store building measuring approximately 9' x 5'. Two possible metallic USTs were observed directly to the west of the probable UST, each measuring approximately 5' x 3'. All remaining anomalies were attributed to utilities or metallic debris. The geophysical investigation indicated the presence of one probable metallic UST and two possible metallic USTs at the property.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Solutions, IES at Parcel 027, located on the east side of U.S. 52, north of Crescent Road in Rockwell, Rowan County, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project W-5316). Solutions, IES directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to include all accessible areas across the entire parcel. The survey grid spanned approximately 140 feet from west to east and approximately 80 feet from north to south. Conducted on December 12 and 13, 2013, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site contained a residential structure and two shed buildings surrounded primarily by grassy areas. It should be noted that a raised porch was present at the front (west) side of the residential structure that prevented access by the EM61, and the air gap beneath the porch caused a lack of connection to the ground and prevented GPR data collection, resulting in this area not being surveyed. Aerial photographs showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

Prior to conducting the geophysical investigation, a 20-foot by 10-foot survey grid was established across the geophysical survey areas using measuring tapes and water-based marking paint. These grid marks were used as X-Y coordinates for location control when collecting the geophysical data and establishing base maps for the geophysical results.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. The EM survey was performed on December 12, 2013, using a Geonics EM61 metal detection instrument. According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data

were digitally collected at approximately 0.8 foot intervals along north-south trending or east-west trending, parallel survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics DAT61 and Surfer for Windows Version 11.0 software programs.

GPR data were acquired across select EM differential anomalies on December 13, 2013, using a Geophysical Survey Systems, Inc. (GSSI) SIR-2000 unit equipped with a 400 MHz antenna. Data were collected generally from east to west and north to south across the property. The GPR data were viewed in real time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 8 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. GPR Transects across specific anomalies and areas of reinforced concrete were saved to the hard drive of the SIR unit for post-processing and figure generation.

DISCUSSION OF RESULTS

Contour plots of the EM61 bottom coil and differential results obtained across survey area at the property are presented in **Figure 2**. The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to delineate metal conduits or utility lines; small, isolated metal objects, and areas containing insignificant metal debris. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM Anomalies: The three buildings contained metal siding and possible reinforcement in their foundations, resulting in an EM response immediately surrounding the perimeter of each structure. The EM feature extending from north to south across the entire survey area at its western boundary was suspected to be associated with a water line. The EM feature at X=30, Y=35 was the result of a water meter cover. The EM feature at X=48, Y=90 was not explained by any cultural features, and was investigated further by the GPR. The EM feature at X=72, Y=40 was due to a water faucet and AC unit. The EM feature adjacent to the east side

of the house was associated with a metal carport. The EM feature at X=100, Y=35 was suspected to be due to debris or a utility, and was investigated further by the GPR. The EM feature at the southeast corner of the house was due to a gas meter. The EM feature extending across the majority of the south survey boundary was due to a chain link fence. The remaining features were minor, and were likely due to isolated metallic debris or utilities.

Discussion of GPR Survey: **Figure 3** presents the locations of the formal GPR transects performed at the property, as well as images of the transects. Additional reconnaissance GPR transects were performed and viewed in real time. The results of the GPR survey indicated the presence of one probable metallic UST and two possible metallic USTs. The remaining unexplained EM features were attributed to debris or utilities. A detailed discussion is presented below.

GPR Transects Across Suspected Utilities and Debris

GPR Transect 6 was performed across the anomaly at X=100, Y=35. This transect recorded a reflector that was consistent with an isolated object/debris, or a section of an unknown utility. No evidence was recorded that would suggest a UST was present at this location. Reconnaissance transect were performed across the suspected water line running from north to south along the western boundary of the survey area. These transects confirmed the presence of a utility at this location. Per the request of the Solutions, IES project manager, this utility was marked in the field using white spray paint.

Possible and Probable Metallic USTs

GPR Transects 1-5 were performed across the EM anomaly at X=48, Y=90. The GPR data indicated the presence of **one probable metallic UST and two possible metallic USTs** at this location. **Figure 4** shows the locations of the probable and possible USTs on the aerial map. Specifically, GPR Transects 1 and 2 identified one probable UST at the exact location of the EM anomaly. GPR reflectors were consistent with a UST, and indicated it was approximately 9 feet long and 5 feet wide, at a depth of approximately 2.5 feet. GPR Transects 3, 4, and 5 recorded evidence of two structures in the subsurface directly west of the probable UST. These structures were outside of the high amplitude metallic EM signal, and thus these two features have been categorized as two possible USTs. They were both approximately 5 feet long and 3 feet wide, at a depth of approximately 3 feet below the ground surface.

Parcel 027 Probable/Possible UST Locations

North Carolina State Plane (US Survey Feet)

UST	Northing	Easting
Probable UST#1	667933.683	1577771.823
Possible UST#1	667939.499	1577779.995
Possible UST#2	667935.54	1577781.943

The geophysical investigation indicated the presence of one probable metallic UST and two possible metallic USTs at the property. No evidence of additional USTs was recorded at the property.

SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across Parcel 027 in Rockwell, North Carolina, provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as metal debris and the buildings, or were associated with utilities.
- A suspected water line was observed to extend across the majority of the west survey boundary.
- A probable metallic UST was observed on the south side of the store building measuring approximately 9’ x 5’.
- Two possible metallic USTs were observed directly to the west of the probable UST, each measuring approximately 5’ x 3’.
- All remaining anomalies were attributed to utilities or metallic debris.
- The geophysical investigation indicated the presence of one probable metallic UST and two possible metallic USTs at the property.

LIMITATIONS

Geophysical surveys have been performed and this report prepared for Solutions, IES in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined conclusively determined the definitive presence or absence of metallic USTs, but that the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

Approximate Boundaries of the Geophysical Survey Area

View of South Portion of Survey Area
(Facing Approximately East)

View of North Portion of Survey Area
(Facing Approximately East)

TITLE
PARCEL 27:
GEOPHYSICAL SURVEY BOUNDARIES
AND SITE PHOTOGRAPHS

PROJECT
NCDOT PROJECT W-5316
ROCKWELL, ROWAN COUNTY, NC

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

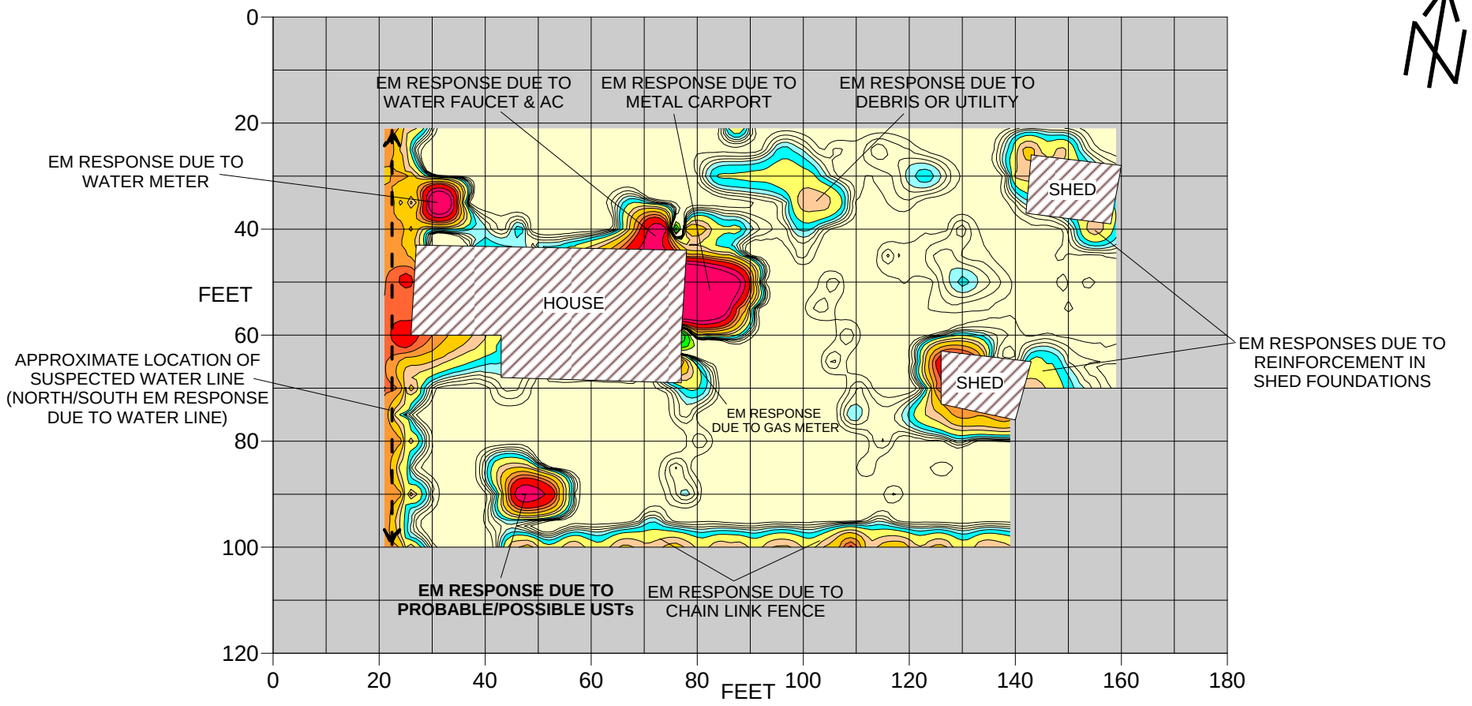
DATE 12/17/2013

CLIENT SOLUTIONS, IES

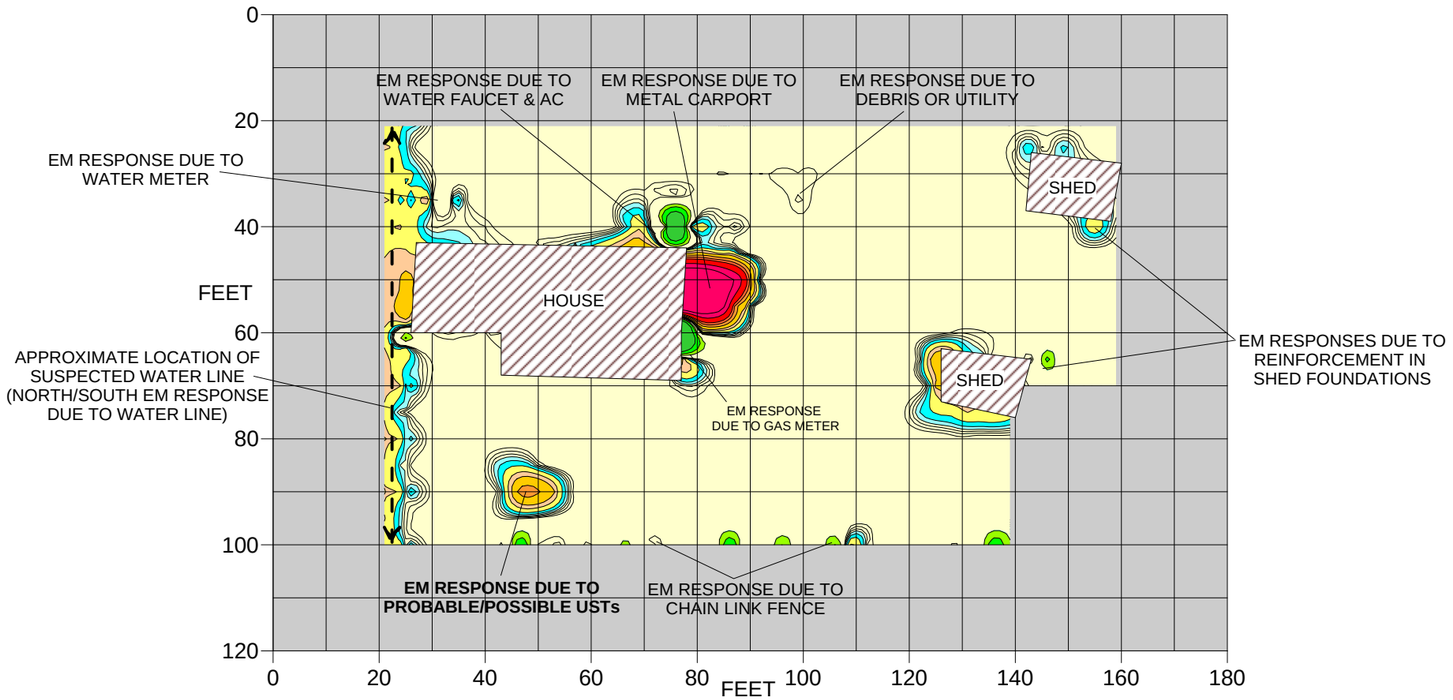
PYRAMID PROJECT #: 2013-290

FIGURE 1

EM61 Bottom Coil Results



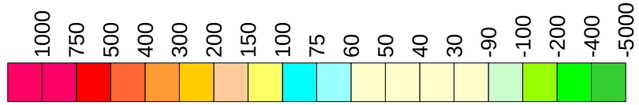
EM61 Differential Results



EVIDENCE OF ONE PROBABLE & TWO POSSIBLE METALLIC USTs OBSERVED

The contour plots show the bottom coil (most sensitive) and differential results of the EM61 instrument in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous buried, metal debris.The EM61 data were collected on December 12, 2013 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were collected on December 13, 2013, using aGSSI SIR 2000 unit coupled to a 400 MHz antennae.

EM61 Metal Detection Response
(millivolts)



TITLE: PARCEL 27: EM61 BOTTOM COIL & DIFFERENTIAL RESULTS CONTOUR MAPS

PROJECT: NCDOT PROJECT W-5316
ROCKWELL, ROWAN COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C
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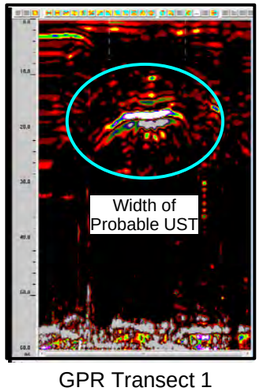
License # C1251 Eng. / License # C257 Geology

DATE: 12/17/2013

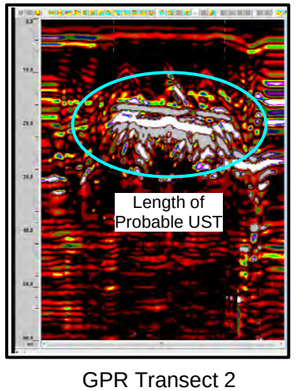
CLIENT: SOLUTIONS, IES

PYRAMID PROJECT #: 2013-290

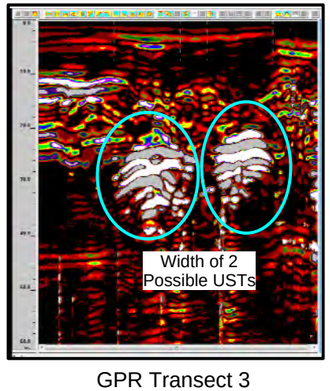
FIGURE 2



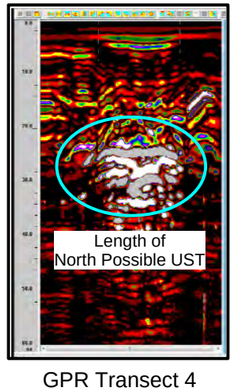
GPR Transect 1



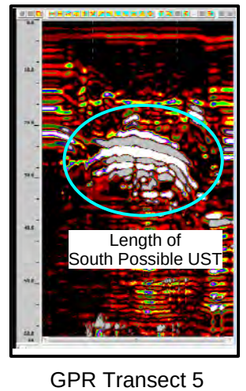
GPR Transect 2



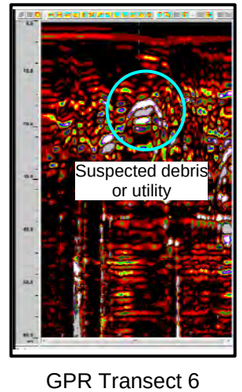
GPR Transect 3



GPR Transect 4



GPR Transect 5



GPR Transect 6

TITLE

PARCEL 27:
GPR TRANSECT LOCATIONS
AND SELECT IMAGES

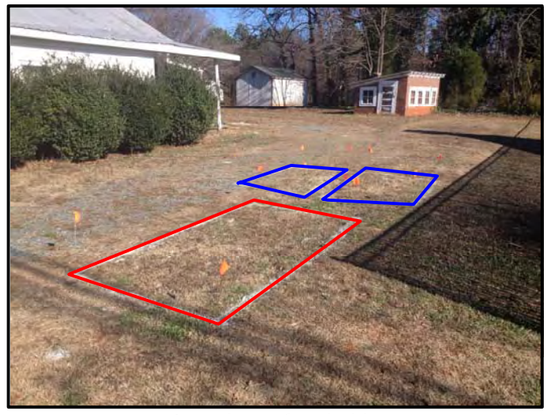
PROJECT

NCDOT PROJECT W-5316
ROCKWELL, ROWAN COUNTY, NC

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

DATE	CLIENT
12/17/2013	SOLUTIONS, IES
PYRAMID PROJECT #: 2013-290	**FIGURE 3**

The UST labeled as "probable" was characterized as such due to a combination of an EM61 metallic response and clear GPR reflections at its location. The two "possible" USTs did not exhibit a significant metallic response, and thus may be other non-metallic subsurface structures.



Locations of probable and possible USTs

Parcel 027 Probable/Possible UST Locations

North Carolina State Plane (US Survey Feet)

UST	Northing	Easting
Probable UST#1	667933.683	1577771.823
Possible UST#1	667939.499	1577779.995
Possible UST#2	667935.54	1577781.943

Parcel 027 Probable & Probable UST Size/Depth

UST	Size	Depth (ft)
Probable UST #1	~ 9' x 5'	2.5'
Possible UST #1	~ 5' x 3'	3'
Possible UST #2	~ 5' x 3'	3'

TITLE: PARCEL 27: APPROXIMATE LOCATIONS OF PROBABLE & POSSIBLE USTs

PROJECT: NCDOT PROJECT W-5316 ROCKWELL, ROWAN COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

DATE: 12/17/2013

CLIENT: SOLUTIONS, IES

PYRAMID PROJECT #: 2013-290

FIGURE 4

ATTACHMENT B

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 27-1

BORING LOCATION:	Rowan Co., NC - Parcel 27	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/8/2014	DATE FINISHED: 1/8/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 16'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)	DESCRIPTION OF MATERIALS	DEPTH (ftbgs)
0–5			100%	0.0, 0.0, 0.0	TS: Topsoil. ML: Red clayey silt. Dry.	0–5
5–10			100%	0.0, 0.0, 0.0	ML: Red clayey silt. Dry.	5–10
10–11	27-1	■	100%	0.0	ML: Red and tan mottled clayey silt. Damp.	10–11
11–16			100%	0.0, 0.0, 0.0	ML: Orange clayey silt with tan mottling. Damp to moist.	11–16

End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 27-2

BORING LOCATION:	Rowan Co., NC - Parcel 27	PROJECT NUMBER: 2013.0077.NDOT	
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/8/2014	DATE FINISHED: 1/8/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)	DESCRIPTION OF MATERIALS
0					TS — Topsoil.
1			100%	0.0	
2					
3				0.0	
4			100%		
5				0.0	
6					ML — Red clayey silt. Dry.
7			100%	0.0	
8					
9				0.0	
10			100%		
11	27-2			0.0	ML — Orange and red mottled clayey silt. Damp.
12					End of Boring.

DEPTH (ftbgs): 0 1 2 3 4 5 6 7 8 9 10 11 12

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 27-3

BORING LOCATION:	Rowan Co., NC - Parcel 27	PROJECT NUMBER: 2013.0077.NDOT	
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/8/2014	DATE FINISHED: 1/8/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)	DESCRIPTION OF MATERIALS
0					TS — Topsoil.
1			100%	0.0	
2					
3				0.0	
4			100%		
5				0.0	
6					ML — Red clayey silt. Dry.
7			100%	0.0	
8					
9				0.0	
10			100%		
11	27-3			0.0	ML — Orange and red mottled clayey silt. Damp.
12					End of Boring.

DEPTH (ftbgs): 0 1 2 3 4 5 6 7 8 9 10 11 12

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 27-4

BORING LOCATION:	Rowan Co., NC - Parcel 27	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/8/2014	DATE FINISHED: 1/8/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)	DESCRIPTION OF MATERIALS
0					TS — Topsoil.
1			100%	0.0	ML — Red clayey silt. Dry.
2					ML — Orange to red clayey silt. Dry.
3				0.0	
4			100%		
5				0.0	
6					ML — Red clayey silt. Dry.
7				0.0	
8			100%		
9				0.0	
10	27-4				
11				0.0	ML — Red and orange mottled clayey silt. Damp.
12					End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 27-5

BORING LOCATION:	Rowan Co., NC - Parcel 27	PROJECT NUMBER: 2013.0077.NDOT	
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)		DESCRIPTION OF MATERIALS
0					TS	Topsoil.
1			62.5%	0.0	ML	Red clayey silt. Dry.
2	27-5					
3				0.0		
4					GC	Saturated gravel with red clayey silt.
5			100%	0.0	ML	Red clayey silt. Damp.
6						
7				0.0	ML	Orange and tan mottled clayey silt. Dry.
8						

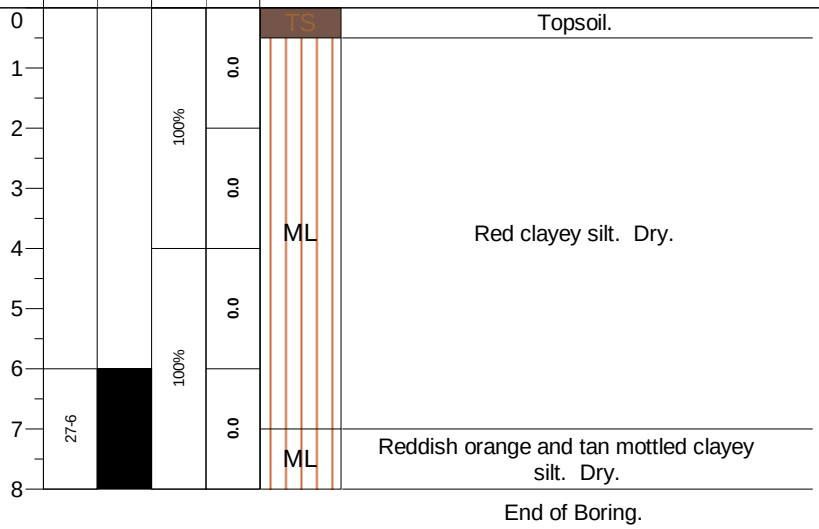
End of Boring.

Notes: Groundwater encountered at approximately 4' bgs.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 27-6

BORING LOCATION: Rowan Co., NC - Parcel 27	PROJECT NUMBER: 2013.0077.NDOT
DRILLING CONTRACTOR: Solutions-IES	DATE STARTED: 1/9/2014 — DATE FINISHED: 1/9/2014
DRILLING METHOD: Direct Push	TOTAL DEPTH (ftbgs): 8' — SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT: Geoprobe 5400	NORTHING: NA — EASTING: NA
SAMPLING METHOD: Macro Core	INITIAL DTW: NA — FINAL DTW: NA
LOGGED BY: Stewart Farling — CHECKED BY: MWB	



End of Boring.

Notes: No groundwater encountered.

ATTACHMENT C

PHOTO 1- BORINGS AT GEOPHYSICAL ANOMALY LOOKING EAST

PHOTO 2 - BORINGS AT GEOPHYSICAL ANOMALY LOOKING WEST

PHOTO 3 - BORING AT PORCH LOOKING NORTHEAST

PHOTO 4 - BORING AT PORCH LOOKING EAST

PHOTO 5 - BORING AT SHED LOOKING NORTH

PHOTO 6 - BORINGS WITHIN PROPOSED R/W LOOKING NORTH

ATTACHMENT D

Hydrocarbon Analysis Results

Client: Solutions IES
Address: Raleigh, NC

Samples taken 1/8/14, 1/9/14
Samples extracted 1/8/14, 1/9/14
Samples analysed Friday, January 10, 2014

Contact: Mike Branson

Operator Bob George

Project: Rowan Co. PSA

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	27-1	10.9	<0.5	<0.5	<0.5	<0.5	< 0.55	< 0.05	< 0.027	0	0	100	Match not possible
s	27-2	11.2	<0.6	<0.6	<0.6	<0.6	< 0.56	< 0.06	< 0.028	0	0	100	Match not possible
s	27-3	11.1	<0.6	<0.6	<0.6	<0.6	< 0.56	< 0.06	< 0.028	0	0	100	Match not possible

Initial Calibrator QC check OK

Low Range Calibrator Final check OK 0.080

High Range Calibrator Final check OK 1.515

Results generated by a QED HC-1 analyser

Concentration values in mg/kg for soil samples and mg/L for water samples.

Soil values are not corrected for moisture or stone content

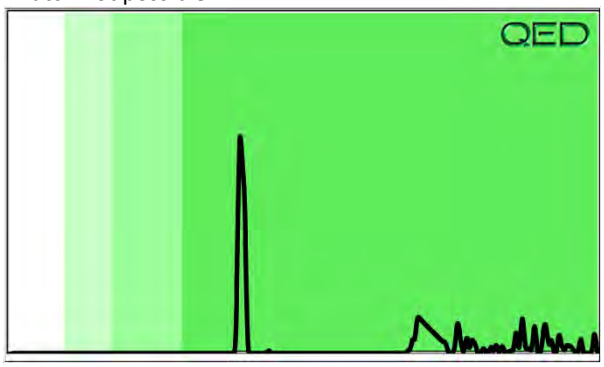
Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches

Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

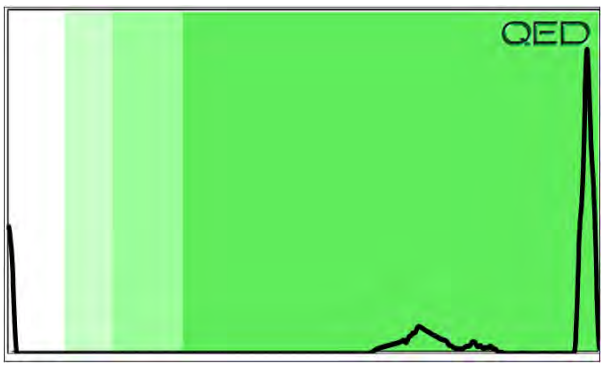
(SBS)= site specific background subracted (LBS)= Library background subtracted % = match confidence

Project Rowan Co. PSA **Date** Friday, January 10, 2014

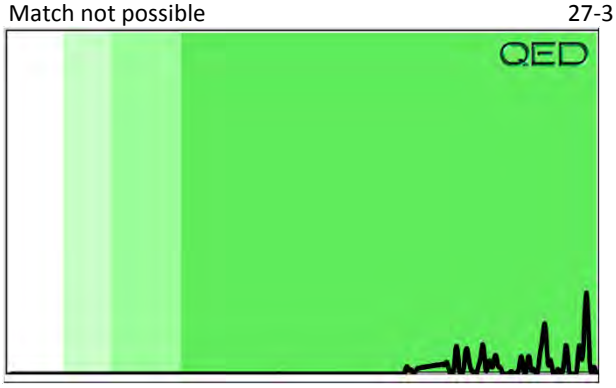
Match not possible 27-1



Match not possible 27-2



Match not possible 27-3



Hydrocarbon Analysis Results

Client: Solutions IES
Address: Raleigh, NC

Samples taken Thursday, January 09, 2014
Samples extracted Thursday, January 09, 2014
Samples analysed Friday, January 10, 2014

Contact: Mike Branson

Operator Bob George

Project: Rowan Co. PSA

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	27-4	11.0	<0.6	<0.6	<0.6	<0.6	< 0.55	< 0.06	< 0.028	0	0	100	Match not possible
s	27-5	11.8	<0.6	<0.6	<0.6	<0.6	< 0.59	< 0.06	< 0.029	0	0	100	Match not possible
s	27-6	11.3	<0.6	<0.6	<0.6	<0.6	< 0.56	< 0.06	< 0.028	0	0	100	Match not possible

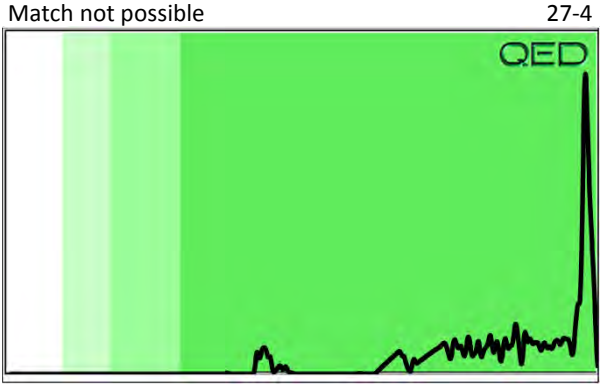
Initial Calibrator QC check	OK	Low Range Calibrator Final check	OK	0.075
		High Range Calibrator Final check	OK	1.486

Results generated by a QED HC-1 analyser
Concentration values in mg/kg for soil samples and mg/L for water samples.
Soil values are not corrected for moisture or stone content

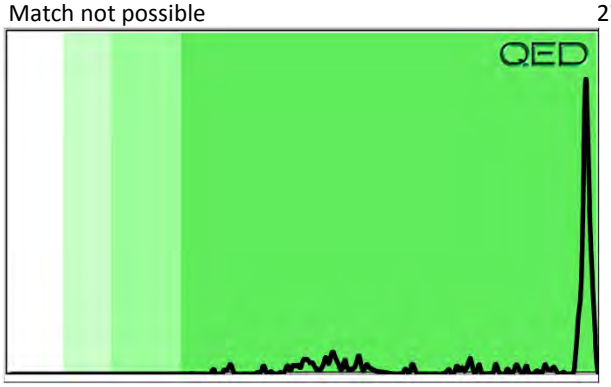
Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches
Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match
(SBS)= site specific background subracted (LBS)= Library background subtracted % = match confidence

Project Rowan Co. PSA **Date** Friday, January 10, 2014

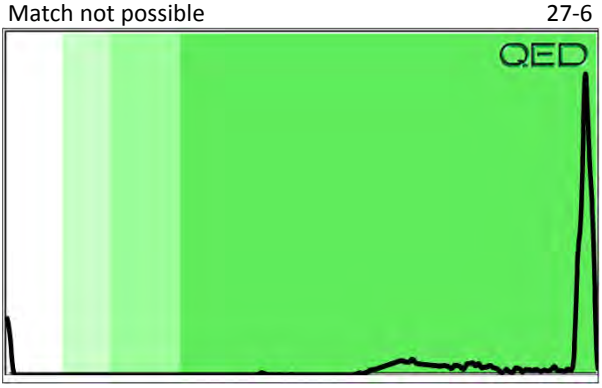
Match not possible 27-4



Match not possible 27-5



Match not possible 27-6



KB LABS inc.
Mobile Laboratory Services
6821 SW Archer Road
Gainesville, FL 32608
TEL (352) 367-0073
FAX (352) 367-0074

CHAIN-OF-CUSTODY RECORD

1 of 2

MOBILE UNIT #

CLIENT NAME	PROJECT NAME & ADDRESS
Solutions-JES	Bowman Co. PSA 2013.6011 NDOT
SAMPLERS	**CONTACT PERSON**
Stewart Farling	Mike Bowman

BATCH # (Lab Use Only)

PRESERVATION
C Chilled
H HCL
Ot Other (see Remarks)

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

SAMPLE FIELD ID.\ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	VOLATILES	DRO (C10-C28) - SIM			COMMENT
SB1	1/8/14	1500		X				S	1		X			petro odor
SB2	"	1501		"				"	"		"			petro odor
SB3		1502												
SB4		1503												
SB5		1504												
SB6		1505												
SB7		1506												
24-1		1115												
24-2		1116												
24-3	"	1119												
24-4	1/9/14	855												
24-5	↓	856												
24-6	↓	857		↓				↓	↓		↓			

Precleaned Containers Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time	**Remarks and Observations**
	1/14/14 1220		1/15/14 1220	
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time	

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
Eden, NC 27288
(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

January 29, 2014

Chemical Testing Engineer
NCDOT
Materials & Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607

RE: Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Dear Chemical Engineer:
Enclosed are the analytical results for sample(s) received by the laboratory on January 11, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

The laboratory report is being reissued on January 29, 2014, due to laboratory log in error.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
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Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	Matrix	Date Collected	Date Received
		Solid	01/08/14 15:00	01/11/14 10:20
		Solid	01/08/14 15:01	01/11/14 10:20
		Solid	01/08/14 15:02	01/11/14 10:20
		Solid	01/08/14 15:03	01/11/14 10:20
		Solid	01/08/14 15:04	01/11/14 10:20
		Solid	01/08/14 15:05	01/11/14 10:20
		Solid	01/08/14 15:06	01/11/14 10:20
		Solid	01/09/14 16:00	01/11/14 10:20
		Solid	01/09/14 16:02	01/11/14 10:20
		Solid	01/09/14 16:04	01/11/14 10:20
		Solid	01/09/14 16:06	01/11/14 10:20
		Solid	01/09/14 16:08	01/11/14 10:20
		Solid	01/09/14 16:10	01/11/14 10:20
		Solid	01/09/14 16:12	01/11/14 10:20
		Solid	01/09/14 16:14	01/11/14 10:20
		Solid	01/09/14 16:16	01/11/14 10:20
		Solid	01/09/14 16:20	01/11/14 10:20
		Solid	01/09/14 16:22	01/11/14 10:20
		Solid	01/09/14 16:40	01/11/14 10:20
92186113020	**27-1**	Solid	01/08/14 17:15	01/11/14 10:20
92186113021	**27-2**	Solid	01/08/14 17:16	01/11/14 10:20
92186113022	**27-3**	Solid	01/08/14 17:17	01/11/14 10:20
92186113023	**27-4**	Solid	01/09/14 08:55	01/11/14 10:20
92186113024	**27-5**	Solid	01/09/14 08:55	01/11/14 10:20
92186113025	**27-6**	Solid	01/09/14 08:57	01/11/14 10:20

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 6010	JMW	7	PASI-A
		EPA 7471	MTS	1	PASI-A
		EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 6010	JMW	7	PASI-A
		EPA 7471	MTS	1	PASI-A
		EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 6010	JMW	7	PASI-A
		EPA 7471	MTS	1	PASI-A
		EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113020	**27-1**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113021	**27-2**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

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SAMPLE ANALYTE COUNT

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92186113022	**27-3**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113023	**27-4**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113024	**27-5**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113025	**27-6**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-1 **Lab ID: 92186113020** Collected: 01/08/14 17:15 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.8	6.1	1	01/13/14 14:20	01/15/14 01:02	68334-30-5	
Surrogates									
n-Pentacosane (S)	72	%	41-119		1	01/13/14 14:20	01/15/14 01:02	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.4	6.4	1	01/16/14 09:28	01/16/14 16:47	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-167		1	01/16/14 09:28	01/16/14 16:47	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**26.6**	%	0.10	0.10	1		01/17/14 09:34		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-2 **Lab ID: 92186113021** Collected: 01/08/14 17:16 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.5	5.9	1	01/14/14 09:00	01/15/14 03:24	68334-30-5	
Surrogates									
n-Pentacosane (S)	77	%	41-119		1	01/14/14 09:00	01/15/14 03:24	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	5.8	5.8	1	01/16/14 09:28	01/16/14 17:10	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-167		1	01/16/14 09:28	01/16/14 17:10	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**23.5**	%	0.10	0.10	1		01/17/14 09:34		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-3 **Lab ID: 92186113022** Collected: 01/08/14 17:17 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.5	5.9	1	01/14/14 09:00	01/15/14 03:48	68334-30-5	
Surrogates									
n-Pentacosane (S)	75	%	41-119		1	01/14/14 09:00	01/15/14 03:48	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.0	6.0	1	01/16/14 09:28	01/16/14 17:32	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-167		1	01/16/14 09:28	01/16/14 17:32	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**23.2**	%	0.10	0.10	1		01/17/14 09:29		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-4 **Lab ID: 92186113023** Collected: 01/09/14 08:55 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.4	5.8	1	01/14/14 09:00	01/15/14 03:48	68334-30-5	
Surrogates									
n-Pentacosane (S)	81	%	41-119		1	01/14/14 09:00	01/15/14 03:48	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	5.3	5.3	1	01/16/14 09:28	01/16/14 17:55	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	112	%	70-167		1	01/16/14 09:28	01/16/14 17:55	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**21.8**	%	0.10	0.10	1		01/17/14 09:29		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-5 **Lab ID: 92186113024** Collected: 01/09/14 08:55 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.4	5.7	1	01/14/14 09:00	01/15/14 04:11	68334-30-5	
Surrogates									
n-Pentacosane (S)	78	%	41-119		1	01/14/14 09:00	01/15/14 04:11	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.1	6.1	1	01/16/14 09:28	01/16/14 18:18	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-167		1	01/16/14 09:28	01/16/14 18:18	460-00-4	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Acetone	**110**	ug/kg	105	10.5	1		01/17/14 16:51	67-64-1	A+
Benzene	ND	ug/kg	5.2	1.7	1		01/17/14 16:51	71-43-2	
Bromobenzene	ND	ug/kg	5.2	2.1	1		01/17/14 16:51	108-86-1	
Bromochloromethane	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	74-97-5	
Bromodichloromethane	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	75-27-4	
Bromoform	ND	ug/kg	5.2	2.4	1		01/17/14 16:51	75-25-2	
Bromomethane	ND	ug/kg	10.5	2.6	1		01/17/14 16:51	74-83-9	
2-Butanone (MEK)	ND	ug/kg	105	3.0	1		01/17/14 16:51	78-93-3	
n-Butylbenzene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.2	1.7	1		01/17/14 16:51	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.2	2.1	1		01/17/14 16:51	98-06-6	
Carbon tetrachloride	ND	ug/kg	5.2	2.7	1		01/17/14 16:51	56-23-5	
Chlorobenzene	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	108-90-7	
Chloroethane	ND	ug/kg	10.5	2.5	1		01/17/14 16:51	75-00-3	
Chloroform	ND	ug/kg	5.2	1.7	1		01/17/14 16:51	67-66-3	
Chloromethane	ND	ug/kg	10.5	2.5	1		01/17/14 16:51	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.2	3.8	1		01/17/14 16:51	96-12-8	
Dibromochloromethane	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	106-93-4	
Dibromomethane	ND	ug/kg	5.2	2.6	1		01/17/14 16:51	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.2	2.1	1		01/17/14 16:51	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	10.5	3.8	1		01/17/14 16:51	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.2	1.6	1		01/17/14 16:51	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.2	2.3	1		01/17/14 16:51	107-06-2	
1,1-Dichloroethene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.2	1.5	1		01/17/14 16:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.2	1.6	1		01/17/14 16:51	563-58-6	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-5 **Lab ID: 92186113024** Collected: 01/09/14 08:55 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
cis-1,3-Dichloropropene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	5.2	1.6	1		01/17/14 16:51	10061-02-6	
Diisopropyl ether	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	108-20-3	
Ethylbenzene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.2	2.1	1		01/17/14 16:51	87-68-3	
2-Hexanone	ND	ug/kg	52.3	4.1	1		01/17/14 16:51	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	99-87-6	
Methylene Chloride	ND	ug/kg	20.9	3.1	1		01/17/14 16:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	52.3	3.9	1		01/17/14 16:51	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	5.2	1.6	1		01/17/14 16:51	1634-04-4	
Naphthalene	ND	ug/kg	5.2	1.3	1		01/17/14 16:51	91-20-3	
n-Propylbenzene	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	103-65-1	
Styrene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.2	2.2	1		01/17/14 16:51	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	79-34-5	
Tetrachloroethene	ND	ug/kg	5.2	1.8	1		01/17/14 16:51	127-18-4	
Toluene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.2	2.3	1		01/17/14 16:51	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.2	1.7	1		01/17/14 16:51	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.2	2.2	1		01/17/14 16:51	79-00-5	
Trichloroethene	ND	ug/kg	5.2	2.2	1		01/17/14 16:51	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.2	2.3	1		01/17/14 16:51	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.2	1.7	1		01/17/14 16:51	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.2	2.1	1		01/17/14 16:51	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.2	1.9	1		01/17/14 16:51	108-67-8	
Vinyl acetate	ND	ug/kg	52.3	9.2	1		01/17/14 16:51	108-05-4	
Vinyl chloride	ND	ug/kg	10.5	1.9	1		01/17/14 16:51	75-01-4	
Xylene (Total)	ND	ug/kg	10.5	3.8	1		01/17/14 16:51	1330-20-7	
m&p-Xylene	ND	ug/kg	10.5	3.8	1		01/17/14 16:51	179601-23-1	
o-Xylene	ND	ug/kg	5.2	2.0	1		01/17/14 16:51	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1		01/17/14 16:51	2037-26-5	
4-Bromofluorobenzene (S)	86	%	70-130		1		01/17/14 16:51	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-132		1		01/17/14 16:51	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**21.5**	%	0.10	0.10	1		01/17/14 09:30		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-6 **Lab ID: 92186113025** Collected: 01/09/14 08:57 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.6	6.0	1	01/14/14 09:00	01/15/14 04:11	68334-30-5	
Surrogates									
n-Pentacosane (S)	77	%	41-119		1	01/14/14 09:00	01/15/14 04:11	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.9	6.9	1	01/16/14 09:28	01/16/14 18:41	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-167		1	01/16/14 09:28	01/16/14 18:41	460-00-4	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Acetone	ND	ug/kg	103	10.3	1		01/17/14 17:10	67-64-1	
Benzene	ND	ug/kg	5.2	1.6	1		01/17/14 17:10	71-43-2	
Bromobenzene	ND	ug/kg	5.2	2.1	1		01/17/14 17:10	108-86-1	
Bromochloromethane	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	74-97-5	
Bromodichloromethane	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	75-27-4	
Bromoform	ND	ug/kg	5.2	2.4	1		01/17/14 17:10	75-25-2	
Bromomethane	ND	ug/kg	10.3	2.6	1		01/17/14 17:10	74-83-9	
2-Butanone (MEK)	ND	ug/kg	103	3.0	1		01/17/14 17:10	78-93-3	
n-Butylbenzene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.2	1.6	1		01/17/14 17:10	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.2	2.1	1		01/17/14 17:10	98-06-6	
Carbon tetrachloride	ND	ug/kg	5.2	2.7	1		01/17/14 17:10	56-23-5	
Chlorobenzene	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	108-90-7	
Chloroethane	ND	ug/kg	10.3	2.5	1		01/17/14 17:10	75-00-3	
Chloroform	ND	ug/kg	5.2	1.6	1		01/17/14 17:10	67-66-3	
Chloromethane	ND	ug/kg	10.3	2.5	1		01/17/14 17:10	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.2	3.7	1		01/17/14 17:10	96-12-8	
Dibromochloromethane	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	106-93-4	
Dibromomethane	ND	ug/kg	5.2	2.6	1		01/17/14 17:10	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.2	2.1	1		01/17/14 17:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	10.3	3.7	1		01/17/14 17:10	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.2	1.5	1		01/17/14 17:10	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.2	2.3	1		01/17/14 17:10	107-06-2	
1,1-Dichloroethene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.2	1.4	1		01/17/14 17:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.2	1.5	1		01/17/14 17:10	563-58-6	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 27-6 **Lab ID: 92186113025** Collected: 01/09/14 08:57 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
cis-1,3-Dichloropropene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	5.2	1.5	1		01/17/14 17:10	10061-02-6	
Diisopropyl ether	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	108-20-3	
Ethylbenzene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.2	2.1	1		01/17/14 17:10	87-68-3	
2-Hexanone	ND	ug/kg	51.5	4.0	1		01/17/14 17:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	99-87-6	
Methylene Chloride	ND	ug/kg	20.6	3.1	1		01/17/14 17:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	51.5	3.8	1		01/17/14 17:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	5.2	1.5	1		01/17/14 17:10	1634-04-4	
Naphthalene	ND	ug/kg	5.2	1.2	1		01/17/14 17:10	91-20-3	
n-Propylbenzene	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	103-65-1	
Styrene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.2	2.2	1		01/17/14 17:10	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	79-34-5	
Tetrachloroethene	ND	ug/kg	5.2	1.8	1		01/17/14 17:10	127-18-4	
Toluene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.2	2.3	1		01/17/14 17:10	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.2	1.6	1		01/17/14 17:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.2	2.2	1		01/17/14 17:10	79-00-5	
Trichloroethene	ND	ug/kg	5.2	2.2	1		01/17/14 17:10	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.2	2.3	1		01/17/14 17:10	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.2	1.6	1		01/17/14 17:10	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.2	2.1	1		01/17/14 17:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.2	1.9	1		01/17/14 17:10	108-67-8	
Vinyl acetate	ND	ug/kg	51.5	9.1	1		01/17/14 17:10	108-05-4	
Vinyl chloride	ND	ug/kg	10.3	1.9	1		01/17/14 17:10	75-01-4	
Xylene (Total)	ND	ug/kg	10.3	3.7	1		01/17/14 17:10	1330-20-7	
m&p-Xylene	ND	ug/kg	10.3	3.7	1		01/17/14 17:10	179601-23-1	
o-Xylene	ND	ug/kg	5.2	2.0	1		01/17/14 17:10	95-47-6	
Surrogates									
Toluene-d8 (S)	100	%	70-130		1		01/17/14 17:10	2037-26-5	
4-Bromofluorobenzene (S)	87	%	70-130		1		01/17/14 17:10	460-00-4	
1,2-Dichloroethane-d4 (S)	123	%	70-132		1		01/17/14 17:10	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**24.7**	%	0.10	0.10	1		01/17/14 09:30		

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: GCV/7709 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005

METHOD BLANK: 1120401 Matrix: Solid
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	01/14/14 10:38	
4-Bromofluorobenzene (S)	%	102	70-167	01/14/14 10:38	

LABORATORY CONTROL SAMPLE: 1120402

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	50	53.2	106	70-165	
4-Bromofluorobenzene (S)	%			96	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120403 1120404

Parameter	Units	92185828001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	60.7	60.7	71.9	65.6	117	107	47-187	9	30	
4-Bromofluorobenzene (S)	%						107	106	70-167			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120405 1120406

Parameter	Units	92185830001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	63.6	63.6	73.9	73.1	115	114	47-187	1	30	
4-Bromofluorobenzene (S)	%						106	109	70-167			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: GCV/7714 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113015, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020, 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

METHOD BLANK: 1122174 Matrix: Solid
Associated Lab Samples: 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113015, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020, 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	01/16/14 10:41	
4-Bromofluorobenzene (S)	%	103	70-167	01/16/14 10:41	

LABORATORY CONTROL SAMPLE: 1122175

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	49.6	52.7	106	70-165	
4-Bromofluorobenzene (S)	%			99	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1122176 1122177

Parameter	Units	92186113006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	56.1	56.1	63.4	62.1	113	110	47-187	2	30	
4-Bromofluorobenzene (S)	%						106	105	70-167			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: MERP/6049 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 92186113017, 92186113018, 92186113019

METHOD BLANK: 1121654 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.0050	01/15/14 18:25	

LABORATORY CONTROL SAMPLE: 1121655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.067	0.071	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1121656 1121657

Parameter	Units	92186004001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.0045	.063	.053	.0023J	0.0043	-3	0	75-125		20	M1

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: MPRP/15050 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 92186113017, 92186113018, 92186113019

METHOD BLANK: 1121372 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	01/16/14 17:14	
Cadmium	mg/kg	ND	0.10	01/16/14 17:14	
Chromium	mg/kg	ND	0.50	01/16/14 17:14	
Lead	mg/kg	ND	0.50	01/16/14 17:14	
Selenium	mg/kg	ND	1.0	01/16/14 17:14	

LABORATORY CONTROL SAMPLE: 1121373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.7	99	80-120	
Cadmium	mg/kg	50	49.7	99	80-120	
Chromium	mg/kg	50	47.1	94	80-120	
Lead	mg/kg	50	49.9	100	80-120	
Selenium	mg/kg	50	49.9	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1121374 1121375

Parameter	Units	92186081001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.1	61.5	51.3	59.0	46.3	94	88	75-125	24	20	R1
Cadmium	mg/kg	ND	61.5	51.3	57.8	45.0	94	88	75-125	25	20	R1
Chromium	mg/kg	2.3	61.5	51.3	58.5	46.3	91	86	75-125	23	20	R1
Lead	mg/kg	2.7	61.5	51.3	59.8	46.9	93	86	75-125	24	20	R1
Selenium	mg/kg	ND	61.5	51.3	57.3	44.4	93	86	75-125	25	20	R1

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: MSV/25542 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92186113017, 92186113018, 92186113019, 92186113024, 92186113025

METHOD BLANK: 1123342 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1,1-Trichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1,2-Trichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1-Dichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1-Dichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
1,1-Dichloropropene	ug/kg	ND	5.5	01/17/14 12:16	
1,2,3-Trichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2,3-Trichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,2,4-Trichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2,4-Trimethylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,3,5-Trimethylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,3-Dichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,3-Dichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,4-Dichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
2,2-Dichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
2-Butanone (MEK)	ug/kg	ND	111	01/17/14 12:16	
2-Chlorotoluene	ug/kg	ND	5.5	01/17/14 12:16	
2-Hexanone	ug/kg	ND	55.3	01/17/14 12:16	
4-Chlorotoluene	ug/kg	ND	5.5	01/17/14 12:16	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	55.3	01/17/14 12:16	
Acetone	ug/kg	ND	111	01/17/14 12:16	
Benzene	ug/kg	ND	5.5	01/17/14 12:16	
Bromobenzene	ug/kg	ND	5.5	01/17/14 12:16	
Bromochloromethane	ug/kg	ND	5.5	01/17/14 12:16	
Bromodichloromethane	ug/kg	ND	5.5	01/17/14 12:16	
Bromoform	ug/kg	ND	5.5	01/17/14 12:16	
Bromomethane	ug/kg	ND	11.1	01/17/14 12:16	
Carbon tetrachloride	ug/kg	ND	5.5	01/17/14 12:16	
Chlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
Chloroethane	ug/kg	ND	11.1	01/17/14 12:16	
Chloroform	ug/kg	ND	5.5	01/17/14 12:16	
Chloromethane	ug/kg	ND	11.1	01/17/14 12:16	
cis-1,2-Dichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
cis-1,3-Dichloropropene	ug/kg	ND	5.5	01/17/14 12:16	
Dibromochloromethane	ug/kg	ND	5.5	01/17/14 12:16	
Dibromomethane	ug/kg	ND	5.5	01/17/14 12:16	
Dichlorodifluoromethane	ug/kg	ND	11.1	01/17/14 12:16	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

METHOD BLANK: 1123342 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/kg	ND	5.5	01/17/14 12:16	
Ethylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Hexachloro-1,3-butadiene	ug/kg	ND	5.5	01/17/14 12:16	
Isopropylbenzene (Cumene)	ug/kg	ND	5.5	01/17/14 12:16	
m&p-Xylene	ug/kg	ND	11.1	01/17/14 12:16	
Methyl-tert-butyl ether	ug/kg	ND	5.5	01/17/14 12:16	
Methylene Chloride	ug/kg	ND	22.1	01/17/14 12:16	
n-Butylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
n-Propylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Naphthalene	ug/kg	ND	5.5	01/17/14 12:16	
o-Xylene	ug/kg	ND	5.5	01/17/14 12:16	
p-Isopropyltoluene	ug/kg	ND	5.5	01/17/14 12:16	
sec-Butylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Styrene	ug/kg	ND	5.5	01/17/14 12:16	
tert-Butylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Tetrachloroethene	ug/kg	ND	5.5	01/17/14 12:16	
Toluene	ug/kg	ND	5.5	01/17/14 12:16	
trans-1,2-Dichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
trans-1,3-Dichloropropene	ug/kg	ND	5.5	01/17/14 12:16	
Trichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
Trichlorofluoromethane	ug/kg	ND	5.5	01/17/14 12:16	
Vinyl acetate	ug/kg	ND	55.3	01/17/14 12:16	
Vinyl chloride	ug/kg	ND	11.1	01/17/14 12:16	
Xylene (Total)	ug/kg	ND	11.1	01/17/14 12:16	
1,2-Dichloroethane-d4 (S)	%	122	70-132	01/17/14 12:16	
4-Bromofluorobenzene (S)	%	83	70-130	01/17/14 12:16	
Toluene-d8 (S)	%	99	70-130	01/17/14 12:16	

LABORATORY CONTROL SAMPLE: 1123343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	55.7	52.9	95	70-131	
1,1,1-Trichloroethane	ug/kg	55.7	53.3	96	70-141	
1,1,2,2-Tetrachloroethane	ug/kg	55.7	50.3	90	70-130	
1,1,2-Trichloroethane	ug/kg	55.7	51.5	92	70-132	
1,1-Dichloroethane	ug/kg	55.7	53.2	95	70-143	
1,1-Dichloroethene	ug/kg	55.7	55.0	99	70-137	
1,1-Dichloropropene	ug/kg	55.7	53.6	96	70-135	
1,2,3-Trichlorobenzene	ug/kg	55.7	45.6	82	69-153	
1,2,3-Trichloropropane	ug/kg	55.7	54.4	98	70-130	
1,2,4-Trichlorobenzene	ug/kg	55.7	43.7	79	55-171	
1,2,4-Trimethylbenzene	ug/kg	55.7	51.8	93	70-149	
1,2-Dibromo-3-chloropropane	ug/kg	55.7	48.8	88	68-141	
1,2-Dibromoethane (EDB)	ug/kg	55.7	51.3	92	70-130	
1,2-Dichlorobenzene	ug/kg	55.7	52.0	93	70-140	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1123343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/kg	55.7	53.6	96	70-137	
1,2-Dichloropropane	ug/kg	55.7	52.5	94	70-133	
1,3,5-Trimethylbenzene	ug/kg	55.7	52.2	94	70-143	
1,3-Dichlorobenzene	ug/kg	55.7	50.5	91	70-144	
1,3-Dichloropropane	ug/kg	55.7	54.0	97	70-132	
1,4-Dichlorobenzene	ug/kg	55.7	51.9	93	70-142	
2,2-Dichloropropane	ug/kg	55.7	54.1	97	68-152	
2-Butanone (MEK)	ug/kg	111	94.1J	84	70-149	
2-Chlorotoluene	ug/kg	55.7	50.5	91	70-141	
2-Hexanone	ug/kg	111	108	97	70-149	
4-Chlorotoluene	ug/kg	55.7	51.8	93	70-149	
4-Methyl-2-pentanone (MIBK)	ug/kg	111	107	96	70-153	
Acetone	ug/kg	111	106J	95	70-157	
Benzene	ug/kg	55.7	51.6	93	70-130	
Bromobenzene	ug/kg	55.7	50.8	91	70-141	
Bromochloromethane	ug/kg	55.7	52.6	95	70-149	
Bromodichloromethane	ug/kg	55.7	52.8	95	70-130	
Bromoform	ug/kg	55.7	51.9	93	70-131	
Bromomethane	ug/kg	55.7	57.5	103	64-136	
Carbon tetrachloride	ug/kg	55.7	53.8	97	70-154	
Chlorobenzene	ug/kg	55.7	52.3	94	70-135	
Chloroethane	ug/kg	55.7	54.3	97	68-151	
Chloroform	ug/kg	55.7	54.8	98	70-130	
Chloromethane	ug/kg	55.7	49.6	89	70-132	
cis-1,2-Dichloroethene	ug/kg	55.7	52.1	93	70-140	
cis-1,3-Dichloropropene	ug/kg	55.7	48.9	88	70-137	
Dibromochloromethane	ug/kg	55.7	52.2	94	70-130	
Dibromomethane	ug/kg	55.7	51.6	93	70-136	
Dichlorodifluoromethane	ug/kg	55.7	51.6	93	36-148	
Diisopropyl ether	ug/kg	55.7	56.7	102	70-139	
Ethylbenzene	ug/kg	55.7	53.4	96	70-137	
Hexachloro-1,3-butadiene	ug/kg	55.7	46.0	83	70-145	
Isopropylbenzene (Cumene)	ug/kg	55.7	56.4	101	70-141	
m&p-Xylene	ug/kg	111	111	100	70-140	
Methyl-tert-butyl ether	ug/kg	55.7	55.7	100	45-150	
Methylene Chloride	ug/kg	55.7	54.5	98	70-133	
n-Butylbenzene	ug/kg	55.7	53.9	97	65-155	
n-Propylbenzene	ug/kg	55.7	54.9	99	70-148	
Naphthalene	ug/kg	55.7	49.2	88	70-148	
o-Xylene	ug/kg	55.7	53.8	97	70-141	
p-Isopropyltoluene	ug/kg	55.7	54.4	98	70-148	
sec-Butylbenzene	ug/kg	55.7	55.6	100	70-145	
Styrene	ug/kg	55.7	55.1	99	70-138	
tert-Butylbenzene	ug/kg	55.7	53.5	96	70-143	
Tetrachloroethene	ug/kg	55.7	50.2	90	70-140	
Toluene	ug/kg	55.7	52.3	94	70-130	
trans-1,2-Dichloroethene	ug/kg	55.7	51.8	93	70-136	
trans-1,3-Dichloropropene	ug/kg	55.7	53.3	96	70-138	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1123343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/kg	55.7	53.8	97	70-132	
Trichlorofluoromethane	ug/kg	55.7	57.5	103	69-134	
Vinyl acetate	ug/kg	111	119	107	24-161	
Vinyl chloride	ug/kg	55.7	53.9	97	55-140	
Xylene (Total)	ug/kg	167	165	99	70-141	
1,2-Dichloroethane-d4 (S)	%			103	70-132	
4-Bromofluorobenzene (S)	%			95	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE SAMPLE: 1124395

Parameter	Units	92186115001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/kg	ND	28.2	24.2	86	49-180	
Benzene	ug/kg	ND	28.2	29.8	105	50-166	
Chlorobenzene	ug/kg	ND	28.2	30.1	107	43-169	
Toluene	ug/kg	ND	28.2	45.3	160	52-163	
Trichloroethene	ug/kg	ND	28.2	29.5	105	49-167	
1,2-Dichloroethane-d4 (S)	%				120	70-132	
4-Bromofluorobenzene (S)	%				90	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1124394

Parameter	Units	92186113017 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	ND	6J		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	6.6		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

SAMPLE DUPLICATE: 1124394

Parameter	Units	92186113017 Result	Dup Result	RPD	Max RPD	Qualifiers
2-Butanone (MEK)	ug/kg	ND	8J		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	69.2J		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	
m&p-Xylene	ug/kg	ND	8.6J		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	5.4J		30	
o-Xylene	ug/kg	ND	2.6J		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	3.3J		30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	107	100	5		
4-Bromofluorobenzene (S)	%	88	85	10		

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

SAMPLE DUPLICATE: 1124394

Parameter	Units	92186113017 Result	Dup Result	RPD	Max RPD	Qualifiers
Toluene-d8 (S)	%	99	100	14		

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: OEXT/25495 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005, 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020

METHOD BLANK: 1120120 Matrix: Solid
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005, 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	01/14/14 20:41	
n-Pentacosane (S)	%	77	41-119	01/14/14 20:41	

LABORATORY CONTROL SAMPLE: 1120121

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	49.5	74	49-113	
n-Pentacosane (S)	%			81	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120122 1120123

Parameter	Units	92186113004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Components	mg/kg	ND	94.2	94.2	65.3	49.5	68	51	10-146	28	30	
n-Pentacosane (S)	%						73	53	41-119			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: OEXT/25503 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

METHOD BLANK: 1120384 Matrix: Solid
Associated Lab Samples: 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	01/15/14 01:49	
n-Pentacosane (S)	%	76	41-119	01/15/14 01:49	

LABORATORY CONTROL SAMPLE: 1120385

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	51.4	77	49-113	
n-Pentacosane (S)	%			79	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120386 1120387

Parameter	Units	92186150001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Components	mg/kg	ND	87.4	87.4	63.5	65.8	72	74	10-146	4	30	
n-Pentacosane (S)	%						76	77	41-119			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: OEXT/25493 Analysis Method: EPA 8270
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 92186113017, 92186113018, 92186113019

METHOD BLANK: 1120090 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1,2-Dichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1,3-Dichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1,4-Dichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1-Methylnaphthalene	ug/kg	ND	330	01/14/14 11:51	
2,4,5-Trichlorophenol	ug/kg	ND	330	01/14/14 11:51	
2,4,6-Trichlorophenol	ug/kg	ND	330	01/14/14 11:51	
2,4-Dichlorophenol	ug/kg	ND	330	01/14/14 11:51	
2,4-Dimethylphenol	ug/kg	ND	330	01/14/14 11:51	
2,4-Dinitrophenol	ug/kg	ND	1650	01/14/14 11:51	
2,4-Dinitrotoluene	ug/kg	ND	330	01/14/14 11:51	
2,6-Dinitrotoluene	ug/kg	ND	330	01/14/14 11:51	
2-Chloronaphthalene	ug/kg	ND	330	01/14/14 11:51	
2-Chlorophenol	ug/kg	ND	330	01/14/14 11:51	
2-Methylnaphthalene	ug/kg	ND	330	01/14/14 11:51	
2-Methylphenol(o-Cresol)	ug/kg	ND	330	01/14/14 11:51	
2-Nitroaniline	ug/kg	ND	1650	01/14/14 11:51	
2-Nitrophenol	ug/kg	ND	330	01/14/14 11:51	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	330	01/14/14 11:51	
3,3'-Dichlorobenzidine	ug/kg	ND	1650	01/14/14 11:51	
3-Nitroaniline	ug/kg	ND	1650	01/14/14 11:51	
4,6-Dinitro-2-methylphenol	ug/kg	ND	660	01/14/14 11:51	
4-Bromophenylphenyl ether	ug/kg	ND	330	01/14/14 11:51	
4-Chloro-3-methylphenol	ug/kg	ND	660	01/14/14 11:51	
4-Chloroaniline	ug/kg	ND	1650	01/14/14 11:51	
4-Chlorophenylphenyl ether	ug/kg	ND	330	01/14/14 11:51	
4-Nitroaniline	ug/kg	ND	660	01/14/14 11:51	
4-Nitrophenol	ug/kg	ND	1650	01/14/14 11:51	
Acenaphthene	ug/kg	ND	330	01/14/14 11:51	
Acenaphthylene	ug/kg	ND	330	01/14/14 11:51	
Aniline	ug/kg	ND	330	01/14/14 11:51	
Anthracene	ug/kg	ND	330	01/14/14 11:51	
Benzo(a)anthracene	ug/kg	ND	330	01/14/14 11:51	
Benzo(a)pyrene	ug/kg	ND	330	01/14/14 11:51	
Benzo(b)fluoranthene	ug/kg	ND	330	01/14/14 11:51	
Benzo(g,h,i)perylene	ug/kg	ND	330	01/14/14 11:51	
Benzo(k)fluoranthene	ug/kg	ND	330	01/14/14 11:51	
Benzoic Acid	ug/kg	ND	1650	01/14/14 11:51	
Benzyl alcohol	ug/kg	ND	660	01/14/14 11:51	
bis(2-Chloroethoxy)methane	ug/kg	ND	330	01/14/14 11:51	
bis(2-Chloroethyl) ether	ug/kg	ND	330	01/14/14 11:51	
bis(2-Chloroisopropyl) ether	ug/kg	ND	330	01/14/14 11:51	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	330	01/14/14 11:51	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

METHOD BLANK: 1120090 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	ND	330	01/14/14 11:51	
Chrysene	ug/kg	ND	330	01/14/14 11:51	
Di-n-butylphthalate	ug/kg	ND	330	01/14/14 11:51	
Di-n-octylphthalate	ug/kg	ND	330	01/14/14 11:51	
Dibenz(a,h)anthracene	ug/kg	ND	330	01/14/14 11:51	
Dibenzofuran	ug/kg	ND	330	01/14/14 11:51	
Diethylphthalate	ug/kg	ND	330	01/14/14 11:51	
Dimethylphthalate	ug/kg	ND	330	01/14/14 11:51	
Fluoranthene	ug/kg	ND	330	01/14/14 11:51	
Fluorene	ug/kg	ND	330	01/14/14 11:51	
Hexachloro-1,3-butadiene	ug/kg	ND	330	01/14/14 11:51	
Hexachlorobenzene	ug/kg	ND	330	01/14/14 11:51	
Hexachlorocyclopentadiene	ug/kg	ND	330	01/14/14 11:51	
Hexachloroethane	ug/kg	ND	330	01/14/14 11:51	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	01/14/14 11:51	
Isophorone	ug/kg	ND	330	01/14/14 11:51	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	01/14/14 11:51	
N-Nitrosodimethylamine	ug/kg	ND	330	01/14/14 11:51	
N-Nitrosodiphenylamine	ug/kg	ND	330	01/14/14 11:51	
Naphthalene	ug/kg	ND	330	01/14/14 11:51	
Nitrobenzene	ug/kg	ND	330	01/14/14 11:51	
Pentachlorophenol	ug/kg	ND	1650	01/14/14 11:51	
Phenanthrene	ug/kg	ND	330	01/14/14 11:51	
Phenol	ug/kg	ND	330	01/14/14 11:51	
Pyrene	ug/kg	ND	330	01/14/14 11:51	
2,4,6-Tribromophenol (S)	%	46	27-110	01/14/14 11:51	
2-Fluorobiphenyl (S)	%	48	30-110	01/14/14 11:51	
2-Fluorophenol (S)	%	48	13-110	01/14/14 11:51	
Nitrobenzene-d5 (S)	%	47	23-110	01/14/14 11:51	
Phenol-d6 (S)	%	52	22-110	01/14/14 11:51	
Terphenyl-d14 (S)	%	90	28-110	01/14/14 11:51	

LABORATORY CONTROL SAMPLE: 1120091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	3330	2300	69	39-101	
1,2-Dichlorobenzene	ug/kg	3330	2180	65	36-110	
1,3-Dichlorobenzene	ug/kg	3330	2220	67	35-110	
1,4-Dichlorobenzene	ug/kg	3330	2230	67	35-110	
1-Methylnaphthalene	ug/kg	3330	2610	78	45-105	
2,4,5-Trichlorophenol	ug/kg	3330	3170	95	48-109	
2,4,6-Trichlorophenol	ug/kg	3330	2770	83	45-111	
2,4-Dichlorophenol	ug/kg	3330	2690	81	51-116	
2,4-Dimethylphenol	ug/kg	3330	2760	83	42-103	
2,4-Dinitrophenol	ug/kg	16700	13200	79	28-103	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1120091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dinitrotoluene	ug/kg	3330	3260	98	46-114	
2,6-Dinitrotoluene	ug/kg	3330	3340	100	48-112	
2-Chloronaphthalene	ug/kg	3330	2250	68	44-105	
2-Chlorophenol	ug/kg	3330	2610	78	36-110	
2-Methylnaphthalene	ug/kg	3330	2730	82	39-112	
2-Methylphenol(o-Cresol)	ug/kg	3330	2720	81	39-101	
2-Nitroaniline	ug/kg	6670	6010	90	44-111	
2-Nitrophenol	ug/kg	3330	3010	90	41-100	
3&4-Methylphenol(m&p Cresol)	ug/kg	3330	2670	80	43-103	
3,3'-Dichlorobenzidine	ug/kg	6670	4890	73	10-150	
3-Nitroaniline	ug/kg	6670	5720	86	35-110	
4,6-Dinitro-2-methylphenol	ug/kg	6670	5220	78	38-118	
4-Bromophenylphenyl ether	ug/kg	3330	2740	82	47-115	
4-Chloro-3-methylphenol	ug/kg	6670	5920	89	43-127	
4-Chloroaniline	ug/kg	6670	5090	76	34-109	
4-Chlorophenylphenyl ether	ug/kg	3330	2810	84	44-115	
4-Nitroaniline	ug/kg	6670	5990	90	37-111	
4-Nitrophenol	ug/kg	16700	12200	73	21-152	
Acenaphthene	ug/kg	3330	2530	76	38-117	
Acenaphthylene	ug/kg	3330	2670	80	46-107	
Aniline	ug/kg	3330	2420	73	29-110	
Anthracene	ug/kg	3330	2690	81	50-110	
Benzo(a)anthracene	ug/kg	3330	2580	77	47-116	
Benzo(a)pyrene	ug/kg	3330	2920	88	47-106	
Benzo(b)fluoranthene	ug/kg	3330	2710	81	47-109	
Benzo(g,h,i)perylene	ug/kg	3330	2890	87	39-115	
Benzo(k)fluoranthene	ug/kg	3330	2550	76	45-117	
Benzoic Acid	ug/kg	16700	12600	76	16-110	
Benzyl alcohol	ug/kg	6670	4680	70	38-105	
bis(2-Chloroethoxy)methane	ug/kg	3330	2600	78	39-110	
bis(2-Chloroethyl) ether	ug/kg	3330	2590	78	19-119	
bis(2-Chloroisopropyl) ether	ug/kg	3330	2340	70	21-110	
bis(2-Ethylhexyl)phthalate	ug/kg	3330	2630	79	35-116	
Butylbenzylphthalate	ug/kg	3330	2760	83	38-110	
Chrysene	ug/kg	3330	2690	81	49-110	
Di-n-butylphthalate	ug/kg	3330	2540	76	43-109	
Di-n-octylphthalate	ug/kg	3330	2840	85	37-109	
Dibenz(a,h)anthracene	ug/kg	3330	3020	90	43-116	
Dibenzofuran	ug/kg	3330	2280	68	45-106	
Diethylphthalate	ug/kg	3330	2580	77	41-114	
Dimethylphthalate	ug/kg	3330	2590	78	43-110	
Fluoranthene	ug/kg	3330	2760	83	50-114	
Fluorene	ug/kg	3330	2670	80	46-114	
Hexachloro-1,3-butadiene	ug/kg	3330	2390	72	28-111	
Hexachlorobenzene	ug/kg	3330	2430	73	46-120	
Hexachlorocyclopentadiene	ug/kg	3330	3150	94	18-119	
Hexachloroethane	ug/kg	3330	2170	65	33-110	
Indeno(1,2,3-cd)pyrene	ug/kg	3330	3050	92	42-115	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1120091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isophorone	ug/kg	3330	2880	86	44-109	
N-Nitroso-di-n-propylamine	ug/kg	3330	2110	63	43-104	
N-Nitrosodimethylamine	ug/kg	3330	2340	70	29-110	
N-Nitrosodiphenylamine	ug/kg	3330	2150	64	48-113	
Naphthalene	ug/kg	3330	2540	76	41-110	
Nitrobenzene	ug/kg	3330	2690	81	38-110	
Pentachlorophenol	ug/kg	6670	3890	58	32-128	
Phenanthrene	ug/kg	3330	2610	78	50-110	
Phenol	ug/kg	3330	2640	79	28-106	
Pyrene	ug/kg	3330	2840	85	45-114	
2,4,6-Tribromophenol (S)	%			89	27-110	
2-Fluorobiphenyl (S)	%			78	30-110	
2-Fluorophenol (S)	%			81	13-110	
Nitrobenzene-d5 (S)	%			79	23-110	
Phenol-d6 (S)	%			83	22-110	
Terphenyl-d14 (S)	%			87	28-110	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: PMST/6159 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113015

SAMPLE DUPLICATE: 1121730

Parameter	Units	92186192001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.3	13.9	5	25	

SAMPLE DUPLICATE: 1121731

Parameter	Units	92186113015 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.9	17.7	7	25	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: PMST/6163
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005, 92186113006, 92186113007, 92186113008, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020, 92186113021

SAMPLE DUPLICATE: 1121766

Parameter	Units	92186378006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.8	13.7	6	25	

SAMPLE DUPLICATE: 1121767

Parameter	Units	92186113021 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.5	23.3	1	25	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: PMST/6164
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92186113022, 92186113023, 92186113024, 92186113025

SAMPLE DUPLICATE: 1121804

Parameter	Units	92186316001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.3	18.7	3	25	

SAMPLE DUPLICATE: 1121805

Parameter	Units	92186447002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	98.3	98.4	0	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

A+	The reaction of the soil preservative, sodium bisulfate, is known to react with humic acid in soils to produce ketones. Based upon method blank results, the laboratory feels the ketones in this sample are a result of that reaction.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92186113001	**SB-1**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113002	**SB-2**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113003	**SB-3**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113004	**SB-4**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113005	**SB-5**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113006	**SB-6**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113007	**SB-7**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113008	**4-1**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113009	**4-2**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113010	**4-3**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113011	**4-4**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113012	**4-5**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113013	**4-6**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113014	**4-7**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113016	**4-9**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113017	**4-10**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113018	**4-11**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113019	**4-12**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113020	**27-1**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113021	**27-2**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113022	**27-3**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113023	**27-4**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113024	**27-5**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113025	**27-6**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113001	**SB-1**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113002	**SB-2**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113003	**SB-3**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113004	**SB-4**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113005	**SB-5**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113006	**SB-6**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113007	**SB-7**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113008	**4-1**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113009	**4-2**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113010	**4-3**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113011	**4-4**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113012	**4-5**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113013	**4-6**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113014	**4-7**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113015	**4-8**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113016	**4-9**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113017	**4-10**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113018	**4-11**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113019	**4-12**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113020	**27-1**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113021	**27-2**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113022	**27-3**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113023	**27-4**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92186113024	**27-5**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113025	**27-6**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113017	**4-10**	EPA 3050	MPRP/15050	EPA 6010	ICP/13661
92186113018	**4-11**	EPA 3050	MPRP/15050	EPA 6010	ICP/13661
92186113019	**4-12**	EPA 3050	MPRP/15050	EPA 6010	ICP/13661
92186113017	**4-10**	EPA 7471	MERP/6049	EPA 7471	MERC/5840
92186113018	**4-11**	EPA 7471	MERP/6049	EPA 7471	MERC/5840
92186113019	**4-12**	EPA 7471	MERP/6049	EPA 7471	MERC/5840
92186113017	**4-10**	EPA 3546	OEXT/25493	EPA 8270	MSSV/8650
92186113018	**4-11**	EPA 3546	OEXT/25493	EPA 8270	MSSV/8650
92186113019	**4-12**	EPA 3546	OEXT/25493	EPA 8270	MSSV/8650
92186113017	**4-10**	EPA 8260	MSV/25542		
92186113018	**4-11**	EPA 8260	MSV/25542		
92186113019	**4-12**	EPA 8260	MSV/25542		
92186113024	**27-5**	EPA 8260	MSV/25542		
92186113025	**27-6**	EPA 8260	MSV/25542		
92186113001	**SB-1**	ASTM D2974-87	PMST/6163		
92186113002	**SB-2**	ASTM D2974-87	PMST/6163		
92186113003	**SB-3**	ASTM D2974-87	PMST/6163		
92186113004	**SB-4**	ASTM D2974-87	PMST/6163		
92186113005	**SB-5**	ASTM D2974-87	PMST/6163		
92186113006	**SB-6**	ASTM D2974-87	PMST/6163		
92186113007	**SB-7**	ASTM D2974-87	PMST/6163		
92186113008	**4-1**	ASTM D2974-87	PMST/6163		
92186113009	**4-2**	ASTM D2974-87	PMST/6159		
92186113010	**4-3**	ASTM D2974-87	PMST/6159		
92186113011	**4-4**	ASTM D2974-87	PMST/6159		
92186113012	**4-5**	ASTM D2974-87	PMST/6159		
92186113013	**4-6**	ASTM D2974-87	PMST/6159		
92186113014	**4-7**	ASTM D2974-87	PMST/6159		
92186113015	**4-8**	ASTM D2974-87	PMST/6159		
92186113016	**4-9**	ASTM D2974-87	PMST/6163		
92186113017	**4-10**	ASTM D2974-87	PMST/6163		
92186113018	**4-11**	ASTM D2974-87	PMST/6163		
92186113019	**4-12**	ASTM D2974-87	PMST/6163		
92186113020	**27-1**	ASTM D2974-87	PMST/6163		
92186113021	**27-2**	ASTM D2974-87	PMST/6163		
92186113022	**27-3**	ASTM D2974-87	PMST/6164		
92186113023	**27-4**	ASTM D2974-87	PMST/6164		
92186113024	**27-5**	ASTM D2974-87	PMST/6164		
92186113025	**27-6**	ASTM D2974-87	PMST/6164		

Pace Analytical	Sample Condition Upon Receipt (SCUR)	Page 1 of 2
	Document Number: F-CHR-CS-03-rev.13	Issuing Authority: Pace Huntersville Quality Office

Client Name: Solutions

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1102 T1301 Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Temp Correction Factor T1102: No Correction T1301: No Correction

Corrected Cooler Temp.: 3.8 °C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: mw 1/11/14

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☐Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☐Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☐No ☐N/A	7. DRO
Sufficient Volume:	☐Yes ☐No ☐N/A	8. jar for 4-8 Acid broken
Correct Containers Used:	☐Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☐No ☐N/A	
Containers Intact:	☐Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☐N/A	11.
Sample Labels match COC:	☐Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☐Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Mike Branson Date/Time: 1-13-14

Comments/ Resolution: WBS 416139.1.1

1-13-14 → let him know WOFU broken for 4-8. Cannot run DRO.

SCURF Review: AMB Date: 1-13-14

SRF Review: JDB Date: 1/13/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92186113

92186113

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical®
www.pacelabs.com

1732702

Section A Required Client Information:

Company: Solutions-IES
Address: 101 Nowell Rd.
Raleigh NC 27607
Email To: mbranson@solutions-ies.com
Phone: (919) 873-1060 Fax:
Requested Due Date/TAT: STD

Section B Required Project Information:

Report To: Mike Branson
Copy To:
Purchase Order No.:
Project Name: Rowan ~~Stokes~~ Co. PSA
Project Number: 2013.0077-NDOT

Section C Invoice Information:

Attention: Emily Davis
Company Name: SIES
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: DRO/GRO	VOCs 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	27-1	SL	G			1/8/14	1715		4					~~X~~	X	X		X			921840113 020
2	27-2	↓	↓			↓	1716		↓												021
3	27-3					↓	1717														022
4	27-4					1/9/14	855		↓												023
5	27-5						856		8						X				X		024
6	27-6	↓	↓			↓	857		8						X				X		025
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Parcel 27 samples	[signature] / SIES	1/10/14	1215	[signature]	1/10/14	1245	
				[signature]	1/11/14	1020	Temp in °C: 3 e; Received on Ice (Y/N): y; Custody Sealed Cooler (Y/N): n; Samples Intact (Y/N): n

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Stewart Farling
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/9/14

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.