



January 3, 2018

Grace Zammitti
Project Engineer
Whiting-Turner Contracting Company
6305 Ivy Lane, Suite 800
Greenbelt, MD 20770

Re: GWU – Corcoran Hall Unknown Drum Characterization

Dear Ms. Zammitti:

On December 19th 2017, R3 Technologies collected four (1) liter samples from the above referenced drum – using a COLIWASA (Composite Liquid Waste Sampler) – for purposes of hazardous and characterization analysis. The COLIWASA method is an industry standard used to ensure that all phases of the unknown container are represented in the sample. Once collected, the samples were immediately refrigerated until they were picked up an hour later by a Caliber Analytical Services technician. Samples were then transported to the lab on ice in an Igloo cooler.

Once received by the lab, subject samples were processed for the following tests: pH; Ignitability; PCB's; Reactivity (Cyanides, Sulfides); Total Petroleum Hydrocarbons (Diesel Range & Gasoline Range); Total Metals (RCRA Expanded); Anions (Chloride, Fluoride, Nitrate, Sulfate); and TCLP (Herbicides, Metals, Pesticides, Semi-Volatiles, Volatiles). The results of those tests are attached.

Based on our interpretation of the resulting test data, it is reasonable to conclude that the contents of the above referenced drum are non-hazardous, consisting of 99.92% water and trace amounts of salts, metal and carbon. Accordingly, a detailed characterization of the data is delineated in the attached material profile sheet.

Thank you for the opportunity to assist you with the management of this project. Please do not hesitate to contact me at 443.253.3241 should you require further information. In the meantime, kindly have a representative from GWU execute the attached profile so we may process the waste material.

Sincerely,
R3 Technologies, Inc.



Joe Tumminello, CHMP
Sr. Project Manager



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

ACV Enviro
2931 Whittington Ave.
Baltimore, MD 21230

Date Sampled: 12/19/17 10:00
Date Received: 12/19/17 11:57
Date Issued: 12/28/17

Project: GWU
Site Location: 500 17th St. NW, Washington, DC
Project Number: 50146

SDG Number: 17121901

Field Sample ID:	R3 GWU 1	Matrix: Water			Lab ID: 17121901-01		
	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Corrosivity / pH							
pH	6.96	pH units		SM4500-H+B	12/22/17	12/22/17 12:50	MBC
Flash Point / Ignitability							
Flash Point	> 200	°F		ASTM D3278	12/28/17	12/28/17 10:15	GFH
Polychlorinated Biphenyls							
Aroclor 1016	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Aroclor 1221	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Aroclor 1232	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Aroclor 1242	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Aroclor 1248	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Aroclor 1254	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Aroclor 1260	ND	ug/L	5	EPA 8082	12/20/17	12/22/17 12:05	AC
Reactivity							
Cyanides, releasable HCN	NRM	mg/kg	10	SW846 Ch.7	12/28/17	12/28/17 12:30	MBC
Sulfides, releasable H ₂ S	NRM	mg/kg	100	SW846 Ch.7	12/28/17	12/28/17 12:30	MBC
Total Petroleum Hydrocarbons - (C10-C28) DRO							
Diesel Range Organics **	46	mg/L	2.9	EPA 8015C	12/19/17	12/20/17 10:03	AC
Total Petroleum Hydrocarbons - (C6-C10) GRO							
Gasoline Range Organics	0.33	mg/L	0.2	EPA 8015C	12/19/17	12/19/17 15:49	GFH

Notes/Qualifiers:

LLQ- Lowest Level of Quantitation

ND - Not Detected at a concentration greater than or equal to the LLQ.

** Chromatographic pattern inconsistent with diesel fuel.

NRM - Non-Reactive Matrix as defined by D003

Approved by:

QC Chemist



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

ACV Enviro
2931 Whittington Ave.
Baltimore, MD 21230

Date Sampled: 12/19/17 10:00
Date Received: 12/19/17 11:57
Date Issued: 12/28/17

Project: GWU
Site Location: 500 17th St. NW, Washington, DC
Project Number: 50146

SDG Number: 17121901

Field Sample ID:	R3 GWU 2	Matrix: Water			Lab ID: 17121901-02		
	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Total Metals							
Aluminum	ND	mg/L	0.05	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Antimony	0.0099	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Arsenic *	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Barium *	0.034	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Beryllium	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Cadmium *	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Calcium	230	mg/L	0.1	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Chromium*	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Cobalt	0.030	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Copper	0.37	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Iron	2.4	mg/L	0.1	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Lead *	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Magnesium	17	mg/L	0.1	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Manganese	0.083	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Mercury *	0.0037	mg/L	0.001	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Nickel	0.20	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Potassium	21	mg/L	0.1	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Selenium *	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Silver *	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Sodium	46	mg/L	0.1	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Thallium	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Vanadium	ND	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL
Zinc	0.41	mg/L	0.005	EPA 6020A	12/21/17	12/22/17 11:48	MEL

Notes/Qualifiers:

LLQ- Lowest Level of Quantitation

ND - Not Detected at a concentration greater than or equal to the LLQ.

* RCRA 8 Metal.

NRM - Non-Reactive Matrix as defined by D003

Approved by:

QC Chemist



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

ACV Enviro
2931 Whittington Ave.
Baltimore, MD 21230

Date Sampled: 12/19/17 10:00
Date Received: 12/19/17 11:57
Date Issued: 12/28/17

Project: GWU
Site Location: 500 17th St. NW, Washington, DC
Project Number: 50146

SDG Number: 17121901

Field Sample ID:	R3 GWU 3	Matrix: Water			Lab ID: 17121901-03		
	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Chloride by IC							
Chloride	59.3	mg/L	25	EPA 300.0	12/20/17	12/20/17 21:04	SS
Fluoride by IC							
Fluoride	3.83	mg/L	0.2	EPA 300.0	12/20/17	12/20/17 16:53	SS
Nitrate by IC							
Nitrate (as N)	ND	mg/L	0.2	EPA 300.0	12/20/17	12/20/17 16:53	SS
Sulfate by IC							
Sulfate	444	mg/L	50	EPA 300.0	12/20/17	12/20/17 21:04	SS

Notes/Qualifiers:

LLQ- Lowest Level of Quantitation

ND - Not Detected at a concentration greater than or equal to the LLQ.

NRM - Non-Reactive Matrix as defined by D003

Approved by:

QC Chemist



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

ACV Enviro
2931 Whittington Ave.
Baltimore, MD 21230

Date Sampled: 12/19/17 10:00

Date Received: 12/19/17 11:57

Date Issued: 12/28/17

Project: GWU
Site Location: 500 17th St. NW, Washington, DC
Project Number: 50146

SDG Number: 17121901

Field Sample ID:	R3 GWU 1	Matrix:	Water	Lab ID:	17121901-01			
	Result	Unit	LLQ	REGL	Method	Prepared	Analyzed	Init.
TCLP Herbicides								
2,4,5-TP (Silvex)	ND	ug/L	5	1000	1311/8151	12/21/17	12/21/17 18:15	AC
2,4-D	ND	ug/L	5	10000	1311/8151	12/21/17	12/21/17 18:15	AC
TCLP Metals								
Arsenic	ND	mg/L	0.5	5	1311/6020A	12/21/17	12/22/17 11:48	MEL
Barium	ND	mg/L	10	100	1311/6020A	12/21/17	12/22/17 11:48	MEL
Cadmium	ND	mg/L	0.1	1	1311/6020A	12/21/17	12/22/17 11:48	MEL
Chromium	ND	mg/L	0.5	5	1311/6020A	12/21/17	12/22/17 11:48	MEL
Lead	ND	mg/L	0.5	5	1311/6020A	12/21/17	12/22/17 11:48	MEL
Mercury	0.037	mg/L	0.02	0.2	1311/6020A	12/21/17	12/22/17 11:48	MEL
Selenium	ND	mg/L	0.1	1	1311/6020A	12/21/17	12/22/17 11:48	MEL
Silver	ND	mg/L	0.5	5	1311/6020A	12/21/17	12/22/17 11:48	MEL
TCLP Pesticides								
g-BHC (Lindane)	ND	ug/L	1	400	1311/8081	12/21/17	12/21/17 22:10	AC
Heptachlor	ND	ug/L	1	8	1311/8081	12/21/17	12/21/17 22:10	AC
Heptachlor Epoxide	ND	ug/L	1	8	1311/8081	12/21/17	12/21/17 22:10	AC
Endrin	ND	ug/L	1	20	1311/8081	12/21/17	12/21/17 22:10	AC
Methoxychlor	ND	ug/L	1	10000	1311/8081	12/21/17	12/21/17 22:10	AC
Toxaphene	ND	ug/L	10	500	1311/8081	12/21/17	12/21/17 22:10	AC
Chlordane	ND	ug/L	10	30	1311/8081	12/21/17	12/21/17 22:10	AC
TCLP Semi-Volatiles								
2-Methylphenol	ND	ug/L	1000	200000	1311/8270	12/22/17	12/27/17 15:04	GFH
3+4-Methylphenol	ND	ug/L	1000	200000	1311/8270	12/22/17	12/27/17 15:04	GFH
2,4-Dinitrotoluene	ND	ug/L	100	130	1311/8270	12/22/17	12/27/17 15:04	GFH
Hexachloroethane	ND	ug/L	100	3000	1311/8270	12/22/17	12/27/17 15:04	GFH
Hexachlorobenzene	ND	ug/L	100	130	1311/8270	12/22/17	12/27/17 15:04	GFH
Nitrobenzene	ND	ug/L	100	2000	1311/8270	12/22/17	12/27/17 15:04	GFH
Pentachlorophenol	ND	ug/L	2000	100000	1311/8270	12/22/17	12/27/17 15:04	GFH
Pyridine	ND	ug/L	1000	5000	1311/8270	12/22/17	12/27/17 15:04	GFH
2,4,5-Trichlorophenol	ND	ug/L	100	400000	1311/8270	12/22/17	12/27/17 15:04	GFH
2,4,6-Trichlorophenol	ND	ug/L	100	2000	1311/8270	12/22/17	12/27/17 15:04	GFH
Hexachlorobutadiene`	ND	ug/L	100	500	1311/8270	12/22/17	12/27/17 15:04	GFH



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

ACV Enviro
2931 Whittington Ave.
Baltimore, MD 21230

Date Sampled: 12/19/17 10:00

Date Received: 12/19/17 11:57

Date Issued: 12/28/17

Project: GWU
Site Location: 500 17th St. NW, Washington, DC
Project Number: 50146

SDG Number: 17121901

Field Sample ID:	R3 GWU 1	Matrix:	Water	Lab ID: 17121901-01					
	Result	Unit	LLQ	REGL	Method	Prepared	Analyzed	Init.	
TCLP Volatiles									
Benzene	ND	ug/L	5	500	1311/8260	12/28/17	12/28/17 11:54	GFH	
Carbon Tetrachloride	ND	ug/L	5	500	1311/8260	12/28/17	12/28/17 11:54	GFH	
Chloroform	ND	ug/L	5	6000	1311/8260	12/28/17	12/28/17 11:54	GFH	
1,2-Dichloroethane	ND	ug/L	5	500	1311/8260	12/28/17	12/28/17 11:54	GFH	
Tetrachloroethene	ND	ug/L	5	700	1311/8260	12/28/17	12/28/17 11:54	GFH	
Vinyl Chloride	ND	ug/L	5	200	1311/8260	12/28/17	12/28/17 11:54	GFH	
2-Butanone (MEK)	89	ug/L	10	200000	1311/8260	12/28/17	12/28/17 11:54	GFH	
Chlorobenzene	ND	ug/L	5	100000	1311/8260	12/28/17	12/28/17 11:54	GFH	
1,4-Dichlorobenzene	ND	ug/L	5	7500	1311/8260	12/28/17	12/28/17 11:54	GFH	
1,1-Dichloroethene	ND	ug/L	5	700	1311/8260	12/28/17	12/28/17 11:54	GFH	
Trichloroethene	ND	ug/L	5	500	1311/8260	12/28/17	12/28/17 11:54	GFH	

Notes/Qualifiers:

LLQ- Lowest Level of Quantitation

ND - Not Detected at a concentration greater than or equal to the LLQ.

REGL - RCRA Regulatory Limit. For TCLP reference 40CFR, Part 261.24, Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic

Approved by:

QC Chemist

Chain of Custody Record



Customer:	ACV Enviro
Contact/Report to:	Steve Glab
Phone:	410-368-9161
Fax:	410-368-9171

E-mail address:	sglab@acvenviro.com
Project Name:	GWU
Project Number:	50146
Site Location:	50017th St. NW, Washington DC

SDG Number:	17121901
Sampled by:	Steve Glab
PO Number:	193102-04

Page ____ of ____

Lab Number	Field Sample ID	Date Sampled	Time Sampled	No. of Bottles	Analysis Requested											Sampling Remarks/ Comments
					Preservative											
					Matrix *	EPA 8151 Herbicides RCRA	EPA 300.0 IC Screen	EPA 6020A Metals RCRA	EPA 8082 PCB's	EPA 8081 Pesticides RCRA	SW846 Ch. 7 RCI	EPA 8270 C SVOC's RCRA	EPA 8260 B VOC's RCRA	EPA 8015C TPH DRO	EPA 8015C TPH GRO	
	R3 GWU 1	12/19/17	10:00	1	Liquid											
	R3 GWU 2	12/19/17	10:00	1	Liquid											
	R3 GWU 3	12/19/17	10:00	1	Liquid											
	R3 GWU 4	12/19/17	10:00	1	Liquid											

Relinquished by:		Date/Time:	12/19	Deliverables:	Receipt Temperature:	Turnaround Time:
Received by:		Date/Time:	12/19/17 11:57	I II III CLP EDD	Temp: _____ On Ice	STD Next Day 2-Day Other _____
Relinquished by:		Date/Time:		Custody Seals:	Comments/Special Instructions:	
Received by:		Date/Time:		Sample Cooler		
Relinquished by:		Date/Time:		Delivered by client		
Received by:		Date/Time:		CAS Courier		

* DW = Drinking Water | GW = Groundwater | S = Soil | SL = Sludge | W = Water | WW = Wastewater

Cycle Chem, Inc. 217 South First Street Elizabeth, NJ 07206 Phone: (908) 355-5800 Fax: (908) 355-0562		550 Industrial Dr. Lewisberry, PA 17339 Phone: (717) 938-4700 Fax: (717) 938-3301	General Chemical 133 Leland St. Framingham, MA 01701 Phone: (508) 872-5000 Fax: (508) 875-5271	Material Profile Sheet Generator Number: _____ Product Code: _____ Sales Code: _____	
A. Generator Information					
Generator Name		George Washington University		Generator USEPA ID	DCD 983 967 498
Mailing Address		500 17 th Street NW, Washington DC 20006			
Site Address					
Generator Contact		Grace Zammitti		Phone #	201-661-0719
				Fax #	
Billing Address		R3 Technologies, Inc.; Towson, MD 21204			
Billing Contact		J. Tumminello		Phone #	443.253.3241
				Fax #	410.825.4779
Name of Waste		Non Hazardous Waste Water		Process Generating Waste	Unknown Origin – Presumed Mechanical
B. Physical Characteristics of Waste				C. Shipping Information	
Color/Physical Description: Clear				Specific Gravity: 1.0	
Strong Incidental Odor Present?: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Wastewater?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Physical State @ 70°:					
<input checked="" type="checkbox"/> Single Phase <input type="checkbox"/> Multilayered <input type="checkbox"/> Solid <input type="checkbox"/> Semi-solid <input type="checkbox"/> Gas/Aerosol <input type="checkbox"/> Loose Pack					
<input type="checkbox"/> Bi-layered <input type="checkbox"/> Powder <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Sludge <input type="checkbox"/> Lab Pack					
% Sludge 0 % Suspended solids 0 % Solid/Debris 0 % Free Liquids 100					
Dumpable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Pumpable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Pourable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Flashpoint: <input type="checkbox"/> <70° <input type="checkbox"/> 70-100° <input type="checkbox"/> 101-141° <input type="checkbox"/> 142-200° <input checked="" type="checkbox"/> >200° No Flash <input type="checkbox"/> Exact				Quantity: 1 Units:	
Ignitable Solid: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Price: Year	
pH: <input type="checkbox"/> <2 <input type="checkbox"/> 2.01-5 <input checked="" type="checkbox"/> 5.01-9 <input type="checkbox"/> 9.01-12.4 <input type="checkbox"/> >12.5 <input checked="" type="checkbox"/> Exact 6.96				Container : 55 Gallon Drum	
E. Chemical Composition					
Description				Range Minimum Range Maximum	
Non-Regulated Waste Water				99.915%	
Total Metals (in Parts Per Million): 318 ppm				0.03%	
Antimony[.010]; Barium[.034]; Calcium[230]; Cobalt[.030]; Copper[0.37]; Iron[2.40]; Magnesium[17.0]; Manganese[.083]; Mercury[.004]; Nickel[0.20]; Potassium[21.0]; Sodium[46.0]; Zinc[0.41]					
Anions (in Parts Per Million): 507 ppm Chloride [59.3]; Fluoride [3.83]; Sulfate [444]				0.05%	
Organics (in Parts Per Million): 46 ppm / Petroleum Hydrocarbons [46.33]; 2-Butanone [.089]				0.005%	
F. Regulatory Information					
EPA Hazardous Waste?: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No USEPA Code(s): None					
Applicable Subcategories:					
State Hazardous Waste?: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No State Code(s): None					
D.O.T. Hazardous Waste?: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Proper Shipping Name: NON DOT / NON RCRA REGULATED MATERIAL					
Class: ID. NO: P.G.: R.Q.:					
G. Special Handling Considerations					
Project Codes:					
Special Handling:					
Special Handling:					
Special Pricing:					
H. Other Hazardous Characteristics					
<input type="checkbox"/> RCRA Reactive <input type="checkbox"/> Water Reactive None Actual				<input type="checkbox"/> Is this waste characteristically hazardous (EPA Waste Codes D004-D043):	
<input type="checkbox"/> Radioactive <input type="checkbox"/> Subject to Subpart PCB's <input checked="" type="checkbox"/>				<input type="checkbox"/> Does this waste contain underlying hazardous constituents As defined In 40 CFR 268(2)(I) at at concentrations exceeding the UTS treatment standards? If yes, list In section C.	
<input type="checkbox"/> Etiological FF Benzene Cyanides <input checked="" type="checkbox"/>					
<input type="checkbox"/> TSCA Regulated <input type="checkbox"/> Oxidizing Phenolics <input checked="" type="checkbox"/>					
<input type="checkbox"/> Pyrophoric <input type="checkbox"/> Explosive Sulfides <input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/> None VOC's <input checked="" type="checkbox"/>					
GENERATOR CERTIFICATION: I hereby certify that all information submitted In this and attached documents is complete, contains true and accurate descriptions and is representative of the waste material, and that all relevant information regarding known or suspected hazards In the possession of the Generator has been disclosed. If CCI discovers; after having taken delivery of the waste, that any waste does not conform to the identification and description On this MPS then CCI shall provide notice of such condition to the Generator and coordinate the return of the nonconforming waste to the point of origin as Set forth On the manifest or to such other locations designated In writing by the Generator. Generator agrees to reimburse CCI for all handling, packaging, clean-up and transportation costs or charges, damage to equipment, and costs associated with lost time incurred by CCI during the receipt, handling, temporary storage and return of such nonconforming waste to point of origin or to such other location designated by Generator. I hereby authorize CCI to amend and/or correct any information on the MPS with the full understanding that if any amendment or correction is performed, I will be contacted As such to issue any approval.					
AUTHORIZED SIGNATURE: TITLE: DATE:					