GrafTech International Holdings Inc.
12900 Snow Road • Parma, Ohio 44130

Juanita Bursley
Senior Manager, Corporate Environmental Risk Management

(216) 676-2175
Facsimile (216) 676-2697
juanita.bursley@graftech.com

February 28, 2013

Mr. Brian Sadowski
Project Manager
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203-2915

Subject: GrafTech International Holdings Inc. closed landfill site, SWMF #32N03 (formerly Site #932035)

Dear Mr. Sadowski:

Please find attached the requisite Periodic Review Report (PRR) for the subject GrafTech International Holdings Inc. (GTIH) closed landfill site, SWMF #32N03 (formerly Union Carbide Corp., Carbon Products Division and UCAR Republic Site #932035), as requested in your 45-Day Reminder Notice, dated January 9, 2013. This Landfill was closed and capped in 1987, and classified by the state in 1997 as a Class 4 Inactive Hazardous Waste Site. There is no required Remedial Program or remedial objectives established for this site.

As requested by the state in March 2009, a proposed Operation, Maintenance and Monitoring (OM&M) Plan was submitted to New York State Department of Environmental Conservation (NYSDEC) Region 9 on September 30, 2009, which was subsequently approved on November 4, 2009. The purpose of this PRR is to document GTIH's implementation and full compliance with this OM&M Plan. This report, including the signed certification form in Enclosure 4, covers the compliance period between January 1, 2012 and December 31, 2012. PDF files of this cover letter and the PRR were also submitted to you and Mr. Hinton by email today, February 28, 2013.

I'd like to bring to your attention that the Site Name "Union Carbide Corp., Carbon Products Div." in Box 1 of the Institutional and Engineering Controls (IC/EC) Certification Form (see Enclosure 4 to the PRR) no longer reflects the current site owner. I've indicated on the prior forms that this information is not correct and added the correct owner and contact information. However, the state has not yet updated this information on the certification form. As you likely know, Union Carbide Corp. (UCC) no longer exists. The Carbon Products Division was spun off prior to Dow Chemical purchasing UCC. Later, this spun-off business incorporated and is now, after a name change, GrafTech International Limited, the parent company. Therefore, as a rule, we try to remove the legacy UCC owner from all public records. Please change the Site Name to GrafTech International Holdings Inc. to reflect the current subsidiary company owner.

Please contact me should you have any questions or need additional information regarding the PRR. My contact information is provided above in the letter header.

Sincerely,

Juanita M. Bursley

Juanita M. Bursley
Senior Manager, Corporate Environmental Risk Management
GrafTech International Holdings Inc.

Enclosures

cc: Mr. Robert Bucci
3344 Wildwood Dr.
Niagara Falls, NY 14304

Mr. Michael Hinton
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, NY 14203-2915

GRAFTECH INTERNATIONAL HOLDINGS INC.

2012 PERIODIC REVIEW REPORT

AND ANNUAL OPERATION, MAINTENANCE AND MONITORING (OM&M) REPORT

FOR THE CLOSED LANDFILL SITE

SWMF #32N03

(Formerly UCAR Carbon Company, Republic Site Registry No. 932035)

PER THE SITE OM&M PLAN

(Approved on 11/04/09)

February 26, 2013

2012 PERIODIC REVIEW REPORT AND OPERATION, MAINTENANCE AND MONITORING REPORT

For SWMF #32N03

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ENCLOSURES

1.0 INTRODUCTION AND SITE OVERVIEW

This Periodic Review Report (PRR) is being submitted for the GrafTech International Holdings Inc. (GTIH) (formerly UCAR Carbon Company Inc.) closed landfill facility, SWMF #32N03 (Registry No. 932035) ("Landfill"), under the provisions of the Division of Environmental Remediation (DER) Inactive Hazardous Waste Site Program. The Landfill is located in the Town of Niagara, Niagara County, State of New York, on Parcel # 130.20-1.1. The Landfill is located off of Hyde Blvd. behind the former UCAR Republic Plant. The Landfill was closed and capped in 1987. The Landfill property, which is 61.80 acres, of which 16.48 acres make up the cap, is secured by a metal fence with two (2) locked entrance gates. In 1997, the Landfill was reclassified by the state from Class 2a to a Class 4 Inactive Hazardous Waste Site. **There is no required Remedial Program or remedial objectives for this site**. The purpose of this PRR is to document GTIH's full implementation and compliance with the post-closure care procedures and institutional/engineering controls contained in the Operation, Monitoring and Maintenance (OM&M) Plan, which was approved by the state on November 4, 2009. The OM&M Plan specifies the routine inspection, maintenance, and groundwater monitor programs, and also describes the requirement for an approved Soil Management Plan (SMP) in the event that GTIH has future plans to excavate soil from the areas outside the footprint of the landfill. This PRR covers the period of January 1, 2012 through December 31, 2012.

2.0 SITE MANAGEMENT

For the report period specified above, GTIH has designated the Sr. Manager, Corporate Environmental Risk Management, to be responsible for managing the Landfill. This position is currently filled by Ms. Juanita M. Bursley, who is located at the Corporate Headquarters at 12900 Snow Road, Parma, Ohio 44130. In addition, GTIH has also contracted the services of Mr. Robert Bucci, a retired former UCAR Carbon manager, to act as the local point-of-contact for the Landfill. Mr. Bucci lives in the local Niagara Falls community, and has the responsibility for managing the day-to-day operations at the Landfill, including conducting the scheduled inspections, managing contractors to perform routine sampling and any needed maintenance and/or repairs at the site, responding to neighborhood requests, etc. Mr. Bucci is also responsible for communicating to Ms. Bursley whenever any significant issue arises that could possibly prevent full conformance with the

OM&M Plan, or any other important matters concerning the Landfill outside the scope of this Plan. Ms. Bursley has been granted the authority by GTIH to requisition the necessary resources, so that appropriate corrective actions can be promptly implemented to adequately address any identified deficiency and ensure full conformance with the provisions of the OM&M Plan.

3.0 INSPECTION AND MAINTENANCE

The following inspection and maintenance program requirements are included in the state-approved OM&M Plan. In agreement with Mr. Michael Hinton, NYSDEC Division of Environmental Remediation, Region 9, the annual OM&M compliance report is incorporated with this annual PRR. GTIH is presently working with the NYSDEC Division of Environmental Remediation, Region 9, to make modifications to the approved OM&M Plan to convert it to a full Site Management Plan. This is expected to be completed by June 2013.

3.1 Weekly Inspections

Weekly visual inspections of the Landfill's security equipment (perimeter fence, gates and locks), cap, monitoring wells, and surrounding areas were conducted, as scheduled, and a record maintained on the standard inspection form, which documents the date and time of the inspection, the inspector's name, and the condition of these facilities, specifically noting any identified deficiency. The inspection record also documented any corrective action(s) taken. Any fence areas that were found damaged were also duly noted on the inspection map. Copies of these inspection records are available upon inspection or request by NYSDEC.

3.2 Required New York State Department of Environmental Conservation (NYSDEC) Annual Inspections

Annual visual inspections of the Landfill's monitoring well system (condition of the outer casings, concrete seals and security locks), and the condition of the cap were conducted, as scheduled, and a record maintained on the standard inspection form, which documents the date and time of the inspection, the inspector's name, and the condition of these facilities, specifically noting any identified deficiency. A copy of the annual inspection form is provided in Enclosure 1.

3.3 Routine Maintenance and Repairs

The following maintenance and repair activities were conducted per the OM&M Plan:

a. Repairs were scheduled, as needed, with outside contractor(s) to timely correct any deficiencies discovered during the routine weekly and annual inspections. These included numerous repairs to the perimeter security fencing.

b. Mowing of the vegetative cover on the Landfill cap and the perimeter lawn of the Landfill and other general care were scheduled, as needed. The cap was mowed a minimum of once per year, starting after September 1, 2012.

c. General clean-ups of any debris found along the fence line, etc. were performed, as needed, to keep the Landfill area clear of any objectionable or unsightly materials.

3.4 Recordkeeping

All inspection records are being retained for a minimum period of three (3) years and copies will be made available to the state upon written request.

3.5 NYSDEC Inspection

No NYSDEC inspection of the Landfill was conducted in 2012. The last NYSDEC on-site inspection of the Landfill was conducted on May 27, 2010 and no violations were found.

At GTIH's request during the May 2010 site inspection, NYSDEC subsequently verified that, based on its research of the Preliminary Site Assessment records, the Department had installed groundwater monitoring wells GW-10A and GW-10B, which are located outside the Landfill perimeter security fencing on neighboring property not owned by GTIH. This review confirmed that NYSDEC owns these two wells and that GTIH is not responsible to either maintain these wells or to include them in the Landfill's long-term groundwater monitoring program covered under the current OM&M Plan.

4.0 GROUNDWATER MONITORING PROGRAM

4.1 Overview of the Annual Groundwater Monitoring Program for the Landfill

The Landfill was capped and closed in 1987. The groundwater monitoring well network at the Landfill site consists of eleven (11) on-site wells. The history of the groundwater monitoring requirements is as follows. Between 1987 and 2000, groundwater monitoring was conducted quarterly. Following their review of the collected groundwater quality data, the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation and the Division of Solid and Hazardous Materials approved a modified semi-annual sampling program, in a letter dated January 18, 2000, in accordance with the requirements of 6 NYCRR Section 360 to monitor the effectiveness of the solid waste landfill closure in protecting groundwater quality. This new monitoring program was implemented from April 2000 to November 2005. Following a subsequent review of the post-closure groundwater monitoring program and historical groundwater quality data, the NYSDEC Division of Environmental Remediation and the Division of Solid and Hazardous Materials agreed to a modified annual post-closure groundwater monitoring program, which was first implemented in the autumn of 2006. Since that time, the new monitoring program consists of sampling a network of seven (7) of the eleven (11) on-site groundwater wells at the Landfill (specifically, BW-1, BW-2, BW-3, BW-4, MW-3, GW-8B and GW-9B); testing the collected samples by the specified EPA Methodologies for five (5) parameters (Volatile Organic Compounds (VOCs), Total and Dissolved Iron, Potassium and Zinc, Ammonia, Nitrite and Total Kjeldahl Nitrogen (TKN)); and conducting four (4) field measurements for Turbidity, Specific Conductance, pH and temperature. A map of the Landfill showing the locations of the groundwater monitoring wells is provided in Enclosure 2. One sampling event must occur in every calendar year; scheduling of the sampling collection is rotated every year between spring (every odd year) and autumn (every even year). Groundwater elevation measurements are also recorded during each annual sampling campaign. An Annual Monitoring Report is submitted annually to the NYSDEC within six (6) months of the sampling event in the required electronic format.

4.2 Summary of the 2012 Groundwater Sampling Campaign

The annual groundwater sampling campaign was conducted by GTIH's environmental consultant, Conestoga-Rovers & Associates (CRA), on September 27, 2012. Samples collected from the seven (7) wells were submitted to Test America for analysis. Analytical test results were compared to the New York State Class GA water criteria and to the results of the historical monitoring data for the Landfill. These data were consistent with the historical data; therefore, **no discernible negative trend in groundwater quality was observed**.

The Annual Monitoring Report for the 2012 sampling campaign, including a written summary report by Conestoga-Rovers & Associates (CRA), a full copy of the laboratory's analytical reports, documentation of the quality assurance/quality control procedures and field logs, was prepared and submitted electronically to the state by CRA on behalf of GTIH on November 8, 2012. Mr. Robert Bucci, GTIH's representative, subsequently submitted hard copies on November 16, 2012 to Ms. Mary McIntosh, Engineering Geologist II, NYSDEC, Division of Solid and Hazardous Materials, and to other state and local authorities. Therefore, only CRA's summary report and a partial copy of Test America's Analytical Report, which includes a summary of all 2012 data above the relative detection limits, are included in Enclosure 3.

5.0 SOIL MANAGEMENT PLAN

The state has agreed that there is no requirement for a written soil management plan for this Landfill, because there are no immediate plans or anticipation of any future plans to excavate and/or remove soils from the property surrounding the Landfill footprint. However, should this situation change at any time in the future, GTIH must prepare and submit to the NYDEC for approval a written Soil Management Plan a minimum of thirty (30) days prior to commencing such excavation activities. This plan would address the particulars of the planned project. In the event of an unlikely and unforeseen emergency event requiring that GTIH disturb the soils on-site, GTIH would follow all applicable OSHA regulations to protect the workers, would stage the removed soils as close to the excavation site as safely possible, and would contact the NYDEC within forty-eight (48) hours of this event.

6.0 SOIL VAPOR MANAGEMENT

On February 8, 2007, NYDEC approved a modified Work Plan specifying the installation of four (4) soil vapor implants along the south fence line of the Landfill property in order to collect soil gas samples near the residences along Rhode Island Street. These implants were installed on March 8, 2007. On March 26 - 27, 2007, these implants were purged and sampled in accordance with the sample collection criteria in the approved Work Plan. The volume of collected soil vapor at each sampling location was insufficient to analyze the contents in the laboratory. The inability to draw soil vapor from any of the implants suggested that the clay soils are too tight to allow migration of vapors. In May 2007, GTIH submitted a Soil Intrusion Evaluation Report to NYSDEC, which concluded that there is no threat to neighboring residential properties, based on the results of the attempted March 2007 soil vapor sampling event, and recommended that no further action concerning vapor studies was warranted.

On December 28, 2008, the NYSDEC and the New York State Department of Health (NYS DOH) informed GTIH, in writing, that they had reviewed the submitted Soil Intrusion Evaluation Report for the Landfill and determined that the potential for soil vapor intrusion into neighboring homes and businesses had been satisfactorily evaluated. Furthermore, the agencies concurred with GTIH's recommendation that no further action is needed at this site regarding soil vapor intrusion. Therefore, no vapor intrusion monitoring program is required at this Landfill.

7.0 CONCLUSIONS AND RECOMMENDATIONS

All site inspections, monitoring and maintenance activities, and reporting requirements were implemented as required in the OM&M Plan for the Landfill during the certification period. The analytical data from the annual groundwater monitoring event are consistent with the historical data. Engineering controls and associated institutional controls are in place, are performing properly and remain effective. There were no identified deficiencies in the approved institutional/engineering controls (IC/EC) at this site during the certification period, or any recommended improvements that would require changes to the OM&M Plan.

However, GTIH has agreed to voluntarily modify the OM&M Plan to transition it to a full Site Management Plan (SMP), in accordance with applicable chapters and subsections of the NYS Division of Environmental Remediation, Final DER-10 Technical Guidance for Site Investigation and Remediation (dated May 2010), and also to address past potentially confusing and duplicative reporting requirements. GTIH submitted a draft SMP to NYSDEC for review in 2012 and subsequently received agency comments requesting several changes. This work is progressing and GTIH expects to submit a revised proposed SMP to NYSDEC for approval by June 2013.

There are currently no required treatment or mitigation systems at this site, and no indication that any changes are needed. Based on this review, the remedy in place continues to be protective of public health and the environment. The completed IC/EC Certification form is attached (see Enclosure 4).

Due to the facts that 1) this Landfill is a Class 4 Inactive Hazardous Waste Site; 2) there is no required Remedial Program or remedial objectives; and 3) the groundwater monitoring program for the past twenty-five (25) years since closure has identified no negative trends in the water quality, GTIH therefore recommends that compliance be maintained with the OM&M Plan (or an approved Site Management Plan) until thirty (30) years post-closure. At that time, an assessment and determination should be made as to whether the Site Management can be discontinued.

ENCLOSURE 1

Annual Inspection Forms

Robert Bucci, Consultant
3344 Wildwood Dr.
Niagara Falls, New York 14304
Phone 716 297-6772 Cell & 716 628-8208
Email: nia3344@verizon.net

September 30, 2012

Juanita M. Bursley
Corporate Senior Manager, Environmental Protection
GrafTech International Holdings Inc.
12900 Snow Road
Parma, Ohio 44130

Subject: Graftech International Holdings Inc.
Landfill #32N03 OM&M Compliance Report

Dear Ms. Bursley

In accordance with your Operation Monitoring and Maintenance Plan I am supplying with the following information. I am attaching a copy of the annual inspection of the wells, locks, casings, seals and the landfill cap and surrounding area.

If you have any questions please free to call me at (716-628-8208).

Very truly yours,

Robert Bucci
Consultant

R. Bucci
enc

INSPECTION OF LANFILL FENCE & CAP & SURROUNDING AREA

Date	Time	Inspector
9-28-22	8:10 AM	Robert Bucci

AREA	OK	DAMAGED	DATE REPAIRED	REMARKS
A	X			
B	X			
C	X			
D	X			
E	X			
F	X			
G	X			
H	X			
I	X			
J	X			

GATE	OK	DAMAGED	DATE REPAIRED	REMARKS
1	X			
2	X			
3	X			

COMMENTS:

CAP CONDITION COMMENTS: **(Checking for erosion)**

Grass cutting of the cap started at the End of August and completed in Sept. NO EROSION, normal vegetation

SUROUNDING AREA:

NO SOIL WAS disrupted, Area Remains NATURAL

APPENDIX B

ANNUAL MONITORING WELL INSPECTION

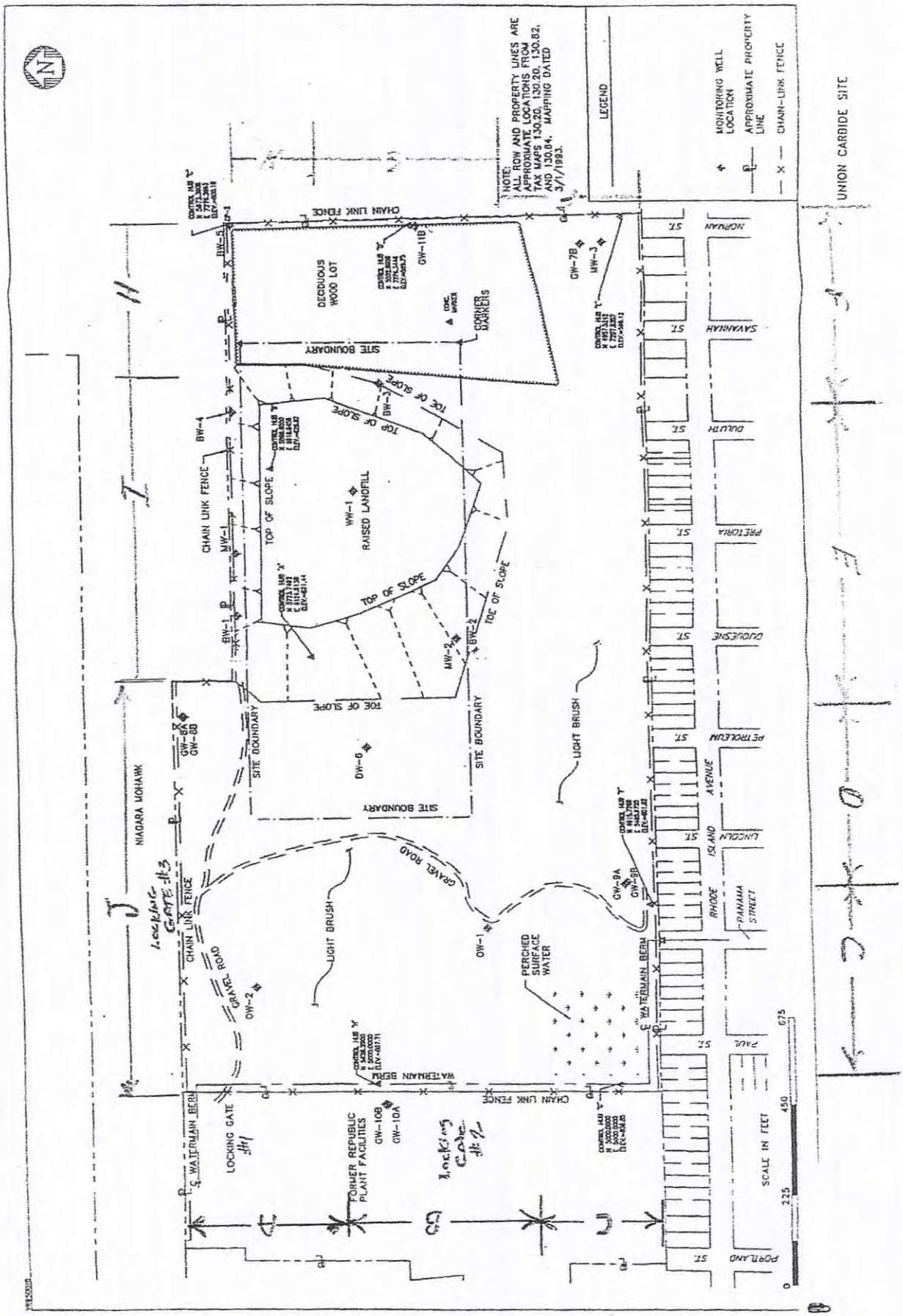
ID WELL NUMBER	WELL ID TAG INTACT YES/NO	LOCK CONDITION	OUTER CASING CONDITION	CONCRETE SEAL CONDITION	COMMENTS
MW1-78	Yes	Very Good	Good	Good	
MW2-78	Yes	Very Good	Good	Good	
MW3-79	Yes	Very Good	Good	Good	
BW1-86	Yes	Very Good	Good	Good	
BW2-86	Yes	Very Good	Good	Good	
BW3-86	Yes	Very Good	Good	Good	
BW4-86	Yes	Very Good	Good	Good	
BW5-86	Yes	Very Good	Good	Good	
BW6-86	Yes	Very Good	Good	Good	
WW1-86	Yes	Very Good	Good	Good	
OW1-88	Yes	Very Good	Good	Good	
OW2-88	Yes	Very Good	Good	Good	

NYSDEC WELLS

(INSTALLED SEPT/OCT 93)

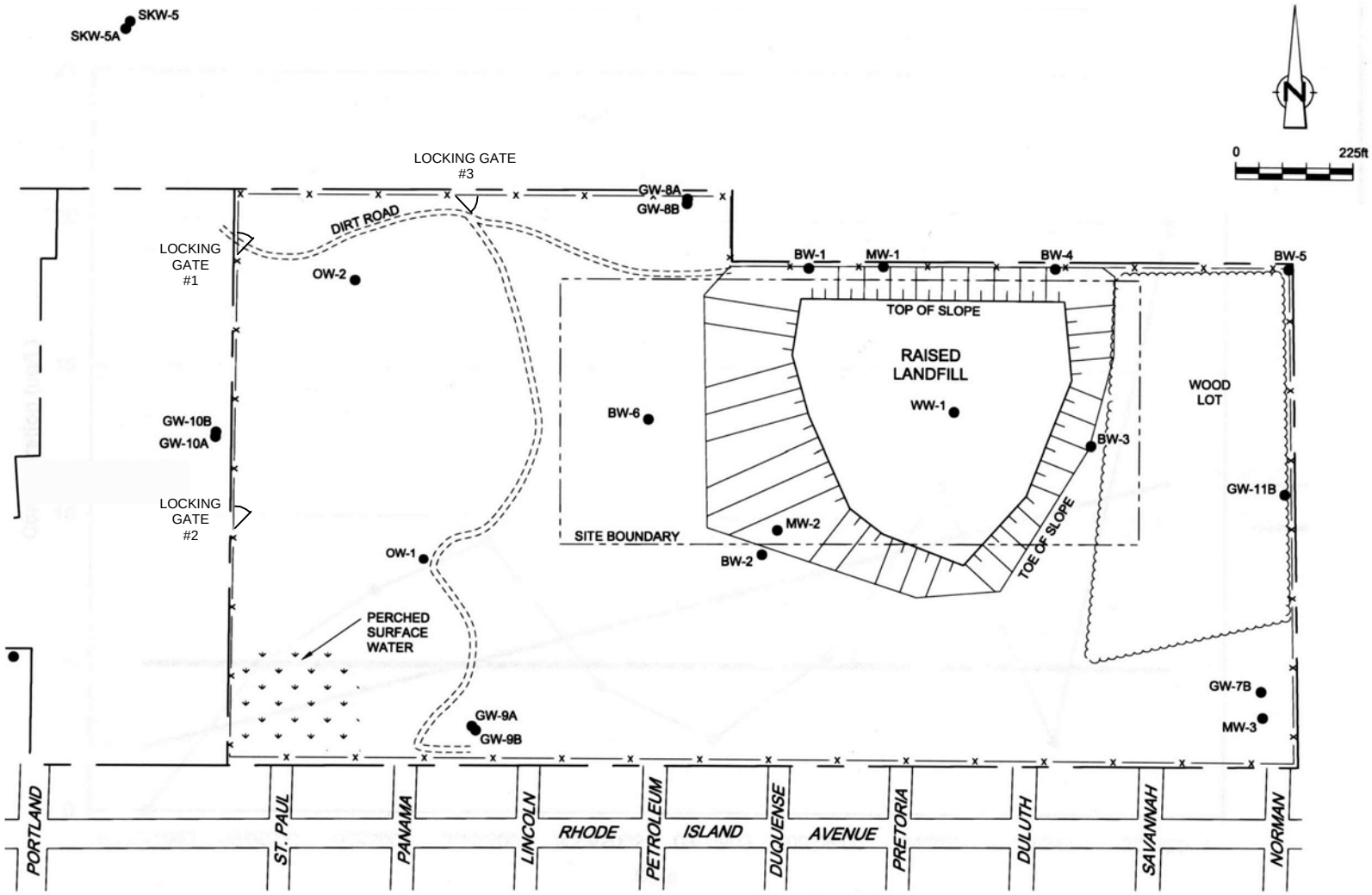
ID WELL NUMBER	WELL ID TAG INTACT YES/NO	LOCK CONDITION	OUTER CASING CONDITION	CONCRETE SEAL CONDITION	COMMENTS
GW7B-93	Yes	Very Good	Good	Good	
GW8A-93	Yes	Very Good	Good	Good	
GW8B-93	Yes	Very Good	Good	Good	
GW9A-93	Yes	Very Good	Good	Good	
GW9B-93	Yes	Very Good	Good	Good	
GW11B-93	Yes	Very Good	Good	Good	

ENTIRE CAP MOWED: completed 1ST week Sept. 2012


NOTE:
ALL ROW AND PROPERTY LINES ARE APPROXIMATE. LOCATIONS FROM TAX MAPS 130.20, 130.20, 130.82, AND 130.84, MAPPING DATED 3/1/1993.
LEGEND
MONITORING WELL LOCATION
APPROXIMATE PROPERTY LINE
CHAIN-LINK FENCE
UNION CARBIDE SITE
DECIDUOUS WOOD LOT
CORNER MARKERS
SITE BOUNDARY
TOP OF SLOPE
TOE OF SLOPE
RAISED LANDFILL
CHAIN LINK FENCE
LIGHT BRUSH
GRAVEL ROAD
PERCHED SURFACE WATER
WATERMAIN BERM
LOCKING GATE
FORMER REPUBLIC PLANT FACILITIES
NIAGARA MOHAWK
NORMAN ST.
SAVANNAH ST.
DULUTH ST.
PRETORIA ST.
DUQUESNE ST.
PETROLEUM AVENUE
LINCOLN ISLAND
RHODE PANAMA STREET
PAUL ST.
PORTLAND ST.
SCALE IN FEET
0
225
450
675

ENCLOSURE 2

Site Plan Map Showing Locations of Groundwater Monitoring Wells, Fencing and Locking Gates



LEGEND

PROPERTY LINE

FENCE

WW-1 MONITORING WELL LOCATION

figure 1

SITE PLAN AND MONITORING WELL LOCATIONS
UCAR SWMF #32NO3
(FORMERLY UCAR REPUBLIC SITE REGISTRY No. 932035)
Niagara Falls, New York

ENCLOSURE 3

Annual Groundwater Monitoring Reports

Robert Bucci, Consultant
3344 Wildwood Dr.
Niagara Falls, New York 14304
Phone 716 297-6772 Cell & 716 628-8208
Email: nia3344@verizon.net

November 16 , 2012 Reference No. 005513

Ms. Mary F. McIntosh
Engineering Geologist II
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Ms. McIntosh:

Re: Annual Monitoring Event 2012
UCAR Republic (Graftech Int) SWMF #32N03

The annual monitoring event for the above-referenced Site was conducted on September 27, 2012. The Site groundwater monitoring program was modified in November 2005 and currently consists of the following (excerpt from letter from C. Barron (CRA) to M. McIntosh (NYSDEC) dated November 4, 2005.):

> Annual sampling of seven wells (BW-1, BW-2, BW-3, BW-4, MW-3, GW-8B, and GW-9B) with analysis of the samples for Part 360 volatiles, ammonia, iron (total and soluble), potassium (total and soluble), zinc (total and soluble), nitrite, total kjeldahl nitrogen (TKN), turbidity, groundwater elevation, pH, specific conductance, and temperature. Monitoring is rotated between the spring and fall seasons such that one year sampling is conducted in the spring and the next year it will be conducted in the fall. Sampling is conducted once in each calendar year and reporting is submitted annually following receipt and review of the groundwater analytical data.

The sample collection and analyses were performed in accordance with the program outlined in the letters from M. McIntosh (NYSDEC) to R. Bucci (UCAR), dated January 18, 2000 and February 23, 2000. Attached is an email sent to Joseph Coyne of CRA from NYENUDAEA@dec.state.ny.us that on November 8, 2012 that the electronic results of our sampling were transmitted. I have enclosed a hard copy of our results.

August 1, 2011 Reference No. 005513

The analytical data from this monitoring event are consistent with the historical data.

The next groundwater monitoring event at the Site will be conducted in the Spring of 2013. Should you have any questions or require additional information, please do not hesitate to contact the undersigned at 716-628-8208.

Yours truly,

Robert Bucci
Site Consultant

Encl.

c.c.: M. Hans
M. Hinton
J. M. Bursley

CONESTOGA-ROVERS & ASSOCIATES

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

TO: Jim Kay

REF. NO.: 005513

FROM: Susan Scrocchi/eew-7

DATE: November 12, 2012

E-Mail and Hard Copy if Requested

RE: Analytical Data Assessment and Validation
Annual Groundwater Monitoring Program
UCAR Carbon Company, Inc.
Niagara Falls, New York
September 2012

INTRODUCTION

The following document details an assessment and validation of analytical results for ground water samples collected in support of the annual monitoring program at the UCAR Carbon Site in Niagara Falls, New York (Site) during September 2012. Samples were submitted to TestAmerica Laboratory, located in Buffalo, NY. A sample collection and analysis summary is presented in Table 1. A summary of the analytical methodology is presented in Table 2. The validated analytical results are summarized in Table 3.

Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, duplicate data, recovery data from surrogate spikes, laboratory control samples (LCS), and matrix spikes; and field quality assurance/quality control (QA/QC) samples . The assessment of analytical and in-house data included checks for: data consistency (by observing comparability of duplicate analyses); adherence to accuracy and precision criteria; transmittal errors; and anomalously high and low parameter values.

The quality assurance/quality control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and the documents entitled:

i) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99-008, October 1999;

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994;

These will subsequently be referred to as the "Guidelines".

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results, supporting quality assurance/quality control (QA/QC) and all raw data provided.

SAMPLE HOLDING TIME AND PRESERVATION

The sample holding time criteria for the analyses are summarized in Table 2. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved and delivered on ice and stored by the laboratory at the required temperature (0-6°C).

GAS CHROMATOGRAPHY/MASS SPECTROMETER (GC/MS) – TUNING AND MASS CALIBRATION (INSTRUMENT PERFORMANCE CHECK) – VOLATILE ORGANIC COMPOUNDS (VOCs)

GC/MS

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the volatile organic compound (VOC) method requires the analysis of specific tuning compound bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout the volatile analysis periods. All tuning criteria were met, indicating that proper optimization of the instrumentation was achieved.

GC/MS INITIAL CALIBRATION – VOCs

To quantify compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

i) All relative response factors (RRFs) must be greater than or equal to 0.05.

ii) The percent relative standard deviation (RSD) values must not exceed 30.0 percent or a minimum coefficient of determination of 0.99 if quadratic equation calibration curves are used.

The initial calibration data for VOCs was reviewed. All compounds met the above criteria for sensitivity and linearity.

GC/MS CONTINUING CALIBRATION – VOCs

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

i) All RRF values must be greater than or equal to 0.05.
ii) Percent difference (%D) values must not exceed 25 percent.

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity. Some variability was observed between initial and continuing response factors. All associated sample results were qualified as estimated (see Table 4).

INITIAL CALIBRATION – INORGANIC ANALYSES

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For Inductively Coupled Plasma (ICP) analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For instrumental general chemistry analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve and resulting correlation coefficients must be 0.995 or greater.

After the analyses of the calibration curves, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits.

Analytical Method	*Parameter*	*Control Limits*
ICP/AA	Metals	90 - 110%
Instrumental Wet Chemistry	Ammonia, Nitrite, TKN	85 - 115%

Upon review of the data, it was determined that the calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that the instrumentation used for metals and instrument general chemistry analyses was properly calibrated prior to sample analyses.

CONTINUING CALIBRATION – INORGANIC ANALYSES

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

CONTRACT REQUIRED DETECTION LIMIT (CRDL) STANDARD ANALYSES

To verify the linearity of the ICP calibration near the detection limit, a standard is analyzed which contains the ICP analytes at specified concentrations. This standard must be analyzed at the beginning and end of each sample analysis run or a minimum of twice per 8-hour period.

The CRDL recoveries were acceptable.

LABORATORY BLANK ANALYSES

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. Additionally, initial and continuing calibration blanks (ICBs/CCBs) are routinely analyzed after each ICV/CCV for the inorganic parameters.

For this study, laboratory method blanks were analyzed at a minimum frequency of one per 20 investigative samples and/or one per analytical batch.

All blanks were non-detect with the exception of TKN present at a low concentration. The associated sample results with similar concentrations were qualified as non-detect (see Table 5).

SURROGATE SPIKE RECOVERIES

In accordance with the methods employed, all samples, blanks and QC samples analyzed for VOCs are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of individual sample matrices on analytical efficiency.

All samples submitted for VOC determinations were spiked with three surrogate compounds prior to sample analysis. All surrogate recoveries were within the laboratory control limits.

INTERNAL STANDARDS (IS) ANALYSES

Internal standard data were evaluated for all VOC sample analyses.

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results, internal standard compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the internal standard responses.

The sample internal standard results were evaluated against the following criteria:

i) The retention time of the internal standard must not vary more than ±30 seconds from the associated calibration standard.

ii) Internal standard area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard.

All internal standard recoveries and retention times met the above criteria.

LABORATORY CONTROL SAMPLE (LCS) ANALYSES

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCSs were analyzed at a minimum frequency of one per 20 investigative samples and/or one per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses
The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

To evaluate the effects of sample matrices on the extraction or digestion process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest . All percent recoveries and RPD values were within the laboratory control limits, demonstrating good analytical accuracy and precision.

Inorganic Analyses
The MS/MSD samples were spiked with the analytes of interest and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating good analytical accuracy and precision.

ICP SERIAL DILUTION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per 20 investigative samples or at least one per analytical batch must be

analyzed at a five-fold dilution. For samples with sufficient analyte concentrations, the serial dilution results must agree within 10 percent of the original results.

A serial dilution was performed on each MS/MSD sample. All results met the criteria above.

ICP INTERFERENCE CHECK SAMPLE ANALYSIS (ICS)

To verify that the laboratory has established proper inter-element and background correction factors, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium and iron and are analyzed at the beginning and end of each sample analysis period.

ICS analysis results were evaluated for all samples using the criteria in the "Guidelines". All ICS recoveries and results were acceptable.

FIELD QA/QC SAMPLES

The field QA/QC consisted of one trip blank sample and one field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was collected and submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 and 100 percent for water and soil samples, respectively. If the reported concentration in either the investigative sample or its duplicate is less than five times the RL, the evaluation criteria is one or two times the RL value for water and soil samples, respectively.

All field duplicate results were within acceptable agreement, demonstrating good sampling and analytical precision with some variability. A summary of the qualified sample results is presented in Table 6.

ANALYTE REPORTING

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the practical quantitation limit (PQL) but greater than the method detection limit (MDL) were qualified as estimated (J) in Table 3 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the PQL in Table 3.

TARGET COMPOUND IDENTIFICATION

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to the identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

CONCLUSION

Based on this assessment, the data produced by TestAmerica were found to exhibit acceptable levels of accuracy and precision based on the provided information and may be used with the qualifications noted.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

				Analysis/Parameters					
Sample I.D.	*Location I.D.*	*Collection Date (mm/dd/yy)*	*Collection Time (hr:min)*	*VOCs*	*Selected Metals-total and dissolved*	*TKN*	*Nitrite*	*Ammonia*	*Comments*
TB-5513-092712	-	9/27/2012	-	X					Trip blank
WG-5513-092712-001	BW-3	9/27/2012	10:25	X	X	X	X	X	
WG-5513-092712-002	BW-1	9/27/2012	12:00	X	X	X	X	X	
WG-5513-092712-003	GW-9B	9/27/2012	13:00	X	X	X	X	X	
WG-5513-092712-004	MW-3	9/27/2012	13:25	X	X	X	X	X	
WG-5513-092712-005	GW-8B	9/27/2012	14:35	X	X	X	X	X	MS/MSD
WG-5513-092712-006	BW-2	9/27/2012	15:35	X	X	X	X	X	
WG-5513-092712-007	BW-2	9/27/2012	16:15	X	X	X	X	X	Field Duplicate of WG-5513-092712-006
WG-5513-092712-008	BW-4	9/27/2012	16:45	X	X	X	X	X	

Notes:

- = Not applicable.
TKN - Total Kjeldahl Nitrogen.
VOCs - Volatile Organic Compounds.
MS - Matrix Spike
MSD - Matrix Spike Duplicate

TABLE 2

SUMMARY OF ANALYTICAL METHODS
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

Parameter	*Method*
TCL VOCs	SW-846 8260[1]
Iron, Potassium and Zinc (total and diss)	SW-846 6010[1]
Nitrite	EPA 353.2[2]
Ammonia	EPA 350.1[2]
Total Kjeldahl Nitrogen	EPA 351.2[2]

Notes:

(1) "Test Methods for Solid Waste/Physical Chemical Methods," SW-846, 3rd Edition, September 1986 (with all subsequent revisions).

(2) "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency [USEPA] 600/4-79-220, March 1983 (with all

TCL Target Compound List.

VOCs Volatile Organic Compounds.

TABLE 3

ANALYTICAL RESULTS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

	Location:	*BW-1*	*BW-2*	*BW-2*	*BW-3*
	Sample Name:	*WG-5513-092712-002*	*WG-5513-092712-006*	*WG-5513-092712-007*	*WG-5513-092712-001*
	Sample Date:	*9/27/2012*	*9/27/2012*	*9/27/2012 (Duplicate)*	*9/27/2012*
	Units				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
1,1-Dichloroethane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
1,1-Dichloroethene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
1,2-Dichloroethane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
1,2-Dichloropropane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	20 U	40 U	40 U	10 U
2-Hexanone	µg/L	10 U	20 U	20 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	20 U	20 U	5.0 U
Acetone	µg/L	20 U	40 U	40 U	10 U
Benzene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Bromodichloromethane	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Bromoform	µg/L	2.0 UJ	4.0 UJ	4.0 UJ	1.0 UJ
Bromomethane (Methyl bromide)	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Carbon disulfide	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Carbon tetrachloride	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Chlorobenzene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Chloroethane	µg/L	4.8	4.0 U	4.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	2.0 U	4.0 U	4.0 U	2.0
cis-1,3-Dichloropropene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Dibromochloromethane	µg/L	2.0 UJ	4.0 UJ	4.0 UJ	1.0 UJ
Ethylbenzene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Styrene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Tetrachloroethene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

	Location:	*BW-1*	*BW-2*	*BW-2*	*BW-3*
	Sample Name:	*WG-5513-092712-002*	*WG-5513-092712-006*	*WG-5513-092712-007*	*WG-5513-092712-001*
	Sample Date:	*9/27/2012*	*9/27/2012*	*9/27/2012 (Duplicate)*	*9/27/2012*
	Units				
Volatile Organic Compounds					
Toluene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Trichloroethene	µg/L	2.0 U	4.0 U	4.0 U	1.0 U
Vinyl chloride	µg/L	2.0 U	4.0 U	4.0 U	5.7
Xylenes (total)	µg/L	4.0 U	8.0 U	8.0 U	2.0 U
Wet Chemistry					
Ammonia	µg/L	880	480	480	450
Nitrite (as N)	µg/L	50 U	50 U	50 U	50 U
Total kjeldahl nitrogen (TKN)	µg/L	1900	1200	1200	1200
Metals					
Iron	µg/L	4900	8000 J	3800 J	1100
Iron (dissolved)	µg/L	850	1100	1800	770
Potassium	µg/L	6800	6200	6300	3800
Potassium (dissolved)	µg/L	6900	6200	6400	3800
Zinc	µg/L	13000	5600	3700	120
Zinc (dissolved)	µg/L	140	7 J	2.8 J	25

Notes:
J - Estimated
U - Not detected.
UJ - Estimated reporting limit.

TABLE 3

ANALYTICAL RESULTS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

	Location:	*BW-4*	*GW-8B*	*GW-9B*	*MW-3*
	Sample Name:	*WG-5513-092712-008*	*WG-5513-092712-005*	*WG-5513-092712-003*	*WG-5513-092712-004*
	Sample Date:	*9/27/2012*	*9/27/2012*	*9/27/2012*	*9/27/2012*
	Units				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	3.3	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	5.0	0.39 J	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	20 U	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	20 U	10 U	10 U	10 U
Benzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	2.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane (Methyl bromide)	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	0.52 J	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	14	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1700	23	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	2.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Ethylbenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	120	1.0 U	1.0 U	1.0 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

	Location:	*BW-4*	*GW-8B*	*GW-9B*	*MW-3*
	Sample Name:	*WG-5513-092712-008*	*WG-5513-092712-005*	*WG-5513-092712-003*	*WG-5513-092712-004*
	Sample Date:	*9/27/2012*	*9/27/2012*	*9/27/2012*	*9/27/2012*
	Units				
Volatile Organic Compounds					
Toluene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	6.8	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	640	7.6	1.0 U	1.0 U
Vinyl chloride	µg/L	290	3.5	1.0 U	1.0 U
Xylenes (total)	µg/L	4.0 U	2.0 U	2.0 U	2.0 U
Wet Chemistry					
Ammonia	µg/L	4900	57	420	59
Nitrite (as N)	µg/L	31 J	50 U	50 U	50 U
Total kjeldahl nitrogen (TKN)	µg/L	4800	500 U	1100	770 U
Metals					
Iron	µg/L	14800	180	310	12300
Iron (dissolved)	µg/L	4500	140	200	1100
Potassium	µg/L	21200	5400	4500	3600
Potassium (dissolved)	µg/L	21200	5300	4500	2900
Zinc	µg/L	3900	980	11	59
Zinc (dissolved)	µg/L	23	320	6 J	6.2 J

Notes:
J - Estimated
U - Not detected.
UJ - Estimated reporting limit.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

Parameter	*Calibration Date*	*Compound*	*%D*	*Associated Sample ID*	*Qualified Sample Results*	*Units*
VOCs	10/5/12	Bromoform	41	WG-5513-092712-001	1.0 UJ	µg/L
				WG-5513-092712-002	2.0 UJ	µg/L
				WG-5513-092712-003	1.0 UJ	µg/L
				WG-5513-092712-004	1.0 UJ	µg/L
				WG-5513-092712-005	1.0 UJ	µg/L
				WG-5513-092712-006	4.0 UJ	µg/L
				WG-5513-092712-007	4.0 UJ	µg/L
				WG-5513-092712-008	2.0 UJ	µg/L
VOCs	10/5/12	Dibromochloromethane	27	WG-5513-092712-001	1.0 UJ	µg/L
				WG-5513-092712-002	2.0 UJ	µg/L
				WG-5513-092712-003	1.0 UJ	µg/L
				WG-5513-092712-004	1.0 UJ	µg/L
				WG-5513-092712-005	1.0 UJ	µg/L
				WG-5513-092712-006	4.0 UJ	µg/L
				WG-5513-092712-007	4.0 UJ	µg/L
				WG-5513-092712-008	2.0 UJ	µg/L

Notes:
UJ - Estimated reporting limit.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

Parameter	*Analysis Date*	*Analyte*	*Blank Result*	*Sample ID*	*Original Sample Result*	*Qualified Sample Result*
General Chemistry	10/1/12	Total kjeldahl nitrogen (TKN)	0.16	WG-5513-092712-004	0.77	0.77 U
				WG-5513-092712-005	0.50	0.50 U

Notes:
U - Not detected.

TABLE 6

QUALIFIED SAMPLE RESULTS DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2012

Parameter	*Analyte*	*Original Sample ID*	*Qualified Original Result*	*Duplicate Sample ID*	*Qualified Duplicate Result*	*RPD*	*Units*
Metals	Iron (total)	WG-5513-092712-006	8.0 J	WG-5513-092712-007	3.8 J	71	mg/L

Notes:
J - Estimated.
RPD - Relative Percent Difference.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

(PARTIAL COPY)

ANALYTICAL REPORT

Job Number: 480-25846-1

Job Description: 5513, UCAR

For:
Conestoga-Rovers & Associates, Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, NY 14304

Attention: Ms. Sue Scrocchi

Approved for release.
Robert Wienke
Project Administrator
10/9/2012 4:38 PM

Designee for
Melissa L Deyo
Project Manager I
melissa.deyo@testamericainc.com
10/09/2012

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

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TestAmerica Laboratories, Inc.
TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298
Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com

Job Narrative
480-25846-1

Comments
No additional comments.

Receipt
The samples were received on 9/28/2012 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

GC/MS VOA
Method(s) 8260B: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: WG-5513-092712-002 (480-25846-3), WG-5513-092712-006 (480-25846-7), WG-5513-092712-007 (480-25846-8), WG-5513-092712-008 (480-25846-9). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: (480-25846-9 MS), (480-25846-9 MSD), WG-5513-092712-008 (480-25846-9). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The matrix spike (MS) recoveries for batch 84219 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8260B: The Matrix Spike Blank recovery for batch 84219 was below TestAmerica's statistically developed internal laboratory QC limits, for Bromoform and Chlorodibromomethane. These analytes were not requested spiking compounds; therefore the recoveries are being reported for advisory purposes only. All other quality control indicators, including the continuing calibration verification, were within method prescribed limits for these analytes.

No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 351.2: The method blank for batch 83224 contained TKN above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.WG-5513-092712-001 (480-25846-2), WG-5513-092712-002 (480-25846-3), WG-5513-092712-003 (480-25846-4), WG-5513-092712-004 (480-25846-5), WG-5513-092712-005 (480-25846-6), WG-5513-092712-006 (480-25846-7), WG-5513-092712-007 (480-25846-8), WG-5513-092712-008 (480-25846-9)

No other analytical or quality issues were noted.

SAMPLE SUMMARY

Client: Conestoga-Rovers & Associates, Inc.

Job Number: 480-25846-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
480-25846-1	TB-5513-092712	Water	09/27/2012 0000	09/28/2012 0840
480-25846-2	WG-5513-092712-001	Water	09/27/2012 1025	09/28/2012 0840
480-25846-3	WG-5513-092712-002	Water	09/27/2012 1200	09/28/2012 0840
480-25846-4	WG-5513-092712-003	Water	09/27/2012 1300	09/28/2012 0840
480-25846-5	WG-5513-092712-004	Water	09/27/2012 1325	09/28/2012 0840
480-25846-6	WG-5513-092712-005	Water	09/27/2012 1435	09/28/2012 0840
480-25846-6MS	WG-5513-092712-005	Water	09/27/2012 1435	09/28/2012 0840
480-25846-6MSD	WG-5513-092712-005	Water	09/27/2012 1435	09/28/2012 0840
480-25846-7	WG-5513-092712-006	Water	09/27/2012 1535	09/28/2012 0840
480-25846-8	WG-5513-092712-007	Water	09/27/2012 1615	09/28/2012 0840
480-25846-9	WG-5513-092712-008	Water	09/27/2012 1645	09/28/2012 0840

EXECUTIVE SUMMARY - Detections

Client: Conestoga-Rovers & Associates, Inc. Job Number: 480-25846-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-25846-2	**WG-5513-092712-001**					
cis-1,2-Dichloroethene		2.0		1.0	ug/L	8260B
Vinyl chloride		5.7		1.0	ug/L	8260B
Iron		1.1		0.050	mg/L	6010B
Potassium		3.8		0.50	mg/L	6010B
Zinc		0.12		0.010	mg/L	6010B
Ammonia		0.45		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		1.2	B	0.20	mg/L	351.2
Dissolved						
Iron		0.77		0.050	mg/L	6010B
Potassium		3.8		0.50	mg/L	6010B
Zinc		0.025		0.010	mg/L	6010B
480-25846-3	**WG-5513-092712-002**					
Chloroethane		4.8		2.0	ug/L	8260B
Iron		4.9		0.050	mg/L	6010B
Potassium		6.8		0.50	mg/L	6010B
Zinc		13.0		0.010	mg/L	6010B
Ammonia		0.88		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		1.9	B	0.20	mg/L	351.2
Dissolved						
Iron		0.85		0.050	mg/L	6010B
Potassium		6.9		0.50	mg/L	6010B
Zinc		0.14		0.010	mg/L	6010B
480-25846-4	**WG-5513-092712-003**					
Iron		0.31		0.050	mg/L	6010B
Potassium		4.5		0.50	mg/L	6010B
Zinc		0.011		0.010	mg/L	6010B
Ammonia		0.42		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		1.1	B	0.20	mg/L	351.2
Dissolved						
Iron		0.20		0.050	mg/L	6010B
Potassium		4.5		0.50	mg/L	6010B
Zinc		0.0060	J	0.010	mg/L	6010B

EXECUTIVE SUMMARY - Detections

Client: Conestoga-Rovers & Associates, Inc. Job Number: 480-25846-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-25846-5	**WG-5513-092712-004**					
Iron		12.3		0.050	mg/L	6010B
Potassium		3.6		0.50	mg/L	6010B
Zinc		0.059		0.010	mg/L	6010B
Ammonia		0.059		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		0.77	B	0.20	mg/L	351.2
Dissolved						
Iron		1.1		0.050	mg/L	6010B
Potassium		2.9		0.50	mg/L	6010B
Zinc		0.0062	J	0.010	mg/L	6010B
480-25846-6	**WG-5513-092712-005**					
1,1-Dichloroethene		0.39	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		23		1.0	ug/L	8260B
Trichloroethene		7.6		1.0	ug/L	8260B
Vinyl chloride		3.5		1.0	ug/L	8260B
Iron		0.18		0.050	mg/L	6010B
Potassium		5.4		0.50	mg/L	6010B
Zinc		0.98		0.010	mg/L	6010B
Ammonia		0.057		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		0.50	B	0.20	mg/L	351.2
Dissolved						
Iron		0.14		0.050	mg/L	6010B
Potassium		5.3		0.50	mg/L	6010B
Zinc		0.32		0.010	mg/L	6010B
480-25846-7	**WG-5513-092712-006**					
Iron		8.0		0.050	mg/L	6010B
Potassium		6.2		0.50	mg/L	6010B
Zinc		5.6		0.010	mg/L	6010B
Ammonia		0.48		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		1.2	B	0.20	mg/L	351.2
Dissolved						
Iron		1.1		0.050	mg/L	6010B
Potassium		6.2		0.50	mg/L	6010B
Zinc		0.0070	J	0.010	mg/L	6010B

EXECUTIVE SUMMARY - Detections

Client: Conestoga-Rovers & Associates, Inc. Job Number: 480-25846-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-25846-8	WG-5513-092712-007					
Iron		3.8		0.050	mg/L	6010B
Potassium		6.3		0.50	mg/L	6010B
Zinc		3.7		0.010	mg/L	6010B
Ammonia		0.48		0.020	mg/L	350.1
Total Kjeldahl Nitrogen		1.2	B	0.20	mg/L	351.2
Dissolved						
Iron		1.8		0.050	mg/L	6010B
Potassium		6.4		0.50	mg/L	6010B
Zinc		0.0028	J	0.010	mg/L	6010B
480-25846-9	WG-5513-092712-008					
1,1,2,2-Tetrachloroethane		3.3		2.0	ug/L	8260B
1,1-Dichloroethene		5.0		2.0	ug/L	8260B
Carbon disulfide		0.52	J	2.0	ug/L	8260B
Chloroform		14		2.0	ug/L	8260B
cis-1,2-Dichloroethene		1700		20	ug/L	8260B
Tetrachloroethene		120		2.0	ug/L	8260B
trans-1,2-Dichloroethene		6.8		2.0	ug/L	8260B
Trichloroethene		640		20	ug/L	8260B
Vinyl chloride		290		20	ug/L	8260B
Iron		14.8		0.050	mg/L	6010B
Potassium		21.2		0.50	mg/L	6010B
Zinc		3.9		0.010	mg/L	6010B
Ammonia		4.9		0.10	mg/L	350.1
Total Kjeldahl Nitrogen		4.8	B	0.40	mg/L	351.2
Nitrite as N		0.031	J	0.050	mg/L	353.2
Dissolved						
Iron		4.5		0.050	mg/L	6010B
Potassium		21.2		0.50	mg/L	6010B
Zinc		0.023		0.010	mg/L	6010B

CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

Address: NF office

Phone: ____ Fax: ____

COC NO.: 7

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 5513-02	Laboratory Name: Test America	Lab Location: Amherst	SSOW ID:
Project Name: UCAR	Lab Contact: Melissa Deyo	Lab Quote No:	Cooler No:
Project Location: Hyde Park Blvd N.F.			Carrier:
Chemistry Contact: S. Scrocchi			Airbill No:
Sampler(s): D. Tyran			Date Shipped: 9-28-12

Sample Type: Matrix Code (see back of COC); Grab (G) or Comp (C)

Container Quantity & Preservation: Unpreserved; Hydrochloric Acid (HCl); Nitric Acid (HNO_3); Sulfuric Acid (H_2SO_4); Sodium Hydroxide (NaOH); Methanol/Water (Soil VOC); EnCores 3x5-g, 1x25-g; Other; Total Containers/Sample

Analysis Requested (See Back of COC for Definitions): Ammonia; TAL Metals; TAL Metals Di; TCL OLM04; Nitrite Nitrate; TKN

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code	Grab (G) or Comp (C)	Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores	Other	Total Containers/Sample	Ammonia	TAL Metals	TAL Metals Di	TCL OLM04	Nitrite Nitrate	TKN						MS/MSD Request	Comments/ Special Instructions
1	TB-5513-092712	9-27-12		TB	G		X							2				X									
2	WG-5513-092712-001	9-27-12	1025	WG	G	X	X	X	X					7	X	X	X	X	X	X							
3	WG-5513-092712-002	9-27-12	1200	WG	G	X	X	X	X					7	X	X	X	X	X	X							
4	WG-5513-092712-003	9-27-12	1300	WG	G	X	X	X	X					7	X	X	X	X	X	X							
5	WG-5513-092712-004	9-27-12	1325	WG	G	X	X	X	X					7	X	X	X	X	X	X							
6	WG-5513-092712-005	9-27-12	1435	WG	G	X	X	X	X					21	X	X	X	X	X	X						X	
7	WG-5513-092712-006	9-27-12	1535	WG	G	X	X	X	X					7	X	X	X	X	X	X							
8	WG-5513-092712-007	9-27-12	1615	WG	G	X	X	X	X					7	X	X	X	X	X	X							
9	WG-5513-092712-008	9-27-12	1645	WG	G	X	X	X	X					7	X	X	X	X	X	X							
10																											
11																											
12																											
13																											
14																											
15																											

DS SD SD

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week ☐ Other:

Total Number of Containers: 72

All Samples in Cooler must be on COC

Notes/ Special Requirements:

	Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	David Tyran	CRA	9-28-12	0800	[signature]	TA Buffalo	9-28-12	840
2.								
3.								

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

7.6 #1

CRA Form: COC 10B (20110804)

ENCLOSURE 4

Institutional and Engineering Controls Certification Form

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 932035

Site Name Union Carbide Corp., Carbon Prod. Div.

Site Address: Hyde Park Boulevard Zip Code: 14303
City/Town: Niagara
County: Niagara
Site Acreage: 61.8

Current Owner:
GrafTech International Holdings Inc.

Owner Address:
12900 Snow Road
Parma, Ohio 44130
c/o Juanita Bursley

Reporting Period: January 1, 2012 to December 31, 2012

	YES	NO
1. Is the information above correct?	☐	☒
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

N/A

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 932035 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
130.20-1-1	GrafTech International Holdings Inc.	Monitoring Plan O&M Plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
130.20-1-1	Cover System Fencing/Access Control

Engineering Control Details for Site No. 932035

Parcel: 130.20-1-1

Per the revised OM&M Plan dated November 4, 2009, groundwater monitoring and landfill cap maintenance is required.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the ~~Site~~ OM&M ~~Management~~ Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

N/A

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 932035

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Thomas R. Jacques (print name) at 12900 Snow Road, Parma, Ohio 44130 (print business address),

am certifying as Owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

T.R.J

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

2/28/13
Date

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Juanita M. Bursley (print name) at 12900 Snow Road, Parma, Ohio 44130 (print business address),

am certifying as a Qualified Environmental Professional for the Owner (Owner or Remedial Party)

Juanita M. Bursley

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

N/A

Stamp (Required for PE)

2/28/13

Date