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Texas
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Seattle
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London

Jason B. Hutt
Partner

202.828.5850 Office
202.857.2114 Fax

jason.hutt@bgllp.com

Bracewell & Giuliani LLP
2000 K Street NW
Suite 500
Washington, DC
20006-1872

May 26, 2011

By FedEx

Jacqueline Morrison
Land and Chemicals Division (3LC00)
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Re: **Request for Information on Marcellus Shale Flowback Water**

Dear Ms. Morrison:

As discussed with Humane Zia and in our meeting today with EPA Region III, enclosed please find Chesapeake Energy Corporation's response to RFI Nos. 1 and 4 of United States Environmental Protection Agency Region III's ("EPA Region III") Request for Information dated May 12, 2011 (the "RFI"), CHK00000001-CHK00000024. Subject to our discussion on Friday, May 27, 2011 with Bill Early regarding how best to prioritize the EPA Region III's pending requests for information, Chesapeake intends to continue working diligently and in good faith to respond to this RFI on a rolling basis. Chesapeake expects to complete its response within the next two weeks. In the meantime, please do not hesitate to contact the undersigned with any questions regarding this matter.

Very truly yours,

Bracewell & Giuliani LLP

Jason B. Hutt

Jason B. Hutt

Enclosure

cc: Humane Zia, USEPA Region III
Steven Feisal, Chesapeake Energy Corporation
Mike Brownell, Chesapeake Energy Corporation
Stephanie Timmermeyer, Chesapeake Energy Corporation

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Bracewell & Giuliani LLP
2000 K Street NW
Suite 500
Washington, DC
20006-1872

June 9, 2011

By FedEx

Jacqueline Morrison
Land and Chemicals Division (3LC00)
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Re: **Request for Information on Marcellus Shale Flowback Water**

Dear Ms. Morrison:

Enclosed please find Chesapeake Energy Corporation's updated response to RFI No. 1 and response to RFI Nos. 2, 3, 5, and 6 of United States Environmental Protection Agency Region III's ("EPA Region III") Request for Information dated May 12, 2011 (the "RFI"), CHK00000025-CHK00000028.

Very truly yours,

Bracewell & Giuliani LLP

Jason B. Hutt

Enclosure

cc: Humane Zia, USEPA Region III
Steven Feisal, Chesapeake Energy Corporation
Mike Brownell, Chesapeake Energy Corporation
Stephanie Timmermeyer, Chesapeake Energy Corporation

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Bracewell & Giuliani LLP
2000 K Street NW
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Washington, DC
20006-1872

June 17, 2011

By FedEx

Jacqueline Morrison
Land and Chemicals Division (3LC00)
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Re: **Request for Information on Marcellus Shale Flowback Water**

Dear Ms. Morrison:

In our June 9th submittal on behalf of Chesapeake Energy Corporation related to the United States Environmental Protection Agency Region III's Request for Information dated May 12, 2011, we inadvertently excluded the attachments referenced in the narrative enclosure, CHK00000025-CHK00000028. Enclosed please find those excluded attachments, CHK00000029 to CHK00000174.

Very truly yours,

Bracewell & Giuliani LLP

Jason B. Hutt

Enclosure

cc: Humane Zia, USEPA Region III
Steven Feisal, Chesapeake Energy Corporation
Mike Brownell, Chesapeake Energy Corporation
Stephanie Timmermeyer, Chesapeake Energy Corporation

CHESAPEAKE ENERGY CORPORATION
Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water
May 25, 2011

Question 1. Provide a list identifying each state permitted Well that you own or operate in EPA Region III and include the latitude and longitude for each Well and identify whether each Well is actively being drilled, is completed, or is producing natural gas.

Please see attachment CHK00000002-000000024.

Question 4. Identify your intentions for disposal, reuse, treatment, recycling, and reclamation of Gas Extraction Wastewater after May 19, 2011, including your expected methods and locations for disposal, treatment, or recycling during calendar year 2011. Provide the expected percentage of your Gas Extraction Wastewater by disposal, treatment, or recycling method.

For produced water from Marcellus shale gas wells in EPA Region III, Chesapeake Energy Corporation ("Chesapeake") intends to either recycle or dispose of such produced water at state permitted UIC wells during the remainder of calendar year 2011. For such recycling, Chesapeake intends to use filtration in Pennsylvania and West Virginia. For such disposal, Chesapeake intends to utilize UIC wells in West Virginia and Ohio. In Pennsylvania, Chesapeake expects its recycling to disposal percentage to be approximately 90:10 for such produced water. In West Virginia, Chesapeake expects its recycling to disposal percentage to be approximately 50:50 for such produced water. Chesapeake does not expect to generate produced water at any Marcellus shale gas well in any other parts of EPA Region III during the remainder of calendar year 2011.

CHESAPEAKE ENERGY CORPORATION
Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water
June 9, 2011

In providing this second, and final submission of information requested by U.S. Environmental Protection Agency Region III's ("EPA Region III") *Request for Information on Marcellus Shale Flowback Water* ("RFI"), Chesapeake has made a good faith effort to compile and produce responsive information through the date of the RFI, but reserves the right to supplement its response consistent with the terms of the RFI to the extent that additional information becomes available or EPA Region III clarifies the scope of the RFI.

Chesapeake is providing the enclosed information on a voluntary basis to assist EPA Region III in understanding the important role that recycling and reuse of produced water plays in the Chesapeake's Marcellus Shale exploration and production activities. In providing this information, Chesapeake does not waive any objections as to the scope of EPA Region Ill's information request authority under the statutes cited in the RFI. Among other things, Chesapeake does not agree that EPA Region III has the authority to require the submission quarterly reports on waste disposal and recycling practices under any of the statutes cited in the RFI, or to submit information regarding all discharges or releases of any substance or waste without regard to the quantity or identity of such substances or wastes. To the extent these or similar objections are made by other companies responding to the RFI, Chesapeake incorporates and adopts those objections into this response by reference as if fully stated herein.

While reserving any and all legal rights associated with these objections, Chesapeake responds to the RFI as follows:

Question 1. Provide a list identifying each state permitted Well that you own or operate in EPA Region III and include the latitude and longitude for each Well and identify whether each Well is actively being drilled, is completed, or is producing natural gas.

Please see Folder 1 on the enclosed compact disc for a revised list of Chesapeake's Marcellus Shale gas wells. Note, this information is current as of June 2, 2011.

Question 2. Provide all Pennsylvania "26R" forms completed and submitted to the Commonwealth of Pennsylvania for all Gas Extraction Wastewaters associated with your Wells for the calendar year 2010, including complete Chemical Analysis Attachments associated with each.

Responsive information is contained in Folder 2 on the enclosed compact disc.

Question 3. For the period of April 19, 2011 to present, identify your Gas Extraction Wastewater management activities, including disposal, reuse, treatment, recycling, and reclamation for your Wells. In doing so, provide the following:

a. For each Well, the actual or estimated amount of Gas Extraction Wastewater generated;

"Flowback" is a process whereby "produced water", which consists of formation water and injected waters, is returned to the surface from the wellbore. For the purpose of responding to

this question, Chesapeake has provided information on "produced water"; information responsive to this part is contained in Folder 1 on the enclosed compact disc.

b. For each facility that has received your Gas Extraction Wastewater, including but not limited to, underground injection wells, wastewater treatment plants, and recycling facilities, provide the name and address for each such facility, the name and address of any entity that transported your Gas Extraction Wastewater to each facility, and the volume (in gallons) of such Gas Extraction Wastewater sent to each such facility;

During the relevant time period all of Chesapeake's produced water was either recycled or injected into governmet-permitted underground disposal wells. Further information responsive to this part is contained in Folder 3b on the enclosed compact disc. Note; latitude and longitude coordinates have been provided in lieu of a specific address.

c. The total volume (in gallons) of Gas Extraction Wastewater that you treated and recycled or caused to be treated or recycled for all your Well sites;

Responsive information is contained in the attachment referenced in Question 3b.

d. A description of the method or methods by which you or any third party recyclers recycled such Gas Extraction Wastewater; and

Chesapeake utilizes filtration, primarily employing 20 micron filter bags, and dewatering in order to reuse/recycle our produced water. Chesapeake continually explores for ways to enhance and increase our reuse/recycling efforts.

e. All modified disposal plans that you submitted after April 19, 2011 to the Commonwealth pursuant to the Pennsylvania Code Title 52 Section 78.55.

Chesapeake has not been required to submit a modified disposal plan to the Commonwealth of Pennsylvania.

f. Describe your use of pits, lagoons, impoundments or other land-based units for the storage or disposal of such Gas Extraction Wastewater associated with your gas extraction activities.

None.

g. Provide the latitude and longitude for all pits, lagoons, impoundments or other land-based units used for the storage of Gas Extraction Wastewater associated with your gas extraction activities.

Not applicable.

Question 4. Identify your intentions for disposal, reuse, treatment, recycling, and reclamation of Gas Extraction Wastewater after May 19, 2011, including your expected methods and locations for disposal, treatment, or recycling during calendar year 2011. Provide the expected percentage of your Gas Extraction Wastewater by disposal, treatment, or recycling method.

Please see Chesapeake's previous response submitted on May 26, 2011.

Question 5. Submit quarterly reports to EPA on your waste disposal and recycling practices commencing on July 1, 2011 and continuing on a quarterly basis thereafter until June 30, 2012, for a total of four (4) reports. Such quarterly reports shall include the following information for the prior quarter:

Chesapeake wishes to register its objection to Question 5 and its various subparts. Question 5 appears to exceed EPA Region Ill's authority under the statutes cited in the RFI because it requires quarterly reporting not currently mandated by any of the statutory or regulatory authorities relied upon by EPA Region III in issuing the RFI. Nonetheless, while reserving any and all rights associated with these objections, Chesapeake is willing to work on a voluntary basis with EPA Region III and the other recipients of this RFI so that an orderly, consistent and transparent process for responding to Question 5 is achieved; currently, no further information is required under this question until July 1, 2011.

a. For each Well, the actual or estimated volume (in gallons) of Gas Extraction Wastewater generated;

b. For each facility that has received your Gas Extraction Wastewater, including but not limited to, underground injection wells, wastewater treatment plants, and recycling facilities, provide the name and address for each such facility, the name and address of any entity that transported your Gas Extraction Wastewater to each facility, and the volume (in gallons) of Gas Extraction Wastewater sent to each such facility;

c. The total volume (in gallons) of Gas Extraction Wastewater that you or any third parties treated and recycled or caused to be treated or recycled for all your Well sites;

d. A description of the method or methods by which you or any third party recyclers recycled such Gas Extraction Wastewater; and

e. Describe your use of pits, lagoons, impoundments or other land-based units for the storage or disposal of such Gas Extraction Wastewater for your gas extraction activities.

f. Provide the latitude and longitude for all pits, lagoons, impoundments or other land-based units used for the storage of Gas Extraction Wastewater associated with your gas extraction activities.

Question 6. Identify any and all discharges or releases of any substances, wastes, and/or Gas Extraction Wastewater from facilities that contain Wells that you own or operate and all

media (air, water, or land) that were affected by such discharges or releases and the estimated quantities of all substances discharged or released for the past five (5) years.

Chesapeake objects to Question 6 because the request is vague, overbroad in scope, and, accordingly, exceeds EPA Region III's statutory authority to request such information. Without any limiting principle on Question 6, Chesapeake cannot provide any meaningful response. As a result, Chesapeake requests EPA Region III provide clarification as to the definition and scope of terms used in Question 6 so that Chesapeake can better assess whether it has responsive information.

Chesapeake
ENERGY

June 8, 2011

Jim Miller
Pennsylvania Department of Environmental Protection
Northcentral Regional Office
208 West Third Street, Suite 101
Williamsport, PA 17701

Dear Mr. Miller

Attached is the Form 26R Chemical Analysis of Residual Waste Annual Report by the generator for fluids, along with the Statement of Qualifications and the analytical report from Test America.

If you should have any questions or require additional information, please do not hesitate to contact me.

Best Regards,

Chesapeake Appalachia, L.L.C

Tal Oden
Regulatory Manager North, Eastern Division

Enclosures

CHK00000036

2540-FM-BWM0347 Rev. 1/2011

pennsylvania

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

FORM 26R
CHEMICAL ANALYSIS OF RESIDUAL WASTE
ANNUAL REPORT BY THE GENERATOR

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.

General Reference 287.54

Date Prepared/Revised 05/30/2011

DEP USE ONLY
Date Received & General Notes

SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION

Company Name
Chesapeake Energy Corporation

If a Subsidiary, Name of Parent Company
Chesapeake Operations Inc

EPA Generator ID#

Company Mailing Address Line 1
101 N Main Street

Company Mailing Address Line 2

Company Address Last Line – City	State	Zip+4	Phone	Ext
Athens	PA	18810	5708866564	

Company Contact Last Name	First Name	MI	Suffix
Maryott	Mary	A	

Municipality	County
Athens Boro	Bradford

Contact Phone	Ext	Contact Email Address
570-888-6564	84067	mary.maryott@chk.com

Is the waste generated at the Company Mailing Address (noted above)? ☐ Yes ☒ No

If 'No', describe location of waste generation and storage. see attached

Municipality	County	State

SECTION B. WASTE DESCRIPTION

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
420	Process Wastewaters	12,422,544	☐ cu yd ☒ gal ☐ lb ☐ ton	☐ One Time

1. GENERAL PROPERTIES

a. pH Range 5.10 to 8.1 (based on analyses or knowledge)

b. Physical State
☒ Liquid Waste (EPA Method 9095)
☐ Solid (EPA Method 9095)
☐ Gas (ambient temperature & pressure)

c. Physical Appearance Color gray to brown Odor none

Number of Solid or Liquid Phases of Separation

Describe each phase of separation.

2. CHEMICAL ANALYSIS ATTACHMENTS

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	☐ Yes	☐ No	
b.	A detailed description of the waste sampling method is attached.	☒ Yes	☐ No	
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	☒ Yes	☐ No	
d.	The results of the hazardous waste determination is attached.	☐ Yes	☐ No	
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	☐ Yes	☒ No	☐ N/A

CHK00000037

3. Process Description & Schematic Attachments

a. A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached. ☒ Yes ☐ No

b. A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached. ☒ Yes ☐ No

c. If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached. ☒ Yes ☐ No ☐ N/A

SECTION C. MANAGEMENT OF RESIDUAL WASTE

1. Processing or Disposal Facility(ies)

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a. Solid waste permit number(s) for processing or disposal facility being utilized

b. Facility Name: TriCounty
Address Line 1: 1487 Tom's Run Road
Address Line 1:
Address City State ZIP: Hollbrook PA 1534
Municipality: County: Wayne

c. Facility Contact Name: Roy Kohler
Title:
Phone: 724-627-7178 Email Address:

d. Volume of waste shipped to processing or disposal facility in the previous year
☐ cu yd ☐ gal ☐ lb ☐ ton (check one)

a. Solid waste permit number(s) for processing or disposal facility being utilized.

b. Facility Name:
Address Line 1:
Address Line 1:
Address City State ZIP:
Municipality: County:

c. Facility Contact Name:
Title:
Phone: Email Address:

d. Volume of waste shipped to processing or disposal facility in the previous year
0 ☐ cu yd ☐ gal ☐ lb ☐ ton (check one)

2. Beneficial Use

a. Has the waste been approved for beneficial use? ☐ Yes ☒ No
If "Yes", list the general permit number or approval number.

b. Volume of waste beneficially used in the previous year
0 ☐ cu yd ☐ gal ☐ lb ☐ ton (check one)

SECTION D. CERTIFICATION

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

☒ I certify the information required in Section B-1, General Properties was supplied to the Department for the year 2009 and has not changed.

Form Submitted: ☒ Form 26R ☐ Other (specify) _____

Date Submitted: 04/01/2010

☒ I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year 2009 and has not changed.

Form Submitted: ☒ Form 26R ☐ Other (specify) _____

Date Submitted: 04/01/2010

☐ I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year 2010 and has not changed.

Form Submitted: ☐ Form 26R ☐ Other (specify) _____

Date Submitted: 04/01/2010

Name of Responsible Official: TAL ODEN Title: Mgr. Reg. Eastern Div.

Signature: _____ Date: 06/08/2011

2540-PM-BWM0347 Rev. 1/2011

pennsylvania

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

FORM 26R
CHEMICAL ANALYSIS OF RESIDUAL WASTE
ANNUAL REPORT BY THE GENERATOR

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.

DEP USE ONLY
Date Received & General Notes

General Reference 287.54

Date Prepared/Revised 05/30/2011

SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION

Company Name
Chesapeake Energy Corporation

If a Subsidiary, Name of Parent Company
Chesapeake Operations Inc

EPA Generator ID#

Company Mailing Address Line 1
101 N Main Street

Company Mailing Address Line 2

Company Address Last Line – City	State	Zip+4	Phone	Ext
Athens	PA	18810	570-888-6564	

Company Contact Last Name	First Name	MI	Suffix
Maryott	Mary	A	

Municipality
Athens Boro

County
Bradford

Contact Phone	Ext	Contact Email Address
570-888-6564	84067	mary.maryott@chk.com

Is the waste generated at the Company Mailing Address (noted above)? ☐ Yes ☐ No

If 'No', describe location of waste generation and storage. see attached

Municipality | County | State

SECTION B. WASTE DESCRIPTION

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
420	Process Wastewaters	12,422.544	☐ cu yd ☑ gal ☐ lb ☐ ton	☐ Date Time

1. GENERAL PROPERTIES

a. pH Range 5.10 to 8.1 (based on analyses or knowledge)

b. Physical State
- ☑ Liquid Waste (EPA Method 9095)
- ☐ Solid (EPA Method 9095)
- ☐ Gas (ambient temperature & pressure)

c. Physical Appearance
Color gray to brown Odor none
Number of Solid or Liquid Phases of Separation
Describe each phase of separation.

2. CHEMICAL ANALYSIS ATTACHMENTS

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	☐ Yes ☐ No
b.	A detailed description of the waste sampling method is attached.	☐ Yes ☐ No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	☐ Yes ☐ No
d.	The results of the hazardous waste determination is attached.	☐ Yes ☐ No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	☐ Yes ☐ No ☐ N/A

CHK00000040

3. Process Description & Schematic Attachments

a. A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached. ☒ Yes ☐ No

b. A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached. ☒ Yes ☐ No

c. If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached. ☐ Yes ☐ No ☐ N/A

SECTION C. MANAGEMENT OF RESIDUAL WASTE

1. Processing or Disposal Facility(ies)

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a. Solid waste permit number(s) for processing or disposal facility being utilized.
WMGR123

b. Facility Name: Eureka
Address Line 1: 419 Second Street
Address Line 1:
Address City State ZIP: Williamsport PA 17701
Municipality: Williamsport Boro County: Lycoming

c. Facility Contact Name: Dan Ertel
Title: owner
Phone: 570-971-9978 Email Address: d.ertel@jertal.com

d. Volume of waste shipped to processing or disposal facility in the previous year.
2,000,000 ☐ cu yd ☐ gal ☐ lb ☐ ton (check one)

a. Solid waste permit number(s) for processing or disposal facility being utilized.
PA0026913

b. Facility Name: McKeesport Waste Authority
Address Line 1: 100 Atlantic Ave
Address Line 1:
Address City State ZIP: McKeesport PA 15132
Municipality: McKeesport Boro County: Allegheny

c Facility Contact Name: Joe Rost
Title: Executive Director
Phone: 412-673-9701 Email Address: macm.jrost@verizon.net

d Volume of waste shipped to processing or disposal facility in the previous year.
0 ☐ cu yd ☐ gal ☐ lb ☐ ton (check one)

2. Beneficial Use

a. Has the waste been approved for beneficial use? ☐ Yes ☒ No
If "Yes", list the general permit number or approval number.

b. Volume of waste beneficially used in the previous year.
0 ☐ cu yd ☐ gal ☐ lb ☐ ton (check one)

CHK00000041

SECTION D. CERTIFICATION

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

☒ I certify the information required in Section B-1, General Properties was supplied to the Department for the year 2009 and has not changed.

Form Submitted: ☒ Form 26R
☐ Other (specify)

Date Submitted: 04/01/2010

☒ I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year 2009 and has not changed.

Form Submitted: ☒ Form 26R
☐ Other (specify)

Date Submitted: 04/01/2010

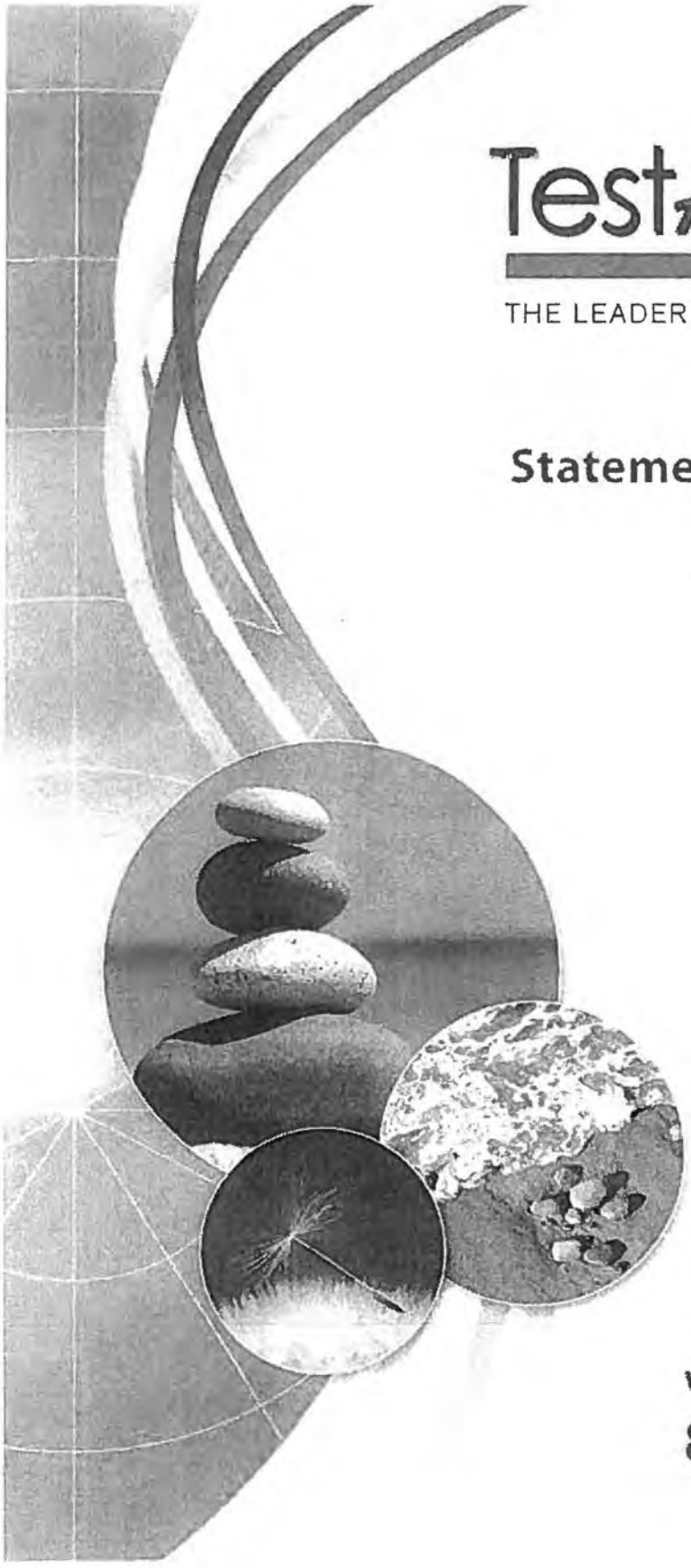
☒ I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year 2010 and has not changed.

Form Submitted: ☒ Form 26R
☐ Other (specify)

Date Submitted: 04/01/2010

Name of Responsible Official: TAL ODEN Title: Mgr. Reg. Eastern Div

Signature: [signature] Date: 06/08/2011



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

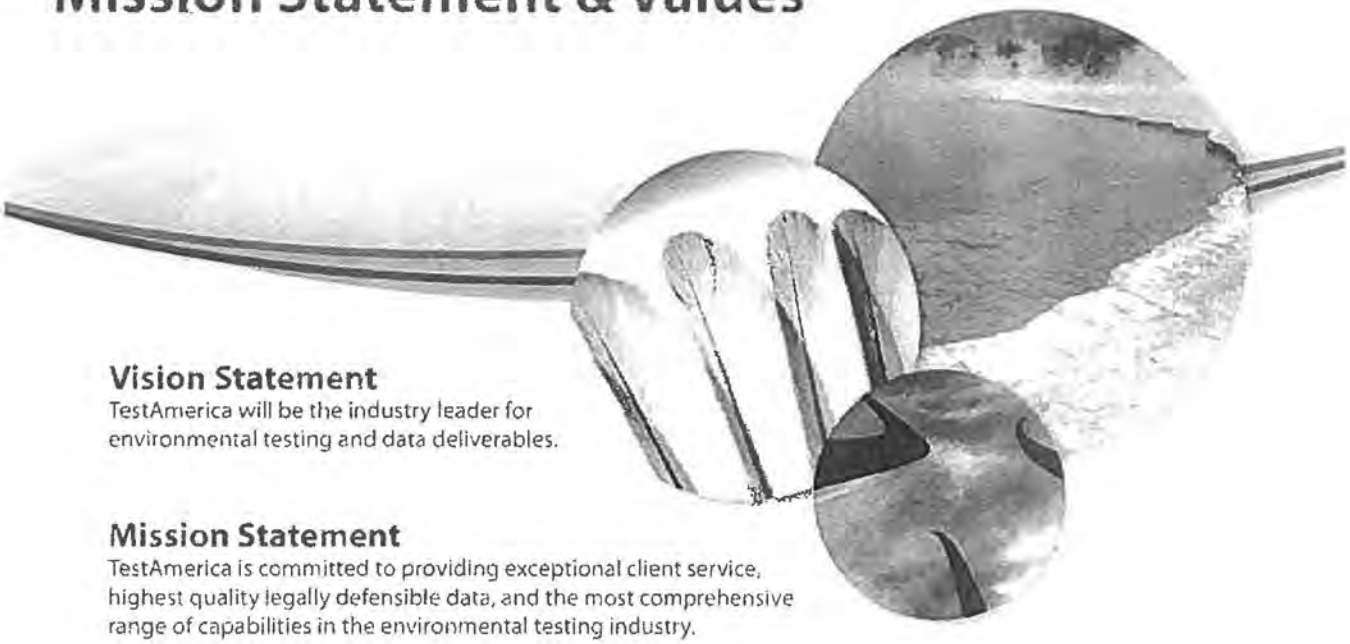
Statement of Qualifications
Vol.1

www.testamericainc.com

866-785-LABS

CHK00000043

Mission Statement & Values



Vision Statement

TestAmerica will be the industry leader for environmental testing and data deliverables.

Mission Statement

TestAmerica is committed to providing exceptional client service, highest quality legally defensible data, and the most comprehensive range of capabilities in the environmental testing industry.

Core Values

Integrity: We adhere to the highest moral and ethical standards in all that we do.

Client Service: We strive to ensure our clients' satisfaction and success.

Performance: We set challenging goals, hold one another accountable, and reward results.

Technical Excellence: We continually invest in new technologies to provide exceptional data quality and to develop new and emerging methods.

Teamwork: We help each other succeed through a cooperative team effort, in an atmosphere of civility and respect.

People: We invest in training, professional development and career progression for our employees.

Growth: We manage our business for profitable and sustainable growth.

Sustainability Statement

TestAmerica takes pride in being the industry leader for environmental testing and data deliverables. Our services enable clients to make business decisions that positively impact the environment, the importance of which is not overshadowed by TestAmerica's commitment to operating in an environmentally conscious manner. In response, TestAmerica obligates itself to achieving sustainable financial returns and respecting the environment and community within which we work and live.

Sustainability by definition is inherently broad. TestAmerica follows a sustainability framework that ensures the company operates in a manner that achieves financial success through the practice of environmental stewardship, ethical leadership and by embracing our role as corporate citizen in the communities where we work. The foundation blocks of the TestAmerica Sustainability Framework include:

Governance, Ethics and Compliance: Operating in a responsible and ethical manner in accordance with our ethics policy and the law, promoting ethical sales and purchasing practices;

Employees: Providing a rewarding, diverse, and inclusive workplace for employees;

Environment, Health and Safety: Capitalizing on the inherent financial and social benefits stemming from sound environmental practices and a safe and healthy workplace;

Supply Chain: Working with suppliers to improve their social and environmental performance and cooperatively seeking opportunities to reduce the carbon footprint relative to the delivery of services to TestAmerica laboratories and clients;

Charitable & Community Support: Encouraging the support of local and national charitable organizations and other initiatives that support local communities connected to our business and employees;

Economic Impacts: Using financial resources wisely to benefit company stakeholders and to address key sustainability issues;

Public Policy: Working with governments, regulators and policymakers to improve the quality of analytical methods ensuring the consistent delivery of legally defensible data.

Our employees work to integrate sustainable solutions within every business division, every service category and every department of our operations. Sustainability is integral to and embedded within all our actions and the service we provide.

Introduction

Through strategic investment in people, technology, capital equipment and infrastructure, TestAmerica has developed the world's leading environmental testing company. Our unique combination of experience and expertise is backed by recognized industry experts and an unprecedented scale of analytical services that address an extensive range of environmental applications. TestAmerica is a leading provider of critical analytical support services to both public and private sector clients. Whether it is the Department of Defense, Department of Energy, Fortune 500 industrials, or the consulting and engineering firms that support them, TestAmerica leads the industry in developing innovative solutions to address their testing needs.

TestAmerica focuses on the refinement of methods that address current environmental issues and invests in the development of new solutions for challenges that the market and our clients anticipate facing in the future. To facilitate this process, TestAmerica routinely assumes leadership positions with a variety of environmental trade associations, regulatory review boards and lab industry steering committees. TestAmerica's leadership helps to shape how analytical solutions are brought to market, sets the standard for quality and ethics, and challenges conventional wisdom to drive an industry culture of continuous improvement. TestAmerica holds active leadership positions in each of the following organizations:

- **NELAC** - National Environmental Laboratory Accreditation Conference
- **ITRC** - Interstate Technology & Regulatory Council
- **ACIL** - American Council of Independent Laboratories
- **SAME** - Society of American Military Engineers
- **AWMA** - Air & Waste Management Association

Through a network of 36 fixed base lab operations, 33 service centers and a fleet of mobile laboratories, TestAmerica brings a unique blend of expertise and convenience to its customers. Our ability to deliver the widest variety of environmental testing services is a function of our unmatched scale. Among the large variety of testing applications TestAmerica provides are:

- Metals by ICP & ICP/MS
- Low Level Mercury
- Bioavailable Arsenic & Lead
- Alkyl Tins
- Metals Speciation
- Trace Level Volatile Organics
- Trace Level Semivolatile Organics
- Pesticides by HR/MS
- Agricultural Pesticides
- Herbicides
- PCB Congeners & Homologs
- High Resolution Dioxin & Furans
- Explosive & Energetic Compounds
- Chemical Warfare Agents
- Petroleum Hydrocarbons Bioavailability
- Radiological & Mixed Waste
- Radiobioassay & Radio Dating
- Sediments & Elutriates
- Plant & Animal Tissues
- Aquatic Toxicology
- Drinking Water
- Mold, Fungi & Legionella
- Ambient & Source Air Emissions
- Geotechnical
- Multi-Increment Sampling
- Oil Fingerprinting/Biomarkers

The expertise provided by TestAmerica, and the services we offer, are designed to address the specific requirements of a broad spectrum of regulatory programs. The ability to understand regulatory platforms, the decision criteria they drive and their prescription for quality analytical testing is critical for the development and delivery of test results that meet the needs of their intended use. TestAmerica has long led the industry in the development and refinement of analytical test methodologies for a host of regulatory programs and has often served as a member of steering committees who have shaped the standard of quality and practice for the environmental testing industry. Among the regulatory programs TestAmerica routinely supports are:

- Resource Conservation & Recovery Act (RCRA)
- Clean Water Act (CWA)
- Clean Air Act (CAA)
- Safe Drinking Water Act (SDWA)
- Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)
- Superfund Amendments & Reauthorization Act (SARA)
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide & Rodenticide Act (FIFRA)
- National Environmental Policy Act (NEPA)
- Inland, Upland & Ocean Testing Manuals
- Total Maximum Daily Load (TMDL)
- National Pollution Discharge Elimination System (NPDES)
- Marine Protection, Research & Sanctuaries Act (MPRSA)
- Maximum Achievable Control Technology (MACT)
- Boiler & Industrial Furnace (BIF)
- Radioactive Environmental Monitoring Program (REMP)
- Cluster Rule
- DoD QSM, Version 4.1
- Leaking Underground Storage Tank (LUST/UST)
- Comprehensive State Brownfields Programs
- National Emission Standards for Hazardous Air Pollutants (NESHAP)



TotalAccess

TotalAccess

An overriding benefit that TestAmerica clients receive as a function of our scale and coverage is the inherent convenience in the way we deliver our services. Convenience takes on many definitions and each client's demands are unique. TestAmerica adds the element of convenience to its analytical service offering in the following ways.

TotalAccess allows you to track all aspects of your environmental data program, with instant access through your own familiar web browser. TotalAccess is a web-based project information tool that provides you with:

- Rapid Data Access
- Complete Document Management Library
- Point & Click Downloads of Project Files
- User Customized Data Reporting Functionality
- Automated Comparison Against Hundreds of Regulatory Lists
- Data Relationship & Trending Wizard
- Analytical Budget Management
- Fully Customizable User Preference Settings

TotalAccess provides TestAmerica clientele with online, secure access to services that enable faster communications, rapid access to data, and a centralized repository for all your project information. Users of the TotalAccess system benefit from having...

- Quick reference to their contacts for each site or program they manage with TestAmerica support.
- Instant notification on project status, including results, electronic deliverables and other documents generated by TestAmerica.
- Online access and download of project documentation including invoices, reports, EDDs and COCs
- Interactive search utility for analytical capabilities and methodologies available within the TestAmerica organization.
- Interactive search utility for lab certification programs detailing which TestAmerica labs hold accreditation and for what program elements.
- Customizable displays capturing data in a single grid and single click downloads to Excel, PDF, or XPS.
- Budget management tools to keep track of analytical expenditures and purchase order ceilings

The TotalAccess system is available free of charge to all TestAmerica customers.

Ask the Expert

TestAmerica is recognized as the industry's technical leader, focusing on global concerns related to environmental testing. Featuring over 30 industry professionals, TestAmerica's "Ask the Expert" program allows any individual with a question relative to environmental testing to access the thoughts and opinions of recognized experts in their field through a free, easy to use online platform.

"Of all the services requested by our customers, none is more sought after than our knowledge. All environmental decisions are in part based upon the data collected. Our customers prefer and in some cases demand the application specific expertise we provide as it adds assurance that data provided appropriately matches their decision objectives," offered Jim Miller, Vice President of Marketing and National Accounts.

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Mobile Laboratories

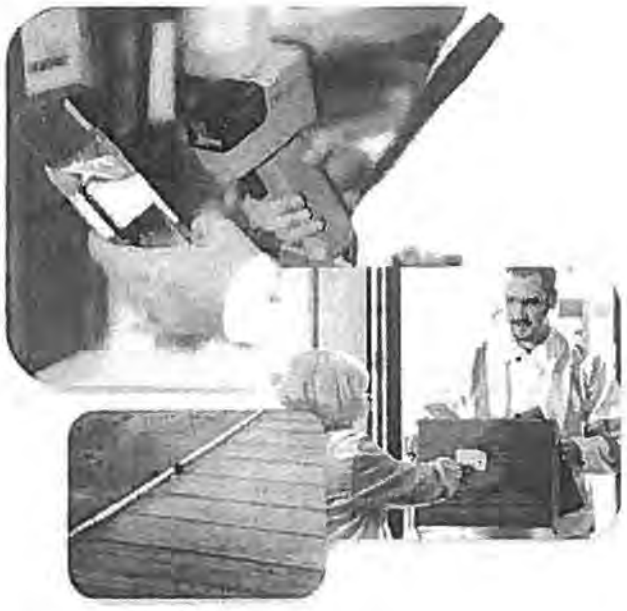
Environmental projects of high sensitivity and compressed timelines can require on-site laboratory support. TestAmerica has a fleet of mobile laboratories equipped to address virtually any testing application that can be done in a fixed base lab. Typical on-site projects completed by TestAmerica include site assessments, investigations, remediation, plume delineation, groundwater monitoring, natural attenuation, soil gas surveys and perimeter air monitoring.

Mobile lab analytical results are available for review in the field immediately upon completion. Results are provided after each analysis with final hard copy report provided upon completion of the sample delivery group. Data is also made available via the TotalAccess system for remote project support personnel.

TestAmerica also has an extensive history assisting clients with outsourced management of their on-site laboratory facilities. Utilizing a customer service based business model that employs commercial laboratory best practices, TestAmerica assists clients with:

- Analytical instrument procurement and maintenance
- Lab supply procurement and inventory management
- Vendor selection and management
- Establishing and managing performance metrics
- Managing operation and staffing schedules
- Work load planning and surge capacity management
- Developing internal and external client feedback systems
- Records management and storage.

TestAmerica's on-site lab management programs help clients achieve their goals of cost reduction, process improvement and system optimization. Our strategy, which is employed throughout our industry's leading network of labs, drives focus on cost control, productivity improvement and increased customer satisfaction.



National Program Coordination

Clients interested in developing a uniform approach to contracting lab services on a national level benefit from TestAmerica's unique approach to national account support. TestAmerica is the only environmental lab services provider to offer truly national coverage through a network of over 65 business locations in the continental United States, Alaska and Hawaii as well as internationally in Bangkok, Manila, and Seoul. Our coverage allows TestAmerica to provide its national customers with a breadth and depth of service offerings that is unmatched in the industry and couple that coverage with all the conveniences offered by a local supplier. Each of our national service programs is customized to meet the unique needs of each customer and is managed through a single point of contact, a National Program Manager, capable of orchestrating the delivery of services from the entire TestAmerica network.

Among the many benefits clients enjoy when contracting with TestAmerica on a national basis are:

Financial

Driven by individual buyer philosophy and goals, TestAmerica develops custom service packages that create financial incentive and scale economy benefits for our clients. Supporting a variety of industry preferred e-procurement systems, TestAmerica facilitates further client savings and sustainability objectives through the use of electronic commerce technology.

Consistency & Centralized Program Management

The TestAmerica approach to national program support drives consistency in the manner in which analytical data are developed, prepared and delivered to our clients. Our approach provides clients assurance that data they obtain to support a variety of programs under a variety of regulatory requirements is prepared with a standard of care and analytical practice that is consistent across laboratory facilities.

Consolidation

With over 65 business locations in the United States, Alaska and Hawaii TestAmerica couriers provide more geographic coverage than any other lab in the country. Our combination of locations maintains certifications in all 50 states and under several government programs. All locations provide logistical support for sample transport to and from the lab and many locations offer sampling support to assist clients with their compliance monitoring needs. TestAmerica's broad based coverage is unique in the industry and provides clients the opportunity to centralize their program, leveraging their purchasing dollar without compromise to the service demands of their monitoring programs.

Custom Planning

Complex projects often require project specific quality assurance plans customized to suit the needs of the regulating body. TestAmerica routinely assists its clients with evaluating project specific data quality objectives and employs appropriate analytical techniques to ensure that those objectives are consistently met.

TestAmerica SOPs are widely utilized in project plans governed by federal and state regulators and are widely recognized for their high quality standards.

When commonly prescribed test methods don't meet project specific needs, TestAmerica works cooperatively with its clients to develop sound scientific applications that deliver confidence and data suitable for its intended use. As the industry leader, TestAmerica routinely serves on industry steering committees that evaluate, refine and promote new analytical practices to address the evolving testing needs presented by emerging analytical challenges.

Database Management

National and multi-national clients who centrally manage environmental data benefit from TestAmerica's information technology expertise. Our staff of over 100 dedicated IT professionals focuses exclusively on the delivery of data via electronic means to accommodate hundreds of client custom data management systems.

E-Procurement

The procurement of environmental services is being revolutionized by the introduction of new on-line business software solutions that help clients efficiently manage their expenditures for environmental services. TestAmerica leads the industry by providing a dedicated team of finance professionals to assist clients with the implementation and management of their e-solutions for procuring laboratory services, saving each client significant time and money. TestAmerica supports dozens of commercial and client proprietary e-procurement systems that include:

- Ariba
- Bottomline Business
- Enfos
- Exostar
- OB10
- Oracle
- Oil-Dex
- Web-Commerce
- WebEDI
- Xign

Services and Capabilities

TestAmerica is the leading environmental testing firm in the United States, including 36 laboratories and 33 service centers providing innovative technical expertise and comprehensive analytical testing services. Specialty analyses include source and ambient air, aquatic toxicity, explosives, specialty organics, dioxins, drinking water, sediments and tissues, emerging contaminants, radiochemistry and mixed waste testing.

Specialty Capabilities Matrix

Laboratories :	Anchorage - Anchorage, AK	Austin - Austin, TX	Buffalo - Amherst, NY	Burlington - South Burlington, VT	Cedar Falls - Cedar Falls, IA	Chicago - University Park, IL	Connecticut - Shelton, CT	Corpus Christi - Corpus Christi, TX	Dayton - Dayton, OH	Denver - Arvada, CO	Edison - Edison, NJ	Honolulu - Aiea, HI	Houston - Houston, TX	Irvine - Irvine, CA	King of Prussia - King of Prussia, PA	Knoxville - Knoxville, TN	Los Angeles - LA, CA	Mobile - Mobile, AL	Nashville - Nashville, TN	N. Canton - N. Canton, OH	Pensacola - Pensacola, FL	Phoenix - Phoenix, AZ	Pittsburgh - Pittsburgh, PA	Portland - Beaverton, OR	Richland - Richland, WA	San Francisco - Pleasanton, CA	Savannah - Savannah, GA	Seattle - Tacoma, WA	Spokane - Spokane Valley, WA	St. Louis - Earth City, MO	Tallahassee - Tallahassee, FL	Tampa - Tampa, FL	Valparaiso - Valparaiso, IN	Watertown - Watertown, WI	West Sacramento - W. Sac, CA	Westfield - Westfield, MA	EMLab P&K
Capabilities :																																					
1, 4 Dioxane (Low Level - detection level 2ppb)			X			X	X			X	X			X				X		X		X	X								X	X		X	X	
4110 B Anions (equiv to 300.0) Non-potable Water			X			X	X			X								X	X							X			X						X	
Acrylic Acid PBMS																															X						
AFFF (PFOS, PFOA, PBSM)										X																										X		
Aquatic Toxicity Testing										X																											X	
Arsenic Speciation																				X																	
Asbestos in Bulk																									X												X
Asbestos in Drinking Water																																					X
Atterberg Limits				X																			X														
AVS-SEM Acid Volatile Sulfides/Simultaneously Extracted Metals				X																																	
Bioassay Analyses Radiochemistry																									X												
Bioavailable Metals												X																									
Bioavailable PAHs																X																					
Carbamates										X	X																				X				X		
Cyanide (CN), Available (OIA 1677)														X									X														
Dioxins/Furans - High and Low Resolution																X																				X	
Ethylene Thiourea																															X						
Explosives & Degradates (EPA Method SW 8321A)										X																				X					X		

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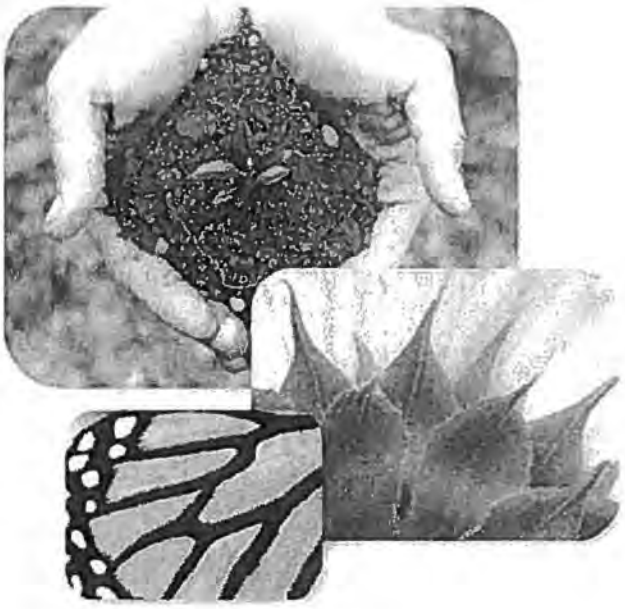
Laboratories :	Anchorage - Anchorage, AK	Austin - Austin, TX	Buffalo - Amherst, NY	Burlington - South Burlington, VT	Cedar Falls - Cedar Falls, IA	Chicago - University Park, IL	Connecticut - Shelton, CT	Corpus Christi - Corpus Christi, TX	Dayton - Dayton, OH	Denver - Arvada, CO	Edison - Edison, NJ	Honolulu - Aiea, HI	Houston - Houston, TX	Irvine - Irvine, CA	King of Prussia - King of Prussia, PA	Knoxville - Knoxville, TN	Los Angeles - L.A., CA	Mobile - Mobile, AL	Nashville - Nashville, TN	N. Canton - N. Canton, OH	Pensacola - Pensacola, FL	Phoenix - Phoenix, AZ	Pittsburgh - Pittsburgh, PA	Portland - Beaverton, OR	Richland - Richland, WA	San Francisco - Pleasanton, CA	Savannah - Savannah, GA	Seattle - Tacoma, WA	Spokane - Spokane Valley, WA	St. Louis - Earth City, MO	Tallahassee - Tallahassee, FL	Tampa - Tampa, FL	Valparaiso - Valparaiso, IN	Watertown - Watertown, WI	West Sacramento - W. Sac, CA	Westfield - Westfield, MA	[illegible]
Capabilities :																																				
Formaldehyde													X						X	X		X								X						
Hydrazine IC, PBMS										X																										
Incremental Soil Sampling EPA-600R-03-027												X												X				X							X	
Low Level Pesticides																X																				
Mercury, Low-level (EPA Method 1631)																				X	X			X										X		
Methamphetamine and other drug residues																			X			X														
Methane, ethane and ethene (RSK-175)	X	X	X	X						X			X	X			X		X	X	X						X		X						
Methane sulfonic acid by IC (EPA Method 300)																																	X			
Multiple Extraction Leachate Procedure (Method 1320)				X														X					X					X							
NDMA (Low Level)										X				X				X																X		
Oxygenates		X	X		X		X		X					X			X	X	X		X	X				X	X	X				X		X	X	
Particle-Size Analysis of Soils				X																			X					X							
PCB Congeners				X																			X				X							X	
Perchlorate				X						X			X	X								X					X			X				X	
PFOA/PFOS										X																								X		
Polybrominated Diphenyl Ethers (PBDE)										X				X																				X		
Polychlorinated Napthalenes (PCNs)						X																														
Porosity				X																																
Pthalic and Maleic acids/anhydrides																														X	X					
Radiobioassay																									X											
Sediment Radiodating																									X											
Sequential Extraction Procedure Metals																X																				
Tannin and Lignin (SM5550)									X															X												
Tetraethyl Lead		X												X																						
Tin, Organo, TBT9 Tributyl Tin				X																								X								
Tritium																									X				X							
Volatile Fatty Acids			X																											X	X					

Personnel & Management

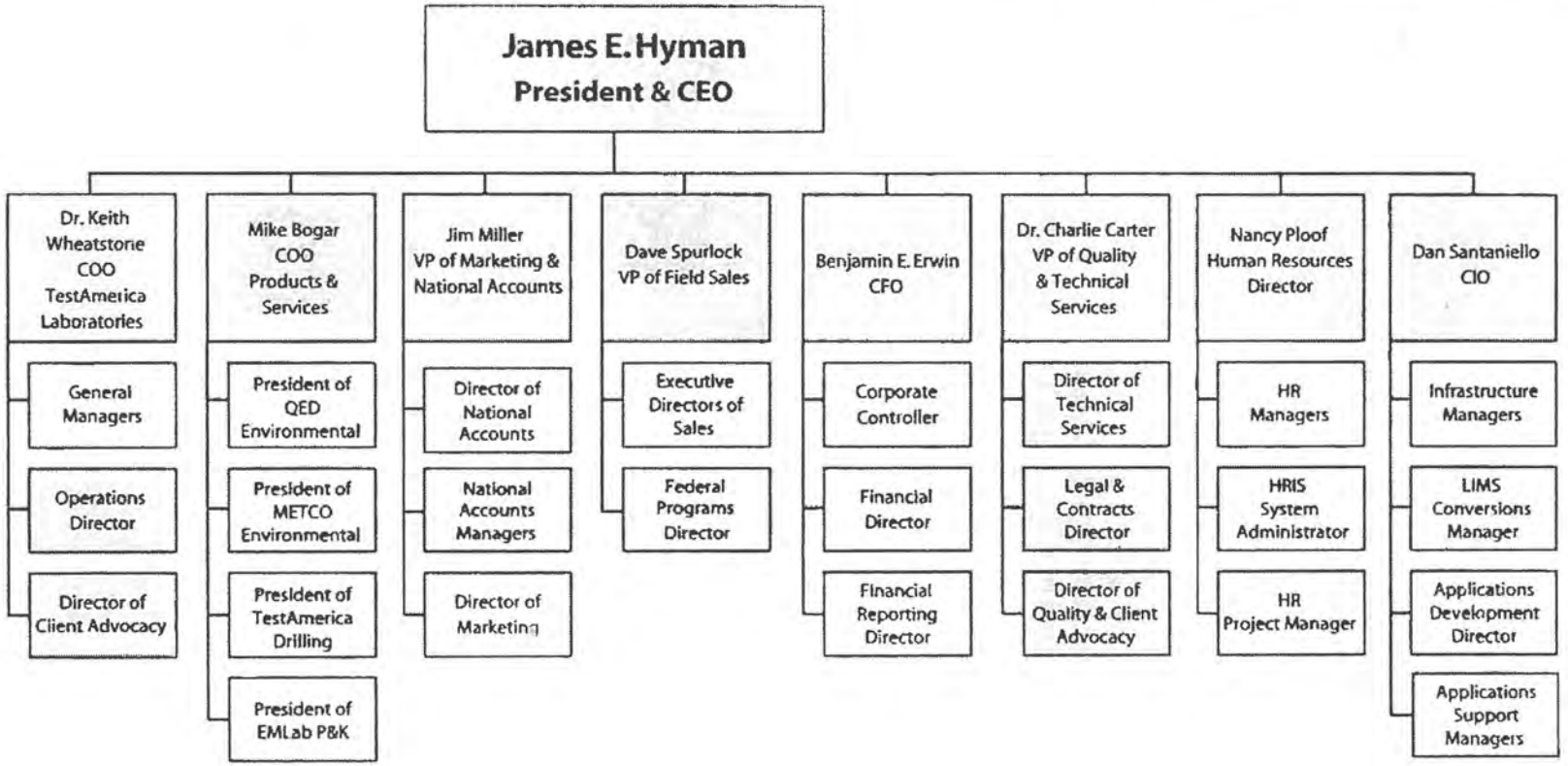
TestAmerica attributes its success to the professionalism and technical expertise of its people. Each person contributes directly to the company's growth and success. TestAmerica has made a commitment to its employees to help them achieve both personal and professional success.

TestAmerica employs exceptional people who welcome challenges. We value and reward high performance, hard work, honesty and teamwork. TestAmerica employees hold themselves accountable to the highest standards of ethics, trust, and quality. These high professional standards, coupled with unparalleled technical leadership, decidedly set TestAmerica apart from the competition.

See Organizational Chart on Page 13



Organizational Chart



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Executive Team

James E. Hyman, President & CEO

Mr. Hyman is President and Chief Executive Officer of TestAmerica Laboratories Inc., reporting to the company's Board of Directors. Prior to joining TestAmerica in 2011, he served as CEO of Cornell Companies, Inc., a provider to government agencies of corrections, education, rehabilitation and treatment services. With over 25 years of experience in international business leadership, Mr. Hyman also has held executive positions with Starwood Hotels & Resorts Worldwide, GE Capital Services, McKinsey & Company, and JP Morgan. Mr. Hyman currently serves on the Americas Board of the Grosvenor Group, a global real estate company and chairs the not-for-profit Mega-Cities Project. Mr. Hyman has an MBA with Distinction from Harvard Business School and an AB with Honors from the University of Chicago.

Dr. Keith Wheatstone, Chief Operating Officer

With a Ph.D. in Analytical Chemistry and over 40 years of environmental laboratory experience, Dr. Wheatstone is responsible for the daily management of all TestAmerica Laboratories facilities. The COO's responsibilities include allocation of personnel and resources, long-term planning, and development of technical policies and management plans. Dr Wheatstone is a Chartered Scientist, Chartered Chemist and a Fellow of the Royal Society of Chemistry (UK).

Michael J. Bogar, Chief Operating Officer, Products and Services

With over 25 years of executive management in marketing, sales, operations and business leadership, Mr. Bogar is responsible for the daily management of all of the Products and Services businesses. The COO's responsibilities include the development and execution of business plans for all the Products and Services businesses.

Benjamin E. Erwin, Chief Financial Officer

Mr. Erwin has 15 years experience in developing, executing and leading global corporate strategies across a variety of industries. As CFO, he is directly responsible for management of finance, accounting, treasury and purchasing functions at TestAmerica. He has deep financial expertise with strength in corporate finance, planning & analysis, merger & acquisition transactions and restructuring. Mr. Erwin graduated with honors degrees in Economic and in Politics from Wake Forest University.

James Miller, Vice President Marketing & National Accounts

Mr. Miller is responsible for the company's National Client Programs and marketing related efforts, reporting to the President and CEO. Mr. Miller holds dual degrees in Chemical Engineering and Journalism. Mr. Miller previously worked with Occidental Petroleum Corporation as well as various media outlets. Mr. Miller has 23 years of experience in the environmental industry, 20 of which he served in various officer posts.

Dr. Charles Carter, Vice President Quality & Technical Services

Dr. Charles Carter is Vice President of Quality and Technical Services, reporting to the President and CEO. In this role he has overall responsibility for corporate quality assurance and laboratory technical development, and he is also involved with legal issues, contracts, health and safety, and information technology efforts. Dr. Carter has a Ph.D. in environmental chemistry, has over 30 years experience in the environmental laboratory industry, and is a recognized industry expert in numerous areas of environmental and analytical chemistry. He has been active in various industry organizations and is a frequent speaker at environmental forums and conferences.

David B. Spurlock, Vice President Field Sales

Mr. Spurlock is Vice President of Field Sales for TestAmerica Laboratories, Inc. and has overall leadership responsibility for the field and federal sales teams. He works in close association with Jim Miller, Vice President of Marketing and National Accounts. Mr. Spurlock holds a B.S. degree in Business Administration from Robert Morris University and has 25 years of leadership experience in the clinical laboratory industry with such companies as SmithKline Beecham, Quest Diagnostics, and LabCorp Inc.

Dan Santaniello, Chief Information Officer

Mr. Santaniello is CIO, reporting to the President and CEO. In this role he has overall responsibility for information technology and Laboratory Information Management Systems (LIMS). Mr. Santaniello has a B.S. in Electrical Engineering and has over 17 years of experience gained through various information technology and operations management roles in the environmental lab industry. Mr. Santaniello is an industry leader in his field having designed several LIMS and on-line environmental data systems in commercial use today.

Nancy Ploof, Human Resources Director

Ms. Ploof serves as the Human Resources Director responsible for leadership, functional expertise, and strategic direction for the management of human resources throughout the organization. She works closely with all levels within TestAmerica to identify and implement necessary HR strategies. She holds an A.A. in Human Resources Management from Baker College located in Flint, MI. She holds the Professional in Human Resources Management accreditation (PHR) from SHRM since 2000. Ms. Ploof has 15 years of environmental testing industry experience, 11 of which have been in the HR field.

Senior Management Team

Chip Meador, General Manager

Mr. Meador earned his B.S. and M.S. degrees in Botany/Ecology at the University of Florida. He has been a General Manager since 2007 and has worked in a variety of management roles in the environmental industry since 1980. He is experienced in all aspects of laboratory operation and management and is very familiar with RCRA and many aspects of hazardous waste management.

Scott Morris, General Manager

Mr. Morris, as General Manager, has overall leadership responsibility for 10 TestAmerica laboratory locations based in Alaska, California, Hawaii, Oregon and Washington as well as Southeast Asia. In 13 years with the TestAmerica organization, he has served in a variety of leadership roles including General Manager, Laboratory Director, Procurement, Marketing and Business Development. Mr. Morris experience also includes mergers and acquisitions as well as post merger integration. Mr. Morris earned an MBA at the University of Warwick in Coventry, England and his undergraduate degree from UCE Birmingham, England.

Chris Oprandi, General Manager

Mr. Oprandi has been in the analytical industry since 1988. He began his career as a laboratory technician and then advanced into laboratory management where he is currently General Manager. Mr. Oprandi is skilled in designing improvements to increase capacity and in identifying and eliminating production bottlenecks. He is experienced in all aspects of laboratory management: production control, project management, database management, quality assurance, environmental health & safety, business development and customer relations. Mr. Oprandi has extensive management and leadership experience. He has developed and implemented numerous training programs addressing both the technical and leadership functions of the business.

Dr. Jack Tuschall, General Manager

Dr. Tuschall earned his Ph.D. and M.S. degrees in Environmental Engineering Science at the University of Florida. He has been a General Manager for TestAmerica and predecessor companies for the past 9 years. Dr. Tuschall has extensive experience in managing full-service analytical laboratories; analytical methods development; design, implementation, and management of environmental monitoring programs; trace organic, inorganic, and mixed-waste analyses; design and implementation of quality assurance programs; and production and use of analytical reference standards. His diverse experience in the environmental analytical chemistry field provides the foundation for successfully leading the Mobile, Nashville, Orlando, Pensacola, Tallahassee and Tampa laboratories. In addition to his General Management responsibilities, Dr. Tuschall is the Director of Best Practices, Environmental Health and Safety Director and is responsible for fostering Continuous Improvement through the development and implementation of best practices across the company's laboratories.

Rusty Vicinie, General Manager

Mr. Vicinie is responsible for the operations of TestAmerica laboratories in Knoxville, Dayton, Canton, Pittsburgh, King of Prussia, Edison and Burlington. Mr. Vicinie's professional expertise includes environmental chemistry focused on air toxics, sediment and tissue analysis as well as having a background in industrial hygiene and clinical laboratory services. He holds degrees in both Chemistry and Biology with graduate work conducted in the areas of Analytical Chemistry and Pharmacology. Mr. Vicinie has 29 years of analytical laboratory experience with 20 of those years being in the environmental practice.

Dr. Richard Burrows – Director of Technical Services

Dr. Burrows is the Technical Director for TestAmerica's network of laboratories in the United States. His duties include implementing new technology, improving existing methods and leading technical groups within TestAmerica. Dr. Burrows has over 25 years of experience in analytical chemistry working in both academic and commercial laboratories of which 18 years have been in the environmental laboratory field. He has been actively involved with environmental methods and techniques through the U.S. Environmental Protection Agency (USEPA) and American Council of Independent Laboratories (ACIL). His method development work has involved bringing new perspectives to method detection limits, calibration, quality assurance and quality control and method development. Dr. Burrows is currently a member of the Environmental Laboratory Advisory Board and is twice a recipient of the ACIL Preston Millar Award. Dr. Burrows received his B.S. in Chemistry and Ph D. in Analytical Chemistry from the University of Bristol in England.

Sharon Gordon – Legal and Contracts Director

Ms. Gordon is responsible for contract review, negotiation, general legal matters and oversight of contract compliance for the entire TestAmerica group of companies. Ms. Gordon regularly conducts training for company employees on contracts, as well as ethics and compliance issues. Ms. Gordon is an attorney, with degrees from: Hastings College of Law (JD) and U.C.L.A (B.A. and Masters in Environmental Planning), and a member of the State of California and Kansas Bar Association. She has 34 years of legal experience including 29 years experience in the environmental consulting field, 16 of which have been with environmental testing laboratories.

Bosco Ramirez – Operations Director

Mr. Ramirez has operational responsibilities that include defining standard operational policies, development and provision of training, as well as operational tools and process development. He also is responsible for the temporary takeover and management of individual laboratory operations during periods of transition. Reporting directly to the Chief Operating Officer, Mr. Ramirez works closely with the General Manager team to address operational needs throughout the TestAmerica network of laboratories. Mr. Ramirez holds a Masters Degree in Analytical Chemistry and brings over 20 years of experience in the environmental laboratory field where he has held positions as Lab Director, Technical Director, Quality Assurance Director and Client Services Manager.

Ray Frederici – Director of Quality and Client Advocacy

Mr. Frederici is highly experienced with 28 years in the environmental testing industry and extensive leadership & management expertise. He possesses excellent abilities for financial management, strategic planning, performance monitoring, policy development and enforcement. As a strong and decisive decision-maker, he takes personal responsibility to spread customer service awareness and lead organizational improvements and solve problems. Through concise communication, presentation, technical writing and technology/computer expertise, he is an organizational change agent.

Tim O'Shields – Director of Client Advocacy

Mr. O'Shields is a passionate, self-motivated professional with 29 year of experience in the environmental laboratory business. Mr. O'Shields' roles have ranged from positions in laboratory and corporate management to roles in technical leadership. He has spent a number of years in developing and delivering comprehensive leadership development programs. Most recently, his role includes development of programs and training to enhance client service company-wide to Best in Class. This role includes hands-on work across the company for process improvement. Major strengths are technical depth, laboratory operations, business management, leadership team development, quality assurance, process improvement, action planning to resolve issues and for business growth, and business development.

Resources

As the world's leading environmental testing company, TestAmerica offers an unparalleled collection of physical resources designed and managed to support the wide and varied needs of our clientele. Strategically positioned expertise and a carefully orchestrated system of planned redundancy provides a platform for the delivery of analytical services that meets the exacting needs of hundreds of regulatory and client programs while providing the capacity to address peak demand without compromise to client schedules and budget.

Facility & Instrument Summary

TestAmerica Laboratories	Major Instrument Summary											
Facilities Size, Employees and Major Instrumentation	Square Footage of the Labs	Laboratory Employees	TOX	TOC	IC	Wet Chem Autoanalyzers	ICMS	ICP	ICP/MS	CVAA-Hg	CVAFS - LLHg	CVAFS - MeHg
Anchorage Laboratory	3600	5										
Austin Laboratory	27000	40		1		3		2	1	1		
Bangkok, Thailand Laboratory	3300	10						1				
Buffalo Laboratory	30000	100	2	1	3	3		2	1	2		
Burlington Laboratory	41000	80		3	2	4		3	1	2		
Cedar Falls Laboratory	12000	45	2	1	1	2		2		1		
Chicago Laboratory	51000	70	1	2	2	3		3		5		
Connecticut (Shelton, CT) Laboratory	16000	40		2	1	1		2		1		
Corpus Christi Laboratory	15000	30		1		1		2	1	2		
Dayton Laboratory	20000	60		1	1	1		2	1	1		
Denver (Arvada) Laboratory	54000	120	3	3	7	4		4	2	2		
Edison Laboratory	49000	130		3	1			4	1	2		
Honolulu Laboratory	6400	10						1		1		
Houston Laboratory	30000	60		1	2	1		2		1		
Irvine Laboratory	40000	120		4	15		2	2	2	1		
King Of Prussia Laboratory	10000	46				1		2	1	1		
Knoxville Laboratory	29000	30			3		1	2		1		
Los Angeles Laboratory	11000	20										
Mobile Laboratory	15000	50	3	1	1	1		1	1	2		
Nashville Laboratory	48000	125	3		3	3		3		3		
North Canton Laboratory	51000	100	3	1	2	2		2		2	2	1
Pensacola Laboratory	20000	48		1	1	2		1		1	1	
Phoenix Laboratory	24000	60		1	4	3		3	1	2		
Pittsburgh Laboratory	34000	69	2	2	4	2		3	2	2		
Portland (Beaverton) Laboratory	20000	60		1	4	2		1	3	2	1	
Richland Laboratory	40000	35						1				
San Francisco (Pleasanton) Laboratory	21000	35		1	1			2		1	1	
Savannah Laboratory	55000	100	2	2	4	3		1	2	1		
Seattle Laboratory	20000	27	1	1		2		1	1	2		
Spokane Laboratory	6000	6			1	1		1		1		
St. Louis (Earth City) Laboratory	31000	85	2	2	3	2		2	1	2		
Tallahassee Laboratory	26000	40		1	1	3		2		1		
Tampa Laboratory	14000	47		2	2	3		2		3		
Valparaiso Laboratory	15000	35		1	2	3		2	1	1		
Watertown Laboratory	11900	36			1	1		1			1	
West Sacramento Laboratory	56000	85	3	4	4	3		2	2	1		
Westfield Laboratory	10000	32		1	2	2		2	1	2		
Total	976100	2111	26	45	75	60	3	69	37	53	6	1

TestAmerica Laboratories	Major Instrument Summary										
Facilities Size, Employees and Major Instrumentation	HPLC	CI/MS/MS	LC/MS/MS	GC (various detectors)	GC/MS	HRGC/HRMS	Alpha Spectrometer	Gamma Spectrometer	Gas Proportional Counter	Liquid Scintillation Detector	Kinetic Phosphorescence Analyzer
Anchorage Laboratory				6	1						
Austin Laboratory				20	12						
Bangkok, Thailand Laboratory				1	1						
Buffalo Laboratory	1			17	12						
Burlington Laboratory	4		1	18	28						
Cedar Falls Laboratory	1			12	9						
Chicago Laboratory	3			13	11						
Connecticut (Shelton, CT) Laboratory				6	10						
Corpus Christi Laboratory	1			10	6						
Dayton Laboratory				13	11						
Denver (Arvada) Laboratory	3	1	4	26	21						
Edison Laboratory				21	25						
Honolulu Laboratory				6	4						
Houston Laboratory	1			16	9						
Irvine Laboratory				25	32						
King Of Prussia Laboratory				7	10						
Knoxville Laboratory	2			7	9	3					
Los Angeles Laboratory				5	5						
Mobile Laboratory	1			9	3						
Nashville Laboratory	4			60	35						
North Canton Laboratory	2			12	15						
Pensacola Laboratory	1			21	9						
Phoenix Laboratory	4			13	7						
Pittsburgh Laboratory	2			12	12						
Portland (Beaverton) Laboratory	2			16	8						
Richland Laboratory							286	12	78	8	2
San Francisco (Pleasanton) Laboratory				9	12						
Savannah Laboratory	2			17	18						
Seattle Laboratory	1			10	12						
Spokane Laboratory				3	2						
St. Louis (Earth City) Laboratory	2		1	10	9		76	8	64	3	2
Tallahassee Laboratory	5			13	6						
Tampa Laboratory				8	9						
Valparaiso Laboratory	1			4	6						
Watertown Laboratory	2			4	5						
West Sacramento Laboratory	4		3	12	11	7					
Westfield Laboratory				16	9						
Total	51		10	477	409	10	362	20	142	11	4

Accreditations and Certification

Quality Assurance

TestAmerica is committed to providing the highest quality data and the best overall service available in the environmental testing industry. To ensure that data produced and reported by TestAmerica meet the requirements of our clients and comply with the letter and spirit of municipal, state and federal regulations, we maintain a quality system that is clear, effective, well communicated and supported at all levels of the organization.

Under the supervision of the Corporate Quality Director, TestAmerica has instituted a culture of quality that is a product of its organizational design, comprehensive training programs and industry leading systems of checks and balances. TestAmerica quality programs are governed by a corporate quality manual that defines our business policies and management practices, and articulates our systems for quality control, quality assessment and quality improvement. It is our policy to:

- Provide high quality, consistent and objective environmental testing services that meet all federal, state and municipal regulatory requirements
- Generate data that are scientifically sound, legally defensible, meet project objectives and are appropriate for their intended use
- Build continuous improvement mechanisms into all laboratory, administrative and managerial activities
- Maintain a working environment that fosters open communication with both clients and staff

TestAmerica analyzes Proficiency Test (PT) samples as required for accreditation and as outlined in the National Environmental Laboratory Accreditation Conference (NELAC). Each facility participates in the PT program semiannually for each area of testing and matrix (e.g. organics, inorganics, microscopy, radiological, microbiological, aqueous and drinking water) for which it is certified.

Proficiency Testing scores are a key performance measure of company performance capability. Laboratory scores are monitored to ensure continuous improvement and sustained high achievement. TestAmerica consistently ranks above industry-wide proficiency testing norms.

State & NELAP Accreditations

The TestAmerica network of laboratories collectively maintains laboratory certifications, accreditations and/or approvals in all 50 U.S. states. All TestAmerica laboratory facilities hold NELAP accreditation as well. TestAmerica is an active member of the NELAC community, chairing a number of committees and participating in the development and implementation of the national standards, now set as requirements under the program. TestAmerica maintains accreditations with sufficient redundancy between laboratories to enable work sharing on national, regional and local levels. This includes maintaining redundant method capabilities and technologies to manage large program sample volumes.

Federal Accreditations

TestAmerica had the first laboratory to be audited and approved under the new DoD Environmental Laboratory Approval Program (ELAP) and now has 11 facilities accredited under the program. TestAmerica has been closely involved with the DoD's development of the new accreditation program, and has made many contributions that are included in the new DoD Quality Systems Manual (QSM) Version 4.1. TestAmerica is also active in Department of Energy (DOE) programs with multiple facilities having successfully passed DOECAP audits. Additionally, TestAmerica is a participant in the USEPA Contract Laboratory Program and has 15 facilities with membership in the USEPA Environmental Response Laboratory Network (ERLN) and Water Laboratory Alliance (WLA).

See Certification Table on Page 22

Accredited to Work in Canada

TestAmerica's Nashville, TN and TestAmerica's Savannah, GA laboratories are accredited in accordance with international standard ISO 17025:2005 for a defined scope and meet the principles of ISO 9001:2008. These TestAmerica laboratories maintain an ISO 17025 compliant scope of accreditation through the internationally recognized accreditation body American Association for Laboratory Accreditation (A2LA). Based on a mutual recognition agreement generated by the International Laboratory Accreditation Cooperation (ILAC), these TestAmerica laboratories have been recognized as meeting the international requirements of ISO 17025:2005 and as qualified to provide environmental testing support for Canadian environmental interests in many Canadian Territories and Provinces.

Electronic Data

TestAmerica provides electronic data deliverables (EDDs) to numerous government and commercial clients. EDDs can be provided in many TestAmerica standard formats, or can be customized to meet client requirements. We currently provide EDDs in various ASCII, Access, DBF and Excel spreadsheet file formats.

While offering many standard formats, most EDDs are customized to meet our clients' individual requirements, some of which are very complex. TestAmerica employs a technical staff that is dedicated to EDD development and client consultation, ensuring that electronic data provided to our clients are accurate and formatted to meet the clients' exacting requirements.

Health and Safety

TestAmerica is committed to providing a work environment that is free of recognized environmental safety and health hazards. It is TestAmerica policy that all work will be conducted in a manner that is safe to the employee, the community and the environment. We believe that every employee can work without injury or unreasonable exposure to hazardous work conditions. We further believe that all work can be done in a manner that protects the environment.

The TestAmerica Environmental Health & Safety Director (EHSD) ensures our commitment to operating a safe and environmentally sound business is not compromised. Under the supervision of the EHSD, each business unit has a designated Environmental Health & Safety Coordinator (EHSC), who is responsible for ensuring that health and safety operating policies and practices are adhered to at all levels of the operating unit they oversee.

Certification Table

	Anchorage	Austin	Buffalo	Burlington	Cedar Falls	Chicago	Connecticut	Corpus Christi	Dayton	Denver	Edison	Honolulu	Houston	Irvine	King of Prussia	Knoxville	Los Angeles	Mobile	Nashville	North Canton	Ontario SC	Orlando SC	Pensacola	Phoenix	Pittsburgh	Pontiac SC	Portland	Richland	San Francisco	Savannah	Seattle	Spokane	St. Louis	Tallahassee	Tampa	Valparaiso	Waterlown	West Sacramento	Westfield
Alabama						x				x								x	x				x							x									
Alaska	x									x									x								x			x								
Arizona										x				x					x					x													x	
Arkansas		x	x							x			x			x		x	x						x				x							x	
California		x	x			x				x						x			x	x				x			x		x			x				x	
Colorado																x											x											
Connecticut			x	x			x			x	x		x			x		x	x					x					x							x	
Delaware				x																																	
Florida			x	x						x		x				x	x		x	x		x							x							x	
Georgia			x			x				x						x	x	x	x	x		x							x							x	
Guam																																					
Hawaii						x						x		x		x											x										
Idaho										x																											
Illinois			x		x	x				x								x	x	x			x						x			x				x	
Indiana						x			x							x														x								
Iowa			x		x	x				x						x		x					x									x					
Kansas		x	x		x	x				x						x		x	x				x									x				x	
Kentucky			x			x			x							x		x					x											x				
Louisiana		x	x			x				x			x			x		x	x				x									x				x	
Maine			x	x						x																												
Maryland			x							x						x			x				x															
Massachusetts			x			x	x												x				x													x	
Michigan			x						x							x										x										x	
Minnesota			x	x	x					x						x			x	x													x				
Mississippi						x												x	x																		
Missouri																																	x				
Montana																			x																		

	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Northern Mariana Islands	Ohio	Oklahoma	Oregon	Pennsylvania	Puerto Rico	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	DOD ELAP	Canada
Anchorage																												
Austin							X				X		X			X			X						X			
Buffalo			X	X		X		X			X	X	X					X	X			X	X		X			
Burlington			X	X		X							X		X													
Cedar Falls								X				X																
Chicago							X				X					X			X									
Connecticut			X	X		X									X													
Corpus Christi											X								X									
Dayton										X			X															
Denver		X	X	X		X	X	X			X	X	X			X		X	X	X				X				
Edison				X		X							X		X													
Honolulu																												
Houston											X								X	X								
Irvine					X				X																			
King of Prussia				X		X							X															
Kingsville				X		X	X				X		X			X		X	X	X		X	X		X			
Los Angeles						X						X											X					
Mobile							X									X		X	X				X					
Nashville		X	X	X		X	X	X		X	X	X	X		X	X		X	X	X		X	X		X			
North Canton		X		X		X							X															
Ontario SC																												
Orlando SC																												
Pensacola			X	X			X				X		X		X	X		X	X			X	X					
Phoenix		X				X						X																
Pittsburgh			X	X		X	X						X			X				X					X			
Portsmouth SC																												
Portland												X											X					
Richland		X										X				X		X		X			X					
San Francisco														X														
Savannah	X	X		X	X	X	X				X		X	X	X	X		X	X		X	X	X	X	X	X	X	
Seattle												X											X	X		X		
Spokane																							X					
St Louis		X		X		X							X			X			X	X		X	X		X		X	
Tallahassee				X															X									
Tampa																												
Valparaiso											X												X					
Watertown								X																	X			
West Sacramento		X		X	X	X						X	X			X			X	X		X	X	X	X	X	X	
Wynnefield			X	X		X	X						X		X													

Project Experience

As the industry leading provider of environmental analytical services, comprised of 36 operating laboratory units combining hundreds of years of experience, TestAmerica has developed broad based experience in support of a multitude of environmental projects for public and private sector clients alike.

Automotive

- TestAmerica provides comprehensive analytical support to one of the nations largest automotive manufacturers supporting a variety of compliance programs, waste management needs and large scale remediation efforts. Projects often involve analysis of a full range of organic and inorganic parameters covering a variety of environmental media to include; wastewater, groundwater, sediment, soil, concrete & waste matrices. TestAmerica routinely coordinates specialty analytical services through a network team to address large scale and complex investigation programs.
- TestAmerica developed and deployed a mobile lab unit to a remote Midwestern destination to assist with a 3-year PCB investigation and remediation program at a large auto manufacturing facility. Services required included the analysis of dozens of samples daily with confirmed data due the same day samples were delivered. Confirmation and quality control support was provided by TestAmerica fixed base laboratories. Results produced from the mobile lab were reported following Level IV data package requirements.

Brownfields

- TestAmerica has provided ongoing support for the State of Hawaii Brownfields program, funded by Federal grants. Supporting brownfield redevelopment efforts at a former MSW Incinerator facility, TestAmerica performed analyses for heavy metals for a variety of investigation and cleanup actions over the past five years, and most recently has implemented multi-incremental sample processing procedures for large (2 Kg) sample composites coupled with up-scaled (10 g) metals digestion procedures. TestAmerica has provided Level IV data packages for third party validation for all sites supported under this program.
- TestAmerica provides analytical support to an Eastern U.S. environmental consulting firm at six discreet project locations in support of Brownfields site assessments and redevelopment activities. Project analytical requirements include Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC), Pesticides, Polychlorinated Biphenyls (PCBs), Polyaromatic Hydrocarbons (PAHs), Herbicides, Total & Dissolved Metals, and inorganic parameters. Four of the six sites were funded by EPA Brownsfields Pilot Project money therefore requiring full CLP analytical protocols and data packages prepared for third party validation.
- TestAmerica provides services at a former chrome plating shop located in California, working cooperatively with a global environmental engineering firm under a USEPA Brownfields grant. Hundreds of soil and groundwater samples have been analyzed to date for VOCs, metals, and hexavalent chromium, often requiring final results within 24 hours of sample receipt at the lab.

Building and Construction

- TestAmerica worked cooperatively with a national environmental services company to complete a long-term project involving a bridge expansion in the greater Philadelphia area. Critical to project success was our ability to meet demanding turnaround time requirements on a large volume of samples for a wide range of analyses. Analytical requirements included DRO-QAM, volatile and semi-volatile organic compounds, RCRA characteristic parameters, sulfur, metals, herbicides, and total organic halides. Project specific communication standards were developed to ensure client and project expectations were met and the project completed on time and on budget.
- TestAmerica has provided extended support services for a large RCRA investigation conducted in conjunction with a major airport expansion in Ohio. Testing demands include the analysis of subsurface samples used to delineate the nature and extent of site contamination. Services are also being provided to support the facility NPDES program for process and storm water discharges as well as general waste characterization services.

Chemical Manufacturing

- TestAmerica provides comprehensive analytical and logistical support for a major petrochemical corporation. Services are provided for multiple facility compliance programs to include industrial discharge, RCRA waste characterization, groundwater and ambient air monitoring. Additionally, method development studies were also conducted to facilitate the transfer of responsibilities from a client operated environmental lab to TestAmerica.
- TestAmerica provides analytical support for a major chemical company, including analyses of all environmental media for Appendix VIII, Appendix IX, TCL and TAL compounds and elements, providing QC oversight involving replicate confirmation sampling and analysis. Continued support is provided for a CERCLA driven remediation program at additional operating units (OUs) including analytical support for remedial investigation, feasibility study and remedial action steps.
- TestAmerica has worked in conjunction with state and federal agencies to provide ongoing method development and analytical support services for the evaluation of PCBs in water, sediment and biota matrices on behalf of a major chemical company. Several hundred samples of varied matrices have been characterized for PCB Aroclor and Homolog mixtures employing GC-ECD and GC/MS-SIM methodology. TestAmerica staff worked in close association with regulators and company representatives to develop techniques to provide method comparison studies contrasting EPA SW846 Method 8082 and a modified GC/MS Method 680 SIM technique for PCB quantification. Several hundred fish fillet composites of various fresh water species were evaluated employing both techniques during a two-year lake study.
- TestAmerica has been performing daily, monthly and quarterly NPDES sampling and analysis for a major chemical manufacturing company, meeting their regulatory requirements for discharge monitoring. Analyses include various inorganic analyses on a daily basis, 7 days a week, 365 days a year. Sample collection is performed by TestAmerica staff using composite samplers. Additional monthly and quarterly testing includes Volatile Organic Compounds (VOCs), semi-Volatile Organic Compounds (SVOCs), Polychlorinated biphenyls (PCBs), Metals, and general chemistry.

Consumer Goods

- TestAmerica provides sampling and analytical services to a major fragrance manufacturer supporting the company's compliance monitoring program. Daily, monthly and quarterly NPDES discharge samples are collected and analyzed for each of three facilities, one of which also requires semi-annual ground water sampling and analysis. All field sampling and analyses are performed in accordance with applicable state guidelines. A wide range of organic and inorganic constituents are routinely monitored, including several program specific compounds performed by the lab specifically to meet the requirements of this client.
- TestAmerica performs sampling and analysis services for a major food, home care, and personal products manufacturer. TestAmerica field technicians complete numerous client requirements on-site, which include preparation of maintenance field logs and sampling field logs for multiple locations. On-site field support is required daily, 365 days a year. Summary data and activity reports are compiled and submitted monthly and submitted electronically. Additionally, TestAmerica prepares Industrial Self-Monitoring Reports (SMR) for submittal to the local sanitary district and prepares NPDES required Monthly Monitoring Reports (MMR) for submittal to the state agency.
- TestAmerica, in support of a nonprofit applied science and technology development company, performs analysis of air particulates, water, soil/sediment, milk, wine, vegetation, lichen, wildlife, vegetables and silica gel for the following isotopes: Americium, Carbon, Curium, Gamma Isotopes, Gross Alpha, Gross Beta, Iodine, Plutonium, Radium, Strontium, Technetium, Thorium, Tritium and Uranium (Isotopic and Total).

Project Experience

Department of Defense (DoD)

- TestAmerica has provided continued support to an international environmental and engineering firm in support of their efforts at the Massachusetts Military Reserve, a very high profile Department of Defense project location. Currently in the third phase of project execution, TestAmerica provides rapid turnaround analysis for an ongoing groundwater project. Select drilling process samples are analyzed and reported on a 24-hour TAT basis allowing for continuous, uninterrupted field drilling activities. TestAmerica developed a modification to EPA method 8330 to address a need for lower soil reporting limits, allowing for the quantification of trace levels of explosive residue ten times lower than standard method protocols.
- TestAmerica continues to support an international consulting/engineering firm at a number of Federal Department of Defense sites throughout the country. Support is provided for soil, sediment, water, and waste samples. Analyses are performed following the DOD QSM or the AFCEE QAPP, depending on the site. Level IV data packages, ready for third party validation, are provided along with the appropriate electronic data deliverables (ERPIMS or ERiS).
- TestAmerica provides support to a global consulting engineering firm for RFI and risk assessment efforts conducted at Altus AFB. AFCEE 3.0 protocols are followed and modified for Appendix IX analytes. Primary samples are analyzed for volatiles, semi-volatiles, and metals. Periodically samples are analyzed for pesticides, explosives, anions, dissolved gases, radiochemistry parameters and dioxins. All deliverables are provided as full raw data packages in both hard copy and CD-ROM formats. EDDs are submitted in AFCEE's ERPIMS 4.0 format.
- TestAmerica provides full-service laboratory support to a Department of Defense installation conducting analyses for Volatile Organic Compounds (VOCs), PAHs, PCBs, pesticides, hydrazine, NDMA, and a variety of metals and inorganic parameters in soil and water samples employing SW-846 methods and following AFCEE 3.1 protocol. Data deliverables include long-form raw data and a customized electronic deliverable. Under this project, TestAmerica has provided research and development support for the analysis of hydrazine to ensure compliance with state requirements.
- TestAmerica has provided analytical support to multiple environmental engineering firms managing projects at a Midwest located Department of Defense Army Ammunition Arsenal for the past 12 years. Work was performed following the Army Shell document, and subsequently graduated to Corp District specific guidelines. TestAmerica worked closely with USACE to support the development of this unique program, including providing R&D work to develop soil grinding techniques used in multi-incremental sample processing. Analytical support to date has involved full TCL/TAL Organic and Inorganic parameters, various general chemistry analyses and TCLP analyses as well as explosive and energetic compounds. Report deliverables include Level IV data package and client specific electronic data files.
- TestAmerica works as a subcontractor to a USACE/HTRW prime contractor, providing support for semi-annual groundwater sampling events conducted at various operational units within Fort Wainwright, AK and other military sites. Groundwater and soil samples are analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAH SIM, Pesticides, PCBs and Metals and wet chemistry methods. All work is performed in accordance with the DOD QSM with full COE prescribed data packages including EDF and SEDD electronic deliverables.
- TestAmerica provides routine support to a USACE district office conducting chemical and radiochemical analyses on a variety of sample types for a noted FUSRAP site. Often, samples result from emergency response related acuvities and require rapid turnaround time support for the Hazardous, Toxic, and Radioactive Waste (HTRW) program.

Department of Energy (DoE)

- TestAmerica participates in many studies conducted in and around Department of Energy plants located in Oak Ridge, TN and Kansas City, MO. Concerns over PCB levels contained in native fish tissues have resulted in the establishment of several biomonitoring studies. TestAmerica began supporting the projects during the 2006 monitoring event analyzing more than 300 fish and clams over the last three years for PCB aroclors by SW 8082 and for PCB congeners by 1668A. Dragonflies were also analyzed for PCB congeners by 1668A.
- TestAmerica has supported ongoing efforts at the Savannah River Site (SRS), providing analytical services for chemical, physical and radiochemical analyses on a variety of different matrices including soil, sediment, sludge, groundwater, surface water, waste matrices and building materials such as wood, concrete, metals, and painted materials as required. All analyses are performed under strict adherence to the DOE Quality Systems for Analytical Services (QSAS) Version 2.4.
- TestAmerica performs analysis of urine and fecal tissue for routine and rapid turnaround times to support a large scale personnel exposure monitoring program. Analysis is conducted for the following isotopes: Americium, Plutonium, Strontium, Thorium, Tritium and Uranium (Isotopic). In support of this program, TestAmerica supplies a contract specific customized data report and EDD format.

Emergency Response

- TestAmerica, teaming with a major environmental engineering firm, successfully responded to an off-hours spill at a leading telecommunications provider. The coordinated effort involved the receipt and processing of a large number of samples on a Friday afternoon of a holiday weekend. Results were furnished immediately upon completion allowing the response team to initiate a remedy the very next morning.
- The TestAmerica network of laboratories collaborated to support emergency level support effort for an impacted river and aquifer caused by the accidental release of fly ash sludge. TestAmerica led the effort to supply high-quality data to identify and define the physical and chemical characteristics of fly ash, soils, groundwater, surface water, sediment, drinking water, biota, and macro invertebrates in support of the recovery effort. Data was used for characterization and for assessing the degree of remediation achieved, as well as potential litigation.
- TestAmerica provided analytical support for an emergency response effort resulting from a fire at a Midwest chemical manufacturing facility. Work included accelerated turnaround of a high volume of soil and water samples analyzed for metals, organic and wet chemistry parameters. Post emergency response work continued with waste classification analyses required for waste disposal and soil, groundwater and drinking water analyses conducted to assess residual environmental impacts associated with the chemical fire. TestAmerica continues to provide long-term monitoring support to the site.

Project Experience

International

- Through facilities in Southeast Asia, TestAmerica provides support for multiple multinational oil companies with monitoring projects associated with the operation of offshore oil platforms. Sample matrices include seawater, sediments, and biota for the determination of PAHs, particle size, metals and TPH at challenging low reporting limits. TestAmerica also provides technicians for onboard sample extraction and analysis.
- TestAmerica provides analytical services and field support for international consulting firms conducting Phase II site investigations and underground storage tank projects in several Asian countries. Data are produced to meet USEPA, international and country-specific technical and defensibility criteria. TestAmerica assists by providing project management, coordinating international sample shipments and furnishing technical support covering multiple countries, including very remote project locations.
- TestAmerica has provided lab support to the investigation and remediation of a large closed exploration and production tract in South America for an international oil and gas corporation. An in-country lab was established to facilitate quick turnaround time requirements and assist with sample logistics for samples being returned to the United States. Lab support included full range organics with metals analyses along with Level IV deliverables.
- TestAmerica provides support to an international environmental consulting company, analyzing samples from various site assessments, investigations and monitoring programs conducted at retail gas stations, terminals and refineries located throughout Latin America, South America and the Caribbean. Analyses of sediment, soil and groundwater typically include Petroleum Hydrocarbons, PAHs, BTEX/MTBE/Ethanol, metals and various inorganic analyses. TestAmerica coordinates international shipments of samples and sampling supplies to and from the field addressing a variety of country specific requirements and restrictions.

Mining

- TestAmerica has been providing analytical services in support of a large remediation project at a mining site in Southern Nevada. A full range of analytical tests are provided to include: Appendix IX 8260 and 8270, metals, hexavalent chromium, pesticides and PCBs, cyanide, full wet chemistry analysis, 1625C for NDMA, low level 1,4-dioxane, PCBSA, perchlorate and radiochemistry analyses. TestAmerica's service center in Las Vegas has been used to stage sampling equipment and provide courier service to facilitate moving large sample volume and time sensitive samples.

Oil & Gas Refining & Marketing

- TestAmerica prepared and deployed a mobile lab facility to support the excavation and removal of a retired pipeline in Dutch Harbor. The mobile laboratory obtained full certification by Alaska DEC. This project called for the analysis of hundreds of environmental samples under 24 hour turnaround conditions. Results were provided on time routinely following project specific requirements for electronic data transfer.
- TestAmerica has conducted an ambient air monitoring program to a consortium of petrochemical refineries in the Gulf Coast region for more than 20 years. This ongoing project involves analysis by TO-15 (GC/MS) of more than 160 organic compounds in a single analytical run with part per trillion (PPT) reporting limits.
- TestAmerica provides research and development services in support of proprietary product identification projects for companies in the petroleum industry. The laboratory works with clients to help establish effective test methodology for the identification of unique organic compounds. Addressing these analytical challenges often requires modification to routine preparatory and analytical methods resulting in a customized approach to product identification.
- TestAmerica has been assisting a major petrochemical refinery for several years with their compliance monitoring and Hazardous waste classification programs. Analytical testing involves a wide range of wet chemistry analysis and TCLP for both organic and inorganic constituents on a variety of challenging matrices covering over 100 samples per month.
- TestAmerica is the sole contracted lab supporting system monitoring samples at a large former oil terminal pipeline conducting facility remediation. The analytical support for this project requires the analysis of over 300 samples monthly for VOC + TPH compounds. To meet customer specific needs for this project, TestAmerica invested in specialized sampling media and delivers a customized data deliverable.

Power Utilities

- TestAmerica provides analyses of soil, groundwater and building debris, working cooperatively with a national consulting engineering firm to support the decommissioning of a major nuclear power facility. TestAmerica maintains NRC materials handling licenses and provides for the safe handling of all samples taken during the decommissioning process. Samples are analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Pesticides and Polychlorinated Biphenyls (PCBs). Metals and Wet Chemistry parameters.
- TestAmerica continues to offer support to a global environmental consulting firm conducting investigation and remediation of land contaminated with by-products from manufactured gas plant operations. TestAmerica provides analytical services that include the analysis of Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs) as well as total particulates and metals in air samples using NIOSH methods: NIOSH 1501, NIOSH 5506, NIOSH 0500 and NIOSH 7300. Data provided is used to support risk assessments for a nearby residential area.
- TestAmerica provides support to a major Texas based power company for their transformer maintenance and spill remediation programs. Daily support requires routine analysis of a large number of transformer oil samples for PCBs to ensure compliance with EPA regulations and to address clean-up of contaminated sites.
- TestAmerica provides analytical services for groundwater compliance monitoring at multiple locations for a large energy company with operations throughout New Jersey. Sites range from active, operating substations to closed manufactured gas plant (MGP) facilities. Site-specific analytical programs encompass testing for organic, inorganic, general chemistry, biological, and monitored natural attenuation parameters. TestAmerica field service teams provide low-flow groundwater sample collection services in accordance with NJDEP Field Sampling protocols following client specific site safety protocols.
- TestAmerica provides analytical support on a large remediation effort for a large energy company located in the southeastern United States. This project requires daily sample delivery to the lab, encompassing a 2-3 year project life cycle. All samples are analyzed for a variety of metals and inorganic parameters on an accelerated turnaround basis so that ongoing disposal and treatment decisions can be made, minimizing costly project interruptions. Client specific QA protocols have been established to meet data usability requirements and all data is provided in a Level IV data package. Customized multi-file EQUIS deliverables are included with the delivery of each data set. Total number of samples exceeds 500 per month on average.

Project Experience

Steel & Primary Metals

- TestAmerica provides support to a multi-national steel making organization on an environmental dredging project involving PCB contamination. During the height of the project, dredging operations were conducted 24 hours per day, 6 days per week. An ambient air monitoring program was conducted during dredging activities to assure that the nearby residents and workers were not exposed to fugitive air contaminants that could adversely affect human health. TestAmerica analyzed more than 700 samples for PCB Aroclors using method TO-4A, PAHs by TO-13A and volatiles by TO-14/TO-15. All samples were done on a fast turnaround time basis. Monitoring for volatiles by TO-15 remains ongoing.
- TestAmerica has performed compliance analytical services for the world's leading beverage can maker at 11 locations nationwide since 1990. Through centralized project coordination, TestAmerica employs its network of laboratories to meet this client's national testing demands. The laboratories analyze compliance samples on a monthly basis as well as perform waste characterization services. Summary data packages for submittal to the facilities' local agencies.

Sediment Management

- TestAmerica, in support of private industry, provides analytical support for a river sediment investigation in eastern New York. The river has been the subject of a major investigation and remediation effort addressing Polychlorinated Biphenyl (PCB) contamination. TestAmerica continues to provide support to a Fortune 500 company engaged in remedial action for contaminated sediments playing a significant role by performing approximately 20,000 analyses to date for PCBs in sediment. Samples are analyzed using a modification to traditional methodology to address site-specific and matrix concerns resulting in high quality data used to make critical decisions throughout the remediation process.

State Government

- TestAmerica, in support of the State of New York, Department of Environmental Conservation (DEC), receives samples from all NYSDEC regions to address the analytical requirements of remedial investigations, discharge evaluations, spill responses and state Superfund activities. TestAmerica performs all analyses adhering to the NYS Analytical Services Protocol (ASP), which mimics EPA CLP Methods. Sample matrices include wastes, soils, drinking waters, groundwaters, sediments, discharge samples and air. This contract requires strict adherence to the required methodologies resulting in high quality, legally defensible data for the State of New York.
- TestAmerica maintains analytical support contracts with each of three major engineering firms holding primary contracts with the Illinois State Department of Transportation. In this capacity TestAmerica performs a broad range of analyses for statewide assessments and investigations. In over 10 years of support provided under this program, TestAmerica has uniquely positioned itself to address the program's custom requirements.
- TestAmerica is the primary laboratory supporting development of the Hawaii Department of Health Technical Guidance Manual (TGM) for sampling and risk assessment. Support includes application of draft TGM procedures to determine efficacy at selected sites over the past two years. One site in this effort consisted of a former agricultural property at a remote island location that required testing for Organochlorine Pesticides, Organochlorine Herbicides, Triazines, Carbamates, Metals, SVOCs, and Dioxins as a prerequisite for a housing development. TestAmerica provided solutions to help resolve problematic sample transport logistics from the site. In addition, TestAmerica developed and applied the first-ever super-scaled (5 Kg) multi-incremental sample processing application for a number of the tested parameters, conducting leachability studies on all positive samples, and pioneering commercial lab implementation of the Ruby-Drexler sample preparation technique to determine the 'bioaccessible' component of detected arsenic concentrations.
- TestAmerica is the primary laboratory supporting an ambient air monitoring project within residential dwellings. This ambient air program is under the control of a state government agency and is highly visible within the public domain. TestAmerica has dedicated approximately 180 summa canisters and 130 flow controllers exclusively for use by this client. Canisters are supplied to the client on a weekly basis, batch screened for both SIM and SCAN modes of EPA Method TO-15, maintaining a seamless cycle of appropriate sampling media to the field for systematic project execution.
- TestAmerica worked with the Florida Department of Environmental Protection (FDEP) to validate analytical techniques used for the identification of 1,4-dioxane following 8260SIM methodology. TestAmerica was the first laboratory in Florida certified for analysis of 1,4-dioxane by 8260SIM.
- TestAmerica has proliferated its analytical capabilities to expand its test offerings specific to the evaluation of Hexavalent Chromium in environmental samples. TestAmerica currently serves as the lead lab for an extensive NJDEP project addressing the evaluation of background chromium concentrations in urban soils. Processing thousands of samples for state driven programs, the laboratory not only complies with the difficult New Jersey data validation guidelines but also performs other non-routine procedures, such as the Japanese Slab Cake method.

Project Experience

Transportation

- TestAmerica has provided ongoing environmental testing services for a major transportation company since 1982 with sites located throughout the eastern US. A variety of matrices have been evaluated for environmental compliance which include water, soil, waste, complex organic matrices, and air. Routine analytical services include the testing of various matrices for volatile organics, semivolatile organics, metals and wet chemistry parameters for groundwater and surface water monitoring, and waste evaluation programs. Special methodology has been developed to meet unique regulatory compliance concerns, ensuring that minimum reporting levels are achieved despite complex matrix interferences. Data deliverables are customized to meet regulatory and data management needs.
- TestAmerica currently supports a comprehensive remediation effort for a 240-acre rail yard working in conjunction with a major consulting engineering firm. High sample volumes and quick turnaround are required to monitor the extent of impacted groundwater, groundwater treatment effectiveness, soil remediation effectiveness and to keep stockpiles moving. Over 700,000 cubic yards of soil has been excavated to date. Samples are analyzed for 8260, 8270, 8015, Metals, STLC and TCLP parameters. Customized quality assurance plans were developed to address challenging matrix and site conditions. Data reports and electronic deliverables were also customized to address client specific needs.

Waste Management

- TestAmerica holds a national contract with a national waste management firm to provide sampling and analytical services throughout the United States. TestAmerica conducts a wide range of environmental analyses for several hundred solid waste landfills under this agreement, assisting the client with meeting their regulatory compliance requirements. In addition, at selected locations OSHA trained field personnel are provided to collect groundwater, surface water and leachate samples. TestAmerica provides automated sample scheduling services, site specific sample kits, long term data management and client specific data handling supporting a wide variety of reporting formats.
- TestAmerica maintains a unique support arrangement with a Midwest area industrial waste recycling facility providing waste screening and characterization services as well as process related testing. TestAmerica services are uniquely designed to ensure the efficient daily operation of the facility and uninterrupted service to facility clients.

Water Treatment

- TestAmerica supports an international environmental and natural resource management firm with water quality monitoring for a large scale TMDL program. Analytical services designed to meet specific TMDL requirements are provided at various water bodies throughout the Southeastern United States. Analysis conducted includes low-level ortho and total phosphorus, TKN, nitrates, coliform, alkalinity, TDS, TSS, color, turbidity, chlorophyll A, anions and metals.
- TestAmerica is the primary laboratory supporting a large-scale drinking water program for a major California utility company. Required analyses fall under EPA Title 22 regulations, many of which are conducted under 24-hour turnaround conditions. TestAmerica orchestrates a statewide sample transport system picking up samples at various locations in the state and delivering them to the lab within time to address short hold-time parameters. Project specific communication standards have been developed to immediately notify the client for any positive results, including weekends and holidays. Five different report types are needed as dictated by project specific requirements.
- TestAmerica provided analytical support for a wastewater treatment plant pilot study in south Florida. This study was designed to evaluate treatment of reuse water as a potential source used to recharge local aquifers currently used to provide community drinking water. Samples were collected daily, weekly and monthly with over 1500 samples being studied. Analytical requirements included full list organic and inorganic analyses utilizing wastewater, potable water and pharmaceutical and personal-care products (PPCP) methodologies.

TestAmerica Products & Services Businesses

TestAmerica affiliates include EMLab P&K, the leader in analytical microscopy and indoor air quality testing; QED Environmental Systems, Inc., the leading supplier of groundwater sampling equipment and remediation pumping systems; TestAmerica Drilling Corp., provider of innovative environmental and geotechnical drilling, and TestAmerica Air Emissions Corp. (METCO Environmental), specializing in air emissions testing.

EMLab P&K

is the leading indoor air quality (IAQ) testing laboratory in North America, specializing in lab analysis of air and surface samples for mold, fungi, bacteria, asbestos and allergens with more accredited locations and analysts than any other lab in the nation. EmLab P&K is committed to providing outstanding service, quality and support to industrial hygienists, laboratories, state and local public health departments, hospitals and IAQ professionals.

QED Environmental Systems, Inc.

is the leading international supplier of air-powered pumping systems for groundwater sampling, groundwater remediation and landfill liquids. QED developed products include:

- MicroPurge® low-flow groundwater sampling equipment
- AutoPump® remediation and landfill air-powered pumps for use in severe conditions of solids, solvents, corrosives and high temperatures
- Genie® systems selectively pump floating layers of hydrocarbon
- E-Z Tray® air strippers remove VOC's from groundwater and waste water

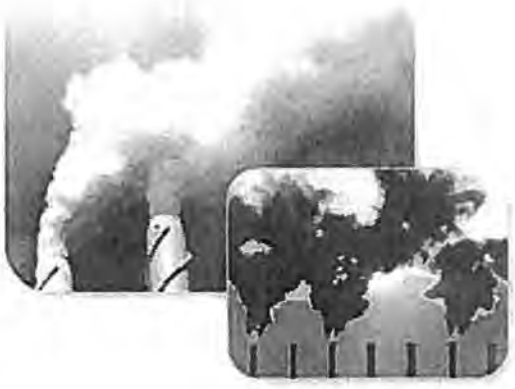
TestAmerica Products & Services Businesses

TestAmerica Drilling Corp.

is a leading drilling contractor in the western United States, specializing in environmental, geotechnical, and infrastructure subsurface investigations. Their innovations include the industry's first decontamination trailer, limited access drill rigs and well surface completion toolings. TestAmerica Drilling is widely recognized for its ability to deliver your project on-time and on-budget.

METCO Environmental

is a leader in source emissions testing, serving a full spectrum of industries including, refining, petrochemical, combustion and utilities, both in the U.S. and internationally. METCO has built a reputation for exacting sampling methods and rigorous quality control, based on having sampled over 25,000 sources. METCO is staffed by highly qualified and trained full-time professional employees who maintain the highest safety standards in the industry.



Notes:

CHK00000078

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2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-0404

February 03, 2009 3:03:02PM

Client: Chesapeake Energy Corporation
6100 N. Western Avenue
Oklahoma City, OK 73118
Attn: Fred Gipson

Work Order: NRL0012
Project Name: Chesapeake Shale Project - PA Sites
Project Nbr: 4100810701
P/O Nbr:
Date Received: 12/02/08

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
[redacted]6910-11D	NRL0012-01	12/01/08 11:00
Trip Blank	NRL0012-02	12/01/08 00:01

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. If you have any question relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

2960 Foster Creighton Road Nashville, TN 37204 * 615-726-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4100810701
Attn	Fred Gipson	Received:	12/02/08 08:30

Additional Laboratory Comments: This is a complete final report. The subcontracted parameters are listed below and are attached to the end of this report.

All subcontracted data is attached at the end of the Nashville Report. Per client request, the Ra226 and Ra228 (Total Radium) analysis was switched to Gamma Spec Analysis by Method 901.1M due to sample matrix complexities that prevented the first analysis from proper completion. Therefore, the Gamma Spec will be reported in this report in lieu of the Total Radium. No further changes were made.

Sample Anomalies:

All samples arrived in good condition and within temperature allowance. The pH tested at sample receipt for the Cyanide containers was pH ~ 10. This was likely contributed to the complexity of the sample matrix and its effects on the acid preservation in the bottle. Client requested we proceed with analysis as received.

The matrix of the sample analyzed required the use of both prep and analytical dilutions in various tests to accommodate the known sample matrix effects that have been seen with this project. These matrix effects have caused some tests to report with elevated detection limits due to these interferences in the analytical methods by the sample complexity. These results are noted in the report with "RL1" qualifiers indicating lower diluted and undiluted runs on this analysis were not feasible due to method QC constraints.

Specific Conductance is reported with an "E" value slightly over the upper linear range. The highest second source standard that can be purchased and used in this data set was at 100,000 umho/cm thereby establishing the upper linear range of the instrument by our normal SOP for the method. At the request of the client, an in-house standard was prepared and analyzed on the instrument probe showing linearity of the instrument within normal acceptable QC ranges to 250,000 umho/cm. Therefore, the linearity of the instrument was considered valid to this higher range; however, any value above the 100,000 umho/cm was noted with an "E" qualifier in the report as per the method SOP recommendations.

Due to the sample complexity issues, the empirical relationship between the Specific conductivity and TDS value may not agree. This would likely be due to the amount of soluble organics and/or any separated out oils represented in the TDS value that may not be reflected in the Specific Conductance analysis. The use of smaller sample aliquots was used in accordance to the method when possible to help minimize the sample complexity issues and improve the empirical variances in these tests.

The TDS value is noted with an "A-01" qualifier. The definition of this special notation is located in the sample qualifier definition page at the end of the report.

In comparison of Total and Dissolved metal elements some of the metals results differ. This is likely attributed to the sample matrix complexity that is causing the total recoveries to be less than the dissolved recoveries. The bottles were checked to make sure they were labeled correctly. There were no visible signs noted by the analysts during the tests that indicated a proper digestion and analysis didn't occur, so the data was accepted as reported.

The Hexavalent Chromium results are reporting twice due to a computer system error. The detection limit of 1000 mg/L is the value that should be used for evaluative purposes. The 100 mg/L detection limit should not be used for reporting purposes.

QC Anomalies:

The Blank Spike recovery for a,a-Dimethylphenethylamine, Isosafrole, Methpyrilene, 1,4-Phenylenediamine,

Client	Chesapeake Energy Corporation	Work Order	NRL0612
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	1020810701
Attn	Fred Gipson	Received	12/02/2008 08:30

Fampian, and Kepone were biased low in the Appendix IX Semivolatile analysis. These compounds are considered a poor performer by the method due to reactivity of the compound. Some of these were not detected in the Blank Spike at any recovery, but due to the nature of these compounds and its reactivity to the extraction process, the sample was not re-extracted for reanalysis. The data was accepted as qualified for this compound. It is noted with an "L2" qualifier in the report.

Some compounds were biased high in the Blank Spike recoveries. The sample results for these runs were all non-detect and noted in the report with an "L" qualifier. The data was not affected so no further action was taken.

The Bromide recovery in the associated QC was reported as acceptable within the recovery range of 80-120 % instead of the method default of 90-110% due to the complexity of the sample matrix. The affected sample recoveries are noted with a "C8" and "L1" qualifier in the report. The client was made aware of this occurrence due to the Chloride interferences during the IC analysis. No further action was taken.

There is a detailed listing of the data qualifiers used in this report located at the end of the report before the COC section.

Subcontracted Analyses:

The following tests were subcontracted to other TestAmerica laboratories. Their results will be located within the body of the report unless noted otherwise at the beginning of the narrative.

Color analysis was performed by the TestAmerica Savannah laboratory.
Total & Dissolved Zirconium by Method 6020B and Total Sulfur by Method 6020B were analyzed by the TestAmerica Connecticut laboratory. Gamma Spectroscopy and Gross Alpha and Gross Beta were analyzed by the St. Louis laboratory.

The Chain(s) of Custody, 41 pages, are included and are an integral part of this report.

These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.

All solids results are reported in wet weight unless specifically stated.
Estimated uncertainty is available upon request.
This report has been electronically signed.
Report Approved By:

Mark Hollingsworth

Program Manager - National Accounts

CHK00000081

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client:	Chesapeake Energy Corporation	Work Order	NRL0012
	6100 N. Western Avenue	Project Name	Chesapeake State Project - PA Sites
	Oklahoma City, OK 73118	Project Number	4100810721
Attn:	Fred Gipson	Received:	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01[redacted]26910-11D - Water) Sampled: 12/01/08 11:00								
General Chemistry Parameters								
Ammonia as N	235		mg/L	10.0	1	12/16/08 14:33	EPA 350.1M	8122287
Bicarbonate Alkalinity as CaCO3	58.9		mg/L	10.0	1	12/02/08 21:12	SM 2320B	8120336
BOD - 5 Day	76.2	L1	mg/L	40.0	20	12/02/08 17:30	SM 5210B	8120305
Bromide	898		mg/L	500	500	12/07/08 09:14	EPA 300.0	8120880
Carbonate as CaCO3	ND		mg/L	10.0	1	12/02/08 21:12	SM 2320B	8120339
Chemical Oxygen Demand	31900		mg/L	1000	100	12/05/08 21:14	EPA 410.4	8121078
Chloride	228000		mg/L	5000	5000	12/03/08 23:08	SM4500-Cl E	8120608
Chromium (VI)	9.22	HT3	mg/L	1.00	100	12/16/08 19:36	SW846 7196A	8122645
Cyanide	ND		mg/L	0.00500	1	12/15/08 11:13	EPA 335.4	8121929
Fluoride	ND		mg/L	0.100	1	12/09/08 09:[illegible]	SM4500-F C	8121281
MBAS (measured as LAS)	0.333		mg/L	0.0500	1	12/03/08 07:[illegible]	SM 5540C	8120390
Nitrate Nitrite as N	0.127		mg/L	0.100	1	12/03/08 18:[illegible]	SM4500-NO3 F	8120548
O & G, Gravimetric, HEM	ND		mg/L	5.56	1	12/10/08 13:51	EPA 1664A	8121525
pH	5.10	HT1	pH Units	0.100	1	12/08/08 10:17	SW846 9040C	8121050
Phenolics	ND		mg/L	0.0500	1	12/11/08 12:10	EPA 420.4 M	8121331
Phosphorus	ND		mg/L	10.0	1	12/12/08 12:17	EPA 365.4	8121721
Residual Chlorine	4.89	HT1	mg/L	0.100	5	12/10/08 15:18	SM 4500Cl G	8121523
Specific conductance	237000	A-01, F	umho/cm	10.0	1	12/06/08 14:40	SM2510 B	8121062
Sulfate	ND		mg/L	1.00	1	12/12/08 12:19	ASTM D516-90	8122036
Sulfide	2.60		mg/L	1.00	1	12/03/08 15:30	SM4500-S2 F	8120984
Sulfite	ND	HT1	mg/L	25.0	5	12/02/08 18:00	SM4500-SO3 B	8120350
Total Dissolved Solids	337000	A-01a	mg/L	1000	1	12/02/08 21:40	SM2540 C	8120296
Total Organic Carbon	224		mg/L	1.00	1	12/02/08 08:30	SM5310 B	8120197
Total Suspended Solids	159		mg/L	4.00	1	12/03/08 21:48	SM2540 D	8120489
Turbidity	31.7		NTU	1.00	1	12/02/08 15:13	SM2130 B	8120332
Cyanide, Weak Acid Dissociable	ND		mg/L	0.0500	1	12/11/08 10:32	SM4500-CN I	8121713
Temperature of pH determination	22.2	HT1	Deg C	NA	1	12/08/08 10:17	EPA 170.1	8121050
Total Kjeldahl Nitrogen	585		mg/L	10.0	1	12/11/08 16:27	EPA 351.2	8121720
Chromium, Trivalent	ND	N1	mg/L	6.00	1000	12/05/08 17:31	SW846 7196A	[CALC]
Chromium, Trivalent	ND		mg/L	1.00	100	12/16/08 19:36	SW846 7196A	[CALC]
General Chemistry Parameters - Dissolved								
Chromium (VI)	7.81	HT3	mg/L	1.00	100	12/16/08 19:36	SW846 7196A	8122645
Chromium, Trivalent Dissolved	ND	N1	mg/L	6.00	1000	12/08/08 18:58	SW846 7196A	[CALC]
Chromium, Trivalent Dissolved	ND		mg/L	1.00	100	12/16/08 19:36	SW846 7196A	[CALC]
Metals								
Hardness CaCO3	40400		mg/L	6620	1000	12/05/08 17:31	SM 2340B	[CALC]
Total Metals by EPA Method 6010B								
Antimony	ND		mg/L	100	1000	12/05/08 17:31	SW846 6010B	8120066
Arsenic	ND		mg/L	10.0	1000	12/05/08 17:31	SW846 6010B	8120066
Barium	ND		mg/L	10.0	1000	12/05/08 17:31	SW846 6010B	8120066
Boron	8920		mg/L	10.0	1000	12/05/08 17:31	SW846 6010B	8120066
Beryllium	ND		mg/L	4.00	1000	12/05/08 17:31	SW846 6010B	8120066

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2960 Foster Creighton Road Nashville TN 37204 * 800-765-0653 * Fax 615-726-3404

Client:	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4100810791
Attn:	Fred Gibson	Received	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01 (F[redacted]26910-11D - Water) - cont. Sampled: 12/01/08 11:00						[redacted]		
Total Metals by EPA Method 6010B - cont.								
Boron	ND		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Cadmium	ND		mg/L	1.00	1000	12/05/08 17:31	SW846 6010B	8120966
Calcium	14500		mg/L	1000	1000	12/05/08 17:31	SW846 6010B	8120966
Chromium	ND		mg/L	5.00	1000	12/05/08 17:31	SW846 6010B	8120966
Cobalt	ND		mg/L	20.0	1000	12/05/08 17:31	SW846 6010B	8120966
Copper	ND		mg/L	10.0	1000	12/05/08 17:31	SW846 6010B	8120966
Iron	75.4		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Lead	ND		mg/L	5.00	1000	12/05/08 17:31	SW846 6010B	8120966
Magnesium	1010		mg/L	1000	1000	12/05/08 17:31	SW846 6010B	8120966
Manganese	ND		mg/L	15.0	1000	12/05/08 17:31	SW846 6010B	8120966
Molybdenum	ND		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Nickel	ND		mg/L	10.0	1000	12/05/08 17:31	SW846 6010B	8120966
Potassium	ND		mg/L	1000	1000	12/05/08 17:31	SW846 6010B	8120966
Selenium	ND		mg/L	10.0	1000	12/05/08 17:31	SW846 6010B	8120966
Silver	ND		mg/L	5.00	1000	12/05/08 17:31	SW846 6010B	8120966
Sodium	69400		mg/L	1000	1000	12/05/08 17:31	SW846 6010B	8120966
Strontium	3400		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Thallium	ND		mg/L	15.0	1000	12/05/08 17:31	SW846 6010B	8120966
Tin	ND		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Titanium	ND		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Vanadium	ND		mg/L	20.0	1000	12/05/08 17:31	SW846 6010B	8120966
Zinc	ND		mg/L	50.0	1000	12/05/08 17:31	SW846 6010B	8120966
Dissolved Metals by EPA Method 6010B								
Aluminum	ND		mg/L	100	1000	12/08/08 18:58	SW846 6010B	8120974
Antimony	ND		mg/L	10.0	1000	12/08/08 18:58	SW846 6010B	8120974
Arsenic	ND		mg/L	10.0	1000	12/08/08 18:58	SW846 6010B	8120974
Barium	19200		mg/L	10.0	1000	12/08/08 18:58	SW846 6010B	8120974
Beryllium	ND		mg/L	4.00	1000	12/08/08 18:58	SW846 6010B	8120974
Cadmium	ND		mg/L	1.00	1000	12/08/08 18:58	SW846 6010B	8120974
Chromium	ND		mg/L	5.00	1000	12/08/08 18:58	SW846 6010B	8120974
Cobalt	ND		mg/L	20.0	1000	12/08/08 18:58	SW846 6010B	8120974
Copper	ND		mg/L	10.0	1000	12/08/08 18:58	SW846 6010B	8120974
Iron	196		mg/L	50.0	1000	12/08/08 18:58	SW846 6010B	8120974
Lead	ND		mg/L	5.00	1000	12/08/08 18:58	SW846 6010B	8120974
Manganese	18.0		mg/L	15.0	1000	12/08/08 18:58	SW846 6010B	8120974
Molybdenum	ND		mg/L	50.0	1000	12/08/08 18:58	SW846 6010B	8120974
Nickel	ND		mg/L	10.0	1000	12/08/08 18:58	SW846 6010B	8120974
Selenium	ND		mg/L	10.0	1000	12/08/08 18:58	SW846 6010B	8120974
Silver	ND		mg/L	5.00	1000	12/08/08 18:58	SW846 6010B	8120974
Strontium	7290		mg/L	50.0	1000	12/08/08 18:58	SW846 6010B	8120974
Thallium	ND		mg/L	15.0	1000	12/08/08 18:58	SW846 6010B	8120974
Tin	ND		mg/L	50.0	1000	12/08/08 18:58	SW846 6010B	8120974
Titanium	ND		mg/L	50.0	1000	12/08/08 18:58	SW846 6010B	8120974

CHK00000083

Client:	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73116	Project Number:	410S810701
Attn:	Fred Gipson	Received:	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01 (F[redacted]910-11D - Water) - cont. Sampled: 12/01/08 11:00						[redacted]		
Dissolved Metals by EPA Method 6010B - cont.								
Vanadium	ND		mg/L	[redacted]	.000	12/08/08 18:58	SW846 6010B	8120074
Zinc	ND		mg/L	[redacted]	.000	12/08/08 18:58	SW846 6010B	8120074
Mercury by EPA Methods 7470A/7471A								
Mercury	ND		mg/L	[redacted]	1	12/04/08 20:13	SW846 7470A	8120683
Dissolved Mercury by EPA Methods 7470A/7471A								
Mercury	ND		mg/L	[redacted]	1	12/09/08 12:07	SW846 7470A	8121171
Volatile Organic Compounds by EPA Method 8260B								
Acetone	98.1		ug/L	50.0	1	12/04/08 19:59	SW846 8260B	8121411
Acetonitrile	ND		ug/L	20.0	1	12/04/08 19:59	SW846 8260B	8121411
Acrolein	ND	L	ug/L	50.0	1	12/04/08 19:59	SW846 8260B	8121411
Acrylonitrile	ND		ug/L	10.0	1	12/04/08 19:59	SW846 8260B	8121411
Benzene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Bromodichloromethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Bromoform	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Bromomethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
2-Butanone	ND		ug/L	50.0	1	12/04/08 19:59	SW846 8260B	8121411
Carbon disulfide	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Carbon Tetrachloride	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Chlorobenzene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Chlorodibromomethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Chloroethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Chloroform	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Chloromethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Chloroprene	ND		ug/L	5.00	1	12/04/08 19:59	SW846 8260B	8121411
3-Chloropropene	ND		ug/L	2.00	1	12/04/08 19:59	SW846 8260B	8121411
1,2-Dibromo-3-chloropropane	ND		ug/L	5.00	1	12/04/08 19:59	SW846 8260B	8121411
1,2-Dibromoethane (EDB)	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Dibromomethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
trans-1,4-Dichloro-2-butene	ND		ug/L	5.00	1	12/04/08 19:59	SW846 8260B	8121411
1,2-Dichlorobenzene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,3-Dichlorobenzene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,4-Dichlorobenzene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Dichlorodifluoromethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,2-Dichloroethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,1-Dichloroethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
cis-1,2-Dichloroethene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
trans-1,2-Dichloroethene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,1-Dichloroethene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,2-Dichloropropane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
trans-1,3-Dichloropropene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
cis-1,3-Dichloropropene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,4-Dioxane	ND		ug/L	200	1	12/04/08 19:59	SW846 8260B	8121411

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation	Work Order	NRL0012
	6100 N. Western Avenue	Project Name	Chesapeake Shale [illegible]
	Oklahoma City, OK 73118	Project Number	4100810701
Attn	Fred Gibson	Received	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01 (F[redacted]6910-11D - Water) - cont. Sampled: 12/01/08 11:00						[redacted]		
Volatile Organic Compounds by EPA Method 8260B - cont.								
Ethylbenzene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Ethyl Methacrylate	ND		ug/L	10.0	1	12/04/08 19:59	SW846 8260B	8121411
Hexachlorobutadiene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
2-Hexanone	ND		ug/L	50.0	1	12/04/08 19:59	SW846 8260B	8121411
Iodomethane	ND		ug/L	10.0	1	12/04/08 19:59	SW846 8260B	8121411
Isobutanol	ND		ug/L	50.0	1	12/04/08 19:59	SW846 8260B	8121411
Methacrylonitrile	ND		ug/L	20.0	1	12/04/08 19:59	SW846 8260B	8121411
Methylene Chloride	ND		ug/L	5.00	1	12/04/08 19:59	SW846 8260B	8121411
Methyl Methacrylate	ND		ug/L	5.00	1	12/04/08 19:59	SW846 8260B	8121411
4-Methyl-2-pentanone	ND		ug/L	10.0	1	12/04/08 19:59	SW846 8260B	8121411
Propionitrile	ND		ug/L	20.0	1	12/04/08 19:59	SW846 8260B	8121411
Styrene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,1,2,2-Tetrachloroethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,1,1,2-Tetrachloroethane	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Tetrachloroethene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Toluene	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
1,2,4-Trichlorobenzene	ND		ug/L	1.00	1	[illegible]	SW846 8260B	8121411
1,1,1-Trichloroethane	ND		ug/L	1.00	1	[illegible]	SW846 8260B	8121411
1,1,2-Trichloroethane	ND		ug/L	1.00	1	[illegible]	SW846 8260B	8121411
Trichloroethene	ND		ug/L	1.00	1	[illegible]	SW846 8260B	8121411
Trichlorofluoromethane	ND		ug/L	1.00	1	[illegible]	SW846 8260B	8121411
1,2,3-Trichloropropane	ND		ug/L	1.00	1	[illegible]	SW846 8260B	8121411
Vinyl acetate	ND		ug/L	10.0	1	12/04/08 19:59	SW846 8260B	8121411
Vinyl chloride	ND		ug/L	1.00	1	12/04/08 19:59	SW846 8260B	8121411
Xylenes, total	ND		ug/L	3.00	1	12/04/08 19:59	SW846 8260B	8121411
Surr: 1,2-Dichloroethane-d4 (60-140%)	*127 %*					*12/04/08 19:59*	*SW846 8260B*	*8121411*
Surr: Dibromofluoromethane (75-124%)	*108 %*					*12/04/08 19:59*	*SW846 8260B*	*8121411*
Surr: Toluene-d8 (78-121%)	*103 %*					*12/04/08 19:59*	*SW846 8260B*	*8121411*
Surr: 4-Bromofluorobenzene (79-124%)	*111 %*					*12/04/08 19:59*	*SW846 8260B*	*8121411*
Semivolatile Organic Compounds by EPA Method 8270C								
a,a-Dimethylphenethylamine	ND	L2	ug/L	47.6	[illegible]	[illegible]	[illegible]	[illegible]
Acenaphthene	ND		ug/L	9.52	1	[illegible]	[illegible]	[illegible]
Acenaphthylene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Acetophenone	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Acetylaminofluorene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Aminobiphenyl	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Aniline	ND		ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
Anthracene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Aramite	ND		ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
Benzo (a) anthracene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Benzo (a) pyrene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Benzo (b) fluoranthene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Benzo (g,h,i) perylene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299

Client:	Chesapeake Energy Corporation	Work Order:	NRL0912
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4100810701
Attn:	Joel Gipson	Received:	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0912-01 [redacted]6910-11D - Water) - cont. Sampled: 12/01/08 11:00						[redacted]		
Semivolatile Organic Compounds by EPA Method 8270C - cont.								
Benzo(k)fluoranthene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Benzyl alcohol	ND		ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
4-Bromophenyl phenyl ether	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Butyl benzyl phthalate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Carbazole	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Chloro-3-methylphenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Chloroaniline	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Chlorobenzilate	ND		ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
Bis(2-chloroethoxy)methane	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Bis(2-chloroethyl)ether	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Bis(2-chloroisopropyl)ether	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Chloronaphthalene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Chlorophenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Chlorophenyl phenyl ether	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Chrysene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Diallate (cis or trans)	ND		ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
Dibenz(a,h)anthracene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Dibenzofuran	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Di-n-butyl phthalate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,2-Dichlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,3-Dichlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,4-Dichlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
3,3-Dichlorobenzidine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2,4-Dichlorophenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2,6-Dichlorophenol	ND		ug/L	19.0	1	12/05/08 17:42	SW846 8270C	8120299
Diethyl phthalate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Dimethoate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Dimethylaminoazobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
7,12-Dimethylbenz(a)anthracene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
3,3-Dimethylbenzidine	ND		ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
2,4-Dimethylphenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Dimethyl phthalate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4,6-Dinitro-2-methylphenol	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
1,3-Dinitrobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2,4-Dinitrophenol	ND	L	ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
2,4-Dinitrotoluene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2,6-Dinitrotoluene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Disulfoton	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Diethylhexyl phthalate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Diphenylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Diphenzone	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Di-n-octyl phthalate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Ethyl Methanesulfonate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299

Client	Chesapeake Energy Corporation	Work Order	NRL0012
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	4100810701
Attn	Fred Gipson	Received	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01[redacted]6910-11D - Water) - cont. Sampled: 12/01/08 11:00						[redacted]		
Semivolatile Organic Compounds by EPA Method 8270C - cont.								
Camphor	ND	L2	ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Fluoranthene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Fluorene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Hexachlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Hexachlorobutadiene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Hexachlorocyclopentadiene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Hexachloroethane	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Hexachlorophene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Hexachloropropene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Indeno (1,2,3-cd) pyrene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Isodrin	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Isophorone	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Isosafrole	ND	L2	ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
Kepone	ND	L2	ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Methapyrilene	ND	L2	ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
3-Methylcholanthrene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Methyl Methanesulfonate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Methylnaphthalene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Methylphenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
3/4-Methylphenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Naphthalene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,4-Naphthoquinone	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1-Naphthylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Naphthylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Nitroaniline	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
3-Nitroaniline	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
2-Nitroaniline	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
Nitrobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Nitrophenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Nitrophenol	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
4-Nitroquinoline-n-oxide	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosodi-n-butylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosodiethylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosodimethylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosodiphenylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitroso-di-n-propylamine	ND	L	ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosomethylethylamine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosomorpholine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosopiperidine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
N-Nitrosopyrrolidine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
5-Nitro-o-toluidine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
O,O,O-Triethyl phosphorothioate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Parathion-ethyl	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation	Work Order	NRL0012
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	4190810701
Attn	Fred Gipson	Received	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01 [redacted]6910-11D - Water) - cont. Sampled: 12/01/08 11:00						[redacted]		
Semivolatile Organic Compounds by EPA Method 8270C - cont.								
Pentachlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pentachloroethane	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pentachloronitrobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pentachlorophenol	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
Phenacetin	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Phenanthrene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Phenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,3-Phenylenediamine	ND	L2	ug/L	47.6	1	12/05/08 17:42	SW846 8270C	8120299
Phorate	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2-Picoline	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pronamide	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pyrene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Parathion-methyl	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pyridine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Safrole	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Sulfotep	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,2,4,5-Tetrachlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2,3,4,6-Tetrachlorophenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Thionazin	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
o-Toluidine	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,2,4-Trichlorobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2,4,5-Trichlorophenol	ND		ug/L	23.8	1	12/05/08 17:42	SW846 8270C	8120299
2,4,6-Trichlorophenol	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
1,3,5-Trinitrobenzene	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Surr: Terphenyl-d14 (21-123%)	*46 %*					*12/05/08 17:42*	*SW846 8270C*	*8120299*
Surr: 2,4,6-Tribromophenol (23-129%)	*111 %*					*12/05/08 17:42*	*SW846 8270C*	*8120299*
Surr: Phenol-d5 (10-100%)	*93 %*					*12/05/08 17:42*	*SW846 8270C*	*8120299*
Surr: 2-Fluorobiphenyl (34-108%)	*60 %*					*12/05/08 17:42*	*SW846 8270C*	*8120299*
Surr: 2-Fluorophenol (10-100%)	*91 %*					*12/05/08 17:42*	*SW846 8270C*	*8120299*
Surr: Nitrobenzene-d5 (29-116%)	*59 %*					*12/05/08 17:42*	*SW846 8270C*	*8120299*

Client:	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Slade Energy - PA Sites
	Oklahoma City, OK 73118	Project Number:	410081970
Attn:	Fred Gipson	Received:	12/2/08 8:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-02 (Trip Blank - Water) Sampled: 12/01/08 00:01								
Volatile Organic Compounds by EPA Method 8260B								
Acetone	ND		ug/L	50.0	1	12/4/08 17:47	SW846 8260B	8121411
Acetonitrile	ND		ug/L	20.0	1	12/4/08 17:47	SW846 8260B	8121411
Acrolein	ND	L	ug/L	50.0	1	12/4/08 17:47	SW846 8260B	8121411
Acrylonitrile	ND		ug/L	10.0	1	12/4/08 17:47	SW846 8260B	8121411
Benzene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Bromodichloromethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Bromoform	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Bromomethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
2-Butanone	ND		ug/L	50.0	1	12/4/08 17:47	SW846 8260B	8121411
Carbon Disulfide	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Carbon Tetrachloride	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Chlorobenzene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Chlorodibromomethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Chloroethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Chloroform	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Chloromethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Chloroprene	ND		ug/L	5.00	1	12/4/08 17:47	SW846 8260B	8121411
3-Chloropropene	ND		ug/L	2.00	1	12/4/08 17:47	SW846 8260B	8121411
1,2-Dibromo-3-chloropropane	ND		ug/L	5.00	1	12/4/08 17:47	SW846 8260B	8121411
1,2-Dibromoethane(EDB)	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Dibromomethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
trans-1,4-Dichloro-2-butene	ND		ug/L	5.00	1	12/4/08 17:47	SW846 8260B	8121411
1,2-Dichlorobenzene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,3-Dichlorobenzene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,4-Dichlorobenzene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Dichlorodifluoromethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,2-Dichloroethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,1-Dichloroethane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
cis-1,2-Dichloroethene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
trans-1,2-Dichloroethene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,1-Dichloroethene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,2-Dichloropropane	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
trans-1,3-Dichloropropene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
cis-1,3-Dichloropropene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
1,4-Dioxane	ND		ug/L	200	1	12/4/08 17:47	SW846 8260B	8121411
Ethylbenzene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
Ethyl Methacrylate	ND		ug/L	10.0	1	12/4/08 17:47	SW846 8260B	8121411
Hexachlorobutadiene	ND		ug/L	1.00	1	12/4/08 17:47	SW846 8260B	8121411
2-Hexanone	ND		ug/L	50.0	1	12/4/08 17:47	SW846 8260B	8121411
Iodomethane	ND		ug/L	10.0	1	12/4/08 17:47	SW846 8260B	8121411
Isobutanol	ND		ug/L	50.0	1	12/4/08 17:47	SW846 8260B	8121411
Methacrylonitrile	ND		ug/L	20.0	1	12/4/08 17:47	SW846 8260B	8121411
Methylene Chloride	ND		ug/L	5.00	1	12/4/08 17:47	SW846 8260B	8121411

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Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0012
		Project Name:	Chesapeake Shale Project - PA Sites
		Project Number:	41008[illegible]0701
Attn	Fred [illegible]	Received:	12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-02 (Trip Blank - Water) - cont. Sampled: 12/01/08 00:01								
Volatile Organic Compounds by EPA Method 8260B - cont.								
Methyl Methacrylate	ND		ug/L	5.00	1	12/04/08 17:47	SW846 8260B	8121411
4-Methyl-2-pentanone	ND		ug/L	10.0	1	12/04/08 17:47	SW846 8260B	8121411
Propionitrile	ND		ug/L	20.0	1	12/04/08 17:47	SW846 8260B	8121411
Styrene	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
1,1,1,2-Tetrachloroethane	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
1,1,2,2-Tetrachloroethane	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
Tetrachloroethene	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
Toluene	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
1,2,4-Trichlorobenzene	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
1,1,1-Trichloroethane	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
1,1,2-Trichloroethane	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
Trichloroethene	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
Trichlorofluoromethane	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
1,2,3-Trichloropropane	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
Vinyl acetate	ND		ug/L	10.0	1	12/04/08 17:47	SW846 8260B	8121411
Vinyl chloride	ND		ug/L	1.00	1	12/04/08 17:47	SW846 8260B	8121411
Xylenes, total	ND		ug/L	3.00	1	12/04/08 17:47	SW846 8260B	8121411
Surr: 1,2-Dichloroethane-d4 (70-130%)	*114 %*					*12/04/08 17:47*	*SW846 8260B*	*8121411*
Surr: Dibromofluoromethane (75-125%)	*102 %*					*12/04/08 17:47*	*SW846 8260B*	*8121411*
Surr: Toluene-d8 (75-125%)	*100 %*					*12/04/08 17:47*	*SW846 8260B*	*8121411*
Surr: 4-Bromofluorobenzene (79-124%)	*106 %*					*12/04/08 17:47*	*SW846 8260B*	*8121411*

Client	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4100810701
Attn	Fred Gipson	Received:	12/02/08 08:30

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Dissolved Mercury by EPA Methods 7470A/7471A							
SW846 7470A	8120171	NRL0012-01	3.00	30.00	12/08/08 [illegible]	[illegible]	EPA 7470
Dissolved Metals by EPA Method 6010B							
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	[illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08	[illegible]	[illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120074	NRL0012-01	50.00	50.00	12/08/08 [illegible]	LTB	EPA 3010A [illegible]
General Chemistry Parameters							
SM 5210B	8120505	NRL0012-01	300.00	300.00	12/02/08 [illegible]	SHF	BOD/CBOD
Mercury by EPA Methods 7470A/7471A							
SW846 7470A	8120685	NRL0012-01	3.00	30.00	12/04/08 [illegible]	[illegible]	EPA 7470
Semivolatile Organic Compounds by EPA Method 8270C							
SW846 8270C	8120294	NRL0012-01	1000.00	1.00	12/03/08 [illegible]	[illegible]	EPA 3510C
Total Metals by EPA Method 6010B							
SW846 6010B	8120066	NRL0012-01	50.00	50.00	12/05/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	12/05/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	12/05/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	12/05/08 [illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	LTB	EPA 3010A [illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]
SW846 6010B	8120066	NRL0012-01	50.00	50.00	[illegible]	[illegible]	[illegible]

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2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Chesapeake Energy Corporation [illegible]
[illegible] N. Western Avenue
Oklahoma City, OK 73118
Attn Fred Gibson

Work Order: NRL0012
Project Name: Chesapeake Shale Project - PA Sites
Project Number: 4160810701
Received: 12/02/08 08:30

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010
[illegible]	8120066	NRL0012-01	50.00	50.00	12/05/08 11:03	LTB	EPA 3010A / 6010

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Client:	Chesapeake Energy Corporation	Work Order:	KRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	410810701
Attn:	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank

Analyte	Blank Value	Q	Units	QC Batch	Test Number	Analyzed Date/Time
General Chemistry Parameters						
8120197-BLK1						
Total Organic Carbon	0.500		mg/L	8120197	8120197-BLK1	12/07/08 02:30
8120296-BLK1						
Total Dissolved Solids	<5.00		mg/L	8120296	8120296-BLK1	12/05/08 21:00
8120305-BLK1						
BOD - 5 Day	1.02		mg/L	8120305	8120305-BLK1	12/02/08 17:30
8120332-BLK1						
Turbidity	<0.200		NTU	8120332	8120332-BLK1	12/07/08 15:07
8120336-BLK1						
Bicarbonate Alkalinity as CaCO3	<5.00		mg/L	8120336	8120336-BLK1	12/02/08 21:15
8120339-BLK1						
Carbonate as CaCO3	<5.00		mg/L	8120339	8120339-BLK1	12/02/08 21:15
8120340-BLK1						
Sulfite	2.20		mg/L	8120340	8120340-BLK1	12/02/08 18:00
8120390-BLK1						
MBAS (mol wt 320)	<0.0250		mg/L	8120390	8120390-BLK1	12/04/08 07:00
8120489-BLK1						
Total Suspended Solids	<0.500		mg/L	8120489	8120489-BLK1	12/03/08 21:45
8120548-BLK1						
Nitrate/Nitrite as N	<0.0250		mg/L	8120548	8120548-BLK1	12/03/08 17:15
8120608-BLK1						
Chloride	0.506		mg/L	8120608	8120608-BLK1	12/03/08 23:10
8120880-BLK1						
Bromide	<0.200		mg/L	8120880	8120880-BLK1	12/04/08 07:00
8120984-BLK1						
Sulfide	<0.200		mg/L	8120984	8120984-BLK1	12/05/08 15:30
8121062-BLK1						
Specific conductance	<10.0		umhos/cm	8121062	8121062-BLK1	12/05/08 14:40
8121078-BLK1						
Chemical Oxygen Demand	<5.00		mg/L	8121078	8121078-BLK1	12/05/08 23:14

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Client:	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK, 73118	Project Number:	410081070
Attn:	Fred Greene	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Work Value	Q	Units	QC Batch	Lab Number	Analyzed Date/Time
General Chemistry Parameters						
8121281-BLK1						
[illegible]	[illegible]		mg/L	8121281	8121281-BLK1	[illegible]
8121525-BLK1						
[illegible]	[illegible]		mg/L	8121525	8121525-BLK1	[illegible]
8121531-BLK1						
[illegible]	[illegible]		mg/L	8121531	8121531-BLK1	[illegible]
8121543-BLK1						
[illegible]	[illegible]		mg/L	8121543	8121543-BLK1	[illegible]
8121713-BLK1						
[illegible]	[illegible]		mg/L	8121713	8121713-BLK1	[illegible]
8121720-BLK1						
[illegible]	[illegible]		mg/L	8121720	8121720-BLK1	[illegible]
8121721-BLK1						
[illegible]	[illegible]		mg/L	8121721	8121721-BLK1	[illegible]
8121929-BLK1						
[illegible]	[illegible]		mg/L	8121929	8121929-BLK1	[illegible]
8122036-BLK1						
[illegible]	[illegible]		mg/L	8122036	8122036-BLK1	[illegible]
8122287-BLK1						
[illegible]	[illegible]		mg/L	8122287	8122287-BLK1	[illegible]
8122645-BLK1						
[illegible]	[illegible]		mg/L	8122645	8122645-BLK1	[illegible]
General Chemistry Parameters - Dissolved						
8122645-BLK1						
[illegible]	[illegible]		mg/L	8122645	8122645-BLK1	[illegible]
Total Metals by EPA Method 6010B						
8120066-BLK1						
Aluminum	0.0063		mg/L	8120066	8120066-BLK1	12/03/08 16:58
Antimony	0.00386		mg/L	8120066	8120066-BLK1	12/03/08 16:58
Arsenic	0.00150		mg/L	8120066	8120066-BLK1	12/03/08 16:58
Barium	0.00580		mg/L	8120066	8120066-BLK1	12/03/08 16:58
Beryllium	0.00100		mg/L	8120066	8120066-BLK1	12/03/08 16:58

2960 Foster Creighton Road Nashville, TN 37204 (800-765-0980) Fax 615-726-3404

Client	Chesapeake Energy Corporation	Work Order	NRL6012
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - OK Sites
	Oklahoma City, OK 73118	Project Number	410381020
Attn	Brad Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	LQ	Units	QC Batch	Lab Number	Analyzed Date/Time
Total Metals by EPA Method 6010B						
8120066-BLK1						
Boron	<0.00200		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Cadmium	<0.000300		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Calcium	<0.100		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Chromium	<0.00150		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Cobalt	<0.00200		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Copper	<0.00250		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Iron	<0.0280		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Lead	<0.00280		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Magnesium	<0.100		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Manganese	<0.00100		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Molybdenum	<0.00600		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Nickel	<0.00200		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Potassium	<0.500		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Selenium	<0.00430		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Silver	<0.00106		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Sodium	<0.500		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Strontium	<0.00100		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Thallium	<0.00750		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Tin	<0.00580		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Titanium	<0.00300		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Vanadium	<0.00150		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Zinc	<0.020		mg/L	8120066	8120066-BLK1	12/05/08 16:55
Dissolved Metals by EPA Method 6010B						
8120074-BLK1						
Aluminum	<0.0180		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Antimony	<0.00580		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Arsenic	<0.00450		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Barium	<0.00150		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Beryllium	<0.00150		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Cadmium	<0.000300		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Chromium	<0.00150		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Cobalt	<0.00200		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Copper	<0.00250		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Iron	<0.0280		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Lead	<0.00280		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Manganese	<0.00100		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Molybdenum	<0.00600		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Nickel	<0.00200		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Selenium	<0.00430		mg/L	8120074	8120074-BLK1	12/06/08 18:36
Silver	<0.00106		mg/L	8120074	8120074-BLK1	12/06/08 18:36

CHK00000095

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0012
		Project Name:	Chesapeake Shale Project - PA Sites
		Project Number:	41008107[illegible]
Attn	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Dissolved Metals by EPA Method 6010B						
8120074-BLK1						
Strontium	0.000200		mg/L	8120074	8120074-BLK1	12/08/08 18:36
Thallium	<0.00750		mg/L	8120074	8120074-BLK1	12/08/08 18:36
Tin	<0.00580		mg/L	8120074	8120074-BLK1	12/08/08 18:36
Titanium	<0.000980		mg/L	8120074	8120074-BLK1	12/08/08 18:36
Vanadium	<0.00150		mg/L	8120074	8120074-BLK1	12/08/08 18:36
Zinc	<0.0100		mg/L	8120074	8120074-BLK1	12/08/08 18:36
Mercury by EPA Methods 7470A/7471A						
8120683-BLK1						
Mercury	0.000150		mg/L	8120683	8120683-BLK1	12/04/08 18:21
Dissolved Mercury by EPA Methods 7470A/7471A						
8121171-BLK1						
Mercury	[illegible]150		mg/L	8121171	8121171-BLK1	12/09/08 12:[illegible]
Volatile Organic Compounds by EPA Method 8260B						
8121411-BLK1						
Acetone	23.9		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Acetonitrile	<8.36		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Acrolein	<15.5		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Acrylonitrile	<3.33		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Benzene	<0.270		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Bromodichloromethane	<0.350		ug/L	8121411	8121411-BLK1	[illegible]
Bromoform	<0.430		ug/L	8121411	8121411-BLK1	[illegible]
Bromomethane	<0.420		ug/L	8121411	8121411-BLK1	12/04/08 13:23
2-Butanone	<2.46		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Carbon disulfide	<0.380		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Carbon Tetrachloride	<0.330		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Chlorobenzene	<0.180		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Chlorodibromomethane	<0.280		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Chloroethane	<0.450		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Chloroform	<0.250		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Chloromethane	<0.380		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Chloroprene	<0.310		ug/L	8121411	8121411-BLK1	12/04/08 13:23
3-Chloropropene	<0.400		ug/L	8121411	8121411-BLK1	12/04/08 13:23
1,2-Dibromo-3-chloropropane	<0.860		ug/L	8121411	8121411-BLK1	12/04/08 13:23
1,2-Dibromoethane (EDB)	<0.390		ug/L	8121411	8121411-BLK1	12/04/08 13:23
Dibromomethane	<0.350		ug/L	8121411	8121411-BLK1	12/04/08 13:23
trans-1,4-Dichloro-2-butene	<1.16		ug/L	8121411	8121411-BLK1	12/04/08 13:23
1,2-Dichlorobenzene	<0.360		ug/L	8121411	8121411-BLK1	12/04/08 13:23
1,3-Dichlorobenzene	<0.330		ug/L	8121411	8121411-BLK1	12/04/08 13:23

Client:	Chesapeake Energy Corporation	Work Order:	NRI0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	416083[illegible]
Attn:	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	Q	Units	QC Batch	Lab Number	Analyzed Date Time
Volatile Organic Compounds by EPA Method 8260B						
8121411-BLK1						
1,4-Dichlorobenzene	<0.380		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Dichlorodifluoromethane	<0.160		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,2-Dichloroethane	<0.370		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,1-Dichloroethane	<0.340		ug/L	8121411	8121411-BLK1	12/04/08 15:25
cis-1,2-Dichloroethene	<0.390		ug/L	8121411	8121411-BLK1	12/04/08 15:25
trans-1,2-Dichloroethene	<0.470		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,1-Dichloroethene	<0.340		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,2-Dichloropropane	<0.320		ug/L	8121411	8121411-BLK1	12/04/08 15:25
trans-1,3-Dichloropropene	<0.330		ug/L	8121411	8121411-BLK1	12/04/08 15:25
cis-1,3-Dichloropropene	<0.290		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,4-Dioxane	<62.2		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Ethylbenzene	<0.340		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Ethyl Methacrylate	<3.23		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Hexachlorobutadiene	<0.910		ug/L	8121411	8121411-BLK1	12/04/08 15:25
2-Hexanone	<15.7		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Isobutanol	<3.33		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Isobutane	<0.36		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Methacrylonitrile	<0.14		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Methylene Chloride	<0.830		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Methyl Methacrylate	0.540		ug/L	8121411	8121411-BLK1	12/04/08 15:25
4-Methyl-2-pentanone	<3.49		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Propionitrile	<0.28		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Styrene	<0.330		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,1,2,2-Tetrachloroethane	<0.290		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,1,1,2-Tetrachloroethane	<0.290		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Tetrachloroethene	<0.250		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Toluene	<0.280		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,2,4-Trichlorobenzene	<0.560		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,1,1-Trichloroethane	<0.370		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,1,2-Trichloroethane	<0.400		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Trichloroethene	<0.230		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Trichlorofluoromethane	<0.350		ug/L	8121411	8121411-BLK1	12/04/08 15:25
1,2,3-Trichloropropane	<0.540		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Vinyl acetate	<3.42		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Vinyl chloride	<0.290		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Xylenes, total	<0.560		ug/L	8121411	8121411-BLK1	12/04/08 15:25
Surrogate: 1,2-Dichloroethane-d4	111%			8121411	8121411-BLK1	12/04/08 15:25
Surrogate: Dibromofluoromethane	104%			8121411	8121411-BLK1	12/04/08 15:25
Surrogate: Toluene-d8	101%			8121411	8121411-BLK1	12/04/08 15:25
Surrogate: 4-Bromofluorobenzene	106%			8121411	8121411-BLK1	12/04/08 15:25
Fluorobenzene	22.0		ug/L	8121411	8121411-BLK1	12/04/08 15:25

CHK00000097

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0012
		Project Name:	Chesapeake Shale Project - PA Sites
		Project Number:	4100810701
Attn	Fred Gibson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

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Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B						
8121411-BLK1						
[illegible]	[illegible]		ug/L	8121411	8121411-BLK1	[illegible]
[illegible]	25.0		ug/L	8121411	8121411-BLK1	[illegible]
Semivolatile Organic Compounds by EPA Method 8270C						
8120299-BLK1						
a,a-Dimethylphenethylamine	[illegible]		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Acenaphthene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Acenaphthylene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Acetophenone	[illegible]		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2-Acetylaminofluorene	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
4-Aminobiphenyl	<5.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Aniline	<6.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Anthracene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<10.3		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo (a) anthracene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo (a) pyrene	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo (b) fluoranthene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo (g,h,i) perylene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo (k) fluoranthene	<1.10		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzyl alcohol	<6.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
4-Bromophenyl phenyl ether	<5.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Butyl benzyl phthalate	<1.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Carbazole	<1.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	[illegible]		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	[illegible]		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<1.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	[illegible]		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<4.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<4.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<3.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<1.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<1.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<2.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<3.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<6.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<6.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<8.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
[illegible]	<2.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52

CHK00000098

Client	Chesapeake Energy Corporation	Work Order	NRL0912
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	410081970
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	Q	Units	QC Batch	Lab Sample	Analyzed Date/Time
Semivolatile Organic Compounds by EPA Method 8270C						
8120299-BLK1						
2,4-Dichlorophenol	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2,6-Dichlorophenol	<3.40		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Diethylphthalate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dimethoate	<1.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dimethylaminoazobenzene	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
7,12-Dimethylbenz(a)anthracene	<1.10		ng/L	8120299	8120299-BLK1	12/05/08 14:52
3,3-Dimethylbenzidine	<5.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2,4-Dimethylphenol	<1.10		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dimethylphthalate	<3.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
4,6-Dinitro-2-methylphenol	<3.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
1,3-Dinitrobenzene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2,4-Dinitrophenol	<3.40		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2,4-Dinitrotoluene	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2,6-Dinitrotoluene	<2.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dinoseb	<3.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Di-n-octyl phthalate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Diphenylamine	<1.80		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Disulfoton	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Bis(2-ethylhexyl) adipate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Ethyl Methanesulfonate	<1.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Famphur	<2.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Fluoranthene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Fluorene	<1.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorobenzene	<3.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorobutadiene	<5.10		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorocyclopentadiene	<3.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachloroethane	<5.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorophene	<3.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachloropropene	<1.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Indeno(1,2,3-cd)pyrene	<1.00		ng/L	8120299	8120299-BLK1	12/05/08 14:52
Isodrin	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Isophorone	<4.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Isosafrole	<3.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Kepone	<2.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Methapyrilene	<4.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
3-Methylcholanthrene	<1.20		ng/L	8120299	8120299-BLK1	12/05/08 14:52
Methyl Methanesulfonate	<3.00		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2-Methylnaphthalene	<1.0		ng/L	8120299	8120299-BLK1	12/05/08 14:52
2-Methylphenol	<3.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
3,4-Methylphenol	<4.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Naphthalene	<1.0		ng/L	8120299	8120299-BLK1	12/05/08 14:52

Client	Chesapeake Energy Corporation	Work Order	KRI0912
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	410080/0701
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	Q	Units	QC Batch	Lab Number	Analyzed Date/Time
Semivolatile Organic Compounds by EPA Method 8270C						
8120299-BLK1						
1,4-Naphthoquinone	<2.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
1-Naphthylamine	<2.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2-Naphthylamine	<4.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
4-Nitrophenol	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
4-Nitroquinoline-1-oxide	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
5-Nitro-o-toluidine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
a,a-Dimethylphenethylamine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Acenaphthene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Acenaphthylene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Acetophenone	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Aniline	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Anthracene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Aramite	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Atrazine	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Azobenzene	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzidine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo(a)anthracene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo(a)pyrene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo(b)fluoranthene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo(g,h,i)perylene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzo(k)fluoranthene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzoic acid	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Benzyl alcohol	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
bis(2-Chloroethoxy)methane	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
bis(2-Chloroethyl)ether	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
bis(2-Chloroisopropyl)ether	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
bis(2-Ethylhexyl)phthalate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Butylbenzylphthalate	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Carbazole	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Chrysene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dibenz(a,h)anthracene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dibenzofuran	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Diethylphthalate	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dimethoate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Dimethylphthalate	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Di-n-butylphthalate	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Di-n-octylphthalate	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Diphenylamine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Disulfoton	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Ethyl methanesulfonate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Famphur	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Fluoranthene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Fluorene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorobenzene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorobutadiene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorocyclopentadiene	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachloroethane	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachlorophene	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexachloropropene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexamethylphosphoramide	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hexanoic acid	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Hydroquinone	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Indeno(1,2,3-cd)pyrene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Isodrin	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Isophorone	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Isosafrole	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Kepone	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Methapyrilene	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Methyl methanesulfonate	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Naphthalene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Nitrobenzene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosodi-n-butylamine	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosodiethylamine	<1.80		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosodimethylamine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosodiphenylamine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosodi-n-propylamine	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosomethylethylamine	<1.40		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosomorpholine	<1.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosopiperidine	<1.80		ug/L	8120299	8120299-BLK1	12/05/08 14:52
N-Nitrosopyrrolidine	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
O-Nitrotoluene	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
O,O,O-Triethyl phosphorothioate	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Parathion-ethyl	<1.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pentachlorobenzene	<1.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pentachloroethane	<1.40		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pentachloronitrobenzene	<2.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pentachlorophenol	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Phenacetin	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Phenanthrene	<1.90		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Phenol	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
p-Phenylenediamine	<50.0		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Phorate	<1.80		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2-Picoline	<5.10		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pronamide	<1.80		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pyrene	<1.60		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Pyridine	<1.80		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Safrole	<3.30		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Sulfotep	<1.20		ug/L	8120299	8120299-BLK1	12/05/08 14:52
1,2,4,5-Tetrachlorobenzene	<1.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52
2,3,4,6-Tetrachlorophenol	<1.50		ug/L	8120299	8120299-BLK1	12/05/08 14:52
Thionazin	<1.70		ug/L	8120299	8120299-BLK1	12/05/08 14:52

CHK00000100

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Client	Chesapeake Energy Corporation	Work Order	SRL0812
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Spec
	Oklahoma City, OK 73118	Project Number	4100810701
Attn	Fred Gipson	Received	12/20/08 08:30

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Semivolatile Organic Compounds by EPA Method 8270C						
8120299-BLK1						
o-Toluidine	<4.60		ug/L	8120299	8120299-BLK1	
1,2,4-Trichlorobenzene	<4.30		ug/L	8120299	8120299-BLK1	
2,4,5-Trichlorophenol	<5.30		ug/L	8120299	8120299-BLK1	
2,4,6-Trichlorophenol	<5.50		ug/L	8120299	8120299-BLK1	
1,3,5-Trinitrobenzene	<4.10		ug/L	8120299	8120299-BLK1	
Surrogate: Terphenyl-d14	79%			8120299	8120299-BLK1	
Surrogate: 2-Fluorophenol	96%			8120299	8120299-BLK1	
Surrogate: Phenol-d5	35%			8120299	8120299-BLK1	
Surrogate: 2,4,6-Tribromophenol	63%			8120299	8120299-BLK1	
Surrogate: 2-Fluorobiphenyl	48%			8120299	8120299-BLK1	
Surrogate: Nitrobenzene-d5	76%			8120299	8120299-BLK1	

CHK00000101

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0012
		Project Name:	Chesapeake Shale Project - PA Sites
		Project Number:	410081070[illegible]
Attn	Fred [illegible]	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Duplicate

Analyte	Orig. Result	Duplicate	Q	Units	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
General Chemistry Parameters									
8120197-DUP1									
Total Organic Carbon	[illegible]	[illegible]		mg/L	[illegible]	20	8120197	NRK2245-01	12/02/08 08:30
8120197-DUP2									
Total Organic Carbon	[illegible]	ND		mg/L		20	8120197	NRK2309-01	12/02/08 08:30
8120296-DUP1									
Total Dissolved Solids	[illegible]	[illegible]		mg/L	2	20	8120296	[illegible]	[illegible]
8120305-DUP1									
BOD - 5 Day	[illegible]	18.0		mg/L	[illegible]	20	8120305	[illegible]	12/02/08 17:30
8120332-DUP1									
Turbidity	[illegible]	[illegible]		NTU	2	10	8120332	[illegible]	[illegible]
8120336-DUP1									
Bicarbonate Alkalinity as CaCO3	[illegible]	[illegible]		mg/L	[illegible]	20	8120336	[illegible]	[illegible]
8120339-DUP1									
Carbonate as CaCO3	ND	ND		mg/L		20	8120339	[illegible]	[illegible]
8120340-DUP1									
Sulfate	[illegible]	[illegible]		mg/L	[illegible]	10	8120340	[illegible]	12/02/08 18:00
8120390-DUP1									
MBAS as LAS [illegible]	[illegible]	[illegible]		mg/L	5	20	8120390	[illegible]	[illegible]
8120489-DUP1									
Total Suspended Solids	[illegible]	[illegible]		mg/L	20	20	8120489	[illegible]	[illegible]
8120489-DUP2									
Total Suspended Solids	[illegible]	[illegible]	[illegible]	mg/L	[illegible]	20	8120489	NRL0307-01	[illegible]
8120548-DUP1									
Nitrate/Nitrite as N	[illegible]	[illegible]		mg/L	2	20	8120548	NRL0012-01	12/03/08 18:50
8120608-DUP1									
Chloride	[illegible]	229000		mg/L	0.6	10	8120608	NRL0012-01	12/03/08 23:08
8120880-DUP1									
Bromide	[illegible]	[illegible]		mg/L	[illegible]	20	8120880	NRL0012-01	[illegible]
8120984-DUP1									

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City OK 73118	Work Order	NRL0912
		Project Name	Chesapeake Shale Project - PA Sites
		Project Number	41008'0701
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

Duplicate - Cont.

Analyte	Orig. Val	Duplicate	Q	Units	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
General Chemistry Parameters									
8120984-DUP1									
Sulfide	2.6	2.4		mg/L	[illegible]	[illegible]	8120984	[illegible]	[illegible]
8121050-DUP1									
pH	5.30	5.26	H1	pH Units	[illegible]	200	8121050	[illegible]	[illegible]
Temperature at pH determination	22.7	22.7	H1	Deg C	0	200	8121050	[illegible]	[illegible]
8121062-DUP1									
Specific conductance	489	487		umhos/cm	0.4	10	8121062	[illegible]	[illegible]
8121078-DUP1									
Chemical Oxygen Demand	ND	ND		mg/L		15	8121078	[illegible]	[illegible]
8121281-DUP1									
Fluoride	0.0300	0.0300		mg/L	0	20	8121281	[illegible]	[illegible]
8121531-DUP1									
Phenolics	ND	ND		mg/L		25	8121531	[illegible]	[illegible]
8121543-DUP1									
Residual Chlorine	0.665	0.684	R2	mg/L	3	2	8121543	[illegible]	[illegible]
8121713-DUP1									
Cyanide, Weak Acid Dissociable	ND	ND		mg/L		29	8121713	[illegible]	[illegible]
8121720-DUP1									
Total Kjeldahl Nitrogen	0.953	0.945		mg/L	0.9	20	8121720	[illegible]	[illegible]
8121721-DUP1									
Phosphorus	0.186	0.125	R2	mg/L	40	20	8121721	[illegible]	[illegible]
8121929-DUP1									
Cyanide	ND	ND		mg/L		41	8121929	[illegible]	[illegible]
8122036-DUP1									
Sulfate	144	150		mg/L	4	20	8122036	[illegible]	[illegible]
8122287-DUP1									
Ammonia as N	82.5	82.1		mg/L	0.4	30	8122287	[illegible]	[illegible]
8122645-DUP1									
Chromium (VI)	9.22	9.20		mg/L	0.2	15	8122645	[illegible]	[illegible]

CHK00000103

Client:	Chesapeake Energy Corporation	Work Order	NRL0012
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	410981070]
Attn:	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Duplicate - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
General Chemistry Parameters - Dissolved									
8122645-DUP1									
[illegible]	[illegible]	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CHK00000104

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2960 Foster Creighton Road Nashville, TN 37204 * 800-765-[illegible] * Fax [illegible]

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0817
		Project Name:	Chesapeake Shale Pro[illegible]
		Project Number:	41005-0707
Attn	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	% Rec. Limits	Batch	Analyzed Date/Time
General Chemistry Parameters								
8120197-BS1								
Total Organic Carbon	200	185		ug/mL	93%	[illegible]	8120197	12/02/08 08:[illegible]
8120296-BS1								
Total Dissolved Solids	100	97.0		ug/mL	97%	[illegible]	8120296	12/02/08 [illegible]
8120305-BS1								
BOD - 5 Day	198	240	L1	ug/mL	121%	[illegible]	8120305	12/02/08 15:[illegible]
8120332-BS1								
Turbidity	5.00	4.90		NTU	98%	[illegible]	8120332	12/02/08 [illegible]
8120340-BS1								
Sulfite	40.0	36.[illegible]		mg/L	91%	[illegible]	8120340	[illegible]
8120390-BS1								
MBAS (mol wt 320)	0.[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	8120390	[illegible]
8120489-BS1								
Total Suspended Solids	[illegible]	91.[illegible]		ug/mL	[illegible]		8120489	[illegible]
8120548-BS1								
Nitrate/Nitrite as N	6.02	5.9		mg/L	98%	[illegible]	8120548	[illegible]
8120608-BS1								
Chloride	10.0	10.3	MNR	mg/L	102%	[illegible]	8120608	12/[illegible]/08 [illegible]
8120880-BS1								
Bromide	10.0	10.1	MNR	mg/L	101%	[illegible]	8120880	[illegible]
8120984-BS1								
Sulfide	20.0	19.[illegible]		mg/L	97%	[illegible]	8120984	[illegible]
8121050-BS1								
pH	7.00	7.01	HT1	pH Units	100%	[illegible]	8121050	12/05/08 10:1[illegible]
8121062-BS1								
Specific conductance	[illegible]	1360		umho/cm	96%	[illegible]	8121062	12/0[illegible]/08 14:40
8121078-BS1								
Chemical Oxygen Demand	20.0	20.[illegible]		ug/mL	102%	[illegible]	8121078	[illegible]
8121281-BS1								
Fluoride	0.0100	[illegible]		mg/L	[illegible]	[illegible]	8121281	[illegible]

CHK00000105

[illegible]	Chesapeake Energy Corporation	Work Order:	NRL0912
	6100 N. Western Avenue	Project Name:	Chesapeake State Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	410581073I
Attn:	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Source Sample	Analyzed Val	Q	Units	% Rec	Target Range	Batch	Analyzed Date Time
General Chemistry Parameters								
8121525-BS1								
Oil & Grease [HEM]	20.0	19.9		mg/L	100%	78 - 114	8121525	12/09/08 18:37
8121531-BS1								
Phenolics	0.500	0.506		mg/L	101%	80 - 120	8121531	12/11/08 12:10
8121543-BS1								
Residual Chlorine	0.500	0.549		mg/L	110%	90 - 110	8121543	12/03/08 15:16
8121713-BS1								
Cyanide, Weak Acid Dissociable	0.200	0.210		mg/L	105%	85 - 115	8121713	12/11/08 20:32
8121720-BS1								
Nitrate-Nitrite as N	2.50	2.51		mg/L	100%	90 - 110	8121720	12/11/08 16:23
8121721-BS1								
Nitrite as N	2.50	2.37		mg/L	95%	90 - 110	8121721	12/12/08 12:17
8121929-BS1								
Arsenic	0.100	0.0967		mg/L	97%	90 - 110	8121929	12/15/08 11:31
8122036-BS1								
Sulfate	20.0	9.83	MNR	mg/mL	99%	90 - 110	8122036	12/12/08 12:19
8122287-BS1								
Ammonia as N	5.00	5.14		mg/L	103%	90 - 110	8122287	12/16/08 14:53
8122645-BS1								
Chromium, TD	0.100	0.106		mg/L	106%	85 - 115	8122645	12/16/08 19:36
General Chemistry Parameters - Dissolved								
8122645-BS1								
Chromium, TD	0.100	0.106		mg/L	106%	85 - 115	8122645	12/16/08 19:36
Total Metals by EPA Method 6010B								
8120066-BS1								
Aluminum	2.00	2.02		mg/L	101%	80 - 120	8120066	12/05/08 17:02
Antimony	0.100	0.106		mg/L	106%	80 - 120	8120066	12/05/08 17:02
Arsenic	0.0500	0.0512		mg/L	102%	80 - 120	8120066	12/05/08 17:02
Barium	2.00	2.21		mg/L	111%	80 - 120	8120066	12/05/08 17:02
Beryllium	0.0500	0.0516		mg/L	103%	80 - 120	8120066	12/05/08 17:02
Boron	2.00	1.91		mg/L	96%	80 - 120	8120066	12/05/08 17:02
Cadmium	0.0500	0.0507		mg/L	101%	80 - 120	8120066	12/05/08 17:02
Calcium	5.00	5.18		mg/L	104%	80 - 120	8120066	12/05/08 17:02

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THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville TN 37204 [illegible]

Client	Chesapeake Energy Corporation	Work Order	NRL0012
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	4100810751
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

LCS - Cont.

Total Metals by EPA Method 6010B

8120066-BS1

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec	Target Range	Batch	Analyzed Date/Time
Chromium	[illegible]	0.209		mg/L	101%	[illegible]	[illegible]	[illegible]
Cobalt	[illegible]	0.525		mg/L	105%	[illegible]	[illegible]	[illegible]
Copper	[illegible]	0.254		mg/L	102%	[illegible]	[illegible]	[illegible]
Iron	[illegible]	1.07		mg/L	107%	[illegible]	8120066	[illegible]
Lead	[illegible]	0.0509		mg/L	102%	[illegible]	[illegible]	[illegible]
Magnesium	5.00	5.05		mg/L	101%	[illegible]	[illegible]	[illegible]
Manganese	0.500	0.512		mg/L	102%	[illegible]	[illegible]	[illegible]
Molybdenum	0.500	0.498		mg/L	99%	[illegible]	[illegible]	[illegible]
Nickel	0.500	0.498		mg/L	100%	[illegible]	[illegible]	[illegible]
Potassium	5.00	4.15		mg/L	83%	[illegible]	[illegible]	[illegible]
Selenium	0.0500	0.0478		mg/L	96%	[illegible]	[illegible]	[illegible]
Silver	0.0500	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Sodium	5.00	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Strontium	[illegible]	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Thallium	0.0500	0.0518		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Tin	[illegible]	1.04		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Titanium	[illegible]	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Vanadium	[illegible]	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Zinc	0.500	0.504		mg/L	[illegible]	[illegible]	[illegible]	[illegible]

Dissolved Metals by EPA Method 6010B

8120074-BS1

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec	Target Range	Batch	Analyzed Date/Time
Aluminum	2.00	1.97		mg/L	98%	[illegible]	8120074	12/08/08 15:11
Antimony	0.100	0.0893		mg/L	89%	[illegible]	8120074	12/08/08 18:11
Arsenic	0.0500	0.0472		mg/L	94%	[illegible]	8120074	[illegible]
Barium	2.00	2.08		mg/L	104%	[illegible]	8120074	12/05/08 18:[illegible]
Beryllium	0.0500	[illegible]		mg/L	101%	[illegible]	[illegible]	[illegible]
Cadmium	0.0500	[illegible]		mg/L	100%	[illegible]	[illegible]	[illegible]
Chromium	0.200	[illegible]		mg/L	103%	[illegible]	[illegible]	[illegible]
Cobalt	0.500	0.530		mg/L	106%	[illegible]	[illegible]	[illegible]
Copper	0.250	0.257		mg/L	103%	[illegible]	8120074	12/08/08 18:41
Iron	1.00	0.995		mg/L	100%	[illegible]	8120074	[illegible]
Lead	0.0500	0.0485		mg/L	97%	[illegible]	8120074	12/08/08 18:41
Manganese	0.500	0.523		mg/L	105%	[illegible]	8120074	12/08/08 18:41
Molybdenum	0.500	0.495		mg/L	99%	[illegible]	8120074	[illegible]
Nickel	0.500	0.505		mg/L	102%	[illegible]	8120074	[illegible]
Selenium	0.0500	0.0446		mg/L	89%	[illegible]	[illegible]	[illegible]
Silver	0.0500	0.0505		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Strontium	[illegible]	1.03		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Thallium	0.0500	0.0498		mg/L	[illegible]	[illegible]	[illegible]	[illegible]
Tin	1.00	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]

Client:	Chesapeake Energy Corporation	Work Order:	NRI0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4100810701
Attn:	Fred Gapsar	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Source Val	Analyzed Val	Q	Units	% Rec	Target Range	Batch	Analyzed Date/Time
Dissolved Metals by EPA Method 6010B								
8120074-BS1								
Barium	1.00	1.01		mg/L	101%	80 - 120	8120074	12/08/08 18:41
Cadmium	0.500	0.507		mg/L	101%	80 - 120	8120074	12/08/08 18:41
Zinc	0.500	0.515		mg/L	103%	80 - 120	8120074	12/08/08 18:41
Mercury by EPA Methods 7470A/7471A								
8120683-BS1								
Mercury	0.00000	0.00268		mg/L	93%	78 - 124	8120683	12/04/08 18:23
Dissolved Mercury by EPA Methods 7470A/7471A								
8121171-BS1								
Mercury	0.00000	0.00255		mg/L	96%	78 - 124	8121171	12/09/08 12:02
Volatile Organic Compounds by EPA Method 8260B								
8121411-BS1								
Acetone	250	273		ug/L	109%	62 - 150	8121411	12/04/08 10:45
Ammonia	250	1210	L	ug/L	484%	10 - 150	8121411	12/04/08 10:45
Acrylonitrile	250	250		ug/L	100%	75 - 135	8121411	12/04/08 10:45
Benzene	50.0	46.5		ug/L	93%	80 - 120	8121411	12/04/08 10:45
Bromodichloromethane	50.0	55.9		ug/L	112%	80 - 120	8121411	12/04/08 10:45
Bromoform	50.0	50.4		ug/L	101%	69 - 129	8121411	12/04/08 10:45
Bromomethane	50.0	55.1		ug/L	110%	62 - 148	8121411	12/04/08 10:45
2-Butanone	250	229		ug/L	92%	70 - 141	8121411	12/04/08 10:45
Carbon disulfide	50.0	56.3		ug/L	113%	80 - 126	8121411	12/04/08 10:45
Carbon tetrachloride	50.0	56.2		ug/L	112%	76 - 143	8121411	12/04/08 10:45
Chlorobenzene	50.0	47.3		ug/L	95%	80 - 120	8121411	12/04/08 10:45
Chlorodibromomethane	50.0	49.5		ug/L	99%	76 - 125	8121411	12/04/08 10:45
Chloroethane	50.0	49.3		ug/L	99%	77 - 137	8121411	12/04/08 10:45
Chloroform	50.0	46.6		ug/L	93%	80 - 120	8121411	12/04/08 10:45
Chloromethane	50.0	48.1		ug/L	96%	55 - 125	8121411	12/04/08 10:45
1,2-Dibromo-3-chloropropane	50.0	42.1		ug/L	84%	60 - 136	8121411	12/04/08 10:45
1,2-Dibromoethane (EDB)	50.0	49.1		ug/L	98%	80 - 125	8121411	12/04/08 10:45
Dibromomethane	50.0	46.9		ug/L	94%	80 - 124	8121411	12/04/08 10:45
trans-1,4-Dichloro-2-butene	50.0	54.1		ug/L	108%	10 - 150	8121411	12/04/08 10:45
1,2-Dichlorobenzene	50.0	48.5		ug/L	97%	80 - 122	8121411	12/04/08 10:45
1,3-Dichlorobenzene	50.0	48.8		ug/L	98%	80 - 122	8121411	12/04/08 10:45
1,4-Dichlorobenzene	50.0	48.0		ug/L	96%	80 - 120	8121411	12/04/08 10:45
Dichlorodifluoromethane	50.0	45.1		ug/L	90%	35 - 125	8121411	12/04/08 10:45
1,2-Dichloroethane	50.0	49.2		ug/L	98%	69 - 136	8121411	12/04/08 10:45
1,1-Dichloroethene	50.0	53.5		ug/L	107%	76 - 136	8121411	12/04/08 10:45
cis-1,2-Dichloroethene	50.0	49.0		ug/L	98%	80 - 129	8121411	12/04/08 10:45
cis-1,3-Dichloropropene	50.0	49.8		ug/L	100%	80 - 131	8121411	12/04/08 10:45

Client:	Chesapeake Energy Corporation	Work Order	NRL0612
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	415085-0301
Attn:	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Known Val	Analyzed Val	Q	Units	%Rec	Limits	RPD	Analyzed Prep Time
Volatile Organic Compounds by EPA Method 8260B								
8121411-BS1								
1,3-Dichlorobenzene	50.0	49.6		ug/L	99%	80 - 120	8121411	12/04/08 10:45
1,2-Dichloropropane	50.0	45.8		ug/L	92%	80 - 120	8121411	12/04/08 10:45
trans-1,3-Dichloropropene	50.0	50.0		ug/L	100%	80 - 120	8121411	12/04/08 10:45
cis-1,3-Dichloropropene	50.0	50.0		ug/L	100%	80 - 120	8121411	12/04/08 10:45
1,4-Dioxane	5000	4990		ug/L	100%	80 - 120	8121411	12/04/08 10:45
Ethylbenzene	50.0	48.7		ug/L	97%	80 - 120	8121411	12/04/08 10:45
Ethyl Methacrylate	250	240		ug/L	96%	80 - 120	8121411	12/04/08 10:45
Hexachlorobutadiene	50.0	53.3		ug/L	107%	80 - 120	8121411	12/04/08 10:45
2-Hexanone	250	251		ug/L	100%	80 - 120	8121411	12/04/08 10:45
Isobutanol	250	267		ug/L	107%	80 - 120	8121411	12/04/08 10:45
Methylene Chloride	50.0	53.5		ug/L	107%	80 - 120	8121411	12/04/08 10:45
4-Methyl-2-pentanone	250	235		ug/L	94%	80 - 120	8121411	12/04/08 10:45
Styrene	50.0	53.5		ug/L	107%	80 - 120	8121411	12/04/08 10:45
1,1,2,2-Tetrachloroethane	50.0	49.3		ug/L	99%	80 - 120	8121411	12/04/08 10:45
1,1,2,2-Tetrachloroethane	50.0	48.6		ug/L	97%	80 - 120	8121411	12/04/08 10:45
Tetrachloroethene	50.0	47.1		ug/L	94%	80 - 120	8121411	12/04/08 10:45
Toluene	50.0	46.5		ug/L	93%	80 - 120	8121411	12/04/08 10:45
1,2,4-Trichlorobenzene	50.0	50.1		ug/L	100%	80 - 120	8121411	12/04/08 10:45
1,1,1-Trichloroethane	50.0	50.9		ug/L	102%	80 - 120	8121411	12/04/08 10:45
1,1,2-Trichloroethane	50.0	48.8		ug/L	98%	80 - 120	8121411	12/04/08 10:45
Trichloroethene	50.0	47.4		ug/L	95%	80 - 120	8121411	12/04/08 10:45
Trichlorofluoromethane	50.0	46.8		ug/L	94%	80 - 120	8121411	12/04/08 10:45
1,2,3-Trichloropropane	50.0	48.2		ug/L	96%	80 - 120	8121411	12/04/08 10:45
Vinyl acetate	250	294		ug/L	118%	80 - 120	8121411	12/04/08 10:45
Vinyl chloride	50.0	46.4		ug/L	93%	80 - 120	8121411	12/04/08 10:45
Xylenes, total	150	149		ug/L	99%	80 - 120	8121411	12/04/08 10:45
Surrogate: 1,2-Dichloroethane-d4	25.0	26.3			105%	70 - 130		
Surrogate: Dibromofluoromethane	25.0	25.4			102%	70 - 130		
Surrogate: Toluene-d8	25.0	25.8			103%	70 - 130		
Surrogate: 4-Bromofluorobenzene	25.0	25.7			103%	70 - 130		
Fluorobenzene	25.0	25.0		ug/L	100%	70 - 130	8121411	12/04/08 10:45
Chlorobenzene-d5	25.0	25.0		ug/L	100%	70 - 130	8121411	12/04/08 10:45
1,3-Dichlorobenzene-d4	25.0	25.0		ug/L	100%	70 - 130	8121411	12/04/08 10:45
8121411-BS2								
Acrylonitrile	50.0	44.3		ug/L	89%	80 - 120	8121411	12/04/08 10:45
Chloroprene	50.0	50.9		ug/L	102%	80 - 120	8121411	12/04/08 10:45
3-Chloropropene	50.0	51.5		ug/L	103%	80 - 120	8121411	12/04/08 10:45
Isobutanol	500	417		ug/L	83%	80 - 120	8121411	12/04/08 10:45
Methacrylonitrile	500	454		ug/L	91%	80 - 120	8121411	12/04/08 10:45
Methyl Methacrylate	50.0	52.6		ug/L	105%	80 - 120	8121411	12/04/08 10:45

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-2404

[illegible]	Chesapeake Energy Corporation	Work Order:	NRL0912
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4100810701
Attn:	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Reporting Limit	Analyzed Value	Q	Units	%Rec	Target Range	Batch	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B								
8121411-BS2								
Propylene oxide	500	463		ug/L	93%	10 - 150	8121411	12/04/08 11:37
Dibromofluoromethane (S)	25.0	25.0			100%	60 - 140	8121411	12/04/08 11:37
1,2-Dichloroethane-d4 (S)	25.0	25.8			103%	75 - 124	8121411	12/04/08 11:37
Toluene-d8 (S)	25.0	26.0			104%	78 - 121	8121411	12/04/08 11:37
4-Bromofluorobenzene (S)	25.0	24.7			99%	79 - 124	8121411	12/04/08 11:37
Benzene	25.0	25.0		ug/L	97%	50 - 150	8121411	12/04/08 11:37
Chlorobenzene-d5	25.0	25.0		ug/L	98%	50 - 150	8121411	12/04/08 11:37
1,4-Dichlorobenzene-d4	25.0	25.0		ug/L	96%	50 - 150	8121411	12/04/08 11:37
Semivolatile Organic Compounds by EPA Method 8270C								
8120299-BS1								
2-Methylphenol	50.0	22.1	MNR1	ug/L	88%	29 - 127	8120299	12/05/08 15:13
3&4-Methylphenol	50.0	46.0	MNR1	ug/L	92%	39 - 135	8120299	12/05/08 15:13
2,4,6-Trichlorophenol	50.0	48.7	MNR1	ug/L	97%	38 - 132	8120299	12/05/08 15:13
2-Chloronaphthalene	50.0	26.0	MNR1	ug/L	52%	22 - 119	8120299	12/05/08 15:13
Acenaphthylene	50.0	51.7	MNR1	ug/L	103%	43 - 133	8120299	12/05/08 15:13
Dimethylphthalate	50.0	48.7	MNR1	ug/L	97%	37 - 118	8120299	12/05/08 15:13
Benzo(a)anthracene	50.0	45.9	MNR1	ug/L	91%	38 - 133	8120299	12/05/08 15:13
Bis(2-ethylhexyl)phthalate	50.0	50.7	MNR1	ug/L	101%	50 - 122	8120299	12/05/08 15:13
Benzo(b)fluoranthene	50.0	45.0	MNR1	ug/L	90%	47 - 123	8120299	12/05/08 15:13
Benzo(k)fluoranthene	50.0	44.2	MNR1	ug/L	88%	46 - 125	8120299	12/05/08 15:13
Benzo(a)pyrene	50.0	44.6	MNR1	ug/L	89%	25 - 134	8120299	12/05/08 15:13
Di-n-octylphthalate	50.0	46.8	MNR1	ug/L	94%	48 - 135	8120299	12/05/08 15:13
Indeno(1,2,3-cd)pyrene	50.0	52.3	MNR1	ug/L	104%	53 - 134	8120299	12/05/08 15:13
Dibenz(a,h)anthracene	50.0	45.6	MNR1	ug/L	91%	55 - 119	8120299	12/05/08 15:13
Benzo(g,h,i)perylene	50.0	41.6	MNR1	ug/L	83%	33 - 122	8120299	12/05/08 15:13
4,4'-DDD	50.0	28.2	MNR1	ug/L	56%	39 - 108	8120299	12/05/08 15:13
Bis(2-chloroethoxy)methane	50.0	49.0	MNR1	ug/L	98%	48 - 109	8120299	12/05/08 15:13
Bis(2-chloroethyl)ether	50.0	54.6	L, MNR1	ug/L	109%	48 - 104	8120299	12/05/08 15:13
Bis(2-chloroisopropyl)ether	50.0	50.3	MNR1	ug/L	101%	46 - 105	8120299	12/05/08 15:13
2-Chloroethylvinylether	50.0	44.5	MNR1	ug/L	89%	42 - 103	8120299	12/05/08 15:13
2-Chloronaphthalene	50.0	43.7	MNR1	ug/L	87%	33 - 112	8120299	12/05/08 15:13
4-Chlorophenyl-phenylether	50.0	50.5	MNR1	ug/L	101%	50 - 116	8120299	12/05/08 15:13
Chrysene	50.0	46.3	MNR1	ug/L	93%	53 - 116	8120299	12/05/08 15:13
Dibenz(a,h)anthracene	50.0	45.6	MNR1	ug/L	91%	59 - 124	8120299	12/05/08 15:13
Dibenzofuran	50.0	43.5	MNR1	ug/L	87%	53 - 114	8120299	12/05/08 15:13
Diethylphthalate	50.0	56.6	MNR1	ug/L	113%	56 - 120	8120299	12/05/08 15:13
Fluoranthene	50.0	44.2	MNR1	ug/L	88%	24 - 130	8120299	12/05/08 15:13
Fluorene	50.0	42.5	MNR1	ug/L	85%	38 - 109	8120299	12/05/08 15:13
Hexachlorobenzene	50.0	42.8	MNR1	ug/L	86%	28 - 109	8120299	12/05/08 15:13
Hexachlorobutadiene	50.0	39.5	MNR1	ug/L	80%	37 - 122	8120299	12/05/08 15:13

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THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville TN 37204 • 800-765-0980 • [illegible]

Client:	Chesapeake Energy Corporation	Work Order:	NRI0012
	6100 N. Western Avenue	Project Name:	Chesapeake Strife Pro[illegible]
	Oklahoma City, OK 73118	Project Number:	419080007
Attn:	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Known Val	Analyzed Val	Q	Units	% Rec	Limits	RPD	Analyzed Date/Time
Semivolatile Organic Compounds by EPA Method 8270C								
8120299-BS1								
2,4-Dichlorophenol	50.0	40.4	MNR1	ug/L	81%	[illegible]	[illegible]	[illegible]
Diethyl phthalate	50.0	52.5	MNR1	ug/L	105%	[illegible]	[illegible]	[illegible]
2,4-Dimethylphenol	50.0	30.7	MNR1	ug/L	61%	[illegible]	[illegible]	[illegible]
Dimethyl phthalate	50.0	51.6	MNR1	ug/L	103%	[illegible]	[illegible]	[illegible]
4,6-Dinitro-2-methylphenol	50.0	66.2	MNR1	ug/L	132%	[illegible]	[illegible]	[illegible]
1,3-Dinitrobenzene	50.0	51.2	MNR1	ug/L	102%	[illegible]	[illegible]	[illegible]
2,4-Dinitrophenol	50.0	79.0	L, MNR1	ug/L	158%	[illegible]	[illegible]	[illegible]
2,4-Dinitrotoluene	50.0	50.8	MNR1	ug/L	102%	[illegible]	[illegible]	[illegible]
2,6-Dinitrotoluene	50.0	50.4	MNR1	ug/L	101%	[illegible]	[illegible]	[illegible]
Di-n-octyl phthalate	50.0	53.6	MNR1	ug/L	107%	[illegible]	[illegible]	[illegible]
Bis(2-ethylhexyl)phthalate	50.0	51.5	MNR1	ug/L	103%	[illegible]	[illegible]	[illegible]
Fluoranthene	50.0	49.8	MNR1	ug/L	100%	[illegible]	[illegible]	[illegible]
Fluorene	50.0	46.9	MNR1	ug/L	94%	[illegible]	[illegible]	[illegible]
Hexachlorobenzene	50.0	45.9	MNR1	ug/L	92%	[illegible]	[illegible]	[illegible]
Hexachlorobutadiene	50.0	42.0	MNR1	ug/L	84%	[illegible]	[illegible]	[illegible]
Hexachlorocyclopentadiene	50.0	37.6	MNR1	ug/L	75%	[illegible]	[illegible]	[illegible]
Hexachloroethane	50.0	45.3	MNR1	ug/L	91%	[illegible]	[illegible]	[illegible]
Indeno(1,2,3-cd)pyrene	50.0	45.0	MNR1	ug/L	90%	[illegible]	[illegible]	[illegible]
Isophorone	50.0	47.5	MNR1	ug/L	95%	[illegible]	[illegible]	[illegible]
2-Methylnaphthalene	50.0	37.5	MNR1	ug/L	75%	[illegible]	[illegible]	[illegible]
2-Methylphenol	50.0	40.9	MNR1	ug/L	82%	[illegible]	[illegible]	[illegible]
3,4-Methylphenol	50.0	44.5	MNR1	ug/L	89%	[illegible]	[illegible]	[illegible]
Naphthalene	50.0	38.0	MNR1	ug/L	76%	[illegible]	[illegible]	[illegible]
4-Nitroaniline	50.0	43.8	MNR1	ug/L	88%	[illegible]	[illegible]	[illegible]
3-Nitroaniline	50.0	39.4	MNR1	ug/L	79%	[illegible]	[illegible]	[illegible]
2-Nitroaniline	50.0	44.8	MNR1	ug/L	90%	[illegible]	[illegible]	[illegible]
Nitrobenzene	50.0	45.4	MNR1	ug/L	91%	[illegible]	[illegible]	[illegible]
2-Nitrophenol	50.0	42.6	MNR1	ug/L	85%	[illegible]	[illegible]	[illegible]
4-Nitrophenol	50.0	29.6	MNR1	ug/L	59%	[illegible]	[illegible]	[illegible]
N-Nitrosodimethylamine	50.0	39.2	MNR1	ug/L	78%	[illegible]	[illegible]	[illegible]
N-Nitrosodiphenylamine	50.0	50.5	MNR1	ug/L	101%	[illegible]	[illegible]	[illegible]
N-Nitrosodi-n-propylamine	50.0	61.9	L, MNR1	ug/L	124%	[illegible]	[illegible]	[illegible]
Pentachlorophenol	50.0	60.8	MNR1	ug/L	122%	[illegible]	[illegible]	[illegible]
Phenanthrene	50.0	45.9	MNR1	ug/L	92%	[illegible]	[illegible]	[illegible]
Phenol	50.0	26.8	MNR1	ug/L	54%	[illegible]	[illegible]	[illegible]
Pyrene	50.0	49.1	MNR1	ug/L	98%	[illegible]	[illegible]	[illegible]
Pyridine	50.0	8.71	MNR1	ug/L	17%	[illegible]	[illegible]	[illegible]
2,3,5,6-Tetrachlorophenol	50.0	56.9	MNR1	ug/L	114%	[illegible]	[illegible]	[illegible]
1,2,4-Trichlorobenzene	50.0	37.8	MNR1	ug/L	76%	[illegible]	[illegible]	[illegible]
2,4,5-Trichlorophenol	50.0	48.7	MNR1	ug/L	97%	[illegible]	[illegible]	[illegible]
2,4,6-Trichlorophenol	50.0	47.4	MNR1	ug/L	95%	[illegible]	[illegible]	[illegible]

2960 Foster Creighton Blvd. Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client: Chesapeake Energy Corporation
6100 N. Western Avenue
Oklahoma City, OK 73118
Attn: Fred Gipson

Work Order: NRL0072
Project Name: Chesapeake Shale Project - PA Sites
Project Number: 4100810701
Received: 12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec	Target Range	Batch	Analyzed Date/Time
Semivolatile Organic Compounds by EPA Method 8270C								
8120299-BS1								
Surrogate: Terphenyl-d14	50.0	39.9			80%	21 - 125	8120299	12/05/08 15:13
Surrogate: 2,4,6-Tribromophenol	50.0	58.1			116%	23 - 129	8120299	12/05/08 15:13
Surrogate: Phenol-d5	50.0	19.9			40%	10 - 100	8120299	12/05/08 15:13
Surrogate: 2-Fluorobiphenyl	50.0	37.6			75%	34 - 108	8120299	12/05/08 15:13
Surrogate: 2-Fluorophenol	50.0	28.0			56%	16 - 100	8120299	12/05/08 15:13
Surrogate: Nitrobenzene-d5	50.0	42.2			84%	29 - 116	8120299	12/05/08 15:13
8120299-BS2								
a,a-Dimethylphenethylamine	50.0	ND	L2	ug/L	[illegible]	[illegible] - 100	8120299	12/05/08 15:34
Acetophenone	50.0	29.1		ug/L	58%	11 - 139	8120299	12/05/08 15:34
2-Acetylaminofluorene	50.0	28.4		ug/L	57%	38 - 150	8120299	12/05/08 15:34
4-Aminobiphenyl	50.0	26.6		ug/L	53%	10 - 150	8120299	12/05/08 15:34
Aramite	50.0	62.4		ug/L	125%	43 - 150	8120299	12/05/08 15:34
Chlorobenzilate	50.0	49.9		ug/L	100%	52 - 150	8120299	12/05/08 15:34
Diallate	[illegible]	65.8		ug/L	96%	10 - 150	8120299	12/05/08 15:34
1,4-Dichlorobenzene	50.0	53.6		ug/L	107%	37 - 122	8120299	12/05/08 15:34
2,6-Dichlorophenol	50.0	48.2		ug/L	96%	37 - 150	8120299	12/05/08 15:34
Dimethoate	50.0	33.3		ug/L	67%	25 - 150	8120299	12/05/08 15:34
Dimethylaminoazobenzene	50.0	29.9		ug/L	60%	36 - 148	8120299	12/05/08 15:34
7,12-Dimethylbenz(a)anthracene	50.0	62.8		ug/L	126%	39 - 146	8120299	12/05/08 15:34
3,3-Dimethylbenzidine	50.0	27.0		ug/L	54%	10 - 150	8120299	12/05/08 15:34
1,3-Dinitrobenzene	50.0	30.6		ug/L	61%	46 - 153	8120299	12/05/08 15:34
Dinoseb	50.0	66.4		ug/L	133%	41 - 142	8120299	12/05/08 15:34
Diphenylamine	50.0	29.0		ug/L	58%	42 - 159	8120299	12/05/08 15:34
Disulfoton	50.0	33.3		ug/L	67%	27 - 140	8120299	12/05/08 15:34
Ethyl Methanesulfonate	50.0	48.1		ug/L	97%	24 - 121	8120299	12/05/08 15:34
Famphur	50.0	ND	L2	ug/L	0%	10 - 150	8120299	12/05/08 15:34
Hexachlorophene	255	89.2		ug/L	35%	10 - 150	8120299	12/05/08 15:34
Hexachloropropene	50.0	27.5		ug/L	55%	10 - 107	8120299	12/05/08 15:34
Isodrin	50.0	32.5		ug/L	65%	42 - 134	8120299	12/05/08 15:34
Isosafrole	100	54.8	L2	ug/L	55%	71 - 150	8120299	12/05/08 15:34
Kepone	50.0	ND	L2	ug/L	0%	10 - 150	8120299	12/05/08 15:34
Methapyrilene	50.0	ND	L2	ug/L	0%	10 - 125	8120299	12/05/08 15:34
3-Methylcholanthrene	50.0	56.6		ug/L	113%	58 - 121	8120299	12/05/08 15:34
Methyl Methanesulfonate	50.0	35.5		ug/L	71%	10 - 150	8120299	12/05/08 15:34
1,4-Naphthoquinone	50.0	13.5		ug/L	27%	10 - 150	8120299	12/05/08 15:34
1-Naphthylamine	50.0	27.4		ug/L	55%	10 - 134	8120299	12/05/08 15:34
2-Naphthylamine	50.0	24.9		ug/L	50%	10 - 135	8120299	12/05/08 15:34
5-Nitro-o-toluidine	50.0	34.3		ug/L	69%	13 - 150	8120299	12/05/08 15:34
N-Nitrosodi-n-butylamine	50.0	32.1		ug/L	64%	10 - 150	8120299	12/05/08 15:34
N-Nitrosodiethylamine	50.0	27.8		ug/L	56%	37 - 133	8120299	12/05/08 15:34

Client	Chesapeake Energy Corporation	Work Order	NRI0912
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	2.00810731
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Known Val.	Analyzed Val.	Q	Units	%Rec	Control Limits	Batch	Analyzed Date/Time
Semivolatile Organic Compounds by EPA Method 8270C								
8120299-BS2								
N-Nitrosomethylethylamine	50.0	26.5		ug/L	53%	28 - 104	8120299	12/05/08 15:31
N-Nitrosomorpholine	50.0	27.5		ug/L	55%	38 - 126	8120299	12/05/08 15:31
N-Nitrosopiperidine	50.0	29.1		ug/L	58%	38 - 126	8120299	12/05/08 15:31
N-Nitrosopyrrolidine	50.0	28.5		ug/L	57%	38 - 126	8120299	12/05/08 15:31
5-Nitro-o-toluidine	50.0	31.5		ug/L	63%	30 - 130	8120299	12/05/08 15:31
O,O,O-Triethyl phosphorothioate	50.0	29.1		ug/L	58%	37 - 123	8120299	12/05/08 15:31
Parathion-ethyl	50.0	33.2		ug/L	67%	30 - 130	8120299	12/05/08 15:31
Pentachlorobenzene	50.0	30.4		ug/L	61%	37 - 120	8120299	12/05/08 15:31
Pentachloroethane	50.0	24.7		ug/L	49%	31 - 111	8120299	12/05/08 15:31
Pentachloronitrobenzene	50.0	35.0		ug/L	70%	37 - 144	8120299	12/05/08 15:31
Phenacetin	50.0	33.4		ug/L	67%	34 - 127	8120299	12/05/08 15:31
1,4-Phenylenediamine	50.0	ND	L2	ug/L	0%	10 - 130	8120299	12/05/08 15:31
Phorate	50.0	36.9		ug/L	74%	37 - 123	8120299	12/05/08 15:31
2-Picoline	50.0	15.9		ug/L	32%	13 - 116	8120299	12/05/08 15:31
Pronamide	50.0	32.6		ug/L	65%	40 - 130	8120299	12/05/08 15:31
Propylthiouracil	50.0	40.2		ug/L	80%	30 - 130	8120299	12/05/08 15:31
Pyridine	50.0	12.4		ug/L	25%	10 - 130	8120299	12/05/08 15:31
Safrole	50.0	27.9		ug/L	56%	37 - 114	8120299	12/05/08 15:31
Sulfotep	50.0	38.5		ug/L	77%	37 - 127	8120299	12/05/08 15:31
1,2,4,5-Tetrachlorobenzene	50.0	27.5		ug/L	55%	37 - 117	8120299	12/05/08 15:31
2,3,4,6-Tetrachlorophenol	50.0	60.5		ug/L	121%	30 - 130	8120299	12/05/08 15:31
Thionazin	50.0	30.5		ug/L	61%	37 - 123	8120299	12/05/08 15:31
o-Toluidine	50.0	35.4		ug/L	71%	30 - 130	8120299	12/05/08 15:31
1,3,5-Trinitrobenzene	50.0	35.5		ug/L	71%	37 - 133	8120299	12/05/08 15:31
Surrogate: Terphenyl-d14	50.0	37.7			75%	30 - 130	8120299	12/05/08 15:31
Surrogate: 2,4,6-Tribromophenol	50.0	51.1			102%	30 - 130	8120299	12/05/08 15:31
Surrogate: Phenol-d5	50.0	10.7			21%	10 - 130	8120299	12/05/08 15:31
Surrogate: 2-Fluorophenol	50.0	31.4			63%	30 - 130	8120299	12/05/08 15:31
Surrogate: Nitrobenzene-d5	50.0	32.6			65%	30 - 130	8120299	12/05/08 15:31
Surrogate: Nitrobenzene-d5	50.0	39.0			78%	30 - 130	8120299	12/05/08 15:31

CHK00000113

[illegible]	Chesapeake Energy Corporation	Work Order:	NRL0912
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	410981070?
[illegible]	Fred Capshaw	Received	12/03/08 08:30

PROJECT QUALITY CONTROL DATA
LCS Dup

Analyte	Data Qual	Result	Q	Units	Spike Conc.	% Rec.	Target Range	RPD	RPD Limit	Batch	Sample Duplicated	Analyzed Date/Time
General Chemistry Parameters												
8120489-BSD1												
[illegible]		199		mg/dL	[illegible]	100%	90 - 110	18	20	8120489		12/03/08 21:48
8120608-BSD1												
Chloride		99.4		mg/L	100	104%	90 - 110	0.8	20	8120608		12/03/08 23:08
8121050-BSD1												
pH		7.00	[illegible]	pH Units	[illegible]	100%	0 - 200	0.1	200	8121050		12/08/08 20:17
8121281-BSD1												
[illegible]		1.03		mg/L	[illegible]	103.00%	90 - 110	1	20	8121281		12/09/08 09:45
8121525-BSD1												
[illegible]		10.9		mg/L	[illegible]	102%	78 - 114	2	18	8121525		12/10/08 15:57
8121713-BSD1												
Cyanide, Weak Acid Dissociable		0.11		mg/L	0.100	111%	81 - 119	0.9	20	8121713		12/11/08 10:52
8121929-BSD1												
Cyanide		0.0979		mg/L	0.102	98%	90 - 110	0.6	20	8121929		12/15/08 11:51
Dissolved Metals by EPA Method 6010B												
8120074-BSD1												
Aluminum		2.02		mg/L	2.00	101%	80 - 120	3	20	8120074		12/08/08 18:45
Antimony		0.0907		mg/L	0.100	90%	80 - 120	0.1	20	8120074		12/08/08 18:45
Arsenic		0.0865		mg/L	0.0930	93%	80 - 120	1	20	8120074		12/08/08 18:45
Barium		2.02		mg/L	2.00	101%	80 - 120	2	20	8120074		12/08/08 18:45
Beryllium		0.0519		mg/L		104%	80 - 120	3	20	8120074		12/08/08 18:45
Cadmium		0.0516		mg/L	0.0500	103%	80 - 120	3	20	8120074		12/08/08 18:45
Chromium		0.211		mg/L	0.200	106%	80 - 120	3	20	8120074		12/08/08 18:45
Cobalt		0.543		mg/L	0.500	109%	80 - 120	2	20	8120074		12/08/08 18:45
Copper		0.264		mg/L	0.250	106%	80 - 120	3	20	8120074		12/08/08 18:45
Iron		1.05		mg/L	1.00	105%	80 - 120	5	20	8120074		12/08/08 18:45
Lead		0.0498		mg/L	0.0500	100%	80 - 120	1	20	8120074		12/08/08 18:45
Manganese		0.535		mg/L	0.500	107%	80 - 120	2	20	8120074		12/08/08 18:45
Molybdenum		0.508		mg/L	0.500	102%	80 - 120	3	20	8120074		12/08/08 18:45
Nickel		0.520		mg/L	0.500	104%	80 - 120	3	20	8120074		12/08/08 18:45
Selenium		0.0693		mg/L	0.0700	99%	80 - 120	10	20	8120074		12/08/08 18:45
Silver		0.0526		mg/L	0.0500	105%	80 - 120	4	20	8120074		12/08/08 18:45
Strontium		1.02		mg/L	1.00	102%	80 - 120	0.5	20	8120074		12/08/08 18:45
Thallium		0.0485		mg/L	0.0500	97%	80 - 120	20	20	8120074		12/09/08 09:28
Tin		1.04		mg/L	1.00	104%	80 - 120	1	20	8120074		12/08/08 18:45
Titanium		0.996		mg/L	1.00	100%	80 - 120	1	20	8120074		12/08/08 18:45

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville, TN 37204 - 800-765-0[illegible]

Client	Chesapeake Energy Corporation	Work Order	MRI[illegible]
	6100 N. Western Avenue	Project Name	Chesapeake State P[illegible]
	Oklahoma City, OK 73118	Project Number	411908137.0
Attn	Fred Gipson	Received	12/02/2008 08:30

PROJECT QUALITY CONTROL DATA
LCS Dup - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc.	% Rec.	Target Range	RPD	Limit	Result	Analyzed Date/Time
Dissolved Metals by EPA Method 6010B											
8120074-BSD1											
Vanadium		0.515		mg/l	[illegible]	[illegible]%	80 - 120	2	20	[illegible]	[illegible]
Zinc		0.529		mg/l	[illegible]	[illegible]%	80 - 120	2	20	[illegible]	[illegible]
Mercury by EPA Methods 7470A/7471A											
8120683-BSD1											
Mercury		0.00783		mg/L	[illegible]	78%	75 - 125	21	20	[illegible]	[illegible]
Dissolved Mercury by EPA Methods 7470A/7471A											
8121171-BSD1											
Mercury		0.00111		ug/L	[illegible]	[illegible]%	78 - 124	15	25	[illegible]	[illegible]
Volatile Organic Compounds by EPA Method 8260B											
8121411-BSD1											
Acetone		2.98		ug/L	[illegible]	[illegible]%	62 - 154	2	50	[illegible]	[illegible]
Acrolein		1350	I	ug/l	[illegible]	[illegible]%	10 - 156	2	50	[illegible]	[illegible]
Acrylonitrile		35		ug/l	[illegible]	[illegible]%	75 - 130	1	1	[illegible]	[illegible]
Benzene		46.8		ug/l	[illegible]	94%	80 - 137	1	21	[illegible]	[illegible]
Bromodichloromethane		55.0		ug/l	[illegible]	[illegible]%	83 - 137	2	21	[illegible]	[illegible]
Bromoform		50.7		ug/l	[illegible]	[illegible]%	69 - 137	0.6	24	[illegible]	[illegible]
Bromomethane		55.4		ug/l	[illegible]	[illegible]%	62 - 148	0.6	24	[illegible]	[illegible]
2-Butanone		252		ug/l	[illegible]	[illegible]%	75 - 141	1	30	[illegible]	[illegible]
Carbon disulfide		57.4		ug/L	[illegible]	[illegible]%	80 - 120	2	16	[illegible]	[illegible]
Carbon Tetrachloride		56.8		ug/L	[illegible]	[illegible]%	76 - 143	1	29	[illegible]	[illegible]
Chlorobenzene		48.4		ug/l	[illegible]	[illegible]%	80 - 120	2	27	[illegible]	[illegible]
Chlorodibromomethane		50.9		ug/l	[illegible]	[illegible]%	76 - 123	0.9	21	[illegible]	[illegible]
Chloroethane		19.3		ug/L	[illegible]	[illegible]%	77 - 127	0.02	32	[illegible]	[illegible]
Chloroform		47.2		ug/l	[illegible]	[illegible]%	80 - 133	1	25	[illegible]	[illegible]
Chloromethane		47.8		ug/l	[illegible]	[illegible]%	33 - 125	0.6	21	[illegible]	[illegible]
1,2-Dibromo-3-chloropropane		4.46		ug/l	[illegible]	[illegible]%	60 - 136	1	29	[illegible]	[illegible]
1,2-Dibromoethane (EDB)		50.1		ug/l	[illegible]	[illegible]%	80 - 123	2	21	[illegible]	[illegible]
Dibromomethane		47.6		ug/L	[illegible]	[illegible]%	80 - 124	2	20	[illegible]	[illegible]
trans-1,4-Dichloro-2-butene		53.4		ug/l	[illegible]	[illegible]%	10 - 150	1	50	[illegible]	[illegible]
1,2-Dichlorobenzene		49.2		ug/l	[illegible]	[illegible]%	80 - 122	2	24	[illegible]	[illegible]
1,3-Dichlorobenzene		49.3		ug/l	[illegible]	[illegible]%	80 - 123	1	18	[illegible]	[illegible]
1,4-Dichlorobenzene		48.6		ug/L	[illegible]	[illegible]%	80 - 120	1	19	[illegible]	[illegible]
Dichlorodifluoromethane		45.5		ug/L	[illegible]	[illegible]%	36 - 120	0.8	14	[illegible]	[illegible]
1,2-Dichloroethane		49.5		ug/L	[illegible]	[illegible]%	69 - 136	0.4	26	[illegible]	[illegible]
1,1-Dichloroethane		51.0		ug/l	[illegible]	[illegible]%	76 - 138	0.9	15	[illegible]	[illegible]
cis-1,2-Dichloroethene		49.6		ug	[illegible]	[illegible]%	80 - 129	1	16	[illegible]	[illegible]
trans-1,2-Dichloroethene		51.0		ug/l	[illegible]	[illegible]%	80 - 131	2	16	[illegible]	[illegible]
1,1-Dichloroethene		50.3		ug/l	[illegible]	[illegible]%	80 - 127	1	20	[illegible]	[illegible]

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	41008107[illegible]
Attn	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

LCS Dup - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date Time
Volatile Organic Compounds by EPA Method 8260B												
8121411-BSD1												
1,2-Dichloropropane		44.1		ug/L	50.0	88%	80 - 120	0.6	19	8121411		12/04/08 11:11
trans-1,3-Dichloropropene		50.7		ug/L	50.0	101%	70 - 132	1	20	8121411		12/04/08 11:11
cis-1,3-Dichloropropene		57.1		ug/L	50.0	114%	76 - 135	2	19	8121411		12/04/08 11:11
1,4-Dioxane		4860		ug/L	5000	97%	38 - 150	0.7	49	8121411		12/04/08 11:11
Ethylbenzene		49.9		ug/L	50.0	100%	80 - 128	1	17	8121411		12/04/08 11:11
Ethyl Methacrylate		219		ug/L	250	88%	78 - 135	3	30	8121411		12/04/08 11:11
Hexachlorobutadiene		55.0		ug/L	50.0	110%	68 - 148	5	31	8121411		12/04/08 11:11
2-Hexanone		254		ug/L	250	102%	67 - 138	1	21	8121411		12/04/08 11:11
Iodomethane		220		ug/L	250	88%	76 - 143	4	31	8121411		12/04/08 11:11
Methylene Chloride		54.0		ug/L	50.0	108%	76 - 135	6.0	18	8121411		12/04/08 11:11
4-Methyl-2-pentanone		209		ug/L	250	98%	67 - 143	2	[illegible]	8121411		12/04/08 11:11
Styrene		55.5		ug/L	50.0	111%	[illegible] - 139	4	16	8121411		12/04/08 11:11
1,1,2,2-Tetrachloroethane		48.9		ug/L	50.0	98%	65 - 145	0.7	28	8121411		12/04/08 11:11
1,1,1,2-Tetrachloroethane		50.5		ug/L	50.0	101%	80 - 135	3	17	8121411		12/04/08 11:11
Tetrachloroethene		48.5		ug/L	50.0	97%	80 - 125	2	27	8121411		12/04/08 11:11
Toluene		47.0		ug/L	50.0	94%	80 - 125	1	19	8121411		12/04/08 11:11
1,2,4-Trichlorobenzene		50.6		ug/L	50.0	101%	60 - 140	1	26	8121411		12/04/08 11:11
1,1,1-Trichloroethane		52.6		ug/L	50.0	105%	80 - 131	2	16	8121411		12/04/08 11:11
1,1,2-Trichloroethane		49.5		ug/L	50.0	99%	80 - 122	1	21	8121411		12/04/08 11:11
Trichloroethene		47.6		ug/L	50.0	95%	80 - 131	0.4	28	8121411		12/04/08 11:11
Trichlorofluoromethane		47.2		ug/L	50.0	94%	68 - 135	0.5	20	8121411		12/04/08 11:11
1,2,3-Trichloropropane		48.5		ug/L	50.0	97%	60 - 127	0.9	26	8121411		12/04/08 11:11
Vinyl acetate		297		ug/L	250	119%	37 - 150	1	29	8121411		12/04/08 11:11
Vinyl chloride		45.9		ug/L	50.0	91%	69 - 130	1	25	8121411		12/04/08 11:11
Xylenes, total		155		ug/L	150	103%	80 - 129	1	15	8121411		12/04/08 11:11
Surrogate: 1,2-Dichloroethane-d4		26.7		ug/L	25.0	107%	60 - 140			8121411		12/04/08 11:11
Surrogate: Dibromofluoromethane		26.4		ug/L	25.0	106%	75 - 124			8121411		12/04/08 11:11
Surrogate: Toluene-d8		25.9		ug/L	25.0	104%	78 - 121			8121411		12/04/08 11:11
Surrogate: 4-Bromofluorobenzene		25.7		ug/L	25.0	103%	79 - 124			8121411		12/04/08 11:11
Fluorobenzene		25.0		ug/L	25.0	99%	50 - 200			8121411		12/04/08 11:11
Chlorobenzene-d5		25.0		ug/L	25.0	98%	50 - 200			8121411		12/04/08 11:11
1,4-Dichlorobenzene-d4		25.0		ug/L	25.0	99%	50 - 200			8121411		12/04/08 11:11
8121411-BSD2												
Acetonitrile		539		ug/L	500	108%	10 - 150	2	50	8121411		12/04/08 12:04
Chloroprene		49.5		ug/L	50.0	99%	10 - 150	2	50	8121411		12/04/08 12:04
[illegible]		48.7		ug/L	50.0	97%	10 - 150	6	50	8121411		12/04/08 12:04
[illegible]		417		ug/L	500	83%	10 - 150	0.007	50	8121411		12/04/08 12:04
Methacrylonitrile		561		ug/L	500	112%	10 - 150	1	50	8121411		12/04/08 12:04
[illegible]		119		ug/L	110	108%	10 - 150	3	50	8121411		12/04/08 12:04
[illegible]		468		ug/L	500	93%	10 - 150	0.7	50	8121411		12/04/08 12:04

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THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation	Work Order:	NRL06.2
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Site
	Oklahoma City, OK 73118	Project Number:	4109810701
Attn	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

LCS Dup - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B												
8121411-BSD2												
Surrogate: 1,2-Dichloroethane-d4		25.5		ug/L	25.0	102%	60 - 146			8121411		[illegible]
Surrogate: Dibromofluoromethane		25.5		ug/L	25.0	102%	75 - 124			8121411		[illegible]
Surrogate: Toluene-d8		26.8		ug/L	25.0	[illegible]	78 - 121			[illegible]		[illegible]
Surrogate: 4-Bromofluorobenzene		25.2		ug/L	25.0	[illegible]	79 - 124			[illegible]		[illegible]
Fluorobenzene		25.6		ug/L	25.0	[illegible]	50 - 200			[illegible]		[illegible]
Chlorobenzene-d5		25.1		ug/L	25.0	[illegible]	50 - 200			[illegible]		[illegible]
1,4-Dichlorobenzene-d4		25.[illegible]		ug/L	25.0	95%	50 - 200			[illegible]		[illegible]

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0012
		Project Name:	Chesapeake Shale Project - PA Sites
		Project Number:	4100810701
Attn	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Matrix Spike

Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc	% Rec	Target Range	Batch	Sample Spiked	Analyzed Date/Time
General Chemistry Parameters										
8120197-MS1										
Total Organic Carbon	1.71	19.6		ug/mL	20.0	89%	77 - 128	8120197	NRK2173-01	12/02/08 08:30
8120390-MS1										
MBAS (mol wt 320)	0.333	0.754	M8	mg/L	0.750	56%	81 - 118	8120390	NRL0012-01	12/03/08 07:30
8120548-MS1										
Nitrate/Nitrite as N	0.0772	3.89	M2	mg/L	6.00	63%	90 - 110	8120548	NPL2656-01	12/03/08 17:58
8120984-MS1										
Sulfide	2.50	19.5		mg/L	20.0	85%	76 - 115	8120984	NRK2656-01	12/05/08 15:30
8121062-MS1										
Specific conductance	1520	1690		umhos/cm	101	63%	0 - 200	8121062	NRL3175-02	12/06/08 14:40
8121078-MS1										
Chemical Oxygen Demand	18.0	67.2		mg/L	50.0	98%	90 - 110	8121078	NRK2420-01	12/05/08 21:14
8121281-MS1										
Fluoride	1370	[illegible]		mg/L	0.0100	102000%	72 - 121	8121281	NRK2656-01	12/09/08 09:15
8121525-MS1										
Oil & Grease, HEM	[illegible]	43.0		mg/L	40.0	103%	78 - 114	8121525	NRL0719-01	12/10/08 15:57
8121531-MS1										
Phenols	ND	0.711		mg/L	0.750	95%	50 - 150	8121531	NRL0291-06	12/11/08 12:10
8121713-MS1										
Cyanide, Weak Acid Dissociable	ND	1.11		mg/L	1.00	111%	72 - 121	8121713	NRL0722-01RE1	12/11/08 10:52
8121720-MS1										
Total Kjeldahl Nitrogen	8.17	10.4	M2	mg/L	2.50	88%	90 - 110	8121720	NRL0527-01	12/11/08 16:27
8121721-MS1										
Phosphorus	1.39	1.25	M8	mg/L	2.00	-7%	76 - 112	8121721	NRL0299-01	12/12/08 12:17
8121929-MS1										
Cyanide	ND	0.0982		mg/L	0.100	98%	68 - 134	8121929	NRL0668-01	12/15/08 11:31
8122287-MS1										
Ammonia as N	0.835	5.57		mg/L	5.00	94%	90 - 110	8122287	NRL0299-01	12/16/08 14:33
8122645-MS1										

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2960 Foster Creighton Road Nashville, TN 37204 - (615) 726-0177 - Fax (615) 726-3404

Client	Chesapeake Energy Corporation	Work Order	NRL0612
	6100 N. Western Avenue	Project Name	Chesapeake State Penn (PA Wide)
	Oklahoma City, OK 73118	Project Number	4100816701
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Matrix Spike - Cont.

Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc.	% Rec.	Target Range	RPD	Sample Spiked	Analyzed Date/Time
General Chemistry Parameters										
8122645-MS1										
Chromium (VI)	0.22	ND	M4	mg/L	0.100	92%	85 - 115		[illegible]	[illegible]
General Chemistry Parameters - Dissolved										
8122645-MS1										
Chromium (VI)	7.51	ND	M4	mg/L	0.100	75%	85 - 115		[illegible]	[illegible]
Total Metals by EPA Method 6010B										
8120066-MS1										
Aluminum	0.338	2.29		mg/L	2.00	103%	75 - 125		SRK[illegible]	[illegible]
Antimony	N.D.	0.112		mg/L	0.100	112%	75 - 125		SRK[illegible]	[illegible]
Arsenic	ND	0.0502		mg/L	0.0500	100%	75 - 125		SRK[illegible]	[illegible]
Barium	0.0543	2.07		mg/L	2.00	101%	75 - 125		SRK[illegible]	[illegible]
Beryllium	N.D.	0.0559		mg/L	0.0500	106%	75 - 125		SRK[illegible]	[illegible]
Boron	0.0622	1.10		mg/L	1.00	103%	75 - 125		SRK[illegible]	[illegible]
Cadmium	0.0122	0.0649		mg/L	0.0500	103%	75 - 125		SRK[illegible]	[illegible]
Chromium	0.0531	0.281		mg/L	0.200	105%	75 - 125		SRK[illegible]	[illegible]
Cobalt	0.00920	0.540		mg/L	0.500	106%	75 - 125		SRK[illegible]	[illegible]
Copper	0.0267	0.281		mg/L	0.250	102%	75 - 125		SRK[illegible]	[illegible]
Iron	3.95	5.16		mg/L	1.00	121%	75 - 125		SRK[illegible]	[illegible]
Lead	0.00626	0.0562		mg/L	0.0500	100%	75 - 125		SRK[illegible]	[illegible]
Manganese	0.0368	0.570		mg/L	0.500	107%	75 - 125		SRK[illegible]	[illegible]
Molybdenum	0.0175	0.542		mg/L	0.500	101%	75 - 125		SRK[illegible]	[illegible]
Nickel	0.0328	0.537		mg/L	0.500	100%	75 - 125		SRK[illegible]	[illegible]
Selenium	ND	0.0501		mg/L	0.0500	100%	75 - 125		SRK[illegible]	[illegible]
Silver	0.0118	0.0630		mg/L	0.0500	102%	75 - 125		SRK[illegible]	[illegible]
Strontium	0.128	1.12		mg/L	1.00	99%	75 - 125		SRK[illegible]	[illegible]
Thallium	ND	0.0403		mg/L	0.0500	93%	75 - 125		SRK[illegible]	[illegible]
Tin	0.00880	1.06		mg/L	1.00	105%	75 - 125		SRK[illegible]	[illegible]
Titanium	0.0123	1.00		mg/L	1.00	99%	75 - 125		SRK[illegible]	[illegible]
Vanadium	0.0161	0.518		mg/L	0.500	102%	75 - 125		SRK[illegible]	[illegible]
Zinc	0.0519	0.582		mg/L	0.500	106%	75 - 125		SRK[illegible]	[illegible]
Dissolved Metals by EPA Method 6010B										
8120074-MS1										
Aluminum	0.0411	1.4		mg/L	1.00	100%	75 - 125		[illegible]	[illegible]
Antimony	ND	0.0872		mg/L	0.100	87%	75 - 125		[illegible]	[illegible]
Arsenic	0.0191	0.109		mg/L	0.0833	110%	75 - 125		[illegible]	[illegible]

CHK00000119

[illegible]	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK, 73118	Project Number:	4190810701
Attn:	Ted Corcoran	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Matrix Spike - Cont.

Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc.	% Rec.	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Dissolved Metals by EPA Method 6010B										
8120074-MS1										
Boron	ND	2.28		mg/L	2.00	108%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Beryllium	ND	0.0499		mg/L	0.0500	100%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Cadmium	ND	0.0426		mg/L	0.0500	85%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Chromium	ND	0.198		mg/L	0.200	99%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Cobalt	ND	0.509		mg/L	0.500	102%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Copper	ND	0.259		mg/L	0.250	104%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Iron	64.8	66.2	M7	mg/L	1.00	162%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Lead	ND	0.0488		mg/L	0.0500	98%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Manganese	1.76	2.27		mg/L	0.500	102%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Molybdenum	ND	0.489		mg/L	0.500	98%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Nickel	ND	0.475		mg/L	0.500	96%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Selenium	ND	0.0426		mg/L	0.0500	85%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Silver	ND	0.0503		mg/L	0.0500	101%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Strontium	0.289	1.29		mg/L	1.00	101%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Thallium	ND	0.0415		mg/L	0.0500	83%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Tin	ND	1.02		mg/L	1.00	102%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Titanium	0.00170	0.996		mg/L	1.00	99%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Vanadium	0.021	0.501		mg/L	0.500	100%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Zinc	0.21	0.515		mg/L	0.500	103%	75 - 125	8120074	NRL0536-08	12/08/08 19:07
Mercury by EPA Methods 7470A/7471A										
8120683-MS1										
Mercury	0.0186	0.00111		mg/L	0.00100	92%	85 - 115	8120683	NRL0536-01	12/04/08 14:57
Dissolved Mercury by EPA Methods 7470A/7471A										
8121171-MS1										
Mercury	ND	0.00120		mg/L	0.00100	120%	85 - 115	8121171	NRL0540-20	12/09/08 15:47
Volatile Organic Compounds by EPA Method 8260B										
8121411-MS1										
Acetone	ND	253		ug/L	250	102%	55 - 148	8121411	NRL0266-01	12/04/08 21:19
Acrolein	ND	1219	M7	ug/L	250	488%	10 - 196	8121411	NRL0266-01	12/04/08 21:19
Acrylonitrile	ND	257		ug/L	250	103%	54 - 157	8121411	NRL0266-01	12/04/08 21:19
Benzene	ND	46.2		ug/L	50.0	92%	68 - 143	8121411	NRL0266-01	12/04/08 21:19
Bromodichloromethane	ND	53.5		ug/L	50.0	107%	80 - 132	8121411	NRL0266-01	12/04/08 21:19
Bromoform	ND	48.6		ug/L	50.0	97%	67 - 123	8121411	NRL0266-01	12/04/08 21:19
Bromomethane	ND	50.2		ug/L	50.0	100%	39 - 166	8121411	NRL0266-01	12/04/08 21:19
2-Butanone	ND	213		ug/L	250	85%	50 - 154	8121411	NRL0266-01	12/04/08 21:19

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THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville TN 37204 * 800-765-0980 * Fax 615-726-3404

Client:	Chesapeake Energy Corporation	Work Order:	NRL[illegible]012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Site
	Oklahoma City, OK 73118	Project Number:	410081070[illegible]
Attn:	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Matrix Spike - Cont.

Analyte	Orig. Val	MS Val	Q	Units	Spike Conc	% Rec	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B										
8121411-MS1										
Carbon disulfide	ND	61.4		ug/L	50.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Carbon Tetrachloride	ND	[illegible]		ug/L	50.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chlorobenzene	ND	47.4		ug/L	50.0	95%	[illegible]	[illegible]	[illegible]	[illegible]
Chlorodibromomethane	ND	48.2		ug/L	50.0	97%	73 - 125	[illegible]	[illegible]	[illegible]
Chloroethane	ND	47.2		ug/L	50.0	94%	71 - 151	[illegible]	[illegible]	[illegible]
Chloroform	ND	46.2		ug/L	50.0	92%	79 - 132	[illegible]	[illegible]	[illegible]
Chloromethane	ND	59.4		ug/L	50.0	119%	35 - 125	[illegible]	[illegible]	[illegible]
1,2-Dibromo-3-chloropropane	ND	44.7		ug/L	50.0	89%	60 - 13[illegible]	[illegible]	[illegible]	[illegible]
1,2-Dibromoethane (EDB)	ND	47.7		ug/L	50.0	95%	80 - 132	[illegible]	[illegible]	[illegible]
Dibromomethane	ND	45.5		ug/L	50.0	92%	79 - 131	[illegible]	[illegible]	[illegible]
trans-1,4-Dichloro-2-butene	ND	52.[illegible]		ug/L	50.0	106%	10 - 200	[illegible]	[illegible]	[illegible]
1,2-Dichlorobenzene	ND	47.1		ug/L	50.0	94%	86 - 126	[illegible]	[illegible]	[illegible]
1,3-Dichlorobenzene	ND	47.6		ug/L	50.0	95%	7[illegible] - 132	[illegible]	[illegible]	[illegible]
1,4-Dichlorobenzene	ND	46.8		ug/L	50.0	94%	80 - 12[illegible]	[illegible]	[illegible]	[illegible]
Dichlorodifluoromethane	ND	47.2		ug/L	50.0	94%	36 - 146	[illegible]	[illegible]	[illegible]
1,1-Dichloroethane	ND	47.[illegible]		ug/L	50.0	95%	53 - 146	[illegible]	[illegible]	[illegible]
1,2-Dichloroethane	ND	53.5		ug/L	50.0	107%	76 - 131	[illegible]	[illegible]	[illegible]
cis-1,2-Dichloroethene	ND	49.0		ug/L	50.0	98%	78 - 141	[illegible]	[illegible]	[illegible]
trans-1,2-Dichloroethene	ND	54.9		ug/L	50.0	110%	78 - 137	[illegible]	[illegible]	[illegible]
1,1-Dichloroethene	ND	53.5		ug/L	50.0	107%	63 - 155	[illegible]	[illegible]	[illegible]
1,2-Dichloropropane	ND	43.2		ug/L	50.0	86%	77 - 128	[illegible]	[illegible]	[illegible]
trans-1,3-Dichloropropene	ND	49.0		ug/L	50.0	98%	65 - 137	[illegible]	[illegible]	[illegible]
cis-1,3-Dichloropropene	ND	55.6		ug/L	50.0	111%	[illegible]	[illegible]	[illegible]	[illegible]
1,4-Dioxane	ND	418		ug/L	500	84%	[illegible]	[illegible]	[illegible]	[illegible]
Ethylbenzene	ND	48.5		ug/L	50.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethyl Methacrylate	ND	259		ug/L	250	104%	[illegible]	[illegible]	[illegible]	[illegible]
Hexachlorobutadiene	ND	49.5		ug/L	50.0	99%	[illegible]	[illegible]	[illegible]	[illegible]
2-Hexanone	ND	246		ug/L	250	99%	[illegible]	[illegible]	[illegible]	[illegible]
Iodomethane	ND	129		ug/L	250	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methylene Chloride	ND	53.7		ug/L	50.0	107%	[illegible]	[illegible]	[illegible]	[illegible]
4-Methyl-2-pentanone	ND	243		ug/L	250	97%	55 - 155	[illegible]	[illegible]	[illegible]
Styrene	ND	51.9		ug/L	50.0	104%	[illegible]	[illegible]	[illegible]	[illegible]
1,1,2,2-Tetrachloroethane	ND	49.6		ug/L	50.0	99%	55 - 152	[illegible]	[illegible]	[illegible]
1,1,1,2-Tetrachloroethane	ND	48.2		ug/L	50.0	96%	75 - 140	[illegible]	[illegible]	[illegible]
Tetrachloroethene	ND	48.6		ug/L	50.0	97%	67 - 15[illegible]	[illegible]	[illegible]	[illegible]
Toluene	ND	46.5		ug/L	50.0	91%	75 - 139	[illegible]	[illegible]	[illegible]
1,2,4-Trichlorobenzene	ND	47.5		ug/L	50.0	95%	55 - 135	[illegible]	[illegible]	[illegible]

2960 Foster Creighton Road Nashville TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order	NRL6912
		Project Name	Chesapeake Shale Project - PA Sites
		Project Number	4190810701
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Matrix Spike - Cont.

Analyte	Orig Val	MS Val	Q	Units	Spike Conc	%Rec	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B										
8121411-MS1										
1,1-Dichloroethene	ND	52.4		ug/L	50.0	104%	80 - 130	8121411	NRL0266-01	12/04/08 21:19
1,2-Dichloroethane	ND	48.6		ug/L	50.0	97%	77 - 128	8121411	NRL0266-01	12/04/08 21:19
Trichloroethene	ND	47.2		ug/L	50.0	94%	57 - 158	8121411	NRL0266-01	12/04/08 21:19
Trichlorofluoromethane	ND	59.2		ug/L	50.0	118%	68 - 145	8121411	NRL0266-01	12/04/08 21:19
1,2,3-Trichloropropane	ND	48.5		ug/L	50.0	97%	55 - 137	8121411	NRL0266-01	12/04/08 21:19
Vinyl acetate	ND	278		ug/L	250	111%	23 - 169	8121411	NRL0266-01	12/04/08 21:19
Vinyl chloride	ND	51.6		ug/L	50.0	103%	59 - 156	8121411	NRL0266-01	12/04/08 21:19
Xylenes, total	ND	148		ug/L	150	99%	80 - 130	8121411	NRL0266-01	12/04/08 21:19
Surrogate: 1,2-Dichloroethane-d4		26.9		ug/L	25.0	107%	60 - 140	8121411	NRL0266-01	12/04/08 21:19
Surrogate: Dibromofluoromethane		26.5		ug/L	25.0	106%	75 - 129	8121411	NRL0266-01	12/04/08 21:19
Surrogate: Toluene-d8		26.2		ug/L	25.0	105%	78 - 121	8121411	NRL0266-01	12/04/08 21:19
Surrogate: 4-Bromofluorobenzene		26.8		ug/L	25.0	107%	79 - 124	8121411	NRL0266-01	12/04/08 21:19
Chlorobenzene		25.0		ug/L	25.0	100%	50 - 200	8121411	NRL0266-01	12/04/08 21:19
Dibromochloromethane		25.0		ug/L	25.0	100%	50 - 200	8121411	NRL0266-01	12/04/08 21:19
1,3-Dichlorobenzene		25.0		ug/L	25.0	100%	50 - 200	8121411	NRL0266-01	12/04/08 21:19

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville TN [illegible]

Client	Chesapeake Energy Corporation	Work Order	NRI9017
	6100 N. Western Avenue	Project Name	Chesapeake shale [illegible]
	Oklahoma City, OK 73118	Project Number	410681[illegible]01
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

Matrix Spike Dup

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc.	% Rec.	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
General Chemistry Parameters												
8120197-MSD1												
Total Organic Carbon	[illegible]	[illegible]		mg/kg	[illegible]	88%	77 - 128	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8120390-MSD1												
MBAS (molecular 320)	0.533	[illegible]	M8	mg/L	[illegible]	48%	84 - 118	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8120548-MSD1												
Nitrate/Nitrite as N	[illegible]	3.88	M2	mg/L	[illegible]	63%	90 - 110	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8120984-MSD1												
Sulfide	2.50	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8121062-MSD1												
Specific conductance	1823	1800		umhos/cm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8121078-MSD1												
Chemical Oxygen Demand	[illegible]	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8121281-MSD1												
Fluoride	[illegible]	[illegible]		mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8121531-MSD1												
Phenolics	ND	0.745		mg/L	[illegible]	99%	80 - 120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8121720-MSD1												
Total Kjeldahl Nitrogen	[illegible]	3.02	M2	mg/L	2.50	80%	90 - 110	35	20	[illegible]	[illegible]	[illegible]
8121721-MSD1												
Phosphorus	[illegible]	[illegible]	B5	mg/L	2.00	97%	70 - 112	91	20	[illegible]	[illegible]	[illegible]
8121929-MSD1												
Cyanide	ND	0.0335		mg/L	[illegible]	97%	90 - 110	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8122287-MSD1												
Ammonia as N	0.843	[illegible]		mg/L	[illegible]	95%	90 - 110	[illegible]	20	[illegible]	[illegible]	[illegible]
8122645-MSD1												
Chromium (VI)	[illegible]	ND	M4	mg/L	[illegible]	92.20%	85 - 115	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
General Chemistry Parameters - Dissolved												
8122645-MSD1												
Chromium (VI)	[illegible]	ND	M4	mg/L	[illegible]	781.5%	85 - 115	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CHK00000123

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2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client	Chesapeake Energy Corporation 6100 N. Western Avenue Oklahoma City, OK 73118	Work Order:	NRL0612
		Project Name:	Chesapeake Shale Project - PA Sites
		Project Number:	410081C701
Attn	Fred Gipson	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

Matrix Spike Dup - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Total Metals by EPA Method 6010B												
8120066-MSD1												
Aluminum	0.238	2.19		mg/L	2.00	98%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Antimony	ND	0.104		mg/L	0.100	104%	75 - 125	7	20	8120066	NRK2487-02	12/05/08 17:21
Arsenic	ND	0.0486		mg/L	0.0500	97%	75 - 125	3	20	8120066	NRK2487-02	12/05/08 17:21
Barium	0.0552	1.97		mg/L	2.00	96%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Beryllium	ND	0.0506		mg/L	0.0500	101%	75 - 125	4	20	8120066	NRK2487-02	12/05/08 17:21
Boron	0.0622	1.03		mg/L	1.00	97%	75 - 125	6	20	8120066	NRK2487-02	12/05/08 17:21
Cadmium	0.0137	0.0612		mg/L	0.0500	97%	75 - 125	4	20	8120066	NRK2487-02	12/05/08 17:21
Chromium	0.0201	0.219		mg/L	0.200	100%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Cobalt	[illegible]	0.515		mg/L	0.500	101%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Copper	[illegible]	0.266		mg/L	0.250	[illegible]	75 - 125	4	20	8120066	NRK2487-02	12/05/08 17:21
Iron	[illegible]	4.90		mg/L	[illegible]	95%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Lead	[illegible]	0.0535		mg/L	0.0500	96%	75 - 125	3	20	8120066	NRK2487-02	12/05/08 17:21
Manganese	[illegible]	0.545		mg/L	0.500	95%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Molybdenum	[illegible]	0.515		mg/L	0.500	96%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Nickel	0.0270	0.514		mg/L	0.500	95%	75 - 125	4	20	8120066	NRK2487-02	12/05/08 17:21
Selenium	ND	0.0457		mg/L	0.0500	91%	75 - 125	2	20	8120066	NRK2487-02	12/05/08 17:21
Silver	0.0118	0.0621		mg/L	0.0500	101%	75 - 125	1	20	8120066	NRK2487-02	12/05/08 17:21
Strontium	0.128	1.03		mg/L	1.00	91%	75 - 125	7	20	8120066	NRK2487-02	12/05/08 17:21
Thallium	ND	0.0460		mg/L	0.0500	92%	75 - 125	0.7	20	8120066	NRK2487-02	12/05/08 17:21
Tin	0.03887	0.962		mg/L	1.00	95%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Titanium	0.0122	0.960		mg/L	1.00	95%	75 - 125	4	20	8120066	NRK2487-02	12/05/08 17:21
Vanadium	0.0164	0.495		mg/L	0.500	97%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Zinc	0.0499	0.534		mg/L	0.500	98%	75 - 125	5	20	8120066	NRK2487-02	12/05/08 17:21
Dissolved Metals by EPA Method 6010B												
8120074-MSD1												
Aluminum	0.0411	2.05		mg/L	2.00	100%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Antimony	ND	0.0845		mg/L	0.100	84%	75 - 125	3	20	8120074	NRL0536-08	12/08/08 19:11
Arsenic	0.0094	0.104		mg/L	0.0500	58%	75 - 125	5	20	8120074	NRL0536-08	12/08/08 19:11
Barium	0.324	2.29		mg/L	2.00	98%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Beryllium	ND	0.0478		mg/L	0.0500	96%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Cadmium	ND	0.0410		mg/L	0.0500	82%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Chromium	ND	0.190		mg/L	0.200	95%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Cobalt	ND	0.489		mg/L	0.500	98%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Copper	ND	0.248		mg/L	0.250	99%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Iron	64.6	65.0	MS	mg/L	1.00	34%	75 - 125	2	20	8120074	NRL0536-08	12/08/08 19:11
Lead	ND	0.0474		mg/L	0.0500	95%	75 - 125	3	20	8120074	NRL0536-08	12/08/08 19:11
Manganese	[illegible]	2.22		mg/L	0.500	92%	75 - 125	2	20	8120074	NRL0536-08	12/08/08 19:11
Molybdenum	ND	0.469		mg/L	0.500	94%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Nickel	ND	0.465		mg/L	0.500	93%	75 - 125	4	20	8120074	NRL0536-08	12/08/08 19:11
Selenium	ND	0.0313		mg/L	0.0500	63%	75 - 125	3	20	8120074	NRL0536-08	12/08/08 19:11

CHK00000124

Client	Chesapeake Energy Corporation	Work Order	NRL0912
	6100 N. Western Avenue	Project Name	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number	4100810701
Attn	Fred Gipson	Received	12/02/08 08:30

PROJECT QUALITY CONTROL DATA

Matrix Spike Dup - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Dissolved Metals by EPA Method 6010B												
8120074-MSD1												
Silver	ND	0.0481		mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Strontium	0.289	1.25		mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thallium	ND	0.0355	M2	mg/L	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tin	ND	0.982		mg/L	[illegible]	[illegible]	75 - 125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Titanium	[illegible]	0.930		mg/L	[illegible]	93%	75 - 125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vanadium	0.00210	0.486		mg/L	[illegible]	97%	75 - 125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zinc	ND	[illegible]		mg/L	[illegible]	99%	75 - 125	1	[illegible]	[illegible]	[illegible]	[illegible]
Mercury by EPA Methods 7470A/7471A												
8120683-MSD1												
Mercury	0.000189	0.00158		mg/L	0.00200	80%	63 - 138	3	22	8120683	[illegible]	[illegible]
Dissolved Mercury by EPA Methods 7470A/7471A												
8121171-MSD1												
Mercury	ND	0.00239		mg/L	[illegible]	119%	63 - 138	0.8	22	8121171	[illegible]	[illegible]
Volatile Organic Compounds by EPA Method 8260B												
8121411-MSD1												
Acetone	ND	280		ug/L	250	112%	55 - 148	9	23	8121411	[illegible]	[illegible]
Acrolein	ND	1330	M7	ug/L	250	533%	10 - 196	12	34	8121411	[illegible]	12/04/08 21:45
Acrylonitrile	ND	283		ug/L	250	113%	54 - 157	15	20	8121411	[illegible]	12/04/08 21:45
Benzene	ND	50.2		ug/L	50.0	100%	68 - 143	[illegible]	25	8121411	[illegible]	12/04/08 21:45
Bromodichloromethane	ND	59.6		ug/L	50.0	119%	80 - 152	[illegible]	18	8121411	[illegible]	12/04/08 21:45
Bromoform	ND	54.0		ug/L	50.0	108%	67 - 123	10	24	8121411	[illegible]	12/04/08 21:45
Bromomethane	ND	57.2		ug/L	50.0	114%	39 - 166	13	45	8121411	[illegible]	12/04/08 21:45
2-Butanone	ND	272		ug/L	250	93%	50 - 154	[illegible]	25	8121411	[illegible]	12/04/08 21:45
Carbon disulfide	ND	66.2		ug/L	50.0	132%	79 - 117	5	[illegible]	8121411	[illegible]	[illegible]
Carbon Tetrachloride	ND	63.6		ug/L	50.0	127%	62 - 165	10	25	8121411	[illegible]	[illegible]
Chlorobenzene	ND	50.9		ug/L	50.0	102%	67 - 140	[illegible]	25	8121411	[illegible]	[illegible]
Chlorodibromomethane	ND	57.4		ug/L	50.0	115%	72 - 123	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chloroethane	ND	56.1		ug/L	50.0	100%	74 - 151	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chloroform	ND	55.2		ug/L	[illegible]	101%	59 - 152	[illegible]	24	[illegible]	[illegible]	[illegible]
Chloromethane	ND	63.9		ug/L	50.0	128%	33 - 138	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,2-Dibromo-3-chloropropane	ND	53.1		ug/L	50.0	106%	60 - 135	11	26	[illegible]	[illegible]	[illegible]
1,2-Dibromoethane (EDB)	ND	52.6		ug/L	50.0	105%	80 - 132	5	[illegible]	[illegible]	[illegible]	[illegible]
Dibromomethane	ND	49.5		ug/L	50.0	99%	79 - 131	8	[illegible]	[illegible]	[illegible]	[illegible]
trans-1,4-Dichloro-2-butene	ND	57.0		ug/L	50.0	114%	10 - 200	[illegible]	[illegible]	[illegible]	[illegible]	12/04/08 21:45
1,2-Dichlorobenzene	ND	52.0		ug/L	50.0	104%	80 - 139	10	[illegible]	[illegible]	[illegible]	12/04/08 21:45
1,3-Dichlorobenzene	ND	52.2		ug/L	50.0	104%	75 - 152	9	18	[illegible]	[illegible]	12/04/08 21:45
1,4-Dichlorobenzene	ND	51.3		ug/L	50.0	103%	80 - 126	9	19	[illegible]	[illegible]	12/04/08 21:45
Dichlorodifluoromethane	ND	50.8		ug/L	50.0	102%	36 - 146	[illegible]	11	[illegible]	[illegible]	[illegible]

CHK00000125

2960 Foster Creighton Road Nashville TN 37204 * 800-765-0980 * Fax 615-726-3404

Client:	Chesapeake Energy Corporation	Work Order:	NRL0912
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, Ok 73118	Project Number:	4.00816701
Attn:	Fred Greene	Received:	12/02/08 08:30

PROJECT QUALITY CONTROL DATA
Matrix Spike Dup - Cont.

Analyte	Result	Expected	Q	Units	Spike Level	%Rec	Target Range	RPD	RPD Limit	Batch	Sample Duplicated	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B												
8121411-MSD1												
Ethylbenzene	ND	52.4		ug/L	50.0	105%	53 - 146	9	26	8121411	NRL0266-01	12/04/08 21:45
Methyl tert-butyl ether	ND	58.0		ug/L	50.0	116%	76 - 131	8	15	8121411	NRL0266-01	12/04/08 21:45
cis-1,2-Dichloroethene	ND	52.8		ug/L	50.0	106%	76 - 141	8	11	8121411	NRL0266-01	12/04/08 21:45
trans-1,2-Dichloroethene	ND	59.5		ug/L	50.0	119%	78 - 132	8	14	8121411	NRL0266-01	12/04/08 21:45
1,1-Dichloroethane	ND	58.6		ug/L	50.0	117%	63 - 153	9	26	8121411	NRL0266-01	12/04/08 21:45
1,2-Dichloroethane	ND	47.4		ug/L	50.0	95%	55 - 128	9	16	8121411	NRL0266-01	12/04/08 21:45
trans-1,3-Dichloropropene	ND	53.1		ug/L	50.0	106%	65 - 137	10	20	8121411	NRL0266-01	12/04/08 21:45
cis-1,3-Dichloropropene	ND	61.0		ug/L	50.0	122%	71 - 140	9	16	8121411	NRL0266-01	12/04/08 21:45
1,4-Dioxane	ND	435		ug/L	500	87%	25 - 180	4	49	8121411	NRL0266-01	12/04/08 21:45
Ethylbenzene	ND	52.4		ug/L	50.0	105%	50 - 135	8	17	8121411	NRL0266-01	12/04/08 21:45
m,p-Xylene	ND	233		ug/L	250	109%	60 - 136	6	30	8121411	NRL0266-01	12/04/08 21:45
Hexachlorobutadiene	ND	54.2		ug/L	50.0	108%	45 - 155	6	31	8121411	NRL0266-01	12/04/08 21:45
2-Hexanone	ND	269		ug/L	250	108%	58 - 134	9	31	8121411	NRL0266-01	12/04/08 21:45
Isopropylbenzene	ND	210		ug/L	250	84%	43 - 167	11	32	8121411	NRL0266-01	12/04/08 21:45
Methylene Chloride	ND	58.1		ug/L	50.0	116%	64 - 140	8	15	8121411	NRL0266-01	12/04/08 21:45
4-Methyl-2-pentanone	ND	264		ug/L	250	105%	55 - 153	8	31	8121411	NRL0266-01	12/04/08 21:45
Naphthalene	ND	56.5		ug/L	50.0	113%	80 - 139	8	16	8121411	NRL0266-01	12/04/08 21:45
1,1,2,2-Tetrachloroethane	ND	54.6		ug/L	50.0	109%	55 - 152	10	28	8121411	NRL0266-01	12/04/08 21:45
1,1,1,2-Tetrachloroethane	ND	52.5		ug/L	50.0	105%	75 - 140	9	17	8121411	NRL0266-01	12/04/08 21:45
Tetrachloroethene	ND	52.2		ug/L	50.0	104%	65 - 150	3	27	8121411	NRL0266-01	12/04/08 21:45
Toluene	ND	50.3		ug/L	50.0	101%	75 - 139	7	19	8121411	NRL0266-01	12/04/08 21:45
1,2,3-Trichlorobenzene	ND	52.0		ug/L	50.0	104%	55 - 135	9	26	8121411	NRL0266-01	12/04/08 21:45
1,1,1-Trichloroethane	ND	56.5		ug/L	50.0	113%	80 - 136	9	16	8121411	NRL0266-01	12/04/08 21:45
1,2,4-Trichlorobenzene	ND	53.0		ug/L	50.0	106%	77 - 128	8	21	8121411	NRL0266-01	12/04/08 21:45
1,1,2-Trichloroethane	ND	53.1		ug/L	50.0	106%	82 - 138	8	25	8121411	NRL0266-01	12/04/08 21:45
Trichloroethene	ND	63.8		ug/L	50.0	128%	68 - 135	7	20	8121411	NRL0266-01	12/04/08 21:45
1,2,3-Trichloropropane	ND	52.3		ug/L	50.0	105%	55 - 137	9	26	8121411	NRL0266-01	12/04/08 21:45
Vinyl acetate	ND	502		ug/L	250	201%	46 - 169	8	29	8121411	NRL0266-01	12/04/08 21:45
Vinyl chloride	ND	55.9		ug/L	50.0	112%	49 - 156	8	26	8121411	NRL0266-01	12/04/08 21:45
Xylenes, total	ND	337		ug/L	300	112%	80 - 136	8	19	8121411	NRL0266-01	12/04/08 21:45
Surrogate: 1,2-Dichloroethane-d4		29.8		ug/L	25.0	119%	60 - 140			8121411	NRL0266-01	12/04/08 21:45
Surrogate: Fluorobenzene		26.1		ug/L	25.0	104%	75 - 124			8121411	NRL0266-01	12/04/08 21:45
Surrogate: Toluene-d8		25.8		ug/L	25.0	103%	78 - 121			8121411	NRL0266-01	12/04/08 21:45
Surrogate: 4-Bromofluorobenzene		26.3		ug/L	25.0	105%	79 - 121			8121411	NRL0266-01	12/04/08 21:45
Dibromofluoromethane		25.0		ug/L	25.0	111%	50 - 200			8121411	NRL0266-01	12/04/08 21:45
1,2-Dichlorobenzene-d4		25.0		ug/L	25.0	110%	50 - 200			8121411	NRL0266-01	12/04/08 21:45
1,1-Dichloroethene-d2		25.0		ug/L	25.0	104%	50 - 200			8121411	NRL0266-01	12/04/08 21:45

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client:	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Sh[illegible]
	Oklahoma City, OK 73118	Project Number:	41608 [illegible]
Attn:	Fred Gipson	Received:	12/02/[illegible]

CERTIFICATION SUMMARY

TestAmerica Nashville

Method	Matrix	AIHA	Nelac	Pennsylvania
ASTM D516-90	Water			X
EPA 1664A	Water	N/A	X	X
EPA 170.1	Water	N/A		
EPA 3[illegible]	Water	N/A	X	X
EPA 335.4	Water	N/A	X	X
EPA 350.1M	Water	N/A	X	X
EPA 351.2	Water	N/A	X	X
EPA 365.4	Water	N/A	X	X
EPA 420.4	Water	N/A	X	X
EPA 420.4 M	Water		X	
SM 2320B	Water	N/A		
SM 2340B	Water	N/A	X	X
SM 4500CLG	Water	N/A		
SM 5210B	Water	N/A	X	X
SM 5540C	Water	N/A	X	X
SM2130 B	Water		X	X
SM2510 B	Water		X	X
SM2540 C	Water	N/A	X	X
SM2546 D	Water		X	X
SM4500-CLE	Water		X	X
SM4500-CN E	Water			
SM4500-F C	Water		X	X
SM4500-NO3 F	Water		X	X
SM4500-S2 F	Water		X	X
SM4500-SO3 B	Water		X	X
SM5310 B	Water		X	X
SW846 6010B	Water	N/A	X	X
SW846 7196A	Water		X	X
SW846 7470A	Water	N/A	X	X
SW846 8260B	Water	N/A	X	X
SW846 8270C	Water	N/A	X	X
SW846 9040C	Water			

Subcontracted Laboratories

TestAmerica - Savannah, GA (14337)

5102 LaRoche Avenue - Savannah, GA 31404

Analysis Performed: Subcontract - Color
Samples: NRL0012-01

TestAmerica - Earth City, MO (14321)

13715 Rider Trail North - Earth City, MO 63045

Analysis Performed: Subcontract - Gross Alpha
Samples: NRL0012-01

Analysis Performed: Subcontract - Gross Beta
Samples: NRL0012-01

Analysis Performed: Subcontract - Radium (total)
Samples: NRL0012-01

CHK00000127

Client:	Chesapeake Energy Corporation	Work Order:	NRL0012
	6100 N. Western Avenue	Project Name:	Chesapeake Shale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	4500830791
Attn:	Fred Gipson	Received:	12/02/08 08:30

CERTIFICATION SUMMARY

Subcontracted Laboratories

TestAmerica - Earth City, MO (4321)

13715 Rider Trail North - Earth City, MO 63045

Analysis Performed: Subcontract - Sulfur ASTM 2622
Sample(s): NRL0012-01

Analysis Performed: Subcontract - Zirconium
Sample(s): NRL0012-01

CHK00000128

2960 Foster Creighton Road Nashville TN 37204 [illegible] Fax 615-726-3404

Client:	Chesapeake Energy Corporation	Work Order:	NRL0212
	6100 N. Western Avenue	Project Name:	Chesapeake Seale Project - PA Sites
	Oklahoma City, OK 73118	Project Number:	410081073I
Attn:	Fred Gipson	Received:	12/02/08 08:30

DATA QUALIFIERS AND DEFINITIONS

A-01	Conductivity probe/meter linear to 250,000 umhos/cm.
A-01a	Sample weight on filter is greater than 0.2 grams.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
HT3	Sample received with insufficient holding time remaining for analysis to be performed within the method's holding time requirements.
HTI	The holding time for this test is immediate. The laboratory measurement, therefore, may not be suitable for compliance purposes.
L	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.
L1	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above acceptance limits.
L2	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was below acceptance limits.
M2	The MS and or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M4	The MS/MSD required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).
M7	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
M8	The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).
MNR	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike.
N1	See case narrative.
R2	The RPD exceeded the acceptance limit.
R4	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
ND	Not detected at the reporting limit (or method detection limit if shown)

METHOD MODIFICATION NOTES

350.1 M - M = Ammonia-Nitrogen method modified for midi-distillation with Lachat Procedure 10-107-06-1-A

COD 410.4 M - M = COD method modified for use of Hach method 8000

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-42739-1

Job Description: NRL0012 Chesepeake Shale Project

For:
TestAmerica Laboratories, Inc
2960 Foster Creighton Drive
Nashville, TN 37204

Attention: Mr. Mark Hollingsworth

Abbie Page
Project Manager I
12/9/2008 6:07 PM

Abbie Page
Project Manager I
abbie.page@testamericainc.com
12/09/2008

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA: WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

Job Narrative
680-J42739-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

General Chemistry
Method(s) SM 2120B: The following sample(s) was received outside of holding time: NRL0012-01 (680-42739-1)

No other analytical or quality issues were noted.

METHOD SUMMARY

Client: TestAmerica Laboratories, Inc. Job Number: 680-42739-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Color, Colorimetric	TAL SAV	SM SM 2120B	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

SM = "Standard Methods For The Examination Of Water And Wastewater".

CHK00000132

SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 680-42739-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-42739-1	NRL0012-01	Water	12/01/2008 1100	12/03/2008 0858

CHK00000133

Client: TestAmerica Laboratories, Inc

Job Number: 680-42739-1

General Chemistry

Client Sample ID: NRL0812-01

Lab Sample ID: 680-4[illegible]

Client Matrix: Water

Date Sampled: 12/01/2008 1100

Date Received: 12/03/2008 0858

Analyte	Result	Qual	Units	RL	Dil	Method
Color	180	H	PCU	20	4.0	SM 2120B

Analysis Batch: 680-124416 Date Analyzed: 12/03/2008 1340

CHK00000134

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc

Job Number: 680-42735-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Indicates the analyte was analyzed for but not detected
	H	Sample was prepped or analyzed beyond the specified holding time

CHK00000135

Client: TestAmerica Laboratories, Inc

Job Number: 680-42739-1

Method Blank - Batch: 680-124416

Method: SM 2120B
Preparation: N/A

Lab Sample ID: MB 680-124416/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/03/2008 1340
Date Prepared: N/A

Analysis Batch: 680-124416
Prep Batch: N/A
Units: PCU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Color	5.0	U	5.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

SUBCONTRACT ORDER

TestAmerica Nashville

NRL0012

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica Nashville	TestAmerica Savannah
2960 Foster Creighton Road	5102 LaRoche Avenue
Nashville, TN 37204	Savannah, GA 31404
Phone: 800-765-0980	Phone .(912) 354-7858
Fax. 615-726-3404	Fax: (912) 352-0165
Project Manager: Mark Hollingsworth	Project Location. Pennsylvania
Client: Chesapeake Energy Corporation	Receipt Temperature: ___ °C Ice: Y / N

Copy/Relog from NRJ2373. Copy/Relog from NRJ1829. Copy/Relog from NRJ1167. Copy/Relog from NRJ1155. Copy/Relog from NRJ0705. Copy/Relog from NRJ0546. Copy/Relog from NRJ0458.

Analysis	Units	Due	Expires	Interlab Price	Surch	Comments
Sample ID: NRL0012-01	Water		Sampled: 12/01/08 11:00			
Subcontract - Color	%	12/12/08	08/27/11 10.00	$18.00	0%	Sub to TA Savannah - Method SM 2120B
Containers Supplied: W_500mL Amber Glass Unpreserved (N)						

TEMPERATURE

Released By	Date/Time	Received By	Date/Time
[signature]	12/2/08 1556	Beth O. Daughtry	12-3-08 @ 0858
Released By	Date/Time	Received By	Date/Time

CHK00000137

TestAmerica

Nashville, TN

COOLER RECEI

NRL0017

Cooler Received/Opened On 12/02/2008 @ 0830

1. Tracking # 1746 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 96210146

2. Temperature of rep. sample or temp blank when opened: 0.6 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...(NA)

4. Were custody seals on outside of cooler? (YES)...NO...NA

If yes, how many and where: 2 Front/Back

5. Were the seals intact, signed, and dated correctly? (YES)...NO...NA

6. Were custody papers inside cooler? (YES)...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) BJ

7. Were custody seals on containers: YES NO and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) Plastic bag Peanuts Vermiculite Foam Insert Paper Other (None)

9. Cooling process: (Ice) Ice-pack (Ice (direct contact)) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? (YES)...NO...NA

b. Was there any observable headspace present in any VOA vial YES...(NO)...NA

14. Was there a Trip Blank in this cooler? (YES)...NO...NA If multiple coolers, sequence #____

I certify that I unloaded the cooler and answered questions 7-14 (intial) [initials]

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...(NO)...NA

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

If preservation in-house was needed, record standard ID of preservative used here____

16. Was residual chlorine present? YES...(NO)...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) [initials]

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) [initials]

I certify that I attached a label with the unique LIMS number to each container (intial) [initials]

21. Were there Non-Conformance issues at login? (YES)...NO Was a PIPE generated? (YES)...NO...#27573

B.4h Cyanide containers 7 of 10

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 12/02/2008 @ 0830

1. Tracking # 7783 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 96210146

2. Temperature of rep. sample or temp blank when opened: 1 - 2 Degrees Celsius

3. If item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO (NA)

4. Were custody seals on outside of cooler? (YES)...NO...NA

If yes, how many and where: 2 front

5. Were the seals intact, signed, and dated correctly? (YES)...NO...NA

6. Were custody papers inside cooler? (YES)...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) VJ

7. Were custody seals on containers: YES NO and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) Plastic bag Peanuts Vermiculite Foam Insert Paper Other (None)

9. Cooling process: (Ice) Ice-pack (Ice (direct contact)) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? YES...(NO)...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...(NA)

14. Was there a Trip Blank in this cooler? YES...NO...(NA) If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) VJ

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

If preservation in-house was needed, record standard ID of preservative used here_____

16. Was residual chlorine present? YES...(NO)...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) VJ

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) VJ

I certify that I attached a label with the unique LIMS number to each container (initial) VJ

21. Were there Non-Conformance issues at login? (YES)...NO Was a PIPE generated? (YES)...NO...# 21525

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 9/07

CHK00000139

10811

CHAIN-OF-[illegible] DY RECORD

NRL0012
12/16/08 23 59

BENHAM

CLIENT NAME: Confidential	SITE MANAGER: Fred Gipson
PROJECT NO.: 4100810701	PROJECT NAME: Confidential
PAGE 1 PAGE 2	LAB. PO#: Bill Client

PARAMETERS/METHOD NUMBER

DATE	TIME	MATRIX	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	Group 1	Group 2	Group 3	Group 4	Appendix IX VOC	Appendix IX SVOC	LAB I.D. NUMBER (LAB USE ONLY)	REMARKS (I.E. FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE)
12/1/08	1100	WATER	F[redacted]626910-11.D	16	X	X	X		X	X	1	Group 1 - 3 — 1 filter
12/1/08	—	WATER	TRIP BLANK	1					X		2	(4) 250 ml P HNO3; (3) 1L P NP
												(2) 1L G H2SO4; (1) 1L P H2SO4
												(1) 1L GA NP
												Group 4
												(2) 250 ml P HNO3; (2) 1L P NP
												(1) 1L P H2SO4; (1) 1L GA NP
												(4) 1L P HNO3; (1) 125 ml P HCl
												(1) 500 ml GA NP; (1) 250 ml P NaOH
												(1) 250 ml P NaOH / Zn Acetate
												(1) 500 ml GA H2SO4
												Appendix IX
												VOC: (3) 40 ml VOA HCl
												SVOC: (2) 1L GA NP

SAMPLED BY: (Signature) [signature] DATE: 12/1/08 TIME: AS SHOWN

RELINQUISHED BY: (Signature) [signature] DATE: 12/1/08 TIME: 1400

RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

SAMPLE SHIPPED BY: (Circle) AIRBILL # 971023301746

(FEDEX) PONY XPS VEL XPS
HAND DELIVERED UPS OTHER

COMMENTS: Attorney / client priviledge

TURN AROUND TIME NEEDED: Standard

RECEIVING LABORATORY: Test America
ADDRESS: 2960 Foster Creighton Dr.
CITY: Nashville STATE: TN ZIP: 37204
CONTACT: Mark Hollingsworth
PHONE: 615-301-5044

RECEIVED BY LABORATORY: [signature] (Signature)
DATE: 12/2/08 TIME: 8:30

SAMPLE CONDITION UPON RECEIPT: (Lab Use Only)
Temperature: 0.6 Wet Ice Present: Y N
VOA's Free of Headspace: Y N
Comments:

BENHAM CONTACT PERSON(S): Scott Hess

PHONE # 405 321-3895

POINT OF ORIGIN: ☐ NORMAN ☐ TULSA ☐ ARLINGTON ☐ ARDMORE ☐ HOUSTON ☒ OTHER: PENNSYLVANIA

PAGE #1 - RECEIVING LAB PAGE #2 - RETURN TO BENHAM PAGE #3 - PROJECT MANAGER PAGE #4 - QA/QC COORDINATOR

CHK00000140

11172

CHK00000141

CHAIN-OF-CUSTODY RECORD

BENHAM

CLIENT NAME	SITE MANAGER	PARAMETERS/METHOD NUMBER
Confidential	Fred Gipson	
PROJECT NO. 1100810701	PROJECT NAME Confidential	
PAGE 2 of 2	LAB PO# Bill Client	

DATE	TIME	MATRIX	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	Group 1	Group 2	Group 3	Group 4	Appendix IX VOC	Appendix IX SVOC	LAB I.D. NUMBER (LAB USE ONLY)	REMARKS (IF FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB, COMPOSITE)
12/1/08	1100	water	F[redacted]626910-LLD	18			X					

Group 1 - 3
(4) 250 ml P HNO3; (3) 1L P NP
(2) 1L G H2SO4; (1) 1L P H2SO4
(1) 1L GA NP
Group 4
(2) 250 ml P HNO3; (2) 1L P NP
(1) 1L P H2SO4; (1) 1L GA NP
(4) 1L P HNO3; (1) 125 ml P HCl
(1) 250 ml P NaOH / Zn Acetate
(1) 500 ml GA H2SO4
Appendix IX
VOC: (3) 40 ml VOA HCl
SVOC: (2) 1L GA NP

SAMPLED BY: (Signature)	DATE: 12/1/08 TIME: 0515 CST	RELINQUISHED BY: (Signature)	DATE: 12/1/08 TIME: 1400	RECEIVED BY: (Signature)	DATE: TIME:
RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)	DATE: TIME:	SAMPLE SHIPPED BY: (Circle) AIRBILL # 971023007883	

COMMENTS: Attorney / client privilege

TURN AROUND TIME NEEDED: Standard

SAMPLE SHIPPED BY: (Circle) FEDEX PONY XPS VEL XPS HAND DELIVERED UPS OTHER

LABORATORY INFORMATION: Test America
ADDRESS: 2960 Foster Creighton Dr.
CITY: Nashville STATE: TN ZIP: 37204
CONTACT: Mark Hollingsworth
PHONE: 615-301-5044

RECEIVED BY LABORATORY: (Signature)
DATE: 12/1/08 TIME: 5:30

SAMPLE CONDITION UPON RECEIPT: (Lab Use Only)
Temperature 1.2 Wet Ice Present: Y N
VOA's Free of Headspace Y N
Comments:

BENHAM CONTACT PERSON(S): Scott Hess
PHONE #: 405-321-3895

POINT OF ORIGIN: NORMAN TULSA ARLINGTON ARDMORE HOUSTON OTHER: PENNSYLVANIA

PAGE #1 - RECEIVING LAB | PAGE #2 - RETURN TO BENHAM | PAGE #3 PROJECT MANAGER | PAGE #4 - QA/QC COORDINATOR

TestAmerica

ANALYTICAL REPORT

Job Number: 220-7492-1

SDG Number: 220-7492

Job Description: F8L030326

For:
TestAmerica Laboratories, Inc.
13715 Rider Trail North
Earth City, MO 63045

Attention: Ms. Sherryl Adam

Joan Widomski

Designee for
Erin A Gaus
Project Manager I
erin.gaus@testamericainc.com
12/18/2008

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Connecticut Certifications and Approvals: CTDOH PH-047, MADEP CT023, RIDOH A43, NYDOH 10602, NY NELAP 10602, NHDES 2528, NJDEP CT410, ME DOH CT023, UT DOH 2032614458

Job Narrative
220-J7492-1

Comments
No additional comments

Receipt
All samples were received in good condition within temperature requirements

Metals
Method(s) 6020: The following samples were diluted due to the nature of the sample matrix: NRL0012-01 (220-7492-1), NRL0012-01-DISSOLVED (220-7492-2). Elevated reporting limits (RLs) are provided

No other analytical or quality issues were noted.

METHOD SUMMARY

Client: TestAmerica Laboratories, Inc

Job Number: 220-7492-1
Sdg Number: 220-7492

Description	Lab Location	Method	Preparation Method
Matrix Water			
Metals (ICP/MS)	TAL CT	SW846 6020	
Sample Filtration, Field	TAL CT		FIELD_FLTRD
Preparation, Total Metals	TAL CT		SW846 3010A

Lab References:

TAL CT = TestAmerica Connecticut

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates

CHK00000144

METHOD / ANALYST SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1
Sdg Number: 220-7492

Method	Analyst	Analyst ID
SW846 6020	Petronchak, Nestor	NP

SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1
Sdg Number: 220-7492

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
220-7492-1	NRL0012-01	Water	12/01/2008 0000	12/11/2008 0955
220-7492-2	NRL0012-01-DISSOLVED	Water	12/01/2008 0000	12/11/2008 0955

SAMPLE RESULTS

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1
Sdg Number: 220-7492

Client Sample ID: NRL0012-01

Lab Sample ID: 220-7492-1
Client Matrix: Water

Date Sampled: 12/01/2008 0000
Date Received: 12/11/2008 0955

6020 Metals (ICP/MS)

Method	6020	Analysis Batch: 220-22933		Instrument ID:	Agilent ICPMS
Preparation	3010A	Prep Batch: 220-22804		Lab File ID:	N/A
Dilution	1.0			Initial Weight/Volume:	5 mL
Date Analyzed	12/16/2008 1723			Final Weight/Volume:	500 mL
Date Prepared	12/12/2008 1524				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Zr	100	U	30	100
Sulfur	82100	J	30000	100000

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1
Sdg Number: 220-7492

Client Sample ID: NRL0012-01-DISSOLVED

Lab Sample ID	220-7492-2	Date Sampled	12/01/2008 0000
Client Matrix	Water	Date Received	12/11/2008 0955

6020 Metals (ICP/MS)-Dissolved

Method	6020	Analysis Batch:	220-22933	Instrument ID:	Agilent ICPMS
Preparation	3010A	Prep Batch:	220-22804	Lab File ID:	N/A
Dilution	1.0			Initial Weight/Volume:	5 mL
Date Analyzed	12/16/2008 1727			Final Weight/Volume:	50.0 mL
Date Prepared	12/12/2008 1524				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Zr	100	U	30	100

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc

Job Number: 220-7492-1
Sdg Number: 220-7492

Lab Section	Qualifier	Description
Metals		
	U	Indicates analyzed for but not detected
	I	Sample result is greater than the MDL but below the CRDL

CHK00000150

QUALITY CONTROL RESULTS

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1
Sdg Number: 220-7492

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 220-22804					
LCS 220-22804/2-A	Lab Control Spike	T	Water	3010A	
MB 220-22804/1-A	Method Blank	T	Water	3010A	
220-7481-A-1-B DU	Duplicate	T	Water	3010A	
220-7481-A-1-C MS	Matrix Spike	T	Water	3010A	
220-7492-1	NRL0012-01	T	Water	3010A	
220-7492-2	NRL0012-01-DISSOLVED	D	Water	3010A	
Analysis Batch:220-22932					
LCS 220-22804/2-A	Lab Control Spike	T	Water	6020	220-22804
MB 220-22804/1-A	Method Blank	T	Water	6020	220-22804
Analysis Batch:220-22933					
220-7481-A-1-B DU	Duplicate	T	Water	6020	220-22804
220-7481-A-1-C MS	Matrix Spike	T	Water	6020	220-22804
220-7492-1	NRL0012-01	T	Water	6020	220-22804
220-7492-2	NRL0012-01-DISSOLVED	D	Water	6020	220-22804

Report Basis
D = Dissolved
T = Total

CHK00000152

Client: TestAmerica Laboratories, Inc

Job Number: 220-7492-1
Sdg Number: 220-7492

Method Blank - Batch: 220-22804

Method: 6020
Preparation: 3010A

Lab Sample ID: MB 220-22804/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1557
Date Prepared: 12/12/2008 1524

Analysis Batch: 220-22932
Prep Batch: 220-22804
Units: ug/L

Instrument ID: Agilent ICPMS
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 500 mL

Analyte	Result	Qual	MDL	RL
Zr	10	U	3.0	10
Sulfur	10000	U	3000	10000

Lab Control Spike - Batch: 220-22804

Method: 6020
Preparation: 3010A

Lab Sample ID: LCS 220-22804/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1600
Date Prepared: 12/12/2008 1524

Analysis Batch: 220-22932
Prep Batch: 220-22804
Units: ug/L

Instrument ID: Agilent ICPMS
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 500 mL

Analyte	Spike Amount	Result	% Rec	Limit	Qual
Sulfur	40000	43020	108	50 - 120	

Matrix Spike - Batch: 220-22804

Method: 6020
Preparation: 3010A

Lab Sample ID: 220-7481-A-1-C MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1628
Date Prepared: 12/12/2008 1524

Analysis Batch: 220-22933
Prep Batch: 220-22804
Units: ug/L

Instrument ID: Agilent ICPMS
Lab File ID: N/A
Initial Weight/Volume: 5 ml
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec	Limit	Qual
Sulfur	71800	J	400000	502300	108	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1
Sdg Number: 220-7492

Duplicate - Batch: 220-22804

Method: 6020
Preparation: 3010A

Lab Sample ID: 220-7491-A-1-B DU
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/16/2008 1624
Date Prepared: 12/13/2008 1524

Analysis Batch: 220-22933
Prep Batch: 220-22804
Units: ug/L

Instrument ID: Agilent ICPMS
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 500 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Zr	37	J	100	NC	20	U
Sulfur	71800	J	72750	1	20	J

Calculations are performed before rounding to avoid round-off errors in calculated results.

F8L030326 NRL0012 7492 **INTER-COMPANY LOG**

COMMENTS:
Project Manager:
Project: 4100810701 Chesepeake Shale Project
Report Type: B Standard Report
Client: 490 - TestAmerica Nashville

Date Received: 2008-12-03
Analytical Due Date: 2008-12-17
Report Due Date: 2008-12-22

WORK LOCATION: *I6* *TestAmerica Connecticut*

SMP#: 1 ✓ CLIENT ID: NRL0012-01 DATE SAMPLED: 20081201 MATRIX: I WATER
SAMPLE COMMENTS:

METHOD: ZZ NONE NONE Archive
EXTRACTION: 88 NO SAMPLE PREPARATION PERFORMED / QC TYPE: 01 STANDARD TEST SET
WORKORDER K31PQ1AE METAL: XX

SMP#: 2 ✓ CLIENT ID: NRL0012-01-DISSOLVED DATE SAMPLED: 20081201 MATRIX: I WATER
SAMPLE COMMENTS:

METHOD: ZZ NONE NONE Archive
EXTRACTION: 88 NO SAMPLE PREPARATION PERFORMED / QC TYPE: 01 STANDARD TEST SET
WORKORDER K31PR1AC METAL: XX

The sample(s) listed on this form are being sent to your location for the specified analysis. If you have any questions please contact the Project Manager listed above. PLEASE RETURN THE ORIGINAL SIGNED FORM WITH THE REPORT AT THE COMPLETION OF ANALYSIS.

Thank You

TA- St. Louis
Sample Receiving

RELINQUISHED BY: _____ DATE: 12/9/08 1700

RECEIVED FOR LAB BY: _____ DATE: 12-10-08 9:55

No Inside The Cooler Ut

8.0°C

PASSED
RAD
SCREEN

CHK00000155

TESTAMERICA CONNECTICUT
PRESERVATIVE RECORD

Job Number: 2207492
Client: TestAmerica Tennessee
Client Project: St Louis Workshare

Lab Number	Preservative	pH	Adjustment (mLs)	pH after Adjustment	Preservative Lot Number	Chlorine Residual	Initials	Date
7492	HNO_3	<2	NA	NA	NA	NA	ANT	12-11-08

12/18/2008

TestAmerica Form# SMF00206.CT

TestAmerica - Connecticut
Internal Chain-of-Custody

220-7492
TestAmerica Tennessee
St-Louis Workshare

Trip Blank:

QC: Air:

FB:

Soil: Water: # 1-2

Date Received: 12-11-08

Sample #s: 1-2

Locations: 99A

Laboratory Sample #	Relinquished by	Accepted by	Date	Time	Reason	Relinquished by	Accepted by	Date	Time
1, 2		JV	12/12	1400	MTR	JV		12/12	1537

TestAmerica Form# SMF00508.CT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 4100810701

Chesepeake Shale Project

Lot #: F8L030325

Mark Hollingsworth

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204

TESTAMERICA LABORATORIES, INC.

Sherryl Adam
Project Manager

January 13, 2009

CHK00000158

Case Narrative
LOT NUMBER: **F8L030325**

This report contains the analytical results for the sample received under chain of custody by TestAmerica St. Louis on December 3, 2008. This sample is associated with your Chesepeake Shale Project NRL0012.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Gross Alpha/Beta by GFPC
The Gross Alpha Beta reporting limit was not met due to a reduction of sample size attributed to the sample's high residual mass. The analytical results are reported with the MDC achieved.

Affected Samples:
F8L030325 (1), NRL0012-01

Gamma Spectroscopy – Radium - 226 & Hits

- The Pb-210 energy, 46.54 keV, is below the lower end of the laboratory's calibration range for the applicable geometry for this sample. The reported results for Pb-210 are estimated.
- Ra-226 is reported based upon the Bi-214 daughter. Due to the potential loss of Rn-222, the first decay daughter of Ra226, the results may be biased low. This is especially true if the samples have not been allowed to ingrow for a minimum of 21 days (to reach potential equilibrium).
- The Cesium 137 and Radium 228 by gamma spec reporting limit was not met due to the activity of the sample. The analytical results are reported with the MDC achieved.
- Pb-214 exhibited elevated levels of activity in the samples. The Pb-214 242 keV gamma emission occurs very close to the Ra-224 241 keV gamma emission, causing interference. The analysis software assigned the observable peak to both Pb-214 and Ra-224 in some of the samples (did not split the peak). Based upon visual inspection of the spectra and other knowledge of the samples (based upon the Th-228 concentration seen in the sample, Ra-224 would not be expected to be seen above the calculated MDC), it was determined correction for the Pb-214 contribution to the peak would be necessary to properly report Ra-224 for these samples.

  The activity (Bq) reported for Pb-214 for each sample was utilized to determine the corresponding peak size that would be present at the 242 keV region based upon the Pb-214 abundance at that energy (7.43%). This peak size was then converted to activity (Bq) that would contribute to the Ra-224 peak at 241 keV based upon the Ra-224 abundance at that energy (4.1%). This value was then subtracted from the initial Ra-224 activity to determine the corrected Ra-224 activity. The activity concentration reported is derived from this corrected activity.
- Protactinium 234m was identified at the 766 line by the software. Upon further data review, it is determined that an interference is causing the identification. The result was re-calculated using only the 1001 keV line. The results are reported with this narrative.

Affected Samples:
F8L030325 (1): NRL0012-01

CHK00000160

METHODS SUMMARY

F8L030325

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Gamma Spectroscopy - Cesium-137 & Hits	EPA 901.1 MOD	
Gross Alpha/Beta by GFPC	SW846 9310 MOD	

References:

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8L030325

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
K3LPC	001	NRL0012-01	12/01/08	11:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as 'ND' were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

CHK00000162

TestAmerica Nashville

Client Sample ID: NRL0012-01

Radiochemistry

Lab Sample ID: FSL030325-001
Work Order: K31PJ
Matrix: WATER

Date Collected: 12/01/08 1100
Date Received: 12/03/08 0915

Parameter	Result	Qual	Total Uncert. (2 o+/-)	RL	mdc	Prep Date	Analysis Date
GROSS A/B BY GFPC SW846 9310 MOD				pCi/L	Batch # 8338145		Yld %
Gross Alpha	26200		5200	3	2900	12/03/08	12/06/08
Gross Beta	5900		1900	4	2100	12/03/08	12/06/08
Gamma Cs-137 & Hits by EPA 901.1 MOD				pCi/L	Batch # 9005172		Yld %
Actinium 227 (assumes equilibrium w/ Th-227)	-50	U	150		250	01/05/09	01/05/09
Actinium 228	960		120		110	01/05/09	01/05/09
Bismuth 211 eq Th-227	-50	U	150		250	01/05/09	01/05/09
Bismuth 212	150	U	170		270	01/05/09	01/05/09
Bismuth 214	6780		410		70	01/05/09	01/05/09
Cesium 137	-39	U	28	12	46	01/05/09	01/05/09
Lead 210	-430	U	770		1300	01/05/09	01/05/09
Lead 212	0.7	U	98		160	01/05/09	01/05/09
Lead 214	6850		430		80	01/05/09	01/05/09
Potassium 40	840		380		320	01/05/09	01/05/09
Protactinium 234M	-2	U	2400		4100	01/05/09	01/05/09
Protactinium 231	-70	U	590		980	01/05/09	01/05/09
Radium (226)	6780		410		70	01/05/09	01/05/09
Radium 228	960		120	50	110	01/05/09	01/05/09
Radium 223 (assumes equilibrium w/ Th-227)	-50	U	150		250	01/05/09	01/05/09
Radium 224	810		0.0		0.0	01/05/09	01/05/09
Thallium 208	-0.7	U	24		40	01/05/09	01/05/09
Thorium 227	-50	U	150		250	01/05/09	01/05/09
Thorium 234	-70	U	1000		1200	01/05/09	01/05/09
Uranium 235	60	U	160		270	01/05/09	01/05/09
Uranium 238	-70	U	1000		1200	01/05/09	01/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

CHK00000163

TestAmerica Nashville

Client Sample ID: NRL0012-01 DUP

Radiochemistry

Lab Sample ID: F81030325-001K
Work Order: [illegible]
Matrix: [illegible]

Date Collected: 12/01/08 1100
Date Received: 12/03/08 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Gamma Cs-137 & Hits by EPA 901.1 MOD			pCi/L		Batch # 9005172		Yld %
Actinium 227 (assumes equilibrium w/ Th-227)	[illegible]	U	140		230	01/05/09	01/06/09
Actinium 228	1000		130		140	01/05/09	01/06/09
Bismuth 211 eq Th-227	[illegible]	U	140		230	01/05/09	01/06/09
Bismuth 212	6[illegible]	U	190		300	01/05/09	01/06/09
Bismuth 214	6750		410		70	01/05/09	01/06/09
Cesium 137	-25	U	28	12	46	01/05/09	01/06/09
Lead 210	-3[illegible]	U	430		600	01/05/09	01/06/09
Lead 212	-48	U	55		72	01/05/09	01/06/09
Lead 214	7230		440		80	01/05/09	01/06/09
Potassium 40	100	U	290		490	01/05/09	01/06/09
Protactinium 234M	[illegible]840	U	0.0		0.0	01/05/09	01/06/09
Protactinium 231	[illegible]0	U	580		970	01/05/09	01/06/09
Radium (226)	6750		410		70	01/05/09	01/06/09
Radium 228	1000		130	51	140	01/05/09	01/06/09
Radium 223 (assumes equilibrium w/ Th-227)	[illegible]20	U	140		230	01/05/09	01/06/09
Radium 224	359		0.0		0.0	01/05/09	01/06/09
Thallium 208	-[illegible]	U	25		42	01/05/09	01/06/09
Thorium 23[illegible]	[illegible]20	U	140		230	01/05/09	01/06/09
Thorium 234	147	U	490		820	01/05/09	01/06/09
Uranium 235	[illegible]0	U	2100		200	01/05/09	01/06/09
Uranium 238	[illegible]47	U	490		820	01/05/09	01/06/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

CHK00000164

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F8L030325
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
GROSS A/B BY GFPC SW846 9310 MOD			pCi/L	Batch # 8338145		Yld %	F8L030000-145B
Gross Alpha	-0.11	U	0.39	3.00	0.76	12/03/08	12/05/08
Gross Beta	-0.13	U	0.87	4.00	1.5	12/03/08	12/05/08
Gamma Cs-137 & Hits by EPA 901.1 MOD			pCi/L	Batch # 9005172		Yld %	F9A050000-172B
Actinium 227 (assumes equilibrium w/ Th-227)	-18	U	30		50	01/05/09	01/09/09
Actinium 228	0.0	U	23		45	01/05/09	01/09/09
Bismuth 211 eq Th-227	-18	U	30		50	01/05/09	01/09/09
Bismuth 212	0.0	U	54		97	01/05/09	01/09/09
Bismuth 214	-4	U	17		22	01/05/09	01/09/09
Cesium 137	1.5	U	5.3	12.0	9.4	01/05/09	01/09/09
Lead 210	60	U	140		230	01/05/09	01/09/09
Lead 212	0.9	U	7.7		15	01/05/09	01/09/09
Lead 214	0.9	U	8.7		19	01/05/09	01/09/09
Potassium 40	-70	U	530		160	01/05/09	01/09/09
Protactinium 234M	70	U	550		1000	01/05/09	01/09/09
Protactinium 231	0.0	U	130		230	01/05/09	01/09/09
Radium (226)	-4	U	17		22	01/05/09	01/09/09
Radium 228	0.0	U	25	50	48	01/05/09	01/09/09
Radium 223 (assumes equilibrium w/ Th-227)	-18	U	30		54	01/05/09	01/09/09
Radium 224	0.0		0.0		0.0	01/05/09	01/09/09
Thallium 208	7.2	U	5.1		7.6	01/05/09	01/09/09
Thorium 227	-18	U	30		50	01/05/09	01/09/09
Thorium 234	9	U	160		260	01/05/09	01/09/09
Uranium 235	-19	U	82		50	01/05/09	01/09/09
Uranium 238	9	U	160		260	01/05/09	01/09/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.

U Result is less than the sample detection limit

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F8L030325
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	Lab Sample ID % Rec	QC Control Limits
GROSS A/B BY GFPC SW846 9310 MOD		pCi/L		9310 MOD			F8L030000-145C
Gross Beta	67.3	70.6	6.0	1		104	(72 - 117)
	Batch #:	8338145		Analysis Date:	12/05/08		
GROSS A/B BY GFPC SW846 9310 MOD		pCi/L		9310 MOD			F8L030000-145C
Gross Alpha	49.4	55.2	8.0	0.9		112	(72 - 138)
	Batch #:	8338145		Analysis Date:	12/05/08		
Gamma Cs-137 & Hits by EPA 901.1 MOD		pCi/L		901.1 MOD			F9A050000-172C
Americium 241	141000	136000	11000	500		96	(90 - 110)
Cesium 137	53100	51600	3000	200		97	(90 - 110)
Cobalt 60	87800	85500	4800	200		97	(90 - 110)
	Batch #:	9008172		Analysis Date:	01/08/09		

NOTE(S)

CHK00000166

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F8L030325
Matrix: WATER

Date Sampled: 12/02/08
Date Received: 12/03/08

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Gamma Cs-137 & Hits by EPA 901.1 MOD				pCi/L	901.1 MOD				F8L030325-001	
Actinium 227 (assumes equilibrium w/ Th-227)	-50	U	150		-20	U	140		89	%RPD
Actinium 228	960		120		1000		130		5	%RPD
Bismuth 211 eq Th-227	-50	U	150		-20	U	140		89	%RPD
Bismuth 212	150	U	170		60	U	180		86	%RPD
Bismuth 214	6780		410		6750		410		0.4	%RPD
Cesium 137	-39	U	18		-25	U	28		44	%RPD
Lead 210	-430	U	770		-33	U	480		171	%RPD
Lead 212	0.7	U	98		-48	U	66		199	%RPD
Lead 214	6550		430		7230		440		9	%RPD
Potassium 40	840		380		100	U	290		161	%RPD
Protactinium 231	-70	U	580		-70	U	580		0	%RPD
Protactinium 234M	-2	U	2400		-940	U	0.0		196	%RPD
Radium (226)	6780		410		6750		410		0.4	%RPD
Radium 223 (assumes equilibrium w/ Th-227)	-50	U	150		-20	U	140		89	%RPD
Radium 224	310		0.0		359		0.0		14	%RPD
Radium 228	960		120		1000		130		5	%RPD
Thallium 208	-0.7	U	24		-3	U	25		122	%RPD
Thorium 227	-50	U	150		-20	U	140		89	%RPD
Thorium 234	-70	U	1000		140	U	490		221	%RPD
Uranium 235	60	U	160		-20	U	2100		533	%RPD
Uranium 238	-70	U	1000		140	U	490		221	%RPD
	Batch #:		9005172 (Sample)		9005172 (Duplicate)					
GROSS A/B BY GFPC SW846 9310 MOD				pCi/L	9310 MOD				F8L030114-001	
Gross Alpha	8800		3200		7900		2900		10	%RPD
Gross Beta	1300	U	1620		500	U	1300		89	%RPD
	Batch #:		8338145 (Sample)		8338145 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results.

MATRIX SPIKE REPORT

Radiochemistry

[illegible] Lot ID: FSL030114 Date Sampled: 11/20/08
[illegible]: WATER Date Received: 11/25/08

Parameter	Spike Amount	Spike Result	Total Uncert. (2σ +/-)	Spike Yld.	Sample Result	Total Uncert. (2 σ +/-)	QC Sample ID %YLD	%REC	QC Control Limits
GROSS A/B BY GFPC SW846 9310 MOD			pCi/L		9310 MOD			FSL030114-001	
Gross Beta	136000	146000	12000		1200	1600		107	(66 - 147)
	Batch #:	8338145		Analysis Date:		12/06/08			
GROSS A/B BY GFPC SW846 9310 MOD			pCi/L		9310 MOD			FSL030114-001	
Gross Alpha	98900	113000	13000		8800	9200		106	(44 - 150)
	Batch #:	8338145		Analysis Date:		12/06/08			

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off errors in calculated results.

CHK00000168

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SUBCONTRACT ORDER

TestAmerica Nashville

NRL0012

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica Nashville	TestAmerica St. Louis
2960 Foster Creighton Road	13715 Rider Trail North
Nashville, TN 37204	Earth City, MO 63045
Phone: 800-765-0980	Phone :(314) 298-8566
Fax: 615-726-3404	Fax: (314) 298-8566
Project Manager: Mark Hollingsworth	Project Location: Pennsylvania
Client: Chesapeake Energy Corporation	Receipt Temperature: ______ °C Ice: Y / N

Copy/Relog from NRJ2373. Copy/Relog from NRJ1829. Copy/Relog from NRJ1167. Copy/Relog from NRJ1186. Copy/Relog from NRJ0705. Copy/Relog from NRJ0546. Copy/Relog from NRJ0458.

Analysis	Units	Due	Expires	Interlab Price	Surch	Comments
Sample ID: NRL0012-01	Water		Sampled: 12/01/08 11:00			
Subcontract - Gross Alpha	%	12/12/08	08/27/11 10:00	$32.50	0%	sub to TA St. Louis - Method 9310
Subcontract - Gross Beta	%	12/12/08	08/27/11 10:00	$32.50	0%	sub to TA St. Louis - Method 9310
Subcontract - Radium (total)	%	12/12/08	08/27/11 10:00	$160.00	0%	sub to TA St. Louis - Method 9315
Subcontract - Sulfur ASTM 2	%	12/12/08	08/27/11 10:00	$25.00	0%	Method 6020 - send to St. Louis
Subcontract - Zirconium	%	12/12/08	08/27/11 10:00	$50.00	0%	Method 6020 - To St. Louis (Total & Dissolved)

Containers Supplied:

R_1 L Plastic HNO3 (AA)	R_1 L Plastic HNO3 (AB)	R_250 mL Plastic HNO3 (I)	R_250 mL Plastic HNO3 (M)	R_1 L Plastic HNO3 (Y)
R_1 L Plastic HNO3 (Z)				

rec'd 6x1L 12.03.08 [initials]

[signature]	12/2/08 1556	[signature]	12/3/08 9:15
Released By	Date/Time	Received By	Date/Time

LOT # F81030325-NRL0012

testAmerica
THE LEADER IN ENVIRONMENTAL TESTING

323
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CONDITION UPON RECEIPT FORM

Client: TA Nashville
Quote No: 81063
COC/RFA No: NRK26560012 282
Initiated By: AB Date: 12/3/08 Time: 9:15

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	9203 2916 (0.581	6.		1.	Amb at	6.	
2.		7.		2.		7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- (If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests; Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N (N/A)	Was sample received with proper pH*? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	(Y) N	Sample received in proper containers?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
6.	Y (N)	Was sample received broken?	13.	(Y) N N/A	Was Internal COC/Workshare received?
7.	(Y) N	Is sample volume sufficient for analysis?	14.	(Y) N N/A	Was pH taken by original TestAmerica lab?

*For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Corrective Action
- ☐ Client Contact Name: _____ Informed by: _____
- ☐ Sample(s) processed "as is"
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: K. Cleary Date: 12-10-08

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

CHK00000170

CHESAPEAKE ENERGY CORPORATION
Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water
June 9, 2011

Wastewater Transporter	Address	County	State
TAW-000219	PO Box 2449, Alma, AR 72921	Crawford	AR
Smith Oilfield Service, Inc.	PO Box 615, Carrie, KY 41725	Knott	KY
Artexoma	874 Hunt Creed RD Nichols	Tioga	NY
DC Rauscher	162 NYS Rt. 414 Waterloo	Senaca	NY
Appalachian Oil Purchasers, Inc.	PO Box 430 Frazeysburg, Ohio 43822	Muskingum	OH
BBU Services-326833	Po Box 2541, 2206 Horns Mill Road, Lancaster, OH 43130	Fairfield	OH
Heavy Duty	2355 Watson Marshall RD Mcdonald	Chemung	OH
Stallion-321577	3361 Baird Ave. SE, Paris, OH 44669	Stark	OH
SUNPRO-327229	7640 Whipple Ave. NW, N. Canton, OH 44720	Stark	OH
W. Pol Contracting-916235	8835 Fisher Road, Diamond, OH 44412	Portage	OH
WVOG-857319	PO Box 698, Zanesville, OH 43702	Muskingum	OH
ECS&R-327751	3237 US Hwy 19, Cochranton, PA 16314	Crawford	PA
Elcon	10534 Rt. 514 Suite 3 Monroeton	Bradford	PA
Excalibur	RR 2 Box 136A Towanda	Bradford	PA
Higgins Hauling-325459	338 Sy Huffman Hill, Waynesburg, PA 15370	Greene	PA
IBEX	13 Alpine DR. Athens	Bradford	PA
James Barron Trucking-327525	10314 Somerset Pike, Somerset, PA 15501	Somerset	PA
Mountain Energy	PO Box 766 Tunkhannock	Wyoming	PA
RNI	2832 Rt. 414 Canton	Bradford	PA
Romesberg Trucking (RTI)-943248	409 Broadway St. Suite #1, Berlin, PA 15530	Somerset	PA
Select	504 Main St. Towanda	Bradford	PA
SGFS	150 Frantz RD. Suite 2 Meshoppen	Bradford	PA
Stallion	297 Beautys Run Rd Williamsport	Lycoming	PA
Summit Environmental Services-327741	774 Pike Road, Johnstown, PA 15909	Cambria	PA
Key Energy Services-000862	PO Box 201858, Dallas, TX 75320	Dallas	TX
Central Environmental-326132	PO Box 1366, Parkersburg, WV 26102	Wood	WV
Devonian Industries-294406	297 Boy Scout Camp Road, Morgantown, WV 26508	Monongalia	WV
Energy Contractors-952591	1400 Aviation Way, Bridgeport, WV 26330	Harrison	WV
H & H Pit Disposal-923263	PO Box 146, Spencer, WV 25276	Roane	WV
Hawg Hauling & Disposal-999982	Po Box 1300, Jane Lew, WV 26378	Lewis	WV
K & N Contracting-928197	PO Box 607, Elkview, WV 25071	Kanawha	WV
Reliable Environmental Transport (RET)-324046	PO Box 500, Bridgeport, WV 26330	Harrison	WV
Select Tanks-327707	7994 S. Pleasants Hwy, St. Mary's, WV 26170	Pleasants	WV

CHESAPEAKE ENERGY CORPORATION
Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water
June 9, 2011

Facility Name	Address	County	State	Latitude	Longitude	Volume Sent (Gallons)
Sipple disposal well	Sipple Ridge Road, Beattyville, KY41311	Lee	KY			3,010
[redacted] 1 (832745)		Noble	OH	39.77763	-81.54691	17,640
[redacted] 8H		Carroll	OH	40.672905	-81.5189	521,804
[redacted] H 1		Noble	OH	39.74657	-81.59999	269,346
[redacted] 1 (832984)		Athens	OH	39.23322	-82.13851	3,360
Ohio Oil Gathering Corp. 1		Washington	OH	39.37897	-81.2896	6,285
Ohio Oil Gathering Corp. 2		Washington	OH	39.39206	-81.31725	6,285
Ohio Oil Gathering Corp. 3		Washington	OH	39.39995	-81.31725	6,285
[redacted] #2 Disposal Well	St Rt 88 Garrettsville, OH 44231	Portage	OH			287,490
STALLION WATER DISPOSAL		Portage	OH	41.3458754	-81.08978215	9,660
WARREN DRILLING CO 1		Noble	OH	39.65388	-81.47532	137,340
[redacted] 5H		BRADFORD	PA	41.592417	-76.448359	12,600
[redacted] 2H		BRADFORD	PA	41.666349	-76.710095	99,187
[redacted] 2H, [redacted]		BRADFORD	PA	41.814355	-76.333172	8,400
[redacted] 1H, [redacted] 4H		SUSQUEHANNA	PA	41.77293	-76.030318	17,640
BRO[redacted]N 5H		TIOGA	PA	41.584793	-77.256751	26,090
[redacted] 1H, [redacted] 2H		SUSQUEHANNA	PA	41.739029	-76.053981	33,684
[redacted] 2H, [redacted] 5H		BRADFORD	PA	41.662796	-76.726398	102,150
CSI 2H, CSI 5H		BRADFORD	PA	41.793952	-76.571803	13,230
DGSM 5H		BRADFORD	PA	41.893559	-76.600796	12,600
Eureka	419 Second Street, Williamsport, PA 17701	Lycoming	PA	N 41.237842	W -77.008517	324,940
[redacted] E 6H		WYOMING	PA	41.633814	-76.117954	9,030
[redacted] 6H,8H,10H		Washington	PA	40.263346	-80.465571	137,970
[redacted] 5H		BRADFORD	PA	41.881655	-76.505595	13,500
Hershberger Processing Facility		Bradford	PA	N 41.684091	W -76.336679	903,364
[redacted] 2H, [redacted] 5H		SUSQUEHANNA	PA	41.650714	-76.042909	26,376
[redacted] 3H		BRADFORD	PA	41.828842	-76.656077	8,904
[redacted] RK 5H		SULLIVAN	PA	41.537765	-76.766645	29,064

USEPA Note:
Chesapeake has waived any claim of confidentiality for this document, per email from M. Armstrong, Esq., dated 7/19/2011.

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CHK00000172

CHESAPEAKE ENERGY CORPORATION
Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water
June 9, 2011

Facility Name	Address	County	State	Latitude	Longitude	Volume Sent (Gallons)
John Barrett Processing Facility		Bradford	PA	N 41.684103	W -76.357338	2,023,165
[redacted] 2H, [redacted] N 5H		BRADFORD	PA	41.814172	-76.375395	55,650
[redacted] 1H, [redacted] 2H, [redacted] 3H, [redacted] 4, [redacted] 5H, [redacted] 6H		SUSQUEHANNA	PA	41.738805	-76.029825	47,880
M & M ESTATES 2H		SULLIVAN	PA	41.551929	-76.737523	11,970
[redacted] 2H		BRADFORD	PA	41.564478	-76.333815	16,280
[redacted] 5H		WYOMING	PA	41.568578	-76.18185	22,680
[redacted]		BRADFORD	PA	41.662281	-76.716679	40,390
[redacted] 6H		SULLIVAN	PA	41.560639	-76.614838	93,540
Sharer Processing Facility		Bradford	PA	N 41.759727	W -76.149158	202,946
STORMS 2H, STORMS 5H		BRADFORD	PA	41.725942	-76.178861	18,480
[redacted] 2H		BRADFORD	PA	41.808993	-76.529603	4,200
[redacted] 5H		BRADFORD	PA	41.963678	-76.388483	28,110
[redacted] 3H		Washington	PA	40.22908	-80.032171	208,400
[redacted] 2H, [redacted] 5H		BRADFORD	PA	41.621613	-76.45009	15,540
[redacted] KI 2H		BRADFORD	PA	41.715277	-76.356051	17,220
[redacted] 10H (833221)		Brooke	WV	40.191402	-80.635879	25,400
[redacted] 3H (832805)		Brooke	WV	40.187616	-80.641404	6,720
[redacted] R 10H (832974)		Ohio	WV	40.147009	-80.575808	4,200
[redacted] D 1H, 3H. 4H, 8H		Wetzel	WV	39.709053	-80.640574	65,940
DELLSLOW HUNTING & FISHING CLUB 3H		Preston	WV	39.622367	-79.740835	2,940
[redacted] 6H, 8H		Marion	WV	39.46207	-79.994702	685,482
ELK VALLEY LAND CORP 1 SWD		Braxton	WV	38.674705	-80.85171	409,962
EUREKA STATION		Pleasants	WV	39.4134538	-81.1889536	379,806
[redacted] 3H		Ohio	WV	40.04502	-80.600519	186,060
[redacted] 8H		Ohio	WV	40.11401	-80.59242	142,990
[redacted] 5H, 10H		Wetzel	WV	39.69448	-80.68492	43,680
[redacted] -1 SWD		Monongalia	WV	39.5906	-79.8307	17,640

CONFIDENTIAL

USEPA Note:
Chesapeake has waived any claim of confidentiality for this document, per email from M. Armstrong, Esq., dated 7/19/2011.

CHK00000173

CHESAPEAKE ENERGY CORPORATION
Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water
June 9, 2011

Facility Name	Address	County	State	Latitude	Longitude	Volume Sent (Gallons)
[redacted] S 1H, 3H, 5H, 8H		Wetzel	WV	39.6809	-80.70678	221,340
[redacted] N 1H, 3H, 5H		Upshur	WV	38.815467	-80.279933	338,100
[redacted] 5H		Brooke	WV	40.231051	-80.522545	65,310
[redacted] 10H		Wetzel	WV	39.68855	-80.69818	3,780
[redacted] 1H, 3H, 5H		Upshur	WV	38.847141	-80.300745	672,840
MARQUETTE SWD 1		Monongalia	WV	39.5546517	-79.8777291	5,880
North West Landfill	512 E Dry Run Road, Parkersburg, WV	Wood	WV			40,000
NORTHWESTERN LANDFILL (913578)		Wood	WV	39.246512	-81.50259	19,320
[redacted] B 1H, 3H, 5H, 8H		Marshall	WV	39.737224	-80.670618	475,272
RELIANCE MINERALS 3H (833041)		Monongalia	WV	39.523795	-79.976376	5,460
[redacted] 3H, 5H, 6H		Wetzel	WV	39.7115	-80.60935	420
[redacted] 3H, 6H, 10H		Wetzel	WV	39.70483	-80.68532	8,190
[redacted] N 1H, 3H, 5H, 10H		Marshall	WV	39.733804	-80.623496	349,356
White Processing Facility		Susquehanna		N 41.719445	W -76.063117	654,350

USEPA Note:
Chesapeake has waived any claim of confidentiality for this document, per email from M. Armstrong, Esq., dated 7/19/2011.