



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

APR 22 2011

**OVERNIGHT AND CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Mr. Aubrey McClendon, Chairman and CEO  
Chesapeake Energy Corporation  
6100 North Western Avenue  
Oklahoma City, OK 73118

**Discovery Date of Incident(s): April 20, 2011**  
**Location of Incident(s): Chesapeake Energy Gas Well in Leroy Township, Bradford County, PA**

Dear Mr. McClendon:

The U.S. Environmental Protection Agency ("EPA") is seeking information concerning the release, or threat of release, of hazardous substances, pollutants or contaminants into the environment from a Chesapeake Energy facility located in Canton, Leroy Township, Bradford County, PA (hereinafter the "Site" or the "Facility"). EPA is requiring that you<sup>1</sup> provide information regarding the nature or extent of release(s) or threatened release(s) that was reported to have occurred at the Facility on or about April 19, 2011.

EPA is requesting this information pursuant to the authority granted to it under Section 308 of the Clean Water Act, 42 U.S.C. § 1318, Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act, ("CERCLA"), 42 U.S.C. § 9604(e), and Section 3007(a) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6927(a). Pursuant to the authority of Section 308 of the CWA, 33 U.S.C. § 1318, you are required to furnish the information and documents requested that are in your possession, custody or control, or in the possession, custody or control of any of its employees or agents, that concern, refer or relate to the actual and/or threatened "discharge" of a "pollutant" as defined in Section 502(6) of the CWA, 33 U.S.C. § 1365(6). Section 3007 (a) of RCRA provides in relevant part that "any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator,

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<sup>1</sup> The term "you" or "your" refers to the departments, subdivisions, subsidiary offices, subordinate offices, agents, contractors, consultants, and all persons, entities, firms and corporations acting under, through or for them, or in active concert or participation with them.

...furnish information relating to such wastes . . . .” Under CERCLA, EPA has authority to respond to an actual and/or threatened “release” of hazardous substances, pollutants or contaminants as defined in Sections 101(14) and 101(33) of the CERCLA, 42 U.S.C. §§ 9601(14) and 9601(33).

EPA hereby requires that you furnish to EPA, within the receipt of this letter within **the time frames noted below**, the information requested below, including all documents responsive to such request.

Your response to this request should be mailed and provided electronically in native format to:

**Joan Armstrong, Chief  
Oil and Prevention Branch (3HS62)  
U. S. Environmental Protection Agency, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029  
Armstrong.joan@epa.gov**

The provisions of Section 309 of the CWA, 42 U.S.C. § 1319, Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9604(e) and Section 3008 of RCRA, 42 U.S.C. § 6928, authorize EPA to pursue penalties for failure to comply with or respond adequately to an information request under Section 308 of the CWA, Section 104(e) of CERCLA, 42 U.S.C. § 9604(e) and Section 3007(a) of RCRA, 42 U.S.C. § 6927(a). In addition, providing false, fictitious, or fraudulent statements or representations may subject you to criminal penalties under 18 U.S.C. § 1001. The information you provide may be used by EPA in administrative, civil or criminal proceedings.

Certify the information provided in response to the above questions in the following manner:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through \_\_, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Signature: \_\_\_\_\_  
Name (Please print or type): \_\_\_\_\_  
Title: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_

EPA strongly encourages you to give this matter your immediate attention and to respond to this Information Request within the time specified above. EPA may use any information submitted in response to this request in an administrative, civil, or criminal action. This request is not subject to the Paperwork Reduction Act, 44 U.S.C. § 3501 et seq., because it seeks collection of information from specific entities as part of an administrative investigation.

If you have any legal questions relating to this Information Request, your attorney can contact James Van Orden, Assistant Regional Counsel, at 210-814-2693 at any time. If you have any technical questions on this matter, please call Joan Armstrong, Chief of the Oil and Prevention Branch at (215) 814-3155.

Sincerely,

A handwritten signature in black ink, appearing to read "Karen Melvin", written in a cursive style.

Karen Melvin, Associate Division Director  
Office of Enforcement  
Hazardous Site Cleanup Division

Enclosures

## **Enclosure 1**

### **Instructions**

1. Please provide a separate narrative response to each and every Question and subpart of a Question set forth in this Information Request. If you cannot provide the information requested or provide a complete response to a question, please provide an explanation.
2. Precede any answer with the number of the Question to which it corresponds.
3. If information or documents not known or not available to you as of the date of submission of a response to this Information Request should later become known or available to you, you must supplement your response to EPA. Moreover, should you find at any time after the submission of your response that any portion of the submitted information is false or misrepresents the truth, you must notify EPA of this fact as soon as possible and provide EPA with a corrected response.
4. For each document produced in response to this Information Request, indicate on the document, or in some other reasonable manner, the number of the Question to which it corresponds. In the event that you believe any question is redundant, please cross reference your responses accordingly.
5. In accordance with Enclosure 3, the information requested herein must be provided even though the Respondent may contend that it includes possible confidential information or trade secrets. You may, if you desire, assert a confidentiality claim covering part or all of the information requested, 40 C.F.R. Part 2, Subpart B, by attaching to such information at the time it is submitted, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as "trade secret" or "proprietary" or "company confidential." Information covered by such a claim will be disclosed by EPA only to the extent, and only by means of the procedures set forth in the statutes and regulations set forth above. If no such claim accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice to you. You should read the above cited statutes and regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim. If you desire to assert a claim of business confidentiality, please see Enclosure 3, *Business Confidentiality Claims/Disclosure to EPA Contractors & Grantees of Your Response*
6. Provide all quantities requested in pounds unless otherwise noted.
7. You must submit all requested information under an authorized signature certifying that the information is true and complete to the best knowledge of the certifying official after due inquiry. Knowingly providing false information, in response to this request, may be actionable under 18 U.S.C. §§ 1001 and 1341 or other statutory authorities. At the bottom of your response letter, please include the following certification:

## Enclosure 2

### Definitions

The following definitions shall apply to the following words as they appear in this Request.

#### Clean Water Act Definitions

1. **Discharge:** For purposes of Section 311 of the Act, a discharge to navigable waters or adjoining shorelines includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping, but excludes certain discharges in compliance with a permit under Section 402 of the Act.
2. **Drill Pad:** Drill pad shall mean any drilling pad, platform, or other structure designed for use and/or actually used to drill for purposes of natural gas production, and shall include any and all equipment such as drill rigs, contained thereon.
3. **Onshore facility:** The term onshore facility shall mean any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under, any land within the United States other than submerged land.
4. **Offshore facility:** The term offshore facility shall mean any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel.
5. **Navigable Waters:** Navigable waters of the United States means “navigable waters” as defined in section 502(7) of the FWPCA, and includes: (1) All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters; (2) Interstate waters; (3) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and (4) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.
6. **Mobile Refueler:** Mobile refueler means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container.
7. **Natural Gas Production Facility:** Natural Gas Production Facility (NGPF) means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation equipment) used in the production, extraction, recovery, movement, stabilization, separation and/or treating of natural gas.

8. **Oil-filled Operational Equipment:** Oil-filled operational equipment means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (*e.g.*, those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device.
9. **Well:** The term means any well that is used for or is related to natural gas production.

### **CERCLA Definitions**

1. The term “person” shall have the same definition as in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21): an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body.
2. The term “facility” or “vessel” shall mean the facility or vessel on or about the site where the incident occurred.
3. The term “hazardous substance” shall have the same definition as that contained in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and includes any mixtures of such hazardous substances with any other substances, including petroleum products.
4. The term “extremely hazardous substance” or “EHS” shall have the same definition as that contained in Section 329(3) of the Emergency Planning and Community Right-to-Know Act of 1986, (“EPCRA”) 42 U.S.C. § 11049(3), and 40 C.F.R. § 355.20.
5. The term “release” has the same definition as that contained in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22), and includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant.
6. The term “hazardous chemical” means any hazardous chemical as defined under 29 C.F.R. § 1910.1200(c).
7. The term “reportable quantity” means, for any CERCLA hazardous substance, the reportable quantity or “RQ” established in 40 C.F.R. § 302.4, for those substances. “Reportable quantity” for an EHS means the reportable quantity established in 40 C.F.R. Part 355, appendices A and B, for those substances.
8. The term “day” shall mean a business day or any day other than a Saturday, Sunday or Federal holiday.
9. Any terms not defined herein shall have their ordinary meaning, unless such terms are

defined in CERCLA, or in 40 C.F.R. Part 300, in which case the statutory or regulatory definitions shall apply.

10. The term “threshold planning quantity” or “TPQ” means, for any EHS, the threshold planning quantity established in 40 C.F.R. Part 355, Appendices A and B.
11. The term “you” or “Respondent” shall mean the addressee of this Request, the addressee's officers, managers, employees, contractors, subcontractors, trustees, successors, assigns, and agents.

### **RCRA Definitions**

1. **Disposal** means the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.
2. **Solid waste** means a solid waste as defined by Section 1004(27) of RCRA, 32 U.S.C. § 6903(27).
3. **Hazardous Waste** means a hazardous waste as defined by Section 1004(5) of RCRA, 32 U.S.C. § 6903(5).
4. **Treatment** means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; amenable for recovery, amenable for storage, or reduced in volume.

### **Enclosure 3**

#### **Business Confidentiality Claims**

You are entitled to assert a claim of business confidentiality covering any part or all of the submitted information, in the manner described in 40 C.F.R. Part 2, Subpart B. Information subject to a claim of business confidentiality will be made available to the public only in accordance with the procedures set forth in 40 C.F.R. Part 2, Subpart B. If a claim of business confidentiality is not asserted when the information is submitted to EPA, EPA may make this information available to the public without further notice to you. You must clearly mark such claimed information by either stamping or using any other such form of notice that such information is a trade secret, proprietary, or company confidential. To best ensure that your intent is clear, we recommend that you mark as confidential each page containing such claimed information.

#### **Disclosure of Your Response to EPA Contractors and Grantees**

EPA may contract with one or more independent contracting firms (See "Enclosure B") to review the documentation, including documents which you claim are confidential business information ("CBI"), which you submit in response to this information request, depending on available agency resources. Additionally, EPA may provide access to this information to (an) individual(s) working under (a) cooperative agreement(s) under the Senior Environmental Employee Program ("SEE Enrollees"). The SEE Program was authorized by the Environmental Programs Assistance Act of 1984 (Pub. L. 98-313). The contractor(s) and/or SEE Enrollee(s) will be filing, organizing, analyzing and/or summarizing the information for EPA personnel. The contractors have signed a contract with EPA that contains a confidentiality clause with respect to CBI that they handle for EPA. The SEE Enrollee(s) is working under a cooperative agreement that contains a provision concerning the treatment and safeguarding of CBI. The individual SEE Enrollee has also signed a confidentiality agreement regarding treatment of CBI. Pursuant to Section 104(e)(7) of CERCLA, 42 U.S.C. Section 9604(e)(7), and EPA's regulations at 40 C.F.R. Section 2.310(h), EPA may share such CBI with EPA's authorized representatives which include contractors and cooperators under the Environmental Programs Assistance Act of 1984. (See 58 *Fed. Reg.* 7187 (1993)). If you have any objection to disclosure by EPA of documents which you claim are CBI to any or all of the entities listed in Enclosure 4, you must notify EPA in writing at the time you submit such documents.

### **Enclosure 4**



List of Contractors That May Review Your Response

[rev. 1/2010]

**Artic Slope Regional Corporation**

Contract # EP-W-05-052

Subcontractor: Booz-Allen & Hamilton

**Booz-Allen & Hamilton**

Contract # GS-35F-0306J (GSA Schedule)

**CDM-Federal Programs Corporation**

Contract # EP-S3-07-06

Subcontractors: L. Robert Kimball & Associates Inc.  
Page Technologies Inc.  
Avatar Environmental LLC  
Terradon Corporation

**Chenega Global Services, LLC**

Contract #EP-S3-09-02

**EA Engineering, Science and Technology, Inc.**

Contract #EP-S3-07-07

Subcontractor: URS

**Eisenstein Malanchuck, LLP**

Contract #EP-W-07-079

Subcontractors: R. M. Fields International, LLC  
James C. Hermann & Associated  
MacRae & Company, Inc.

**Guardian Environmental Services**

Contract # EP-S3-07-02

Subcontractor: Aerotech, Inc.  
Guardian Equipment

**Hydrogeologic (HGL)**

Contract #EP-S3-07-05

Subcontractor: CH2MHill  
Sullivan International

**Kemron**

Contract # EP-S3-07-03

Subcontractor: Clean Venture/Cycle Chem Inc.  
CMC Inc.  
Los Alamos Technical Associates, Inc.  
Carlucci Construction

**Tetra Tech EM, Inc.**  
Contract #EP-S3-05-02

**Tech Law, Inc.**  
Contract #EP-S3-05-03

**Tetra Tech NUS, Inc.**  
Contract #EP-S3-07-04

**WRS Infrastructure & Environment, Inc.**  
Contracts # EP-S3-07-01 and #EP-S3-07-09  
Subcontractors:     AEG Environmental  
                          Environmental Staffing  
                          Veolia Environmental Services  
                          Lewis Environmental Group

**Industrial Economics, Inc.**  
Contract # EP-W-06-092

Cooperative Agreements

**National Association of Hispanic Elderly**  
#CQ-832815  
#CQ 83424401

## **INFORMATION REQUIRED**

**EPA requires that you provide the following information based on one or more of the aforementioned information gathering authorities by the close of business Tuesday, April 26, 2011:**

1. Provide the name of each hydraulic fracturing fluid formulation/mixture distributed or utilized by Chesapeake Energy Corporation, its contractors and/ or subcontractors at this Facility at or around the time of the release from the natural gas well (hereinafter, referred to as the “Release”) that occurred at the Facility on or about April 19, 2011 in Leroy Township, Bradford County, Pennsylvania. For each formulation/mixture, provide the following information for each constituent of such product. “Constituent” includes each and every component of the product, including chemical substances, pesticides, radioactive materials and any other components.
  - a. Chemical name (e.g., benzene – use IUPAC nomenclature);
  - b. Chemical formula (e.g., C<sub>6</sub>H<sub>6</sub>);
  - c. Chemical Abstract System number (e.g., 71-43-2);
  - d. Material Safety Data Sheet;
  - e. Concentration (e.g., ppm or mg/L) of each constituent in each hydraulic fracturing fluid product. Indicate whether the concentration was calculated or determined analytically. This refers to the actual concentration injected during the fracturing process following mixing with source water, and the delivered concentration of the constituents to the site. Also indicate the analytical method which may be used to determine the concentration (e.g., SW-846 Method 8260, in-house SOP), and include the analytical preparation method (e.g., SW-846 Method 5035), where applicable;
  - f. Identify the persons who manufactured each product and constituent and the persons who sold them to the Chesapeake Energy Corporation, its contractors and/or subcontractors, including address and telephone numbers for any such persons;
  - g. Identify the purpose and use of each constituent in each hydraulic fracturing fluid product (e.g., solvent, gelling agent, carrier, viscosifier, proppant);
  - h. For proppants, identify the proppant, whether or not it was resin coated, and the materials used in the resin coating;
  - i. For the water used, identify the source, quantity (in gallons), quality and the specifications of water needed to meet formation requirements, and the rationale for the formation requirements;
  - j. Total quantities of each constituent used in hydraulic fracturing and the related quantity of water in which the chemicals were mixed to create the fracturing fluids to support calculated and/or measured composition and properties of the hydraulic fracturing fluids; and
  - k. Chemical and physical properties of all chemicals used, such as Henry’s law coefficients, partitioning coefficients (e.g. Kow KOC, Kd), aqueous solubility, degradation products and constants and others.
1. Provide the specification sheets for the fracturing fluid formulation used on the well involved in the Release.

2. Identify all media (*e.g.* air, surface water, groundwater, and/or land) affected by the Release.
3. Provide all information, data and studies in the Chesapeake Energy Corporation's possession or control relating to the human health and environmental impacts and effects of all products and constituents released during the Release. Specifically, provide copies of all existing private well, surface water, and soil sampling data within a radius of 4000 feet from the Facility prior to and subsequent to the April 19, 2011 Release. This response is a continuing obligation on the part of Chesapeake for any and all future sampling results. In providing all such sampling, also provide:
  - a. The range of detection of the instrument that was used to take the sample;
  - b. Where and when these readings were taken and their respective concentrations;
  - c. A map or diagram of the Facility that denotes the locations at which the samples were taken; and
  - d. Copies of sample results (*i.e.* laboratory analytical reports), if any.
4. List the federal and state agencies, if any, to which the owner and/or operator reported the release or discharge(s), the dates and times on which the reports were made, and the name(s) and title(s) of the person(s) who made the reports.
5. Provide all analyses of the flowback water generated in the operation of the well that was involved in the Release. Your answer must include a breakdown of all constituents of such flowback water, including the percentages of each and every constituent of the flowback water.

**Within fifteen (15) Calendar Days of receipt of this letter, EPA requires that you provide the following information based on one or more of the aforementioned information gathering authorities:**

1. What is the legal name and address of Respondent?
2. What is the business of the Respondent? Please include the primary Standard Industrial Classification (SIC) and North American Industrial Classification System (NAICS) Codes.
3. What year did Respondent first own and/or operate the Facility?
4. What is the date and state of incorporation of Respondent?
5. Provide a description of the drilling operations conducted at the Facility, when those activities began, and if and when drilling operations were completed at this Facility.
6. State at what point in the well drilling or well completion process the release occurred and provide a description of the events leading up to, through and following the release.

7. Provide all documents, reports, information, or data collected related to the substances placed into, or returned to the surface from the wells at this Facility possessed by you or any party related to you by contract or otherwise. Your response should include, but not be limited to:
  - a. Analyses of flowback or produced water constituents including but not limited to production brine. Such analysis must include, but not be limited to an analysis of the composition of salts in fracturing fluid and production brine. This shall include all hydraulic fracturing fluid components (including MSDS, CAS Number, product names);
  - b. Analyses of condensate constituents;
  - c. Drilling fluid components (Material Safety Data Sheets (MSDSs), Chemical Abstract Systems (CAS) Numbers, product names;
  - d. Water/geochemistry analysis from discrete production zones.
  - e. Provide the following information (including any reports that include such information) related to the injection of substances into the wells by you or any other person, including but not limited to:
  - f. Workover fluids (including all underlying components of workover fluids) (including MSDS, CAS Number, product names);
  - g. Formation fracturing records for wells (including the depths and dates).
8. Provide all reports, data or other information related to soil, water (ground and surface) and geology/hydrogeology at and around the Site. Provide copies of all documents containing such data or information, including past and present aerial photographs as well as documents containing the basis for and/or analysis or interpretation of that data or other information.
9. Identify all substances released from the aforementioned Facility in connection with the Release that occurred on or about April 19, 2011. Specifically, identify:
  - a. The name and Chemical Abstract Services ("CAS") Number for each substance discharged;
  - b. For oils or hydrocarbon compounds, identify the type and grade;
  - c. Provide the quantity and concentration of each substance (including but not limited to hazardous substances, oils, total dissolved solids and constituents thereof, and radioactivity) discharged and the method by which the concentration was measured or estimated. For mixtures, provide the name, quantity, and concentration of each constituent of that mixture;
  - d. Provide the solubility and specific gravity of each substance discharged.
  - e. Provide the total quantity of undiluted substance(s) released from the Facility in gallons for oils and in pounds for hazardous substances.
10. Provide all future data and studies in the Chesapeake Energy Corporation's possession or control relating to the human health and environmental impacts and effects of all products and constituents at the Facility. Specifically, provide copies of any subsequent private well, surface water, and soil sampling data within a radius of 4000 feet from the Chesapeake well prior to and subsequent to the April 19, 2011 Release. This response is

a continuing obligation on the part of Chesapeake for any and all future sampling results. In providing all such sampling, also provide:

- a. The range of detection of the instrument that was used to take the sample;
- b. Where and when these readings were taken and their respective concentrations;
- c. A map or diagram of the Facility that denotes the locations at which the samples were taken; and
- d. Copies of sample results (i.e. laboratory analytical reports).

11. State whether fracing fluid, flowback or produced fluids have been analyzed to determine if radiological compounds are/were present in the fluids or sediments generated as part of the well development or operation at the Facility. Provide all such information.
12. For the Release, include a clear timeline of the events immediately prior to, during, and following the Release. This should include, but not be limited to, all information that was relied upon to determine the time and duration of release.
13. Provide the name, title, and company affiliation of the first person who discovered the Release and the date and time of discovery.
14. Provide the name, title, and affiliation of all persons notified of the Release and the date and time of such notification.
15. Describe the physical source (including, but not limited to vehicle, outfall, tank, container, pipe, ditch, conduit, or equipment) at the Facility from which the oil or hydrocarbon compounds and/or hazardous substance or substances (the term "substance" as used here includes both oils and hazardous substances) initially was discharged or released to navigable waters including but limited to Towanda Creek on or around April 19, 2011. If the substance was discharged or released from more than one source, please identify each specific source.
16. List the starting time, date, and duration of the discharge and the time and date when the discharge entered a waterway.
17. Identify the first body of water that the pollutants, contaminants, and/or substance reached. Identify the actual or estimated quantity of the each pollutant, contaminant, and/or substance(s) that entered that water body. Describe the location of any other water bodies that the pollutants, contaminants, and/or substance(s) subsequently entered, including the actual or approximate distance from the Facility. In addition, state the actual or estimated quantity of the substance(s) that entered those additional water bodies.
18. Identify whether each water identified in response to Questions 17 was, at the time of the spill, a "navigable water" as defined in *Enclosure 1*, a tributary of a navigable water; and/or physically connected to a navigable water. Identify all such navigable waters by name and identify the type of body of water (e.g. river, stream, lake, creek, or other type

of body of water).

19. Provide a description and the location of any adjoining shoreline upon which that pollutant, contaminant, and/or substance may have reached. In addition, state the quantity of the substance that reached the adjoining shoreline.
20. For all discharges of oil or hazardous substances to navigable waters, adjoining shorelines to navigable waters, or to any other water/shoreline, please indicate the following
  - a. Did you observe from the oil a film, sheen, discoloration or iridescent appearance on the surface or shoreline of any water? If yes, please describe your observations;
  - b. Did, to your knowledge, any other person observe from the oil a film, sheen, discoloration or iridescent appearance on the surface or shoreline of any water? If yes, please identify all such persons and describe those observations;
  - c. Did you observe any oil sludge or oil emulsion beneath the surface or on the adjoining shorelines of any water? If yes, please describe your observations;
  - d. Did, to your knowledge, any other person observe any oil sludge or oil emulsion to be deposited beneath the surface or on the adjoining shorelines of any water? If yes, please identify all such persons and describe those observations.
21. Describe any damage to animal life or vegetation that you observed or otherwise have knowledge of.
22. Provide the name and address of the operator(s) of the Facility described above in Question 25 and describe the relationship between the owner(s) and operator(s) (*i.e.*, employee, subcontractor, lessee, etc.). Identify any persons who concurrently with you exercised actual control or who held significant authority to control activities at the Facility at any time. In answering this question, include:
  - a. Partners and/or joint ventures;
  - b. Every contractor, subcontractor, or licensor with any presence or activity at the Facility (e.g., service contractors, remediation contractors, management and operator contractors, licensor providing technical support for licensed activities);
  - c. All persons who exercised actual control over any activities or operations at the Facility;
  - d. All persons who held significant authority to control any activities or operations at the Facility;
  - e. All persons who had a significant presence or who conducted significant activities at the Facility;
  - f. All government entities that had proprietary (as opposed to regulatory) interest or involvement with regard to the activity at the Facility.

23. Has any contaminated soil ever been excavated or removed from areas around or near the Facility? If so, provide the following:
- Amount of soil excavated;
  - The substances contained in the excavated soil;
  - Location of excavation;
  - Distance from a navigable water of the United States or an adjoining shoreline;
  - Description of the pathway from the excavated soil area to a navigable water of the US or an adjoining shoreline, including topography and an analysis of whether the materials could reach a navigable water or adjoining shoreline;
  - Any information, including data, maps, and reports, related to any plume of substances associated with any soil excavation.
24. Identify the effect of the spill(s) on any drinking water supply and provide details if available (e.g., shutdown of public or private water supply). Provide the names and addresses of all persons that have been provided with an alternative water supply (e.g., bottled water) due to the spill or because of the threatened migration of contamination.
25. Identify all NPDES or state wastewater discharge permit conditions and/or water quality standards that may have been violated by the spill.
26. Provide the date on which operations began at the Facility. Identify all Natural Gas Production Facilities (NGPFs) (as further defined in *Enclosure 2*) owned and/or operated by you connected to or otherwise associated with the Facility at any time. Identify all components of each NGPF, including but not limited to wells, piping, tanks, other equipment, and surface impoundments.
27. For the wells located at the Facility, provide:
- The name or identifier of each well;
  - Well construction information (including specifications on casing depths, cement tops/bottoms, and perforated zones);
  - Well maintenance information (including logs and inspection records);
  - Well incident information (including fluid loss during drilling or storage, cement loss, problems during hydraulic fracturing or other operations). Provide any root cause analysis conducted and corrective actions taken in response; and
  - Well lithologic logs (also known as “mud logs”).
28. Identify any other leaks, spills, or releases of oil and/or hazardous substances and/or other pollutants into the environment that have occurred from the Facility. For each such release, provide the following:
- date;
  - duration of the release;
  - substance(s) released;
  - the approximate quantity of the substance(s) released;



- e. the origin of the release;
  - f. the cause of the release;
  - g. the location of the release;
  - h. any and all activities undertaken in response to each such release or threatened release, including the notification of any agencies or governmental units about the release;
  - i. The result of any and all investigations of the circumstances, nature, extent or location of the release or threatened release, including the results of any soil and water (ground and surface) testing undertaken;
  - j. Whether any persons were provided with an alternative water supply; and
  - k. All persons with information related to these releases.
29. Provide any other reports, information or data related to activities conducted at or near the wells by you, your predecessors, contractors, and/or any other entity.
30. Provide a clear and complete copy of the Chesapeake Energy Corporation's natural gas lease for the Facility and state whether or not this lease covers all of the wells at the Facility.
31. Provide a clear and complete copy of each and every permit obtained by Chesapeake Energy Corporation for drilling and operation of the Facility and state whether such permit(s) covers each well at the Facility.
32. State whether or not the Chesapeake Energy Corporation has received any guidance or correspondence from the State Emergency Response Commission, Local Emergency Planning Committee or the local Fire Department on hazardous chemical reporting for the Emergency Planning and Community Right-to-Know Act (EPCRA). If guidance or correspondence was received provide clear and complete copies of the guidance or correspondence and identify the date(s) the information was received.
33. In order for EPA to fully understand the nature and extent of chemical storage and use at the Facility, provide the following information for chemicals used, produced, manufactured or stored during drilling operations for each well, at any time from the time operations started through the end of calendar year 2010:
- a. The process by which each chemical is brought to the Facility;
  - b. The estimated quantities of chemicals present at the Facility;
  - c. The way in which the chemicals are stored or staged at the Facility (e.g. diesel fuel is present in a 10,000 gallon above ground storage tank); and
  - d. The length of time that chemicals are present at the Facility.
34. When Chesapeake Energy Corporation receives the hazardous chemical information and MSDSs, how is this information used, stored and evaluated to determine Federal, State and local statutory and regulatory requirements and who is responsible for this determination?

35. Provide the maximum storage quantity for each hazardous chemical, including but not limited to those that may be components of hydraulic fracturing and workover fluids, stored onsite at the facility during the last three years. The following table provides a recommended format.

| CHEMICAL FROM ALL PRODUCTS ON-SITE   | % COMPOSITION            | CAS NUMBER | 2007 MAX AMT (LBS.)                                | 2008 MAX AMT (LBS.)                                 | 2009 MAX AMT (LBS.)                                 |
|--|--------------------------|------------|--|---|---|
| <b>Mixture</b><br>OR<br><b>Chemical Name</b><br>from product<br>from product<br>from product |                          |            |  |   |   |
| <b>Sulfuric acid solution</b>  | 100%                     | N/A        | 15,000 (total)                                     | 12,000 (total)                                      | 14,000 (total)                                      |
| <b>EHS - Sulfuric acid</b>   | 20%                      | 7664-939   | 3,000  | 2,400   | 2,800   |
| <b>Degreaser A12</b>   | 100%                     | N/A        | 17,800 (total)                                     | 17,300 (total)                                      | 11,450 (total)                                      |
| <b>Yellow Paint #2</b>   | 100 %                    | N/A        | 17,200 (total)                                     | 18,200 (total)                                      | 16,350 (total)                                      |
| <b>Xylene</b><br>from yellow paint #2<br>from degreaser A12<br>pure                          | 25%<br>35%<br>100%       | 1330-20-7  | 25,500 (total)<br>8,000<br>8,500<br>9,000          | 22,000 (total)<br>9,000<br>8,400<br>4,600           | 13,300 (total)<br>7,150<br>2,150<br>4,000           |
| <b>Toluene</b><br>from degreaser A12<br>from yellow paint #2<br>from orange paint #5<br>pure | 50%<br>20%<br>5%<br>100% | 108-88-3   | 35,600 (total)<br>9,300<br>9,200<br>8,100<br>9,000 | 37,000 (total)<br>9,300<br>9,200<br>8,100<br>10,400 | 37,000 (total)<br>9,300<br>9,200<br>8,100<br>10,400 |
| <b>Diesel Fuel</b><br>Above ground storage tank (AST)<br>Underground storage tank (UST)      | 100%<br>50%<br>50%       |            | 25,500 (total)<br>8,000<br>13,000                  | 25,500 (total)<br>8,000<br>13,000                   | 25,500 (total)<br>8,000<br>13,000                   |
| <b>Gasoline</b><br>Above ground storage tank (AST)<br>Underground storage tank (UST)         | 100%<br>50%<br>50%       |            | 25,500 (total)<br>8,000<br>13,000                  | 25,500 (total)<br>8,000<br>13,000                   | 25,500 (total)<br>8,000<br>13,000                   |

36. Describe the process for reporting hazardous chemicals at the facility. Provide a description of the process and the name of any programs used to track the quantity of hazardous chemicals stored at the facility.

37. Identify the chemicals, by name and Chemical Abstract Services ("CAS") Numbers, present at the Facility at any time during the last three years for which the Facility is

required to prepare or have available a material safety data sheet (“MSDS”) under the Occupational Safety and Health Act of 1970, 29 U.S.C. § 651 *et seq.* and regulations promulgated under that Act.

38. Identify and provide the MSDSs for each hazardous chemical identified in the preceding question.
39. If Respondent has made any determinations that chemicals at the Facility do not require MSDSs to be prepared or available, please identify those chemicals, the bases for the determinations, and the person(s) who made those determinations.
40. Describe the process and the information used to compile and complete hazardous chemical inventory forms (*i.e.* Tier I and/or Tier II Reports) for the facility in accordance with the reporting requirements of EPCRA Section 312.
41. Provide copies of all hazardous chemical inventory forms (*i.e.* Tier I and/or Tier II reports) submitted during the last three years for the facility.
42. Provide information about the intended disposition of the flowback water prior to the April 19, 2011 Release, including but not limited to treatment and/or disposal at Publicly-owned Treatment Works (POTWs) or recycling at recycling facilities.
43. Provide information about the disposition of the flowback water since the April 19, 2011 incident, including but not limited to treatment and/or disposal at Publicly-owned Treatment Works (POTWs) or recycling at recycling facilities.
44. State whether there were any standard operating procedures (“SOPs”) for notification in place at the time of the release, whether the SOPs were followed, and the cause of and reasons for any deviation from these SOPs. Provide a copy of any SOPs that may have been in place at the time of the release.
45. Identify any and all hazardous substances and/or EHSs that were released during or as a result of the Release. Specifically, identify:
  - a. The name and CAS Number;
  - b. The amount/quantity;
  - c. The concentration and the method by which the concentration was measured or estimated; and
  - d. For mixtures, the name, quantity and concentration, and the method by which the concentration was measured or estimated, of each constituent of the mixture.
46. Describe the methodology used to calculate the amount/quantity of material released and include all calculations used to determine the amount/quantity of material released and the date and time on which such calculations were made.

47. State whether any samples of the fracing water and flowback water from the other wells at the Facility were taken, either before, during or after the release: If so:
  - a. State the range of detection of the instrument that was used to take the sample;
  - b. State where and when these reading were taken and their respective concentrations; and
  - c. Provide copies of sample results (i.e. laboratory analytical reports), if any.
48. Provide distances, in feet, from the location of the release to the northern, southern, eastern, and western boundaries of the Facility.
49. State the size, in square inches (in<sup>2</sup>) or square centimeters (cm<sup>2</sup>) or other applicable unit of measurement, of the opening through which the EHS(s) and/or hazardous substance(s) was (were) released or vented to the atmosphere.
50. Provide the temperature of the EHS(s) and/or hazardous substance(s) and the pressure under which the EHS(s) and/or hazardous substance(s) was (were) released.
51. State the height of the release point for the EHS(s) and/or hazardous substance(s), and show the location of that release point on the Facility diagram, including an approximate distance to the perimeter of the Facility.
52. State whether there are any sensors at the Facility. If so, please state the number of sensors and denote, on a map or diagram, the locations of the sensors at the Facility.
53. If there are sensors at the Facility, identify the concentration level at which the EHS and/or hazardous substance sensors are set to alarm and state if they were operational when the release occurred.
54. Identify the agencies notified of the release, including the date, time, method of contact, agency name, and the title of the person making the report.
55. Identify the hourly meteorological conditions at the time of the release and the source of that information, including:
  - a. Wind speed;
  - b. Wind direction;
  - c. The amount of cloud cover;
  - d. Ambient air temperature; and
  - e. Humidity.
56. State whether any EHS and/or hazardous substance migrated off the Facility and how that determination was made. If you contend that the EHS(s) and/or hazardous substance(s) released did not migrate off the facility, please provide all information used in support of your position.

57. State the amount of the EHS(s) and/or hazardous substance(s) that migrated off the Facility and describe the method used to calculate the amount(s).
58. State the distance of the next closest non-Facility building from the release point and provide a description of the activities that occur in that building (e.g. residence, school, business, etc.).
59. Provide copies of all photographs that were taken as a result of the release, including but not limited to photographs of faulty equipment.
60. Provide all modeling data that may have been completed to determine the extent of the release, including but not limited to, maps, diagrams, charts and graphs that were generated as part of the modeling, and any data used to develop the model.
61. Identify any federal or state permits under which the release may have been covered. Cite any requirements contained within those permits and provide copies of the permits. If you believe the April 19, 2011 release meets the criteria of a federally permitted release, please fully explain your rationale.
62. Identify any continuous release reports made pursuant to CERCLA Section 103(f) under which the release may have been covered, and provide copies of those reports.
63. With respect to the disposal of flowback fluids from the well to the wellpad and surrounding environment for the **period of April 19, 2011 up to receipt of this letter** provide the following information:
- a. State the **total** volume of waste (in pounds or kilograms) generated at the facility as a result of the April 19, 2011 Release.
  - b. State whether a “waste determination” and determination under the Land Disposal Regulations pursuant to 40 C.F.R. §§ 262.11 and 268.7, respectively, were made on these waste streams. Please provide the basis of your waste determination, including, but not limited to, any and all analytical results the waste determination was based on.
  - c. Were these waste streams determined to be a “hazardous waste” as defined in 40 C.F.R. § 261.2? If so, please state the specific EPA Hazardous Waste Code(s) associated with such hazardous waste.
  - d. Please describe in detail the management, handling and storage practices of the Facility for these waste streams from the point of generation to disposal of such waste. Please provide in detail each step of the transfer process, including, but not limited to, type and volume of accumulation and/or storage container(s), if any, and labeling/markings and storage location of each such container(s) used.
  - e. Please state if these waste streams are shipped off-site. If so, is the particular waste stream shipped off-site for recycling (i.e., reclaim, re-use), treatment, storage or disposal?

g. If the waste stream is shipped off-site, provide copies of all bills of lading/manifests/shipping invoices and LDR notices and certifications that accompanied each off-site shipment of this waste stream.

h. Is anything added to any of the waste streams before it is shipped off-site for disposal? If so, what is added, at what point of the waste handling operations and why?

64. Please provide the following information related to any surface impoundment(s) located at the facility:

a. A copy of the specifications for the impoundments located in the Waste Water Treatment area. If specifications are not available, please provide to the best of your knowledge, a description of the impoundments. The description should include dimensions, (width, length, depth, slopes) any reinforcements in the support material (if so width, length, depth, spacing in between reinforcements, material used for reinforcements) or other materials used in the construction. Provide any letters you may have regarding the design and the structural integrity of the impoundments.

b. Provide a history for the impoundments, such as the date of initial operation, dates of repair/replacement and the entity that performed such work, inspection/integrity testing records and the entity that performed such work, frequency of sludge removal and the entity that performed such work, and any other written operation records or reports regarding the maintenance of the impoundments.

c. Does Chesapeake store well cuttings or flowback fluids in any impoundment before the material is sent for offsite disposal? What are Chesapeake's storage practices regarding this material? Describe the device the material is stored in, where it is located at the Facility, and length of time the material is stored at the Facility.

d. If any hazardous waste or listed waste was removed from the impoundments, provide copies of the manifest for the transportation of the waste, names of the transporters, and any waste analysis conducted on the waste. If waste analysis was conducted provide information as to who conducted the test and the dates that the test was conducted.

e. Provide copies of all manifests for the transportation of impoundment material.

f. Provide a copy of the closure plan for the impoundments, include cost estimates for closure and financial assurance.

g. Provide the specifications of the impoundments' liners, leachate collection systems and any groundwater monitoring equipment if present.

- h. Provide the closure plan for the impoundments, if any.
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- 65. If you have any reason to believe that there may be persons able to provide a more detailed or complete response to any Question contained herein, or who may be able to provide additional responsive documents, identify such persons by name, address, and phone number and describe the additional information or documents that each may have.
  - 66. For each and every Question contained herein, if the information or documents responsive to this request are not in Chesapeake's possession, custody or control, identify the person or persons by name, address, and phone number from whom such information or documents may be obtained.
  - 67. List the name, address, telephone number, and affiliation of any and all persons who made any observations in response to these questions.
  - 68. Please provide any other information you wish to bring to the attention of the federal government at this time related to this matter.