David P. Poole
Senior Vice President –
General Counsel

dpoole@rangeresources.com
817-869-4254
817-869-9154 (fax)

May 25, 2011

***Via Electronic Mail and Certified Mail Return Receipt Requested***

Ms. Jacqueline Morrison
3LC00
Land and Chemicals Division
U.S. EPA, Region III
1650 Arch Street
Philadelphia, PA 19103
Email: morrison.jacqueline@epa.gov

Re: Information Request, Dated May 12, 2011
Request for Information on Marcellus Shale Flowback Water
Range Resources Corporation and Range Production Company

Ms. Morrison:

Range Resources Corporation and Range Production Company[1] ("***Range***") are in receipt of the U.S. Environmental Protection Agency's ("***EPA***") above-referenced request for information ("***Request***"). Range understands that EPA is interested in gathering information related to changes in industry practices as a result of the Pennsylvania Department of Environmental Protection's ("***PADEP***") request that natural gas well drilling operators cease delivering wastewater to certain facilities in the state. Range has an exemplary record of compliance with environmental regulations and an even stronger record of voluntary cooperation with environmental regulatory authorities. In keeping with this history, Range willingly responds to EPA's Request with the enclosed information showing the locations and development phases of Range's wells, copies of "26R" forms,[2] descriptions of past disposal and

[1] Range Resources Corporation and Range Production Company are separate legal entities and are referred to herein together as "Range" solely for convenience.

[2] Range recycled Marcellus Shale wastewater in 2010, and therefore does not have "26R" forms available for 2010. Range is instead providing EPA with copies of its 2009 "26R" forms.

recycling methods with respect to wastewater[3], descriptions of Range's use of centralized impoundments for storage or disposal of wastewater, and a description of Range's intentions with regard to disposal, reuse, treatment, recycling, and reclamation of gas extraction wastewater after May 19, 2011.

To the extent that EPA seeks different or additional information from what Range has provided, Range will greet all future requests with the same spirit of cooperation and, consistent with EPA's authority, will voluntarily provide information that Range believes will be helpful to EPA in meeting its properly authorized goals. To that end, Range offers the remainder of this letter to EPA for consideration and to explain Range's view of the authorities cited by EPA as the basis for the Request.

As authority for the Request, EPA cites several statutes, namely section 104(e) of the Comprehensive Environmental Response Compensation and Liability Act ("***CERCLA***"), section 3007(a) of the Resource Conservation and Recovery Act ("***RCRA***"), and section 308 of the Clean Water Act ("***CWA***"). Respectfully, and for the reasons stated below, Range does not understand any of these statutory provisions to empower EPA to seek the requested information from Range. Specifically, Range does not understand any of these statutory provisions to permit EPA, without first engaging in rulemaking, to seek forward-looking information or to impose an ongoing reporting obligation. While Range agrees to voluntarily submit information responsive to certain requests, including information regarding its future intentions for "disposal, reuse, treatment, recycling, and reclamation of Gas Extraction Wastewater after May 19, 2011," for the reasons stated below Range will not agree to submit quarterly reports to EPA regarding its "waste disposal and recycling practices."[4] Range currently provides this information to the PADEP on a semi-annual basis and, due to the lag time required to obtain and process manifests from Range's third-party contractors, quarterly production to EPA would create a substantial burden and meeting this burden, as requested, is infeasible and duplicative.

- CERCLA § 104(e) — EPA's information gathering authority under this provision does not authorize EPA to request forward-looking information or to impose an ongoing *ad hoc* reporting obligation—the provision says so plainly: "[t]he authority of this subsection may be exercised only for the purposes of determining the need for response, or choosing or taking any response action under this subchapter, or otherwise enforcing the provisions of this subchapter." This limitation accords with the legislative purpose of CERCLA as expressed by EPA—to allow EPA to remedy ***past*** mistakes in hazardous waste management." *See* S. Carolina Dep't of Health and Envtl. Control v. Commerce and Industry Ins. Co., 372 F.3d 245, 256 n.12 (4th Cir. 2004) (quoting an EPA Orientation Manual). Because the prospective nature of the information requested by

[3] The term "wastewater," as used herein, refers to wastewater generated by Range's Marcellus Shale activities.

[4] Attachment A details Range's response to each of EPA's information requests.

EPA in Requests 4 and 5 is not related to CERCLA's legislative purpose, those portions of the Request are not reasonable pursuant to EPA's grant of authority under CERCLA. *See* United States v. Pretty Products, Inc., 780 F. Supp. 1488, 1506 (S.D. Ohio 1991) (stating that an EPA information request will be enforced by a district court only if the information requested is "relevant to legislative purposes"). Additionally, a necessary predicate for the invocation of Section 104(e) information request authority is that there be a release or threatened release of hazardous substances or pollutants or contaminants that present an imminent and substantial danger to public health or welfare, subject to CERCLA enforcement authority. 42 U.S.C. § 9604(e)(1). The Request, which purports to seek information concerning all "wells owned or operated by you in EPA Region III" irrespective of whether there has been a release or threatened release of hazardous substances or pollutants or contaminants that presents an imminent and substantial danger at such facilities, exceeds EPA's Section 104(e) authority. Moreover, the "subchapter" referred to in § 104(e)(1) is Subchapter 1 of 42 U.S.C. Chapter 103, comprising 42 U.S.C. §§ 9601-9628, relating to the response to releases and threatened releases. Section 104(e) does not authorize use of the information request procedures contained in Section 104(e)(2) for other purposes, such as investigating compliance with other federal, state or local environmental laws or regulations.

- RCRA § 3007 — This provision requires entities handling ***hazardous waste*** to furnish information to EPA upon request. RCRA § 3001(b)(2)(A) delineates the steps EPA must follow to identify and list hazardous wastes, and precludes the classification of "drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of . . . natural gas" as hazardous waste. 42 U.S.C. § 6921(b)(2)(A). EPA has reexamined this exemption and concluded that wastes produced in connection with gas exploration, development, and production should continue to ***not*** be regulated as hazardous waste under RCRA. 53 Fed. Reg. 25,446 (July 6, 1988). Because EPA's request asks for information on waste that is not regulated as hazardous waste for RCRA purposes, RCRA § 3007 does not authorize EPA to request or obtain the information.

- CWA § 308 — As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System ("***NPDES***") permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. EPA's authority under Section 308 of the CWA is limited to requesting certain information from the "owner or operator of ***any point source***." 33 U.S.C. § 1318(a)(A) (emphasis added). The Request does not present any claim or evidence that the wells owned or operated by Range are a "point source" subject to regulation under the CWA.[5] Absent evidence that specific well facilities are point sources within the purview of the CWA, Section 308 does not authorize the Request. Additionally, at this time, Pennsylvania is an NPDES

[5] Moreover, with limited exceptions, none of which Range believes are applicable in this instance, Section 402(l)(2) exempts from regulation under the CWA discharges of stormwater from oil and gas exploration, production, processing or treatment operations or transmission facilities. 42 U.S.C. § 1342(l)(2).

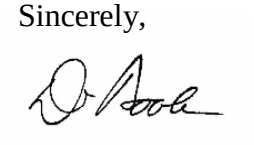
state, meaning that delegable NPDES functions are being implemented by PADEP, but Pennsylvania does not have an approved state pretreatment program. Accordingly, EPA serves as the Approval Authority for Pennsylvania's pretreatment program, but not for other aspects of the NPDES program. EPA accurately quotes CWA § 308 but its stated basis does not comport with the information requested. As explained by EPA in its letter, PADEP's request that natural gas well drilling operators cease delivering wastewater to 15 facilities in Pennsylvania triggered EPA's interest "in gathering information related to changes in industry practices that may be related to this development." However, the CWA does not authorize EPA to seek information on a whim or out of curiosity and EPA's stated basis is not logically connected to its statutory authority, which is limited to investigating actual or threatened discharges and "development of new effluent limits or pretreatment standards and to determine whether parties are in violation of existing effluent limits or pretreatment standards." Moreover, data provided to PADEP on a semi-annual basis for years prior responds to the requested information. The burden of producing duplicative historical information to EPA is great; it is incumbent on EPA to obtain such information from the state agency to which it has delegated the NPDES program functions. Furthermore, EPA seeks to arbitrarily change the frequency of reporting, i.e. semi-annually to quarterly, and the burden created far outweighs any discernable benefit to the Agency.

Accordingly, the scope of the Request is not authorized by the statutory provisions cited by EPA. Moreover, the Request purports to impose binding obligations on Range and purports to subject it to penalties for noncompliance. The Request, then, is akin to a legislative rule that imposes obligations and significantly affects private interests—implicating notice-and-comment procedures that EPA has yet to satisfy. *See, e.g.*, U.S. Telecom Ass'n v. F.C.C., 400 F.3d 29, 34–35 (D.C. Cir. 2005); Batterton v. Marshall, 648 F.2d 694, 701–02 (D.C. Cir. 1980). As stated previously, EPA seeks to arbitrarily change the frequency of reporting, i.e. semi-annually to quarterly. EPA cannot engage in *ad hoc* rulemaking, and until EPA follows administrative rulemaking procedures, it cannot impose an ongoing reporting obligation on Range pursuant to the statutory provisions cited. *See* Reuters Limited v. F.C.C., 781 F.2d 946, 950-51 (D.C. Cir. 1986) ("[I]t is elementary that an agency must adhere to its own rules and regulations. Ad hoc departures from those rules, even to achieve laudable aims, cannot be sanctioned, for therein lie the seeds of destruction of the orderliness and predictability which are the hallmarks of lawful administrative action. Simply stated, rules are rules, and fidelity to the rules which have been properly promulgated, consistent with applicable statutory requirements, is required of those to whom Congress has entrusted the regulatory missions of modern life.") (internal citation omitted).

Although it is Range's position that EPA's reliance on the provisions it cites as giving it authority to make the Request is misplaced, Range desires to cooperate with EPA and, in that spirit, offers EPA the responsive information enclosed. Additionally, if, after the date of this response, Range discovers additional similar information or documents Range will promptly

supplement its response. Range objects, however, to EPA's attempt to use an information request to obtain forward-looking information and to impose an ongoing reporting obligation without first satisfying administrative rulemaking procedures. If EPA desires, Range is open to discussing further EPA's interpretation of its authority to compel different or additional responses to the Request pursuant to the above-referenced statutory provisions. Any replies or correspondence related to this response should be directed to David P. Poole, General Counsel, Range Production Company, 100 Throckmorton Street, Suite 1200, Fort Worth, Texas 76102, or faxed to 817.869.4254, attention David Poole.

Sincerely,



David P. Poole

Enclosures

# ATTACHMENT A

**Range's Response to EPA's Request for Information**
**Regarding Marcellus Shale Flowback Water**

**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.**

**RESPONSE:**

See Attachment B.

**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.**

**RESPONSE:**

See attachment C. Please note that, because Range recycled Marcellus Shale wastewater in 2010, and therefore does not have "26R" forms available for 2010, Range is instead providing EPA with copies of its 2009 "26R" forms.

**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:**

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

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 3.a.

**3.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;**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 3.b.

**3.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;**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 3.c.

**3.d. A description of the method or methods by which you or any third party recyclers recycled such Gas Extraction Wastewater (April 19, 2011 to present);**

**RESPONSE:**

Range Resources classifies its water types consistent with the designations utilized by the Pennsylvania Department of Environmental Protection ("***PADEP***") in its semi-annual reporting Oil and Gas Annual Production System. These classifications are: Brine, Drilling, and Frac Fluid. Brine includes water collected from a well that is producing natural gas to sales. Drilling water is any water generated during drilling activities; this designation may include, but is not limited to, stormwater runoff from drilling pads, water collected in reserve pits, and residual water from recycling of water-based drilling mud. Each of these classifications of water is handled differently, and the way that each is handled depends in part on the geographic location of operations: either Northern Marcellus (North-Central Pennsylvania) or Southern Marcellus (Southwestern Pennsylvania).

Northern Marcellus

Currently all Brine, Drilling, and Frac Fluid waters are being collected on location and transported to Eureka Resources, LLC; a third-party owned and operated advanced treatment facility operating under PADEP General Permit WMGR119, PADEP Plan Approval 41-00079A, and Permit No. C-20 issued by the Williamsport Sanitary Authority under its EPA regulated industrial pretreatment program. The facility processes the water through equalization, primary clarification, metals precipitation, sand filtration, and mechanical vapor recompression/distillation. The condensed, distilled water is discharged to the local municipal authority while the concentrated brine is transported to injection wells in Ohio.

Southern Marcellus

Brine is collected on a daily basis from actively producing gas wells. Range is currently recycling approximately half of this volume of water. The water is recycled by transferring it to one of Range Resources' PADEP permitted reuse water impoundments. Before being transferred into the reuse water impoundments it is either filtered through a bag filtration system or cycled through a bank of weir tanks to remove any residual solids that may be present. The remaining volume of brine that is not recycled is transported directly from the well sites to injection wells in Ohio for disposal.

Stormwater runoff collected from constructed locations prior to the commencement of drilling operations is recycled by filtering it through a bag filtration system and transferring it to one of Range's PADEP permitted reuse water impoundments where it is stored for reuse. Water collected after the commencement of drilling operations is recycled by filtering it through a bag filtration system and transferring it to a third-party owned and operated PADEP permitted centralized treatment facility. The centralized treatment facility processes the water through equalization, metals precipitation, clarification, and multi-media filtration. The water is then transferred to one of Range's PADEP permitted reuse water impoundments where it is stored for reuse.

Water is also generated from drilling operations by the water-based mud recycling process. Water generated from this process is recycled by filtering it through a bag filtration system and transferring it to a third-party owned and operated PADEP permitted centralized treatment facility. The centralized treatment facility processes the water through equalization, metals precipitation, clarification, and multi-media filtration. The water is then transferred to one of Range Resources' PADEP permitted reuse water impoundments where it is stored for reuse.

Water produced through well completions operations is recycled by filtering it through a bag filtration system and transferring it to one of Range Resources' PADEP permitted reuse water impoundments where it is stored for reuse.

**3.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;**

**RESPONSE:**

Range is not currently required to submit a modified disposal plan to the Commonwealth and, as of the date of this response, has not submitted such a plan.

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

**RESPONSE:**

Range Resources utilizes reuse water impoundments constructed and permitted under PA Code Chapter 78.56 – 78.63 and the *Design, Construction and Maintenance Standards for Pits and Dam Embankments Associated with Impoundments for Oil and Gas Wells* to facilitate our reuse program in our Southern Marcellus operating area. Reuse water sources are segregated and treated, as described above, and then stored in our reuse water impoundments until utilized for well completion operations.

**3.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.**

**RESPONSE:**

| Water Reuse Impoundments | Location | |
|---|---|---|
| | Latitude | Longitude |
| [redacted] | 40°13'53.21"N | 80°16'24.75"W |
| | 40°12'25.2"N | 80°22'5.16"W |
| | 40°19'39.94"N | 80°17'46.73"W |
| | 40°7'22.67"N | 80°13'1.14"W |
| | 40°12'18.83"N | 80°24'57.69"W |
| | 40°14'42.29"N | 80°20'58.94"W |
| | 40°18'1.46"N | 80°13'48.40"W |
| | 40°5'26.72"N | 80°13'35.14"W |
| | | |

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

**RESPONSE:**

Prior to May 19, 2011 Range Resources utilized an established water recycling program, as described above, that eliminated water disposal through "conventional" surface discharge treatment facilities. Instead, all water was disposed of via either injection wells or Eureka Resources, LLC, which utilizes an advanced thermal distillation process to produce distilled water for discharge to the local municipal authority.

Range Resources intends to continue utilizing our existing approach and methodologies to water recycling as described above, with the exception of implementing a recycling program in our Northern Marcellus operations. This program will consist of transferring a percentage of Brine, Drilling, and Frac Fluid water from the locations at which they are produced directly to completions operations for reuse. The remaining percentage of Brine, Drilling, and Frac Fluid water will be transferred to Eureka Resources for treatment and disposal.

Upon implementation of our recycling program, we anticipate the below distribution of water recycling versus disposal for the remainder of calendar year 2011:

| Water | Recycle Percentage | Disposal Percentage | Disposal Location |
|---|---|---|---|
| Frac Fluid | 99% | 1% | Eureka Resources, LLC |
| Brine | 50% | 50% | OH Injection Wells and Eureka Resources |
| Drilling | 91% | 9% | Eureka Resources, LLC |

**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) quarters. Such quarterly reports shall include the following information for the prior quarter:**

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

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 5.a.

**5.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;**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 5.b.

**5.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;**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 5.c.

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

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 5.d.

**5.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.**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 5.e.

**5.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.**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request 5.f.

**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.**

**RESPONSE:**

For the reasons stated in the attached letter, Range respectfully declines to respond to Request No. 6. Additionally, Range objects to Request No. 6 because the request is vague, overbroad in scope, and, accordingly, is not authorized by law. The request uses a series of undefined and ambiguous terms, such as "discharge," "release," "any substances," and "all media." The request could be read to require the disclosure of the release of anything (*e.g.*, fresh water, stormwater runoff), anywhere (*e.g.*, steam and water evaporation), for the last five years. In referring to "any substances," the request exceeds EPA's authority under CERCLA, the CWA, and RCRA, which respectively refer only to hazardous substances, pollutants, and hazardous waste. As such, the request is beyond the scope of EPA's authority to seek information related to the actual and/or threatened release of hazardous substances or the release of contaminants or pollutants that may pose an imminent hazard, information related to point sources, or information related to hazardous waste activities.

# ATTACHMENT B

# Well List Info for EPA Reporting

Attachment B

NGE RESOURCES

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| 1H | 37-125-23932 | 1/20/2010 | 40°17 ' 27.7" N | 80°14' 52" W | 10/1/2010 | Turn On Production D ate |
| | 37-125-23933 | 1/21/2010 | 40°17' 27.7" N | 80°14' 52.3" W | 10/1/2010 | Turn On Production Date |
| | 37-125-22366 | 3/15/2007 | 40°17' 16.6" N | 80°18' 51" W | 9/29/2010 | Plug & Abandon Date |
| | 37-125-22447 | 2/5/2007 | 40°17' 0.133" N | 80°18' 36.986" W | 4/19/2007 | Turn On Production Date |
| H | 37-125-22831 | 9/20/2007 | 40°17' 29.69 9" N | 80°18' 43.402" W | 2/5/2008 | Turn On Production Dat e |
| 3H | 37-125-24299 | | 40°21' 46.55" N | 80° 16' 8.57" W | 3/16/2011 | Suspend Operations Date |
| owhead Hunting Club Unit 2 | 37-035-21123 | 10/13/2008 | 41°14' 48.206" N | 77°28' 28.592" W | 8/6/2010 | Plug & Ab andon Date |
| owhead Hunting Club Unit 3H | 37-035-21204 | 8/7/2010 | 41°14' 47.82" N | 77°28' 28.98" W | 9/23/2010 | TD Date |
| | 37-125-23730 | 6/27/2009 | 40°13' 49 .7" N | 80°16' 39.7" W | 6/12/2010 | Turn On Production Dat e |
| | 37-125-23731 | 6/27/2009 | 40°13' 50 .1" N | 80°16' 39.6" W | 6/12/2010 | Turn On Production Dat e |
| | 37-125-23732 | 6/28/2009 | 40°13' 50 .3" N | 80°16' 39.6" W | 6/12/2010 | Turn On Production Dat e |
| | 37-125-23785 | 7/21/2009 | 40°13' 50 .5" N | 80°16' 39.6" W | 8/26/2010 | Turn On Production Dat e |
| | 37-125-23733 | 6/28/2009 | 40°13' 50 .5" N | 80°16' 39.7" W | 8/26/2010 | Turn On Production Dat e |
| H | 37-125-23734 | 6/28/2009 | 40°13' 50 .3" N | 80°16' 39.7" W | 8/26/2010 | Turn On Production Dat e |
| | 37-125-23786 | 7/21/2009 | 40°13' 50 .1" N | 80°16' 39.7" W | 6/12/2010 | Turn On Production Dat e |
| | 37-125-23787 | 7/23/2009 | 40°13' 49.9" N | 80°16' 39.7" W | 6/12/2010 | Turn On Production Dat e |
| | 37-125-23471 | 12/30/2008 | 40°4' 49" N | 80°1 3' 21.2" W | 7/14/2009 | Plug & Abandon Date |
| | 37-125-23280 | 2/27/2009 | 40°16' 13" N | 80°18' 30.8" W | 7/31/2009 | Turn On Production Date |
| | 37-125-23591 | 4/9/2009 | 40°16' 13.1 " N | 80°18' 31" W | 7/29/2009 | Turn On Production Date |
| | 37-125-23609 | 5/28/2009 | 40°6' 59 .9" N | 80°13' 42.1" W | 2/15/2010 | Turn On Production Dat e |
| | 37-125-23153 | 5/17/2008 | 40°7' 0.098" N | 80°13' 42.208" W | 12/17/2009 | Turn On Production Date |
| | 37-125-23156 | 4/30/2009a | 40°7' 0.2" N | 80°13' 42.1" W | 12/22/2009 | Turn On Production Dat e |
| | 37-125-23160 | 5/23/2008 | 40°12' 24.99 8" N | 80°22' 3" W | 10/18/2009 | Turn On Production Date |
| | 37-125-23159 | 6/15/2008 | 40°12' 24.90 1" N | 80°22' 2.798" W | 10/5/2009 | Turn On Production Dat e |
| | 37-125-24022 | 4/21/2010 | 40°12' 24.47 " N | 80°22' 1.78" W | 2/11/2011 | Completions Date |
| | 37-125-24021 | 4/21/2010 | 40°12' 24.43 " N | 80°22' 1.6" W | 2/14/2011 | Completions Date |
| | 37-125-24109 | 4/20/2010 | 40°12' 24.61 " N | 80°22' 1.93" W | 2/21/2011 | Completions Date |
| | 37-125-24028 | 4/20/2010 | 40°12' 24.52 " N | 80°22' 1.97" W | 2/21/2011 | Completions Date |
| H | 37-125-24110 | 4/23/2010 | 40°12' 24.53 " N | 80°22' 1.56" W | 2/14/2011 | Completions Date |
| H | 37-125-24111 | 4/23/2010 | 40°12' 24" N | 80°22' 1.74" W | 2/21/2011 | Completions Date |
| | 37-123-43847 | 8/16/2007 | 41°46' 19.884" N | 79°27 ' 43.2" W | 11/27/2007 | Turn On Production Date |
| | 37-125-23277 | 10/28/2008 | 40°13' 58.102" N | 80°20' 17.7" W | 9/10/2009 | Turn On Production Date |
| | 37-125-23283 | 11/6/2008 | 40°13' 58.001" N | 8 0°20' 17.498" W | 10/2/2009 | Turn On Production Date |
| | 37-125-23282 | 11/3/2008 | 40°13' 58.001" N | 8 0°20' 17.3" W | 9/10/2009 | Turn On Production Date |
| | 37-125-23284 | 10/29/2008 | 40°13' 58.001" N | 80°20' 17.099" W | 5/17/2009 | TD Date |
| | 37-125-23370 | 11/30/2008 | 40°13' 58" N | 80° 20' 17" W | 9/10/2009 | Turn On Production Date |
| | 37-125-23368 | 11/13/2008 | 40°13' 58" N | 80° 20' 16.5" W | 9/10/2009 | Turn On Production Date |
| | 37-125-23369 | 11/30/2008 | 40°13' 58.155" N | 80°20' 15.526" W | 9/10/2009 | Turn On Production Date |
| | 37-125-24099 | 5/9/2010 | 40°7' 51.35" N | 8 0°11' 16.62" W | 4/2/2011 | TD Date |
| | 37-125-24100 | 5/10/2010 | 40°7' 51.46" N | 80°11' 17.13" W | 8/31/2010 | Suspend Operations Date |
| | 37-125-24096 | 5/9/2010 | 40°7' 51.2" N | 80 °11' 16.68" W | 10/5/2010 | Suspend Operations Date |
| | 37-125-24097 | 5/10/2010 | 40°7' 51.3" N | 8 0° 11' 16.9" W | 3/23/2011 | TD Date |
| | 37-125-24128 | 5/13/2010 | 40°7' 51.55" N | 8 0°11' 17.36" W | 3/12/2011 | TD Date |
| | 37-125-24129 | 5/13/2010 | 40°7' 51.65" N | 8 0°11' 17.31" W | 5/1/2011 | Resume Operations Date |
| | 37-125-24098 | 5/9/2010 | 40°7' 51.25" N | 80 °11' 16.39" W | 4/20/2011 | TD Date |
| | 37-125-24058 | 5/8/2010 | | | 4/12/2011 | TD Date |
| | 37-125-24130 | 5/10/2010 | 40°7' 51.48" N | 8 0°11' 16.84" W | 4/29/2011 | TD Date |
| | 37-125-24239 | | 40°0' 0" N | 80°0' 0" W | 3/23/2011 | Suspend Operations Date |
| | 37-125-24232 | 1/10/2011 | 40°13' 33.89" N | 80°22' 45.62" W | 1/26/2011 | Suspend Operations Date |
| | 37-125-24233 | 1/11/2011 | 40°13' 33.93" N | 80°22' 45.51" W | 2/17/2011 | Suspend Operations Date |
| | 37-125-24252 | 1/11/2011 | 40°13' 34.06" N | 80°22' 45.74" W | 3/11/2011 | Suspend Operations Date |
| | 37-125-24327 | 1/11/2011 | 40°13' 34.23" N | 80°22' 45.86" W | 3/21/2011 | Suspend Operations Date |
| | 37-125-24234 | 1/11/2011 | 40°13' 34.11" N | 80°22' 45.63" W | 3/2/2011 | Suspend Operations Date |
| | 37-125-24235 | | 40°0' 0" N | 80°0' 0" W | 3/23/2011 | Suspend Operations Date |
| | 37-125-24236 | 3/22/2011 | | | 4/21/2011 | Suspend Operations Date |
| | 37-125-24237 | 3/11/2011 | 40°13' 34.63" N | 80°22' 45.99" W | 3/30/2011 | Suspend Operations Date |
| | 37-125-24238 | 3/12/2011 | 40°13' 34.58" N | 80°22' 46.11" W | 4/7/2011 | Suspend Operations Date |
| | 37-083-51038 | 10/13/2006 | 41°45' 18.9" N | 78°24' 41.6" W | 1/24/2007 | Turn On Production Date |
| t Mountain Hunting Club 1 | 37-081-20056 | 7/23/2007 | 41°22' 36.367" N | 77°8' 13.794" W | 5/8/2008 | Shut-In Dat e |
| | 37-125-23173 | 8/18/2008 | 40°13' 34.8" N | 80°3 0' 59.3" W | 3/26/2011 | Plug & Abandon Date |
| | 37-125-23174 | 5/31/2008 | 40°13' 34.9" N | 80° 30' 59.3" W | 5/1/2009 | Turn On Production Date |
| | 37-125-22709 | 7/9/2007 | 40°16' 50" N | 80°22' 48.7" W | 1/18/2008 | Turn On Production Date |
| | 37-125-22258 | 1/20/2006 | 40°18' 24" N | 80° 19' 5.4" W | 10/9/2006 | Turn On Production Date |
| | 37-125-22237 | 5/1/2006 | 40°18' 39.7" N | 80° 19' 33.5" W | 10/25/2006 | Turn On Production Date |

NGE RESOURCES

# Well List Info for EPA Reporting

Attachment B

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| [redacted] | 37-125-22499 | 8/9/2007 | 40° 18' 19.8" N | 80° 19' 34.7" W | 10/2/2007 | Turn On Production Date |
| | 37-125-22500 | 2/23/2007 | 40° 18' 6.84" N | 80° 19' 17.183" W | 4/25/2007 | Turn On Production Date |
| | 37-125-24011 | 3/11/2010 | 40° 12' 38.6" N | 80° 21' 10" W | 2/13/2011 | Turn On Production Date |
| | 37-125-23970 | 3/12/2010 | 40° 12' 38.7" N | 80° 21' 10.2" W | 2/23/2011 | Turn On Production Date |
| | 37-125-23971 | 3/12/2010 | 40° 12' 38.5" N | 80° 21' 10.2" W | 2/22/2011 | Turn On Production Date |
| | 37-125-23864 | 3/10/2010 | 40° 12' 38.3" N | 80° 21' 10.1" W | 2/20/2011 | Turn On Production Date |
| | 37-125-23972 | 3/12/2010 | 40° 12' 38.4" N | 80° 21' 10" W | 2/19/2011 | Turn On Production Date |
| | 37-125-24013 | 3/12/2010 | 40° 12' 38.2" N | 80° 21' 10" W | 2/18/2011 | Turn On Production Date |
| | 37-125-23905 | 3/12/2010 | 40° 12' 38.9" N | 80° 21' 10.3" W | 2/17/2011 | Turn On Production Date |
| | 37-125-23906 | 3/11/2010 | 40° 12' 38.9" N | 80° 21' 10.1" W | 2/15/2011 | Turn On Production Date |
| | 37-125-24012 | 3/11/2010 | 40° 12' 38.7" N | 80° 21' 10.1" W | 2/13/2011 | Turn On Production Date |
| | 37-125-22252 | 11/17/2006 | 40° 16' 8" N | 80° 22' 16.9" W | 10/10/2006 | Turn On Production Date |
| | 37-125-22264 | 3/9/2006 | 40° 15' 55.4" N | 80° 21' 58.4" W | 10/16/2006 | Turn On Production Date |
| H | 37-125-22265 | 4/17/2006 | 40° 16' 13.44" N | 80° 22' 40.332" W | 5/17/2007 | Turn On Production Date |
| | 37-125-22440 | 1/17/2007 | 40° 15' 40.32" N | 80° 22' 38.88" W | 4/3/2007 | Turn On Production Date |
| | 37-125-22431 | 1/31/2007 | 40° 16' 15.3" N | 80° 21' 49.4" W | 3/29/2007 | Turn On Production Date |
| | 37-125-22434 | 2/12/2007 | 40° 15' 57.7" N | 80° 21' 32.6" W | 4/5/2007 | Turn On Production Date |
| | 37-125-22638 | 6/21/2007 | 40° 15' 43.1" N | 80° 22' 18.3" W | 3/19/2011 | Plug & Abandon Date |
| | 37-125-22508 | 1/8/2007 | 40° 15' 3.4" N | 80° 19' 28.3" W | 4/6/2007 | Turn On Production Date |
| | 37-125-22509 | 2/16/2007 | 40° 15' 11.9" N | 80° 19' 7" W | 4/12/2007 | Turn On Production Date |
| H | 37-125-22724 | 7/24/2007 | 40° 14' 54.2" N | 80° 19' 43.6" W | 6/19/2008 | Turn On Production Date |
| | 37-125-22725 | 6/30/2008 | 40° 14' 54.2" N | 80° 19' 43.4" W | 12/17/2009 | Plug & Abandon Date |
| | 37-125-22726 | 7/21/2007 | 40° 15' 25.054" N | 80° 19' 56.826" W | 10/19/2007 | Turn On Production Date |
| | 34-029-21656 | 11/19/2007 | 40° 49' 34.391" N | 80° 40' 3.755" W | 11/19/2007 | Spud Date |
| | 37-125-22636 | 9/25/2007 | 40° 18' 52.052" N | 80° 19' 16.724" W | 11/17/2007 | Turn On Production Date |
| | 37-125-23803 | 9/4/2009 | 40° 16' 0.4" N | 80° 21' 17.2" W | 5/5/2010 | Turn On Production Date |
| | 37-125-23804 | 9/3/2009 | 40° 16' 0.6" N | 80° 21' 17.2" W | 5/5/2010 | Turn On Production Date |
| | 37-125-23023 | 2/26/2008 | 40° 19' 48.3" N | 80° 16' 55.1" W | 1/13/2010 | Turn On Production Date |
| | 37-125-23304 | 1/22/2009 | 40° 19' 48.207" N | 80° 16' 54.997" W | 3/12/2010 | Turn On Production Date |
| | 37-125-23693 | 10/27/2009 | 40° 19' 41.2" N | 80° 17' 46" W | 5/21/2010 | Turn On Production Date |
| | 37-125-23780 | 10/28/2009 | 40° 19' 41.1" N | 80° 17' 45.4" W | 5/20/2010 | Turn On Production Date |
| | 37-125-23781 | 10/28/2009 | 40° 19' 41.1" N | 80° 17' 45.8" W | 5/21/2010 | Turn On Production Date |
| | 37-125-23782 | 10/28/2009 | 40° 19' 41.1" N | 80° 17' 45.6" W | 5/19/2010 | Turn On Production Date |
| s Creek County Park 14H | 37-125-23165 | 6/20/2008 | 40° 14' 47.9" N | 80° 22' 53.3" W | 6/2/2009 | Turn On Production Date |
| s Creek County Park 15H | 37-125-23182 | 6/28/2008 | 40° 14' 47.9" N | 80° 22' 53.5" W | 5/1/2009 | Turn On Production Date |
| s Creek County Park 16H | 37-125-23300 | 2/27/2009 | 40° 14' 47.9" N | 80° 22' 53.1" W | 6/19/2009 | Turn On Production Date |
| s Creek County Park 25H | 37-125-23859 | 10/29/2009 | 40° 15' 39.8" N | 80° 25' 27.5" W | 4/15/2010 | Turn On Production Date |
| s Creek County Park 5 | 37-125-22618 | 5/24/2007 | 40° 15' 2.5" N | 80° 22' 43.7" W | 6/23/2007 | Turn On Production Date |
| s Creek County Park 6H | 37-125-22830 | 7/15/2008 | 40° 15' 46.1" N | 80° 23' 17.8" W | 3/30/2009 | Turn On Production Date |
| s Creek County Park 7H | 37-125-22861 | 7/22/2008 | 40° 15' 39.2" N | 80° 23' 27" W | 4/14/2010 | Turn On Production Date |
| s Creek County Park 8H | 37-125-22793 | 7/2/2008 | 40° 15' 46.1" N | 80° 23' 17.6" W | 3/30/2009 | Turn On Production Date |
| s Creek County Park 9H | 37-125-22668 | 7/13/2008 | 40° 15' 39.6" N | 80° 23' 27.2" W | 4/14/2010 | Turn On Production Date |
| [redacted] | 34-081-20487 | 12/7/2007 | 40° 19' 4.751" N | 80° 36' 58.066" W | 12/12/2007 | TD Date |
| | 37-125-23185 | 1/14/2009 | 40° 7' 21.4" N | 80° 1' 2' 58.1" W | 5/20/2010 | Turn On Production Date |
| | 37-125-23205 | 9/2/2008 | 40° 7' 21.5" N | 80° 12 ' 57.9" W | 5/22/2010 | Turn On Production Date |
| | 37-125-23796 | 8/5/2009 | 40° 7' 21.8" N | 80° 12 ' 57.3" W | 5/21/2010 | Turn On Production Date |
| | 37-125-23828 | 9/18/2009 | 40° 7' 21.9" N | 80° 1 2' 57.3" W | 5/20/2010 | Turn On Production Date |
| | 37-125-23795 | 7/15/2009 | 40° 7' 21.7" N | 80° 1 2' 57.4" W | 5/22/2010 | Turn On Production Date |
| | 37-125-23829 | 8/17/2009 | 40° 7' 21.6" N | 80° 1 2' 57.7" W | 5/22/2010 | Turn On Production Date |
| | 37-125-23794 | 8/4/2009 | 40° 7' 21.5" N | 80° 12 ' 57.6" W | 5/20/2010 | Turn On Production Date |
| | 37-125-23797 | 7/16/2009 | 40° 7' 21" N | 80° 12' 57.5" W | 5/20/2010 | Turn On Production Date |
| | 37-125-24207 | 7/21/2010 | 40° 4' 32.92" N | 80° 14' 44.52" W | 3/12/2011 | TD Date |
| | 37-125-24046 | 7/20/2010 | 40° 4' 33" N | 80° 14' 44.4" W | 3/19/2011 | TD Date |
| | 37-125-24175 | 7/21/2010 | 40° 4' 32.77" N | 80° 14' 44.69" W | 3/3/2011 | TD Date |
| | 37-125-24045 | 7/21/2010 | 40° 4' 33.2" N | 80° 14' 44.2" W | 2/21/2011 | TD Date |
| | 37-125-22088 | 6/18/2005 | 40° 16' 47.028" N | 80° 17' 33.575" W | 3/21/2006 | Turn On Production Date |
| | 37-125-22238 | 8/21/2006 | 40° 17' 4" N | 80° 17' 31.5" W | 12/13/2007 | Turn On Production Date |
| | 37-125-22629 | 6/6/2007 | 40° 16' 44" N | 80° 17' 49.8" W | 7/20/2007 | Turn On Production Date |
| Run Hunting Club Unit 1H | 37-081-20219 | 6/9/2010 | 41° 19' 58.82" N | 77° 17' 29.37" W | 3/20/2011 | Completions Date |
| Run Hunting Club Unit 2H | 37-081-20220 | 7/8/2010 | 41° 19' 58.6" N | 77° 17' 29.3" W | 3/27/2011 | Completions Date |
| Run Hunting Club Unit 3H | 37-081-20329 | 9/27/2010 | 41° 19' 58.43" N | 77° 17' 29.24" W | 3/26/2011 | Completions Date |
| [redacted] | 37-125-23888 | 1/4/2010 | 40° 19' 13.1" N | 80° 18' 8.4" W | 4/19/2011 | Turn On Production Date |
| | 37-125-23889 | 1/4/2010 | 40° 19' 13.3" N | 80° 18' 8.3" W | 4/19/2011 | Turn On Production Date |
| | 37-125-23853 | 12/29/2009 | 40° 19' 13.4" N | 80° 18' 8.2" W | 4/21/2011 | Turn On Production Date |

ANGE RESOURCES

# Well List Info for EPA Reporting

Attachment B

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| [redacted] | 37-125-23890 | 1/4/2010 | 40° 19' 13.6" N | 80° 18' 8" W | 4/25/2011 | Turn On Production Date |
| | 37-125-23891 | 1/4/2010 | 40° 19' 13" N | 80° 18' 8" W | 4/26/2011 | Turn On Production Date |
| | 37-125-23829 | 1/4/2010 | 40° 19' 13.7" N | 80° 18' 7.8" W | 4/28/2011 | Turn On Production Date |
| | 37-125-23893 | 6/16/2010 | 40° 19' 13" N | 80° 18' 8.3" W | 4/29/2011 | Turn On Production Date |
| | 37-125-23894 | 6/16/2010 | 40° 19' 13.2" N | 80° 18' 8.2" W | 4/30/2011 | Turn On Production Date |
| | 37-015-20062 | | 41° 57' 8.352" N | 76° 39' 36.072" W | 1/1/2008 | Temporarily Abandon Date |
| | 37-125-23008 | 4/10/2008 | 40° 14' 37.7" N | 80° 16' 45.9" W | 2/1/2009 | Turn On Production Date |
| | 37-125-23130 | 4/12/2008 | 40° 14' 37.7" N | 80° 16' 46" W | 2/1/2009 | Turn On Production Date |
| | 37-125-22720 | 2/5/2008 | 40° 15' 15.1" N | 80° 19' 15.7" W | 2/6/2008 | Suspend Operations Date |
| | 37-125-22721 | 7/17/2008 | 40° 15' 15.1" N | 80° 19' 16" W | 2/1/2009 | Turn On Production Date |
| | 37-125-22722 | 7/23/2008 | 40° 15' 15.1" N | 80° 19' 16.2" W | 12/8/2009 | Plug & Abandon Date |
| | 37-125-22723 | 8/11/2007 | 40° 15' 15" N | 80° 19' 16.4" W | 12/4/2007 | Turn On Production Date |
| | 37-125-23697 | 7/16/2009 | 40° 17' 0.7" N | 80° 13' 38.4" W | 3/6/2010 | Turn On Production Date |
| | 37-125-23643 | 7/16/2009 | 40° 17' 0.7" N | 80° 13' 38.6" W | 3/4/2010 | Turn On Production Date |
| | 37-125-23637 | 7/17/2009 | 40° 17' 0.6" N | 80° 13' 38.4" W | 3/4/2010 | Turn On Production Date |
| | 37-125-23638 | 7/20/2009 | 40° 17' 0.7" N | 80° 13' 38.2" W | 3/4/2010 | Turn On Production Date |
| | 37-125-23759 | 7/20/2009 | 40° 17' 0.8" N | 80° 13' 38.2" W | 3/5/2010 | Turn On Production Date |
| | 37-125-22317 | 7/15/2006 | 40° 15' 46.3" N | 80° 19' 51.1" W | 12/19/2006 | Turn On Production Date |
| | 34-067-20376 | | 40° 24' 52.668" N | 80° 59' 58. 055" W | 1/1/2008 | TD Date |
| | 37-125-23908 | 3/29/2010 | 40° 18' 21" N | 80° 14' 0.03" W | 6/8/2010 | Suspend Operations Date |
| | 37-125-23994 | 3/26/2010 | 40° 18' 20.9" N | 80° 14' 0.02" W | 5/7/2010 | Suspend Operations Date |
| | 37-125-23909 | 3/29/2010 | 40° 18' 20.7" N | 80° 14' 0.02" W | 6/3/2010 | Suspend Operations Date |
| | 37-125-24165 | 7/8/2010 | 40° 3' 48.09" N | 80° 12' 15.49" W | 4/30/2011 | Completions Date |
| | 37-125-24164 | 7/9/2010 | 40° 3' 48.02" N | 80° 12' 15.25" W | 4/29/2011 | Completions Date |
| | 37-125-23196 | 8/12/2008 | 40° 11' 46.2" N | 80° 21' 6.5" W | 10/30/2009 | Turn On Production Date |
| | 37-125-23979 | 7/1/2010 | 40° 11' 45.5" N | 80° 21' 6.5" W | 4/17/2011 | Turn On Production Date |
| | 37-125-24029 | 7/1/2010 | 40° 11' 46.9" N | 80° 21' 6.3" W | 4/21/2011 | Turn On Production Date |
| nklin Lakeview Estates Unit 10H | 37-125-24200 | 1/14/2011 | 40° 8' 28.39" N | 80° 15' 42.21" W | 1/14/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 11H | 37-125-24201 | 1/14/2011 | 40° 8' 28.53" N | 80° 15' 42.04" W | 5/1/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 12H | 37-125-24220 | 9/28/2010 | 40° 9' 4.4" N | 80° 15' 9.32" W | 2/10/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 13H | 37-125-24221 | 1/5/2011 | 40° 9' 4.25" N | 80° 15' 10.06" W | 1/21/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 14H | 37-125-24139 | 9/28/2010 | 40° 9' 4.45" N | 80° 15' 9.6" W | 2/6/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 15H | 37-125-24138 | 9/29/2010 | 40° 9' 4.5" N | 80° 15' 9.35" W | 11/3/2010 | Suspend Operations Date |
| nklin Lakeview Estates Unit 1H | 37-125-24198 | 1/13/2011 | 40° 8' 28.02" N | 80° 15' 42.45" W | 3/26/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 2H | 37-125-24199 | 1/14/2011 | 40° 8' 28.47" N | 80° 15' 41.95" W | 4/20/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 3H | 37-125-24307 | 1/14/2011 | 40° 8' 28.32" N | 80° 15' 42.12" W | 4/8/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 4H | 37-125-23948 | 6/10/2010 | 40° 9' 4.3" N | 80° 15' 10.1" W | 2/16/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 5H | 37-125-23946 | 6/11/2010 | 40° 9' 4.4" N | 80° 15' 9.8" W | 1/31/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 6H | 37-125-23939 | 6/9/2010 | 40° 9' 4.3" N | 80° 15' 10.3" W | 1/28/2011 | Suspend Operations Date |
| nklin Lakeview Estates Unit 7H | 37-125-24322 | 1/14/2011 | 40° 8' 28.17" N | 80° 15' 42.29" W | 3/14/2011 | Suspend Operations Date |
| [redacted] | 37-081-20535 | 4/5/2011 | 41° 17' 46.34" N | 77° 13' 14.23" W | 4/15/2011 | Resume Operations Date |
| eral Refractories 5 | 37-051-21294 | 10/1/2007 | 40° 5' 3.529" N | 79° 42' 32.519" W | 10/31/2007 | Turn On Production Date |
| [redacted] | 37-081-20164 | 3/2/2010 | 41° 18' 8.3" N | 77° 18' 24.8" W | 2/20/2011 | Turn On Production Date |
| | 37-081-20156 | 3/26/2010 | 41° 18' 8.2" N | 77° 18' 24.6" W | 2/16/2011 | Turn On Production Date |
| | 37-081-20150 | 3/27/2010 | 41° 18' 8.2" N | 77° 18' 24.3" W | 2/16/2011 | Turn On Production Date |
| | 37-081-20151 | 3/27/2010 | 41° 18' 8.1" N | 77° 18' 24.1" W | 2/16/2011 | Turn On Production Date |
| | 37-081-20215 | 3/2/2010 | 41° 18' 7.9" N | 77° 18' 24" W | 2/16/2011 | Turn On Production Date |
| | 37-125-23100 | 5/23/2008 | 40° 14' 38.5" N | 80° 18' 34.5" W | 11/14/2008 | Turn On Production Date |
| | 37-125-23898 | 11/12/2009 | 40° 14' 38.2" N | 80° 18' 34.8" W | 4/21/2010 | TD Date |
| | 37-125-23899 | 11/11/2009 | 40° 14' 38.2" N | 80° 18' 34.7" W | 3/24/2010 | TD Date |
| | 37-125-23900 | | 40° 14' 38" N | 80° 18' 34.8 " W | 11/12/2009 | Suspend Operations Date |
| | 37-125-23935 | 11/12/2009 | 40° 14' 38" N | 80° 18' 35" W | 6/27/2010 | Turn On Production Date |
| | 37-125-23901 | 11/11/2009 | 40° 14' 37.9" N | 80° 18' 35.1" W | 6/27/2010 | Turn On Production Date |
| | 37-125-23875 | 12/16/2009 | 40° 14' 24.6" N | 80° 27' 52.5" W | 9/5/2010 | Turn On Production Date |
| | 37-125-23876 | 12/16/2009 | 40° 14' 24.6" N | 80° 27' 52.7" W | 9/5/2010 | Turn On Production Date |
| | 37-125-23877 | 12/14/2009 | 40° 14' 24.4" N | 80° 27' 53.1" W | 1/25/2010 | Plug & Abandon Date |
| | 37-125-22990 | 5/12/2009 | 40° 14' 25.4" N | 80° 27' 51.4" W | 8/4/2009 | Turn On Production Date |
| | 37-125-23870 | 12/14/2009 | 40° 14' 24.4" N | 80° 27' 53.4" W | 9/5/2010 | Turn On Production Date |
| | 37-125-23871 | 12/14/2009 | 40° 14' 24.5" N | 80° 27' 52.9" W | 9/5/2010 | Turn On Production Date |
| | 37-125-23872 | 2/6/2010 | 40° 14' 24.5" N | 80° 27' 53.2" W | 9/5/2010 | Turn On Production Date |
| USA 40H | 37-027-21629 | 12/17/2010 | 41° 3' 2.2" N | 77° 54' 30.5" W | 4/11/2011 | Completions Date |
| USA 9 | 37-027-21117 | 8/19/2007 | 41° 0' 23.747" N | 77° 57' 39.448" W | 12/16/2007 | Turn On Production Date |
| [redacted] | 37-125-22212 | 1/8/2007 | 40° 16' 33.1" N | 80° 18' 28.4" W | 9/30/2010 | Plug & Abandon Date |
| | 37-125-22941 | 12/13/2007 | 40° 16' 26.4" N | 80° 19' 6.1" W | 2/20/2008 | Turn On Production Date |

# Well List Info for EPA Reporting

Attachment B

NGE RESOURCES

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| | 37-125-22261 | 12/5/2005 | 40° 16' 21.8" N | 80 ° 18' 51.8" W | 6/3/2006 | Turn On Production Date |
| | 37-125-22259 | 2/25/2006 | 40° 16' 59.2" N | 80 ° 18' 11.4" W | 3/20/2011 | Plug & Abandon Date |
| | 37-125-22300 | 5/2/2007 | 40° 16' 20.7" N | 80° 18' 48.3" W | 2/23/2008 | Turn On Production Date |
| | 37-125-22639 | 5/29/2007 | 40° 16' 20.6" N | 80 ° 18' 31.9" W | 8/19/2007 | Turn On Production Date |
| | 37-059-24798 | 8/15/2008 | 39° 48' 54.5" N | 8 0° 0' 16.4" W | 12/20/2010 | Turn On Production Date |
| | 37-059-24661 | 4/20/2008 | 39° 48' 54.6" N | 8 0° 0' 16.4" W | 11/16/2010 | Turn On Production Date |
| H | 37-081-20292 | 2/12/2011 | 41° 14' 2 2.14" N | 76° 40' 19.19" W | 3/15/2011 | Suspend Operations Date |
| | 37-129-25004 | 9/23/2008 | 40° 9' 32.3" N | 79° 42' 7.4" W | 12/3/2008 | Shut-In Date |
| | 37-125-22471 | 3/6/2007 | 40° 17' 44.3" N | 80° 17' 53.6" W | 4/17/2007 | Turn On Production Date |
| | 37-125-22472 | 3/19/2007 | 40° 17' 54.8" N | 80° 17' 31.7" W | 5/17/2007 | Turn On Production Date |
| | 37-125-22882 | 9/13/2007 | 40° 17' 56.6" N | 80° 17' 48.4" W | 2/29/2008 | Turn On Production Date |
| | 37-125-23923 | 4/9/2010 | 40° 9' 5 .3" N | 80° 24' 57.2" W | 3/23/2011 | TD Date |
| | 37-125-24000 | 5/3/2010 | 40° 9' 5 .3" N | 80° 24' 57.1" W | 3/31/2011 | TD Date |
| | 37-125-24001 | 4/16/2010 | 40° 9' 5.1" N | 80° 24' 57" W | 3/11/2011 | TD Date |
| | 37-125-24002 | 4/15/2010 | 40° 9' 4.9" N | 80° 24' 56.9" W | 1/25/2011 | TD Date |
| | 37-125-23922 | 4/15/2010 | 40° 9' 4.5" N | 80° 24' 56.8" W | 2/7/2011 | TD Date |
| | 37-125-23921 | 4/15/2010 | 40° 9' 4.5" N | 80° 24' 56.9" W | 2/18/2011 | TD Date |
| | 37-125-23920 | 4/15/2010 | 40° 9' 4.5" N | 80° 24' 56.9" W | 4/6/2011 | TD Date |
| | 37-125-23919 | 4/16/2010 | 40° 9' 4.9" N | 80° 24' 57.1" W | 3/2/2011 | TD Date |
| | 37-125-24003 | 5/3/2010 | 40° 9' 5 .1" N | 80° 24' 57.1" W | 1/10/2011 | TD Date |
| | 37-125-23690 | 5/15/2009 | 40° 14' 55 " N | 80° 15' 47.6" W | 12/15/2009 | Turn On Production Date |
| | 37-125-23032 | 4/23/2008 | 40° 14' 54 .9" N | 80° 15' 48.2" W | 12/15/2009 | Turn On Production Date |
| | 37-125-23735 | 8/5/2009 | 40° 14' 55" N | 80° 15' 47.4" W | 12/15/2009 | Turn On Production Date |
| | 37-125-23691 | 5/16/2009 | 40° 14' 55 " N | 80° 15' 48.2" W | 12/20/2009 | Turn On Production Date |
| | 37-125-23822 | 8/20/2009 | 40° 14' 55 .1" N | 80° 15' 47.4" W | 12/15/2009 | Turn On Production Date |
| | 37-125-23692 | 5/16/2009 | 40° 14' 55 " N | 80° 15' 47.8" W | 12/15/2009 | Turn On Production Date |
| | 37-059-24131 | 4/10/2007 | 39° 48' 15.51" N | 79° 58 ' 7.011" W | 10/12/2007 | Turn On Production Date |
| | 37-059-24562 | 1/28/2008 | 39° 48' 38.4" N | 79° 58 ' 3.5" W | 7/10/2008 | Turn On Production Date |
| | 37-125-23328 | 12/16/2008 | 40° 10' 23.5" N | 80° 3' 11" W | 5/29/2009 | Shut-In Date |
| | 37-125-23934 | 1/19/2010 | 40° 10' 25.5" N | 80° 3' 10.8" W | 10/2/2010 | Shut-In Date |
| | 37-125-24026 | 3/30/2010 | 40° 10' 25.09" N | 80° 3' 10.84" W | 10/5/2010 | Shut-In Date |
| | 37-125-23157 | 6/10/2008 | 40° 14' 35.6" N | 80° 19' 17.4" W | 3/3/2009 | Turn On Production Date |
| | 37-125-23158 | 6/21/2008 | 40° 14' 35.5" N | 80° 19' 17.5" W | 3/3/2009 | Turn On Production Date |
| | 37-125-24337 | 3/12/2011 | 40° 23' 5.55" N | 80° 16' 41" W | 3/13/2011 | Suspend Operations Date |
| | 37-125-24171 | 3/12/2011 | 40° 23' 5.55" N | 80° 16' 41.95" W | 3/13/2011 | Suspend Operations Date |
| | 37-125-24338 | 3/12/2011 | 40° 23' 5.54" N | 80° 16' 41" W | 3/13/2011 | Suspend Operations Date |
| | 37-125-24173 | 3/12/2011 | 40° 23' 5.54" N | 80° 16' 40.92" W | 3/13/2011 | Suspend Operations Date |
| | 37-125-24196 | 3/12/2011 | 40° 23' 5.65" N | 80° 16' 41.95" W | 4/6/2011 | Suspend Operations Date |
| | 37-125-24197 | 3/11/2011 | 40° 23' 5.65" N | 80° 16' 41.69" W | 4/15/2011 | Suspend Operations Date |
| | 37-125-24174 | 3/13/2011 | 40° 23' 5.64" N | 80° 16' 41.43" W | 3/14/2011 | Suspend Operations Date |
| | 37-059-24935 | 1/22/2009 | 39° 49' 23" N | 80° 1' 21.6" W | 6/5/2009 | Shut-In Date |
| | 37-125-23158 | 12/14/2008 | 39° 49' 50 .7" N | 80° 1' 23.9" W | 6/5/2009 | Shut-In Date |
| | 37-125-24017 | 6/29/2010 | 40° 3' 58.59" N | 79° 56' 47.94" W | 3/1/2011 | Completions Date |
| | 37-125-24120 | 6/29/2010 | 40° 3' 58.56" N | 79° 56' 48.19" W | 3/1/2011 | Completions Date |
| H | 37-125-23861 | 11/19/2009 | 40° 16' 33" N | 80° 14' 22.3" W | 9/19/2010 | Turn On Production Date |
| H | 37-125-23860 | 11/19/2009 | 40° 16' 33.2" N | 80° 14' 22.3" W | 9/19/2010 | Turn On Production Date |
| | 37-125-22758 | 8/13/2007 | 40° 16' 37.5" N | 80° 14' 24.9" W | 12/31/2008 | Turn On Production Date |
| | 37-125-22874 | 9/16/2007 | 40° 16 ' 35.1" N | 80° 14' 6.2" W | 10/25/2008 | Turn On Production Date |
| | 37-125-22752 | 12/16/2007 | 40° 17' 0.7" N | 80° 13' 39.3" W | 12/16/2008 | Turn On Production Date |
| | 37-125-23040 | 3/28/2008 | 40° 16' 37.6" N | 80° 14' 24.7" W | 11/18/2008 | Turn On Production Date |
| | 37-125-23041 | 4/10/2008 | 40° 16' 37.6" N | 80° 14' 24.5" W | 11/2/2008 | Turn On Production Date |
| | 37-125-24113 | 1/15/2011 | 40° 1' 46.19" N | 80° 12' 51.44" W | 4/8/2011 | Suspend Operations Date |
| | 37-125-24114 | 1/15/2011 | 40° 1' 46.03" N | 80° 12' 51.29" W | 3/26/2011 | Suspend Operations Date |
| | 37-125-24297 | 1/15/2011 | 40° 1' 45.7" N | 80° 12' 50.99" W | 2/15/2011 | Suspend Operations Date |
| | 37-125-24115 | 3/17/2011 | 40° 1' 46.08" N | 80° 12' 51.18" W | 4/19/2011 | Suspend Operations Date |
| | 37-125-24116 | 3/18/2011 | 40° 1' 45.92" N | 80° 12' 51.03" W | 4/28/2011 | Suspend Operations Date |
| | 37-125-24117 | 3/18/2011 | 40° 1' 45.6" N | 80° 12' 50.74" W | 4/30/2011 | Resume Operations Date |
| | 37-125-24118 | 1/14/2011 | 40° 1' 45.86" N | 80° 12' 51.14" W | 2/28/2011 | Suspend Operations Date |
| | 37-125-23274 | 11/10/2008 | 40° 12' 20.1" N | 80° 25' 9.7" W | 12/14/2009 | Turn On Production Date |
| | 37-125-23275 | 12/12/2008 | 40° 12' 19.9" N | 80° 25' 9.6" W | 11/23/2009 | Turn On Production Date |
| | 37-125-23640 | 4/4/2009 | 40° 12' 35.3" N | 80 ° 25' 55.1" W | 12/15/2009 | Turn On Production Date |
| | 37-125-23644 | 4/3/2009 | 40° 12' 19.559" N | 80° 25' 9.63" W | 11/20/2009 | Turn On Production Date |
| H | 37-125-23641 | 4/3/2009 | 40° 12' 20.109" N | 80° 25' 9.571" W | 11/18/2009 | Turn On Production Date |
| H | 37-125-23642 | 5/22/2009 | 40° 12' 20.3" N | 8 0° 25' 9.6" W | 11/17/2009 | Turn On Production Date |

# Well List Info for EPA Reporting

Attachment B

ANGE RESOURCES

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| [redacted] | 37-125-23308 | 6/2/2009 | 40° 14' 38.9" N | 80° 20' 30.9" W | 2/4/2010 | Turn On Production Date |
| | 37-125-23367 | 6/2/2009 | 40° 14' 38.9" N | 80° 20' 30.7" W | 2/4/2010 | Turn On Production Date |
| | 37-125-23696 | 6/8/2009 | 40° 14' 38.9" N | 80° 20' 30.5" W | 2/4/2010 | Turn On Production Date |
| | 37-125-23695 | 6/13/2009 | 40° 14' 38.9" N | 80° 20' 30.5" W | 8/10/2009 | TD Date |
| | 37-125-23705 | 6/13/2009 | 40° 14' 38.8" N | 80° 20' 30.7" W | 2/4/2010 | Turn On Production Date |
| | 37-125-22637 | 6/7/2007 | 40° 17' 56.3" N | 80° 22' 43.9" W | 11/10/2008 | Turn On Production Date |
| | 37-125-24328 | 1/26/2011 | 40° 17' 56.94" N | 80° 22' 46.45" W | 3/4/2011 | Suspend Operations Date |
| | 37-125-24326 | 1/26/2011 | 40° 17' 56.88" N | 80° 22' 46.55" W | 3/21/2011 | Suspend Operations Date |
| | 37-125-24323 | 1/26/2011 | 40° 17' 57.19" N | 80° 22' 46.88" W | 3/27/2011 | Suspend Operations Date |
| | 37-125-24324 | 1/27/2011 | 40° 17' 57.1" N | 80° 22' 46.62" W | 3/11/2011 | Suspend Operations Date |
| | 37-125-24325 | 1/27/2011 | 40° 17' 56.79" N | 80° 22' 46.29" W | 2/24/2011 | Suspend Operations Date |
| | 37-125-23007 | 2/21/2008 | 40° 15' 20.3" N | 80° 14' 14.7" W | 10/21/2008 | Turn On Production Date |
| e Walnut Hunting Club 10H | 37-081-20317 | 1/4/2011 | 41° 18' 18.6" N | 77° 17' 43.84" W | 4/11/2011 | TD Date |
| e Walnut Hunting Club 11H | 37-081-20318 | 1/12/2011 | 41° 18' 18.4" N | 77° 17' 44.13" W | 4/28/2011 | TD Date |
| e Walnut Hunting Club 9H | 37-081-20316 | 3/17/2011 | | | 5/1/2011 | Resume Operations Date |
| [redacted] | 37-125-22600 | 6/21/2007 | 40° 15' 3.5" N | 80° 22' 4.8" W | 3/16/2008 | Turn On Production Date |
| | 37-125-23169 | 8/7/2008 | 40° 14' 37.6" N | 80° 20' 50.4" W | 8/7/2009 | Turn On Production Date |
| | 37-083-51202 | 10/13/2006 | 41° 46' 45.047" N | 78° 1' 6" 20.604" W | 1/5/2007 | Turn On Production Date |
| | 37-125-23798 | 7/7/2010 | 40° 12' 53.4" N | 80° 29' 40.6" W | 1/3/2011 | TD Date |
| | 37-125-24188 | 7/6/2010 | 40° 12' 53.5" N | 80° 29' 40.5" W | 1/11/2011 | Suspend Operations Date |
| | 37-125-23084 | 8/28/2008 | 40° 15' 27" N | 80° 18' 37.7" W | 1/8/2009 | Turn On Production Date |
| | 37-081-20063 | 2/20/2008 | 41° 22' 28.8" N | 77° 8' 5.4" W | 7/12/2008 | TD Date |
| | 37-081-20134 | 7/27/2009 | 41° 22' 28.8" N | 77° 8' 5.2" W | 2/17/2010 | Shut-In Date |
| | 37-125-24282 | 4/19/2011 | 40° 18' 16.04" N | 80° 19' 38.27" W | 4/20/2011 | Suspend Operations Date |
| | 37-125-24283 | 4/18/2011 | 40° 18' 15.77" N | 80° 19' 38.67" W | 4/19/2011 | Suspend Operations Date |
| | 37-125-24284 | 4/19/2011 | 40° 18' 15.94" N | 80° 19' 38.52" W | 4/20/2011 | Suspend Operations Date |
| | 37-125-24279 | 4/19/2011 | 40° 18' 16.26" N | 80° 19' 38.23" W | 4/20/2011 | Suspend Operations Date |
| | 37-125-24281 | 4/17/2011 | 40° 18' 15.56" N | 80° 19' 38.71" W | 4/18/2011 | Suspend Operations Date |
| | 34-123-43883 | 8/23/2007 | 41° 45' 36.756" N | 79° 33 ' 15.876" W | 10/26/2007 | Turn On Production Date |
| | 37-125-22582 | 3/28/2007 | 40° 19' 19.3" N | 80° 20' 0.5" W | 5/3/2007 | Turn On Production Date |
| | 37-125-23098 | 5/5/2008 | 40° 12' 34. 881" N | 80° 19' 15.444" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23882 | 12/17/2009 | 40° 12' 55.5" N | 80° 18' 52.7" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23881 | 12/17/2009 | 40° 12' 5 5.6" N | 80° 18' 52.5" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23883 | 1/4/2010 | 40° 12' 55. 1" N | 80° 18' 53.4" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23886 | 1/4/2010 | 40° 12' 55. 3" N | 80° 18' 53.2" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23885 | 1/4/2010 | 40° 12' 55. 4" N | 80° 18' 53" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23887 | 1/4/2010 | 40° 12' 55. 7" N | 80° 18' 52.3" W | 11/29/2010 | Turn On Production Date |
| | 37-125-23763 | 9/26/2009 | 40° 14' 28 .6" N | 80° 21' 55.4" W | 5/14/2010 | Turn On Production Date |
| | 37-125-23764 | 9/28/2009 | 40° 14' 28 .4" N | 80° 21' 55.4" W | 5/14/2010 | Turn On Production Date |
| | 37-125-23765 | 9/29/2009 | 40° 14' 28 .2" N | 80° 21' 55.4" W | 5/18/2010 | Turn On Production Date |
| | 37-125-23873 | 11/5/2009 | 40° 14' 28 .1" N | 80° 21' 55.4" W | 5/18/2010 | Turn On Production Date |
| | 37-125-22799 | 11/7/2007 | 40° 16' 18.5" N | 80° 17' 54.4" W | 1/19/2008 | Turn On Production Date |
| | 37-125-22801 | 9/12/2008 | 40° 16' 10.5" N | 80° 18' 7.2" W | 3/9/2009 | Turn On Production Date |
| awk Lodge Unit 5H | 37-035-21202 | 8/22/2010 | 41° 13' 50.44" N | 77° 28' 3.79" W | 10/15/2010 | TD Date |
| [redacted] | 37-125-22410 | 8/31/2006 | 40° 15' 37.2" N | 80° 30' 11.3" W | 4/9/2009 | Turn On Production Date |
| | 37-125-22401 | 8/14/2006 | 40° 17' 9.1" N | 80° 19' 17.3" W | 11/4/2006 | Turn On Production Date |
| | 37-125-22620 | 4/13/2007 | 40° 17' 32.4" N | 80° 19' 28.6" W | 5/10/2007 | Turn On Production Date |
| | 34-019-21972 | 8/17/2007 | 40° 38' 15.648" N | 80° 59' 45.815" W | 8/17/2007 | Spud Date |
| ntz Fishing Club 1 | 37-081-20057 | 10/16/2007 | 41° 19' 18.459" N | 77° 17' 52.706" W | 3/28/2011 | Turn On Production Date |
| ntz Fishing Club 18H | 37-081-20480 | 4/25/2011 | | | 4/25/2011 | Suspend Operations Date |
| ntz Fishing Club 19H | 37-081-20481 | 4/25/2011 | | | 4/25/2011 | Suspend Operations Date |
| ntz Fishing Club 20H | 37-081-20482 | 4/25/2011 | | | 4/25/2011 | Suspend Operations Date |
| ntz Fishing Club 21H | 37-081-20483 | 4/25/2011 | | | 4/25/2011 | Suspend Operations Date |
| ntz Fishing Club 22H | 37-081-20484 | 4/25/2011 | | | 4/25/2011 | Suspend Operations Date |
| ntz Fishing Club 23H | 37-081-20485 | 4/25/2011 | | | 4/26/2011 | Suspend Operations Date |
| ntz Fishing Club 3H | 37-081-20067 | 3/26/2008 | 41° 19' 23.6" N | 77° 17' 31.4" W | 1/8/2010 | Shut-In Date |
| ntz Fishing Club 7H | 37-081-20387 | 11/2/2010 | 41° 19' 23.33" N | 77° 17' 29.74" W | 4/4/2011 | Completions Date |
| ntz Fishing Club 8H | 37-081-20386 | 11/3/2010 | 41° 19' 23.18" N | 77° 17' 29.57" W | 1/16/2011 | TD Date |
| ntz Fishing Club 9H | 37-081-20385 | 11/4/2010 | 41° 19' 12.03" N | 77° 17' 29.4" W | 4/4/2011 | Completions Date |
| ntz Fishing Club Unit 12H | 37-081-20235 | 7/20/2010 | 41° 19' 53.5" N | 77° 16' 57.1" W | 3/16/2011 | TD Date |
| ntz Fishing Club Unit 13H | 37-081-20246 | 7/21/2010 | 41° 19' 53.9" N | 77° 16' 56.1" W | 4/3/2011 | TD Date |
| ntz Fishing Club Unit 14H | 37-081-20236 | 7/20/2010 | 41° 19' 53.3" N | 77° 16' 57" W | 2/27/2011 | TD Date |
| ntz Fishing Club Unit 16H | 37-081-20238 | 7/22/2010 | 41° 19' 54" N | 77° 16' 57.4" W | 4/20/2011 | TD Date |
| ntz Fishing Club Unit 17H | 37-081-20239 | 7/22/2010 | 41° 19' 53.8" N | 77° 16' 57.3" W | 4/13/2011 | TD Date |

# Well List Info for EPA Reporting

Attachment B

NGE RESOURCES

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| o Valley LBC Unit 1 | 37-125-22420 | 10/19/2006 | 40° 16' 4.9" N | 80° 20' 52.3" W | 12/21/2006 | Turn On Production Date |
| o Valley LBC Unit 11H | 37-125-24148 | 11/16/2010 | 40° 16' 37.5" N | 80° 20' 59.15" W | 11/17/2010 | Suspend Operations Date |
| o Valley LBC Unit 12H | 37-125-24147 | 11/16/2010 | 40° 16' 37.67" N | 80° 20' 59.27" W | 11/17/2010 | Suspend Operations Date |
| o Valley LBC Unit 14H | 37-125-24146 | 11/16/2010 | 40° 16' 37.37" N | 80° 20' 58.91" W | 4/26/2011 | Resume Operations Date |
| o Valley LBC Unit 15H | 37-125-24149 | 11/16/2010 | 40° 16' 37.85" N | 80° 20' 59.39" W | 11/17/2010 | Suspend Operations Date |
| o Valley LBC Unit 16H | 37-125-24144 | 11/16/2010 | 40° 16' 37.32" N | 80° 20' 59.03" W | 11/17/2010 | Suspend Operations Date |
| o Valley LBC Unit 2 | 37-125-22414 | 11/29/2006 | 40° 16' 30.3" N | 80° 20' 35.2" W | 1/10/2007 | Turn On Production Date |
| o Valley LBC Unit 3 | 37-125-22415 | 10/7/2006 | 40° 16' 36" N | 80° 21' 15.5" W | 12/28/2006 | Turn On Production Date |
| o Valley LBC Unit 4 | 37-125-22433 | 6/15/2007 | 40° 16' 16.3" N | 80° 21' 13.4" W | 2/12/2007 | Turn On Production Date |
| o Valley LBC Unit 6 | 37-125-22495 | 12/22/2006 | 40° 16' 27.6" N | 80° 20' 58.7" W | 3/14/2007 | Turn On Production Date |
| o Valley LBC Unit 8H | 37-125-24145 | 11/15/2010 | 40° 16' 38.02" N | 80° 20' 59.51" W | 11/16/2010 | Suspend Operations Date |
| [redacted] | 37-125-22532 | 4/12/2007 | 40° 16' 13.7" N | 80° 20' 21.3" W | 5/15/2007 | Turn On Production Date |
| | 37-125-22533 | 4/30/2007 | 40° 16' 13.8" N | 80° 19' 58.9" W | 6/2/2007 | Turn On Production Date |
| | 37-125-22536 | 5/11/2007 | 40° 15' 49.2" N | 80° 20' .43" W | 6/17/2007 | Turn On Production Date |
| | 37-125-22537 | 5/12/2007 | 40° 15' 36.2" N | 80° 20' 20.2" W | 7/11/2007 | Turn On Production Date |
| | 37-125-23357 | 6/25/2009 | 40° 15' 36.1" N | 80° 20' 15.6" W | 3/20/2010 | Turn On Production Date |
| | 37-125-23358 | 6/25/2009 | 40° 15' 36" N | 80° 20' 1 5.9" W | 3/20/2010 | Turn On Production Date |
| | 37-125-23596 | 9/14/2010 | 40° 16' 23.89" N | 80° 15' 30.13" W | 4/15/2011 | TD Date |
| | 37-125-24248 | 9/13/2010 | 40° 16' 23.7" N | 80° 15' 30.13" W | 12/21/2010 | Suspend Operations Date |
| | 37-125-24249 | 9/13/2010 | 40° 16' 23.1" N | 80° 15' 30.1" W | 4/21/2011 | TD Date |
| | 37-125-24250 | 9/13/2010 | 40° 16' 23.3" N | 80° 15' 30.11" W | 5/1/2011 | TD Date |
| | 37-125-24251 | 9/13/2010 | 40° 16' 23.5" N | 80° 15' 30.12" W | 4/8/2011 | TD Date |
| | 37-125-22899 | 2/22/2008 | 40° 16' 16" N | 80° 15' 8.4" W | 4/1/2008 | TD Date |
| | 37-125-23359 | 11/4/2008 | 40° 16' 3 5.5" N | 80° 15' 0.2" W | 4/23/2009 | Turn On Production Date |
| | 37-125-22897 | 1/13/2008 | 40° 16' 2 7.8" N | 80° 15' 14" W | 10/24/2008 | Turn On Production Date |
| | 37-125-23056 | 3/12/2008 | 40° 16' 2 7.8" N | 80° 15' 13.7" W | 3/23/2009 | Turn On Production Date |
| | 37-125-23057 | 10/25/2008 | 40° 16' 35.6" N | 80° 15' 0.2" W | 4/23/2009 | Turn On Production Date |
| | 37-125-22942 | 11/12/2007 | 40° 15' 16" N | 80° 14' 54.6" W | 10/23/2008 | Turn On Production Date |
| | 37-125-22991 | 7/26/2008 | 40° 15' 30" N | 80° 14' 53.3" W | 4/5/2009 | Turn On Production Date |
| | 37-125-22900 | 10/3/2007 | 40° 17' 1.6" N | 8 0° 17' 52.7" W | 11/19/2007 | Turn On Production Date |
| | 37-125-22505 | 8/21/2007 | 40° 17' 25.2" N | 8 0° 17' 42.7" W | 10/22/2007 | Turn On Production Date |
| | 37-125-22664 | 9/1/2007 | 40° 17' 22.9" N | 80° 17' 53.9" W | 10/23/2007 | Turn On Production Date |
| | 37-125-24273 | 1/4/2011 | 40° 5' 27.01" N | 8 0° 14' 44.27" W | 1/5/2011 | Suspend Operations Date |
| | 37-125-24274 | 1/4/2011 | 40° 5' 27.15" N | 80° 14' 45.02" W | 2/3/2011 | Suspend Operations Date |
| | 37-125-24276 | 1/4/2011 | 40° 5' 27.05" N | 80° 14' 44.52" W | 1/5/2011 | Suspend Operations Date |
| | 37-125-24298 | 1/4/2011 | 40° 5' 26.91" N | 80° 14' 44.3" W | 1/5/2011 | Suspend Operations Date |
| | 37-125-22074 | 5/31/2003 | 40° 16' 59.3" N | 80° 17' 3 .3" W | 12/7/2005 | Turn On Production Date |
| | 37-125-22205 | 7/13/2005 | 40° 16' 36.8" N | 80° 17' 1 1.5" W | 3/3/2006 | Turn On Production Date |
| | 37-125-22705 | 6/14/2007 | 40° 16' 51.4" N | 80° 16' 5 3.1" W | 7/20/2007 | Turn On Production Date |
| | 37-125-23639 | 5/13/2009 | 40° 17' 32.9" N | 80° 17' 55" W | 8/17/2009 | Turn On Production Date |
| | 37-125-22277 | 9/22/2006 | 40° 15' 31.5" N | 80° 21' 36.4" W | 12/7/2006 | Turn On Production Date |
| | 37-125-22283 | 4/26/2006 | 40° 15' 8.3" N | 80° 21' 11.8" W | 11/17/2006 | Turn On Production Date |
| | 37-125-22548 | 4/30/2007 | 40° 15' 22.3" N | 80° 20' 54.4" W | 3/21/2011 | Plug & Abandon Date |
| | 37-125-23525 | 10/5/2010 | 40° 15' 55.9" N | 80° 21' 45.9" W | 10/19/2010 | Suspend Operations Date |
| | 37-125-23928 | 10/5/2010 | 40° 15' 55.7" N | 80° 21' 45.8" W | 10/30/2010 | Suspend Operations Date |
| | 37-125-23929 | 10/6/2010 | 40° 15' 55.2" N | 80° 21' 45.4" W | 12/11/2010 | Suspend Operations Date |
| | 37-125-23930 | 10/6/2010 | 40° 15' 55.6" N | 80° 21' 45.7" W | 4/29/2011 | TD Date |
| | 37-125-23931 | 10/6/2010 | 40° 15' 55.4" N | 80° 21' 45.6" W | 11/22/2010 | Suspend Operations Date |
| | 37-125-23913 | 4/21/2010 | 40° 13' 19.6" N | 80° 25' 6.3" W | 10/18/2010 | Suspend Operations Date |
| | 37-125-23981 | 4/21/2010 | 40° 13' 19.4" N | 80° 25' 6.2" W | 11/12/2010 | Suspend Operations Date |
| | 37-125-23914 | 4/21/2010 | 40° 13' 19.4" N | 80° 25' 6.3" W | 10/12/2010 | Suspend Operations Date |
| | 37-125-23915 | 8/4/2010 | 40° 13' 19.2" N | 80° 25' 6.3" W | 11/23/2010 | Suspend Operations Date |
| | 37-125-23916 | 4/20/2010 | 40° 13' 19.8" N | 80° 25' 6.4" W | 10/30/2010 | Suspend Operations Date |
| | 37-125-23917 | 4/21/2010 | 40° 13' 19.8" N | 80° 25' 6.5" W | 10/20/2010 | Suspend Operations Date |
| | 37-125-23918 | 4/21/2010 | 40° 13' 19.6" N | 80° 25' 6.4" W | 10/16/2010 | Suspend Operations Date |
| | 37-125-23980 | 4/22/2010 | 40° 13' 19.2" N | 80° 25' 6.2" W | 11/20/2010 | Suspend Operations Date |
| | 37-125-23982 | 4/22/2010 | 40° 13' 19" N | 80° 25' 6.1" W | 11/17/2010 | Suspend Operations Date |
| ocken Hunt Club Unit 2H | 37-081-20230 | 4/8/2011 | 41° 19' 42.54" N | 77° 16' 8.79" W | 4/10/2011 | Resume Operations Date |
| ocken Hunt Club Unit 4H | 37-081-20232 | 11/6/2010 | 41° 19' 42.73" N | 77° 16' 8.86" W | 2/2/2011 | TD Date |
| ocken Hunt Club Unit 5H | 37-081-20233 | 11/7/2010 | 41° 19' 41.9" N | 77° 16' 9.8" W | 4/3/2011 | TD Date |
| ocken Hunt Club Unit 6H | 37-081-20234 | 11/8/2010 | 41° 19' 42.35" N | 77° 16' 8.73" W | 3/2/2011 | TD Date |
| [redacted] | 37-125-23958 | 1/15/2010 | 40° 4' 42.5" N | 80° 13' 28.1" W | 2/28/2011 | Turn On Production Date |
| | 37-125-23959 | 1/15/2010 | 40° 4' 42.4" N | 80° 13' 28" W | 2/27/2011 | Turn On Production Date |
| | 37-125-23960 | 1/15/2010 | 40° 4' 42.6" N | 80° 13' 27.8" W | 10/4/2010 | Plug & Abandon Date |

# Well List Info for EPA Reporting

Attachment B

ANGE RESOURCES

| Well Name | API # | Ong Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| [redacted] | 37-125-23961 | 1/15/2010 | 40°4' 42.7" N | 80°13' 27.9" W | 10/5/2010 | Plug & Abandon Date |
| | 37-125-23852 | 12/3/2009 | 40°4' 42.2" N | 80°13' 28.5" W | 2/26/2011 | Turn On Production Date |
| | 37-125-23851 | 12/5/2009 | 40°4' 42.1" N | 80°13' 28.4" W | 2/27/2011 | Turn On Production Date |
| | 37-125-23850 | 12/5/2009 | 40°4' 42.2" N | 80°13' 28.3" W | 10/8/2010 | Plug & Abandon Date |
| | 37-125-23849 | 12/4/2009 | 40°4' 42.3" N | 80°13' 28.4" W | 2/22/2011 | Turn On Production Date |
| | 37-125-24024 | 4/9/2010 | 40°4' 42.7" N | 80°13' 27.6" W | 2/18/2011 | Turn On Production Date |
| | 37-125-24023 | 4/9/2010 | 40°4' 42.8" N | 80°13' 27.7" W | 2/18/2011 | Turn On Production Date |
| | 37-125-23937 | 12/5/2009 | 40°4' 41.7" N | 80°13' 29.1" W | 3/14/2011 | Turn On Production Date |
| | 37-125-23938 | 12/5/2009 | 40°4' 41.9" N | 80°13' 28.9" W | 3/21/2011 | Turn On Production Date |
| | 37-083-51996 | 12/7/2007 | 41°43' 48.416" N | 78°3 3' 37.663" W | 11/13/2008 | Turn On Production Date |
| | 34-039-21637 | | 40°43' 36.011" N | 80°44' 48.415" W | 11/3/2007 | Temporarily Abandon Date |
| | 37-129-25012 | 9/29/2008 | 40°9' 21.6" N | 79°4 3' 25.1" W | 10/17/2008 | Completions Date |
| | 37-125-22619 | 5/10/2007 | 40°17' 5.5" N | 80°21' 6.3" W | 9/25/2007 | Turn On Production Date |
| | 37-125-22641 | 5/20/2007 | 40°17' 4.8" N | 80°20' 48.3" W | 9/18/2007 | Turn On Production Date |
| | 37-125-22688 | 8/19/2007 | 40°16' 59.8" N | 80°20' 36.7" W | 10/17/2007 | Turn On Production Date |
| | 37-125-22669 | 7/9/2007 | 40°17' 17.7" N | 80°20' 44.4" W | 9/26/2007 | Turn On Production Date |
| yer/Space Management Unit | 37-125-23941 | 1/15/2010 | 40°17' 16" N | 80°12' 56.8" W | 8/ 13/2011 | Turn On Production Date |
| yer/Space Management Unit | 37-125-23942 | 1/14/2010 | 40°17' 16.2" N | 80°12' 56.9" W | 3/10/2011 | Turn On Production Date |
| yer/Space Management Unit 1H | 37-125-23902 | 1/15/2010 | 40°17' 15.6" N | 80°12' 56.9" W | 3/21/2011 | Turn On Production Date |
| yer/Space Management Unit 2H | 37-125-23903 | 1/13/2010 | 40°17' 15.8" N | 80°12' 56.9" W | 3/20/2011 | Turn On Production Date |
| yer/Space Management Unit 3H | 37-125-23904 | 1/14/2010 | 40°17' 16" N | 80°12' 56.9" W | 3/17/2011 | Turn On Production Date |
| yer/Space Management Unit 4H | 37-125-23949 | 1/14/2010 | 40°17' 16.2" N | 80°12' 56.8" W | 3/6/2011 | Turn On Production Date |
| yer/Space Management Unit 9H | 37-125-23940 | 1/15/2010 | 40°17' 15.4" N | 80°12' 56.8" W | 3/6/2011 | Turn On Production Date |
| [redacted] | 37-015-20084 | | 41°58' 41.483" N | 76°38' 20.255 " W | 1/1/2007 | Temporarily Abandon Date |
| | 37-081-20058 | 11/7/2007 | 41°18' 51" N | 77°8 ' 31.9" W | 5/3/2008 | Shut-In Date |
| | 37-125-23151 | 8/1/2008 | 40°13' 43.4" N | 80°19' 19" W | 9/9/2009 | Turn On Production Date |
| | 37-125-23224 | 8/8/2008 | 40°13' 43.2" N | 80°19' 19.1" W | 9/9/2009 | Turn On Production Date |
| | 37-125-24119 | 7/27/2010 | 40°13' 46.2" N | 80°19' 23.8" W | 4/16/2011 | TD Date |
| | 37-125-23975 | 7/27/2010 | 40°13' 45 .4" N | 80°19' 23.8" W | 2/28/2011 | TD Date |
| | 37 125-24329 | 12/9/2010 | 40°13' 46." N | 80°19' 23.8" W | 2/16/2011 | TD Date |
| | 37-125-23974 | 7/27/2010 | 40°13' 45 .8" N | 80°19' 23.8" W | 4/1/2011 | TD Date |
| | 37-125-23976 | 7/27/2010 | 40°13' 45 .6" N | 80°19' 23.9" W | 4/28/2011 | TD Date |
| | 37-125-24070 | 7/27/2010 | 40°13' 45 .4" N | 80°19' 23.9" W | 3/19/2011 | TD Date |
| | 37-125-23991 | 5/27/2010 | 40°14' 46.9" N | 80°16' 13" W | 4/26/2011 | Completions Date |
| | 37-125-23992 | 5/28/2010 | 40°14' 46.9" N | 80°16' 13.2" W | 4/26/2011 | Completions Date |
| | 37-125-24014 | 5/28/2010 | 40°14' 46.1" N | 80°16' 13" W | 2/10/2011 | TD Date |
| | 37-125-24015 | 5/28/2010 | 40°14' 46.5" N | 80°16' 13" W | 2/18/2011 | TD Date |
| | 37-125-23993 | 5/28/2010 | 40°14' 46.7" N | 80°16' 13.2" W | 4/27/2011 | Completions Date |
| | 34-125-24016 | 5/28/2010 | 40°14' 46.3" N | 80°16' 13" W | 1/3/2011 | TD Date |
| | 37-125-24245 | 8/27/2010 | 40°12' 25.63" N | 80°23' 10.26" W | 4/9/2011 | TD Date |
| | 37-125-24246 | 8/27/2010 | 40°12' 25.7" N | 80°23' 10.02" W | 12/22/2010 | Suspend Operations Date |
| | 37-125-24159 | 8/3/2010 | 40°12' 25 .48" N | 80°23' 10.74" W | 4/25/2011 | TD Date |
| | 37-125-24160 | 8/3/2010 | 40°12' 25 .55" N | 80°23' 10.5" W | 8/4/2010 | Suspend Operations Date |
| | 37-125-24253 | 8/28/2010 | 40°12' 25.87" N | 80°23' 9.83" W | 3/22/2011 | TD Date |
| | 37-125-24161 | 8/2/2010 | 40°12' 25 .8" N | 80°23' 10.1" W | 4/2/2011 | TD Date |
| | 37-125-24162 | 8/4/2010 | 40°12' 25 .72" N | 80°23' 10.31" W | 5/1/2011 | TD Date |
| | 37-125-24163 | 8/4/2010 | 40°12' 25 .6" N | 80°23' 10.5" W | 4/16/2011 | TD Date |
| | 37-125-24280 | 8/31/2010 | 40°12' 25.6" N | 80°23' 10.8" W | 3/13/2011 | TD Date |
| | 37-059-25514 | 12/8/2010 | 39°52' 43.99" N | 80°22' 56.07" W | 2/19/2011 | TD Date |
| | 37-125-23676 | 10/27/2009 | 40°16' 27.1" N | 80°12' 59.6" W | 6/3/2010 | TD Date |
| | 37-125-23811 | 10/27/2009 | 40°16' 27.7" N | 80°12' 59.4" W | 8/7/2010 | Turn On Production Date |
| | 37-125-23810 | 10/27/2009 | 40°16' 26.9" N | 80°12' 59.6" W | 5/11/2011 | Completions Date |
| | 37-125-23831 | 3/15/2010 | 40°16' 27.8" N | 80°12' 59.4" W | 8/7/2010 | Turn On Production Date |
| | 37-125-23907 | 11/12/2009 | 40°16' 27.5" N | 80°12' 59.4" W | 8/7/2010 | Turn On Production Date |
| | 37-125-23809 | 10/28/2009 | 40°16' 27.4" N | 80°12' 59.5" W | 8/7/2010 | Turn On Production Date |
| | 37-125-23194 | 10/22/2008 | 40°16' 41.9" N | 80°16' 20.4" W | 5/30/2009 | Turn On Production Date |
| | 37-125-24314 | 12/23/2010 | 40°5' 28.78" N | 80°13' 40.23" W | 1/16/2011 | Suspend Operations Date |
| | 37-125-24315 | 12/23/2010 | 40°5' 28.63" N | 80°13' 40.07" W | 1/28/2011 | Suspend Operations Date |
| | 37-125-23824 | 9/11/2009 | 40°5' 29.5" N | 80°13' 41.2" W | 2/18/2011 | Turn On Production Date |
| | 37-003-21982 | 12/20/2008 | 40°34' 20.191" N | 79°48' 25.4" W | 12/7/2010 | Completions Date |
| | 37-007-20293 | 9/28/2009 | 40°46' 29. 6" N | 80°11' 0.05" W | 3/27/2010 | Shut-In Date |
| | 37-125-22685 | 12/6/2007 | 40°10' 46.6" N | 80°24' 24.2" W | 1/15/2010 | Turn On Production Date |

ANGE RESOURCES

# Well List Info for EPA Reporting

Attachment B

| Well Name | API # | Orig Spud Date | Latitude (DMS) | Longitude (DMS) | Date | Type 1 |
|---|---|---|---|---|---|---|
| [redacted] | 125-23048 | 4/5/2008 | 40° 10' 44.2" N | 80° 24' 40.2" W | 7/2/2009 | Turn On Production D ate |

# ATTACHMENT C

RANGE RESOURCES

February 25, 2010

Pennsylvania Department of Environmental Protection
Residual Waste Coordinator
Bureau of Waste Management
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222

Subject: Form 26R, Chemical Analysis of Residual Waste Annual Report by the Generator
Range Resources – Appalachia, LLC
Residual Waste Code 402, Process Wastewaters – Non-hazardous

Dear Residual Waste Coordinator:

Range Resources – Appalachia, LLC (Range Resources) is submitting the enclosed Form 26R, Chemical Analysis of Residual Waste Annual Report by the Generator for our water (Residual Waste Code 420, Process Wastewaters – Non-hazardous). Note that 69,912,427 gallons of water were produced during calendar year 2009, but 43,515,805 gallons of water were re-used (or recycled) during the year. The volume of water recycled is reported in Section 2, Beneficial Use.

If you have any questions, or require any additional information, please call me at (724) 873-3226.

Respectfully submitted,

RANGE RESOURCES – APPALACHIA, LLC

Carla L. Suszkowski, P.E.
Regulatory and Environmental Manager

**Range Resources – Appalachia LLC**
380 Southpointe Blvd Suite 300 Canonsburg, PA 15317 Tel: (724) 743-6700 Fax: (724) 743-6790

Attachment C

RANGE RESOURCES

February 25, 2010

Pennsylvania Department of Environmental Protection
Residual Waste Coordinator
Bureau of Waste Management
208 West Third St., Suite 101
Williamsport, Pennsylvania 17701

Subject: Form 26R, Chemical Analysis of Residual Waste Annual Report by the Generator
Range Resources – Appalachia, LLC
Residual Waste Code 402, Process Wastewaters – Non-hazardous

Dear Residual Waste Coordinator:

Range Resources – Appalachia, LLC (Range Resources) is submitting the enclosed Form 26R, Chemical Analysis of Residual Waste Annual Report by the Generator for our water (Residual Waste Code 420, Process Wastewaters – Non-hazardous). Note that 69,912,427 gallons of water were produced in Pennsylvania during calendar year 2009, but 43,515,805 gallons of water were re-used (or recycled) during the year. The volume of water recycled is reported in Section 2, Beneficial Use.

If you have any questions, or require any additional information, please call me at (724) 873-3226.

Respectfully submitted,

RANGE RESOURCES – APPALACHIA, LLC

Carla L. Suszkowski, P.E.
Regulatory and Environmental Manager

**Range Resources – Appalachia LLC**
380 Southpointe Blvd Suite 300 Canonsburg, PA 15317 Tel: (724) 743-6700 Fax: (724) 743-6790

2540-PM-BWM0347 6/2005

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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 |
|---|---|
| General Reference 287.54 | Date Received & General Notes |
| Date Prepared/Revised February 22, 2010 | |

## SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION

| | | | | |
|---|---|---|---|---|
| **Company Name** Range Resources - Appalachia, LLC | | | | |
| **If a Subsidiary, Name of Parent Company** | | | | **EPA Generator ID#** |
| **Company Mailing Address Line 1** 380 Southpointe Blvd., Suite 300 | | **Company Mailing Address Line 2** | | |
| **Company Address Last Line – City** Canonsburg | **State** PA | **Zip+4** 15317 | **Phone** (724) 873-3226 | **Ext** NA |
| **Company Contact Last Name** Suszkowski | **First Name** Carla | **MI** L | **Suffix** | |
| **Municipality** Cecil Township | | **County** Washington | | |
| **Contact Phone** (724) 873-3226 | **Ext** NA | **Contact Email Address** csuszkowski@rangeresources.com | | |

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

**If 'No', describe location of waste generation and storage.** Waste was generated during hydraulic fracturing operations at a Marcellus shale well site located in Cross Creek Township, Washington County, Pennsylvania

**Municipality** Cross Creek Twp. **County** Washington **State** PA

## SECTION B. WASTE DESCRIPTION

| Residual Waste Code | Residual Waste Code Description | Amount | Unit of Measure | Time Frame |
|---|---|---|---|---|
| 420 | Process Wastewaters (Non-hazardous) | **69,912,427** | ☐ cu yd ☒ gal<br>☐ lb ☐ ton | ANNUAL<br>☐ One Time |

### 1. GENERAL PROPERTIES

**a. pH Range** 5.5 to 7.8 (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** clear **Odor** none

**Number of Solid or Liquid Phases of Separation** 1

**Describe each phase of separation.** liquid

### 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 |

### 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.**
Processing Facility Permit No. 301353

**b.**

| | | | |
|---|---|---|---|
| Facility Name | Advanced Waste Services | | |
| Address Line 1 | 101 River Park Drive | | |
| Address Line 1 | | | |
| Address City State ZIP | New Castle | PA | 16101 |
| Municipality | New Castle | County | Lawrence |

**c.**

| | | | |
|---|---|---|---|
| Facility Contact Name | Anthony Cialella | | |
| Title | | | |
| Phone | 414-475-3100 | Email Address | |

**d. Volume of waste shipped to processing or disposal facility in the previous year.**
3,276,485 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

**a. Solid waste permit number(s) for processing or disposal facility being utilized.**
Processing Facility Permit No. WMGR119

**b.**

| | | | |
|---|---|---|---|
| Facility Name | Eureka Resources, LLC | | |
| Address Line 1 | 301 Charles St. | | |
| Address Line 1 | | | |
| Address City State ZIP | S. Williamsport | PA | 17702 |
| Municipality | | County | |

**c.**

| | | | |
|---|---|---|---|
| Facility Contact Name | | | |
| Title | | | |
| Phone | | Email Address | |

**d. Volume of waste shipped to processing or disposal facility in the previous year.**
771,680 ☐ 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. | Refer to the attached narrative | | |
| b. | Volume of waste beneficially used in the previous year. 43,515,805 ☐ 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-A, General Properties was supplied to the Department for the year _____ and has not changed.**

**Form Submitted:** ☐ Form 26R

☐ Other (specify) _____

**Date Submitted:** _____

☐ **I certify the information required in Section B-B, Chemical Analysis was supplied to the Department for the year _____ and has not changed.**

**Form Submitted:** ☐ Form 26R

☐ Other (specify) _____

**Date Submitted:** _____

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

**Form Submitted:** ☐ Form 26R

☐ Other (specify) _____

**Date Submitted:** _____

**Name of Responsible Official** Carla L. Suszkowski

**Title** Regulatory and Environmental Manager

**Signature** _____

**Date** _____

## SECTION C. MANAGEMENT OF RESIDUAL WASTE (CONTINUED)

### 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** Liquid Assets Disposal
**Address Line 1** 99 Peninsula St.
**Address Line 1**
**Address City State ZIP** Wheeling WV 26003
**Municipality** **County**

**c.**
**Facility Contact Name** Andy Kicinski
**Title**
**Phone** 724-222-6080 **Email Address**

**d.** **Volume of waste shipped to processing or disposal facility in the previous year.**
12,929,787 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

**a.** **Solid waste permit number(s) for processing or disposal facility being utilized.**
NPDES Permit No. PA0101508

**b.**
**Facility Name** Pennsylvania Brine Treatment
**Address Line 1** 5148 U.S. 322
**Address Line 1**
**Address City State ZIP** Franklin PA 16323
**Municipality** **County**

**c.**
**Facility Contact Name** Paul Hart
**Title**
**Phone** 814-437-3593 **Email Address**

**d.** **Volume of waste shipped to processing or disposal facility in the previous year.**
583,640 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

**a.** **Solid waste permit number(s) for processing or disposal facility being utilized.**
NPDES Permit No. PA0091472

**b.**
**Facility Name** Tunnelton Liquids Company
**Address Line 1** 671 Hogue Drive
**Address Line 1**
**Address City State ZIP** Saltsburg PA 15681
**Municipality** **County**

**c.**
**Facility Contact Name** Bruce Buffalini
**Title**
**Phone** 814-226-5016 **Email Address**

**d.** **Volume of waste shipped to processing or disposal facility in the previous year.**
334,496 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

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

**b.**
**Facility Name** Virgin Oil & Water
**Address Line 1** 5752 W. Webb Road
**Address Line 1**
**Address City State ZIP** Youngstown OH 44515
**Municipality** **County**

**c.**
**Facility Contact Name** No longer in business
**Title**
**Phone** 330-744-9920 **Email Address**

**d.** **Volume of waste shipped to processing or disposal facility in the previous year.**
419,160 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

Attachment C

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

b. **Facility Name** Somerset Production Company
**Address Line 1** 50 Fountain Plz Ste 1220
**Address Line 1**
**Address City State ZIP** Buffalo NY 14202
**Municipality** **County**

c. **Facility Contact Name** Jay Miller or Thomas O'Neill
**Title**
**Phone** 814-442-2943 or 716-842-1042 **Email Address**

d. **Volume of waste shipped to processing or disposal facility in the previous year.**
208,257 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

a. **Solid waste permit number(s) for processing or disposal facility being utilized.**
UIC Permit No. 3420

b. **Facility Name** [redacted]
**Address Line 1**
**Address Line 1**
**Address City State ZIP** Diamon OH 44412
**Municipality** **County**

c. **Facility Contact Name** [redacted]
**Title**
**Phone**

d. **Volume of waste shipped to processing or disposal facility in the previous year.**
248,178 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

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

f. **Facility Name** Brineaway (Injection Well)
**Address Line 1** 19220 US Route 62
**Address Line 1**
**Address City State ZIP** Beloit OH 44609
**Municipality** **County**

g. **Facility Contact Name**
**Title**
**Phone** 330-938-2172 **Email Address**

h. **Volume of waste shipped to processing or disposal facility in the previous year.**
589,134 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

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

j. **Facility Name** Devco (Injection Well)
**Address Line 1** 221 ½ S. Sixth St.
**Address Line 1**
**Address City State ZIP** Byeville OH 43723
**Municipality** **County**

k. **Facility Contact Name** David Hill
**Title**
**Phone** 740-685-5168 **Email Address**

l. **Volume of waste shipped to processing or disposal facility in the previous year.**
29,400 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

Attachment C

a. **Solid waste permit number(s) for processing or disposal facility being utilized.**
UIC Permit No. 4096

b. **Facility Name** [redacted]
**Address Line 1**
**Address Line 1**
**Address City State ZIP** Paris OH 44669
**Municipality** **County**

c. **Facility Contact Name** [redacted]
**Title**
**Phone** [redacted] **Email Address**

d. **Volume of waste shipped to processing or disposal facility in the previous year.**
1,845,638 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

a. **Solid waste permit number(s) for processing or disposal facility being utilized.**
UIC Permit No. 2763

b. **Facility Name** [redacted]
**Address Line 1**
**Address Line 1**
**Address City State ZIP** Magnolia OH 44643
**Municipality** **County**

c. **Facility Contact Name** [redacted]
**Title**
**Phone** [redacted] **Email Address**

d. **Volume of waste shipped to processing or disposal facility in the previous year.**
21,294 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

a. **Solid waste permit number(s) for processing or disposal facility being utilized.**
UIC Permit No. 1198

b. **Facility Name** [redacted]
**Address Line 1**
**Address Line 1**
**Address City State ZIP** Diamon OH 44412
**Municipality** **County**

c. **Facility Contact Name** [redacted]
**Title**
**Phone** [redacted] **Email Address**

d. **Volume of waste shipped to processing or disposal facility in the previous year.**
980,695 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

a. **Solid waste permit number(s) for processing or disposal facility being utilized.**
UIC Permit No. 1076

b. **Facility Name** [redacted]
**Address Line 1**
**Address Line 1**
**Address City State ZIP** Paris OH 44669
**Municipality** **County**

c. **Facility Contact Name** [redacted]
**Title**
**Phone** [redacted] **Email Address**

d. **Volume of waste shipped to processing or disposal facility in the previous year.**
4,158,778 ☐ cu yd ☒ gal ☐ lb ☐ ton (check one)

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

**RANGE RESOURCES – APPALACHIA, LLC**

**NARRATIVE**

## B. APPLICANT IDENTIFICATION

AMOUNT: The total volume of produced water generated during calendar year 2009 is 69,912,427 gallons, as reported. It should be noted that 43,455,805 gallons of produced waters were directly recycled by Range Resources in our day to day operations.

2. CHEMICAL ANALYSIS ATTACHMENTS

a. The results of a detailed chemical characterization of the waste is attached.

Detailed chemical analysis is attached and provides a representative analysis of produced/flowback water on Day 1, Day 5, Day 14, and Day 90. Additionally, a summary table of all analytical is also attached.

b. A detailed description of the waste sampling method is attached.

The sampling and analysis was conducted in accordance with the Sampling and Analysis Plan developed by the Appalachian Shale Water Conservation Management Committee, in conjunction with the PADEP. This Sampling and Analysis Plan was submitted to the PADEP for review and comment prior to initiating the program. As such, a copy of the plan is not attached to this Form 26R.

c. The quality assurance/quality control procedures employed by the laboratory are attached.

The laboratory utilized for this testing program is a Pennsylvania certified, NELAC accredited laboratory and the QA/QC procedures employed by the laboratory are those required to remain in compliance with their certifications. The QA/QC procedures are not attached to this submittal.

d. The results of the hazardous waste determination are attached.

The attached analytical results indicate that the waste is not a hazardous waste.

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS

a. A detailed description of the manufacturing and/or pollution control processes producing the waste is attached.

The water is produced during the hydraulic fracturing of Marcellus Shale natural gas wells and during the time that the wells are in production.

| Frac Volume (bbls) | 77,995 | | | |
|---|---|---|---|---|
| Cumulative Flowback (bbls) | 3,272 | 10,830 | 12,331 | 17,413 |
| Recovery Rate (%) | 4% | 14% | 16% | 22% |

| Constituents | Units | 40 CFR 261 Appendix VIII | | Cross Creek Unit #8H | | | | Integrated |
|---|---|---|---|---|---|---|---|---|
| | | Chemical Abstract No. | Hazardous Waste No. | Day 1 | Day 5 | Day 14 | Day 90 | Average |
| Acidity | mg/L | Not Applicable | | ND | ND | 122 | 388 | 124 |
| Alkalinity | mg/L | Not Applicable | | 157 | 54 | 60.2 | 11.5 | 61 |
| Aluminum | mg/L | Not Applicable | | 510 | 950 | 1450 | 2570 | 1383 |
| Ammonia Nitrogen | mg/L | Not Applicable | | 60 | 115 | 135 | 168 | 122 |
| Arsenic | mg/L | 7440-38-2 | | 0.037 | 0.078 | 0.083 | 0.109 | 0.080 |
| Barium | mg/L | 7440-39-3 | | 19.200 | 77.1 | 83.1 | 87.2 | 69.7 |
| Benzene | mg/L | 71-43-2 | U019 | 0.260 | 0.880 | 0.360 | 0.290 | 0.546 |
| Beryllium | mg/L | 7440-41-7 | P015 | ND | ND | ND | ND | ND |
| Biochemical Oxygen Demand | mg/L | Not Applicable | | 75 | 64.8 | 120 | [illegible] | 3672 |
| Boron | mg/L | Not Applicable | | 13 | 12.2 | 14.7 | 12.7 | 13 |
| Bromide | mg/L | Not Applicable | | 376 | 826 | 1040 | 1600 | 986 |
| Cadmium | mg/L | 7440-43-9 | | ND | 0.002 | 0.005 | 0.003 | 0.002 |
| Calcium | mg/L | Not Applicable | | 3980 | 8880 | [illegible] | [illegible] | [illegible] |
| Chemical Oxygen Demand | mg/L | Not Applicable | | 2470 | 5170 | 8370 | [illegible] | 8800 |
| Chlorides | mg/L | Not Applicable | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Chromium | mg/L | 7440-47-3 | | 0.011 | 0.039 | 0.033 | 0.016 | 0.027 |
| Cobalt | mg/L | Not Applicable | | 11 | ND | ND | ND | 2 |
| Copper | mg/L | Not Applicable | | 62 | 116 | 73 | ND | 68 |
| Ethylene Glycol | mg/L | Not Applicable | | ND | ND | ND | 290 | 85 |
| Hardness | mg/L | Not Applicable | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Iron Dissolved | mg/L | Not Applicable | | 11 | 46 | 47 | 74 | 47.6 |
| Iron Total | mg/L | Not Applicable | | 12 | 50 | 75 | 69 | 50.4 |
| Lead | mg/L | 7439-92-1 | | 0.025 | 0.061 | 0.106 | ND | 0.040 |
| Lithium | mg/L | Not Applicable | | 34 | 56 | 86 | 105 | 69 |
| Magnesium | mg/L | Not Applicable | | 394 | 881 | 1380 | 1830 | 1109 |
| Manganese | mg/L | Not Applicable | | 2.39 | 4.68 | 7.32 | 8.99 | 5.74 |
| MBAS | mg/L | Not Applicable | | 0.064 | ND | 0.465 | 0.699 | 0.256 |
| Mercury | mg/L | 7439-97-6 | | 0.065 | ND | ND | ND | 0.012 |
| Molybdenum | mg/L | Not Applicable | | 11.50 | 30.80 | ND | ND | 15.5 |
| Nickel | mg/L | 7440-02-0 | | 15.3 | 26.4 | ND | ND | 14.3 |
| Nitrite-Nitrate Nitrogen | mg/L | Not Applicable | | 0.45 | 0.34 | 0.25 | ND | 0.25 |
| Oil & Grease | mg/L | Not Applicable | | ND | 20.4 | 9.9 | 802 | 244 |
| pH | | Not Applicable | | 6.4 | 6.4 | 6.2 | 5.9 | 6.2 |
| Phenolics | mg/L | 108-95-2 | U188 | 0.058 | 0.016 | ND | 0.230 | 0.085 |
| Selenium | mg/L | 7782-49-2 | | ND | ND | ND | 49.9 | 14.6 |
| Silver | mg/L | 7440-22-4 | | ND | ND | ND | ND | ND |
| Sodium | mg/L | Not Applicable | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Specific Conductance | umhos/cm | Not Applicable | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Strontium | mg/L | Not Applicable | | 539 | 1350 | 2100 | 3410 | 1863 |
| Sulfates | mg/L | Not Applicable | | 102.0 | 60.7 | 89.3 | 32.8 | 62.8 |
| Toluene | mg/L | 108-88-3 | U220 | 0.27 | 0.92 | 0.43 | 1.60 | 0.95 |
| Total Dissolved Solids | mg/L | Not Applicable | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Total Kjeldahl Nitrogen | mg/L | Not Applicable | | 77.7 | 55.9 | 127 | 87.7 | 75.4 |
| Total Suspended Solids | mg/L | Not Applicable | | 6.8 | 204 | 209 | 83 | 132 |
| Zinc | mg/L | Not Applicable | | 0.132 | 0.106 | 0.123 | 0.218 | 0.145 |

Radiological Characaterization

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha | pCi/L | Not Applicable | | | | |
| Gross Beta | pCi/L | Not Applicable | | | | |
| Radium 226 | pCi/L | Not Applicable | | | 861 | 1270 |
| Radium 228 | pCi/L | Not Applicable | | | 655 | 1100 |
| Thorium 227 | pCi/L | Not Applicable | | | -49 | 2 |
| Thorium 234 | pCi/L | Not Applicable | | | 10 | 150 |
| Uranium 235 | pCi/L | Not Applicable | | | -40 | 40 |
| Uranium 238 | pCi/L | Not Applicable | | | 10 | 150 |

**B - Estimated result. Result is less than RL.**
**E - Matrix interference.**
**U - Result is less than the sample detection limit.**

<50 mg/L
>50 mg/L and <10,000 mg/L for constituents from 40 CFR 261.34 Appendix VIII
>10,000 mg/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

# ANALYTICAL REPORT

PROJECT NO. CC6H8H Day1

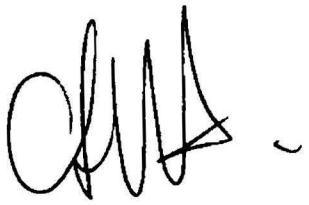
Table 2

Lot #: C9C270155

Tony Gaudlip

Range Resources Corporation
380 Southpointe Blvd
Suite 300
Canonsburg, PA 15317

TESTAMERICA LABORATORIES, INC.



Christina M. Kovitch
Project Manager

April 24, 2009

## NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

| Certifying State/Program | Certificate # | Program Types | TestAmerica |
|---|---|---|---|
| NFESC | NA | NAVY | X |
| US Dept of Agriculture | (#P330-07-00101) | Foreign Soil Import Permit | X |
| Arkansas | (#88-0690) | WW | X |
| | | HW | X |
| California – NELAC | 04224CA | WW | X |
| | | HW | X |
| Connecticut | (#PH-0688) | WW | X |
| | | HW | X |
| Florida – NELAC | (#E871008-04) | WW | X |
| | | HW | X |
| Illinois – NELAC | (#002064) | WW | X |
| | | HW | X |
| Kansas – NELAC | (#E-10350) | WW | X |
| | | HW | X |
| Louisiana – NELAC | (#04041) | WW | X |
| | | HW | X |
| New Hampshire – NELAC | (#203008) | WW | X |
| | | -- | -- |
| New Jersey – NELAC | (PA-005) | WW | X |
| | | HW | X |
| New York – NELAC | (#11182) | WW | X |
| | | HW | X |
| North Carolina | (#434) | WW | X |
| | | HW | X |
| Pennsylvania - NELAC | (#02-00416) | WW | X |
| | | HW | X |
| South Carolina | (#89014002) | WW | X |
| | | HW | X |
| Utah – NELAC | (STLP) | WW | X |
| | | HW | X |
| West Virginia | (#142) | WW | X |
| | | HW | X |
| Wisconsin | 998027800 | WW | X |
| | | HW | X |

The codes utilized for program types are described below:

HW Hazardous Waste certification
WW Non-potable Water and/or Wastewater certification
X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 2/5/2009 C:\Documents and Settings\derubeisn\My Documents\NELAC NARRATIVE Pttsburgh.doc

C9C270155

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

COC ID: KOVITCHC16660-1124-3


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | |
|---|---|---|---|
| Project Information: | Table 2 | Quote #: [redacted] Range | Client: |
| Date: | 3-27-09 | Carrier/Waybill #: | |
| Project Manager: | Amanda Bayne | Table 2 | |
| Phone: | 412-503-4623 | | |

URS Corporation
Foster Plaza 4
501 Holiday Drive
Suite 300
Pittsburgh
PA 15220

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CC6H8H-Day1 | 3-27-09/1015 | WATER | 250P | Plastic - 250mL | 1 | None | WATER 7196A, Dissolved CR6 (Filter in Lab) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | Hydrochloric Acid | WATER, 1664A HEM, Oil and Grease |
| | | WATER | 250P | Plastic - 250mL | 1 | Nitric Acid | WATER, 2340C, Total Hardness |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, 2540D, TSS,TDS,T-Alk,Acidity Spec. Cond |
| | | WATER | 1LP | Plastic -1 Liter | 1 | Sulfuric Acid | WATER, 365.2, Total phosphorus TKN N.Canton |
| | | WATER | 1LP | Plastic -1 Liter | 1 | Sulfuric Acid | WATER, 410.4, COD, Nitrate-Nitrite , NH3 |
| | | WATER | 250P | Plastic - 250mL | 0 | None | WATER, 4500-Cl G, Residual Chlorine, Fie |
| | | WATER | 250AP | Plastic - 250mL (8oz) Amber | 1 | Sodium Hydroxide | WATER, 4500-CN E, Free Cyanide N Canton |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, 5210 B, BOD N.Canton |
| | | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 5310B, Dissolved Organic Carbon (Filter in Lab) |
| | | WATER | VV | Glass - 40mL Vial | 3 | Sulfuric Acid | WATER, 5310B, TOC |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, 5540C MBAS Sulfite (TA Nashville) |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B Diss-Metals (Sp.List)+ Hg Filter in Lab |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B T-Metals (Sp.List + Hg |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 7196A, Hexavalent Chromium |

*Special Requirements:*

*Possible Hazard Identification:* ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

*Sample Disposal:* ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

*Turn Around Time Required:* ☐ Normal ☐ Rush ☐ Other _____

*QC Level:* ___ I ___ II ___ III

*Project Specific Requirements (Specify):*

| | | | |
|---|---|---|---|
| *Relinquished by:* | *Date/Time:* 3-27-09/1200 | *Received by:* Patrick Farrell | *Date/Time:* 3/27/09 1200 |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |

*Comments:*

Attachment C

(1 - 187)

C9C270155

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

COC ID: KOVITCHC16660-1124-3


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | |
|---|---|---|---|
| Project Information: | Table 2 | Quote #: [redacted] Kanga | Client: |
| Date: | 3-27-09 | Carrier/Waybill #: Table 2 | |
| Project Manager: | Amanda Bayne | | |
| Phone: | 412-503-4623 | | |

URS Corporation
Foster Plaza 4
501 Holiday Drive
Suite 300
Pittsburgh
PA 15220

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CC6H5H-Dg1 | 3-27-09/1015 | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8015 DAI TA Buffalo |
| | | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 8015 Gylcols TA Buffalo |
| | | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8260B, VOA (Sp. List) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8270C, BNA Sp. List |
| | | WATER | 250P | Plastic - 250mL | 1 | Sodium Hydroxide | WATER, 9012A, Total Cyanide |
| | | WATER | 250P | Plastic - 250mL | 1 | Zinc Acetate/NaOH | WATER, 9030B/9034, Total Sulfide |
| | | WATER | 250AG | Glass - 250mL (8oz) Amber | 2 | Sulfuric Acid | WATER, 9066, Phenolics |
| | | WATER | 250P | Plastic - 250mL | 0 | None | WATER, Fecal Coliform/ Total Coliform Microbac |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, Osmotic Pressure MJ Relder |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, Sulfate,Nitrite,Nitrate,Fl,Cl,Br,Turb |

10

*Special Requirements:*

*Possible Hazard Identification:* ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

*Sample Disposal:* ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

*Turn Around Time Required:* ☐ Normal ☐ Rush ☐ Other _____

*QC Level:* ___ I ___ II ___ III

*Project Specific Requirements (Specify):*

| | | | |
|---|---|---|---|
| *Relinquished by:* | *Date/Time:* 3-27-09/1200 | *Received by:* Patricia A. Daniels | *Date/Time:* 3/27/09 1200 |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |

*Comments:*

(1 - 187)

Attachment C

# Cross Creek Unit 6H & 8H

(37-125-22830-00)
(37-125-22793-00)

40° 15' 46.1" N
80° 23' 17.8" W

40° 15' 46.1" N
80° 23' 17.6" W

Cross Creek Township
Washington County

## Day 1
## First Day of Flowback
## 27 Mar 09
## Sample ID # C9C270155

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 1

**Lot #:** C9C270155 — Table 2 — **Date Reported:** 4/16/09

Project Number: CC6H8H Day1

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 1** | | | | | | |
| Sample #: 001 Date Sampled: 03/27/09 10:15 Date Received: 03/27/09 Matrix: WATER | | | | | | |
| Trivalent Chromium Trivalent Chromium | | | | | | Reviewed |
| Trivalent Chrom | | ND | 50.0 | ug/L | SW846 6010B | |
| Trivalent Chrom | | ND | 50.0 | ug/L | SW846 6010B | |
| Trace Inductively Coupled Plasma (ICP) Metals | | | | | | Reviewed |
| Silver | | ND | 50.0 | ug/L | SW846 6010B | |
| **Aluminum** | | **510 B** | **2000** | **ug/L** | **SW846 6010B** | |
| **Arsenic** | | **36.9 B** | **100** | **ug/L** | **SW846 6010B** | |
| **Barium** | | **19200** | **2000** | **ug/L** | **SW846 6010B** | |
| Beryllium | | ND | 40.0 | ug/L | SW846 6010B | |
| **Boron** | | **12600** | **2000** | **ug/L** | **SW846 6010B** | |
| **Calcium** | | **3980000** | **50000** | **ug/L** | **SW846 6010B** | |
| Cadmium | | ND | 50.0 | ug/L | SW846 6010B | |
| **Cobalt** | | **10.5 B** | **500** | **ug/L** | **SW846 6010B** | |
| **Chromium** | | **11.4 B** | **50.0** | **ug/L** | **SW846 6010B** | |
| **Copper** | | **62.1 B** | **250** | **ug/L** | **SW846 6010B** | |
| **Iron** | | **12200** | **1000** | **ug/L** | **SW846 6010B** | |
| **Lithium** | | **33900** | **500** | **ug/L** | **SW846 6010B** | |
| **Magnesium** | | **394000** | **50000** | **ug/L** | **SW846 6010B** | |
| **Manganese** | | **2390** | **150** | **ug/L** | **SW846 6010B** | |
| **Molybdenum** | | **11.5 B** | **400** | **ug/L** | **SW846 6010B** | |
| **Sodium** | | **14700000** | **500000** | **ug/L** | **SW846 6010B** | |
| **Nickel** | | **15.3 B** | **400** | **ug/L** | **SW846 6010B** | |
| **Lead** | | **25.2 B** | **30.0** | **ug/L** | **SW846 6010B** | |
| Selenium | | ND | 50.0 | ug/L | SW846 6010B | |
| **Strontium** | | **539000** | **5000** | **ug/L** | **SW846 6010B** | |
| **Zinc** | | **132 B** | **200** | **ug/L** | **SW846 6010B** | |
| Silver | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| **Aluminum** | **Dissolved** | **282 B** | **2000** | **ug/L** | **SW846 6010B** | |
| **Arsenic** | **Dissolved** | **23.0 B** | **100** | **ug/L** | **SW846 6010B** | |
| **Barium** | **Dissolved** | **16600** | **2000** | **ug/L** | **SW846 6010B** | |

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 2

**Lot #:** C9C270155 — Table 2 — **Date Reported:** 4/16/09

Project Number: CC6H8H Day1

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 1** | | | | | | |
| Sample #: 001 Date Sampled: 03/27/09 10:15 Date Received: 03/27/09 Matrix: WATER | | | | | | |
| Beryllium | Dissolved | ND | 40.0 | ug/L | SW846 6010B | |
| **Boron** | **Dissolved** | **12400** | **2000** | **ug/L** | **SW846 6010B** | |
| **Calcium** | **Dissolved** | **3850000** | **50000** | **ug/L** | **SW846 6010B** | |
| Cadmium | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| **Cobalt** | **Dissolved** | **9.5 B** | **500** | **ug/L** | **SW846 6010B** | |
| Chromium | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| **Copper** | **Dissolved** | **50.3 B** | **250** | **ug/L** | **SW846 6010B** | |
| **Iron** | **Dissolved** | **10600** | **1000** | **ug/L** | **SW846 6010B** | |
| **Lithium** | **Dissolved** | **33000** | **500** | **ug/L** | **SW846 6010B** | |
| **Magnesium** | **Dissolved** | **386000** | **50000** | **ug/L** | **SW846 6010B** | |
| **Manganese** | **Dissolved** | **2300** | **150** | **ug/L** | **SW846 6010B** | |
| **Molybdenum** | **Dissolved** | **11.2 B** | **400** | **ug/L** | **SW846 6010B** | |
| **Sodium** | **Dissolved** | **14700000** | **500000** | **ug/L** | **SW846 6010B** | |
| **Nickel** | **Dissolved** | **9.3 B** | **400** | **ug/L** | **SW846 6010B** | |
| **Lead** | **Dissolved** | **19.0 B** | **30.0** | **ug/L** | **SW846 6010B** | |
| Selenium | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| **Strontium** | **Dissolved** | **531000** | **5000** | **ug/L** | **SW846 6010B** | |
| **Zinc** | **Dissolved** | **42.0 B** | **200** | **ug/L** | **SW846 6010B** | |
| Mercury in Liquid Waste (Manual Cold-Vapor) | | | | | | Reviewed |
| **Mercury** | | **0.065 B** | **0.20** | **ug/L** | **SW846 7470A** | |
| **Mercury** | **Dissolved** | **0.064 B** | **0.20** | **ug/L** | **SW846 7470A** | |

B Estimated result. Result is less than RL.

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



**Lot #:** C9C270155 | **Range Resources Corporation** | Table 2 | Project Number: CC6H8H Day1 | **Date Reported:** 4/16/09

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 1** | | | | |
| Sample #: 001 Date Sampled: 03/27/09 10:15 Date Received: 03/27/09 Matrix: WATER | | | | |
| **Benzene** | **260 E** | **5.0** | **ug/L** | **SW846 8260B** |

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



**Lot #:** C9C270155

Range Resources Corporation
Table 2
Project Number: CC6H8H Day1

**Date Reported:** 4/16/09

**Client Sample ID: CC6H8H-DAY 1**
Sample #: 001 Date Sampled: 03/27/09 10:15 Date Received: 03/27/09 Matrix: WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| Toluene | 270 E | 5.0 | ug/L | SW846 8260B |

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 21

**Lot #:** C9C270155 — Table 2 — **Date Reported:** 4/16/09

Project Number: CC6H8H Day1

**Client Sample ID: CC6H8H-DAY 1**

Sample #: 001 Date Sampled: 03/27/09 10:15 Date Received: 03/27/09 Matrix: WATER

J Estimated result. Result is less than RL.

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| Inorganic Analysis | | | | Reviewed |
| Acidity (Titrimetric) 2310B (4a) | ND | 5.0 | mg/L | SM20 2310B (4a) |
| **Alkalinity, Total** | 157 | 5.0 | mg/L | SM18 2320 B |
| **Biochemical Oxygen Demand** | 75.4 | 2.0 | mg/L | SM18 5210 B |
| **Chemical Oxygen Demand** | 2470 | 50.0 | mg/L | MCAWW 410.4 |
| **Specific Conductance** | 124000 | 100 | umhos/cm | MCAWW 120.1 |
| **Bromide** | 376 | 5.0 | mg/L | MCAWW 300.0A |
| **Chloride** | 31500 | 1000 | mg/L | MCAWW 300.0A |
| Nitrite as N | ND G | 1.2 | mg/L | MCAWW 300.0A |
| **Nitrate as N** | 1.4 | 1.2 | mg/L | MCAWW 300.0A |
| **Sulfate** | 102 | 25.0 | mg/L | MCAWW 300.0A |
| **Nitrogen, Ammonia** | 60.3 | 5.0 | mg/L | MCAWW 350.1 |

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 22

**Lot #:** C9C270155 — Table 2 — **Date Reported:** 4/16/09

Project Number: CC6H8H Day1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 1** | | | | | |
| Sample #: 001 Date Sampled: 03/27/09 10:15 Date Received: 03/27/09 Matrix: WATER | | | | | |
| Nitrate-Nitrite | | | | | Reviewed |
| Nitrate-Nitrite | 0.45 | 0.10 | mg/L | MCAWW 353.2 | |
| Phenolics | 0.058 | 0.010 | mg/L | SW846 9066 | |
| pH Aqueous | 6.4 | 0.10 | No Units | SW846 9040 | |
| Total Dissolved Solids SM 2540 C | 61200 | 200 | mg/L | SM18 2540 C | |
| Total Kjeldahl Nitrogen | 77.7 | 3.0 | mg/L | MCAWW 351.3 | |
| Total Suspended Solids SM 2540 D | 6.8 | 4.0 | mg/L | SM20 2540D | |
| Turbidity (Nephelometric) | 14.8 | 2.0 | NTU | MCAWW 180.1 | |

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

B Estimated result. Result is less than RL.

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 1**

**General Chemistry**

**Lot-Sample #...:** C9C270155-001 **Work Order #...:** K88GC **Matrix.....:** WATER

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Hardness, as CaCO3** | **12300** | **250** | **mg/L** | **SM20 2340C** | **04/07/09** | **9097181** |
| | Dilution Factor: 50 | | Analysis Time..: 00:00 | | MS Run #.....: 9097117 | |
| | MDL.....: 76.9 | | | | | |
| **Hexavalent Chromium** | **0.014** | **0.010** | **mg/L** | **SW846 7196A** | **03/28/09** | **9087016** |
| | Dilution Factor: 1 | | Analysis Time..: 08:45 | | MS Run #.....: | |
| | MDL.....: 0.0027 | | | | | |
| **Nitrate-Nitrite** | **0.45 J** | **0.10** | **mg/L** | **MCAWW 353.2** | **04/08-04/09/09** | **9098156** |
| | Dilution Factor: 1 | | Analysis Time..: 12:34 | | MS Run #.....: 9098095 | |
| | MDL.....: 0.010 | | | | | |
| Oil & Grease (HEM) | ND | 4.9 | mg/L | CFR136A 1664A HEM | 04/13/09 | 9103106 |
| | Dilution Factor: 0.98 | | Analysis Time..: 09:35 | | MS Run #.....: | |
| | MDL.....: 0.48 | | | | | |
| **Specific Conductance** | **124000 J** | **100** | **umhos/cm** | **MCAWW 120.1** | **03/31/09** | **9090047** |
| | Dilution Factor: 100 | | Analysis Time..: 00:00 | | MS Run #.....: 9090029 | |
| | MDL.....: | | | | | |
| **Sulfate** | **102** | **25.0** | **mg/L** | **MCAWW 300.0A** | **03/27-03/28/09** | **9086253** |
| | Dilution Factor: 25 | | Analysis Time..: 00:00 | | MS Run #.....: | |
| | MDL.....: 0.79 | | | | | |

(Continued on next page)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

| | | | |
|---|---|---|---|
| Client | TestAmerica Pittsburgh | Work Order: | NSC2612 |
| | 301 Alpha, RIDC Park | Project Name: | TA-Pennsylvania Sites |
| | Pittsburgh, PA 15238 | Project Number: | C9C270155 |
| Attn | Chris Kovitch | Received: | 03/28/09 08:45 |

## ANALYTICAL REPORT

| Analyte | Result | Flag | Units | MRL | Dilution Factor | Analysis Date/Time | Method | Batch |
|---|---|---|---|---|---|---|---|---|
| **Sample ID: NSC2612-01 (CC6H8H-Day 1 - Water) Sampled: 03/27/09 10:15** | | | | | | | | |
| General Chemistry Parameters | | | | | | | | |
| MBAS (mol.wt 320) | 0.0641 | L1, M2 | mg/L | 0.0500 | 1 | 03/29/09 08:56 | SM5540 C | 9034354 |
| Sulfite | ND | HTI | mg/L | 5.00 | 1 | 04/07/09 14:00 | SM4500-SO3 B | 9040909 |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Pittsburgh
301 Alpha Drive; RIDC Park
Pittsburgh, PA 15238

SDG Number: C9C270155

Project: Range Resources Corporation
Project Number: C9C270155

Received: 03/28/09-03/31/(
Reported: 04/23/09 14:18

## Analytical Report

| Analyte | Sample Result | Data Qualifiers | Rpt Limit | MDL | Units | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: RSC0987-01 (CC6H8H-DAY 1 - Water)** | | | | | **Sampled: 03/27/09** | | | **Recvd: 03/28/09 09:10** | | |
| Alcohols by EPA Method 8015 modified | | | | | | | | | | |
| Non-Halogenated Volatile Organics | | | | | | | | | | |
| Ethylene Glycol | 31 | B | 10 | NA | mg/L | 1.00 | 04/01/09 12:13 | tch | 9D01008 | 8015 |
| *Surr: 1,4-Butanediol (66-130%)* | *101 %* | | | | | | 04/01/09 12:13 | tch | 9D01008 | 8015 |

# Range Resources Corporation

## Client Sample ID: CC6H8H-DAY0 DUP

### Radiochemistry

Lab Sample ID: C9C240291-001X
Work Order: K83PA
Matrix: WATER

Date Collected: 03/24/09 1430
Date Received: 03/24/09 1650

| 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 # 9091406** | | **Yld %** |
| Lead 210 | 80 | U | 110 | | 170 | 04/01/09 | 04/22/09 |
| Lead 212 | -4 | U | 17 | | 19 | 04/01/09 | 04/22/09 |
| Lead 214 | -3 | U | 15 | | 22 | 04/01/09 | 04/22/09 |
| Radium (226) | -2 | U | 17 | | 26 | 04/01/09 | 04/22/09 |
| Radium 228 | 10 | U | 20 | 50 | 36 | 04/01/09 | 04/22/09 |
| Thorium 227 | -9 | U | 32 | | 54 | 04/01/09 | 04/22/09 |
| Thorium 234 | -30 | U | 130 | | 180 | 04/01/09 | 04/22/09 |
| Uranium 235 | 9 | U | 30 | | 52 | 04/01/09 | 04/22/09 |
| Uranium 238 | -30 | U | 130 | | 180 | 04/01/09 | 04/22/09 |

**NOTE(S)**

Data are incomplete without the case narrative.

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

U Result is less than the sample detection limit.

# Range Resources Corporation

## Client Sample ID: CC6H8H-DAY0

### Radiochemistry

Lab Sample ID: C9C240291-001
Work Order: K83PA
Matrix: WATER

Date Collected: 03/24/09 1430
Date Received: 03/24/09 1650

| 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 # 9091406 | | Yld % |
| Lead 210 | 140 | U | 120 | | 210 | 04/01/09 | 04/22/09 |
| Lead 212 | 10 | U | 11 | | 18 | 04/01/09 | 04/22/09 |
| Lead 214 | 6 | U | 10 | | 17 | 04/01/09 | 04/22/09 |
| Radium (226) | 7 | U | 12 | | 20 | 04/01/09 | 04/22/09 |
| Radium 228 | 6 | U | 23 | 50 | 42 | 04/01/09 | 04/22/09 |
| Thorium 227 | 3 | U | 54 | | 93 | 04/01/09 | 04/22/09 |
| Thorium 234 | 170 | U | 130 | | 180 | 04/01/09 | 04/22/09 |
| Uranium 235 | 18 | U | 28 | | 48 | 04/01/09 | 04/22/09 |
| Uranium 238 | 170 | U | 130 | | 180 | 04/01/09 | 04/22/09 |

NOTE(S)

Data are incomplete without the case narrative.

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

U Result is less than the sample detection limit.

# Range Resources Corporation

## Client Sample ID: SUPPLY WATER-CC6H8H

### Radiochemistry

Lab Sample ID: C9C240291-002
Work Order: K83PC
Matrix: WATER

Date Collected: 03/24/09 1230
Date Received: 03/24/09 1650

| 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 # 9091406 | | Yld % |
| Lead 210 | -9 | U | 76 | | 140 | 04/01/09 | 04/22/09 |
| Lead 212 | 12.9 | | 9.3 | | 13 | 04/01/09 | 04/22/09 |
| Lead 214 | 13.3 | U | 9.4 | | 14 | 04/01/09 | 04/22/09 |
| Radium (226) | 0.8 | U | 11 | | 22 | 04/01/09 | 04/22/09 |
| Radium 228 | -1 | U | 21 | 50 | 38 | 04/01/09 | 04/22/09 |
| Thorium 227 | -14 | U | 31 | | 52 | 04/01/09 | 04/22/09 |
| Thorium 234 | -60 | U | 140 | | 150 | 04/01/09 | 04/22/09 |
| Uranium 235 | -20 | U | 910 | | 50 | 04/01/09 | 04/22/09 |
| Uranium 238 | -60 | U | 140 | | 150 | 04/01/09 | 04/22/09 |

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Yld results are greater than the MDC.

U Result is less than the sample detection limit.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

# ANALYTICAL REPORT

PROJECT NO. CC6H8H-Day 5

Table 2

Lot #: C9D010248

Tony Gaudlip

Range Resources Corporation
380 Southpointe Blvd
Suite 300
Canonsburg, PA 15317

TESTAMERICA LABORATORIES, INC.

Christina M. Kovitch
Project Manager

April 24, 2009

## NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

| Certifying State/Program | Certificate # | Program Types | TestAmerica |
|---|---|---|---|
| NFESC | NA | NAVY | X |
| US Dept of Agriculture | (#P330-07-00101) | Foreign Soil Import Permit | X |
| Arkansas | (#88-0690) | WW | X |
| | | HW | X |
| California – NELAC | 04224CA | WW | X |
| | | HW | X |
| Connecticut | (#PH-0688) | WW | X |
| | | HW | X |
| Florida – NELAC | (#E871008-04) | WW | X |
| | | HW | X |
| Illinois – NELAC | (#002064) | WW | X |
| | | HW | X |
| Kansas – NELAC | (#E-10350) | WW | X |
| | | HW | X |
| Louisiana – NELAC | (#04041) | WW | X |
| | | HW | X |
| New Hampshire – NELAC | (#203008) | WW | X |
| | | -- | -- |
| New Jersey – NELAC | (PA-005) | WW | X |
| | | HW | X |
| New York – NELAC | (#11182) | WW | X |
| | | HW | X |
| North Carolina | (#434) | WW | X |
| | | HW | X |
| Pennsylvania - NELAC | (#02-00416) | WW | X |
| | | HW | X |
| South Carolina | (#89014002) | WW | X |
| | | HW | X |
| Utah – NELAC | (STLP) | WW | X |
| | | HW | X |
| West Virginia | (#142) | WW | X |
| | | HW | X |
| Wisconsin | 998027800 | WW | X |
| | | HW | X |

The codes utilized for program types are described below:

HW Hazardous Waste certification
WW Non-potable Water and/or Wastewater certification
X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 2/5/2009 C:\Documents and Settings\derubeisn\My Documents\NELAC NARRATIVE Pttsburgh.doc

C9D010248

# TestAmerica Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

COC ID: KOVITCHC16660-1124-3


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | | | |
|---|---|---|---|---|---|
| Project Information: | Table 2 | Quote #: | 81989 | Range Client: | URS Corporation |
| Date: | 4-1-09 | Carrier/Waybill #: | | | Foster Plaza 4 |
| Project Manager: | Amanda Bayne | | Table 2 | | 501 Holiday Drive |
| Phone: | 412-503-4623 | | | | Suite 300 |
| | | | | | Pittsburgh |
| | | | | | PA 15220 |

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CC6H8H-Dg5 | 4-1-09/1415 | WATER | 250P | Plastic - 250mL | 1 | None | WATER 7196A, Dissolved CR6 (Filter in Lab) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | Hydrochloric Acid | WATER, 1664A HEM, Oil and Grease |
| | | WATER | 250P | Plastic - 250mL | 1 | Nitric Acid | WATER, 2340C, Total Hardness |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, 2540D, TSS,TDS,T-Alk,Acidity Spec. Cond |
| | | WATER | 1LP | Plastic -1 Liter | 1 | Sulfuric Acid | WATER, 365.2, Total phosphorus TKN N.Canton |
| | | WATER | 1LP | Plastic -1 Liter | 1 | Sulfuric Acid | WATER, 410.4, COD, Nitrate-Nitrite , NH3 |
| | | WATER | 250P | Plastic - 250mL | 0 | None | WATER, 4500-Cl G, Residual Chlorine, Fie |
| | | WATER | 250AP | Plastic - 250mL (8oz) Amber | 1 | Sodium Hydroxide | WATER, 4500-CN E, Free Cyanide N.Canton |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, 5210 B, BOD N.Canton |
| | | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 5310B, Dissolved Organic Carbon (Filter in Lab) |
| | | WATER | VV | Glass - 40mL Vial | 3 | Sulfuric Acid | WATER, 5310B, TOC |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, 5540C MBAS Sulfite (TA Nashville) |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B Diss-Metals (Sp.List)+ Hg Filter in Lab |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B T-Metals (Sp.List + Hg |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 7196A, Hexavalent Chromium |

*Special Requirements:*

*Possible Hazard Identification:* ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

*Sample Disposal* ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

*Turn Around Time Required:* ☐ Normal ☐ Rush ☐ Other _____

*QC Level:* ___ I ___ II ___ III

*Project Specific Requirements (Specify)*

| | | | |
|---|---|---|---|
| *Relinquished by:* URS | *Date/Time:* 4-1-09/1500 | *Received by:* | *Date/Time* 4/1/09 1615 ~~1605~~ |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time* PMP 4/1/09 |
| *Relinquished by:* | *Date/Time.* | *Received by:* | *Date/Time* |

*Comments:*

C9D010248

# TestAmerica Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

COC ID: KOVITCHC16660-1124-3


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | | |
|---|---|---|---|---|
| Project Information: | Table 2 | Quote #: 81989 | Client: | URS Corporation |
| Date: | 4-1-09 | Carrier/Waybill #: Table 2 | | Foster Plaza 4 |
| Project Manager: | Amanda Bayne | | | 501 Holiday Drive |
| Phone: | 412-503-4623 | | | Suite 300 |
| | | | | Pittsburgh |
| | | | | PA 15220 |

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CC6H9H-Dg5 | 4-1-09/14K | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8015 DAI TA Buffalo |
| | | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 8015 Gylcols TA Buffalo |
| | | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8260B, VOA (Sp. List) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8270C, BNA Sp. List |
| | | WATER | 250P | Plastic - 250mL | 1 | Sodium Hydroxide | WATER, 9012A, Total Cyanide |
| | | WATER | 250P | Plastic - 250mL | 1 | Zinc Acetate/NaOH | WATER, 9030B/9034, Total Sulfide |
| | | WATER | 250AG | Glass - 250mL (8oz) Amber | 2 | Sulfuric Acid | WATER, 9066, Phenolics |
| | | WATER | 250P | Plastic - 250mL | 0 | None | WATER, Fecal Coliform/ Total Coliform Microbac |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, Osmotic Pressure MJ Reider |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, Sulfate,Nitrite,Nitrate,Fl,Cl,Br,Turb |

10

*Special Requirements:*

*Possible Hazard Identification:* ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

*Sample Disposal* ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

*Turn Around Time Required:* ☐ Normal ☐ Rush ☐ Other _____

*QC Level:* ___ I ___ II ___ III

*Project Specific Requirements (Specify):*

| | | | |
|---|---|---|---|
| *Relinquished by:* Courtesy of URS | *Date/Time:* 4-1-09/19a | *Received by:* Richard L Daniel | *Date/Time:* 4/1/09 1615 |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |

*Comments:*

# Cross Creek Unit 6H & 8H

(37-125-22830-00)
(37-125-22793-00)

40° 15' 46.1" N
80° 23' 17.8" W

40° 15' 46.1" N
80° 23' 17.6" W

Cross Creek Township
Washington County

## Day 5
## Fifth Day of Flowback
## 1 Apr 09
## Sample ID # C9D010248

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 1

**Lot #:** C9D010248 — Table 2 — **Date Reported:** 4/23/09

Project Number: CC6H8H-Day 5

**Client Sample ID: CC6H8H-DAY 5**

Sample #: 001 Date Sampled: 04/01/09 14:15 Date Received: 04/01/09 Matrix: WATER

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|---|
| Trivalent Chromium Trivalent Chromium | | | | | | Reviewed |
| Trace Inductively Coupled Plasma (ICP) Metals | | | | | | Reviewed |
| Silver | | ND | 50.0 | ug/L | SW846 6010B | |
| Aluminum | | 950 B | 2000 | ug/L | SW846 6010B | |
| Arsenic | | 78.4 B | 100 | ug/L | SW846 6010B | |
| Barium | | 77100 | 2000 | ug/L | SW846 6010B | |
| Beryllium | | ND | 40.0 | ug/L | SW846 6010B | |
| Boron | | 12200 | 2000 | ug/L | SW846 6010B | |
| Calcium | | 8880000 | 100000 | ug/L | SW846 6010B | |
| Cadmium | | 2.2 B | 50.0 | ug/L | SW846 6010B | |
| Cobalt | | ND | 1000 | ug/L | SW846 6010B | |
| Chromium | | 39.3 B | 50.0 | ug/L | SW846 6010B | |
| Copper | | 116 B | 250 | ug/L | SW846 6010B | |
| Iron | | 49600 | 1000 | ug/L | SW846 6010B | |
| Lithium | | 55900 | 500 | ug/L | SW846 6010B | |
| Magnesium | | 881000 | 50000 | ug/L | SW846 6010B | |
| Manganese | | 4680 | 150 | ug/L | SW846 6010B | |
| Molybdenum | | 30.8 B | 400 | ug/L | SW846 6010B | |
| Sodium | | 23700000 | 500000 | ug/L | SW846 6010B | |
| Nickel | | 26.4 B | 800 | ug/L | SW846 6010B | |
| Lead | | 61.0 | 60.0 | ug/L | SW846 6010B | |
| Selenium | | ND | 50.0 | ug/L | SW846 6010B | |
| Strontium | | 1350000 | 25000 | ug/L | SW846 6010B | |
| Zinc | | 106 B | 200 | ug/L | SW846 6010B | |
| Silver | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| Aluminum | Dissolved | 363 B | 2000 | ug/L | SW846 6010B | |
| Arsenic | Dissolved | 91.2 B | 100 | ug/L | SW846 6010B | |
| Barium | Dissolved | 55200 | 2000 | ug/L | SW846 6010B | |

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



Range Resources Corporation

**Lot #:** C9D010248 — Table 2 — **Date Reported:** 4/23/09

Project Number: CC6H8H-Day 5

**Client Sample ID: CC6H8H-DAY 5**

Sample #: 001 Date Sampled: 04/01/09 14:15 Date Received: 04/01/09 Matrix: WATER

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|---|
| Beryllium | Dissolved | ND | 40.0 | ug/L | SW846 6010B | |
| **Boron** | **Dissolved** | **16900** | **2000** | **ug/L** | **SW846 6010B** | |
| **Calcium** | **Dissolved** | **12000000** | **100000** | **ug/L** | **SW846 6010B** | |
| **Cadmium** | **Dissolved** | **3.0 B** | **50.0** | **ug/L** | **SW846 6010B** | |
| Cobalt | Dissolved | ND | 1000 | ug/L | SW846 6010B | |
| **Chromium** | **Dissolved** | **12.1 B** | **50.0** | **ug/L** | **SW846 6010B** | |
| Copper | Dissolved | ND | 250 | ug/L | SW846 6010B | |
| **Iron** | **Dissolved** | **45700** | **1000** | **ug/L** | **SW846 6010B** | |
| **Potassium** | **Dissolved** | **336000** | **50000** | **ug/L** | **SW846 6010B** | |
| **Lithium** | **Dissolved** | **78800** | **500** | **ug/L** | **SW846 6010B** | |
| **Magnesium** | **Dissolved** | **1180000** | **50000** | **ug/L** | **SW846 6010B** | |
| **Manganese** | **Dissolved** | **6120** | **150** | **ug/L** | **SW846 6010B** | |
| **Molybdenum** | **Dissolved** | **20.2 B** | **400** | **ug/L** | **SW846 6010B** | |
| **Sodium** | **Dissolved** | **31600000** | **500000** | **ug/L** | **SW846 6010B** | |
| Nickel | Dissolved | ND | 800 | ug/L | SW846 6010B | |
| **Lead** | **Dissolved** | **63.8** | **60.0** | **ug/L** | **SW846 6010B** | |
| Selenium | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| **Strontium** | **Dissolved** | **1880000** | **25000** | **ug/L** | **SW846 6010B** | |
| **Zinc** | **Dissolved** | **84.6 B** | **200** | **ug/L** | **SW846 6010B** | |
| Mercury in Liquid Waste (Manual Cold-Vapor) | | | | | | Reviewed |
| Mercury | | ND | 0.20 | ug/L | SW846 7470A | |
| Mercury | Dissolved | ND | 0.20 | ug/L | SW846 7470A | |

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



Range Resources Corporation

**Lot #:** C9D010248 Table 2 **Date Reported:** 4/23/09

Project Number: CC6H8H-Day 5

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 5** | | | | |
| Sample #: 001 Date Sampled: 04/01/09 14:15 Date Received: 04/01/09 Matrix: WATER | | | | |
| **Benzene** | **880** | **50** | **ug/L** | **SW846 8260B** |

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



**Range Resources Corporation**

**Lot #:** C9D010248 — Table 2 — **Date Reported:** 4/23/09

Project Number: CC6H8H-Day 5

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 5** | | | | |
| Sample #: 001 Date Sampled: 04/01/09 14:15 Date Received: 04/01/09 Matrix: WATER | | | | |
| **Toluene** | **920** | **50** | **ug/L** | **SW846 8260B** |

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



Range Resources Corporation
Table 2
Project Number: CC6H8H-Day 5

**Lot #:** C9D010248 **Date Reported:** 4/23/09

**Client Sample ID: CC6H8H-DAY 5**
Sample #: 001 Date Sampled: 04/01/09 14:15 Date Received: 04/01/09 Matrix: WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| Inorganic Analysis | | | | Reviewed |
| Acidity (Titrimetric) 2310B (4a) | ND | 5.0 | mg/L | SM20 2310B (4a) |
| **Alkalinity, Total** | 54.0 | 5.0 | mg/L | SM18 2320 B |
| **Biochemical Oxygen Demand** | 64.8 | 2.0 | mg/L | SM18 5210 B |
| **Chemical Oxygen Demand** | 5170 | 200 | mg/L | MCAWW 410.4 |
| **Specific Conductance** | 233000 | 200 | umhos/cm | MCAWW 120.1 |
| **HARDNESS, TOTAL** | 34000 | 2500 | mg/L | SM20 2340C HEM |
| **Bromide** | 826 | 20.0 | mg/L | MCAWW 300.0A |
| **Chloride** | 72000 | 1000 | mg/L | MCAWW 300.0A |
| **Sulfate** | 60.7 B | 100 | mg/L | MCAWW 300.0A |
| **Nitrogen, Ammonia** | 115 | 5.0 | mg/L | MCAWW 350.1 |
| **Nitrate-Nitrite** | 0.34 | 0.10 | mg/L | MCAWW 353.2 |
| **Phenolics** | 0.016 | 0.010 | mg/L | SW846 9066 |
| **pH Aqueous** | 6.4 | 0.10 | No Units | SW846 9040 |
| **Total Dissolved Solids** SM 2540 C | 116000 | 200 | mg/L | SM18 2540 C |
| **Total Kjeldahl Nitrogen** | 55.9 | 3.0 | mg/L | MCAWW 351.3 |
| **Total Suspended Solids** SM 2540 D | 204 | 4.0 | mg/L | SM20 2540D |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 5**

**General Chemistry**

**Lot-Sample #...: C9D010248-001 Work Order #...: K9FH4 Matrix.....: WATER**

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Hardness, as CaCO3** | **34000** | **2500** | **mg/L** | **SM20 2340C** | **04/07/09** | **9097181** |
| | Dilution Factor: 500 | | Analysis Time..: 00:00 | | MS Run #.....: 9097117 | |
| | MDL.....: 769 | | | | | |
| **Nitrate-Nitrite** | **0.34 J** | **0.10** | **mg/L** | **MCAWW 353.2** | **04/08-04/09/09** | **9098156** |
| | Dilution Factor: 1 | | Analysis Time..: 12:46 | | MS Run #.....: 9098095 | |
| | MDL.....: 0.010 | | | | | |
| **Oil & Grease (HEM)** | **20.4** | **4.9** | **mg/L** | **CFR136A 1664A HEM** | **04/20-04/21/09** | **9110560** |
| | Dilution Factor: 0.98 | | Analysis Time..: 11:30 | | MS Run #.....: 9110307 | |
| | MDL.....: 0.48 | | | | | |
| **Specific Conductance** | **233000 J** | **200** | **umhos/cm** | **MCAWW 120.1** | **04/07/09** | **9097046** |
| | Dilution Factor: 200 | | Analysis Time..: 00:00 | | MS Run #.....: 9097025 | |
| | MDL..... | | | | | |
| **Sulfate** | **60.7 B** | **100** | **mg/L** | **MCAWW 300.0A** | **04/02-04/03/09** | **9092122** |
| | Dilution Factor: 100 | | Analysis Time..: 00:00 | | MS Run #.....: 9092058 | |
| | MDL.....: 3.1 | | | | | |

(Continued on next page)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

| | | | |
|---|---|---|---|
| Client | TestAmerica Pittsburgh | Work Order: | NSD0115 |
| | 301 Alpha, RIDC Park | Project Name: | TA-Pennsylvania Sites |
| | Pittsburgh, PA 15238 | Project Number: | C9D010248 |
| Attn | Chris Kovitch | Received: | 04/02/09 08:00 |

## ANALYTICAL REPORT

| Analyte | Result | Flag | Units | MRL | Dilution Factor | Analysis Date/Time | Method | Batch |
|---|---|---|---|---|---|---|---|---|
| **Sample ID: NSD0115-01 (CC6H8H-Day 5 - Water) Sampled: 04/01/09 14:15** | | | | | | | | |
| General Chemistry Parameters | | | | | | | | |
| MBAS (mol.wt 320) | ND | | mg/L | 0.0500 | 1 | 04/03/09 20:29 | SM5540 C | 9040387 |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Pittsburgh
)01 Alpha Drive; RIDC Park
Pittsburgh, PA 15238

SDG Number: C9D010248

Project: Range Resources Corporation
Project Number: C9D010248

Received: 04/02/09
Reported: 04/24/09 13:44

## Analytical Report

| Analyte | Sample Result | Data Qualifiers | Rpt Limit | MDL | Units | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: RSD0094-01 (CC6H8H-DAY 5 - Water)** | | | | | **Sampled: 04/01/09** | | | **Recvd: 04/02/09 08:50** | | |
| **Non-Halogenated Volatile Organics** | | | | | | | | | | |
| Ethylene Glycol | ND | D02 | 100 | NA | mg/L | 10.0 | 04/09/09 11:52 | tch | 9D09050 | 8015 |
| *Surr: 1,4-Butanediol (66-130%)* | * | *D02,Z3* | | | | | 04/09/09 11:52 | tch | 9D09050 | 8015 |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

# ANALYTICAL REPORT

PROJECT NO. CC6H8H-Day14

Table 1

Lot #: C9D090299

Tony Gaudlip

Range Resources Corporation
380 Southpointe Blvd
Suite 300
Canonsburg, PA 15317

TESTAMERICA LABORATORIES, INC.

Christina M. Kovitch
Project Manager

April 29, 2009

301 Alpha Drive Pittsburgh, PA 15238 **tel** 412.963.7058 **fax** 412.963.2468 **www.testamericainc.com**

## NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

| Certifying State/Program | Certificate # | Program Types | TestAmerica |
|---|---|---|---|
| NFESC | NA | NAVY | X |
| US Dept of Agriculture | (#P330-07-00101) | Foreign Soil Import Permit | X |
| Arkansas | (#88-0690) | WW | X |
| | | HW | X |
| California – NELAC | 04224CA | WW | X |
| | | HW | X |
| Connecticut | (#PH-0688) | WW | X |
| | | HW | X |
| Florida – NELAC | (#E871008-04) | WW | X |
| | | HW | X |
| Illinois – NELAC | (#002064) | WW | X |
| | | HW | X |
| Kansas – NELAC | (#E-10350) | WW | X |
| | | HW | X |
| Louisiana – NELAC | (#04041) | WW | X |
| | | HW | X |
| New Hampshire – NELAC | (#203008) | WW | X |
| | | -- | -- |
| New Jersey – NELAC | (PA-005) | WW | X |
| | | HW | X |
| New York – NELAC | (#11182) | WW | X |
| | | HW | X |
| North Carolina | (#434) | WW | X |
| | | HW | X |
| Pennsylvania - NELAC | (#02-00416) | WW | X |
| | | HW | X |
| South Carolina | (#89014002) | WW | X |
| | | HW | X |
| Utah – NELAC | (STLP) | WW | X |
| | | HW | X |
| West Virginia | (#142) | WW | X |
| | | HW | X |
| Wisconsin | 998027800 | WW | X |
| | | HW | X |

The codes utilized for program types are described below:

HW Hazardous Waste certification
WW Non-potable Water and/or Wastewater certification
X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 2/5/2009 C:\Documents and Settings\derubeisn\My Documents\NELAC NARRATIVE Pttsburgh.doc

C9D090299

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

COC ID: KOVITCHC16972-1141-2


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | |
|---|---|---|---|
| Project Information: | Table 1 | Quote #: [redacted] | Client: URS Corporation |
| Date: | 4-9-09 | Carrier/Waybill #: Range | Foster Plaza 4 |
| Project Manager: | Amanda Baynes | | 501 Holiday Drive |
| Phone: | 412-849-5403 | | Suite 300 |
| | | | Pittsburgh |
| | | | PA 15220 |

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CC6H8H-D-8-14 | 4-9-09/1445 | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, MBAS,Sulfite (TA Nashville) |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, TDS, TSS, T-Alk-t Br,Cl,Fl |
| | | WATER | 250P | Plastic - 250mL | 1 | Sulfuric Acid | WATER, TKN, T-Phos N.Canton |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | Hydrochloric Acid | WATER, 1664A HEM, Oil and Grease |
| | | WATER | 250P | Plastic - 250mL | 1 | Nitric Acid | WATER, 2340C, Total Hardness |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 300.0A, Nitrate ,Nitrite, Sulfate,pH |
| | | WATER | 250AP | Plastic - 250mL (8oz) Amber | 1 | Sodium Hydroxide | WATER, 4500-CN E, Free Cyanide N.Canton |
| | | WATER | 1lp | Plastic -1 Liter | 1 | None | WATER, 5210 B, BOD N.Canton |
| | | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 5310B, Dissolved Organic Carbon (Filter at Lab) |
| | | WATER | VV | Glass - 40mL Vial | 3 | Sulfuric Acid | WATER, 5310B, TOC |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B Diss-Metals (Sp.List) (Filter in Lab) |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B T-Metals (Sp.List) |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 7196A, Diss Hexavalent Cr (needs filted in lab) |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 7196A, Total Hexavalent Chromium |
| | | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8015 DAI TA Buffalo |

Special Requirements:

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

Turn Around Time Required: ☐ Normal ☐ Rush ☐ Other _____

QC Level: ___ I ___ II ___ III

Project Specific Requirements (Specify):

| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time: 4-9-09 1520 | Received by: Tim Vicinelli | Date/Time: 4/9/09 1650 |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |

Comments:

(1 1 206)

Printed On: 4/1/2009 07:17 PM

(NOTE: this ORIGINAL Chain of Custody MUST accompany the samples from collection to receipt at the laboratory)



Attachment C

C9D090299

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

COC ID: KOVITCHC16972-1141-2


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | |
|---|---|---|---|
| Project Information: | Table 1 | Quote #: [redacted] | Client: URS Corporation |
| Date: | 4-7-09 | Carrier/Waybill #: Kayl | Foster Plaza 4 |
| Project Manager: | Amanda Baynes | | 501 Holiday Drive |
| Phone: | 412-849-5403 | | Suite 300 |
| | | | Pittsburgh |
| | | | PA 15220 |

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| QC645H-3&14 | 4-6-09/1445 | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 8015 Glycols TA Buffalo |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8081A, Pesticides |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8082, PCBs (8082) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8141A, Organophos |
| | | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8260B, VOA (Sp. List) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8270C, BNA Sp. List |
| | | WATER | 1GP | Plastic - 1 Gallon | 1 | Nitric Acid | WATER, 901.1 MOD, Gamma Cs-137 & Hits by |
| | | WATER | 250P | Plastic - 250mL | 1 | Sodium Hydroxide | WATER, 9012A, Total Cyanide |
| | | WATER | 250P | Plastic - 250mL | 1 | Zinc Acetate/NaOH | WATER, 9030B/9034, Total Sulfide |
| | | WATER | 4oz | Glass - 4oz (125mL) | 2 | Sulfuric Acid | WATER, 9066, Phenolics |
| | | WATER | 250P | Plastic - 250mL | 1 | Sulfuric Acid | WATER, Ammonia Nitrogen, Nitrate-Nitrite,COD |
| | | WATER | VVAG | Amber Glass - 40 mL Vial | 3 | None | WATER, Fatty Acid TA Buffalo |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, Osmotic Pressure MJ Reider |
| | | WATER | 2oz | Plastic - 2oz | 1 | None | WATER, Total Coliform Microbac |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | None | WATER, TVA TA Watertown |

*Special Requirements:*

*Possible Hazard Identification:* ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

*Sample Disposal:* ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

*Turn Around Time Required:* ☐ Normal ☐ Rush ☐ Other _____

*QC Level:* ___ I ___ II ___ III

*Project Specific Requirements (Specify):*

| | | | |
|---|---|---|---|
| *Relinquished by:* [signature] IMS | *Date/Time:* 4-7-09/1530 | *Received by:* [signature] | *Date/Time:* 4/9/09 1650 |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |
| *Relinquished by:* | *Date/Time:* | *Received by:* | *Date/Time:* |

*Comments:*

10

(T - 206)

Attachment C

## METHOD BLANK REPORT

### General Chemistry

**Client Lot #...:** C9D090299 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Acidity | | Work Order #: LAEPE1AA | | MB Lot-Sample #: | C9D210000-061 | |
| | ND | 5.0 | mg/L | SM20 2310B (4a) | 04/21/09 | 9111061 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |
| **Ammonia Nitrogen** | | Work Order #: K97851AA | | MB Lot-Sample #: | C9D160000-409 | |
| | **0.030 B** | **0.10** | **mg/L** | **MCAWW 350.1** | **04/16-04/17/09** | **9106409** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |
| Biochemical Oxygen Demand (BOD) | | Work Order #: K94L11AA | | MB Lot-Sample #: | A9D100000-381 | |
| | ND | 2.0 | mg/L | SM18 5210 B | 04/10-04/15/09 | 9100381 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |
| Bromide | | Work Order #: K90DE1AA | | MB Lot-Sample #: | C9D100000-362 | |
| | ND | 0.20 | mg/L | MCAWW 300.0A | 04/10/09 | 9100362 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |
| Chemical Oxygen Demand (COD) | | Work Order #: LAKKR1AA | | MB Lot-Sample #: | C9D230000-068 | |
| | ND | 10.0 | mg/L | MCAWW 410.4 | 04/23/09 | 9113068 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 15:51 | | | | |
| Chloride | | Work Order #: LAF7K1AA | | MB Lot-Sample #: | C9D210000-353 | |
| | ND | 1.0 | mg/L | MCAWW 300.0A | 04/21/09 | 9111353 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |

**METHOD BLANK REPORT**

**General Chemistry**

**Client Lot #...:** C9D090299 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hardness, as CaCO3 | | Work Order #: LAD1N1AA | | MB Lot-Sample #: C9D200000-319 | | |
| | ND | 5.0 | mg/L | SM20 2340C | 04/20/09 | 9110319 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |
| **Nitrate-Nitrite** | | Work Order #: LARD41AA | | MB Lot-Sample #: C9D250000-018 | | |
| | **0.024 B** | **0.10** | **mg/L** | **MCAWW 353.2** | **04/25/09** | **9115018** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 12:49 | | | | |
| | ND | | | | | |
| Oil & Grease (HEM) | | Work Order #: LAWJF1AA | | MB Lot-Sample #: C9D280000-174 | | |
| | ND | 5.0 | mg/L | CFR136A 1664A HEM | 04/27-04/28/09 | 9118174 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 12:00 | | | | |
| **Specific Conductance** | | Work Order #: K9WR91AA | | MB Lot-Sample #: C9D100000-016 | | |
| | **0.45 B** | **1.0** | **umhos/cm** | **MCAWW 120.1** | **04/10/09** | **9100016** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |
| **Sulfate** | | Work Order #: K90C01AA | | MB Lot-Sample #: C9D100000-358 | | |
| | **0.14 B** | **1.0** | **mg/L** | **MCAWW 300.0A** | **04/10/09** | **9100358** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 00:00 | | | | |

(Continued on next page)

**METHOD BLANK REPORT**

**General Chemistry**

**Client Lot #...:** C9D090299 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Dissolved Hexavalent Chromium | | Work Order #: K9WX91AA | | MB Lot-Sample #: | C9D100000-115 | |
| | ND | 0.010 | mg/L | SW846 7196A | 04/10/09 | 9100115 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:03 | | | | |

**NOTE(S):**

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

TestAmerica Pittsburgh
301 Alpha Drive; RIDC Park
Pittsburgh, PA 15238

SDG Number: C9D090299

Project: Range Resources Corporation
Project Number: C9D090299

Received: 04/10/09
Reported: 04/27/09 15:55

## Analytical Report

| Analyte | Sample Result | Data Qualifiers | Rpt Limit | MDL | Units | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: RSD0478-01 (CC6H8H-DAY 14 - Water)** | | | | | **Sampled: 04/09/09** | | | **Recvd: 04/10/09 09:10** | | |
| **Non-Halogenated Volatile Organics** | | | | | | | | | | |
| Ethylene Glycol | ND | D02, Z3 | 100 | NA | mg/L | 10.0 | 04/15/09 11:56 | tch | 9D15033 | 8015 |
| *Surr: 1,4-Butanediol (66-130%)* | * | *D02, Z3* | | | | | 04/15/09 11:56 | tch | 9D15033 | 8015 |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

| | | | |
|---|---|---|---|
| Client | TestAmerica Pittsburgh | Work Order: | NSD0891 |
| | 301 Alpha, RIDC Park | Project Name: | TA-Pennsylvania Sites |
| | Pittsburgh, PA 15238 | Project Number: | C9D090299 |
| Attn | Chris Kovitch | Received: | 04/10/09 08:10 |

## ANALYTICAL REPORT

| Analyte | Result | Flag | Units | MRL | Dilution Factor | Analysis Date/Time | Method | Batch |
|---|---|---|---|---|---|---|---|---|
| **Sample ID: NSD0891-01 (CC6H8H-DAY 14 - Water) Sampled: 04/09/09 14:45** | | | | | | | | |
| General Chemistry Parameters | | | | | | | | |
| MBAS (mol.wt 320) | 0.465 | H2 | mg/L | 0.0500 | 1 | 04/15/09 09:00 | SM5540 C | 9042254 |

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**TOTAL Metals**

**Lot-Sample #...:** C9D090299-001 **Matrix.....:** WATER
**Date Sampled...:** 04/09/09 **Date Received..:** 04/09/09

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 9103098 | | | | | | |
| Silver | ND | 50.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K9WFK1CG |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 5.4 | |
| **Aluminum** | **1450 B** | **2000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CH** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 162 | |
| **Arsenic** | **82.8 B** | **100** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CJ** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 19.5 | |
| **Barium** | **83100** | **2000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CK** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 2.6 | |
| Beryllium | ND | 40.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K9WFK1CL |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 1.8 | |
| **Boron** | **14700 J** | **2000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CM** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 12.7 | |
| **Calcium** | **14000000** | **250000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CN** |
| | | Dilution Factor: 50 | | Analysis Time..: 13:47 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 884 | |
| **Cadmium** | **4.7 B** | **50.0** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CP** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 2.1 | |
| Cobalt | ND | 2500 | ug/L | SW846 6010B | 04/13-04/21/09 | K9WFK1CQ |
| | | Dilution Factor: 50 | | Analysis Time..: 13:47 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 22.5 | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**TOTAL Metals**

**Lot-Sample #...:** C9D090299-001 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **32.8 B** | **50.0** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CR** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 10.7 | |
| **Copper** | **73.3 B** | **250** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CT** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 45.7 | |
| **Iron** | **75200** | **1000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CU** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 84.0 | |
| **Lithium** | **86000** | **500** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CW** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 15.0 | |
| **Magnesium** | **1380000** | **50000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1CX** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 218 | |
| **Manganese** | **7320** | **150** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1C0** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 5.7 | |
| Molybdenum | ND | 400 | ug/L | SW846 6010B | 04/13-04/21/09 | K9WFK1C1 |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 8.5 | |
| **Sodium** | **34000000** | **500000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1C2** |
| | | Dilution Factor: 100 | | Analysis Time..: 13:33 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 14500 | |
| Nickel | ND | 2000 | ug/L | SW846 6010B | 04/13-04/21/09 | K9WFK1C3 |
| | | Dilution Factor: 50 | | Analysis Time..: 13:47 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 39.0 | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**TOTAL Metals**

**Lot-Sample #...:** C9D090299-001 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Lead** | **106 B** | **150** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1C4** |
| | | Dilution Factor: 50 | | Analysis Time..: 13:47 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 85.5 | |
| Selenium | ND | 50.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K9WFK1C6 |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 29.0 | |
| **Strontium** | **2100000** | **25000** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1C8** |
| | | Dilution Factor: 500 | | Analysis Time..: 13:37 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 60.0 | |
| **Zinc** | **123 B** | **200** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K9WFK1DC** |
| | | Dilution Factor: 10 | | Analysis Time..: 13:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 30.6 | |
| **Prep Batch #...:** 9103184 | | | | | | |
| Mercury | ND | 0.20 | ug/L | SW846 7470A | 04/13/09 | K9WFK1EC |
| | | Dilution Factor: 1 | | Analysis Time..: 14:16 | Analyst ID.....: 403938 | |
| | | Instrument ID..: HGHYDRA | | MS Run #.....: 9103107 | MDL.....: 0.038 | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**DISSOLVED Metals**

**Lot-Sample #...:** C9D090299-001 **Matrix.....:** WATER
**Date Sampled...:** 04/09/09 **Date Received..:** 04/09/09

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 9103093 | | | | | | |
| **Silver** | **5.6 B** | **50.0** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DE** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 5.4 | |
| **Aluminum** | **395 B** | **2000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DF** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 162 | |
| **Arsenic** | **63.2 B** | **100** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DG** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 19.5 | |
| **Barium** | **75700** | **2000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DH** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 2.6 | |
| Beryllium | ND | 40.0 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1DJ |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 1.8 | |
| **Boron** | **15400 J** | **2000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DK** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 12.7 | |
| **Calcium** | **14300000** | **250000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DL** |
| | | Dilution Factor: 50 | | Analysis Time..: 16:33 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 884 | |
| **Cadmium** | **3.8 B** | **50.0** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DM** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 2.1 | |
| Cobalt | ND | 2500 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1DN |
| | | Dilution Factor: 50 | | Analysis Time..: 16:33 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 22.5 | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**DISSOLVED Metals**

**Lot-Sample #...:** C9D090299-001 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **11.6 B** | **50.0** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DP** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 10.7 | |
| Copper | ND | 250 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1DQ |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 45.7 | |
| **Iron** | **47300** | **1000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DR** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 84.0 | |
| **Lithium** | **94500** | **500** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DU** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 15.0 | |
| **Magnesium** | **1370000** | **50000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1DV** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 218 | |
| **Manganese** | **7740** | **150** | **ug/L** | **SW846 6010B** | **04/13-04/23/09** | **K9WFK1DW** |
| | | Dilution Factor: 10 | | Analysis Time..: 09:36 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 5.7 | |
| Molybdenum | ND | 400 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1DX |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 8.5 | |
| **Sodium** | **36400000** | **500000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1D0** |
| | | Dilution Factor: 100 | | Analysis Time..: 16:38 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 14500 | |
| Nickel | ND | 2000 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1D1 |
| | | Dilution Factor: 50 | | Analysis Time..: 16:33 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 39.0 | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**DISSOLVED Metals**

**Lot-Sample #...:** C9D090299-001 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Lead | ND | 150 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1D2 |
| | | Dilution Factor: 50 | | Analysis Time..: 16:33 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 85.5 | |
| Selenium | ND | 50.0 | ug/L | SW846 6010B | 04/13-04/22/09 | K9WFK1D4 |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 29.0 | |
| **Strontium** | **2330000** | **25000** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1D6** |
| | | Dilution Factor: 500 | | Analysis Time..: 16:42 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 60.0 | |
| **Zinc** | **92.8 B** | **200** | **ug/L** | **SW846 6010B** | **04/13-04/22/09** | **K9WFK1D9** |
| | | Dilution Factor: 10 | | Analysis Time..: 16:28 | Analyst ID.....: 022952 | |
| | | Instrument ID..: 6500ICP | | MS Run #.....: | MDL.....: 30.6 | |
| **Prep Batch #...:** 9105155 | | | | | | |
| Mercury | ND | 0.20 | ug/L | SW846 7470A | 04/15/09 | K9WFK1ED |
| | | Dilution Factor: 1 | | Analysis Time..: 15:16 | Analyst ID.....: 403938 | |
| | | Instrument ID..: HGHYDRA | | MS Run #.....: 9105060 | MDL.....: 0.038 | |

**NOTE(S):**

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

## METHOD BLANK REPORT

### TOTAL Metals

**Client Lot #...:** C9D090299 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **MB Lot-Sample #:** C9D130000-098 **Prep Batch #...:** 9103098 | | | | | | |
| Aluminum | ND | 200 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AA |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Arsenic | ND | 10.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AD |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Barium | ND | 200 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AE |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Beryllium | ND | 4.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AF |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| **Boron** | **1.3 B** | **200** | **ug/L** | **SW846 6010B** | **04/13-04/21/09** | **K91QH1AG** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Cadmium | ND | 5.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AH |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Calcium | ND | 5000 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AJ |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Chromium | ND | 5.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1A6 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Cobalt | ND | 50.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AK |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Copper | ND | 25.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AL |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |

(Continued on next page)

**METHOD BLANK REPORT**

**TOTAL Metals**

**Client Lot #...:** C9D090299 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Iron | ND | 100 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AM |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Lead | ND | 3.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AN |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Lithium | ND | 50.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AP |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Magnesium | ND | 5000 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AQ |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Manganese | ND | 15.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AR |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Molybdenum | ND | 40.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AT |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Nickel | ND | 40.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AU |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| - | -- | | | | | V |
| Selenium | ND | 5.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AW |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Silver | ND | 5.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1AX |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Sodium | ND | 5000 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1A0 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |
| Strontium | ND | 50.0 | ug/L | SW846 6010B | 04/13-04/21/09 | K91QH1A1 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 11:20 | | Analyst ID.....: 22952 | Instrument ID..: 650 | |

(Continued on next page)

**METHOD BLANK REPORT**

**TOTAL Metals**

**Client Lot #...:** C9D090299 **Matrix.....:** WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **MB Lot-Sample #:** C9D130000-184 **Prep Batch #...:** 9103184 | | | | | | | |
| Mercury | ND | 0.20 | ug/L | SW846 7470A | | 04/13/09 | K91V81AA |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 13:34 | | Analyst ID.....: 403938 | | Instrument ID..: HGH | |

**NOTE(S):**

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

B Estimated result. Result is less than RL.

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**GC/MS Volatiles**

| | | | | | |
|---|---|---|---|---|---|
| **Lot-Sample #...:** | C9D090299-001 | **Work Order #...:** | K9WFK1EE | **Matrix.....:** | WATER |
| **Date Sampled...:** | 04/09/09 | **Date Received..:** | 04/09/09 | **MS Run #.....:** | 9104133 |
| **Prep Date.....:** | 04/14/09 | **Analysis Date..:** | 04/14/09 | | |
| **Prep Batch #...:** | 9104245 | **Analysis Time..:** | 17:03 | | |
| **Dilution Factor:** | 1 | **Initial Wgt/Vol:** | 5 mL | **Final Wgt/Vol..:** | 5 mL |
| **Analyst ID.....:** | 034635 | **Instrument ID..:** | HP7 | | |
| | | **Method.....:** | SW846 8260B | | |

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL | |
|---|---|---|---|---|---|
| **Benzene** | **360 E** | **5.0** | **ug/L** | **0.99** | |

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 14**

**GC/MS Volatiles**

**Lot-Sample #...:** C9D090299-001 **Work Order #...:** K9WFK1EE **Matrix.....:** WATER

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|---|
| Toluene | | 430 E | 5.0 | ug/L | 0.85 |

# Range Resources Corporation

## Client Sample ID: CC6H8H-DAY 14

### Radiochemistry

Lab Sample ID: C9D090301-001
Work Order: K9WGJ
Matrix: WATER

Date Collected: 04/09/09 1445
Date Received: 04/09/09 1650

| 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 # 9105288 | Yld % |
| Lead 210 | 90 | U | 280 | | 360 | 04/15/09 | 05/06/09 |
| Lead 212 | 37 | | 22 | | 28 | 04/15/09 | 05/06/09 |
| Lead 214 | 925 | | 92 | | 38 | 04/15/09 | 05/06/09 |
| Radium (226) | 861 | | 84 | | 43 | 04/15/09 | 05/06/09 |
| Radium 228 | 655 | | 66 | 50 | 42 | 04/15/09 | 05/06/09 |
| Thorium 227 | -49 | U | 73 | | 120 | 04/15/09 | 05/06/09 |
| Thorium 234 | 10 | U | 220 | | 390 | 04/15/09 | 05/06/09 |
| Uranium 235 | -40 | U | 200 | | 120 | 04/15/09 | 05/06/09 |
| Uranium 238 | 10 | U | 220 | | 390 | 04/15/09 | 05/06/09 |

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.

# Range Resources Corporation

## Client Sample ID: CC6H8H-DAY 14 DUP

### Radiochemistry

Lab Sample ID: C9D090301-001X
Work Order: K9WGJ
Matrix: WATER

Date Collected: 04/09/09 1445
Date Received: 04/09/09 1650

| 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 # 9105288 | | Yld % |
| Lead 210 | 160 | U | 380 | | 630 | 04/15/09 | 05/06/09 |
| Lead 212 | -20 | U | 1400 | | 40 | 04/15/09 | 05/06/09 |
| Lead 214 | 976 | | 80 | | 39 | 04/15/09 | 05/06/09 |
| Radium (226) | 885 | | 72 | | 25 | 04/15/09 | 05/06/09 |
| Radium 228 | 751 | | 71 | 50 | 48 | 04/15/09 | 05/06/09 |
| Thorium 227 | -23 | U | 68 | | 110 | 04/15/09 | 05/06/09 |
| Thorium 234 | 140 | U | 330 | | 480 | 04/15/09 | 05/06/09 |
| Uranium 235 | -30 | U | 14000 | | 100 | 04/15/09 | 05/06/09 |
| Uranium 238 | 140 | U | 330 | | 480 | 04/15/09 | 05/06/09 |

**NOTE(S)**

Data are incomplete without the case narrative.

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

U Result is less than the sample detection limit.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

# ANALYTICAL REPORT

PROJECT NO. CC6H8H-DAY 90

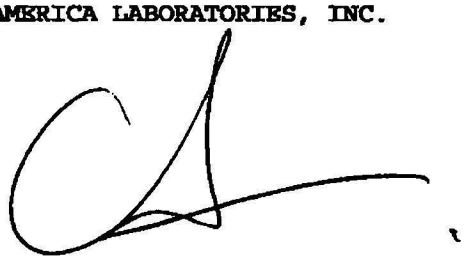
Table 1

Lot #: C9F300106

Tony Gaudlip

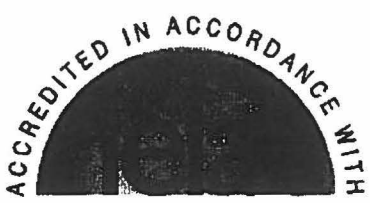
Range Resources Corporation
380 Southpointe Blvd
Suite 300
Canonsburg, PA 15317

TESTAMERICA LABORATORIES, INC.



Christina M. Kovitch
Project Manager

July 28, 2009




## NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

| Certifying State/Program | Certificate # | Program Types | TestAmerica |
|---|---|---|---|
| NFESC | NA | NAVY | X |
| US Dept of Agriculture | (#P330-07-00101) | Foreign Soil Import Permit | X |
| Arkansas | (#88-0690) | WW | X |
| | | HW | X |
| California – NELAC | 04224CA | WW | X |
| | | HW | X |
| Connecticut | (#PH-0688) | WW | X |
| | | HW | X |
| Florida – NELAC | (#E871008-04) | WW | X |
| | | HW | X |
| Illinois – NELAC | (#002064) | WW | X |
| | | HW | X |
| Kansas – NELAC | (#E-10350) | WW | X |
| | | HW | X |
| Louisiana – NELAC | (#04041) | WW | X |
| | | HW | X |
| New Hampshire – NELAC | (#203008) | WW | X |
| | | -- | -- |
| New Jersey – NELAC | (PA-005) | WW | X |
| | | HW | X |
| New York – NELAC | (#11182) | WW | X |
| | | HW | X |
| North Carolina | (#434) | WW | X |
| | | HW | X |
| Pennsylvania - NELAC | (#02-00416) | WW | X |
| | | HW | X |
| South Carolina | (#89014002) | WW | X |
| | | HW | X |
| Utah – NELAC | (STLP) | WW | X |
| | | HW | X |
| West Virginia | (#142) | WW | X |
| | | HW | X |
| Wisconsin | 998027800 | WW | X |
| | | HW | X |

The codes utilized for program types are described below:

HW Hazardous Waste certification
WW Non-potable Water and/or Wastewater certification
X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 2/5/2009 C:\Documents and Settings\derubeisn\My Documents\NELAC NARRATIVE Pttsburgh.doc

C9F300106

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

COC ID: KOVITCHC16972-1141-2


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | |
|---|---|---|---|
| Project Information: | Table 1 | Quote #: [redacted] | Client: |
| Date: | 6-29-09 | Carrier/Waybill #: Range | |
| Project Manager: | Amanda Baynes | | |
| Phone: | 412-849-5403 | | |

URS Corporation
Foster Plaza 4
501 Holiday Drive
Suite 300
Pittsburgh
PA 15220

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CCL48H-Dg 90 | 6-29-09/0930 | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, MBAS,Sulfite (TA Nashville) |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, TDS, TSS, T-Alk-I Br,Cl,Fl |
| | | WATER | 250P | Plastic - 250mL | 1 | Sulfuric Acid | WATER, TKN, T-Phos N.Canton |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | Hydrochloric Acid | WATER, 1664A HEM, Oil and Grease |
| | | WATER | 250P | Plastic - 250mL | 1 | Nitric Acid | WATER, 2340C, Total Hardness |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 300.0A, Nitrate ,Nitrite, Sulfate,pH |
| | | WATER | 250AP | Plastic - 250mL (8oz) Amber | 1 | Sodium Hydroxide | WATER, 4500-CN E, Free Cyanide N.Canton |
| | | WATER | 1lp | Plastic -1 Liter | 1 | None | WATER, 5210 B, BOD N.Canton |
| | | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 5310B, Dissolved Organic Carbon (Filter at lab) |
| | | WATER | VV | Glass - 40mL Vial | 3 | Sulfuric Acid | WATER, 5310B, TOC |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B Diss-Metals (Sp.List) (Filter in Lab) |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | Nitric Acid | WATER, 6010B T-Metals (Sp.List) |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 7196A, Diss Hexavalent Cr (needs filted in lab) |
| | | WATER | 250P | Plastic - 250mL | 1 | None | WATER, 7196A, Total Hexavalent Chromium |
| | | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8015 DAI TA Buffalo |

Special Requirements:

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

| | | | |
|---|---|---|---|
| Turn Around Time Required: ☐ Normal ☐ Rush ☐ Other _____ | QC Level: ___ I ___ II ___ III | Project Specific Requirements (Specify): | |
| Relinquished by: [signature] | Date/Time: 6-29-09/1640 | Received by: [signature] TA | Date/Time: 6/29/09 1640 |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Comments: | | | |

Attachment C

(1 - 192)

C9F300106

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

COC ID: KOVITCHC16972-1141-2


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | |
|---|---|---|---|
| Project Information: | Table 1 | Quote #: [redacted] | Client: |
| Date: | 6-29-09 | Carrier/Waybill #: Range | |
| Project Manager: | Amanda Baynes | | |
| Phone: | 412-849-5403 | | |

URS Corporation
Foster Plaza 4
501 Holiday Drive
Suite 300
Pittsburgh
PA 15220

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CCLH8H Dup 96 | 6-29-09/0930 | WATER | VV | Glass - 40mL Vial | 3 | None | WATER, 8015 Glycols TA Buffalo |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8081A, Pesticides |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8082, PCBs (8082) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8141A, Organophos |
| | | WATER | VV | Glass - 40mL Vial | 3 | Hydrochloric Acid | WATER, 8260B, VOA (Sp. List) |
| | | WATER | 1LAG | Glass - 1 Liter Amber | 2 | None | WATER, 8270C, BNA Sp. List |
| | | WATER | 1GP | Plastic - 1 Gallon | 1 | Nitric Acid | WATER, 901.1 MOD, Gamma Cs-137 & Hits by |
| | | WATER | 250P | Plastic - 250mL | 1 | Sodium Hydroxide | WATER, 9012A, Total Cyanide |
| | | WATER | 250P | Plastic - 250mL | 1 | Zinc Acetate/NaOH | WATER, 9030B/9034, Total Sulfide |
| | | WATER | 4oz | Glass - 4oz (125mL) | 2 | Sulfuric Acid | WATER, 9066, Phenolics |
| | | WATER | 250P | Plastic - 250mL | 1 | Sulfuric Acid | WATER, Ammonia Nitrogen, Nitrate-Nitrite,COD |
| | | WATER | VVAG | Amber Glass - 40 mL Vial | 3 | None | WATER, Fatty Acid TA Buffalo |
| | | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER, Osmotic Pressure MJ Reider |
| | | WATER | 2oz | Plastic - 2oz | 1 | None | WATER, Total Coliform Microbac |
| | | WATER | 500P | Plastic - 500mL (16oz) | 1 | None | WATER, TVA TA Watertown |

Special Requirements:

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may apply if samples are retained longer than 3 months)

Turn Around Time Required: ☐ Normal ☐ Rush ☐ Other _____

QC Level: ___ I ___ II ___ III

Project Specific Requirements (Specify):

| | | | |
|---|---|---|---|
| Relinquished by: [signature] URS | Date/Time: 6-29-09/1610 | Received by: [signature] TA | Date/Time: 6/29/09 1610 |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |

Comments:

10

(1 - 192)

Attachment C

C9F300106

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## Chain of Custody Record

COC ID: KOVITCHC16972-1141-2


**TestAmerica, Inc.**
TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
(412) 963-7058
(412) 963-2468 - fax


| | | | | | |
|---|---|---|---|---|---|
| Project Information: | Table 1 | Quote #: | [redacted] | Client: | URS Corporation<br>Foster Plaza 4<br>501 Holiday Drive<br>Suite 300<br>Pittsburgh<br>PA 15220 |
| Date: | 6-29-09 | Carrier/Waybill #: | Paige | | |
| Project Manager: | Amanda Baynes | | | | |
| Phone: | 412-849-5403 | | | | |

| SAMPLE ID | DATE/TIME | MATRIX | BOTTLE TYPE | | # | PRESERVATIVE | ANALYSIS |
|---|---|---|---|---|---|---|---|
| CLCHEM-DUP | 6-29-09/0930 | WATER | 1LP | Plastic -1 Liter | 1 | None | WATER,Specific Conductivity , Turbidity, Acidity |

| | | | |
|---|---|---|---|
| Special Requirements: | | | |
| Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown | Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may apply if samples are retained longer than 3 months) | | |
| Turn Around Time Required: ☐ Normal ☐ Rush ☐ Other ____ | QC Level: ___I ___II ___III | Project Specific Requirements (Specify): | |
| Relinquished by: [signature] MKS | Date/Time: 6-29-09/1610 | Received by: [signature] TA | Date/Time: 6/29/09 1610 |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Comments: | | | |

Attachment C

11

(1 - 192)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 1

**Lot #:** C9F300106 — Table 1 — **Date Reported:** 7/16/09

Project Number: CC6H8H-DAY 90

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 90** | | | | | | |
| Sample #: 001 Date Sampled: 06/29/09 09:30 Date Received: 06/29/09 Matrix: WATER | | | | | | |
| Trivalent Chromium Trivalent Chromium | | | | | | Reviewed |
| Trace Inductively Coupled Plasma (ICP) Metals | | | | | | Reviewed |
| Silver | | ND | 50.0 | ug/L | SW846 6010B | |
| Aluminum | | 2570 | 2000 | ug/L | SW846 6010B | |
| Arsenic | | 109 | 100 | ug/L | SW846 6010B | |
| Barium | | 87200 | 2000 | ug/L | SW846 6010B | |
| Beryllium | | ND | 40.0 | ug/L | SW846 6010B | |
| Boron | | 12700 | 2000 | ug/L | SW846 6010B | |
| Calcium | | 19800000 | 500000 | ug/L | SW846 6010B | |
| Cadmium | | 3.2 B | 50.0 | ug/L | SW846 6010B | |
| Cobalt | | ND | 5000 | ug/L | SW846 6010B | |
| Chromium | | 15.8 B | 50.0 | ug/L | SW846 6010B | |
| Copper | | ND | 250 | ug/L | SW846 6010B | |
| Iron | | 68700 | 1000 | ug/L | SW846 6010B | |
| Lithium | | 105000 | 1000 | ug/L | SW846 6010B | |
| Magnesium | | 1830000 | 50000 | ug/L | SW846 6010B | |
| Manganese | | 8990 | 150 | ug/L | SW846 6010B | |
| Molybdenum | | ND | 400 | ug/L | SW846 6010B | |
| Sodium | | 39000000 | 500000 | ug/L | SW846 6010B | |
| Nickel | | ND | 4000 | ug/L | SW846 6010B | |
| Lead | | ND | 300 | ug/L | SW846 6010B | |
| Selenium | | 49.9 B | 50.0 | ug/L | SW846 6010B | |
| Strontium | | 3410000 | 25000 | ug/L | SW846 6010B | |
| Zinc | | 218 | 200 | ug/L | SW846 6010B | |
| Silver | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| Aluminum | Dissolved | ND | 2000 | ug/L | SW846 6010B | |
| Arsenic | Dissolved | 99.0 B | 100 | ug/L | SW846 6010B | |
| Barium | Dissolved | 104000 | 2000 | ug/L | SW846 6010B | |

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 2

**Lot #:** C9F300106 — Table 1 — **Date Reported:** 7/16/09

Project Number: CC6H8H-DAY 90

| PARAMETER | | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 90** | | | | | | |
| Sample #: 001 Date Sampled: 06/29/09 09:30 Date Received: 06/29/09 Matrix: WATER | | | | | | |
| Beryllium | Dissolved | ND | 40.0 | ug/L | SW846 6010B | |
| Boron | Dissolved | 15900 | 2000 | ug/L | SW846 6010B | |
| Calcium | Dissolved | 24600000 | 500000 | ug/L | SW846 6010B | |
| Cadmium | Dissolved | 2.8 B | 50.0 | ug/L | SW846 6010B | |
| Cobalt | Dissolved | 46.0 B | 5000 | ug/L | SW846 6010B | |
| Chromium | Dissolved | 16.0 B | 50.0 | ug/L | SW846 6010B | |
| Copper | Dissolved | 32.4 B | 250 | ug/L | SW846 6010B | |
| Iron | Dissolved | 74200 | 1000 | ug/L | SW846 6010B | |
| Lithium | Dissolved | 127000 | 1000 | ug/L | SW846 6010B | |
| Magnesium | Dissolved | 2320000 | 50000 | ug/L | SW846 6010B | |
| Manganese | Dissolved | 11000 | 150 | ug/L | SW846 6010B | |
| Molybdenum | Dissolved | ND | 400 | ug/L | SW846 6010B | |
| Sodium | Dissolved | 47800000 | 500000 | ug/L | SW846 6010B | |
| Nickel | Dissolved | ND | 4000 | ug/L | SW846 6010B | |
| Lead | Dissolved | ND | 300 | ug/L | SW846 6010B | |
| Selenium | Dissolved | ND | 50.0 | ug/L | SW846 6010B | |
| Strontium | Dissolved | 4140000 | 25000 | ug/L | SW846 6010B | |
| Zinc | Dissolved | 250 | 200 | ug/L | SW846 6010B | |
| Mercury in Liquid Waste (Manual Cold-Vapor) | | | | | | Reviewed |
| Mercury | | ND | 0.20 | ug/L | SW846 7470A | |
| Mercury | Dissolved | ND | 0.20 | ug/L | SW846 7470A | |

B Estimated result. Result is less than RL.

| | | | | | | |
|---|---|---|---|---|---|---|
| Organochlorine Pesticides | | | | | | Reviewed |
| alpha-BHC | | ND | 0.049 | ug/L | SW846 8081A | |
| beta-BHC | | ND | 0.049 | ug/L | SW846 8081A | |

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



Range Resources Corporation

**Lot #:** C9F300106 Table 1 **Date Reported:** 7/16/09

Project Number: CC6H8H-DAY 90

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|

**Client Sample ID: CC6H8H-DAY 90**

Sample #: 001 Date Sampled: 06/29/09 09:30 Date Received: 06/29/09 Matrix: WATER

| | | | | |
|---|---|---|---|---|
| ✔ Benzene | 290 | 250 | ug/L | SW846 8260B |

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation 

**Lot #:** C9F300106 Table 1 **Date Reported:** 7/16/09

Project Number: CC6H8H-DAY 90

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 90** | | | | |
| Sample #: 001 Date Sampled: 06/29/09 09:30 Date Received: 06/29/09 Matrix: WATER | | | | |
| ✔ **Toluene** | **1600** | **250** | **ug/L** | **SW846 8260B** |

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---

Range Resources Corporation — PAGE 13

**Lot #:** C9F300106 — Table 1 — **Date Reported:** 7/16/09

Project Number: CC6H8H-DAY 90

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 90** | | | | |
| Sample #: 001 Date Sampled: 06/29/09 09:30 Date Received: 06/29/09 Matrix: WATER | | | | |
| Semivolatile Organic Compounds by GC/MS | | | | Reviewed |
| Aramite | ND | 94 | ug/L | SW846 8270C |
| Inorganic Analysis | | | | Reviewed |
| Acidity (Titrimetric) 2310B (4a) | 388 | 5.0 | mg/L | SM20 2310B (4a) |
| Alkalinity, Total | 11.5 | 5.0 | mg/L | SM18 2320 B |
| Biochemical Oxygen Demand | 12400 | 2.0 | mg/L | SM18 5210 B |
| Chemical Oxygen Demand | 18400 | 250 | mg/L | MCAWW 410.4 |
| Specific Conductance | 480000 | 500 | umhos/cm | MCAWW 120.1 |
| HARDNESS, TOTAL | 77000 | 2500 | mg/L | SM20 2340C |
| N-Hexane Extractable Material (1664A) | 802 | 4.6 | mg/L | CFR136A 1664A HEM |
| Bromide | 1600 | 10.0 | mg/L | MCAWW 300.0A |
| Chloride | 138000 | 2500 | mg/L | MCAWW 300.0A |
| Sulfate | 32.8 B | 50.0 | mg/L | MCAWW 300.0A |
| Nitrogen, Ammonia | 168 | 5.0 | mg/L | MCAWW 350.1 |
| Nitrate-Nitrite | ND | 0.10 | mg/L | MCAWW 353.2 |
| Phenolics | 0.23 | 0.010 | mg/L | SW846 9066 |
| pH Aqueous | 5.9 | 0.10 | No Units | SW846 9040 |
| Total Dissolved Solids SM 2540 C | 200000 | 200 | mg/L | SM18 2540 C |
| Total Kjeldahl Nitrogen | 87.7 | 3.0 | mg/L | MCAWW 351.3 |

J Estimated result. Result is less than RL.

(Continued on next page)

# TESTAMERICA LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

---

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

---



**Range Resources Corporation**

**Lot #:** C9F300106 Table 1 **Date Reported:** 7/16/09

Project Number: CC6H8H-DAY 90

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD | |
|---|---|---|---|---|---|
| **Client Sample ID: CC6H8H-DAY 90** | | | | | |
| Sample #: 001 Date Sampled: 06/29/09 09:30 Date Received: 06/29/09 Matrix: WATER | | | | | |
| Total Suspended Solids SM 2540 D | | | | | Reviewed |
| ✓ **Total Suspended Solids** | **83.0** | **4.0** | **mg/L** | **SM20 2540D** | |

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 90**

**General Chemistry**

**Lot-Sample #...:** C9F300106-001 **Work Order #...:** LFT1Q **Matrix.....:** WATER
**Date Sampled...:** 06/29/09 **Date Received..:** 06/29/09

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| pH | 5.9 | 0.10 | No Units | SW846 9040 | 06/30/09 | 9181361 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:25 | MS Run #.....: | 9181194 |
| | | MDL.....: | | | | |
| Acidity | 388 | 5.0 | mg/L | SM20 2310B (4a) | 07/13/09 | 9194151 |
| | | Dilution Factor: 1 | | Analysis Time..: 00:00 | MS Run #.....: | 9194077 |
| | | MDL.....: 5.0 | | | | |
| Ammonia Nitrogen | 168 J | 5.0 | mg/L | MCAWW 350.1 | 07/02/09 | 9182130 |
| | | Dilution Factor: 50 | | Analysis Time..: 00:00 | MS Run #.....: | |
| | | MDL.....: 0.47 | | | | |
| Biochemical Oxygen Demand (BOD) | 12400 | 2.0 | mg/L | SM18 5210 B | 07/01-07/06/09 | 9182392 |
| | | Dilution Factor: 1 | | Analysis Time..: 00:00 | MS Run #.....: | |
| | | MDL.....: 2.0 | | | | |
| Bromide | 1600 | 10.0 | mg/L | MCAWW 300.0A | 06/30/09 | 9181426 |
| | | Dilution Factor: 50 | | Analysis Time..: 00:00 | MS Run #.....: | |
| | | MDL.....: 0.72 | | | | |
| Chemical Oxygen Demand (COD) | 18400 | 250 | mg/L | MCAWW 410.4 | 07/10-07/11/09 | 9191376 |
| | | Dilution Factor: 25 | | Analysis Time..: 09:38 | MS Run #.....: | 9191235 |
| | | MDL.....: 130 | | | | |
| Chloride | 138000 J | 2500 | mg/L | MCAWW 300.0A | 07/14/09 | 9195342 |
| | | Dilution Factor: 2500 | | Analysis Time..: 00:00 | MS Run #.....: | 9195181 |
| | | MDL.....: 132 | | | | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 90**

**General Chemistry**

**Lot-Sample #...:** C9F300106-001 **Work Order #...:** LFT1Q **Matrix.....:** WATER

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Hardness, as CaCO3** | **77000** | **2500** | **mg/L** | **SM20 2340C** | **07/13/09** | **9194198** |
| | | Dilution Factor: 500 | | Analysis Time..: 00:00 | MS Run #.....: 9194125 | |
| | | MDL.....: 769 | | | | |
| Nitrate-Nitrite | ND | 0.10 | mg/L | MCAWW 353.2 | 07/14/09 | 9195150 |
| | | Dilution Factor: 1 | | Analysis Time..: 13:24 | MS Run #.....: 9195086 | |
| | | MDL.....: 0.010 | | | | |
| **Oil & Grease (HEM)** | **802** | **4.6** | **mg/L** | **CFR136A 1664A HEM** | **07/01/09** | **9182113** |
| | | Dilution Factor: 0.93 | | Analysis Time..: 13:00 | MS Run #.....: | |
| | | MDL.....: 1.5 | | | | |

(Continued on next page)

**Range Resources Corporation**

**Client Sample ID: CC6H8H-DAY 90**

**General Chemistry**

**Lot-Sample #...: C9F300106-001 Work Order #...: LFT1Q Matrix.....: WATER**

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Specific Conductance** | **480000 J** | **500** | **umhos/cm** | **MCAWW 120.1** | **07/01/09** | **9182161** |
| | Dilution Factor: 500 | | | Analysis Time..: 00:00 | MS Run #.....: 9182143 | |
| | MDL.....: | | | | | |
| **Sulfate** | **32.8 B,J** | **50.0** | **mg/L** | **MCAWW 300.0A** | **06/30/09** | **9181423** |
| | Dilution Factor: 50 | | | Analysis Time..: 00:00 | MS Run #.....: 9181238 | |
| | MDL.....: 1.6 | | | | | |
| **Total Alkalinity** | **11.5 J** | **5.0** | **mg/L** | **SM18 2320 B** | **07/08-07/09/09** | **9189249** |
| | Dilution Factor: 1 | | | Analysis Time..: 00:00 | MS Run #.....: 9189142 | |
| | MDL.....: 0.41 | | | | | |
| **Total Dissolved Solids** | **200000** | **200** | **mg/L** | **SM18 2540 C** | **06/30-07/01/09** | **9181411** |
| | Dilution Factor: 1 | | | Analysis Time..: 08:20 | MS Run #.....: 9181231 | |
| | MDL.....: 10.0 | | | | | |
| **Total Kjeldahl Nitrogen** | **87.7** | **3.0** | **mg/L** | **MCAWW 351.3** | **07/13-07/14/09** | **9194330** |
| | Dilution Factor: 1 | | | Analysis Time..: 00:00 | MS Run #.....: 9194194 | |
| | MDL.....: 2.0 | | | | | |
| **Total Sulfide** | **4.8** | **3.0** | **mg/L** | **SW846 9030B/9034** | **06/30/09** | **9181194** |
| | Dilution Factor: 1 | | | Analysis Time..: 16:00 | MS Run #.....: | |
| | MDL.....: 1.2 | | | | | |
| **Total Suspended Solids** | **83.0** | **4.0** | **mg/L** | **SM20 2540D** | **06/30-07/01/09** | **9181412** |
| | Dilution Factor: 1 | | | Analysis Time..: 08:30 | MS Run #.....: 9181232 | |
| | MDL.....: 2.0 | | | | | |

(Continued on next page)

TestAmerica Pittsburgh
01 Alpha Drive; RIDC Park
Pittsburgh, PA 15238

SDG Number: C9F300106

Project: Range Resources Corporation
Project Number: C9F300106

Received: 07/01/09
Reported: 07/14/09 14:53

## Analytical Report

| Analyte | Sample Result | Data Qualifiers | RL | Units | Dil Fac | Date Analyzed | Lab Tech | Batch | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Client ID: CC6H8H-DAY 90 (RSG0056-01 - Water)** | | | | | | **Sampled: 06/29/09 09:30** | | **Recvd: 07/01/09 09:00** | |
| **Non-Halogenated Volatile Organics** | | | | | | | | | |
| Ethylene Glycol | 290 | D02 | 250 | mg/L | 25.0 | 07/02/09 19:45 | GFD | 9G02002 | 8015 |
| *1,4-Butanediol* | * | *D02* | *Surr Limits: (66-130%)* | | | *07/02/09 19:45* | *GFD* | *9G02002* | *8015* |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

| | | | |
|---|---|---|---|
| Client | TestAmerica Pittsburgh | Work Order: | NSG0005 |
| | 301 Alpha, RIDC Park | Project Name: | TA-Pennsylvania Sites |
| | Pittsburgh, PA 15238 | Project Number: | C9F300106 |
| Attn | Chris Kovitch | Received: | 07/01/09 08:00 |

## ANALYTICAL REPORT

| Analyte | Result | Flag | Units | MRL | Dilution Factor | Analysis Date/Time | Method | Batch |
|---|---|---|---|---|---|---|---|---|
| **Sample ID: NSG0005-01 (CC6H8H-DAY 90 - Water) Sampled: 06/29/09 09:30** | | | | | | | | |
| General Chemistry Parameters | | | | | | | | |
| MBAS (mol.wt 320) | 0.699 | HT3 | mg/L | 0.0500 | 1 | 07/01/09 11:50 | SM5540 C | 9070081 |

# Range Resources Corporation

## Client Sample ID: CC6H8H-DAY 90

### Radiochemistry

Lab Sample ID: C9F300107-001
Work Order: LFT1R
Matrix: WATER

Date Collected: 06/29/09 0930
Date Received: 06/29/09 1610

| 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 # 9195333** | | **Yld %** |
| Lead 210 | 70 | U | 310 | | 540 | 07/14/09 | 08/04/09 |
| Lead 212 | 8 | U | 35 | | 60 | 07/14/09 | 08/04/09 |
| **Lead 214** | **1280** | | **140** | | **70** | **07/14/09** | **08/04/09** |
| **Radium (226)** | **1270** | | **120** | | **50** | **07/14/09** | **08/04/09** |
| **Radium 228** | **1100** | | **120** | 50 | **70** | **07/14/09** | **08/04/09** |
| Thorium 227 | 2 | U | 100 | | 180 | 07/14/09 | 08/04/09 |
| Thorium 234 | 150 | U | 380 | | 640 | 07/14/09 | 08/04/09 |
| Uranium 235 | 40 | U | 110 | | 190 | 07/14/09 | 08/04/09 |
| Uranium 238 | 150 | U | 380 | | 640 | 07/14/09 | 08/04/09 |

**NOTE(S)**

**Data are incomplete without the case narrative.**

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

**U Result is less than the sample detection limit.**

# Range Resources Corporation

## Client Sample ID: CC6H8H-DAY 90 DUP

### Radiochemistry

Lab Sample ID: C9F300107-001X
Work Order: LFT1R
Matrix: WATER

Date Collected: 06/29/09 0930
Date Received: 06/29/09 1610

| 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 # 9195333** | | **Yld %** |
| Lead 210 | -120 | U | 890 | | 470 | 07/14/09 | 08/04/09 |
| Lead 212 | 17 | U | 31 | | 52 | 07/14/09 | 08/04/09 |
| **Lead 214** | **1280** | | **110** | | **50** | **07/14/09** | **08/04/09** |
| **Radium (226)** | **1140** | | **120** | | **60** | **07/14/09** | **08/04/09** |
| **adium 228** | **1120** | | **120** | 50 | **50** | **07/14/09** | **08/04/09** |
| Thorium 227 | -40 | U | 110 | | 190 | 07/14/09 | 08/04/09 |
| Thorium 234 | 90 | U | 310 | | 530 | 07/14/09 | 08/04/09 |
| Uranium 235 | -2 | U | 98 | | 170 | 07/14/09 | 08/04/09 |
| Uranium 238 | 90 | U | 310 | | 530 | 07/14/09 | 08/04/09 |

**NOTE(S)**

**Data are incomplete without the case narrative.**

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

**U Result is less than the sample detection limit.**