

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>INVESTIGATION OF KENTUCKY UTILITIES</b>	)	
<b>COMPANY’S AND LOUISVILLE GAS AND</b>	)	
<b>ELECTRIC COMPANY’S RESPECTIVE NEED</b>	)	
<b>FOR AND COST OF MULTIPHASE</b>	)	<b>CASE NO. 2015-00194</b>
<b>LANDFILLS AT THE TRIMBLE COUNTY</b>	)	
<b>AND GHENT GENERATING STATIONS</b>	)	

**SUPPLEMENTAL DATA REQUESTS OF  
KENTUCKY UTILITIES COMPANY AND  
LOUISVILLE GAS AND ELECTRIC COMPANY  
PROPOUNDED TO STERLING VENTURES, LLC**

Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company (“LG&E”) (collectively, the “Companies”) respectfully submit the following supplemental data requests to the Sterling Ventures, LLC (“Sterling”).

**Instructions**

As used herein, “Documents” include all correspondence, memoranda, notes, e-mail, maps, drawings, surveys or other written or recorded materials, whether external or internal, of every kind or description in the possession of, or accessible to, Sterling, its witnesses, or its counsel.

Please identify by name, title, position, and responsibility the person or persons answering each of these data requests.

These requests shall be deemed continuing so as to require further and supplemental responses if Sterling receives or generates additional information within the scope of these requests between the time of the response and the time of any hearing conducted herein.

To the extent that the specific document, work paper, or information as requested does not exist, but a similar document, work paper, or information does exist, provide the similar document, work paper, or information.

To the extent that any request may be answered by a computer printout, spreadsheet, or other form of electronic media, please identify each variable contained in the document or file that would not be self-evident to a person not familiar with the document or file.

If Sterling objects to any request on the ground that the requested information is proprietary in nature, or for any other reason, please notify the undersigned counsel as soon as possible.

For any document withheld on the ground of privilege, state the following: date; author; addressee; indicated or blind copies; all persons to whom distributed, shown or explained; and the nature and legal basis for the privilege asserted.

In the event any document requested has been destroyed or transferred beyond the control of Sterling, its counsel, or its witnesses, state: the identity of the person by whom it was destroyed or transferred and the person authorizing the destruction or transfer; the time, place and method of destruction or transfer; and the reason(s) for its destruction or transfer. If such a document was destroyed or transferred by reason of a document retention policy, describe in detail the document retention policy.

If a document responsive to a request is a matter of public record, please produce a copy of the document rather than a reference to the record where the document is located.

**Supplemental Data Requests**

1. Sterling has stated there are three potential methods for moving coal combustion residuals (“CCR”) into its mine.<sup>1</sup> For each method, please list (in a form substantively identical to the blank table below) all of the environmental permits required for each method, beginning with Sterling’s preferred means of moving CCR from the Trimble County Generating Station through the CCR’s placement in Sterling’s mine. Please include in the list all such permits already required and those that may be required in the future.

Permitting Authority	Name of Permit Required (including relevant statutory or regulatory citation)	Proposed Party to Apply for Permit (Companies or Sterling)	Proposed Permit Application Submission Date	Projected Date of Receiving Permit

2. Provide copies of all analyses, studies, data, reports and evaluations related to the Sterling mine that were reviewed or prepared by J. Steven Gardner that support his opinions in Section III “Environmental Impacts of the Sterling Plan” of his August 6, 2015 pre-filed direct testimony.
3. Mr. Gardner states that his calculations “assume[] that 90% of the available mine space will be used for CCR storage.”<sup>2</sup>
  - a. Describe how the 90% figure was determined.
  - b. If this figure is reflective of not being able to place CCR to the mine roof, what did Sterling determine would be the distance from the top of the CCR to the mine roof?
  - c. What procedures will Sterling Ventures follow to fill the entire void space given the low angle of repose and loose density of CCR materials?
4. Mr. Gardner states, “Sterling currently uses material extracted within the mine to fill mine voids, and places curtains between the top of the extracted material and the roof of the mine to seal the area for mine ventilation purposes.”<sup>3</sup>
  - a. Please describe this material.

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<sup>1</sup> Gardner Testimony at 15 lines 5-11.

<sup>2</sup> Gardner Testimony at 11 line 7.

<sup>3</sup> Gardner Testimony at 4 lines 12-14.

- b. If Sterling disposed of CCR in its mine, would it be able to avoid creating and needing to dispose of “the extracted material” Mr. Gardner addresses in his statement quoted above? If so, to what extent and how?
  - c. What is the estimated volume of this material in relation to the mining rates Sterling has provided?
  - d. Does Mr. Gardner’s 90% available mine space assumption account for storing this extracted material? If not, please provide adjusted mine space availability calculations that account for the need to store this material.
5. Provide mine maps showing the current areas from which limestone has been extracted from all three levels. For each such level, depict and illustrate on such maps where CCR would be placed to aid in mine ventilation.
6. Mr. Gardner states that Sterling uses extracted material coupled with curtains to fill mine voids and “seal the area for mine ventilation purposes,”<sup>4</sup> yet Sterling’s “Mine Emergency Plan” states, “The mine does not ... have ventilation doors, air regulators, or stoppings.”<sup>5</sup>
  - a. Please explain the apparent inconsistency between the two statements above.
  - b. Identify and describe by type all existing “ventilation stoppings” that currently exist in Sterling Ventures’ mine and show their location on a mine map for each of the three mining levels. Please include in your description the material and quantity of material used in each stopping, as well as the cost of each stopping.
  - c. If Sterling disposed of CCR in its mine and used it for ventilation control, to what extent would it be able to cease using the materials it currently uses for ventilation stoppings?
7. Mr. Gardner states that disposing of CCR in Sterling’s mine would “reduc[e] the volume of the mine area to ventilate and sav[e] energy required of mine fans to direct the air flow.”<sup>6</sup> Please describe all energy savings Sterling believes this would create, and provide all analyses and calculations Sterling has conducted to support the asserted energy savings.

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<sup>4</sup> Gardner Testimony at 4 lines 12-14.

<sup>5</sup> Attached to Sterling’s Response to LG&E-KU DR No. 8 (July 17, 2015).

<sup>6</sup> Gardner Testimony at 3 lines 4-6.

8. Sterling has stated that disposing of CCR in its mine will “facilitate mine ventilation.”<sup>7</sup>
  - a. Please provide all plans, studies, and analyses Sterling has prepared or caused to be prepared concerning how disposing of millions of cubic yards of CCR will affect mine ventilation and air quality.
  - b. Please provide all plans, studies, and analyses Sterling has prepared or caused to be prepared concerning the control of: (1) increased particulate levels in the mine resulting from disposing CCR there; and (2) exhaust fumes generated by equipment used to dispose, move, and compact CCR in the mine.
9. Mr. Gardner states, “Backstowing of the CCR will also provide additional long-term roof support within the mined out areas.”<sup>8</sup>
  - a. Provide reports addressing subsidence concerns at the Sterling mine, identify any requirements being placed upon Sterling that necessitate filling mine voids to address subsidence issues, and provide assessments of plans to fill the Sterling mine voids with non-CCR materials to address subsidence.
  - b. What procedures will Sterling use to compact the CCR such that it will provide long-term roof support?
  - c. Provide all analyses and calculations that support Mr. Gardner’s assertion that backstowing of the CCR will also provide additional long-term roof support within the mined out areas.
  - d. Provide a copy of Sterling’s current long-term roof support plan for all three mining levels.
10. Mr. Gardner states, “[T]he mine currently has a net available storage volume that exceeds 8 million cubic yards. At the current production level, the mine will have 9.5 million cubic yards of usable storage space in 2018 when the CCRs will start being shipped to the mine.”<sup>9</sup>
  - a. Provide copies of all analyses, diagrams, maps, and calculations reviewed or prepared by Mr. Gardner to support his opinions quoted above.
  - b. Do Mr. Gardner’s volume estimates account for the spaces that cannot be filled due to mine face up, haulage ways, slopes, shafts, access roads, mine entries committed to ventilation, mine entries for transport of crushed

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<sup>7</sup> Gardner Testimony at 4 line 7.

<sup>8</sup> Gardner Testimony at 4 lines 8-9.

<sup>9</sup> Gardner Testimony at 10 lines 5-8.

stone, Sterling's perimeter mining plan, and mine entries dedicated to maintenance, blasting supplies, and lubricant storage?

- c. Provide, by mining level, an estimate of the remaining mineable reserves on property currently owned or controlled by Sterling Ventures of limestone that could be extracted for sale for the high quality lime market, and provide all maps, diagrams, studies, reports, and calculations that support the estimates.
11. Provide the factual basis and all documents supporting the assumption in Mr. Gardner's pre-filed direct testimony at page 11, lines 15 and 16 that a limestone sales and production increase of 1% per year is considered modest and is reasonably expected to occur.
12. Provide the estimated cost, timing, and location of construction of the shaft referenced by Mr. Gardner on pages 16 and 17 of his pre-filed direct testimony, and provide the estimated dimensions of any such shaft, including the shaft's depth and diameter.
13. Provide the estimated cost, timing, and location of construction of the new 10% slope entry referenced by Mr. Gardner on page 15 of his pre-filed direct testimony, and provide the estimated dimensions of any such slope, including its length, depth, and cross-sectioned area.
14. Provide the basis for the opinion stated in Mr. Gardner's pre-filed direct testimony at page 3, lines 16-18 that CCR placed in Sterling's mine would have a "traditional beneficial use" in the future, and describe any such traditional beneficial use for such materials.
  - a. Identify (on mine maps for each of the three mining levels) where CCR will be placed over the next 38 years along with the location of all shafts or slopes that are proposed.
  - b. Using the mine maps reference in Request for Information 14(a) above, identify the specific areas of Sterling's mine where CCR would reside so they could be easily recovered in the future after the cessation of stone mining operations.
  - c. Please describe how Sterling would keep the various kinds of CCR segregated in the mine to prevent cross-contamination that could render the CCR unsuitable for future use, particularly if all three kinds of CCR (fly ash, bottom ash, and gypsum) will be dumped into the mine through the same shaft from the surface.

15. Mr. Gardner states, “Barges will be loaded with CCR at the Trimble County Power Plant and transported up the Ohio River to a permitted unloading site located in Warsaw, Kentucky.”<sup>10</sup>
  - a. Provide copies of all permits issued by regulatory authorities that are currently in place and effective for the proposed barge unloading site located in Warsaw, Kentucky.
  - b. Please describe all of the changes to the Warsaw site, including equipment installations, that would need to occur for the site to be suitable for barge unloading as Sterling proposes, including the cost, construction time, and additional permits, if any, required for the needed site modifications.
  - c. Was the barge unloading operation analysis performed by Fenner-Dunlop Engineered Conveyor Solutions for the Warsaw site? If not, why does Sterling believe it is a valid assumption to use the Fenner-Dunlop analysis and cost estimates for the Warsaw site?<sup>11</sup>
  - d. Who would be responsible for the cost of the necessary changes to the Warsaw barge unloading site?
16. Provide copies of all spreadsheets, calculations, and analyses prepared by Mr. Gardner to support his opinions in Section V of his pre-filed direct testimony.
17. Refer to line 5 of the revenue requirements summaries provided in Exhibits S, U, V, and W to the Sterling Complaint as well as the note regarding line 5 in the document included in Exhibit S to the Sterling Complaint entitled “Sterling’s PVRP Alternative Analysis Support Document.” Please confirm that the gross price per ton in line 5 of the revenue requirements summaries varies with the volume of CCR disposed in the Sterling mine.
18. Refer to line 5 of the revenue requirements summaries provided in Exhibits S, U, V, and W to the Sterling Complaint. In Exhibits S and U, the gross price per ton for an annual disposal volume of 637,000 cubic yards is \$16.80 per ton. In Exhibit V, the gross price per ton for an annual disposal volume of 416,709 cubic yards is \$17.90 per ton. In Exhibit W, the gross price per ton for an annual disposal volume of 153,109 cubic yards is \$23.59 per ton.
  - a. Please confirm that these costs are correct.
  - b. Please confirm that these costs are expressed in 2018 dollars. If these costs are not expressed in 2018 dollars, please explain in what year’s dollars these costs are expressed.

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<sup>10</sup> Gardner Testimony at 12 lines 1-3.

<sup>11</sup> See Gardner Testimony at 12 lines 5-13; Walters Testimony at 18 lines 14-17 and at 19 lines 3-4.

19. The testimony of Mr. Walters mentions the Strategist computer program several times.<sup>12</sup>
  - a. Does Mr. Walters have any experience with, or independent knowledge of, Strategist? If so, please describe that experience or knowledge.
  - b. Please state Mr. Walters's understanding of the Strategist model and how the Companies use it.
20. Describe Mr. Gardner's personal experience with designing systems for handling of CCR.
21. Provide copies of the mining plans and projections that were reviewed by Mr. Gardner as referenced on page 2, line 8 of his pre-filed direct testimony.
22. Provide copies of all feasibility, reserve, market analysis, and geology reports, contracts for the sale of limestone, ventilation plans, and roof support plans, that relate to Sterling Ventures' mine, that were provided to or reviewed by Mr. Gardner prior to the filing of his pre-filed direct testimony.
23. Provide copies of any other reports or materials provided by Sterling Ventures to Mr. Gardner related to this case.

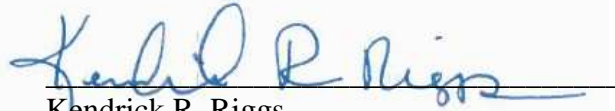
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<sup>12</sup> See, e.g., Walters Testimony at 7.



Dated: August 20, 2015

Respectfully submitted,



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**CERTIFICATE OF COMPLIANCE**

This is to certify that Kentucky Utilities Company's and Louisville Gas and Electric Company's August 20, 2015 electronic filing of the Supplemental Data Requests is a true and accurate copy of the same document being filed in paper medium; that the electronic filing has been transmitted to the Commission on August 20, 2015; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that an original paper copy of the Data Requests is being mailed, by first class United States mail, postage prepaid, to the Commission on August 20, 2015.



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