



April 16, 2014

Ms. Tia L. Jenkins
Senior Assistant Chief Accountant
Office of Beverages, Apparel, and Mining
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549

Re: Arch Coal, Inc.
Form 10-K for Fiscal Year Ended December 31, 2013
Filed February 28, 2014
Form 8-K Furnished February 4, 2014
File No. 001-13105

Dear Ms. Jenkins:

We are providing this letter in response to the comments of the staff of the Securities and Exchange Commission (the "Staff") contained in your letter dated April 3, 2014 regarding the Annual Report on Form 10-K filed by Arch Coal, Inc. ("Arch Coal") for Arch Coal's fiscal year ended December 31, 2013 (the "Form 10-K") and the Current Report on Form 8-K furnished by Arch Coal on February 4, 2014 (the "Form 8-K"). Set forth below are the Staff's comments and our responses.

Form 10-K for Fiscal Year Ended December 31, 2013

Notes to Consolidated Financial Statements

1. Basis of Presentation

Inventories, page F-11

COMMENT NO. 1:

It appears from your disclosure that the coal inventory costs include labor, supplies, equipment costs, transportation costs and operating overhead. Please provide us with a detailed discussion of the costs that are included in operating overhead, particularly whether depreciation, depletion and amortization are included in your inventory balance. To the extent depreciation, depletion and amortization are not included in your inventoried costs; please tell us your basis for excluding them.

RESPONSE:

Operating overhead are costs that are not "direct mining costs" but are costs incurred at the mining location that are necessary to support the mining operation. Where applicable, operating overhead can be comprised of the following costs: engineering, accounting, accounts payable, payroll, human resources, safety, environmental, warehousing, purchasing and security. The types of costs that can be included in operating overhead are: wages, benefits, repair and maintenance cost of buildings and infrastructure, depreciation of buildings, infrastructure and automobiles, insurance, sales and use taxes, utilities, gasoline and fuel, operating lease expense and contractor services. Operating overhead does not include allocations of costs from regional or corporate functions. It only includes non-direct costs incurred for those functions performed at the mining location.

Depreciation and amortization of plant, equipment and development are included in the direct mining costs if the assets are directly involved in the production of the coal, or in operating overhead as noted above. Depletion costs are recognized as an expense when the coal is sold. Therefore, it is not a component of coal inventory cost.

Form 8-K Furnished February 4, 2014

COMMENT NO. 2:

We note your disclosure of "cash cost per ton" on page 4 of Exhibit 99.1. This appears to be a non-GAAP measure, please confirm that you will revise your future earnings releases to comply with the reporting requirements of Regulation G. In addition, please provide us with a detailed discussion of how this measure relates to the "cost per ton sold" measure disclosed on page 60 for the December 31, 2013 10-K.

RESPONSE:

We hereby confirm that we will revise our future earnings releases to comply with the reporting requirements of Regulation G.

The difference between cash cost per ton amounts for the year ended December 31, 2013 reported on page 4 of Exhibit 99.1 to the Form 8-K and cost per ton sold on page 60 of the Form 10-K are the costs of depreciation, depletion and amortization, inclusive of sales contract amortization.

Arch Coal acknowledges that:

- Arch Coal is responsible for the adequacy and accuracy of the disclosure in the filing;

2

- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- Arch Coal may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Thank you for your consideration. If you require any additional information on these issues, or if I can provide you with any other information that will facilitate your continued review of the Form 10-K and Form 8-K, please contact me at 314-994-2700 at your earliest convenience.

Sincerely,

ARCH COAL, INC.

By: /s/ John T. Drexler
John T. Drexler
Senior Vice President and
Chief Financial Officer

3
