



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

Mail Stop 4628

January 24, 2017

Steven Gray
Chief Executive Officer
RSP Permian, Inc.
3141 Hood Street, Suite 500
Dallas, TX 75219

**Re: RSP Permian, Inc.
Amendment No. 1 to Preliminary Proxy Filed on Schedule 14A
Filed January 18, 2017
File No. 1-36264**

Dear Mr. Gray:

We have reviewed your amended filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response and any amendment you may file in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our January 12, 2017 letter.

General

1. Prior comment 22 asked that you explain your practice of excluding per well overhead expenses from operated properties' projected production costs.

You responded, "We respectfully confirm to the Staff that the SHEP I and SHEP II reserve reports filed as Exhibit 99.9 and 99.10 to the Form 8-K have included an estimate of all central administrative office costs that are operating expenses in our projected production costs."

Please address the impact of overhead expense inclusion on these proved reserves. Present to us the figures for operated properties' overhead expenses that you included for SHEP I and for SHEP II.

Background of the Transaction, page 18

2. Please expand the discussion of the September 13, 2016 meeting to explain in more detail how acquiring Silver Hill would enhance “the Company’s liquidity, market capitalization and scale for financing, capital markets and future transaction opportunities” and “.be accretive to the Company’s key financial metrics.”
3. Expand to address what became of the negotiations regarding the Midland Basin properties. The last reference to those discussions occurs in the third paragraph on page 20.
4. Please revise your disclosure to include a description of any material information discussed by the representative of RBC Capital Markets, LLC related to the “fairness opinions” on October 9, 2016.

Opinion of RSP’s Financial Advisor, page 24

SHEP II Financial Analysis, page 27

5. Please expand your Selected Precedent Transactions Analysis to disclose the similarities to the SHEP II transaction that were the basis for the transactions selected. In addition, please tell us if any transactions and companies that fit the disclosed selection criteria for the Public Company Analysis and Selected Precedent Transactions Analysis were not used and, if so, why not.
6. Please provide enhanced disclosure as to how RBC Capital Markets, LLC determined the proper discount range beyond stating that it relied on professional judgment regarding the cost of capital and taking into consideration the capital asset pricing model.

RSP Financial Analysis, page 30

7. Please revise to disclose the data underlying the results described in your Discounted Cash Flow Analysis. For example, please disclose how RBC Capital Markets, LLC determined the proper discount range, beyond stating that it relied on professional judgment regarding the cost of capital and taking into consideration the capital asset pricing model, and the terminal value, including how it determined terminal multiples, and the 2020E EBITDA.

Silver Hill Energy Partners, LLC and Silver Hill Energy II, LLC Management’s Discussion and Analysis of Financial Condition and Results of Operations, page 47

8. We note you intend to incorporate by reference the information required by Item 14(c)(2) of Schedule 14A. Please note that this information may be incorporated by reference to

the same extent as would be permitted by Form S-4 pursuant to Item 14(e) of Schedule 14A. Because Silver Hill Energy Partners, LLC and Silver Hill Energy Partners II, LLC do not meet the requirements for use of Form S-3, it does not appear that you are eligible to incorporate by reference. Please revise the Schedule 14A to include the information required by Item 14(c).

Unaudited Pro Forma Combined Financial Statements, page F-1

Notes to Unaudited Pro Forma Financial Statements, page F-5

9. We note your revised disclosure provided in response to prior comment 11 and reissue the comment in part. Expand your disclosure here or in Note 1 to discuss the accounting treatment of the acquisitions of SHEP I and SHEP II on a separate basis. Your disclosure should also address the nature and terms of the purchase price consideration for each acquisition separately. Additionally, disclose the basis of the fair value of the assets acquired and liabilities assumed.

Note 1. Preliminary Purchase Price Allocation, page F-6

10. We note the stock price at the close of SHEP I acquisition as of November 28, 2016 is also used to calculate the fair value of RSP Permian common stock to be issued in the SHEP II acquisition. The most recent stock price at the time of filing should be used to determine the fair value of common stock to be issued in a transaction not yet consummated. Please update your disclosures accordingly.

Note 2—Pro Forma Adjustments, page F-7

11. We note pro forma adjustment (b) includes a reduction of long-term debt by \$133.0 million related to the pay-off of \$52.0 million upon acquisition of SHEP I, and the elimination of \$81.0 million of long-term debt that will be retained by the sellers of SHEP II. Please tell us how you considered recording a pro forma adjustment to account for the corresponding reduction to interest expense as a result of this reduction in long-term debt.

Annex II – Fairness Opinion of RBC Capital Markets, LLC

12. We note the limitation on reliance by shareholders in the fairness opinion provided by RBC Capital Markets, LLC. Because it is inconsistent with the disclosures relating to the opinion, the limitation should be deleted. Alternatively, disclose the basis for RBC Capital Markets, LLC's belief that shareholders cannot rely upon the opinion to support any claims against RBC Capital Markets, LLC arising under applicable state law (e.g., the inclusion of an express disclaimer in Financial Advisor's engagement letter with RSP Permian, Inc.). Describe any applicable state-law authority regarding the availability of such a potential defense. In the absence of applicable state-law authority, disclose that the

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availability of such a defense will be resolved by a court of competent jurisdiction. Also disclose that resolution of the question of the availability of such a defense will have no effect on the rights and responsibilities of the board of directors under applicable state law. Further disclose that the availability of such a state-law defense to RBC Capital Markets, LLC would have no effect on the rights and responsibilities of RBC Capital Markets, LLC or the board of directors under the federal securities laws.

Closing Comments

You may contact Wei Lu, Staff Accountant, at 202) 551-3725 or Shannon Buskirk, Staff Accountant, at 202-551-3717 if you have questions regarding comments on the financial statements and related matters. For questions regarding comments on engineering matters, you may contact Ronald Winfrey, Petroleum Engineer, at 202-551-3699. Please contact Jason Langford, Staff Attorney, at 202-551-3193 or me at 202-551-3745 with any other questions.

Sincerely,

/s/H. Roger Schwall

H. Roger Schwall
Assistant Director
Office of Natural Resources