



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

DIVISION OF  
CORPORATION FINANCE

May 25, 2011

**Via E-mail**

Mr. Alford B. Neely  
Chief Financial Officer  
CREDO Petroleum Corporation  
1801 Broadway  
Suite 900  
Denver, CO 80202

**Re: CREDO Petroleum Corporation  
Form 10-K for Fiscal Year ended October 31, 2010  
Filed January 13, 2011  
Form 10-Q for Fiscal Quarters ended January 31, 2011  
Filed March 11, 2011  
File No. 001-34281**

Dear Mr. Neely:

We have reviewed your filing and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year ended October 31, 2010

Properties, page 11

Significant Properties, Estimated Proved Oil and Gas Reserves, and Future Net Revenues, page 15

1. We note that your tabular presentation of proved reserves as of December 31, 2010, 2009, and 2008 does not include the detail for developed and undeveloped properties that is required under Item 1202(a)(2) of Regulation S-K. Please modify your presentation as necessary to conform to this guidance.
2. The footnote to your table at page 15 indicates that approximately 71% of your proved reserves were classified as proved developed in 2010. However, details in the LaRoche Petroleum Consultants' Reserve Report at Exhibit 99.1 indicate that your proved reserves represented approximately 61% of your total reserves as of October 31, 2010. Please explain this discrepancy and submit the support for your calculation.
3. Please expand your disclosure to include the information about proved undeveloped reserves that is required by Item 1203 of Regulation S-K.

Production, Average Sales Prices and Average Production Costs, page 15

4. Given your discussion of markets and customers at page 5, indicating that you sell oil under one-year contracts and natural gas under three to five year contracts, it appears that you should disclose the information required by Item 1207 of Regulation S-K.

MD&A of Financial Condition and Results of Operations, page 22

Critical Accounting Policies and Estimates, page 27

Oil and Gas Properties, page 27

5. We note that your description of the ceiling test prescribed under the full cost method of accounting for oil and gas activities does not conform with Rule 4-10(c)(4) of Regulation S-X. The cost center ceiling should include two components pertaining to unproved properties: 1) the cost of unproven properties not being amortized and 2) the lower of cost or estimated fair value of unproven properties included in the costs being amortized. The disclosure at the end of the first paragraph in Note 3 on page 39 indicates that you do not consider the costs of unevaluated properties to be part of the full cost pool. This is not consistent with the requirements in Rule 4-10(c)(2) of Regulation S-X, and may produce an anomalous test result when the ceiling includes the components described in Rule 4-10(c)(4)(B) and (C). Please revise your accounting and disclosure as necessary to comply with these requirements, including any related disclosures appearing elsewhere in

your filing, such as the full cost pool ceiling risk factor on page 9 and the policy disclosure in Note 3 to your financial statements on page 39. Additionally, please submit the analysis that you perform in determining the extent of any differences between your accounting and that which is required under the full cost methodology.

### Financial Statements

#### Note 3 – Oil and Gas Properties, page 39

6. The disclosure you have in the first paragraph on page 40 indicates that you may reduce or eliminate a ceiling test write-down computed as of the end of a period if oil and gas prices increase subsequent to the balance sheet date. The changes described in SEC FR-78, Modernization of Oil and Gas Reporting, include revisions to SAB Topic 12:D.3.c, which previously accommodated the practice you describe. However, as of the end of your recent fiscal year this was no longer an acceptable practice. Please modify your accounting and disclosure as necessary to conform to this guidance and tell us the extent of any differences between your accounting and acceptable practice.

#### Controls and Procedures, page 52

7. We note that you disclose your view on the effectiveness of your internal control over financial reporting as of October 31, 2009. The guidance in Item 308(a)(3) of Regulation S-K requires that you update this assessment at the end of each fiscal year.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- 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
- the company 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.

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You may contact Paul Monsour, Staff Accountant, at (202) 551-3360 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3686 with any other questions.

Sincerely,

/s/ Karl Hiller

Karl Hiller  
Branch Chief