



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549-7010

April 8, 2009

Via U.S. Mail

Karen L. Gallagher
Senior Vice President, Principal Financial Officer and Corporate Secretary
Syntroleum Corporation
5416 South Yale, Suite 400
Tulsa, Oklahoma 74135

**Re: Syntroleum Corporation
Registration Statement on Form S-3
Filed March 12, 2009
File Number 333-151879**

Dear Ms. Gallagher:

We have limited our review of your filing to those issues we have addressed in our comments. Where indicated, we think you should revise your filing in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to contact us at the telephone numbers listed at the end of this letter.

Where You Can Find More Information, page 36

1. We note your disclosure that you incorporate by reference your Form 10-K for your fiscal year ended December 31, 2008. This Form 10-K incorporates by reference its Part III information from your definitive proxy statement, which is not yet filed. In order to have a complete Section 10(a) prospectus, you must either file the definitive proxy statement before the Form S-3 is declared effective

or include the Part III information in an amended Form 10-K. See generally Securities Act Forms Compliance and Disclosure Interpretations, Question 123.01, at <http://www.sec.gov/divisions/corpfin/guidance/safinterp.htm>.

2. You incorporate by reference your Current Report on Form 8-K filed on February 25, 2009. We will issue under separate cover comments related to your application for confidential treatment for portions of Exhibits 10.85 and 10.86 to that Form 8-K.
3. You will not be in a position to request accelerated effectiveness for the Form S-3 registration statement until all issues, including those relating to the pending request for confidential treatment, have been resolved.

Closing Comments

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and

- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

Please contact Tracey L. McNeil at (202) 551-3392 or, in her absence, Timothy S. Levenberg, Special Counsel at (202) 551-3707 with any questions.

Sincerely,

H. Roger Schwall
Assistant Director

cc: Via Facsimile
Del L. Gustafson, Esq.
(918) 594-0505