



DIVISION OF
CORPORATION FINANCE
MAIL STOP 4628

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-4628

September 24, 2009

Ms. Karen L. Gallagher
Chief Financial Officer
Syntroleum Corporation
5416 S. Yale Suite 400
Tulsa, Oklahoma 74135

Re: Syntroleum Corporation
Form 10-K for Fiscal Year Ended December 31, 2008
Filed March 2, 2009
Form 10-Q for Fiscal Quarter Ended June 30, 2009
Filed August 10, 2009
Definitive Proxy Statement on Schedule 14A, filed April 13, 2009
File No. 000-21911

Dear Ms. Gallagher:

We have reviewed your filings and have the following comments. Please provide a written response to our comments. 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 disclosures 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 call us at the telephone numbers listed at the end of this letter.

Form 10-K for the Fiscal Year Ended December 31, 2008

Financial Statements

Note 1 – Summary of Significant Accounting Policies, page F-6

Revenue Recognition, page F-6

1. Please expand your disclosure to clarify how the 50/50 revenue recognition split for deposits received under license agreements, being divided between the point at which you deliver a process design package and the point of having the plant passing operational tests, corresponds to your earnings process. Please also clarify your accounting for any additional funds received under the license agreements during this period.

Note 4 – Investment in Dynamic Fuels, page F-12

2. We note you disclose on page F-13 that during 2008 and 2007, you recognized technical services revenue of \$2.6 million and \$1.6 million from Dynamic Fuels. It appears that you would need to identify these amounts as related party amounts on the face of your statements of operations on page F-3 to comply with Rule 4-08(k) of Regulation S-X.

Note 5 – Marathon Participation and Loan Agreement, page F-13

3. Please expand your disclosure to discuss how you decided to divide the \$24.5 million net figure pertaining to the note payable to Marathon Oil Corporation (“Marathon”) as a \$11.8 million gain on debt extinguishment and \$12.7 million licensing revenue in conjunction with the January 16, 2007 Consolidation and License Agreement and the December 21, 2007 modification to this agreement.

As for the \$12.7 million in revenue, please describe the rights Marathon acquired compared to those it had previously been entitled, the extent this revenue amount relates to royalties from Marathon’s right to use your FT process based upon Marathon’s actual production volumes from licensed plants constructed and operated by Marathon as disclosed on page F-13, what the remaining revenue balance represents, why it is characterized as revenue, and how you determined that the earnings process was complete. It should be clear why Marathon agreed to extinguish a \$27.6 million note for only a \$3.75 million cash payment in return.

Note 8 – Stockholders’ Equity, page F-14

4. We note your disclosure on page F-15 explaining that in June 2008, you entered into a Warrant Agreement providing for the issuance of warrants to Tyson Foods, Inc. (Tyson) to purchase your common shares in exchange for Tyson providing letter of credit support to your Dynamic Fuels joint venture with Tyson, enabling Dynamic Fuels to conduct a \$100 million bond issuance in October 2008.

Please explain your rationale for recording the \$8.6 million value of the warrants that you issued to Tyson as debt issuance cost, rather than as an additional cost of your investment in Dynamic Fuels, considering that you are not carrying the debt in your accounts.

Additionally, please describe the accounting by Dynamic Fuels for the values it received from Tyson's letter of credit guarantee and your warrants, which appear to be necessary to compensate Tyson for half of the value of its letter of credit. Explain your rationale for the accounting at Dynamic Fuels and how any values recorded by Dynamic Fuels were determined.

Definitive Proxy Statement on Schedule 14A, filed April 13, 2009

General

5. Please confirm in writing that you will comply with the following comments relating to your definitive proxy in all future filings, and provide us with an example of the disclosure you intend to use in each case. After our review of your responses, we may raise additional comments.

Compensation Discussion and Analysis, page 14

6. Throughout your disclosure, you reference the use of peer group data in your executive compensation decisions. Identify the companies that comprise the peer group. Refer to Item 402(b)(2)(xiv) of Regulation S-K.
7. In addition, if you have benchmarked different elements of your compensation against different peer groups, please identify the companies that comprise each such group.

Base Pay, page 15

8. You disclose that your compensation guidelines are designed to pay a base salary generally measured below the 50th percentile of base salaries paid by other peer group companies. Disclose the actual percentiles in comparison to the peer group with respect to the base salaries paid to your named executive officers. To the extent actual compensation was outside of a targeted goal or percentile, please explain why.

Incentive Compensation, page 15

9. You state that the nomination and compensation committee determined that Mr. Roth's and Ms. Gallagher's individual performances during 2008 were "in line with expectations" and that given "their contributions to key roles", cash bonuses were paid on March 6, 2009. Please provide additional disclosure and analysis of how their individual performances and contributions factored into the bonus calculation and the decision to award the bonuses in cash. For example, disclose the elements of individual performance, both quantitative and qualitative, and specific contributions to key roles the nomination and compensation committee considered in its evaluation and how they were weighted and factored into your incentive compensation decisions. See Item 402(b)(2)(vii) of Regulation S-K.

Closing Comments

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter 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 disclosures in the filings to be certain that the filings include all information required under the Securities Exchange Act of 1934 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 disclosures, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosures in the filings;
- staff comments or changes to disclosures in response to staff comments do not foreclose the Commission from taking any action with respect to the filings; 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.

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 our review of your filings or in response to our comments on your filings.

Ms. Karen L. Gallagher
Syntroleum Corporation
September 24, 2009
Page 5

You may contact Lily Dang at (202) 551-3867 or Karl Hiller, Branch Chief, at (202) 551-3686 if you have questions regarding comments on the financial statements and related matters. You may contact Tracey McNeil at (202) 551-3392 or Michael Karney at (202) 551-3847 with questions about legal comments. Please contact me at (202) 551-3740 with any other questions.

Sincerely,

H. Roger Schwall
Assistant Director