



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

DIVISION OF
CORPORATION FINANCE

October 4, 2010

Adrian Goldfarb
Chief Financial Officer
Ecosphere Technologies, Inc.
3515 S.E. Lionel Terrace
Stuart, FL 34997

**Re: Ecosphere Technologies, Inc.
Form 10-K for the Year Ended December 31, 2009
Filed March 31, 2010
File No. 000-25663**

Dear Mr. Goldfarb:

We have reviewed your 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 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.

Item 1. Business, page 1

1. We have reviewed your response to prior comment 1 and ask that you please:
 - Tell us whether your processes are used commercially to separate crude oil from water or whether, and if applicable, how you have tested your processes to determine whether they are capable of remediating large oil spills.
 - Tell us whether you undertook any testing or other development efforts to determine the viability of the “deepwater” process before offering it to BP and filing the patent application referenced in your press release.
 - Provide us with a copy of the patent application referenced in the June 14, 2010 application. We refer you to Rule 12b-4 of the Exchange Act.
 - Provide us with a copy of the BP Master Services Agreement.

Item 10. Directors, Executive Officers and Corporate Governance, page 35

2. We refer to the fax correspondence dated September 13, 2010 which we received from your counsel on September 14, 2010. We note the acknowledgement that you received prior comment 2 but have determined not to respond to the comment at this time. We therefore reissue the comment. In the event that you choose not to address the issues raised in our comment, please describe in detail your basis for not responding to our comment and cite to any support for your position. Please also submit the fax correspondence, dated September 13, 2010, as correspondence via EDGAR.

Item 15. Exhibits, page 52

3. We note your response to prior comment 3 and your pending request for confidential treatment for portions of the two agreements filed in response to the comment. We will provide any comments on your confidential treatment request in a separate letter. Also, with respect to pilot programs, please provide us analysis to support your conclusion that you are not and have not been substantially dependent on any paid pilot programs, including, without limitation, those pilots referenced in your Form 10-K disclosure. In this regard, please provide us with your analysis for the BP American, Newfield/Cabot joint venture and Petrohawk paid pilots, which you reference on page 3, and the four paid pilot programs with unspecified major energy exploration companies, which, as you disclose on page 4, were expected to begin in April 2010. Please be sure to include the amount of any revenues derived from each of these paid contracts.
4. We note your response to prior comment 4. Please represent that you will file these assignment agreements in future filings, as applicable. Alternatively, please explain why you believe that you are not required to file these assignment agreements pursuant to Item 601(b)(10) of Regulation S-K. In this regard we note that you previously stated that the agreements did not require filing because there was no consideration for the transfers. See response to prior comment 1 in your correspondence dated July 9, 2010. Please reconcile your representation that there was no consideration for the transfer with the representations in the assignment agreements that Mr. McGuire, as an assignor, received \$1.00 and “other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged” for each transfer.

Form 10-Q for the period ended June 30, 2010

Item 2. Management’s Discussion and Analysis, page 25

Company Overview, page 25

5. We note your disclosure on page 25 that the commercial viability of your technology is demonstrated by the multi-year agreements that you have secured. Please identify for us the multi-year agreements you reference in your disclosure. In this regard, we note that

section 27 of Exhibit 10.16 and Article V.1 of Exhibit 10.17 indicate that these contracts do not cover multiple years.

Revenues, page 30

6. We refer to the final sentence on page 30 where you indicate that you are pursuing contracts outside of the energy sector. With a view to disclosure, please tell us the nature of these efforts and identify the business sector or sectors where you are pursuing these opportunities.

Liquidity and Capital Resources, page 33

7. We note your disclosure on page 34 that as of August 13, 2010, you had \$15,000 in cash and \$540,000 in accounts receivable. From your disclosure on page 24 we also note that 100% of your accounts receivable as of June 30, 2010 were due from a single customer. In light of your liquidity position, please also tell us the name of this customer. Also, please confirm that in future filings as applicable that you will disclose the name of any customer who is responsible for a material amount of your accounts receivable balance where receipt of that balance is material to your liquidity position.
8. We refer to your disclosure in the third paragraph on page 34. Please identify for us the related party that is owed \$2.8 million by EES and, if different, the "EES partner" who is owed money by EES.
9. We note the \$525,000 private placement transaction referenced on page 34. Please tell us where you have filed a Form D relating to this financing.

Item 6. Exhibits, page 37

10. We note your reference at the bottom of page 22 to an employment agreement with Mr. McGuire. Please tell whether you have entered into an employment agreement with Mr. McGuire and, if so, please file the agreement in accordance with Item 601(b)(10) of Regulation S-K.
11. We refer to Exhibit 10.7. Please revise the description of the agreement to disclose the milestones referenced in the final sentence.

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.

Adrian Goldfarb
Ecosphere Technologies, Inc.
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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 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.

You may contact Joseph McCann, Staff Attorney, at (202) 551-6262 or Tim Buchmiller, Reviewing Attorney, at (202) 551-3635 if you have questions on any of our comments.

Sincerely,

Russell Mancuso
Branch Chief

cc (via fax): Michael Harris, Esq.
Harris Cramer LLP