



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

DIVISION OF
CORPORATION FINANCE

August 13, 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 response letter dated July 9, 2010 and have the following 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 call us at the telephone numbers listed at the end of this letter.

After reviewing the information you provide in response to our comments, we may have additional comments.

Item 1. Business, page 1

1. We note that your Form 10-K disclosure, including the disclosure on page 9 under the heading "Other Ecosphere Ozonix Technology Applications" lacks disclosure regarding the applicability of your existing or future technologies to remediation of oil spills. With a view to potential disclosure pursuant to Item 101(c)(1) of Regulation S-K, please tell us about the applicability of your technologies to remediation of oil spills and how those technologies, including the "Ecosphere Deepwater Oil Recovery Process" referenced in your June 14, 2010 press release "Ecosphere Technologies Files Patent to Raise BP Oil to Surface," work to oxidize and/or separate crude oil from seawater and raise the oil to the ocean surface. Please also tell us about your research and development efforts related to oil spill remediation, including when those efforts commenced. Please provide us with a copy of the patent application referenced in your June 14, 2010 press release. In addition, please tell us if you use O₃ in connection with your applications, including your deepwater

oil recovery process, and how you generate sufficient quantities of O₃ for use in these applications and tell us about any environmental or other risks of generating and using the required levels of O₃.

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

2. We refer to the July 12, 2010 article available at <http://thestreetsweeper.org/article.html?c=3&i=896>. Please tell us whether your chief executive officer has been convicted of any felony offenses, and if so, please briefly describe for us each conviction, including the dates when the criminal offense took place and the sentence, if any, imposed. To the extent that your chief executive officer has been convicted of felony offenses, please provide us with your analysis as to whether disclosure of those convictions is required pursuant Rule 12b-20 of the Exchange Act.

Item 11. Exhibits, page 52

3. We note your response to comment 1 in your letter dated July 9, 2010 and reissue with respect to the paid pilot programs referenced in bullet 2 to our May 28, 2010 letter. Please tell us how you operate these paid pilot programs without agreements. Please note that you are required to file a written description of an oral contract similar to that which would be required to be filed as an exhibit pursuant to Item 601(b)(10) if it were written. Please refer to the Division of Corporation Finance's Compliance & Disclosure Interpretations, Regulation S-K, Question 146.04 available at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>.
4. We have reviewed your response to comment 1. Please provide us with copies of the form assignments executed by each inventor named on your patents and file those assignments as exhibits to your applicable future filings. Also, with respect to your representation that "there was no consideration for the assignments," please provide us with your analysis under applicable state law as to whether the assignments are enforceable; if the assignments are not enforceable, please tell us how and when you intend to include appropriate disclosure, including risk factors, in your filings.
5. We note your representation in your response to comment 1 that you will file several material contracts, including those with Southwestern Energy and Newfield Exploration Co., in future filings. Please tell us when you will file each of the contracts you reference in your response.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover 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 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 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 disclosure, 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 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.

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 filing or in response to our comments on your filing.

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

Sincerely,

Brian R. Cascio
Accounting Branch Chief

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