



DIVISION OF  
CORPORATION FINANCE

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-4631

May 18, 2010

Mr. Richard Johnson  
Chief Financial Officer  
Dynasil Corporation of America  
385 Cooper Road  
West Berlin, NJ 08091

**Re: Dynasil Corporation of America  
Form 10-K for the fiscal year ended September 30, 2009  
Form 10-Q for the quarter ended March 31, 2009  
File No. 0-27503**

Dear Mr. Johnson:

We have reviewed your response to our comment letter dated March 26, 2010 and have the following comments. Where indicated, we think you should revise your disclosures in response to these comments. If you disagree, we will consider your explanation as to why our comments are inapplicable or a revision is unnecessary. 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 on 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 September 30, 2009**

**Critical Accounting Policies**

**Valuation of Long-Lived Assets, Intangible Assets and Goodwill, page 13**

1. We note your response to prior comment 5, including your proposed disclosures as well as the additional disclosures you provided in your March 31, 2010 Form 10-Q. It is not clear to us whether you have concluded that the estimated fair values of your reporting units substantially exceed their carrying values. If you have, please revise future filings, including your next Form 10-Q, to explicitly state that conclusion. If you have not, please revise future filings, including your next Form 10-Q, to provide all the disclosures we previously requested. Please provide your disclosures supplementally.

Consolidated Financial Statements

Note 5 – Debt, page F-16

2. In regard to the related party note payable, that we previously but incorrectly believed related to your puttable common stock, please explain to us why a loan to an entity that you apparently acquired is recorded but not eliminated in your consolidated financial statements. Please also explain to us the specific nature of the “financial interest” that the former owners and current officers of RMD have in RMD Instruments LLC and how or where that financial interest is accounted for in your consolidated financial statements.

**Form 10-Q for the period ended March 31, 2010**

Consolidated Financial Statements

General

3. We note your responses to prior comments 9 and 10. In regard to your intangible assets, it is not clear to us:
  - how you determined that a 15 year useful life for backlog is reasonable. It appears to us that backlog would be required to be amortized when the related revenue is recognized which we assume would be a period less than one year.
  - how you determined that a 5-15 year useful life for acquired customer base is appropriate or why the range is so significant. Please explain to us, and disclose in your next Form 10-Q, how you determined the useful lives, why the range of lives is significant, and how you assess this specific asset for impairment.
4. We note your responses to prior comments 9, 10 and 13. Due to the fact that your September 30, 2009 Form 10-K did not include certain required disclosures, please revise your next Form 10-Q to include the disclosures we previously requested.

Note 6 – Equity, page 10

5. We read your response to prior comment 16. It remains unclear to us how you determined that the one million shares of puttable common stock you issued to acquire RMD are appropriately classified in permanent equity. It appears to us that the possible cash redemption of these shares is beyond your control regardless of the likelihood that they may be required to be redeemed. Please provide us a detailed explanation that supports your current accounting for these shares, including reference to the authoritative literature you are relying on.

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MD&A, Liquidity, page 15

6. We note that your new bank facilities appear to contain financial covenants. To the extent that a covenant violation is reasonably likely, please revise future annual and quarterly filings to present, for your most significant and restrictive covenants, actual ratios and other actual amounts versus the minimum/maximum ratios/amounts required as of each reporting date. Such a presentation may allow investors to more easily assess and understand the current status and your continued ability to meet these covenants. See Sections I.D and IV.C of the SEC Interpretive Release No. 33-8350.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please provide us with a supplemental response letter that keys your responses to our comments and provides any requested supplemental information. Detailed letters greatly facilitate our review. Please file your supplemental response on EDGAR as a correspondence file. Please understand that we may have additional comments after reviewing your responses to our comments.

If you have any questions regarding these comments, please direct them to Mindy Hooker, Staff Accountant, at (202) 551-3732, Anne McConnell, Senior Staff Accountant, at (202) 551-3709 or to the undersigned at (202) 551-3689.

Sincerely,

John Hartz  
Sr. Asst. Chief Accountant