

April 16, 2010

Rufus Decker, Accounting Branch Chief
Division of Corporation Finance
United States Securities and Exchange Commission
100 F Street, N.E., Mail Stop 4631
Washington, D.C. 20549-4631

Re: Cabot Corporation
File No. 001-05667

Dear Mr. Decker:

This letter is being submitted in response to the Staff's comment letter of March 17, 2010 in respect of Cabot Corporation's Form 10-K for the fiscal year ended September 30, 2009, Form 10-Q for the period ended December 31, 2009 and Definitive Proxy Statement on Schedule 14A filed on January 28, 2010. For ease of reference, we have restated the Staff's comments before our responses below.

Form 10-Q for the Period Ended December 31, 2009

Note N – Foreign Currency Losses and Subsequent Events, page 26

1. *You disclose that you will be required to apply highly-inflationary accounting to your Venezuelan operations and that you anticipate this will result in a one-time gain of less than \$10 million during the second quarter of fiscal 2010. Please provide us with a comprehensive explanation of how you intend to account for the change in functional currency, including how you arrived at the estimated gain of \$10 million. Please also address the impact of your accounting to any deferred tax assets and translation adjustments previously recorded related to these operations. Refer to ASC 830-10-45.*

Cabot Response:

Beginning January 1, 2010 we will be required to apply highly-inflationary accounting to our 47.5% owned equity affiliate in Venezuela (the "equity affiliate"). This accounting treatment requires a change in the equity affiliate's functional currency from the local currency (Venezuelan Bolivar) to the parent's reporting currency (USD). This highly-inflationary classification results from the fact that the cumulative inflation rate for the preceding 3 year period as of January 1, 2010, exceeds 100 percent. When we change the functional currency, we will remeasure the entity's financial statements as if the new functional currency (USD) were the reporting currency. Accordingly, effective January 1, 2010 all Bolivar denominated monetary

assets and liabilities will be considered foreign currency denominated assets and liabilities and will be remeasured to USD (the functional currency) with remeasurement adjustments in the period recorded in the income statement. The USD will be the functional currency until the economic environment in Venezuela ceases to be considered highly-inflationary.

In accordance with ASC 830-10-45-10, the translated amounts for non-monetary assets and liabilities as of January 1, 2010 will become the accounting basis in USD for those assets and liabilities in the period of change and subsequent periods. Regarding the Bolivar denominated monetary assets and liabilities as of January 1, 2010, the functional currency change from Bolivars to USD, in isolation, has little or no financial statement impact as of that date. On a prospective basis, as prescribed by the accounting literature, foreign exchange movements on monetary assets and liabilities will be recorded directly to our statement of operations.

We are aware of the recent interim guidance announced by the SEC staff at the March 18, 2010 EITF meeting. The example in the guidance focused on a situation where one rate was used to remeasure certain USD-denominated monetary balances and a different rate was used to translate the Bolivar balances into the USD reporting currency. As we have always used the official exchange rate for remeasuring USD monetary assets and liabilities, as well as for translating from the Bolivar local currency financial statements to the USD reporting currency, the issue covered by the staff announcement is not applicable in our particular facts and circumstances.

A large portion of the deferred tax assets recorded prior to the highly-inflationary accounting related to inflation indexing in the local Bolivar financial statements. In accordance with ASC 830-10-45-16, the deferred tax benefits attributable to any such indexing that occurs after the change in functional currency to the reporting currency shall be recognized when realized on the tax return and not before. The deferred tax benefits that were recognized for indexing before the change in functional currency to the reporting currency will be eliminated when the related indexed amounts are realized as deductions for tax purposes.

As you are aware, on January 8, 2010, Venezuela announced a devaluation of its currency. This event, coupled with the change in functional currency from the Bolivar to the USD gave rise to our subsequent event disclosure.

At the time of filing the Q1 2010 10-Q, we had prepared an itemized list of issues that could potentially result in a gain or loss to be recognized as a result of the devaluation, along with a range of the potential dollar value for each item. The items that remained open and that we identified as having a potential P&L impact as of the date of the filing were as follows:

- Our equity affiliate, when considering only the monetary assets and liabilities denominated in Bolivars, excluding income taxes discussed below, had a net monetary liability position. The impact of revaluing this net liability position from a pre-devaluation exchange rate of 2.15 to a post-devaluation exchange rate of 4.3 will result in an unrealized foreign exchange gain. Our 47.5% share of the gain was estimated to be between \$0 and \$3 million based on our net monetary assets and liabilities denominated in Bolivars as of December 31, 2009.

- There was a potential adjustment to the deferred tax liability held at the Cabot Corporation level based on the impact of the Bolivar's devaluation on our unremitted earnings pool. The estimated range of gain was between \$0 and \$4 million.

Given the estimated nature of these ranges and the preliminary nature of our review, we determined that it was most appropriate to provide a range of potential outcomes in our disclosure, and concluded upon the language presented in the 10-Q, presenting the potential gain as less than \$10 million.

Subsequent to the filing of our Q1 2010 10-Q, we have determined that the gain as a result of the re-measurement of the Bolivar net monetary liability position was \$1 million. In addition, we have determined that the impact of the devaluation on Cabot's share of unremitted earnings will reduce the deferred tax liability and result in a tax benefit of approximately \$2 million. Both of these items will be recorded in our Q2 2010 results and will be disclosed in the related footnotes.

Definitive Proxy Statement on Schedule 14A filed on January 28, 2010

Executive Compensation, page 22

Short-Term Incentive Compensation, page 26

Short-Term Incentive Compensation Payouts, page 29

2. *You disclose that 30% of the short-term incentive compensation is based on achievement of individual performance objectives; however, you do not disclose what these individual objectives are, and how the compensation committee evaluated each named executive officer's individual performance in reaching their respective individual goals. This is particularly important when no payouts were payable on the basis of corporate performance. In accordance with Item 402(b)(2)(vii) of Regulation S-K, in future filings please describe the individual goals and performance objectives for each named executive officer. If a named executive officer's personal performance is measured against pre-established personal goals or individual objectives, please disclose the objectives and describe how performance or non-performance impacted the committee's decision to award the personal objective component of the short-term incentive compensation. Please note that to the extent that the committee's decisions regarding a named executive officer's individual performance were based upon a subjective evaluation, please ensure to disclose each named executive officer's personal objectives by also identifying the specific contributions made by each executive and contextualize those achievements for purposes of demonstrating how they resulted in specific compensation decisions. Although quantitative targets for subjective or qualitative assessments may not be required, you should provide insight of how qualitative inputs are translated into objective pay determinations.*

Cabot Response:

In future filings, we will include in this section of the Compensation Discussion and Analysis, to the extent material to our compensation decisions, a discussion of the material elements considered by the Compensation Committee in awarding any short-term incentive compensation to a named executive officer on the basis of his individual performance. This discussion would include an assessment of the named executive officer's individual overall performance and/or specific achievements.

In addition, in future filings, we expect the discussion of the short-term incentive program would include substantially the following additional description of the individual performance portion of the bonus program:

“As explained above, 30% of an executive officer's target bonus relates to individual job performance, and the actual amount paid on this basis can range from 0% to 200% of that 30% target bonus. At the beginning of the fiscal year, the Compensation Committee, with input from the other independent directors, establishes the personal objectives for our CEO, and each executive develops with the CEO his personal objectives for the year. In assessing each named executive officer's individual performance, the Committee considers the officer's personal achievements, including his achievements against his personal objectives, as well as his individual contribution to the management team, leadership and management of his business or function.

The Committee does not assign specific numerical weightings or ratings to the individual goals and the performance of each officer is evaluated as a whole. Furthermore, there are no formal threshold levels of achievement applicable to the individual performance component of the short-term incentive program. Ultimately, the determination of the payout of the portion of the total bonus paid for individual performance is based on the subjective judgment of the Committee after reviewing all factors.”

By way of example, we expect the explanation of the basis upon which the Committee awards the individual performance portion of a bonus to include the following level of detail:

“ . . . Mr. Prevost reviewed with the Committee his assessment of each named executive officer's overall performance for fiscal 2010. The Committee awarded [NEO] a bonus of \$xxx,xxx based on his individual performance. The Committee identified the following significant accomplishments, which the Committee used as the basis for its compensation decisions:

- [NEO] developed and implemented a restructuring plan in response to the unexpected and significant, global economic decline affecting the business,
- He oversaw the successful completion of the business's capacity expansion in [region],
- He developed and implemented a comprehensive compliance strategy relating to _____,
- He developed and successfully led the implementation of organizational changes in the business to _____.

- He was instrumental in the business achieving development milestones for the commercialization of new products,
- He was instrumental in the achievement of new customer development goals for the business.”

Long-Term Incentive Compensation Awards, page 30

3. *You state that the value of the stock option award “was based on the value of each officer’s targeted long-term incentive award for 2009”; however, you do not disclose what that target value was. In future filings please discuss how the committee will determine the total value of the newly structured long-term incentive compensation (we note your discussion on page 27). For each named executive, your disclosure should provide substantive analysis and insight into why the compensation committee determined that the levels of equity compensation were appropriate in light of the factors considered in deriving those payouts.*

Cabot Response:

In future filings, this section of the Compensation Discussion and Analysis will include more discussion of the factors the Compensation Committee considered in determining the total value of long-term incentive awards made to the named executive officers. We expect the discussion would include substantially the following additional explanation of these factors.

“For each executive officer position within the Company, the Compensation Committee obtains from Pearl Meyer & Partners, the Committee’s independent compensation consultant, information regarding current equity incentive compensation grant practices for comparable positions at companies in Cabot’s peer group and from compensation survey reports. While the Committee uses this information to gain a general understanding of competitive market practices, actual award values are based on the Committee’s subjective analysis of a variety of factors. These factors include an assessment of the individual’s position, role and responsibilities within the Company, the overall competitiveness of his total direct compensation, internal equity considerations based primarily on job responsibilities and experience, and retention concerns. The Committee also considers the impact of the grants on equity incentive plan share usage, share dilution and the Company’s compensation expense. The awards made to the named executive officers are included in the tables titled “Summary Compensation Table” and “Grant of Plan-Based Awards Table” below.”

Grant of Plan-Based Awards Table, page 36

4. *Please tell us how you are reporting the values in the “Threshold” column under the “Estimated Future Payouts Under Non-Equity Incentive Awards” heading considering your disclosure in the third paragraph of your “Short-Term Incentive Compensation” discussion on page 26 where you state that if threshold performance is achieved, 50% of the target bonus opportunity is payable, assuming that the threshold adjusted EBITDA is achieved. Please refer to Item 402(d)(2)(iii) of Regulation S-K.*

Cabot Response:

As disclosed on page 26 of our proxy statement, actual short-term incentive compensation awards that are paid to an executive officer can range from 0% to 200% of such officer’s target bonus opportunity, depending on the degree to which corporate (70% weighting) and individual performance (30% weighting) goals are achieved. Corporate performance was measured using two financial metrics: (i) adjusted earnings before interest, taxes, depreciation and amortization (adjusted EBITDA) and (ii) net working capital (NWC) measured in days. For fiscal 2009, the adjusted EBITDA financial metric had a 65% weighting and the NWC measured in days metric had a 35% weighting. As discussed in our proxy statement, if threshold performance for a corporate performance metric was achieved, 50% of the target bonus opportunity for that metric was payable. However, if the threshold adjusted EBITDA goal was not achieved, none of the target bonus opportunity was payable on either of the corporate performance objectives. We do not establish formal threshold levels of achievement for individual performance.

We failed to meet the threshold performance for adjusted EBITDA for 2009 because of the decline we experienced in global demand for our products following the significant decline in worldwide economic conditions that began in 2008. As a result, no payouts were payable on the basis of our corporate performance and we accordingly reported \$0 in the “Grant of Plan-Based Awards Table” for the threshold bonus amount payable for fiscal 2009 under our short-term incentive program as no formal threshold goal was established for individual performance.

In future filings, we will disclose 50% of the target corporate bonus opportunity applicable to each financial metric in the “Threshold” column under the “Estimated Future Payouts Under Non-Equity Incentive Plan Awards” heading, regardless of whether the threshold corporate performance goal is achieved. In addition, we will include substantially the following discussion in a footnote to the “Estimated Future Payouts Under Non-Equity Incentive Plan Awards” heading of the “Grant of Plan-Based Awards Table”:

“The amounts in these columns assume that the financial metrics for corporate performance (adjusted EBITDA and NWC measured in days) are achieved. Actual awards for corporate performance will only be payable if at least the threshold adjusted EBITDA goal is achieved. The amounts included in the “Threshold” column reflect 50% of the target bonus opportunity payable for corporate performance, which is weighted 70% of the overall short-term incentive compensation program, and do not reflect any payout for individual performance as there is no formal threshold payout level for individual performance. The amounts included in the “Target” column reflect 100% of the total target bonus opportunity payable for both corporate and individual performance. The amounts included in the “Maximum” column reflect 200% of the total target bonus opportunity payable for both corporate and individual performance. Actual short-term incentive payments made for fiscal XX are included in the Summary Compensation Table in the column “Non-Equity Incentive Plan Compensation.”

In connection with responding to the Staff’s comments, the Company hereby acknowledges that the Company is responsible for the adequacy and accuracy of the disclosure in its filings, 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.

We would be happy to discuss any of our responses with you at your convenience. Please do not hesitate to call Jim Kelly, Cabot’s Controller, at 617-342-6020 with any questions concerning our financial statements, and Jane Bell, Cabot’s Corporate Secretary and Counsel, at 617-342-6035 with any questions concerning legal matters.

Very truly yours,

/s/ Eduardo E. Cordeiro

Eduardo E. Cordeiro
Executive Vice President and
Chief Financial Officer

cc: Patrick M. Prevost
Brian A. Berube
James P. Kelly
Jane A. Bell
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