August 9, 2007

VIA EDGAR CORRESPONDENCE

United States Securities and Exchange Commission
Division of Corporation Finance
450 Fifth St., N.W.
Washington, DC 20549

Attn: Ms. Tia Jenkins, Senior Assistant Chief Accountant, Office of Emerging Growth Companies

Re: Enzo Biochem, Inc.

Form 10-K for the FYE July 31, 2006, filed October 13, 2006
Form 10-Q for Fiscal Quarter Ended October 31, 2006, filed December 11, 2006
Form 10-Q for Fiscal Quarter Ended January 31, 2007, filed March 12, 2007
Form 10-Q for Fiscal Quarter Ended April 30, 2007, filed June 11, 2007

File No. 001-09974

COMMENT LETTER DATED JULY 27, 2007

Ladies and Gentlemen:

In response to your comments made in a letter dated July 27, 2007, we are pleased to provide you with this additional information and clarification. We ask the Staff to consider that based on our responses and the expanded disclosures provided throughout as they would appear in the Form 10-K for the fiscal year ended July 31, 2006 and in future filings, we do not believe it is necessary to amend the previous filings referenced above.

July 31, 2006 10-K

Critical Accounting Policies, page 43

Comment 1:

We note your disclosures regarding contractual adjustments. Please expand your disclosure to discuss the factors underlying the changes in the contractual adjustment percentages for each period, and to describe any known trends or uncertainties that you expect to have a material favorable or unfavorable impact on net revenues or income from continuing operations in accordance with Item 303(a)(3)(ii) of Regulation S-X. We note that the percentage of contractual adjustments has increased during each of the past three fiscal years, from 68.0% to 75.2% and has increased further to 78.4% during the nine months ended April 30, 2007.

Response:

We will expand the disclosures regarding contractual adjustments within our Critical Accounting Policies in all future periodic filings, beginning with our Form 10-K for the year ended July 31, 2007, to indicate the review is completed quarterly, provide more details on other relevant factors, and include the relevant disclosures from Item 1. Business and Item 1A. Risk Factors sections to indicate the known trends that we reasonably expect will have an impact on revenues or income from continuing operations. The expanded disclosure, as it pertains to the July 31, 2006 10-K is included as Attachment 1, with the additional disclosure underlined.

Supplementally, we note the following for the Staff. The factors that have affected the contractual adjustments for the periods covered by the comment letter relate to third-party reimbursement rates changes and changes in reimbursement arrangements with third-party payers. This includes the growth of in-network provider arrangements and managed care plans with our third-party providers. As indicated in our Critical Accounting Policies these changes are evaluated periodically (meaning quarterly), based on evaluation of current and historical settlement experience with payers, industry reimbursement trends and other relevant factors. The "other relevant factors" include the monthly and quarterly review of: 1) current gross billings and receivables and reimbursements by payer; and 2) current changes in third-party arrangements. As a result of this review, which considers both hindsight and current developments, we are recording adjustments that affect the contractual adjustments and resulting contractual adjustment percentage on a quarterly basis.

Supplementally, we note that in Item 7 in accordance with Item 303 (a) (3) (ii), "Management Discussion and Analysis of Financial Condition and Results of Operations" on page 38 in the July 31, 2006 Form 10-K, paragraph 1, we discussed the increase in the "contractual adjustment expense" as resulting from competitive pricing throughout the industry which was deemed an unfavorable impact on net revenues. We have provided similar disclosure in each of the other periods covered in your letter.

We have disclosed in our Critical Accounting Policies a sensitivity analysis, indicating the effect each 1% point change in our contractual adjustment percentage would have on our clinical laboratory revenues and net accounts receivable, which we believe provides investors with an estimate of the dollar effect of a change in the contractual adjustment percentage.

We have disclosed in Item 1, Business, page 19 in the July 31, 2006 Form 10-K under, "Clinical Laboratory Reimbursement", paragraph 2, "In particular, we believe that reductions in reimbursement for Medicare services will continue to be implemented from time to time. Reductions in the reimbursement rates of other third-party payers, commercial insurers and health maintenance organizations are likely to occur as well."

We have disclosed in Item 1A, Risk Factors on pages 27 and 28 of the July 31, 2006 Form 10-K the following risk factors:

- "Reimbursements from third-party payers, upon which our clinical laboratory business is dependent, are subject to inconsistent rates and coverage and legislative reform that are beyond our control. This inconsistency and any reform that decrease coverage and rates could reduce our earnings and harm our business."

- "The continued growth of managed care may reduce our revenues and increase our loss or reduce our net earnings".

Comment 2:

Please tell us whether you are able to track contractual adjustments recorded during the current period that relate to revenue recorded in previous periods. If so, please revise your disclosure to quantify the effect of contractual adjustments recorded in each period that relate to revenue recorded in previous periods. For example, disclose the impact on net income during fiscal 2006 for adjustments relating to revenue that was recorded in each year prior to fiscal 2006. If you are unable to track these types of adjustments, please revise your disclosure to state that you are unable to quantify such amounts, and explain why you believe that you are able to reasonably estimate contractual adjustments relating to revenue.

Response:

We will expand our disclosure as recommended by the Staff in all future periodic filings, beginning with our Form 10-K for the year ended July 31, 2007. The expanded disclosure is included as Attachment 2.

Supplementally, we reference the discussion of Contractual Adjustments in our response dated December 16, 2005 to Comments 1 and 2(following in *italics*) in the SEC comment letter dated December 5, 2005.

Q1: CONTRACTUAL ALLOWANCE PERCENTAGE

"To compute the contractual allowance percentage, we first determine the reimbursement percentage, which is based on a rolling monthly analysis of the experience of amounts approved as reimbursable and ultimately settled by payers, versus the corresponding gross amount billed to the respective payers. The difference between the gross amount billed and the reimbursement percentage is our contractual allowance percentage and represents the proportion of the gross billed amounts we do not expect to be reimbursable.

In summary, the contractual allowance is an estimate that reduces our gross amount billed to amounts that we ultimately expect to be approved and reimbursable. To the extent that reimbursements received are different from the estimates, we adjust our contractual allowance in the period that approved settlements are received. We adjust the contractual allowance periodically, based upon our evaluation of historical settlement experience with payers, industry reimbursement trends, and other relevant factors. We believe that our net revenues for our clinical labs business meets the requirements of SAB 104."

Q2. TIMING OF ACCOUNTING FOR FINAL SETTLEMENTS

Differences between the estimated payer approved reimbursable settlements and the actual approved settlements are recorded in the period of approved settlement as an adjustment to contractual allowances. Such settlement differences contribute to the changes in our retrospective reimbursement analysis, described above, and are used to continuously adjust our contractual allowance estimate.

Our clinical lab segment's revenues and accounts receivable are net of the contractual allowance and the allowance for doubtful accounts, which are estimates based on historical experience and judgments about the future. We believe that the use of the rolling monthly analysis experience, which includes the impact of final settlements in the period of settlement, results in fairly stated amounts, in all material respects.

Supplementally we note the following to the Staff. Our clinical laboratory financial billing system records gross billings using a standard fee schedule for all payers and does not record contractual adjustments by payer at the time of billing. While our system is unable to track contractual adjustments recorded during the current period that relate to revenue recorded in previous periods, based on the non-system based process we have in place including: 1) the timely review on at least a quarterly basis of industry reimbursement rates and changes as discussed in our response to current Comment 1 above; 2) the rolling monthly analysis experience (see above paragraph); 3) monthly and quarterly review of current gross billings and receivables by payers; and 4) current changes in third-party arrangements; we believe this hindsight review process allows us to reasonably estimate that our contractual adjustments relating to revenue are captured on a timely basis. As also noted in our response to current Comment 1 above, we disclose a sensitivity analysis which is relevant when considering that 210 days is the maximum number of days an account receivable balance is outstanding or not fully reserved.

Our revenue recognition policy has considered the criteria in SAB 104 and paragraph 8 in SFAS 48, which is analogous with respect to being able to estimate revenue adjustments, and to record revenue when the testing process for a specific patient is completed and reported to the ordering physician.

Comment 3:

We note your disclosure that receivables over 210 days were written off during the years ended July 31, 2006 and 2005. Please expand your disclosure to include your accounts receivable balances by aging category for each payer type at each balance sheet date, so that investors will be better able to evaluate the potential exposure to writeoffs.

Response:

We will expand our disclosure as recommended by the Staff in all future periodic filings, beginning with our Form 10-K for the year ended July 31, 2007. We will include a table of the gross aging of accounts receivable by payer type in the "Accounts Receivable and Allowance for Doubtful Accounts" caption of the Critical Accounting Policies section. The table of the gross aging of accounts receivable for the periods covered by this comment letter is included as Attachment 3A. We note to the Staff that in all periods presented aging categories exclude contractual adjustments and fully reserved balances not yet written off.

In future periodic filings, beginning with Form 10-K for the fiscal year ended July 31, 2007, we will indicate that certain fully reserved balances, principally relating to Medicare, may not be written off until the payer's filing date deadline occurs. We note that our collection experience on Medicare beyond 210 days has been insignificant. See Attachment 3B for our expanded disclosure, with the additional disclosure underlined.

Supplementally, we would like to indicate to the Staff that our present clinical laboratory billing reporting system reports agings on a gross revenue basis. We are not able to provide our net aged accounts receivables because our system does not track the aging of our contractual allowances. The determination of our contractual allowance is a non-system based calculation based on various analyses including the rolling analysis of contractual adjustments performed by payer type, not by specific aging category. We perform monthly and quarterly internal analysis and monitoring on our gross agings.

Item 9A, Controls and Procedures

Evaluation of Disclosure Controls and Procedures, page 47

Comment 4:

We note your statement that "effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives." Given this qualification, the disclosure should be revised to state clearly, if true, that your disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives and that your principal executive officer and principal financial officer concluded that your disclosure controls and procedures are effective at that reasonable assurance level. Alternatively, the reference to the level of assurance of your disclosure controls and procedures should be removed. Please make the appropriate revisions in any amended filing or confirm that you will do so in future filings.

Response:

We will revise our disclosure as recommended by the Staff. In future periodic filings we will state that "our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives and that our principal executive officer and principal financial officer concluded that our disclosure controls and procedures are effective at a reasonable assurance level". See Attachment 4 for the effect of this change on the disclosure in the July 31, 2006 Form 10-K. Additional disclosure is underlined.

Notes to Consolidated Financial Statements

Note 10 – Gain on Patent Litigation Settlement Agreement and Royalty Income – page F-22

Comment 5:

We note your disclosure regarding the $14 million gain on patent litigation settlement recorded during the year ended July 31, 2005. We also note that the license agreement with Digene Corporation provides for a non-refundable upfront payment of $16 million, guaranteed payments for fiscal years 2005 through 2009 and royalty payments based on milestones. Please tell us how you determined that is was appropriate to recognize the $14 million gain with respect to the non-refundable payment, including the specific literature in which your conclusion was reached. We may have additional comments after reviewing your response.

Response:

Supplementally, we note the following to the Staff.

In accordance with the Digene Corporation Settlement and License Agreement (the "Agreement") signed on October 14, 2004 to settle a patent litigation lawsuit, we received an initial payment of $16.0 million, of which $14 million was recorded as a gain on patent litigation settlement, would earn in the first "annual period" (October 1, 2004 to September 30, 2005) a minimum royalty payment of $2.5 million, and receive a minimum royalty of $3.5 million in each of the next four annual periods. In addition, the Agreement provides for us to receive quarterly running royalties on the net sales of Digene products subject to the license until the expiration of the patent on April 24, 2018. These quarterly running royalties are fully creditable against the minimum royalty payments due in the first five years of the Agreement. The balance, if any, of the minimum royalty payment is recognized in the final quarter of the applicable annual royalty period.

We believed that the Agreement was first and foremost a litigation settlement by the Company and Digene, as a result of the lawsuit filed in the United States District for the District of Delaware in March 2002 charging Digene with infringement on our patents. When recording the gain on patent litigation settlement in our Form 10-Q for the three months ended October 31, 2004, we concluded that due to the nature of the settlement revenue recognition was not appropriate. We did not view the $14 million as an upfront non-refundable payment since we have no continuing involvement in the on-going product sales with Digene or any continuing involvement in order to be entitled to the future royalties due us pursuant to the Agreement.

We further believed the settlement amount of $14 million (the "Settlement Amount") was a separate element and represented independent economic value since this amount was based on royalties not paid through 2004 using an effective royalty rate provided for in the Agreement plus reimbursement of legal costs. Using this effective royalty rate range on qualified net revenues of Digene and the unreimbursed legal costs, damages in the range of approximately $12.0 to $15.0 million were economically supported. The royalty rate range has been consistent with the post-settlement effective royalty rate we accepted and expected to realize going forward from the time of the settlement based on expectations of future revenues. Although not determinative, we also noted that in Digene's Form 10-Q for the quarter ended September 30, 2004, they disclosed and recorded the Settlement Amount as a patent litigation settlement expense and not as a prepaid royalty.

We considered and determined that the above accounting for the Settlement Amount did not meet the definition of a deferred liability and that due to the terms of the Agreement there was a basis to make an allocation between the elements. Our conclusion that we had no continuing involvement was supported by the fact we: 1) do not participate in any way in a joint steering committee; 2) we have no manufacturing, research or development requirements with respect to the Agreement; and 3) we have no sales and marketing effort requirements pursuant to the Agreement.

We believe the Agreement fits the separability criteria in Emerging Issues Task Force ("EITF") Issue 00-21, Revenue Arrangement with Multiple Deliverables since the settlement amount approximates an appropriate royalty on past revenues and legal fees incurred and therefore there was separate economic value to the Settlement Amount. In our view, the Agreement constituted two elements which included a litigation settlement and a license agreement.

Based on the above factors we believed at the time of the Agreement and continue to believe that the accounting applied to the Agreement was appropriate

* * *

In connection to our response to the Staff's comments and pursuant to the Staff's request, we acknowledge 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 theCommission from taking any action with respect to the filing;

- 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 are available at any time to discuss and address any additional comments you may have after your review.

Respectfully submitted,

/s/ Barry Weiner

Barry Weiner
President, Chief Financial Officer and Director
Enzo Biochem, Inc.

Comment No. 1 - Attachment 1

Critical Accounting Policies

Contractual Adjustments

The Company's estimate of contractual adjustments is based on significant assumptions and judgments, such as its interpretation of payer reimbursement policies, and bears the risk of change. The estimation process is based on the experience of amounts approved as reimbursable and ultimately settled by payers, versus the corresponding gross amount billed to the respective payers. The contractual adjustment is an estimate that reduces gross revenue, based on gross billing rates, to amounts expected to be approved and reimbursed. Gross billings are based on a standard fee schedule we set for all third party payers, including Medicare, health maintenance organizations ("HMO's) and managed care. The Company adjusts the contractual adjustment estimate quarterly, based on its evaluation of current and historical settlement experience with payers, industry reimbursement trends, and other relevant factors. The other relevant factors that affect our contractual adjustment include the monthly and quarterly review of: 1) current gross billings and receivables and reimbursement by payer, 2) current changes in third party arrangements. 3) the growth of in-network provider arrangements and managed care plans specific to our Company.

Our clinical laboratory business is primarily dependent upon reimbursement from third-party payers, such as Medicare (which principally serves patients 65 and older) and insurers. We are subject to variances in reimbursement rates among different third-party payers, as well as constant changes of reimbursement rates. Changes that decrease reimbursement rates or coverage would negatively impact our revenues. The number of individuals covered under managed care contracts or other similar arrangements has grown over the past several years and may continue to grow in the future. In addition, Medicare and other government healthcare programs continue to shift to managed care. These trends will continue to reduce our revenues per test.

During the years ended July 31, 2006, 2005 and 2004, the contractual adjustment percentages, determined usingcurrent and historical reimbursement statistics, were 75.2%,and 72.5% and 70.9%, respectively, of gross billings. The Company believes the negative impact on revenues from the decline in reimbursement rates or the shift to managed care or similar arrangements may be offset by the positive impact of an increase in the number of tests we perform. However, there can be no assurance that we can increase the number of tests we perform or that if we do increase the number of tests we perform, that we can maintain that higher number of tests performed, or that an increase in the number of tests we perform would result in increased revenue.

The Company estimates (by using a sensitivity analysis) that each 1% point change in the contractual adjustment percentage could result in a change in the net accounts receivable of approximately $373,000 and $531,000 as of July 31, 2006 and 2005, respectively, and a change in clinical laboratory services revenues of approximately $1,288,000, and $1,202,000 for the years ended July 31, 2006 and 2005, respectively.

Comment No. 2. - Attachment 2

This expanded disclosure is a continuation of above Attachment 1 to the Contractual Adjustments section within our Critical Accounting Policies

Our clinical laboratory financial billing system records gross billings using a standard fee schedule for all payers and does not record contractual adjustments by payer at the time of billing. Therefore, we are unable to quantify the effect of contractual adjustments recorded during the current period that relate to revenue recorded in a previous period. However, based on our quarterly review process, which includes:

- an analysis of industry reimbursement trends;
- an evaluation of third-party reimbursement rates changes and changes in reimbursement arrangements with third-party payers;
- a rolling monthly analysis of current and historical claim settlement and reimbursement experience with payers;
- an analysis of current gross billings and receivables by payer;

we can reasonably estimate our contractual adjustments to revenue on a timely basis.

Comment No. 3. – Attachment 3A

Form 10-K – July 31, 2007 page 44 - new paragraphs and table following paragraph 4 and;

Form 10-Q – for fiscal Quarters ended October 31, 2006, January 31, 2007, April 30, 2007 – in Critical Accounting Policies section under the "Accounts Receivable and Allowance for Doubtful Accounts"caption, new paragraphs and table appearing before the paragraph which describes the Company's net accounts receivable by segment:

Billing for laboratory services is complicated because of many factors, especially: the differences between our standard fee schedule for all payers and the reimbursement rates of the various payers we deal with, disparity of coverage and information requirements among the various payers, and disputes with payers as to which party is responsible for reimbursement.

The following tables indicate the Clinical Labs Aged Gross Receivables by Payer Group, which is prior to adjustment to gross receivables for 1) contractual adjustments, 2) fully reserved balances not yet written off and 3) other revenue adjustments.

CLINICAL LABS GROSS AGED RECEIVABLES BY PAYER GROUP
In $000's
Payer Category

FORM 10-K - AS OF JULY 31,

	Total		Medicare		Third Party Payers		Self-pay		HMO's	
2006	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1-30 days	12,397	36%	3,997	40%	4,970	45%	1,472	17%	1,958	42%
31-60 days	6,104	18%	553	6%	2,023	18%	1,551	18%	1,977	42%
61-90 days	3,184	9%	397	4%	1,085	10%	1,424	17%	278	6%
91-120 days	2,630	8%	520	5%	860	8%	1,109	13%	142	3%
121-150 days	1,829	5%	334	3%	668	6%	669	8%	158	3%
Greater than 150 days*	8,326	24%	4,243	42%	1,557	14%	2,342	27%	184	4%
Totals	34,470	100%	10,044	100%	11,163	100%	8,566	100%	4,697	100%

	Total		Medicare		Third Party Payers		Self-pay		HMO's	
2005	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1-30 days	12,616	26%	2,577	22%	6,223	37%	1,922	15%	1,894	25%
31-60 days	8,779	18%	1,425	12%	4,124	24%	1,497	12%	1,733	23%
61-90 days	5,485	11%	596	5%	3,031	18%	1,373	11%	485	6%
91-120 days	3,453	7%	473	4%	1,733	10%	867	7%	381	5%
121-150 days	1,860	4%	464	4%	399	2%	757	6%	240	3%
Greater than 150 days**	16,671	34%	6,373	54%	1,410	8%	6,143	49%	2,745	37%
Totals	48,864	100%	11,908	100%	16,919	100%	12,560	100%	7,478	100%

* Total includes $2,063 fully reserved over 210 days as of July 31, 2006

** Total includes $12,191 fully reserved over 210 days as of July 31, 2005

FORM 10-Q FOR THE INDICATED PERIODS

	Total		Medicare		Third Party Payers		Self-pay		HMO's	
As of October 31, 2006	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1-30 days	12,598	40%	3,814	37%	5,047	47%	1,598	28%	2,139	49%
31-60 days	5,001	16%	763	7%	1,767	17%	837	14%	1,734	40%

61-90 days	2,819	9%	677	7%	1,271	12%	674	12%	197	4%
91-120 days	2,781	9%	967	9%	1,041	10%	636	11%	137	3%
121-150 days	1,849	6%	412	4%	730	7%	627	11%	80	2%
Greater than 150 days	6,065	19%	3,718	36%	814	8%	1,433	25%	100	2%
Totals	31,213	100%	10,350	100%	10,671	100%	5,804	100%	4,388	100%

	Total		Medicare		Third Party Payers		Self-pay		HMO's	
As of January 31, 2007	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1-30 days	13,822	47%	2,309	29%	6,159	56%	1,793	37%	3,561	65%
31-60 days	5,016	17%	834	11%	1,627	15%	791	16%	1,764	32%
61-90 days	2,633	9%	688	9%	1,264	12%	615	13%	67	1%
91-120 days	2,475	8%	948	12%	792	7%	687	14%	48	1%
121-150 days	1,530	5%	482	6%	580	5%	445	9%	23	0%
Greater than 150 days	3,802	13%	2,632	33%	561	5%	573	12%	36	1%
Totals	29,278	100%	7,893	100%	10,983	100%	4,904	100%	5,498	100%

	Total		Medicare		Third Party Payers		Self-pay		HMO's	
As of April 30, 2007	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1-30 days	19,506	42%	3,545	38%	8,747	64%	1,969	28%	5,245	32%
31-60 days	9,568	21%	661	7%	2,224	16%	1,654	24%	5,029	31%
61-90 days	7,877	17%	522	6%	1,433	11%	1,296	18%	4,626	29%
91-120 days	2,826	6%	350	4%	555	4%	644	9%	1,277	8%
121-150 days	1,139	2%	492	5%	245	2%	400	6%	2	0%
Greater than 150 days	5,310	11%	3,837	41%	416	3%	1,044	15%	13	0%
Totals	46,226	100%	9,407	100%	13,620	100%	7,007	100%	16,192	100%

Comment No. 3. - Attachment 3B Form 10-K – July 31, 2007 page 44, paragraph 3 sentence 2

During the years ended July 31, 2006 and 2005, the Company determined an allowance for doubtful accounts less than 210 days and wrote off 100% of accounts receivable over 210 days, as it assumed those accounts are uncollectible, except for certain fully reserved balances, principally related to Medicare, until the payer's filing date deadline occurs. We note that our collection experience on Medicare receivables beyond 210 days has been insignificant. The Company adjusts the historical collection analysis for recoveries, if any, on an ongoing basis.

Comment No. 4. - Attachment 4

As required by Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of July 31, 2006. This evaluation was carried out under the supervision and with participation of our Chief Executive Officer and Chief Financial Officer. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures. Therefore, effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives. Based upon our evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures are effective at that reasonable assurance levd as of July 31, 2006, and that information required to be disclosed in the reports that we file under the Exchange Act is recorded, processed, summarized and reported in a timely manner and is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.