



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-0404

May 4, 2007

By U.S. Mail and facsimile to (617)-338-2880

John N. Hatsopoulos
Chairman
Glenrose Instruments, Inc.
45 First Avenue
Waltham, Massachusetts 02451

**Re: Glenrose Instruments, Inc.
Amendment No. 1 to Registration Statement on Form 10
File No. 000-51645
Filed April 5, 2007**

Dear Mr. Hatsopoulos:

We have reviewed your filing and have the following comments. 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.

Critical Accounting Policies, page 22

1. Please add a Goodwill title to your goodwill accounting policy on page 24. Your current presentation is unclear for your readers.

Results of Operations, page 24

2. We have reviewed your revised disclosures in response to our prior comment 18. It is unclear how you have fully responded to our prior comment. Specifically, you have not quantified the reasons for the fluctuations in your revenue, cost of sales, or general and administrative expenses. For example, in your general and administrative expenses discussion, quantify the number of indirect personnel that you reduced and the impact of this decrease on your general and administrative expenses. In consideration that you discuss your 2004 goodwill impairment, disclose this amount in your discussion of results. Therefore, we repeat our prior comment 18.

Please also expand your results of operations discussion of fiscal year 2006 compared to fiscal year 2005 to quantify the reasons for the fluctuations in your results. Your disclosures continue to be vague in consideration that your revenue in 2006 increased 7% and you disclose that revenue increased by the addition of new contracts and growth in

existing contracts. However, your discussion of contract work from DOE sites being slowed in the fourth quarter would indicate that your overall revenue decreased. In order for your readers to better understand fluctuations in your revenue, please quantify the effect of each of your major contracts on your revenue. In addition, quantify the number of personnel added to the existing number of personnel and the dollar impact it had on your general and administrative expenses.

In light of your discussion of fluctuations in your cost of sales for 2006, specifically that personnel costs increased as you hired permanent and temporary staff to handle the increase in the project tasks, it is unclear how you concluded that your gross profit increased due to better utilization of resources and reduced overhead. Please advise or revise.

Contractual Obligations, page 30

3. We note that you have added a contractual obligations table in response to our prior comment 15. Please revise your table to include your interest commitments under your interest-bearing debt in this table, or provide textual discussion of this obligation below the table. If you provide a textual discussion, the discussion should quantify the interest payments using the same time frames stipulated in the table. Refer to footnote 46 to Release 33-8350 "Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations."

Executive Compensation, page 39

4. It appears that you are using the old executive compensation table and related transactions disclosure. For registration statements filed on or after December 15, 2006, that are required to include Items 402 and 404 of Regulation S-B must comply with the requirements adopted by the Commission and published in Release No. 33-8732A. Please revise to include the new tables, including the director compensation table. For guidance, you may wish to refer to our compliance and disclosure interpretations and our transition questions and answers on executive compensation and related person disclosure, both of which are available in the Division of Corporation Finance's section under "SEC Divisions" on the Commission's website at www.sec.gov.

Goodwill, page 59

5. We have reviewed your revised disclosures in response to our prior comment 30. Please expand your disclosures to describe the facts and circumstances that lead to this impairment. Refer to paragraph 47(a) of SFAS 142.

Note 7 – Related-Party Transactions, page 65

6. In consideration that the amounts due from GlenRose Partnership have remained the same from December 31, 2005 to December 31, 2006 and therefore have been outstanding greater than one year, please reclassify this balance out of current assets or tell us if you expect to receive these amounts this year. Refer to ARB 43, Chapter 3, Section A, paragraph 5.

Note 9 – Income Taxes, page 66

7. We have reviewed your responses to our prior comments 17 and 32. Please tell us the following:
- How you determined the amount of \$76,276 to reverse your valuation allowance, which you disclose was the amount of your current tax provision in 2005, resulting in an effective tax rate of 0% in 2005.
 - Reconcile your reversal of \$76,276 to your December 31, 2005 adjustment to valuation allowance of \$170,877 contained in your reconciliation between the federal statutory taxes and effective taxes.
 - Explain the specific facts and circumstances considered to reduce your valuation allowance by \$361,757 for the year ended December 31, 2006 in consideration that you reduced your valuation allowance in the prior year.
 - You disclose on page 67 that as of December 31, 2006, you had net operating losses carryforwards of \$1,287,039 associated with Lionville. Please explain why this amount is different than the NOL Carryforwards amount for 2006 of \$478,366 in the table on page 67 and your disclosure on page 26 that your deferred tax asset balance related to the net operating losses for the Lionville subsidiary are \$478,366 as of December 31, 2006.

In light of your significant fluctuations in your effective tax rates each year including your significant adjustments to your valuation allowance, please include a critical accounting policy that discusses your income taxes. Within your policy, please provide robust disclosures about the specific steps that you take to prepare your calculations, such as your assumptions and your basis for the assumptions used.

Note 11 - Segment Reporting, page 68

8. Your response to our prior comment 3 is unclear to us. In your response, you state that you report one segment. However, you have now included a segment footnote as Note 11 in your amended Form 10 that you disclose that you operate in two business segments: Radiochemistry Laboratories and Environmental Services. You also have stated in your response, that upon your acquisition of Eberline Services, you allocated goodwill to the corporation and not between your two reporting segments. However, your disclosure

regarding goodwill on page 24 appears to contradict your response in that you disclose that you compare the fair value of each reporting unit to its carrying value, and you determined the full amount of goodwill impaired at your Lionville reporting segment as of December 31, 2004. Further, we note your response to our prior comment 16 that you acquired Eberline Services, Inc. and Lionville Labs, Inc. in separate transactions and you responded to our prior comment 28 that kept these two business units separate. In light of the above, it appears that you have two reportable segments; Environmental Services and Analytical Laboratories.

As such, please revise your segment footnote to include segment financial information for each period that you present an income statement in your filing pursuant to paragraph 25 of SFAS 131. In addition to your current disclosures of results of operations in your MD&A, expand your results of operations disclosures to include a separate discussion of each of your reportable segments that includes a discussion of revenues, profitability, and cash needs. Refer to FRC 501.06.a.

9. In addition, we repeat our prior comment 3 to provide us with copies of the relevant financial reports reviewed by your chief operating decision maker.

You may contact Ryan Rohn, Staff Accountant, at (202) 551-3739 or Al Pavot, Senior Accountant, at (202) 551-3738 if you have questions regarding comments on the financial statements and related matters. Please contact Matt Franker, Staff Accountant, at (202) 551-3749 or me, at (202) 551-3767 with other questions.

Sincerely,

Jennifer R. Hardy
Legal Branch Chief

cc: Edwin L. Miller, Jr.
Sullivan & Worcester LLP
One Post Office Square
Boston, Massachusetts 02109