

Mail Stop 6010

September 19, 2006

Via Facsimile and U.S. Mail

Roger G. Little
Chairman of the Board, Chief Executive Officer
and President
Spire Corporation
One Patriots Park
Bedford, MA 01730-2396

Re: Spire Corporation
Form 10-KSB as of December 31, 2005 filed March 21, 2006
File No. 0-12742

Dear Mr. Little:

We have completed our review of your Form 10-KSB and related filings and do not, at this time, have any further comments.

Sincerely,

Martin F. James
Senior Assistant Chief Accountant