UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

ARISTA RECORDS LLC; ATLANTIC RECORDING CORPORATION; BMG MUSIC; CAPITOL RECORDS, INC.; ELEKTRA ENTERTAINMENT GROUP INC.; INTERSCOPE RECORDS; LAFACE RECORDS LLC; MOTOWN RECORD COMPANY, L.P.; PRIORITY RECORDS LLC; SONY BMG MUSIC ENTERTAINMENT; UMG RECORDINGS, INC.; VIRGIN RECORDS AMERICA, INC.; and WARNER BROS. RECORDS INC., Plaintiffs, v. LIME WIRE LLC; LIME GROUP LLC; MARK GORTON; GREG BILDSON; and M.J.G. LIME WIRE FAMILY LIMITED PARTNERSHIP, Defendants.	06 Civ. 05936 (KMW) ECF CASE

**DECLARATION OF PROFESSOR ELLIS HOROWITZ IN SUPPORT OF
PLAINTIFF'S MOTION FOR A PERMANENT INJUNCTION**

I, Professor Ellis Horowitz, the undersigned, hereby declare as follows:

1.   My name is Ellis Horowitz. I am over eighteen years of age, of sound mind, and in all ways qualified and competent to make this declaration. I have personal knowledge of the facts contained in this declaration and they are true and correct.

2.   I have been retained by the Plaintiffs in this action to provide expert analyses and opinions. I have previously submitted an Expert Report and an Affidavit in support of Plaintiffs' Motion for Partial Summary Judgment. (*See* Volume XLI of Exhibits to November 7, 2008 Declaration of Katherine B. Forrest). This declaration assumes the reader is familiar with that

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Expert Report dated April 18, 2008 ("Report"), which is attached hereto as Exhibit A and incorporated in full by reference. My full curriculum vitae is attached as Exhibit B.

3.   I am a Professor of Computer Science and Electrical Engineering at the University of Southern California ("USC"). I have held the position of Professor of Computer Science and Electrical Engineering at USC since 1983, and I served as the Chairman of the Computer Science Department from 1990 to 1999. My background and qualifications to opine on the matters set forth herein are described in greater detail in my original Report. *See* Report, ¶¶ 4-11. I have based my opinions in this declaration on documents reviewed and experiments conducted in preparing my Report.

4.   In my opinion, an injunction that requires copyright owners to give Lime Wire LLC notice of works that have been or are being infringed would be highly burdensome and ultimately ineffective. The number of works accessible through the LimeWire software is so massive that giving notice of all infringing works would be a monumental undertaking. It would also be technically impossible. A user cannot simply start the LimeWire software and obtain a list of the entire universe of songs that are being shared through LimeWire at any given time. Rather, a LimeWire software user must query the system and search for a particular file to see whether the file is available. The results of the query are limited to a subset of all matching files that may be accessible by a particular LimeWire client, especially for popular works which may appear on hundreds of computers. Only those matching files offered by other users that are actively running the LimeWire program (or compatible software) at the same time will be potentially listed in response to the query. Also, queries typically will locate those files accessible within a certain range of other Gnutella-connected computers. A user's search results thus only extend to a subset of computers on the Gnutella network. Plaintiffs thus cannot

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provide notice of all of the infringing content that is available through the LimeWire software because Plaintiffs cannot determine the extent of the universe of infringing content. Obviously, Plaintiffs cannot determine what files are being shared by users who are not currently on the network. In addition, at any given time, a specific LimeWire client will only obtain partial results from a subset of other users.

5.   The LimeWire software employs a filter that does not effectively reduce infringement.[1] The filtering mechanism uses an ineffective limiting criteria: hash value. A hash is a property of a particular digital file, not of a work. There will likely be many different versions of one musical work ripped from a commercially available CD, each with a different hash. In my Report, I conducted an experiment that varied the bitrate at which the same song was "ripped" from a CD using various different methods of creating the file. Varying the bitrate resulted in nine different file hashes, all for the same song. It is not unusual to find dozens or even hundreds or more different files available in Lime Wire search results for a hit single. *See* Report, ¶¶ 101-103.

6.   Even if one were able to catalogue by hash value all of the visible files containing a particular song, which itself would be a monumental endeavor, new files with different hash values for the same song could still emerge. Plaintiffs would have to police the system on an ongoing basis in order to identify and catalogue new hash values for the same content. Plaintiffs would also have to search for new hashes for new content available through the Lime Wire client on a near constant basis in order to make hash-filtering even remotely effective. This burdensome exercise ultimately would not remove all of the infringing content from the Lime Wire system, because infringing hashes would inevitably slip through the cracks.
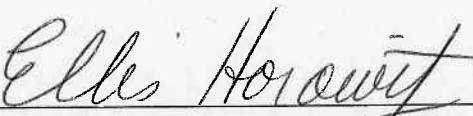
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[1] This is based on my review of the software conducted in preparing my Report.

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7.   Further, as detailed in my Report, the LimeWire default setting for the filtering mechanism is set to "off." Report, ¶ 90, 115. Even if the burdensome exercise of cataloguing recordings by hash value were performed, we might expect that few LimeWire users would turn the filtering mechanism "on." Cataloguing hash values is thus even more futile because Lime Wire's weak, hash-based filtering mechanism is entirely optional.

8.   Software products always require maintenance to keep them current. Maintenance is required for many reasons, including "bug fixes" and changes to make the software compatible with new versions of operating systems like Windows and Mac OS. Lime Wire LLC has released many versions of the LimeWire software during the course of this litigation, as explained in my Report. *See* Report, ¶ 38.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Dated: June 4, 2010
      New York, NY

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Professor Ellis Horowitz

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