EXHIBIT "H"

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UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF FLORIDA

DISNEY ENTERPRISES, INC.,)
UNIVERSAL CITY STUDIOS PRODUCTIONS LLLP,)
TWENTIETH CENTURY FOX FILM CORPORATION,)
COLUMBIA PICTURES INDUSTRIES, INC., and)
WARNER BROS. ENTERTAINMENT INC.,)
Plaintiffs,)
V.) CASE NO. 11-20427-WILLIAMS- TURNOFF
)
HOTFILE CORP., ANTON TITOV, and)
DOES 1-10.	,
DOES 1-10. Defendants.)
DOES 1-10. Defendants.)
DOES 1-10. Defendants. HOTFILE CORP.,)
DOES 1-10. Defendants. HOTFILE CORP., Counterclaimant,)))
DOES 1-10. <i>Defendants.</i> HOTFILE CORP., <i>Counterclaimant</i> , <i>v</i> .	,))))
DOES 1-10. <i>Defendants.</i> HOTFILE CORP., <i>Counterclaimant</i> , v. WARNER BROS. ENTERTAINMENT INC.,	,))))

EXPERT REPORT OF DANIEL S. LEVY, Ph.D.

January 6, 2012

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1. RESEARCH QUESTION

I have been retained by Farella, Braun + Martel LLP on behalf of Hotfile Corp. and Anton Titov (collectively, "Hotfile") to review the report of Dr. Richard Waterman dated November 18, 2011 and to assess his conclusions about the incidence of alleged infringement from March 2009 through January 2011 through the Hotfile website related to the various ways that Hotfile is employed by users.

2. QUALIFICATIONS

I am the National Managing Director and a founder of Advanced Analytical Consulting Group, Inc. ("AACG"). I have a Ph.D. in Economics from The University of Chicago. I have designed and implemented statistical sampling protocols for business analysis and litigations over the course of more than 25 years. I have provided testimony involving surveys, sampling, statistics, econometrics, economics and business, among other topics, before state and Federal courts. I have served as an expert for the US Department of Justice, the US Securities and Exchange Commission, the New York State Attorney General and served as an Expert Arbitrator for the Internal Revenue Service. I have testified in a range of matters over a number of years. My curriculum vitae is attached in Appendix 1.

My billing rate for this case is \$650 per hour. The rates of my staff assigned to this project range from \$195 to \$550 per hour. Compensation for AACG is not contingent on the outcome of the proceedings.

3. INFORMATION CONSIDERED

My opinions are based upon the review of documents produced in this matter, interviews, investigative testimony and testimony from various depositions.

The information I considered has been noted in the footnotes throughout this report. In addition, I considered other documents. A list of these additional documents can be found in Appendix 2.

In addition, my opinions are based on my skills, knowledge, experience, education, and training, as well as information gathered by me and provided to me as of the date of this report. It is usual

and customary for experts to consider and/or rely upon sources of information such as those identified in Appendix 2 in forming expert opinions.

My conclusions are based on information I have access to at the time of this report. They are subject to change based on new information and depositions conducted after the report date.

4. INTRODUCTION

Hotfile provides users a location to store, retrieve, and share computer files through the internet. By "uploading" computer files through the internet to Hotfile computer servers, Hotfile users can remotely store their computer files from any location and then retrieve the same files from any other internet-enabled location. Hotfile users can also provide other internet users access to uploaded files so that other Hotfile users can "download" files. Users' uploaded files may be removed from access by Hotfile after three months unless the file is downloaded by other users during that time.¹ A file that is repeatedly downloaded by another Hotfile user may remain on Hotfile's servers indefinitely. A file that is never downloaded may also remain accessible on Hotfile's servers over an extended period time if the user pays Hotfile a monthly fee to become a Premium-user. Any Hotfile user may store files and download files to various internet connected devices at work, home or while traveling.

Hotfile charges customers a fee to become Premium-users. In addition to the ability to store files indefinitely, Hotfile's Premium-users are provided enhanced download abilities, including greater download speeds, avoidance of any waiting period prior to downloads, and avoidance of hourly limits on downloads.

Hotfile pays Affiliates for certain downloads of files that they have uploaded and stored on Hotfile. The amount of payment received depends on the Affiliate's status (Copper, Bronze, Silver, Gold or Platinum), the number of downloads and the amount of data downloaded.² The Affiliates' status depends on the ratio of the users who downloaded an affiliate's files and the users who become Premium-users based on the affiliate's uploaded files. It also is influenced by

¹ http://hotfile.com/faq.html.

² http://hotfile.com/terms-of-service.html#affiliate.

the ratio of uploaded files to number of downloads. All Hotfile users are eligible to become Affiliates.³

Hotfile files can be accessed wherever a user can use the internet to access Hotfile's servers. However, Affiliate users can only earn payments for having their files downloaded by users in the following countries:

Americas:	Europe:				Asia and Rest:		
North:	Austria	Belgium	Bulgaria	Croatia	Bahrain	China	Hong Kong
Canada	Cyprus	Czech Republic	Denmark	Estonia	Israel	Japan	Kuwait
Mexico	Finland	France	Germany	Gibraltar	Malaysia	Oman	Qatar
United States	Greece	Hungary	Ireland	Italy	Saudi Arabia	Singapore	South Africa
	Latvia	Liechtenstein	Lithuania	Luxembourg	Turkey	UAE	
South:	Malta	Netherlands	Norway	Poland	Oceania:		
Argentina	Portugal	Romania	Russia	Slovakia	Australia	New Zealand	
Brazil	Slovenia	Spain	Sweden	Switzerland			
	United Kingdom						
Total: 5	Total: 33				Total: 16		

 Table 1: List of Countries Eligible in which Downloads are Counted as of January 2011⁴

5. DR. WATERMAN'S SAMPLE

a) <u>Dr. Waterman's Analysis Excludes 95 Percent Of The Time Hotfile Was In</u> <u>Operation.</u>

In his report, Dr. Waterman used a set of files listed in dailydownload.csv (Dailydownload). Dr. Waterman uses the Dailydownload file with the goal of creating "a statistically reliable sample for a study analyzing the percentage of files downloaded daily that were identified as infringing from the website operated by the defendants, www.hotfile.com."⁵ Further in his report and at his deposition, Dr. Waterman makes it clear that he recognizes that his analysis provides no scientific evidence about Hotfile download or allegedly infringing behavior for any month other

³ http://hotfile.com/affiliate.html.

⁴ http://hotfile.com/affiliate.html as of January 2011.

⁵ Rule 26(a)(2)(B) Report of Dr. Richard Waterman, November 18, 2011, P. 2, Para 2.

than January 2011.⁶ This is because, although Dr. Waterman had access to the Dailydownload file for the preceding twenty-two months of operation⁷ and download logs from January 2011 through September 2011, Dr. Waterman chose to analyze only the downloads from one month: January, 2011. As is clearly stated in statistical texts, including those which Dr. Waterman considers "canonical,"⁸ "[t]he population to be sampled (the *sampled* population) should coincide with the population about which the information is wanted (the *target* population)."⁹ Therefore, the analysis in Dr. Waterman's report cannot, and does not, provide scientifically valid evidence based on sampling about behavior in any period outside the one from which he drew his sample: January 2011. Indeed Dr. Waterman points out in his deposition that his goal was to analyze the downloads from only January 2011.¹⁰ Furthermore, for reasons discussed below, Dr. Waterman's analysis does not provide any reliable, scientific estimates of the incidence of alleged infringement even for January 2011.

b) <u>Dr. Waterman's Sample And Analysis Excludes "Free-User" Downloads From 47.9</u> <u>Percent Of Internet Users</u>

Dr. Waterman understands that the data analyzed is missing download information for many countries. Therefore, Dr. Waterman also agreed at his deposition that his calculated infringement rate cannot be applied to the downloads from geographic areas that were not included in the Dailydownload file.¹¹ This is important because the Dailydownload file does not include data for a set of downloads in the countries listed in Table 2.¹²

⁶ RULE 26faH2KB) Report of Dr. Richard Waterman, ¶ 9 and Deposition of Dr. Richard Waterman, November 29, 2011, P. 83, line 12-15.

⁷ The Dailydownload file date range is 2/24/2009 to 9/6/2011.

⁸ Arista Records LLC, et al. v. Lime Wire LLC, 06 Civ. 05936, Expert Report of Dr. Richard Waterman, P. 2, Footnote 1.

⁹William G. Cochran, *Sampling Techniques*, third edition, John Wiley & Sons, New York, 1977, P. 5. The quotation continues with the following: "Sometimes, for reason of practicability or convenience, the sampled population is more restricted than the target population. If so, it should be remembered that the conclusions drawn from the sample apply to the sampled population."

¹⁰ Deposition of Dr. Richard Waterman, November 29, 2011, P.37, lines 7-16; P. 87, lines 16-20.

¹¹ Deposition of Dr. Richard Waterman, November 29 2011, P. 140 lines 1-13.

¹² Deposition of Anton Titov, December 17, 2011, P. 62, lines 19-20.

These countries combined had 956,341,890 internet users as of 2010 as estimated by the World Bank.¹³

Afghanistan	Congo, Rep.	Jamaica	Paraguay
Albania	Costa Rica	Jordan	Peru
Algeria	Cote d'Ivoire	Kazakhstan	Puerto Rico
Andorra	Cuba	Kenya	Rwanda
Angola	Djibouti	Kiribati	Samoa
Antigua and Barbuda	Dominica	Korea, Rep.	Sao Tome and Principe
Armenia	Dominican Republic	Lao PDR	Senegal
Aruba	Ecuador	Lebanon	Serbia
Azerbaijan	Egypt, Arab Rep.	Lesotho	Solomon Islands
Bahamas, The	El Salvador	Liberia	Sri Lanka
Bangladesh	Equatorial Guinea	Libya	Suriname
Barbados	Eritrea	Macao SAR, China	Swaziland
Belarus	Ethiopia	Macedonia, FYR	Syrian Arab Republic
Belize	Faeroe Islands	Madagascar	Tajikistan
Benin	Fiji	Malawi	Tanzania
Bermuda	French Polynesia	Maldives	Thailand
Bhutan	Gabon	Mali	Timor-Leste
Bolivia	Gambia, The	Mauritania	Togo
Bosnia and Herzegovina	Georgia	Mauritius	Tonga
Botswana	Ghana	Micronesia, Fed. Sts.	Trinidad and Tobago
Brunei Darussalam	Greenland	Moldova	Tunisia
Burkina Faso	Grenada	Mongolia	Turkmenistan
Burundi	Guatemala	Montenegro	Tuvalu
Cambodia	Guinea	Morocco	Uganda
Cameroon	Guinea-Bissau	Mozambique	Ukraine
Cape Verde	Guyana	Namibia	Uruguay
Cayman Islands	Haiti	Nepal	Uzbekistan
Central African Republic	Honduras	Nicaragua	Vanuatu
Chad	Iceland	Niger	Venezuela, RB
Chile	India	Nigeria	Vietnam
China	Indonesia	Pakistan	West Bank and Gaza
Colombia	Iran, Islamic Rep.	Panama	Yemen, Rep.
Comoros	Iraq	Papua New Guinea	Zambia
Congo, Dem. Rep.			Zimbabwe
Sources: World Bank (2010). V	Vorld Development Indicators	Online (WDI) Database.	
"Infrastructure: Internet Users."	Retrieved from: databank.wo	rldbank.org.	
http://hotfile.com/affiliate.html			

Table 2: Countries with Free-User Downloads Excluded from Dailydownload in January2011

¹³ World Bank (2010). World Development Indicators Online (WDI) Database. "Infrastructure: Internet Users." Retrieved from: databank.worldbank.org.

In contrast to the Free-user downloads from countries listed in Table 2, a set of Free-user downloads from the countries listed in Table 3 were recorded in the Dailydownload file. The World Bank estimates that there are 1,041,116,133 internet users in these countries.¹⁴ A "Freeuser" download would be any download where an account of a Premium-user was not identified in the download. This could be a download by a non-Premium-user of Hotfile or a download by a Premium-user who was not identified as such during the Hotfile download process.

Argentina	France	Lithuania	Russia
Australia	Germany	Luxembourg	Saudi Arabia
Austria	Gibraltar	Malaysia	Singapore
Bahrain	Greece	Malta	Slovakia
Belgium	Hong Kong	Mexico	Slovenia
Brazil	Hungary	Netherlands	South Africa
Bulgaria	Ireland	New Zealand	Spain
Canada	Israel	Norway	Sweden
Croatia	Italy	Oman	Switzerland
Cyprus	Japan	Poland	Turkey
Czech Republic	Kuwait	Portugal	UAE
Denmark	Latvia	Qatar	United Kingdom
Estonia	Liechtenstein	Romania	United States
Finland			
Source: http://hotfile.com/affiliate.html, http://hotfile.com/news.html			

 Table 3: Countries with Downloads Included in Dailydownload in January 2011¹⁵

This means that any Free-user downloads from 47.9 percent of the internet users form these countries around the world were not recorded in the Dailydownload file. Therefore, Dr. Waterman has no scientific statistical evidence about the behavior associated with Free-users from this 47.9 percent of the internet population in these countries. From his analysis, he cannot even determine how many of these Free-user downloads there were, even in January 2011 – the only month Dr. Waterman sampled.

Based on this critical omission alone, Dr. Waterman has not provided scientific statistical evidence "from which we can reliably estimate the incidents (sic) of copyright infringement

 ¹⁴ Includes population of Gibraltar in 2010 from WDI 29,244.
 ¹⁵ http://hotfile.com/affiliate.html, as of January 2011 China was not included by Hotfile among the countries listed in Table 3.

through the Hotfile website.¹⁶ He has no evidence of the overall incidence of alleged infringement at any given period of time, including January 2011, because he has omitted the Free-user download behavior of 47.9 percent of the internet users in the world; the Dailydownload file simply does not count their downloads. And Dr. Waterman does not even sample downloads through the Hotfile website except for a single month out of the 23 months through January 2011. That is only 4.3 percent of the time Hotfile had been in service through January 2011.

i. <u>Dr. Waterman Provides No Scientific Evidence That His Limited Sampled</u> <u>Population Reflects The Population Of Downloads Through the Hotfile</u> <u>Website.</u>

As discussed, Dr. Waterman has excluded from his population of interest all but 4.3 percent of the time period for which Hotfile was in operation and further has excluded Free-user downloads from 956,341,890 internet users. These excluded populations had zero percent chance of being selected in his sample and therefore no scientifically valid statement about their allegedlyinfringing behavior can be made based on the field of sampling science. It is important to note that there are many files that were not selected for analysis in the limited target population Dr. Waterman analyzed; Dr. Waterman selected only 1,750 downloads for review out of the 145,691,820 that were in the Dailydownload file in January 2011. This selection of some files for the sample and the exclusion of other files based on a probabilistic random sample is not a source of the problems with Dr. Waterman's sample. A significant source of problems in Dr. Waterman's sample, however, is caused by the fact that the files outside of January 2011 were excluded from his analysis and, in a statistical sense, had no chance of being selected into Dr. Waterman's sample. This exclusion of downloads outside of January 2011 makes it impossible for Dr. Waterman to make any reliable statement about the level of alleged infringement in that excluded population based on statistical sampling, because this population of downloads had no statistical chance of being selected into the sample. As we will discuss further below, there are also segments of the population of downloads within January 2011 which had no possibility of being selected into Dr. Waterman's sample. As we will discuss, these omissions render Dr.

¹⁶ Rule 26(a)(2)(B) Report of Dr. Richard Waterman, November 18, 2011, P. 8, Para 18.

Waterman's estimates of alleged infringement as unreliable and unscientific even within January 2011.

Any attempt to apply the results from Dr. Waterman's sample to downloads from the excluded months and users from excluded geographies would have to be based on some additional evidence, which Dr. Waterman does not provide. To establish that the other months and populations exhibited the same downloading behavior as found in the population Dr. Waterman sampled, Dr. Waterman would need some evidence that these excluded time periods and geographies had the same copyright infringement behavior as the limited population he sampled. At times, evidence that the behavior of the excluded population is similar to the sampled population can be found (although this was not done here). In some cases, extensive research can be conducted to determine whether there are other factors that correlate with the behavior of interest. With this knowledge of the strength of these correlating factors, and their values in the populations that were excluded from the statistical sampling, it may be possible to make estimates of the incidence of the behavior of interest in the population that had zero chance of being selected into the sample.¹⁷ Dr. Waterman does not attempt to gather any of this supplementary information that would help inform the nature of the difference between the population that was sampled (downloads from the January 2011 Dailydownload) and the target population (downloads through the Hotfile website) which includes additional downloads from more than 95 percent of the time period Hotfile was in operation and by Free-users drawn from 956,341,890 additional internet users.¹⁸

Dr. Waterman's report does not investigate whether there are any correlates that would be associated with the incidence of alleged copyright infringement. Hence he cannot determine whether there is a change over time in these correlates which may help determine whether the incidence of alleged infringement through the Hotfile website have changed over time. Similarly, for internet users who were omitted from his analysis because they were located in countries for which Hotfile did not retain data, Dr. Waterman has no information based on sampling or

¹⁷ Even if Dr. Waterman had performed such an analysis, it would not fix the omissions of downloads from his sample for January 2011. It would therefore leave his estimates for January 2011 unreliable and the extrapolations to other time periods based on the January 2011 sample would similarly remain unreliable and unscientific.

¹⁸ The number of users in each country is based on data from the World Bank in 2010. The number of users did change over time. Figures for internet users over time can be found in Appendix 3. In addition, the countries for which Hotfile maintained download data has changed over time. This is a factor that Dr. Waterman would need to consider if he attempted to study the infringement behavior in earlier periods and other geographies.

statistical science to provide any scientifically valid estimates of the incidence of infringing behavior through Hotfile's website. He has excluded most of the downloads from Hotfile from his population of interest, has excluded them from the possibility of being included in his sample, and has not studied any correlates of infringing behavior that may assist in extrapolating from his limited target population, January 2011, to any other broader population. For these reasons, Dr. Waterman has no scientific evidence about the incidence of infringement through the Hotfile website during the excluded periods and geographies. And as we will discuss below, his omissions from the population of downloads from January 2011 render his estimates from that period unreliable and unscientific as well.

ii. <u>The Hotfile User Environment was Evolving Rapidly</u>

There was rapid change over time in internet behavior through Hotfile. The volume of users was changing rapidly over time and from month to month. The Hotfile environment is not one where even this basic feature of the Hotfile environment is similar across months. An appeal to the stability of use patterns over time at Hotfile would not be supported by the basic data about the pattern of downloads, uploads and number of users over time. If anything, the Hotfile environment appears to be rapidly evolving, undermining any assertion that use behaviors were stable over time. This can be seen in Figure 1, which shows the daily average of downloads by month for Hotfile.





The Average Downloads per Day was changing rapidly across months. Between January 2010 and January 2011 the Average Downloads per Day increased by more than 100%.

In addition, the daily average of uploads per month on Hotfile similarly changed greatly over time. This can be seen in Figure 2.





When comparing January 2011 to prior months, Dr. Waterman states that he has "no reason to believe that the world changed (in) some dramatic fashion."¹⁹ However, the number of uploads more than doubled from January 2010 to January 2011. From June 2010 to January 2011 the number of uploads increased by approximately one third. Many companies would consider this level of growth to be a dramatic change in the behavior of their user base.

c) <u>Dr. Waterman Mischaracterizes The Statistical and Sampling Process Applied To</u> <u>The Real World Process Of Drug Trials Required By The FDA</u>

During his deposition, Dr. Waterman references "drug trials" in what appears to be an assertion that drug trials simply rely on samples from one population to determine the effect of a drug on another population.²⁰ If Dr. Waterman is referring to clinical drug trials of the type required by the FDA, he has grossly oversimplified the testing and statistical analysis required by the FDA in

¹⁹ Deposition of Dr. Richard Waterman, November 29, 2011, P. 85, line 1-3.

²⁰ Deposition of Dr. Richard Waterman, November 29, 2001, P. 106, line 18 - P. 107, line 21.

its clinical drug trials in many ways. But perhaps two critical distinctions between what the FDA requires and what Dr. Waterman appears to be asserting would be useful. First, the FDA clinical trials require tests to be performed on a range of subjects that have characteristics or covariates that have been determined through years of clinical trials to be associated with the performance of the pharmaceuticals in the general population. Thus, through extensive experience and use of relevant covariates, the medical professionals and physicians at the FDA and the pharmaceutical manufacturer have extensive information that will allow them to use the covariates they have built into their study to determine how the pharmaceuticals are likely to function in the broader population. Dr. Waterman has performed no analysis of the covariates of alleged infringement at all.

Second, the FDA, in its Phase 4 clinical trials may require extensive monitoring and testing in the actual population in which the pharmaceutical is being used in the field. Furthermore, "a crucial element in this [FDA] process is that physicians report any untoward complications....The manufacturer must report adverse drug reactions at quarterly intervals for the first 3 years after approval, including a special report for any serious and unexpected adverse reaction."²¹ This is clearly a direct analysis of the population of interest. It is not an assumption on the part of the FDA that the pharmaceutical will function in the broader population as it did in the sampled population.

If anything, the FDA process demonstrates that in clinical drug trials the FDA is not comfortable relying on a sample from one population to project to another population without extensive use of correlates and then confirmation of the experience of the population of interest through direct observation. Dr. Waterman does neither of these. His appeal to clinical drug tests does not support his apparent claim that the FDA uses the type of extrapolation from one population to another that Dr. Waterman is discussing at that point in his deposition. Consideration of the actual process required by the FDA in drug testing further demonstrates that extrapolation from the experience of downloads in the January 2011 downloads files to other months, geographies or user populations not found in that file is not supported by the FDA.

²¹ Martin S. Lipsky, MD and Lisa K. Sharp, PhD, *From Idea to Market: The Drug Approval Process*, JABFP, September-October 2001, Vol. 14, No. 5, PP. 362-367.

d) Dr. Waterman's Analysis Based On The Dailydownload File Does Not Even Reflect **The Population Of Downloads From January 2011**

Dr. Waterman used the Dailydownload file as the source of his population of downloads.²² As I discussed above, this file does not include Free-user downloads by 956,341,890 internet users. But more importantly the Dailydownload file does not even include all of the downloads by users in the countries where Hotfile did retain information about some of the downloads. As I discuss next, this attribute of the Dailydownload file leaves Dr. Waterman's analysis useless for estimating the incidence of allegedly infringing behavior because he does not actually have the information to determine how many downloads there were even in his restricted sample of downloads from January 2011 and the limited set of countries for which Hotfile retained download information in the Dailydownload file. This critical flaw in Dr. Waterman's analysis results from the fact that the Dailydownload file: (1) does not contain all the downloads by Premium-users; (2) does not include the count of downloads for files downloaded by "Hotlinks"; (3) does not include downloads by Free-users numbering more than 10 downloads in a 24 hour period; and (4) does not include any downloads of files that were anonymously uploaded to Hotfile. Dr. Waterman does not know how many downloads he is missing from his analysis. He does not know the size of the target population from which he is trying to sample. Because Dr. Waterman does not know the number of downloads excluded from his analysis or the total size of the actual population of downloads, he cannot know the percent of alleged infringement in the actual downloaded files through the Hotfile system. Therefore he cannot provide any scientific evidence whatsoever of the percent of alleged infringement based on downloads through the Hotfile website.

Dr. Waterman's Analysis Excludes Repeat Downloads By Premium-users i

The Dailydownload file does not include counts of the Premium-user downloads completed within 15 minutes of each other.²³ A segment of downloads from January 2011 in the "Affiliate" countries are therefore not included in the Dailydownload file.²⁴ Dr. Waterman's analysis is missing these downloads. He does not know whether these downloads tend to infringe copyrights

 ²² Rule 26(a)(2)(B) Report of Dr. Richard Waterman, November 18, 2011, P. 8, Para. 4.
 ²³ Based on conference with Anton Titov.

²⁴ In conversations with Anton Titov, I have confirmed that an entire segment of repeat downloads by the same Premium ID are not counted in the Dailydownload file.

or not. He does not even know how many of these downloads there are. Without knowledge of how many of these downloads have occurred each month, Dr. Waterman cannot provide any scientific statistical evidence about the percentage of allegedly-infringing daily downloads through the Hotfile website, even during January 2011.

ii Dr. Waterman's Analysis Excludes All "Hotlink" Downloads

Premium-users can provide a "Hotlink" to other individuals which allows the other individuals to download the Hotlinked file with improved access features compared to those available to standard Free-users. These downloads via a Hotlink are not counted in the Dailydownload file. As I understand it, they are not counted for payments by Hotfile to Affiliates (the purpose for which the Dailydownload file was created).²⁵ Again, Dr. Waterman, does not address how many of these files downloaded by Hotlinks are missing from the Dailydownload file and therefore from his sample and analysis. Further, since he does not have the Hotlink downloads in his sample, he cannot determine whether these files tend to be infringing or not. Again, due to this omission, Dr. Waterman cannot provide any scientific statistical evidence about the percentage of alleged copyright infringement through the Hotfile website even during January 2011.

Dr. Waterman's Analysis Excludes Downloads by Free-Users Numbering <u>More Than 10 In A 24 Hour Period</u>

The Dailydownload file does not count downloads by Free-users once they have reached 10 downloads in a 24-hour period. So once a Free-user has downloaded 10 files in a 24-hour period all subsequent downloads are omitted from the Dailydownload file.²⁶ Again, Dr. Waterman does not address how many of these files downloaded by Free-users are missing from the Dailydownload file and therefore from his sample and analysis. Further, since he does not have these downloads in his sample, he cannot determine whether these files tend to be infringing or not. Again, due to this omission, Dr. Waterman cannot provide any scientific statistical evidence about the percentage of alleged copyright infringement through the Hotfile website even during January 2011.

²⁵ Communication with Anton Titov.

²⁶ Communication with Anton Titov.

iv. <u>Dr. Waterman's Analysis Excludes All Downloads That Were Anonymously</u> <u>Uploaded.</u>

Hotfile users can upload files without providing any individual information. These files are "anonymously" uploaded by anyone who is not identified by Hotfile or logged into Hotfile. These anonymously-uploaded files are not eligible for Affiliate payments.²⁷ Again, this means that Dr. Waterman could not have selected these files for review. Further, Dr. Waterman does not have any count of the number of files that were downloaded from anonymous uploads. Dr. Waterman does not know how large the target population of downloads actually is, for this reason. In addition, Dr. Waterman does not know whether these files tend to infringe or not. For this reason, in addition to the missing downloads discussed above, Dr. Waterman cannot determine the percentage of downloads through the Hotfile website that allegedly infringe copyrights.

e) <u>Conclusion: Dr. Waterman's Sample Is Not A Valid Scientific Sample of Downloads</u> <u>Through The Hotfile Website</u>

In total, Dr. Waterman's sample is not a valid scientific sample of the "incidents (sic) of copyright infringement through the Hotfile website,"²⁸ which was the concluding goal of Dr. Waterman's report. It is not a valid sample of downloads through the Hotfile website because (1) it excludes Free-user downloads from 47.9 percent of the world's internet users due to their geography, (2) it excludes more than 95 percent of the time period for which Hotfile was in service, (3) it excludes the repeated downloads by Premium-users downloaded within 15 minutes, (4) it excludes Hotlink downloads, (5) it excludes downloads numbering more than 10 in a 24-hour period for Free-users and (6) it excludes the downloads of files uploaded anonymously.

These are not minor omissions. The omissions of download in category 1 above make Dr. Waterman's estimates inapplicable to the downloads by 956,341,890 internet users. Dr. Waterman's choice to exclude all months but January 2011 eliminate 1,882,459,335 downloads from affiliate countries from his analysis, the vast majority.

²⁷ Communication with Anton Titov.

²⁸ Rule 26(a)(2)(B) Report of Dr. Richard Waterman, November 18, 2011, P. 8, Para 18.

Due to the omissions of downloads in categories 3, 4, 5 and 6, Dr. Waterman cannot even tell us how many downloads there were during January 2011, let alone the percentage of them that allegedly infringed. These sampling errors, in categories 3 through 6, make Dr. Waterman's estimates inapplicable to the question of the percentage or incidence of allegedly-infringing behavior through the Hotfile website even during the limited period of January 2011 and the limited geography of Affiliated countries.²⁹

6. <u>DR. WATERMAN'S ANALYSIS IGNORES MAJOR USES OF</u> <u>HOTFILE.</u>

Dr. Waterman's analysis, which focuses on downloads, ignores any other uses of Hotfile. He does not investigate the storage function of Hotfile. He does not investigate the backup and security functions of Hotfile. He does not investigate the file transfer activity on Hotfile between devices owned by one individual. Even if Dr. Waterman's sample of downloads provided a valid sample of downloads to inform this case, which it does not, his study does not reflect the range of user behavior on the Hotfile website because it focuses on only one of the uses and benefits Hotfile provides to users.

Hotfile data list no downloads for 54 percent of all files in the Uploaddownload file which contains a record for files uploaded to Hotfile since February 19, 2009. Although there are omissions in the downloads counted by Hotfile, as discussed in detail above, there is the potential that a large percentage, or a majority, of files uploaded to Hotfile were never downloaded.³⁰ However, given that as much as 54 percent of the files ever uploaded to Hotfile are used in this way, it seems that the storage function could be a significant aspect of how Hotfile is used.

²⁹ Dr. Waterman could have employed more comprehensive data provided by Hotfile to perform his sampling analysis. The Dailydownload file contains downloads starting with a partial month of data in February 2009. The Uploaddownload file contains information about uploads and additional downloads starting with a partial month of data in February 2009. The Download logs contain essentially comprehensive information regarding downloads after March 2011.

³⁰ Information comes from uploaddownloads.csv, which as I understand it, contains a unique record for uploaded files. To find total downloads, I summed the fields "downloads" and "paid downloads". My understanding is that "downloads" gives a count of downloads from free-users and "paid downloads" gives a count of downloads from premium-users that were counted by Hotfile with the exception that some of the omissions discussed above are also omitted from the Uploaddownload file.

Given the magnitude of this one activity alone, it is clear that in order to assess the incidence of allegedly-infringing usage of Hotfile, these other functions would have to be investigated in addition to performing a scientific and relevant sample of downloads in place of the sampling performed by Dr. Waterman.

7. DR. WATERMAN COUNTS MEDIA STORED IN MULTIPART FILES AS SEPARATE DOWNLOADS

Some users cut a single piece of media into multiple parts for storage and downloading on Hotfile. In some cases a single piece of media is cut into six or more parts. Some of these files, for example many with the RAR extension, are cut into pieces in such a way that it is difficult to view or read the file unless all of the Parts of the *.RAR file have been downloaded for a specific piece of media. Therefore, for example, a movie that has been stored in a six part RAR would require six downloads from Hotfile to be functional for most or all users. Alternatively, a movie of similar file size could be stored in a single file. In Dr. Waterman's sampling protocol, a single piece of media stored in multiple parts has a greater chance of being sampled than that same piece of media stored in a single file.³¹

Take for example two pieces of media, one infringing and one not, where both are downloaded once. If the infringing file is stored in a ten part RAR file the download of the entire piece of media would be counted as 10 downloads. If the non-infringing file is stored in a single file, the download of the entire file will result in one download. Therefore, under the counting system devised by Dr. Waterman, the download of this one infringing film and this one non-infringing film would result in a count of 10 infringing downloads and one non-infringing download, for a 91 percent incidence of infringing film, in this example.

Clearly the method of counting downloads of multipart files can have an important impact on the measured incidence of infringing downloads. To investigate the impact of downloads of multipart files, I selected the most common file types used with multipart files, the .part##.RAR extension and files for which the final part of the file extension is made up of three numbers, for

 $^{^{31}}$ For this discussion, I consider the media to be downloaded the same number of time whether it is stored in a single file or in a multipart file.

example ".avi.001". Based on Dr. Waterman's sampling and the files he received, I was able to determine how many parts each of the multipart files had in the Dailydownload file that Dr. Waterman used.³² Based on the number of parts each of the files had, I reversed the weighting that Dr. Waterman had applied to the media found in the multipart files, by dividing the observation Dr. Waterman had selected by the number of parts the file had been divided into. This provides an estimate of the incidence of alleged infringement if each of these multipart files had been stored and downloaded as a single file; a download of one movie is counted as one download regardless of how many parts used to store it. Even leaving all the other omissions and errors in Dr. Waterman's analysis intact, this single change in the method of counting downloads for multipart files, such as RAR and AVI extension files, reduces the estimated level of alleged infringement. This reduction in the percentage of alleged infringement occurs because these multipart files tended to be found by Plaintiffs' witness, Mr. Zebrak, to infringe copyright more than single part files.

There are likely other multipart files in addition to the ones I have identified using the method outlined above. Without more analysis of these multipart files, it is not possible to determine the extent to which the counting process devised by Dr. Waterman influences the incidence of alleged infringement.

8. NO MEASURE OF HOW "HIGHLY LIKELY" TO INFRINGE

For the vast majority of files that Mr. Zebrak reviewed - 82.6 percent³³ according to Dr. Waterman³⁴ - Mr. Zebrak could not determine whether the downloaded file infringed or did not infringe. Mr. Zebrak was only able to give it a relative status of Highly Likely to infringe. However, neither Dr. Waterman nor Mr. Zebrak provided a quantitative assessment of how

³² For example, Waterman's sample included a file called A.Christmas.Carol.2009.DvDrip-aXXo.part2.rar (uploadid: 90857607). The file studio_requested_fileinfo.csv shows that Waterman and his team requested both A.Christmas.Carol.2009.DvDrip-aXXo.part1.rar (uploadid: 90855097) and A.Christmas.Carol.2009.DvDrip-aXXo.part2.rar (uploadid: 90857607) from Hotfile to review. In this case, I classify the sampled file, A.Christmas.Carol.2009.DvDrip-aXXo.part2.rar (uploadid: 90857607), as having two parts.

³³ The upper and lower 95 percent confidence intervals are 84.4 percent and 80.8 percent.

³⁴ Rule 26(a)(2) (B) Report of Scott Zebrak Appendix C. I calculated proportions separately for "confirmed infringing" and "highly likely infringing" files, using methods that produce the same result as those produced by Dr. Waterrnan for the proportion of files either "confirmed" or "highly likely infringing": (10*(proportion of weekend files that infringe)+21*(proportion of weekday files that infringe))/31— William G. Cochran, *Sampling Techniques*, third edition, John Wiley & Sons, New York, 1977, page 107; Eq. 5.52.

likely a Highly Likely download was to infringe. We are provided no information whether highly likely means 66 percent, often known as a super majority, or 99 percent likely to infringe, or any other percentage. Furthermore, we are not provided any information to suggest that such a quantification was even performed or can be provided by Mr. Zebrak. If "Highly Likely" means 66 percent then 66 percent of the 82.6 percent Highly Likely infringing downloads are actually estimated to be infringing. That would be 54.5 percent of the total files would be infringing (54.5%=66% x 82.6%) based on the Highly Likely pool. Adding in the 7.7 percent based on the confirmed infringing status, a total of 62.2 percent of the downloads would be infringing. If 85 percent of the Highly Likely files are actually infringing then 77.9 percent of the downloads sample by Dr. Waterman would be infringing.³⁵

It is clear that some evidence about the percent of Highly Likely files that actually infringe is needed to provide the basis for a scientific sampling and extrapolation of the incidence of infringement through the Hotfile website. Neither Dr. Waterman nor Mr Zebrak provide this required information.

9. <u>MR. ZEBRAK PROVIDES NO MEASUREMENT OF THE</u> <u>RELIABILITY OF HIS DETERMINATION OF INFRINGEMENT</u>

Not only has Mr. Zebrak not quantified how likely the Highly Likely Infringing files are to infringe, but he has also provided no information about the reliability of his assessments and coding of alleged infringement. The measurement of coding reliability is common in situations where individuals review some record and make some assessment about the record based on the review. It is common practice in scientific research to determine how reliably the coders have assessed the records.³⁶ Clearly individuals make mistakes or differ in their interpretations about

 $^{^{35}}$ 70.2% = 85% x 82.6% from the Highly Likely observations plus 7.7% from the Confirmed observations for a total 77.9%.

³⁶ See for example Jackson, Sherri L. (2012). <u>Research Methods and Statistics: A Critical Thinking Approach, 4th Edition</u>. Wadsworth, Cengage Learning. Webb, Noreen M. et. al. (2007). "Reliability Coefficients and Generalizability Theory." In Rao, C.R. and Sinharay (eds.) <u>The Handbook of Statistics vol. 26: Psychometrics</u>.

the status of a given piece of media. To the extent that they disagree about the final determination of a piece of media their determinations are considered to be not Reliable.

Coding Reliability is often tested and measured by having some portion of the records that are being reviewed coded by a second coder to determine the percentage of times where there is agreement between coders. If we know the percent of times that there was not agreement we could factor that into our assessment of the overall infringement levels. But neither Mr. Zebrak nor Dr. Waterman has provided this type of measure. Again this is not a minor omission. Some researchers consider coded data of the type provided here unusable if some measure of the Reliability of the coding is not provided.³⁷

So in addition to some measure of how likely a file categorized as Highly Likely is to infringe, we also need some measure of how Reliable Mr. Zebrak's coding process was.

10. <u>CONCLUSION</u>

For the reasons stated above Dr. Waterman has not provided a scientifically reliable estimate of the incidence of allegedly-infringing behavior through the Hotfile website. As he stated in his deposition, Dr. Waterman did not intend to provide a scientific estimate of the incidence of alleged infringement in downloads from the Hotfile website outside the time period of January 2011, and he did not. In addition, as stated in his deposition, he did not provide a scientific estimate of the allegedly-infringing behavior from the non-Affiliate geographies. Further, due to various omissions in downloads from the file Dr. Waterman used to construct his sample, Dr. Waterman has also failed to provide a scientifically reliable estimate of the incidence of infringement in the downloads from the Hotfile website during January 2011. Dr. Waterman has provided no reliable scientific evidence about the overall population of downloads from the Hotfile website during any time period.

In addition, Dr. Waterman has investigated only one aspect of how users employ Hotfile. He has not investigated the storage, file security and backup or single users' file transfer across

Elsevier. Stemler, Steven and Jessica Tsai. (2008). "Best Practices in Interrater Reliability: Three Common Approaches." In Jason Osborne (ed.) <u>Best Practices in Quantitative Methods</u>. Sage Publications.

³⁷ Neuendorf, Kimberly A. (2002). <u>The Content Analysis Guidebook.</u> Sage Publications. p.142.

locations or devices for self use. Dr. Waterman has not investigated the alleged infringement behavior across the uses of Hotfile.

Finally, neither Dr. Waterman nor Mr. Zebrak have provided any estimate or analysis of how likely files designated as "Highly Likely" are to infringe. Without this information it is not possible to calculate the proportion of allegedly-infringing behavior through the Hotfile website.

OMLA Daniel S. Levy, PhD

January 6, 2012

<u>APPENDIX 1</u> DANIEL S. LEVY, PhD

National Managing Director Advanced Analytical Consulting Group, Inc. Phone: 617 901 6344 Email: DanLevy@AACG.com

EDUCATION

Ph.D., Economics, The University of Chicago A.B., Economics, The University of Chicago (With Special Honors in Economics)

Daniel S. Levy specializes in applications of economics and statistics. He has testified about sampling and statistical issues in Federal Court, presented statistical issues to Government Agencies and served as an Expert Arbitrator.

Dr. Levy has developed and implemented advanced analytical methods for quality control tests for major corporations. For more than a decade, Dr. Levy led a team of economists and statisticians in monthly testing of quality of service for multiple telecommunications companies. His analyses of sampling and statistical issues include testimony for the Securities and Exchange Commission and the Department of Justice and have been presented in Federal Court. He also has performed economic and statistical work in telecommunications, transportation, manufacturing, financial services, mining, oil and gas, consumer durables, healthcare, pharmaceuticals and medical devices industries. He has extensive experience in developing statistical methods for practical business applications. As part of his antitrust and market demand research, Dr. Levy has developed and used large GIS software databases.

Prior to Advanced Analytical Consulting Group, Inc., Dr. Levy was the national leader of the Economic and Statistical Consulting Group at Deloitte Financial Advisory Services and Global Leader of Economic Consulting at Arthur Andersen's Business Consulting Group. He also held research and consulting positions at Charles River Associates, The RAND Corporation,

Needham-Harper Worldwide Advertising, SPSS Inc. and The University of Chicago Computation Center.

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- Daras v. Texaco Inc, 1993, Affidavit.
- Environmental Protection Agency: Navajo Generating Station, 1991, Public Comment, *Valuation of Environmental Damages*.

PROFESSIONAL EXPERIENCE

2009 – Present	National Managing Director, Advance Analytical Consulting Group, Inc.
2002 - 2009	National Leader of Economic and Statistical Consulting, Deloitte FAS LLP
2001 - 2002	Global Director of Economic and Statistical Consulting, Arthur Andersen:
	Value Solutions
1998 - 2001	National Director of Economic and Statistical Consulting, Arthur Andersen:
	Business Consulting
1996 - 1998	Regional Director of Economics, Arthur Andersen: CRCO
1995 - 1996	Economist, Arthur Andersen
1991 - 1995	Senior Associate, Charles River Associates
1988 - 1991	Associate Economist, The RAND Corporation
1985 - 1988	Computer Advisor, The University of Chicago Computation Center
1982 - 1985	Research and Teaching Consultant, SPSS Inc.
1981 - 1982	Research Consultant, Needham, Harper Worldwide Advertising

PROFESSIONAL HONORS AND ACTIVITIES

• Earhart Fellowship for graduate research in economics, 1981 - 1982

- Hewlett Grant for research in developing countries, 1985 1986; renewed, 1986 1987
- CBS Bicentennial Scholarship for research on events leading to the American Revolution, 1986 1987
- Homer and Alice Jones Fellowship, University of Chicago, 1987 1988
- American Economics Association, 1988- Present
- Population Association of America, 1988-1991

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APPENDIX 2

dailydownload.csv

dailydownload.csv.headers

estimation_11172011.txt

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uploaddownloads.csv

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APPENDIX 3

