

JOSEPH P. RUSSONIELLO (CABN 44332)
United States Attorney

BRIAN J. STRETCH (CABN 163973)
Chief, Criminal Division

JEFFREY D. NEDROW (CABN 161299)
Assistant United States Attorney

150 Almaden Boulevard, Suite 900
San Jose, California 95113
Telephone: (408) 535-5045
Facsimile: (408) 535-5066
E-Mail: jeff.nedrow@usdoj.gov

Attorneys for Plaintiff

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA,)	CR No. 07-00732-SI
)	
Plaintiff,)	
)	
v.)	<u>DECLARATION OF LARRY BOWERS</u>
)	
BARRY BONDS,)	
)	
Defendant.)	
)	
)	
)	

I, LARRY BOWERS, declare:

1. I am employed as the Chief Science Officer by the United States Anti-Doping Agency (USADA). USADA is a non-profit organization in the United States dedicated to using testing, adjudication, education, and research to deter the use of performance-enhancing drugs in Olympic, Paralympic, and Pan American sport. Among other duties, I am involved in

5. As a part of my position at USADA, I routinely attend conferences on the latest developments in the field of detecting, deterring, and researching performance-enhancing drugs in sport. To my best ability, I review current scientific literature and publications in the field of performance-enhancing drugs and efforts to keep them out of sport. I have testified on behalf of USADA as an expert on many occasions at disciplinary hearings for athletes suspected of using performance-enhancing drugs. I also have been qualified in federal court as an expert in the area of performance-enhancing drugs, and testified pursuant to that qualification in a federal criminal trial in 2008. The case was *United States v. Graham*, CR 06-0725-SI.

6. Based upon my experience and training, my review of peer-reviewed scientific literature, my ongoing professional communications with scientists in the anti-doping community, and my own research, the following statements are accepted tenets of anti-doping science which are based on reliable scientific principles:

- a. Testosterone, human growth hormone (HGH), insulin, and erythropoietin (EPO), are performance-enhancing substances.
- b. Testosterone is a chemical that causes muscle growth and retention of muscle. It can make a person stronger and it can benefit a person's ability to recover, i.e. it can enable a person to work muscles more often and harder than without the assistance of testosterone. Exogenous, or foreign testosterone, can cause a variety of physiological effects in a person, including acne, physiological effects to the genitalia, an ability to rapidly increase muscle mass, and other effects.
- c. HGH can cause changes to the body by itself or, in connection with other substances, e.g. anabolic steroids and insulin, that can be responsible for the growth of a large number of bodily systems, e.g. muscles and bones. Similar to testosterone, HGH can enhance

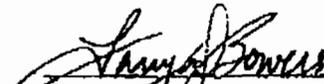
athletic performance by promoting muscle growth and speeding recovery time for muscles after they have been utilized.

d. Insulin is a chemical that assists the body to get sugar and other constituents into the cell. As a performance-enhancing substance, insulin is used to regenerate energy stores in the cell and to prevent muscle breakdown. Insulin is frequently used in conjunction with another substance, such as HGH. HGH increases muscle growth while insulin decreases muscle breakdown, resulting in faster recovery and more muscle accumulation than either substance alone.

e. EPO is a hormone that regulates the number of red blood cells in the blood system. If EPO in addition to the amount naturally produced by the body is administered into the body, it can increase the number of red blood cells in a body's blood system. The performance-enhancing aspect of such an effect is that a body is thereafter able to better transport oxygen to muscles, which can make the muscles more effective in making energy. The benefits of EPO are that a person may experience improved endurance and energy. EPO can enhance a person's ability to train for athletic performances and to perform in athletic competitions.

7. In addition, I am aware from my experience at USADA that it is illegal to distribute and obtain the substances identified herein for performance-enhancement and without a legitimate medical condition requiring such a substance and a prescription from a physician. Examples of legitimate medical conditions related to each substance are as follows: muscle-wasting conditions associated with AIDS (testosterone); growth deficiencies in children (HGH); Type I diabetes (insulin); and anemia-related conditions associated with cancer (EPO). The substances are also illegal in that they are contained on the list of drugs banned in sport, such as the World Anti Doping Agency prohibited list.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge at Colorado Springs, Colorado on January 26, 2009.


Larry D. Bowers
Chief Science Officer
United States Anti-Doping Agency