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March 31, 2010

Delivered via EDGAR

Securities and Exchange Commission
Division of Corporation Finance
100 First Street, N.E.
Mail Stop 4720
Washington, DC 20549

Attn: Jeffrey P. Riedler, Assistant Director
Mike Rosenthal, Staff Attorney

Re: Vertex Pharmaceuticals Incorporated
Form 10-K for the Period Ended December 31, 2008
Definitive Proxy Statement on Schedule 14A filed April 8, 2009
File No. 000-19319

Ladies and Gentlemen:

The purpose of this letter is to respond to the comments provided by the staff (the “Staff”) of the Securities and Exchange Commission (the “SEC”) to Vertex Pharmaceuticals Incorporated (the “Company”) in a letter dated February 19, 2010 to the Company. The comments from the comment letter are reproduced below together with the Company’s responses to those comments.

Schedule 14A

Compensation Discussion and Analysis
2008 Compensation Decisions for Performance-Based Elements, page 29

Comment 1:

We note that your response to our prior comment 1 indicates you expect that the board of directors will evaluate corporate performance with regard to the factors indicated but that the factors considered is at the discretion of the board of directors. Please confirm that your next proxy statement will include the following:

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- Confirmation that no corporate performance targets are set at the beginning of each fiscal year to be used at the end of the fiscal year to gauge corporate or executive performance;
 - The analysis performed by the board of directors used to determine performance at the end of each fiscal year; and
 - How the performance evaluation was used to determine the amount of bonuses awarded to each named executive officer based on the extent of achievement determined by the board.

Response 1:

As the Company discussed with a representative of the Staff, the Company’s board of directors sets goals for Company’s performance early in the year and uses these goals to evaluate the Company’s performance at the beginning of the following year (while retaining discretion to consider all factors it deems relevant to such performance evaluation). The four goals set during 2009 and used in February 2010 to determine the Company’s 2009 rating were to: meet or exceed mission critical milestones toward a successful launch of telaprevir, and strengthen our HCV franchise; maintain financial strength; build organizational strength; and demonstrate increase in portfolio value beyond HCV. The Company confirms that in its 2010 Definitive Proxy Statement (i) it will disclose these goals, (ii) it will describe the analysis performed by the board of directors to determine performance at the end of the year and (iii) it will describe how the performance evaluation was used to determine the amount of the bonuses and equity awards awarded to each executive officer for 2009 performance. The disclosure regarding the Company’s 2009 compensation decisions for performance-based elements will be substantially as set forth in Exhibit A and Exhibit B to this letter.

In addition, the Company confirms that in its 2010 definitive proxy statement (i) it will disclose that 50% of the shares subject to both the Company’s 2007 PARS awards and the Company’s 2008 PARS awards will vest if the Company’s common stock achieves and maintains a market price of \$60.00 per share and (ii) it will add disclosure regarding the reason that Dr. Boger’s salary was increased to the midpoint of the range for CEOs in our comparator company group.

The Company hereby confirms that in future filings the Company will enhance its overall disclosures by complying with the comments provided by the SEC in the manner set forth in the responses above, subject in all cases, to any changes with respect to the facts underlying the Company's disclosures.

The Company acknowledges that:

- 1) the Company is responsible for the adequacy and accuracy of the disclosure in its filings;
- 2) Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- 3) the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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Please contact me at 617-444-6227 in the event that you have any questions or concerns with respect to this matter.

Very truly yours,

/s/ Valerie L. Andrews

Valerie L. Andrews
Deputy General Counsel

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Exhibit A

Disclosure in Compensation Discussion and Analysis

2009 Compensation Decisions for Performance-Based Elements.

Company Rating—Our board of directors evaluated overall 2009 company performance against four goals that it established early in 2009:

- meet or exceed mission critical milestones toward a successful launch of telaprevir, and strengthen our HCV franchise;
- maintain financial strength;
- build organizational strength; and
- demonstrate increase in portfolio value beyond HCV.

The MDCC recommended and the board determined that our company performance rating for 2009 was “Leading.” The board set the company performance factor for the 2009 executive bonus pool at 150%, which is the highest possible performance factor under our program. This rating was based on our having achieved or exceeded all four of the pre-determined goals. In reaching this determination, the board considered the following:

- **Telaprevir and HCV Franchise**—We advanced toward a successful future launch of telaprevir by successfully completing patient enrollment and dosing in all Phase 3 telaprevir clinical trials, demonstrating readiness for commercial supply of telaprevir and building inventory for commercial launch, conducting appropriate value analyses for telaprevir, executing on the telaprevir life-cycle plan through BID dosing and HCV/HIV co-infection clinical trials, and we successfully strengthened our HCV franchise by securing rights to VX-222, consistent with our strategy of investigating “STAT-C” (oral combination) therapy for HCV infection, through the acquisition of Virochem Pharma, Inc.
- **Financial Strength**—We demonstrated financial strength by finishing the 2009 fiscal year with approximately \$1.285 billion in cash, cash equivalents and marketable securities, including cash realized from restructuring our Mitsubishi Tanabe license arrangement and through financial transactions relating to our rights to future milestone payments under our Janssen Pharmaceutica collaboration agreement, and managing our net cash loss to approximately \$510 million.
- **Organizational strength**—We successfully managed a series of leadership transitions in our executive ranks, involving our CEO, Chief Commercial Officer, Chief Medical Officer and head of Global Research & Development; established a 5-year corporate vision and long-range plan, and effectively expanded our capabilities in the areas of research, development and pharmaceutical commercialization.

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- **Portfolio Value**—We demonstrated increased value in our non-HCV programs, including progression of our CF program through a Phase 3 clinical program for VX-770, a Phase 2 clinical trial of VX-809 and definition of a regulatory pathway for a CF corrector/potentiator combination; preparing our JAK-3 inhibitor, VX-509, for Phase 2 clinical investigation in patients with RA; submitting a satisfactory protocol for Phase 2 clinical trials of VX-765 in epilepsy; and continuing research productivity by producing several early-stage molecules suitable for further study.

Although the directors discuss and analyze our performance as a group, each director makes his or her own judgment about which factors are important, and how to weight those factors in reaching a conclusion.

Individual Ratings for Named Executive Officers—The MDCC recommends to the board for approval both a results-based and a values-based rating for each of our executives. The results-based rating recommendation for each named executive is the combined result of the committee members’ observations and review of the officer’s role in the accomplishment of the corporate goals, and factors and recommendations provided to the MDCC by our chief executive officer, Mr. Emmens, made on the basis of Mr. Emmens’ independent assessment of each executive officer’s performance in 2009. The MDCC and Mr. Emmens discussed the recommendations at length, on both an individual-by-individual basis, and on a comparative basis. Upon completion of these discussions, the MDCC finalized its recommendation for the results-based rating for each executive, taking into account Mr. Emmens’ recommendations, factors considered in the discussions, and the opinions of committee members based on the executive’s contributions and the members’ interactions with the executive. When considering the more subjective values-based rating, the MDCC also discussed Mr. Emmens’ recommendations, giving them greater weight than for the results-based rating, because the values-based rating is pertinent to the executive’s daily interactions in carrying out his or her duties, and the MDCC believes that in his role as CEO, Mr. Emmens has greater visibility than the committee members into the quality of these interactions.

Mr. Emmens also discussed his own performance in 2009 with the MDCC. Mr. Emmens noted that Vertex’s performance rating was the highest possible under our system, due to our exceptional performance across all aspects of the business. The board of directors determined that Mr. Emmens’ rating similarly should be at the highest possible level, and rated Mr. Emmens’ 2009 performance as “leading.” For values-based behavior, the board of directors believes that Mr. Emmens is an exceptional leader who exhibits exemplary values-based behavior, and accordingly, assigned Mr. Emmens a values-based rating of “exemplary demonstration.”

The MDCC recommended results-based and values-based ratings for each of Dr. Mueller, Mr. Sachdev and Mr. Smith to the board of directors. Ms. Wysenski joined us in December 2009, and thus was ineligible for year-end bonus or equity awards on account of 2009 performance. The MDCC recommended and the board of directors approved a results-based rating of “leading” for Dr. Mueller, because in addition to consistent and excellent research productivity, Dr. Mueller oversaw a year of extraordinary success for the pharmaceutical operations and the chemistry, manufacturing and controls programs, particularly for the telaprevir Phase 3 clinical trial and launch preparation. He also successfully took on additional

responsibility for our development organization mid-year. Dr. Mueller was rated “exemplary” for values-based behavior in his leadership of our entire scientific organization. Similarly, the MDCC’s recommendation for Mr. Sachdev’s performance rating of “leading,” based in part on a number of initiatives in the public sector that have the potential to increase the value of our HCV franchise, was adopted by the board. Mr. Smith’s organization, which includes finance and accounting, real estate, operations, information systems and strategic communications, also performed at a high level in supporting achievement of the corporate objectives detailed above, particularly in accessing over \$1 billion through debt and equity offerings and other financial transactions, causing the MDCC to recommend and the board to approve a results-based rating of “leading” for Mr. Smith. With respect to values-based evaluation, the MDCC recommended that each of Mr. Smith and Mr. Sachdev be rated “living the values” because they demonstrated strong values-based behavior.

Based on the foregoing, the named executive officers earned the following performance ratings and individual performance factors on account of 2009 performance.

	<u>Results—Based Rating</u>	<u>Values—Based Rating</u>	<u>2009 Overall Performance Rating</u>	<u>Individual Performance Factor</u>
Matthew W. Emmens	Leading	Exemplary Demonstration	Leading/Exemplary	150%
Ian F. Smith	Leading	Living the Values	Leading	145%
Peter Mueller	Leading	Exemplary Demonstration	Leading/Exemplary	150%
Amit Sachdev	Leading	Living the Values	Leading	145%

Annual Cash Bonus and Equity Awards—The annual cash bonuses and annual equity awards for 2009 resulting from the company and individual performance ratings are set forth in the tables under the headings *Compensation and Equity Tables—Summary Compensation Table—Non-Equity Incentive Plan Compensation—Cash Bonus* and *Compensation and Equity Tables—Summary Compensation Table—Stock Awards and Options Awards*.

Exhibit B

Disclosure Referenced in Compensation Discussion and Analysis and Presented under Compensation and Equity Tables

Stock Awards and Options Awards

The total equity awards made to each of the named executives on account of 2009 performance are as follows. Pursuant to applicable rules only the grant date value of the stock options awarded in July 2009 are included in the table above and the grant date values of the awards granted in February 2010 will be included as 2010 compensation.

	<u>Individual Performance Rating</u>	<u>Stock Options Awarded in July 2009</u>	<u>Stock Options Awarded in February 2010</u>	<u>Total Stock Options Awarded for 2009 Performance</u>	<u>Restricted Stock Awarded in February 2010 for 2009 Performance</u>
Matthew W. Emmens	Leading/Exemplary	n/a	354,000	354,000	47,201
Ian F. Smith	Leading	36,250	54,375	90,625	12,084
Peter Mueller	Leading/Exemplary	36,250	72,500	108,750	14,501
Amit Sachdev	Leading	30,500	45,750	76,250	10,166

Non-Equity Incentive Plan Compensation—Cash Bonus

The amounts set forth under the caption “Non-Equity Incentive Plan Compensation” represent cash bonuses for 2009, 2008 and 2007 performance, each of which was paid in the first quarter of the next year. The cash bonus awards to the named executive officers for 2009 performance were determined as follows:

	2009 Base Salary Level	Individual Incentive Target	2009 Target Bonus	Company Performance Factor	Individual Performance Factor	2009 Bonus
Matthew W. Emmens	\$ 1,100,000	115%	\$ 1,265,000	150%	150%	\$ 2,846,251
Ian F. Smith	\$ 463,500	40%	\$ 185,400	150%	145%	\$ 403,245
Peter Mueller	\$ 550,000	40%	\$ 220,000	150%	150%	\$ 495,000
Amit Sachdev	\$ 365,907	35%	\$ 128,067	150%	145%	\$ 278,547