

**CHARTER OF THE AUDIT COMMITTEE
OF THE BOARD OF DIRECTORS OF CPEX PHARMACEUTICALS, INC.
(THE “CHARTER”)**

Adopted and Effective May 13, 2008

I. PURPOSE OF THE COMMITTEE

The purpose of the Audit Committee (the “Committee”) of the Board of Directors (the “Board”) of CPEX Pharmaceuticals, Inc. (the “Corporation”) is to oversee the accounting and financial reporting processes of the Corporation and its subsidiaries and the audits of the financial statements of the Corporation.

II. COMPOSITION OF THE COMMITTEE

The Committee shall consist of three or more directors, as determined from time to time by the Board, upon the recommendation of the Nominating and Governance Committee. Each member of the Committee shall be qualified to serve on the Committee pursuant to the requirements of The Nasdaq Stock Market, Inc. (“Nasdaq”) and any additional requirements that the Board deems appropriate.

Each member of the Committee shall (i) meet the criteria for independence set forth in Nasdaq Rule 4200(a)(15) (subject to the phase-in periods provided in Rule 4350(a)(5)), (ii) meet the criteria for independence set forth in Rule 10A-3(b)(1) under the Securities Exchange Act of 1934 (subject to the exemptions provided in Rule 10A-3(c)); and (iii) not have participated in the preparation of the financial statements of the Corporation or any current subsidiary of the Corporation at any time during the past three years.

The chairperson of the Committee shall be designated by the Board, *provided* that if the Board does not so designate a chairperson, the members of the Committee, by a majority vote, may designate a chairperson.

Any vacancy on the Committee shall be filled by majority vote of the Board. No member of the Committee shall be removed except by majority vote of the Board.

Each member of the Committee must be able to read and understand fundamental financial statements, including the Corporation’s balance sheet, income statement and cash flow statement. In addition, at least one member of the Committee must be designated by the Board to be the “audit committee financial expert,” as defined by the Securities and Exchange Commission (“SEC”) pursuant to the Sarbanes-Oxley Act of 2002 (the “Act”).

III. MEETINGS AND PROCEDURES OF THE COMMITTEE

The Committee shall meet as often as it determines necessary to carry out its duties and responsibilities, but no less frequently than once every fiscal quarter. The Committee, in its discretion, may ask members of management or others to attend its meetings (or portions thereof) and to provide pertinent information as necessary. The Committee should meet separately on a periodic basis with (i) management, (ii) the person responsible for the internal audit function and (iii) the Corporation's independent auditors, in each case to discuss any matters that the Committee or any of the above persons or firms believe warrant Committee attention.

A majority of the members of the Committee present in person or by means of a conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other shall constitute a quorum.

The Committee shall maintain minutes of its meetings and records relating to those meetings and shall report regularly to the Board on its activities, as appropriate.

The Committee shall conduct its meetings in accordance with this Charter, the procedures of the Board set forth in the bylaws of the Corporation, and such other procedures as the Committee may adopt.

IV. DUTIES AND RESPONSIBILITIES OF THE COMMITTEE

In carrying out its duties and responsibilities, the Committee's policies and procedures should remain flexible, so that it may be in a position to best address, react or respond to changing circumstances or conditions. The following duties and responsibilities are within the authority of the Committee and the Committee shall, consistent with and subject to applicable law and rules and regulations promulgated by the SEC, Nasdaq, or any other applicable regulatory authority:

Selection, Evaluation, and Oversight of the Auditors

(a) Be directly responsible for the appointment, compensation, retention and oversight of the work of any registered public accounting firm engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services for the Corporation, and each such registered public accounting firm must report directly to the Committee (the registered public accounting firm engaged for the purpose of preparing or issuing an audit report for inclusion in the Corporation's Annual Report on Form 10-K is referred to herein as the "independent auditors");

(b) Review and, in its sole discretion, approve in advance the Corporation's independent auditors' annual engagement letter, including the proposed fees contained therein, as well as all audit and, as provided in the Act and the SEC rules and regulations promulgated thereunder, all permitted non-audit engagements and relationships between the Corporation and such independent auditors (which approval should be made after receiving input from the Corporation's management, if desired). Approval of audit and

permitted non-audit services will be made by the Committee or by one or more members of the Committee as shall be designated by the Committee/the chairperson of the Committee and the person[s] granting such approval shall report such approval to the Committee at the next scheduled meeting;

(c) Review the performance of the Corporation's independent auditors, including the lead partner and reviewing partner of the independent auditors, and, in its sole discretion (subject, if applicable, to shareholder ratification), make decisions regarding the replacement or termination of the independent auditors when circumstances warrant;

(d) Evaluate the independence of the Corporation's independent auditors by, among other things:

- (i) obtaining and reviewing from the Corporation's independent auditors a formal written statement delineating all relationships between the independent auditors and the Corporation, consistent with Independence Standards Board Standard 1;
- (ii) actively engaging in a dialogue with the Corporation's independent auditors with respect to any disclosed relationships or services that may impact the objectivity and independence of the auditors;
- (iii) taking, or recommending that the Board take, appropriate action to oversee the independence of the Corporation's independent auditors;
- (iv) monitoring compliance by the Corporation's independent auditors with the audit partner rotation requirements contained in the Act and the rules and regulations promulgated by the SEC thereunder;
- (v) monitoring compliance by the Corporation of the employee conflict of interest requirements contained in the Act and the rules and regulations promulgated by the SEC thereunder; and
- (vi) engaging in a dialogue with the independent auditors to confirm that audit partner compensation is consistent with applicable SEC rules;

Oversight of Annual Audit and Quarterly Reviews

(a) Review and discuss with the independent auditors their annual audit plan, including the timing and scope of audit activities, and monitor such plan's progress and results during the year;

(b) Review with management, the Corporation's independent auditors and the person responsible for the Corporation's internal audit function, the following information which is required to be reported by the independent auditor:

- (i) all critical accounting policies and practices to be used;
- (ii) all alternative treatments of financial information that have been discussed by the independent auditors and management, ramifications of the use of such alternative disclosures and treatments, and the treatment preferred by the independent auditors;
- (iii) all other material written communications between the independent auditors and management, such as any management letter and any schedule of unadjusted differences; and
- (iv) any material financial arrangements of the Corporation which do not appear on the financial statements of the Corporation;

(c) Resolve all disagreements between the Corporation's independent auditors and management regarding financial reporting;

Oversight of Financial Reporting Process and Internal Controls

(a) Review:

- (i) the adequacy and effectiveness of the Corporation's accounting and internal control policies and procedures on a regular basis, including the responsibilities, budget, compensation and staffing of the Corporation's internal audit function, through inquiry and discussions with the Corporation's independent auditors and management;
- (ii) the yearly report prepared by management, and attested to by the Corporation's independent auditors, assessing the effectiveness of the Corporation's internal control over financial reporting and stating management's responsibility for establishing and maintaining adequate internal control over financial reporting prior to its inclusion in the Corporation's Annual Report on Form 10-K; and
- (iii) the Committee's level of involvement and interaction with the Corporation's internal audit function, including the Committee's line of authority and role in appointing and compensating employees in the internal audit function, as well as interaction with key members of financial management;

- (b) Review with the chief executive officer, chief financial officer and independent auditors, periodically, the following:
- (i) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Corporation's ability to record, process, summarize and report financial information; and
 - (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Corporation's internal control over financial reporting;
- (c) Discuss guidelines and policies governing the process by which senior management of the Corporation and the relevant departments of the Corporation, including the person responsible for the Corporation's internal audit function, assess and manage the Corporation's exposure to risk, as well as the Corporation's major financial risk exposures and the steps management has taken to monitor and control such exposures;
- (d) Review with management the progress and results of all internal audit projects, and, when deemed necessary or appropriate by the Committee, assign additional internal audit projects to the person responsible for the Corporation's internal audit function;
- (e) Review with management the Corporation's administrative, operational and accounting internal controls, including any special audit steps adopted in light of the discovery of material control deficiencies;
- (f) Receive periodic reports from the Corporation's independent auditors, management and the person responsible for the Corporation's internal audit function to assess the impact on the Corporation of significant accounting or financial reporting developments that may have a bearing on the Corporation;
- (g) Review and discuss with the independent auditors the results of the year-end audit of the Corporation, including any comments or recommendations of the Corporation's independent auditors and, based on such review and discussions and on such other considerations as it determines appropriate, recommend to the Board whether the Corporation's financial statements should be included in the Annual Report on Form 10-K;
- (h) Establish and maintain free and open means of communication between and among the Committee, the Corporation's independent auditors, the person responsible for the Corporation's internal audit function, and management, including providing such parties with appropriate opportunities to meet separately and privately with the Committee on a periodic basis;

(i) Be consulted from time to time regarding details of the type and presentation of information to be included in the Corporation's earnings press releases (especially the use of "pro forma" or "adjusted" information not prepared in compliance with generally accepted accounting principles), as well as financial information and earnings guidance provided by the Corporation to analysts and rating agencies (any such consultation may be done generally (i.e., discussion of the types of information to be disclosed and type of presentations to be made), and the Committee need not discuss in advance each earnings release or each instance in which the Corporation may provide earnings guidance);

Miscellaneous

(a) Establish and implement policies and procedures for the Committee's review and approval or disapproval of proposed transactions or courses of dealings with respect to which executive officers or directors or members of their immediate families have an interest (including all transactions required to be disclosed by Item 404(a) of Regulation S-K);

(b) Meet periodically with the Corporation's counsel to review legal and regulatory matters, including (i) any matters that may have a material impact on the financial statements of the Corporation and (ii) any matters involving potential or ongoing material violations of law or breaches of fiduciary duty by the Corporation or any of its directors, officers, employees, or agents or breaches of fiduciary duty to the Corporation;

(c) Prepare the report required by the rules of the SEC to be included in the Corporation's annual proxy statement;

(d) Review the Corporation's policies relating to the ethical handling of conflicts of interest and review past or proposed transactions between the Corporation and members of management as well as policies and procedures with respect to officers' expense accounts and perquisites, including the use of corporate assets. The Committee shall consider the results of any review of these policies and procedures by the Corporation's independent auditors;

(e) Review and approve in advance any services provided by the Corporation's independent auditors to the Corporation's executive officers or members of their immediate family;

(f) Review the Corporation's program to monitor compliance with the Corporation's Code of Conduct;

(g) Establish procedures for (i) the receipt, retention and treatment of complaints received by the Corporation regarding accounting, internal accounting controls or auditing matters, and (ii) the confidential, anonymous submission by employees of the Corporation of concerns regarding questionable accounting or auditing matters;

(h) Establish procedures for the receipt, retention and treatment of reports of evidence of a material violation made by attorneys appearing and practicing before the SEC in the representation of the Corporation or any of its subsidiaries, or reports made by the Corporation's chief executive officer or the Corporation's counsel in relation thereto;

(i) Secure independent expert advice to the extent the Committee determines it to be appropriate, including retaining, with or without Board approval, independent counsel, accountants, consultants or others, to assist the Committee in fulfilling its duties and responsibilities, the cost of such independent expert advisors to be borne by the Corporation;

(j) Conduct an annual evaluation of the Committee's performance;

(k) In connection with the Committee's regular reports to the Board, the Committee should review with the Board any issues that arise with respect to the quality or integrity of the Corporation's financial statements, the Corporation's compliance with legal or regulatory requirements, the performance and independence of the Corporation's independent auditors, or the performance of the internal audit function;

(l) Review and assess the adequacy of this Charter on an annual basis; and

(m) Perform such additional activities, and consider such other matters, within the scope of its responsibilities, as the Committee or the Board deems necessary or appropriate.

V. EVALUATION OF THE COMMITTEE

The Committee shall, on an annual basis, evaluate its performance. In conducting this review, the Committee shall evaluate whether this Charter appropriately addresses the matters that are or should be within its scope and shall recommend such changes as it deems necessary or appropriate. The Committee shall address all matters that the Committee considers relevant to its performance, including at least the following: the adequacy, appropriateness and quality of the information and recommendations presented by the Committee to the Board, the manner in which they were discussed or debated, and whether the number and length of meetings of the Committee were adequate for the Committee to complete its work in a thorough and thoughtful manner.

The Committee shall deliver to the Board a report, which may be oral, setting forth the results of its evaluation, including any recommended amendments to this Charter and any recommended changes to the Corporation's or the Board's policies or procedures.

VI. INVESTIGATIONS AND STUDIES; OUTSIDE ADVISERS

The Committee may conduct or authorize investigations into or studies of matters within the Committee's scope of responsibilities, and may retain, at the Corporation's expense, such independent counsel or other consultants or advisers as it deems necessary.

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While the members of the Committee have the duties and responsibilities set forth in this Charter, nothing contained in this Charter is intended to create, or should be construed as creating, any responsibility or liability of members of the Committee, except to the extent otherwise provided under applicable federal or state law.