IsoRay, Inc.
Form 424B5
August 29, 2013

Filed pursuant to

Rule 424(b)(5)

File No. 333-188579

PROSPECTUS SUPPLEMENT dated August 29, 2013

(To Prospectus dated May 28, 2013)

IsoRay, Inc.

3,800,985 Common Units, each consisting of

1 Share of Common Stock and

a Warrant to Purchase 0.816 Shares of Common Stock

and

1,670 Preferred Units, each consisting of

1 Share of Series D Convertible Preferred Stock and

a Warrant to Purchase 1,525.23 Shares of Common Stock

We are offering 3,800,985 common units, each consisting of 1 share of our common stock and a warrant to purchase 0.816 shares of common stock (the “Common Units”), and 1,670.436 preferred units, each consisting of 1 share of Series D Convertible Preferred Stock and a warrant to purchase 1,525.23 shares of common stock (the “Preferred Units”), pursuant to this prospectus supplement and the accompanying prospectus on a firm commitment underwritten basis. The Common Units are being offered at an initial per unit purchase price of $0.535 and the Preferred Units are being offered at an initial per unit purchase price of $1,000. The warrants are all exercisable at $0.72 per share and have a twenty-four month term, with the exercise price and term subject to reduction if shareholder approval is obtained. The shares of common stock and the shares of Series D Convertible Preferred Stock will be issued separately from the warrants but can only be purchased together in this offering.

Each share of our Series D Convertible Preferred Stock is convertible into 1,869.15 shares of our common stock at any time at the option of the holder, subject to adjustment, provided that the holder will be prohibited from converting Series D Convertible Preferred Stock into shares of our common stock if, as a result of such conversion, the holder, together with affiliates, would own more than 9.99% of the total shares of our common stock then issued and outstanding. For a more detailed description of the securities being offered, see the section entitled "Description of the Securities We Are Offering" beginning on page S-4 of this prospectus supplement.

Our common stock is traded on the NYSE MKT under the symbol "ISR." On August 28, 2013, the closing price of our common stock on the NYSE MKT was $0.61 per share. We are not listing our Series D Convertible Preferred Stock or the warrants on an exchange or any trading system and we do not expect that a market for our Series D Convertible Preferred Stock or the warrants will develop.

The aggregate market value of our outstanding common stock held by non-affiliates was approximately $27,850,499 based on 34,618,517 shares of outstanding common stock as of August 28, 2013, of which 33,964,023 shares were held by non-affiliates, and a per share price of $0.82 based on the closing price of our common stock as quoted on the NYSE MKT on August 15, 2013. As of the date hereof and excluding this offering, we have sold no securities pursuant to General Instruction I.B.6. of Form S-3 during the prior twelve calendar month period that ends on, and includes, the date of this prospectus supplement.

Investing in our securities involves a high degree of risk. Before buying any securities, you should read the discussion of material risks of investing in our securities referred to under the heading "Risk Factors" beginning on page S-1 of this prospectus supplement.

	Per Unit	**Total**
Public offering price of Common Units	$0.535	$2,033,526.98
Underwriting discount [1] for Common Units	$0.02675	$101,676.35
Proceeds, before expenses, to us from Common Units	$0.50825	$1,931,850.63
Public offering price of Preferred Units	$1,000.00	$1,670,000.00
Underwriting discount [1] for Preferred Units	$50.00	$83,500.00
Proceeds, before expenses, to us from Preferred Units	$950.00	$1,586,500.00
Total proceeds, before expenses, to us		$3,518,350.63

(1) We have agreed to reimburse the underwriter for certain of its expenses as described under “Underwriting” on page S-6 of this prospectus supplement. Does not include any proceeds to be received from the exercise of the warrants, if any.

Delivery of the securities will take place on or about August 30, 2013, subject to the satisfaction of certain conditions.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Maxim Group LLC

Sole Book-Running Manager

The date of this prospectus supplement is August 29, 2013.

TABLE OF CONTENTS

Prospectus Supplement

Prospectus

ABOUT THIS PROSPECTUS SUPPLEMENT

A registration statement on Form S-3 (File No. 333-188579) utilizing a shelf registration process relating to the securities described in this prospectus supplement has been filed with the Securities and Exchange Commission, or the SEC, and was declared effective on June 14, 2013. Under this shelf registration process, of which this offering is a part, we may, from time to time, sell up to $20,000,000 of common stock and other securities.

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering of our securities and also adds, updates and changes information contained in the accompanying prospectus and the documents incorporated by reference. The second part is the accompanying base prospectus, which gives more general information, some of which may not apply to this offering of our securities. To the extent the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or any document filed prior to the date of this prospectus supplement and incorporated by reference, the information in this prospectus supplement will control. Generally, when we refer to this "prospectus," we are referring to both documents combined, together with any free writing prospectus that we have authorized for use in connection with this offering.

You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus. We have not, and the underwriters have not, authorized anyone to provide you with information that is different. This prospectus supplement is not an offer to sell or solicitation of an offer to buy these securities in any circumstances under which the offer or solicitation is unlawful. You should not assume that the information we have included in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date of this prospectus supplement or the accompanying prospectus, respectively, or that any information we have incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement or of any of our securities. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents we have referred you to in "Incorporation of Certain Documents by Reference" and "Where You Can Find More Information" in this prospectus supplement.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

All statements contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, other than statements of historical facts, that address future activities, events or developments are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, which we refer to as the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. These statements often contain the words "may," "will," "believe," "expect," "anticipate," "intends," "estimate," "forecast," "project," and similar expressions, although not all forward-looking statements contain these words. All statements other than statements of historical fact are statements that could be deemed forward-looking statements, including statements relating but not limited to:

- projections of earnings, revenues or other financial items;
- plans and objectives of management for future operations;
- proposed new products or services;
- future operations, plans, regulatory filings or approvals;
- proposed new products or services, any statements regarding pending or future mergers or acquisitions; and
- future economic conditions or performance, and any statement of assumptions underlying any of the foregoing.

These statements are based on certain assumptions and analyses made by us in light of our experience and our assessment of historical trends, current conditions and expected future developments as well as other factors we believe are appropriate under the circumstances. However, whether actual results will conform to the expectations and predictions of management is subject to a number of risks and uncertainties that may cause actual results to differ materially.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our forward-looking statements are based on the information currently available to us and speak only as of the date of this prospectus supplement, the date on the cover of the accompanying prospectus, or, in the case of forward-looking statements incorporated by reference, as of the date of the filing that includes the statement. New risks and uncertainties arise from time to time, and it is impossible for us to predict these matters or how they may affect us. Over time, our actual results, performance or achievements will likely differ from the anticipated results, performance or achievements that are expressed or implied by our forward-looking statements, and such difference might be significant and materially adverse to our security holders. We do not undertake and specifically decline any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

We have identified some of the important factors that could cause future events to differ from our current expectations and they are described in this prospectus supplement and the accompanying prospectus under the caption "Risk Factors" as well as in our most recent Annual Report on Form 10-K, including without limitation under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in other documents that we may file with the SEC, all of which you should review carefully. Please consider our forward-looking statements in light of those risks as you read this prospectus supplement and the accompanying prospectus.

INDUSTRY AND MARKET DATA

This prospectus supplement and the accompanying prospectus contain and incorporate by reference market data, industry statistics and other data that have been obtained from, or compiled from, information made available by third parties. Although we believe these third-party sources are reliable, we have not independently verified the information. Except as may otherwise be noted, none of the sources cited in this prospectus supplement or the accompanying prospectus has consented to the inclusion of any data from its reports, nor have we sought their consent. In addition, some data are based on our good faith estimates. Such estimates are derived from publicly available information released by independent industry analysts and third-party sources, as well as our own management's experience in the industry, and are based on assumptions made by us based on such data and our knowledge of such industry and markets, which we believe to be reasonable. However, none of our estimates have been verified by any independent source. See "Special Note Regarding Forward-Looking Statements" above.

TRADEMARKS

Proxcelan, the IsoRay logo and IsoRay are our registered trademarks. These trademarks are important to our business. Although we may have omitted the “®” or “TM” trademark designation for such trademarks in this prospectus supplement, all rights to such trademarks are nevertheless reserved. Unless otherwise noted, other trademarks used in this prospectus supplement are the property of their respective holders.

iii

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information appearing elsewhere or incorporated by reference in this prospectus supplement and accompanying prospectus and may not contain all of the information that is important to you. This prospectus supplement and the accompanying prospectus include or incorporate by reference information about the securities we are offering as well as information regarding our business and detailed financial data. After you read this summary, you should read this prospectus supplement and the accompanying prospectus in their entirety, including the information incorporated by reference in this prospectus supplement and the accompanying prospectus, especially the section entitled "Risk Factors." If you invest in our securities, you are assuming a high degree of risk.

Unless the context requires otherwise, in this prospectus, the terms "IsoRay," the "Company," "we," "us," "our" and similar terms refer to IsoRay, Inc. and its operating subsidiary IsoRay Medical, Inc., and, to the extent applicable, its non-operating subsidiary, IsoRay International LLC.

BUSINESS OVERVIEW

In 2003, IsoRay obtained clearance from the FDA for treatment for all solid tumor applications using Cesium-131. Such applications include prostate cancer; ocular melanoma; head, neck and lung tumors; breast cancer; liver cancer; brain cancer; colorectal cancer; gynecological cancer; esophageal cancer; and pancreatic cancer. The brachytherapy seed form of Cesium-131 may be used in surface, interstitial and intracavity applications for tumors with known radio sensitivity. Management believes its Cs-131 technology will allow it to become a leader in the brachytherapy market. Management believes that the IsoRay Proxcelan Cesium-131 brachytherapy seed represents the first major advancement in brachytherapy technology in over 21 years with attributes that could make it the long-term "seed of choice" for internal radiation therapy procedures.

Brachytherapy seeds are small devices used in an interstitial radiation procedure. The procedure has become one of the primary treatments for prostate cancer. The brachytherapy procedure places radioactive seeds as close as possible to (in or near) the cancerous tumor (the word "brachytherapy" means close therapy). The seeds deliver therapeutic radiation thereby killing the cancerous tumor cells while minimizing exposure to adjacent healthy tissue. This procedure allows doctors to administer a higher dose of radiation directly to the tumor. Each seed contains a radioisotope sealed within a welded titanium capsule. When brachytherapy is the only treatment (monotherapy) used in the prostate, approximately 70 to 120 seeds are permanently implanted in the prostate in an outpatient procedure lasting less than one hour. The number of seeds used varies based on the size of the prostate and the activity level specified by the physician. When brachytherapy is combined with external beam radiation or intensity modulated radiation therapy (dual therapy), then approximately 40 to 80 seeds are used in the procedure. The isotope decays over time and eventually the seeds become inert. The seeds may be used as a primary treatment or in conjunction with other treatment modalities, such as chemotherapy, or as treatment for residual disease after excision of primary tumors. The number of seeds for other treatment sites will vary from as few as 8 to 16 to as many as 117 to 123 depending on the type of cancer, the location of the tumor being treated and the type of therapy being utilized.

IsoRay began production and sales of Proxcelan Cesium-131 brachytherapy seeds in October 2004 for the treatment of prostate cancer after clearance of its premarket notification (510(k)) by the Food and Drug Administration (FDA). In December 2007, IsoRay began selling its Proxcelan Cs-131 seeds for the treatment of ocular melanoma, however, the market for the treatment has been limited generating a minimal amount of revenue for the Company. The Company continues to make the treatment available to interested physicians and medical facilities. In June 2009, the Company began selling its Proxcelan Cs-131 seeds for treatment of head and neck tumors, commencing with treatment of a tumor that could not be accessed by other treatment modalities. Upon obtaining clearance in August 2009 from the FDA to permit loading Cesium-131 into bioabsorbable braided strands, this clearance permits the product to be commercially distributed for treatment of lung, head and neck tumors as well as tumors in other organs. During the fiscal year ended June 30, 2010, the Company expanded the number of areas of the body in which the Proxcelan Cs-131 seeds were being utilized for treatment by adding lung cancer in August 2009, colorectal cancer in October 2009, and chest wall cancer in December 2009. During the fiscal year ended June 30, 2012, the Company continued the expansion in the number of areas of the body in which the Proxcelan Cs-131 seeds were being utilized through the addition of the treatment of brain cancer in September 2010 and the treatment of gynecological cancer in December 2010. While the Company believes that it has identified the delivery systems for breast cancer, management focused in fiscal 2012 on obtaining its regulatory clearances and final research and development of its GliaSite® Radiation Therapy System and marketing its brain and lung products. The GliaSite® Radiation Therapy System is the world's only system that enables doctors to use liquid radiation (presently Iodine-125 in liquid form until Cesium-131 is approved for use in liquid form) in areas where the cancer is most likely to remain after brain surgery and tumor removal. While management has not identified new opportunities to expand treatment to other sites in the body, it continues to investigate opportunities with interested physicians and medical facilities. Management is now focusing primarily on the brain and lung markets while the Company is researching delivery systems other than those historically used by the Company.

In March 2011, the Company received clearance to commercially deliver Proxcelan™ Cesium-131 brachytherapy seeds that are preloaded into bioabsorbable braided strands into Europe. This clearance permits the product to be commercially distributed for treatment of lung, head and neck tumors as well as tumors in other organs in Europe.

In August 2011, IsoRay Medical received clearance from the FDA for its premarket notification (510(k)) for the GliaSite® radiation therapy system. The GliaSite® Radiation Therapy System is the only FDA-cleared balloon catheter device used in the treatment of brain cancer.

In May 2012, IsoRay Medical received a CE mark for the GliaSite® Radiation Therapy System which states that the Company conforms with the product requirements of the European Council Directive 93/42/EEC. The CE mark allows the GliaSite® Radiation Therapy System to be sold in 31 European countries and to be marketed in the European Free Trade Associate member states and the European Union.

In fiscal 2013, the Company began using a system developed at the Barrow Neurologic Institute to deliver doses of Cesium-131 to treat malignant meningioma, brain metastases, and primary cancers of the brain. A multi-institutional study was conducted to explore use by Cesium-131 laden strands placed directly into the cavity following surgical resection of brain metastases. A new five year study of the results of treating prostate cancer with Cesium-131 was published as well.

As of the date of this prospectus supplement, the Company has a distribution agreement in effect for distribution of its GliaSite® Radiation Therapy System in Germany, Austria, Italy, Switzerland and Luxembourg, where nominal sales have been made to date.

As of the date of this prospectus supplement, the Company has distribution agreements in effect for distribution of its Cesium-131 products and GliaSite® system in Greece and Australia. No sales have been made to date as the distributors in each of these countries are waiting on licensing approvals in those countries.

OUR CORPORATE INFORMATION

Our principal executive offices are located at 350 Hills Street, Suite 106, Richland, Washington 99354, and our telephone number is (509) 375-1202. We maintain an Internet website at *www.isoray.com*. Information on or accessible through our website does not constitute part of this prospectus supplement and should not be relied upon in connection with making any investment decision with respect to the securities offered by this prospectus supplement.

Although our predecessor operating company was organized in 1998, IsoRay, Inc. was incorporated in 1983 in Minnesota and operated under the name Century Park Pictures Corporation until the merger with IsoRay Medical, Inc. on July 28, 2005.

THE OFFERING

The following is a brief summary of some of the terms of the offering and is qualified in its entirety by reference to the more detailed information appearing elsewhere in this prospectus supplement and the accompanying prospectus. For a more complete description of the terms of our securities, see the "Description of the Securities We Are Offering" section in this prospectus supplement.

Securities We Are Offering	3,800,985 Common Units, each consisting of 1 share of our common stock, par value $0.001 per share, and a warrant to purchase 0.816 shares of our common stock, and 1,670 Preferred Units, each consisting of 1 share of our Series D Convertible Preferred Stock, par value $0.001 per share, and a warrant to purchase 1,525.23 shares of common stock, having an aggregate gross offering price of $3,703,527. This prospectus supplement also relates to the offering of the shares of common stock issuable upon exercise of the Warrants and conversion of the Series D Convertible Preferred Stock.
Public Offering Price	$0.535 per Common Unit $1,000 per Preferred Unit
Common Stock Outstanding Before This Offering	34,618,517 shares as of August 28, 2013.
Common Stock To Be Outstanding After This Offering	38,419,502 shares, assuming no other shares of common stock are issued, no warrants offered hereby are exercised, and that none of the shares of Series D Convertible Preferred Stock offered hereby are converted into shares of common stock.
Preferred Stock Conversion	Each share of Series D Convertible Preferred Stock is convertible into 1,869.15 shares of our common stock, subject to adjustment, at any time at the option of the holder, provided that the holder will be prohibited from converting shares of Series D Convertible Preferred Stock into shares of our common stock if, as a result of the conversion, the holder, together with its affiliates, would beneficially own more than 9.99% of the total number of shares of our common stock then issued and outstanding, which is referred to herein as the “Beneficial Ownership Limitation”.
Preferred Stock Voting Rights	Except as required by law, shares of Series D Convertible Preferred Stock shall have no voting rights.

Warrants	The Company will issue warrants (the "Warrants") exercisable in the aggregate for 5,648,738 shares of common stock. The exercise price of each of the Warrants will be equal to $0.72, subject to adjustment by shareholder vote. The Warrants will have exercise terms of twenty-four months from their original issuance date, are not exercisable in the first six months after issuance, may have their term adjusted by shareholder vote, and are callable by the Company.
Use of Proceeds	We estimate that the net proceeds to us from this offering after expenses and commissions will be approximately $3,318,351. We intend to use the net proceeds from the sale of our securities offered by this prospectus supplement for general corporate purposes, including without limitation, working capital needs. See "Use of Proceeds."

vi

Lock-up Agreements	Our executive officers and directors have agreed to a 90-day "lock-up" period from the date of the underwriting agreement with respect to the common shares that they own.
Risk Factors	Our business is subject to substantial risk. Please carefully consider the "Risk Factors" beginning on page S-1 of this prospectus supplement, page 3 of the accompanying prospectus and other information included and incorporated by reference in this prospectus supplement and the accompanying prospectus including, but not limited to, the "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended June 30, 2012 (together with any material changes thereto contained in subsequent filed Quarterly Reports on Form 10-Q), for a discussion of the factors you should consider carefully before deciding to purchase these securities. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. You should be able to bear a complete loss of your investment.
Dividends	We have not paid any cash dividends on our common stock and currently intend to retain any earnings to fund our working capital needs and growth opportunities. Shares of Series D Convertible Preferred Stock are entitled to dividends in the same form as dividends actually paid on shares of common stock. We shall not pay any dividends on shares of common stock (other than dividends in the form of common stock) unless the holders of Series D Convertible Preferred Stock shall first receive dividends on shares of Series D Convertible Preferred Stock held by them (on an as-if-converted-to-common-stock basis) in an amount equal to and in the same form as any such dividends (other than dividends in the form of common stock) to be paid on shares of the common stock.
Preferred Stock and Warrant Listing	There is no established public trading market for the Series D Convertible Preferred Stock or the Warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series D Convertible Preferred Stock or the Warrants on any national securities exchange or trading system. We will apply to list the shares of common stock, the shares of common stock issuable upon exercise of the Warrants, and the shares of common stock issuable upon conversion of the Series D Convertible Preferred Stock on the NYSE MKT.
NYSE MKT Symbol	ISR

Except as otherwise provided herein, the information contained in this prospectus supplement assumes that none of the Warrants sold hereunder have been exercised and none of the Series D Convertible Preferred Stock sold hereunder has been converted.

The number of shares of our common stock outstanding before this offering is based on approximately 34,618,517 shares outstanding as of August 28, 2013 and excludes:

- 3,121,480 shares issuable upon conversion of the Series D Convertible Preferred Stock being offered hereby;

- 5,648,738 shares issuable upon exercise of the Warrants being offered hereby;
- 1,957,033 shares of common stock issuable upon the exercise of warrants outstanding at August 28, 2013 at a weighted average exercise price of $1.38 per share;
- 59,065 shares of common stock issuable upon the conversion of preferred stock outstanding at August 28, 2013;
- 2,312,072 shares of common stock issuable upon the exercise of options outstanding at August 28, 2013 at a weighted average exercise price of $1.83 per share; and
- 1,365,146 shares of common stock reserved for future stock option grants as of August 28, 2013 under our equity compensation plans.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks listed below and other information included and incorporated by reference in this prospectus supplement and accompanying prospectus. There may also be risks of which we are currently unaware, or that we currently regard as immaterial based on the information available to us that later prove to be material. If any of these risks occur, our business, operating results and financial condition could be seriously harmed, the trading price of our common stock could decline, and you could lose some or all of your investment.

Risks Related to this Offering

The Price Of Our Common Stock May Be Adversely Affected By The Future Issuance And Sale Of Shares Of Our Common Stock Or Other Equity Securities. We cannot predict the size of future issuances or sales of our common stock or other equity securities, including those made pursuant to the Warrants and Series D Convertible Preferred Stock purchased hereunder, future acquisitions or capital raising activities, or the effect, if any, that such issuances or sales may have on the market price of our common stock. The issuance and sale of substantial amounts of common stock or other equity securities or announcement that such issuances and sales may occur, could adversely affect the market price of our common stock.

Future Sales By Shareholders, Or The Perception That Such Sales May Occur, May Depress The Price Of Our Common Stock. The sale or availability for sale of substantial amounts of our shares in the public market, including shares issuable upon conversion of outstanding preferred stock or exercise of common stock warrants and options, or the perception that such sales could occur, could adversely affect the market price of our common stock and also could impair our ability to raise capital through future offerings of our shares. As of August 28, 2013, we had 34,618,517 outstanding shares of common stock, and the following additional shares were reserved for issuance: 2,312,072 shares upon exercise of outstanding options, 1,957,033 shares upon exercise of outstanding warrants, and 59,065 shares upon conversion of preferred stock. Any decline in the price of our common stock may encourage short sales, which could place further downward pressure on the price of our common stock and may impair our ability to raise additional capital through the sale of equity securities.

The Issuance Of Shares Upon Exercise Of Derivative Securities May Cause Immediate And Substantial Dilution To Our Existing Shareholders. The issuance of shares upon conversion of the preferred stock and the exercise of common stock warrants and options may result in substantial dilution to the interests of other shareholders since these selling shareholders may ultimately convert or exercise and sell all or a portion of the full amount issuable upon exercise. If all derivative securities were converted or exercised into shares of common stock, including the Warrants and Series D Convertible Preferred Stock issuable in this offering, there would be approximately an additional 13,098,388 shares of common stock outstanding as a result. The issuance of these shares will have the effect of further diluting the proportionate equity interest and voting power of holders of our common stock.

Failure to Comply with NYSE MKT Listing Standards And Any Resulting Delisting Could Adversely Affect The Market For Our Common Stock. Our common stock is presently listed on the NYSE MKT. The NYSE MKT will consider delisting a company's securities if, among other things, the company fails to maintain minimum stockholders equity or the company has sustained losses which are so substantial in relation to its overall operations or its existing financial resources, or its financial condition has become so impaired that it appears questionable, in the opinion of the NYSE MKT, as to whether such issuer will be able to continue operations and/or meet its obligations as they mature. There can be no assurance that we will be able to maintain our listing on the NYSE MKT indefinitely. If we do not raise the capital sought in this offering, we expect to fall below the minimum stockholders equity requirement and may have already fallen below such requirement for the quarter ending June 30, 2013. In the event that our common stock is delisted from the NYSE MKT, trading, if any, in the common stock would be conducted in the over-the-counter market. As a result, our shareholders would likely find it more difficult to dispose of, or to obtain accurate quotations as to the market value of, our common stock.

There Is No Public Market For The Series D Convertible Preferred Stock or the Warrants To Purchase Common Stock In This Offering. There is no established public trading market for the Warrants or the Series D Convertible Preferred Stock being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Warrants or the Series D Convertible Preferred Stock on any securities exchange or for quotation on the any securities market. Without an active market, the liquidity of the Warrants and the Series D Convertible Preferred Stock will be limited.

Since We Have Broad Discretion In How We Use The Proceeds From This Offering, We May Use The Proceeds In Ways In Which You Disagree. Our management will have significant flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for our company. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

Purchasers Of The Units Will Incur Immediate Dilution. Purchasers of securities in this offering will experience immediate and substantial dilution because the purchase price of the securities will be higher than the net tangible book value per share of the outstanding common stock immediately after this offering. In addition, purchasers will experience dilution, which may be substantial, when we issue additional shares of common stock that we are permitted or required to issue under options, warrants, our stock option plans or other employee or director compensation plans. In this offering, after deducting the underwriting discount and estimated offering expenses payable by us, you will experience immediate dilution of $0.31 per share of common stock, representing the difference between our as adjusted net tangible book value per share as of March 31, 2013 after giving effect to this offering of common stock. See the section entitled "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase securities in this offering.

Holders Of The Warrants and the Series D Convertible Preferred Stock Will Have No Voting Rights Or Other Rights As Common Shareholders Until They Exercise Or Convert Their Warrants or Series D Convertible Preferred Stock. Until holders of the Warrants and the Series D Convertible Preferred Stock offered hereby acquire shares of our common stock upon exercise or conversion, they will have no rights with respect to our common stock but holders of the Series D Convertible Preferred Stock will be paid dividends if any dividends are paid to shareholders of common stock. The Series D Convertible Preferred Stock is non-voting. Upon exercise of the Warrants or conversion of the Series D Convertible Preferred Stock, holders will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise or conversion date.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the securities that we are offering hereby will be approximately $3,318,351, after deducting the underwriting discount and the estimated offering expenses payable by us, and assuming none of the Warrants are exercised.

We intend to use the net proceeds from the sale of our securities offered by this prospectus supplement for our working capital needs and general corporate purposes.

Although we have identified some of the potential uses of the proceeds from this offering, we have and reserve broad discretion in the application of these proceeds. Accordingly, we reserve the right to use these proceeds for different purposes or uses which we have not listed above, particularly if there is a change in demand for certain applications of our Cesium-131 and other products which may require increased investment in protocols and research studies and the hiring of additional sales staff. See "Risk Factors – *Since We Have Broad Discretion In How We Use The Proceeds From This Offering, We May Use The Proceeds In Ways In Which You Disagree*."

Based on our current plans, we believe that our net proceeds from this offering, together with our existing cash, cash equivalents and restricted cash will be sufficient to fund our anticipated operating expenses and capital expenditures at least through fiscal year 2015.

Pending any ultimate use of any portion of the proceeds from this offering, we intend to invest the proceeds in short – and medium – term interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

In addition, while we have not entered into any agreements, commitments or understandings relating to any significant transaction as of the date of this prospectus supplement, we may use a portion of the proceeds to pursue acquisitions, joint ventures and other strategic transactions.

Proceeds from the exercise of the Warrants being sold through this offering are estimated to be $4,067,091, assuming all Warrants are exercised using cash and assuming the exercise price is not reduced if shareholder approval is not obtained, and may be received by the Company at any time following the offering depending on when and if the Warrants are exercised by investors. We will not receive any proceeds from the Warrants unless and until the Warrants are exercised for cash. These proceeds when and if received are expected to be used for general corporate purposes, including without limitation, capital expenditures and working capital needs. The amounts and timing of our use of proceeds from the Warrants will vary depending on a number of factors, including when the Warrants are exercised, the amount of cash generated or used by our operations, and the rate of growth, if any, of our business. As a result, we will retain broad discretion in the allocation of the proceeds that we receive upon exercise of the Warrants.

DILUTION

If you invest in our Common Units and Preferred Units, your interest in the common stock and the common stock underlying the Series D Convertible Preferred Stock may be diluted to the extent of the difference between the price you pay for each share of common stock and the net tangible book value per share of our common stock immediately after this offering.

Our net tangible book value on March 31, 2013 was approximately $6,041,387 or approximately $0.175 per share. "Net tangible book value" is total assets minus the sum of liabilities and intangible assets. "Net tangible book value per share" is net tangible book value divided by the total number of shares of common stock outstanding at March 31, 2013.

Net tangible book value dilution per share to new investors represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after completion of this offering. After giving effect to this offering and conversion of the Series D Convertible Preferred Stock and deducting the underwriting discount and our estimated offering expenses, our as adjusted net tangible book value as of March 31, 2013 would have been $0.23 per share. This amount represents an immediate increase in net tangible book value of $0.05 per share to existing shareholders and an immediate dilution of $0.31 per share to purchasers of common stock in this offering at the assumed public offering price, as illustrated in the following table:

Public offering price per share of common stock, net of underwriting discount	$0.51
Public offering price per share of Series D Convertible Preferred stock, net of underwriting discount	$950.00
Net tangible book value per share as of March 31, 2013	$0.18
Increase in net tangible book value per share attributable to this offering	$0.05
Pro forma net tangible book value per share as of March 31, 2013 after giving effect to this offering	$0.23
Dilution per share to new investors in this offering	$0.31

The table above excludes, as of March 31, 2013, the following securities:

- the 5,648,738 shares of common stock issuable upon exercise of the Warrants offered hereunder;
- 1,957,033 shares of common stock issuable upon the exercise of warrants with a weighted average exercise price of $1.38;
- 59,065 shares of common stock issuable upon the conversion of preferred stock;
- 2,312,072 shares of common stock issuable upon the exercise of options with a weighted average exercise price of $1.83; and
- 1,365,146 shares of common stock reserved for future stock option grants under our equity compensation plans.

To the extent that any of these options, warrants and convertible securities are exercised or converted, there may be further dilution to new investors.

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

In this offering, we are offering 3,800,985 Common Units sold to the public at $0.535 per unit and 1,670 Preferred Units sold to the public at $1,000 per unit. The Common Units each consist of 1 share of common stock and a warrant to purchase 0.816 shares of common stock, and the Preferred Units each consist of 1 share of Series D Convertible Preferred Stock and a warrant to purchase 1,525.23 shares of common stock. Units will be not be issued or certificated. The Warrants are immediately separable from the shares of common stock and the shares of Series D Convertible Preferred Stock and will be issued separately.

The shares of common stock issuable upon conversion of the Series D Convertible Preferred Stock and exercise of the Warrants are also being offered pursuant to this prospectus supplement and the accompanying prospectus.

Description of the Common Stock

A description of the common stock we are offering pursuant to this prospectus supplement is set forth under the heading "Description of Capital Stock," starting on page 4 of the accompanying prospectus. As of August 28, 2013, we had 34,618,517 shares of common stock outstanding.

Description of the Series D Convertible Preferred Stock

The material terms and provisions of the Series D Convertible Preferred Stock being offered pursuant to this prospectus supplement and the accompanying prospectus are summarized below. This summary is subject to, and qualified in its entirety by, the Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock to be filed as an exhibit to our current report on Form 8-K, to be filed with the SEC.

General. We may issue our preferred stock, par value $0.001 per share, from time to time in one or more series. Of the 7,000,000 shares of authorized preferred stock prior to designation of the Series D Convertible Preferred Stock, 1,000,000 are designated as Series A Preferred Stock, 5,000,000 are designated as Series B Preferred Stock, and 1,000,000 are designated as Series C Junior Participating Preferred Stock. The Series C preferred shares are related to our 2007 Share Rights Agreement. As of August 28, 2013, no shares of our Series A or Series C preferred stock were outstanding and 59,065 shares of our Series B preferred stock were outstanding. Our board of directors has the authority to issue shares of preferred stock in one or more series and to fix the rights of each series. These rights may include dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, redemption prices, liquidation preferences, sinking fund terms, and the number of shares that constitute any series. The board of directors may exercise this authority without any further action by our shareholders. Our board of directors has designated 1,671 shares of Series D Convertible Preferred Stock.

Rank. The Series D Convertible Preferred Stock ranks (1) on parity with our common stock on an "as converted" basis, (2) junior to our Series A and Series B Preferred Stock, (3) on parity with our Series C Junior Participating Preferred Stock, (4) senior to any series of our capital stock hereafter created specifically ranking by its terms junior to the Series D Convertible Preferred Stock, (5) on parity with any series of our capital stock hereafter created specifically ranking by its terms on parity with the Series D Convertible Preferred Stock, and (6) junior to any series of our capital stock hereafter created specifically ranking by its terms senior to the Series D Convertible Preferred Stock in each case, as to dividends or distributions of assets upon our liquidation, dissolution or winding up whether voluntary or involuntary.

Conversion. Each share of Series D Convertible Preferred Stock is convertible into 1,869.15 shares of our common stock (subject to adjustment as provided in the certificate of designation for the Series D Convertible Preferred Stock) at any time at the option of the holder, provided that the holder will be prohibited from converting shares of Series D Convertible Preferred Stock into shares of our common stock if, as a result of the conversion, the holder, together with its affiliates, would beneficially own more than 9.99% of the total number of shares of our common stock then issued and outstanding, which is referred to herein as the “Beneficial Ownership Limitation”.

Voting Rights. Except as required by law, shares of Series D Convertible Preferred Stock shall not have the right to vote on any matter other than those set forth in the Certificate of Designation with the potential to specifically adversely affect the Series D Convertible Preferred Stock.

Dividends. Shares of Series D Convertible Preferred Stock are entitled to dividends in the same form as dividends actually paid on shares of common stock. Additionally, we shall not pay any dividends on shares of common stock (other than dividends in the form of common stock) unless the holders of Series D Convertible Preferred Stock shall first receive dividends on shares of Series D Convertible Preferred Stock held by them (on an as-if-converted-to-common-stock basis) in an amount equal to and in the same form as any such dividends (other than dividends in the form of common stock) to be paid on shares of the common stock.

Redemption. We are not obligated to redeem or repurchase any shares of Series D Convertible Preferred Stock. Series D Convertible Preferred Stock is not otherwise entitled to any redemption rights, or mandatory sinking fund or analogous fund provisions.

Listing. There is no established public trading market for the Series D Convertible Preferred Stock and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series D Convertible Preferred Stock on any national securities exchange or trading system.

Fundamental Transactions. If at any time the Series D Convertible Preferred Stock is outstanding we effect a merger or other change of control transaction, as described in the certificate of designation and referred to as a fundamental transaction, then, a holder will have the right to receive, upon any subsequent conversion of a share of Series D Convertible Preferred Stock (in lieu of conversion shares) for each issuable conversion share, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such fundamental transaction if it had been, immediately prior to such fundamental transaction, the holder of the shares of common stock into which such holder's shares of Series D Convertible Preferred Stock is then convertible.

Description of the Warrants

The material terms and provisions of the Warrants being offered pursuant to this prospectus supplement and the accompanying p