

SPIRE Corp  
Form 10-Q  
November 10, 2011

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934  
For the quarterly period ended September 30, 2011; or

Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number: 0-12742

Spire Corporation  
(Exact name of registrant as specified in its charter)

Massachusetts 04-2457335  
(State or other jurisdiction of incorporation or (I.R.S. Employer Identification Number)  
organization)

One Patriots Park, Bedford, Massachusetts 01730-2396  
(Address of principal executive offices) (Zip Code)  
781-275-6000  
(Registrant's telephone number including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company

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(Do not check if a smaller reporting  
company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  
Yes  No

The number of shares of the registrant's common stock outstanding as of November 7, 2011 was 8,362,633.

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## PART I. FINANCIAL INFORMATION

## Item 1. Unaudited Condensed Consolidated Financial Statements

## SPIRE CORPORATION AND SUBSIDIARIES

## UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands, except share amounts)

	September 30, 2011	December 31, 2010
Assets		
Current assets		
Cash and cash equivalents	\$2,324	\$6,259
Restricted cash	21	21
Accounts receivable – trade, net	4,563	7,324
Inventories, net	15,001	10,932
Deferred cost of goods sold	3,903	1,018
Deposits on equipment for inventory	652	88
Prepaid expenses and other current assets	631	809
Total current assets	27,095	26,451
Property and equipment, net	3,625	4,588
Intangible and other assets, net	687	820
Available-for-sale investments, at quoted market value (cost of \$2,002 and \$1,980 at September 30, 2011 and December 31, 2010, respectively)	2,144	2,426
Deposit – related party	300	300
Total assets	\$33,851	\$34,585
Liabilities and Stockholders' Equity		
Current liabilities		
Current portion of capital lease obligation	46	44
Revolving line of credit	1,157	1,157
Accounts payable	3,327	6,487
Accrued liabilities	5,214	4,221
Advances on contracts in progress	13,899	9,010
Liabilities of discontinued operations	135	366
Total current liabilities	23,778	21,285
Long-term portion of capital lease obligation	24	58
Deferred compensation	2,144	2,426
Other long-term liabilities	1,076	911
Total long-term liabilities	3,244	3,395
Total liabilities	27,022	24,680
Stockholders' equity		
Common stock, \$0.01 par value; 20,000,000 shares authorized; 8,362,633 and 8,360,133 shares issued and outstanding on September 30, 2011 and December 31, 2010, respectively	84	84
Additional paid-in capital	22,294	21,979
Accumulated deficit	(15,691)	(12,604)
Accumulated other comprehensive income	142	446
Total stockholders' equity	6,829	9,905

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Total liabilities and stockholders' equity	\$33,851	\$34,585
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The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES  
 UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS  
 (in thousands, except share and per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2011	2010	2011	2010
Net sales and revenues				
Sales of goods	\$6,164	\$17,235	\$33,542	\$51,520
Contract research and service revenues	2,779	3,410	8,505	10,335
Total net sales and revenues	8,943	20,645	42,047	61,855
Cost of sales and revenues				
Cost of goods sold	4,499	14,439	25,263	42,978
Cost of contract research and services	2,394	2,356	6,871	7,607
Total cost of sales and revenues	6,893	16,795	32,134	50,585
Gross margin	2,050	3,850	9,913	11,270
Operating expenses				
Selling, general and administrative expenses	3,678	4,620	12,104	13,827
Internal research and development expenses	114	280	786	939
Total operating expenses	3,792	4,900	12,890	14,766
Gain on termination of contracts	—	—	—	837
Operating loss from continuing operations	(1,742)	(1,050)	(2,977)	(2,659)
Interest expense, net	(26)	(24)	(91)	(163)
Foreign exchange gain (loss)	1	(8)	(1)	(21)
Total other expense, net	(25)	(32)	(92)	(184)
Loss from continuing operations before income tax benefit (provision)	(1,767)	(1,082)	(3,069)	(2,843)
Income tax benefit (provision) - continuing operations	(3)	167	(18)	1,146
Loss from continuing operations	(1,770)	(915)	(3,087)	(1,697)
Loss from discontinued operations before sale of business unit	—	—	—	(123)
Gain on sale of business unit	—	—	—	2,604
Income tax provision - discontinued operations	—	—	—	(992)
Income from discontinued operations, net of tax	—	—	—	1,489
Net loss	\$(1,770)	\$(915)	\$(3,087)	\$(208)
Basic and diluted income (loss) per share:				
From continuing operations, net of tax	\$(0.21)	\$(0.11)	\$(0.37)	\$(0.21)
From discontinued operations, net of tax	—	—	—	0.18
Basic and diluted loss per share	\$(0.21)	\$(0.11)	\$(0.37)	\$(0.03)

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Weighted average number of common and common equivalent shares outstanding – basic	8,362,633	8,338,188	8,361,891	8,336,406
Weighted average number of common and common equivalent shares outstanding – diluted	8,362,633	8,338,188	8,361,891	8,336,406

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

SPIRE CORPORATION AND SUBSIDIARIES  
 UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
 (in thousands)

	Nine Months Ended September 30,	
	2011	2010
Cash flows from operating activities:		
Net loss	\$(3,087	) \$(208
Less: Net income from discontinued operations, net of tax	—	1,489
Loss from continuing operations	(3,087	) (1,697
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	1,388	1,201
Deferred tax benefit	—	(992
Deferred compensation	(304	) 74
Stock-based compensation	306	374
Provision for accounts receivable reserve	(24	) (111
Provision for inventory reserve	657	122
Changes in assets and liabilities:		
Restricted cash	—	1,320
Accounts receivable	2,785	1,240
Inventories	(4,726	) 10,083
Deferred cost of goods sold	(2,885	) 4,972
Deposits, prepaid expenses and other current assets	(386	) (41
Accounts payable, accrued liabilities and other liabilities	(2,002	) (7,663
Advances on contracts in progress	4,889	(11,311
Net cash used in operating activities of continuing operations	(3,389	) (2,429
Net cash used in operating activities of discontinued operations	(231	) (1,182
Net cash used in operating activities	(3,620	) (3,611
Cash flows from investing activities:		
Purchase of property and equipment	(235	) (690
Additions to intangible and other assets	(57	) (154
Net cash used in investing activities of continuing operations	(292	) (844
Net cash provided by investing activities of discontinued operations	—	2,646
Net cash (used in) provided by investing activities	(292	) 1,802
Cash flows from financing activities:		
Principal payments on capital lease obligations	(32	) (29
Principal payments on equipment line of credit	—	(768
Proceeds from exercise of stock options	9	9
Net cash used in financing activities	(23	) (788
Net decrease in cash and cash equivalents	(3,935	) (2,597
Cash and cash equivalents, beginning of period	6,259	8,999
Cash and cash equivalents, end of period	\$2,324	\$6,402
Supplemental disclosures of cash flow information:		
Interest paid	\$91	\$178
Interest received	\$—	\$15
Income taxes paid (refunded), net	\$(31	) \$10



The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES  
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

September 30, 2011 and 2010

1. Description of the Business

Spire Corporation (“Spire” or the “Company”) develops, manufactures and markets highly-engineered products and services in three principal business areas: (i) capital equipment for the photovoltaic solar industry, (ii) biomedical and (iii) optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all three business areas, discussed below.

In the photovoltaic solar area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells, provides photovoltaic systems for application to powering buildings with connection to the utility grid and supply photovoltaic materials. The Company’s equipment has been installed in approximately 200 factories in 50 countries.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

In the optoelectronics area, the Company provides custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

On December 14, 2009, the Company completed the sale of its medical products business unit, which develops and markets coated and uncoated hemodialysis catheters and related devices for the treatment of chronic kidney disease (the “Medical Products Business Unit”), to Bard Access Systems, Inc. (“Bard”). Accordingly, the results and liabilities of the Medical Products Business Unit are being presented herein as discontinued operations. See Note 14 to the unaudited condensed consolidated financial statements.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from the Company’s solar equipment line, delivery of solar systems and solar materials. Export sales amounted to 67% and 57% of net sales and revenues for the three and nine months ended September 30, 2011, respectively. Export sales amounted to 30% and 37% of net sales and revenues for the three and nine months ended September 30, 2010, respectively.

The Company has incurred operating losses from continuing operations in 2011 and 2010. Operating loss from continuing operations was \$1.7 million and \$3.0 million for the three and nine months ended September 30, 2011, respectively, and \$1.1 million and \$2.7 million for the three and nine months ended September 30, 2010, respectively. Net cash used in operating activities was \$3.6 million for the nine months ended September 30, 2011 and 2010. As of September 30, 2011, the Company had unrestricted cash and cash equivalents of \$2.3 million compared to \$6.3 million as of December 31, 2010. The Company has numerous options on how to fund future operational losses or working capital needs, including but not limited to sales of equity, bank debt or the sale or license of assets and technology, as it has done in the past; however, there are no assurances that the Company will be able to sell equity, obtain or access bank debt, or sell or license assets or technology on a timely basis and at

appropriate values. The maturity date of the Company's credit facilities is December 31, 2011. The Company has developed several plans including cost containment efforts and outside financing to offset a decline in business due to global economic conditions. As a result, the Company believes it has sufficient resources to finance its current operations through at least September 30, 2012.

## 2. Interim Financial Statements

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission ("SEC") regarding interim financial reporting. Certain information and footnote disclosures normally included in consolidated financial statements prepared in accordance with accounting principles generally accepted in the United States of America have been condensed or omitted in accordance with such rules and regulations. These unaudited condensed consolidated financial statements should be read in conjunction with the annual audited consolidated financial statements and notes thereto for the year ended December 31, 2010, included in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission.

In the opinion of management, the accompanying unaudited condensed consolidated financial statements contain all adjustments (consisting of normal recurring adjustment) necessary to fairly present the Company's financial position as of September 30, 2011 and December 31, 2010 and the results of its operations for the three and nine months ended September 30, 2011 and 2010 and cash flows for the nine months ended September 30, 2011 and 2010. The results of operations for the three and nine months ended September 30, 2011 are not necessarily indicative of the results to be expected for the fiscal year ending December 31, 2011. The unaudited condensed consolidated balance sheet as of December 31, 2010 has been derived from audited financial statements as of that date. During the second quarter of 2009, the Company began pursuing an exclusive sales process of its Medical Products Business Unit. On December 14, 2009, the Company completed the sale of the Medical Products Business Unit to Bard. Accordingly, the results of operations, assets and liabilities of the Medical Products Business Unit are being presented herein as discontinued operations. See Note 14 to the unaudited condensed consolidated financial statements.

### Summary of Significant Accounting Policies

With the exception of the Company's revenue recognition policy which has been updated below, the significant accounting policies followed by the Company are set forth in Note 2 to the Company's consolidated financial statements in its Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC.

#### Revenue Recognition

The Company derives its revenues from continuing operations from three primary sources: (1) commercial products including, but not limited to, solar energy manufacturing equipment, solar energy systems and solar energy materials; (2) biomedical and semiconductor processing services; and (3) United States government funded research and development contracts

The Company generally recognizes product revenue upon shipment of products provided there are no uncertainties regarding customer acceptance, persuasive evidence of an arrangement exists, the sales price is fixed or determinable, and collectability is reasonably assured. These criteria are generally met at the time of shipment when the risk of loss and title passes to the customer.

The Company's OEM (original equipment manufacturer) capital equipment solar energy business builds complex customized machines to order for specific customers. It is the Company's policy to recognize revenues for this equipment when title of the product has passed to the customer, provided that customer acceptance is obtained prior to shipment and the equipment is expected to operate the same in the customer's environment as it does in the Company's environment. When an arrangement with the customer includes future obligations or customer acceptance, revenue is recognized when those obligations are met or customer acceptance has been achieved. Typically, the Company is able to separate arrangements with multiple elements into more than one unit of accounting as it relates to the passage of title, training and installation services. The Company allocates total fees under contract to each element using the relative fair value method and revenue is recognized upon delivery of each element.

In October 2009, the FASB issued Accounting Standard Update No. 2009-13 ("ASU 2009-13"), Multiple Deliverable Revenue Arrangements, amending the accounting standards for multiple-element revenue arrangements to:

- provide updated guidance on how multiple deliverables that exist in an arrangement should be separated, and how the consideration should be allocated;
- require an entity to allocate revenue in an arrangement using estimated selling prices ("ESP") of each element if a vendor does not have vendor-specific objective evidence of selling price ("VSOE") or third-party evidence of selling price ("TPE"); and
- eliminate the use of the residual method and require a vendor to allocate revenue using the relative selling price method.

The Company applied the provisions of this accounting guidance prospectively for applicable arrangements entered into or materially modified after January 1, 2011 (the beginning of the Company's fiscal year), which had a material impact on its consolidated financial statements. Total net sales and revenues for the three and nine months ended September 30, 2011 were \$8.9 million and \$42.0 million, respectively, with the application of ASU 2009-13 and would have been approximately \$8.9 million and \$40.3 million for the three and nine months ended September 30, 2011, respectively, had the Company not applied ASU 2009-13. The application of ASU 2009-13 could result in an increase in revenue for the remainder of 2011. The Company is not able to reasonably estimate the amount of a possible increase in revenue, as the impact will depend on the nature and size of the new or materially modified arrangements as well as the product mix and services included in the arrangements in any given future period. Prior to adoption of ASU 2009-13, when the Company was not able to establish fair value of undelivered elements with

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VSOE or TPE, all revenue was deferred. In accordance with ASU 2009-13, the Company allocates revenue to each element in an arrangement based on a selling price hierarchy. The selling price for a deliverable is based on VSOE of selling price, if available, TPE of selling price, if VSOE is not available, or ESP, if neither VSOE nor TPE is available.

The Company's solar systems business provides photovoltaic systems for application to powering buildings with connection to the utility grid. It is the Company's policy to recognize revenues for these systems when title passes, the customer accepts the system installation and interconnection to the grid is achieved.

The Company's solar materials business supplies photovoltaic materials under a United States government contract. It is the Company's policy to recognize revenues for these materials when title passes and the government accepts the materials.

The Company's biomedical business provides advanced medical device surface treatment processes for performance improvement of orthopedic devices. It is the Company's policy to recognize revenues from these services when services are provided to the customer.

The Company's optoelectronics business provides wafer epitaxial growth services, compound semiconductor foundry services and device fabrication. It is the Company's policy to recognize revenues from these goods and services when title of the product passes to the customer or when services are provided.

The Company recognizes revenues and estimated profits on long-term government contracts on a percent complete basis where the circumstances are such that total profit can be estimated with reasonable accuracy and ultimate realization is reasonably assured. The Company records revenue and profit utilizing the percentage of completion method using a cost-to-cost methodology. A percentage of the contract revenues and estimated profits are determined utilizing the ratio of costs incurred to date to total estimated cost to complete on a contract by contract basis. Profit estimates are revised periodically based upon changes in facts, and any losses on contracts are recognized immediately. Some of the contracts include provisions to withhold a portion of the contract value as retainage until such time as the United States government performs an audit of the cost incurred under the contract. The Company's policy is to take into revenue the full value of the contract, including any retainage, as it performs against the contract since the Company has not experienced any substantial losses as a result of audits performed by the United States government.

#### New Accounting Pronouncements

In June 2011, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Update ("ASU") No. 2011-05 ("ASU 2011-05"), Presentation of Comprehensive Income. The update eliminates the option to present the components of other comprehensive income as part of the statement of stockholders' equity. Instead, entities must report comprehensive income in either a single continuous statement of comprehensive income which contains two sections, net income and other comprehensive income, or in two separate but consecutive statements. The update will be effective for public companies for interim and annual periods beginning after December 15, 2011 with early adoption permitted. The Company does not believe that the application of the provision of ASU 2011-05 will have a material impact on its consolidated financial statements.

In May 2011, the FASB issued ASU No. 2011-04 ("ASU 2011-04"), Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and International Financial Reporting Standards, an amendment to FASB Accounting Standards Codification ("ASC") Topic 820, Fair Value Measurement. The update revises the application of the valuation premise of highest and best use of an asset, the application of premiums and discounts for fair value determination, as well as the required disclosures for transfers between Level 1 and Level 2 fair value measures and the highest and best use of nonfinancial assets. The update provides additional disclosures regarding Level 3 fair value measurements and clarifies certain other existing disclosure requirements. The update will be effective for public companies for interim and annual periods beginning after December 15, 2011 with early

adoption prohibited. The Company does not believe that the application of the provision of ASU 2011-04 will have a material impact on its consolidated financial statements.

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## 3. Accounts Receivable/Advances on Contracts in Progress

Net accounts receivable, trade consists of the following:

(in thousands)	September 30, 2011	December 31, 2010
Amounts billed	\$4,521	\$7,196
Accrued revenue	146	258
	4,667	7,454
Less: Allowance for doubtful accounts	(104	) (130
Net accounts receivable - trade	\$4,563	\$7,324
Advances on contracts in progress	\$13,899	\$9,010

Accrued revenue represents revenues recognized on contracts for which billings have not been presented to customers as of the balance sheet date. These amounts are billed and generally collected within one year.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts when it is probable that a loss has been incurred and the Company can reasonably estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices backed by letters of credit as realizeability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted. The Company received payments of \$37 thousand \$163 thousand for the nine months ended September 30, 2011 and 2010, respectively, against amounts which had been previously reserved for in allowance for doubtful accounts.

Advances on contracts in progress represent billings that have been presented to the customer, as either deposits or progress payments against future shipments, but revenue has not been recognized.

## 4. Inventories and Deferred Costs of Goods Sold

Inventories, net of \$1.1 million and \$425 thousand of reserves at September 30, 2011 and December 31, 2010, respectively, consist of the following at:

(in thousands)	September 30, 2011	December 31, 2010
Raw materials	\$2,721	\$2,919
Work in process	9,850	4,262
Finished goods	2,430	3,751
Net inventory	\$15,001	\$10,932
Deferred cost of goods sold	\$3,903	\$1,018

Deferred cost of goods sold represents costs of equipment that has shipped to the customer and title has passed. The Company defers these costs until the related revenue is recognized.



## 5. Loss Per Share

The following table provides a reconciliation of the denominators of the Company's reported basic and diluted loss per share computations for the periods ended:

	Three Months Ended		Nine Months Ended	
	September 30, 2011	2010	September 30, 2011	2010
Weighted average number of common and common equivalent shares outstanding – basic	8,362,633	8,338,188	8,361,891	8,336,406
Add: Net additional common shares upon assumed exercise of common stock options	—	—	—	—
Adjusted weighted average number of common and common equivalents shares outstanding – diluted	8,362,633	8,338,188	8,361,891	8,336,406

For the three and nine months ended September 30, 2011, zero and 660 shares, respectively and for the three and nine months ended September 30, 2010, 3,567 and 6,939 shares, respectively, of common stock issuable relative to stock options were excluded from the calculation of diluted shares because their inclusion would have been anti-dilutive due to the Company's net loss position.

In addition, for the three and nine months ended September 30, 2011, 783,107 and 773,107 shares, respectively, and for the three and nine months ended September 30, 2010, 732,266 and 712,821 shares, respectively, of common stock issuable relative to stock options were excluded from the calculation of diluted shares because their inclusion would have been anti-dilutive, due to their exercise prices exceeding the average market price of the stock for the period.

## 6. Operating Segments and Related Information

The following table presents certain continuing operating division information in accordance with the provisions of ASC 280, "Segments Reporting."

(in thousands)	Solar	Biomedical	Optoelectronics	Total Company
For the three months ended September 30, 2011				
Net sales and revenues	\$6,177	\$2,003	\$763	\$8,943
Operating income (loss) from continuing operations	\$(1,331)	) \$405	\$(816)	) \$(1,742)
For the three months ended September 30, 2010				
Net sales and revenues	\$17,289	\$2,104	\$1,252	\$20,645
Operating income (loss) from continuing operations	\$(1,132)	) \$324	\$(242)	) \$(1,050)
For the nine months ended September 30, 2011				
Net sales and revenues	\$33,610	\$6,169	\$2,268	\$42,047
Operating income (loss) from continuing operations	\$(1,796)	) \$1,159	\$(2,340)	) \$(2,977)
For the nine months ended September 30, 2010				
Net sales and revenues	\$51,574	\$6,490	\$3,791	\$61,855
Operating income (loss) from continuing operations	\$(2,414)	) \$1,116	\$(1,361)	) \$(2,659)



The following table shows net sales and revenues by geographic area (based on customer location):

(in thousands)	Three Months Ended September 30,				Nine Months Ended September 30,			
	2011	%	2010	%	2011	%	2010	%
United States	\$2,911	33	\$14,370	70	\$18,257	43	\$38,822	63
Europe/Africa	1,382	15	3,353	16	4,175	10	13,685	22
Asia	4,465	50	2,922	14	17,504	42	9,322	15
Rest of the world	185	2	—	—	2,111	5	26	—
	\$8,943	100	\$20,645	100	\$42,047	100	\$61,855	100

Revenues from contracts with United States government agencies for the three months ended September 30, 2011 and 2010 were approximately \$108 thousand and \$3.4 million or 1% and 16% of total net sales and revenues, respectively.

Revenues from contracts with United States government agencies for the nine months ended September 30, 2011 and 2010 were approximately \$8.6 million and \$19.0 million or 20% and 31% of total net sales and revenues, respectively.

Revenues from the delivery of solar equipment to two customers accounted for 28% and 13%, respectively, of total net sales and revenues for the three month period ended September 30, 2011.

Revenues from the delivery of solar equipment and recurring revenues from the sale of solar cell materials to the same customer accounted for 2% and 17%, respectively, of total net sales and revenues for the nine month period ended September 30, 2011. Revenues from the delivery of solar equipment to another two customers account for 18% and 13% of total net sales and revenues for the nine month period ended September 30, 2011.

Recurring revenues from the sale of solar cell materials to one customer account for 12% of total net sales and revenues for the three month period ended September 30, 2010. Revenues from the delivery of a solar equipment module line to one customer account for 15% of total net sales and revenues for the three month period ended September 30, 2010. Revenues from the delivery of four solar systems to one customer account for 35% of total net sales and revenues for the three month period ended September 30, 2010.

Revenues from the delivery of a solar equipment module line and recurring revenues from the sale of solar cell materials to the same customer account for 9% and 17%, respectively, of total net sales and revenues for the nine month period ended September 30, 2010. Revenues from the delivery of a solar equipment cell line and solar equipment module line to the same customer account for 12% and 6%, respectively, of total net sales and revenues for the nine month period ended September 30, 2010. Revenues from the delivery of four solar systems to one customer account for 12% of total net sales and revenues for the nine month period ended September 30, 2010.

One customer represented approximately 18% of net accounts receivable, trade at September 30, 2011 and two customers represented approximately 16% and 12% of net accounts receivable, trade at December 31, 2010.

## 7. Intangible and Other Assets

Patents amounted to \$186 thousand and \$244 thousand, net of accumulated amortization of \$853 thousand and \$795 thousand, at September 30, 2011 and December 31, 2010, respectively. Licenses amounted to \$67 thousand and \$71 thousand, net of accumulated amortization of \$8 thousand and \$4 thousand, at September 30, 2011 and December 31, 2010, respectively. Patent cost is primarily composed of cost associated with securing and registering patents that the Company has been awarded or that have been submitted to, and the Company believes will be approved by, the government. License cost is composed of the cost to acquire rights to the underlying technology or know-how. These costs are capitalized and amortized over their useful lives or terms, ordinarily five years, using the straight-line method. There are no expected residual values related to these patents. Amortization expense, relating to patents and

licenses, was approximately \$20 thousand and \$45 thousand for the three months ended September 30, 2011 and 2010, respectively. Amortization expense, relating to patents and licenses, was approximately \$62 thousand and \$64 thousand for the nine months ended September 30, 2011 and 2010, respectively.

For disclosure purposes, the table below includes future amortization expense for patents and licenses owned by the Company as well as estimated amortization expense related to patents that remain pending at September 30, 2011 of \$171 thousand. This estimated expense for patents pending assumes that the patents are issued immediately, and therefore are being amortized over five years on a straight-line basis. Estimated amortization expense for the periods ending December 31, is as follows:

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(in thousands)	Amortization Expense
2011 remaining 3 months	\$26
2012	103
2013	98
2014	87
2015 and beyond	110
	\$424

Also included in other assets are refundable deposits made by the Company of approximately \$263 thousand and \$250 thousand at September 30, 2011 and December 31, 2010, respectively.

#### 8. Available-for-Sale Investments

Available-for-sale securities consist of assets held as part of the Spire Corporation Non-Qualified Deferred Compensation Plan. These investments have been classified as available-for-sale investments and are reported at fair value, with unrealized gains and losses included in accumulated other comprehensive income. The unrealized gain on these marketable securities was \$142 thousand and \$446 thousand as of September 30, 2011 and December 31, 2010, respectively.

#### 9. Fair Value Measurements

The hierarchy established under ASC 820-10 gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). As required by ASC 820-10, the Company's available-for-sale investments are classified within the fair value hierarchy based on the lowest level of input that is significant to the fair value measurement. The three levels of the fair value hierarchy under ASC 820-10, and its applicability to the Company's available-for-sale investments, are described below:

Level 1 - Pricing inputs are quoted prices available in active markets for identical investments as of the reporting date. As required by ASC 820-10, the Company does not adjust the quoted price for these investments, even in situations where the Company holds a large position and a sale could reasonably impact the quoted price.

Level 2 - Pricing inputs are quoted prices for similar investments, or inputs that are observable, either directly or indirectly, for substantially the full term through corroboration with observable market data. Level 2 includes investments valued at quoted prices adjusted for legal or contractual restrictions specific to these investments.

Level 3 - Pricing inputs are unobservable for the investment, that is, inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability. Level 3 includes investments that are supported by little or no market activity.

#### Valuation Techniques

Fair value is a market-based measure considered from the perspective of a market participant who would buy the asset or assume the liability rather than the Company's own specific measure. All of the Company's fixed income securities are priced using a variety of daily data sources, largely readily-available market data and broker quotes. To validate these prices, the Company compares the fair market values of the Company's fixed income investments using market data from observable and corroborated sources. The Company also performs the fair value calculations for its common stock and mutual fund securities using market data from observable and corroborated sources. In periods of market inactivity, the observability of prices and inputs may be reduced for certain instruments. This condition could cause an instrument to be reclassified from Level 1 to Level 2 or from Level 2 to Level 3. During the three and nine

months ended September 30, 2011, none of the Company's instruments were reclassified between Level 1, Level 2 or Level 3.

The following table presents the financial instruments related to the Company's available-for-sale investment carried at fair value on a recurring basis as of September 30, 2011 by ASC 820-10 valuation hierarchy (as defined above).

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(in thousands)	Balance as of September 30, 2011	Level 1	Level 2	Level 3
Cash and short term investments	\$ 103	\$ 103	\$—	\$—
Common stock				
Basic Materials	66	66	—	—
Consumer Goods	8	8	—	—
Financial	44	44	—	—
Healthcare	48	48	—	—
Industrial Goods	23	23	—	—
Services	71	71	—	—
Technology	27	27	—	—
Total Common Stock	287	287	—	—
Mutual Fund				
Diversified Emerging Markets	163	—	163	—
Foreign Large Blend	122	—	122	—
Foreign Large Growth	165	—	165	—
Foreign Small/Mid Value	126	—	126	—
Large Growth	471	—	471	—
Small Blend	174	174	—	—
Value Fund	68	—	68	—
Total Mutual Fund	1,289	174	1,115	—
Fixed income				
Domestic	443	—	443	—
International	22	—	22	—
Total Fixed Income	465	—	465	—
Total available-for-sale investments <sup>(1)</sup>	\$ 2,144	\$ 564	\$ 1,580	\$—
Percent of total	100	% 26	% 74	% —

(1) Changes in the fair value of available-for-sale investments are recorded in accumulated other comprehensive income, a component of stockholders' equity, in the Company's unaudited condensed consolidated balance sheets.

The carrying amounts reflected in the Company's unaudited condensed consolidated balance sheets for cash, accounts receivable, prepaid expenses and other current assets, accounts payable, accrued expenses, and capital lease obligations approximate fair value due to their short-term maturities. The fair value of the Company's revolving line of credit has been estimated by management based on the terms that it believes it could obtain in the current market for debt of the same terms and remaining maturities. Due to the short-term nature of the remaining maturities, frequency of amendments to its terms and the variable interest rates, the carrying value of the revolving line of credit approximates fair value at September 30, 2011.

#### 10. Notes Payable and Credit Arrangements

On June 22, 2009, the Company entered into two separate credit facilities with Silicon Valley Bank (the "Bank" or "SVB") providing for credit lines of up to \$8 million in the aggregate: (i) an Amended and Restated Loan and Security Agreement (the "Restated Revolving Credit Facility") pursuant to which the Bank agreed to provide the Company with a credit line of up to \$3 million and (ii) an Export-Import Bank Loan and Security Agreement (the "Ex-Im Facility") pursuant to which the Bank agreed to provide the Company with a credit line of up to \$5 million to be guaranteed by the Export-Import Bank of the United States (the "EXIM Bank"). The Company's obligations under these two credit facilities were secured by substantially all of the assets of the Company.

In addition, under the Restated Revolving Credit Facility, the Company's existing equipment credit facility with the Bank was amended whereby the parties agreed that there would be no additional availability under such facility and, based on an outstanding principal amount of \$1.2 million on June 22, 2009, the Company would continue to make monthly installments of principal of \$97 thousand plus accrued interest until the outstanding balance was paid in full (the "Equipment Term Loan").

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On November 16, 2009, the Company entered into two separate amended and restated credit facilities with the Bank continuing to provide for credit lines of up to \$8 million in the aggregate: (i) a Second Amended and Restated Loan and Security Agreement (the "Second Restated Revolving Credit Facility") pursuant to which the Bank agreed to continue to provide the Company with a credit line of up to \$3 million and (ii) an Amendment and Restated Export-Import Bank Loan and Security Agreement (the "Restated Ex-Im Facility") pursuant to which the Bank agreed to continue to provide the Company with a credit line of up to \$5 million to be guaranteed by the EXIM Bank.

The Company's obligations under these two amended credit facilities are secured by substantially all of the assets of the Company. Advances under the Second Restated Revolving Credit Facility are limited to 80% of eligible receivables. Originally, interest on outstanding borrowings accrued at a rate per annum equal to the greater of (i) the prime rate plus 3.0% or (ii) 9.0%; with reductions in the rate if certain events occur, as defined. Advances under the Restated Ex-Im Facility are limited to (i) 90% of eligible receivables subject to a suitable foreign currency hedge agreement if applicable, plus (ii) 75% of all other eligible receivables billed in foreign currency, plus (iii) the 50% of the value of eligible inventory, as defined. Originally, interest on outstanding borrowings accrued at a rate per annum equal to the greater of (i) the prime rate plus 3.0% or (ii) 9.0%; with reductions in the rate if certain events occur, as defined.

In addition, under the Second Restated Revolving Credit Facility, with respect to the Company's outstanding Equipment Term Loan with the Bank, the Company was required to continue to make monthly installments of principal of \$97 thousand plus accrued interest until the outstanding balance was paid in full. Interest on the Equipment Term Loan accrued at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%. The final payment with respect to the Equipment Term Loan was made in June, 2010.

Under the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility, as long as any commitment remains outstanding under the facilities, the Company must comply with a financial covenant by maintaining cash and availability line of \$1.0 million. In addition, until all amounts under the credit facilities with the Bank are repaid, covenants under the credit facilities impose restrictions on the Company's ability to, among other things, incur additional indebtedness, create or permit liens on our assets, merge, consolidate or dispose of assets (other than in the ordinary course of business), make dividend and other restricted payments, make certain debt or equity investments, make certain acquisitions, engage in certain transactions with affiliates or change the business conducted by the Company. Any failure by the Company to comply with the covenants and obligations under the credit facilities could result in an event of default, in which case the Bank may be entitled to declare all amounts owed to be due and payable immediately.

On June 15, 2010, the Company and the Bank entered into (i) the First Loan Modification Agreement amending certain terms of the Second Restated Revolving Credit Facility and (ii) the First Loan Modification Agreement amending certain terms of the Restated Ex-Im Facility (collectively, the "Loan Modifications"). Pursuant to the terms of the Loan Modifications, the Company and the Bank agreed to (i) create a letter of credit sub-facility within the Company's existing credit line, (ii) decrease the interest rate with regard to financed eligible accounts from SVB Prime Rate plus 3.0% per annum to SVB Prime Rate plus 2.5% per annum while (iii) reducing the interest rate floor from 6.0% per annum to 4.0% per annum and (iv) extending the maturity date of the Second Restated Revolving Credit Facility and Restated Ex-Im Facility to December 31, 2011. In addition to the above, in the event the Company achieves certain levels of liquidity, based on cash on hand and availability under the credit facility, the Bank will waive the requirement that the Company cash collateralize any letters of credit issued by the Bank pursuant to the new letter of credit sub-facility in an aggregate amount up to \$1.5 million. Finally, because the Company has made all the required payments under the Equipment Term Loan, the Bank acknowledged that the Equipment Term Loan has been paid in full and all references to it in the Second Restated Revolving Credit Facility have been deleted.

On March 31, 2011, the Bank agreed to increase the letter of credit sub facility under the Company's credit facility with the Bank from \$1.5 million to \$2.5 million. The Company has used \$1.4 million of this sub-facility at September 30, 2011 and December 31, 2010, respectively.

On November 8, 2011, the Company and the Bank entered into amendments to the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility providing that, during the period from November 8, 2011 until the earlier to occur of the date on which the Company delivers its November 2011 financial reports to the Bank or December 31, 2011, and provided the Company maintains liquidity at least equal to twice the amount of its advances drawn and letters of credit issued under the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility, the Company will be able to borrow (i) up to \$2 million under the Second Restated Revolving Credit Facility and (ii) up to \$5 million under the Restated Ex-Im Facility less the amount of outstanding letters of credit. Once the Company maintains liquidity of \$6 million the line will revert to the prior terms of the credit facilities, as previously amended, noted above. All other terms and conditions under the credit facilities remain the same.

Advances outstanding under the Second Restated Revolving Credit Facility were \$842 thousand at September 30, 2011 and December 31, 2010, respectively. Advances outstanding under the Restated Ex-Im Facility were \$315 thousand at September 30, 2011 and December 31, 2010, respectively. As of September 30, 2011, the interest rate per annum on the Second Restated Revolving Credit Facility and Restated Ex-Im Facility was 6.5% and 6.5%, respectively. Combined availability under the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility was \$2.1 million as of September 30, 2011.

## 11. Stock Option Plan and Stock-Based Compensation

The Company has recognized stock-based compensation expense of approximately \$85 thousand and \$119 thousand for the three months ended September 30, 2011 and 2010, respectively. The Company has recognized stock-based compensation expense of approximately \$306 thousand and \$374 thousand for the nine months ended September 30, 2011 and 2010, respectively. The total non-cash, stock-based compensation expense included in the condensed consolidated statements of operations for the periods presented is included in the following expense categories:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2011	2010	2011	2010
Cost of contract research, services and licenses	\$5	\$5	\$19	\$22
Cost of goods sold	17	18	61	56
Administrative and selling	63	96	226	296
Total stock-based compensation	\$85	\$119	\$306	\$374

At September 30, 2011, the Company had outstanding options under two option plans: the 1996 Equity Incentive Plan (the "1996 Plan") and the 2007 Stock Equity Plan (the "2007 Plan", together the "Plans"). Both Plans were approved by stockholders and provided that the Board of Directors may grant options to purchase the Company's common stock to key employees and directors of the Company. Incentive and non-qualified options must be granted at least at the fair market value of the common stock or, in the case of certain optionees, at 110% of such fair market value at the time of grant. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue. The 1996 Plan expired with respect to the issuance of new grants as of December 10, 2006. Accordingly, future grants may be made only under the 2007 Plan.

A summary of options outstanding under the Plans as of September 30, 2011 and changes during the nine month period is as follows:

	Number of Shares	Weighted-Average Exercise Price	Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Options Outstanding at December 31, 2010	760,732	\$ 6.56		
Granted	30,000	\$ 3.50		
Exercised	(2,500)	) \$ 3.50		
Cancelled/expired	(5,125)	) \$ 3.51		
Options Outstanding at September 30, 2011	783,107	\$ 6.47	6.14	\$—
Options Exercisable at September 30, 2011	627,107	\$ 6.70	5.64	\$—
Option vested and expected to vest at September 30, 2011	783,107	\$ 6.47	6.14	\$—

Compensation expense related to stock options to be charged in future periods amounts to approximately \$401 thousand at September 30, 2011 and will be recognized over a weighted-average period of 2.08 years.

The per-share weighted-average fair value of stock options granted during the three and nine months ended September 30, 2011 was \$1.29 and \$2.20, respectively, and \$2.50 and \$2.56 for the three and nine months ended September 30, 2010, respectively, on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

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Year	Expected Dividend Yield	Risk-Free Interest Rate	Expected Option Life	Expected Volatility Factor	
2011	—	1.54	% 5.1 years	77.9	%
2010	—	1.47	% 4.2 years	81.3	%

The risk free interest rate reflects treasury yields rates over a term that approximates the expected option life. The expected option life is calculated based on historical lives of all options issued under the Plans. The expected volatility factor is determined by measuring the actual stock price volatility over a term equal to the expected life of the options granted.

## 12. Comprehensive Loss

Comprehensive loss includes certain changes in equity that are excluded from net loss and consists of the following:

(in thousands)	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2011	2010	2011	2010
Net Loss	\$ (1,770 )	\$ (915 )	\$ (3,087 )	\$ (208 )
Other comprehensive income (loss):				
Change in unrealized gain (loss) on available for sale marketable securities, net of tax	(372 )	186	(304 )	74
Total comprehensive loss	\$ (2,142 )	\$ (729 )	\$ (3,391 )	\$ (134 )

## 13. Gains on Termination of Contracts

In the fourth quarter of 2009, the Company determined that three purchase and sale agreements with Jiangxi Gemei Sci-Tech., LLC (“Jiangxi”) related to a module equipment line and cell equipment line were terminated due to a breach of contract by Jiangxi. Jiangxi had failed to make payments as required by the agreements and has not responded to numerous communications by the Company. The Company made commitments to purchase equipment on behalf of Jiangxi and due to Jiangxi not making contractual payments, the Company entered into settlement agreements with these vendors in the fourth quarter of 2009 and first quarter of 2010. As a result of the settlement agreement entered into in the first quarter of 2010 and deposits paid by Jiangxi less settlements paid to vendors, the Company recognized a gain on termination of contracts of \$837 thousand in the first quarter of 2010.

## 14. Discontinued Operations and Assets Held for Sale

In accordance with ASC 205-20, Presentation of Financial Statements - Discontinued Operations, the accompanying unaudited condensed consolidated balance sheets, statements of operations and cash flows present the results and assets of the Medical Products Business Unit as discontinued operations. During the second quarter of 2009, the Company began pursuing an exclusive sales process of the Medical Products Business Unit. The Company (i) determined that the Medical Products Business Unit was a separate component of the Company's business as, historically, management reviewed separately the Medical Products Business Unit's financial results apart from the Company's ongoing continuing operations, (ii) eliminated the Medical Products Business Unit's financial results from ongoing operations and (iii) determined that the Company will have no further continuing involvement in the operations of the Medical Products Business Unit or cash flows from the Medical Products Business Unit after the sale.

On December 14, 2009, the Company completed the sale of the Medical Products Business Unit to Bard Access Systems, Inc. The purchase price for the Medical Products Business Unit was \$12.4 million, including (i) \$9.4 million that was paid in cash to the Company at closing, (ii) \$100 thousand that was paid in cash at closing to two of the

Company's employees, including Mark Little, Chief Executive Officer of Spire Biomedical, as consideration for their execution of non-competition agreements, and (iii) \$2.9 million that was paid in cash to the Company in the second quarter of 2010 based on the achievement of certain milestones described below (the "Contingent Purchase Price").

Certain of the assets were transferred to Bard at the closing, and certain other assets (the "Contingent Deferred Assets") were transferred to Bard upon the completion of a product recall related to such assets, which occurred in the second quarter of 2010. Until the Contingent Deferred Assets were transferred by the Company, it continued to manufacture and supply to Bard certain hemodialysis catheter products under the terms of a distribution agreement (the "Transition Period"). The Contingent

Deferred Assets were transferred to Bard and Bard paid \$1.5 million of the Contingent Purchase Price to the Company in the second quarter of 2010. In addition, Bard paid \$1.4 million of the remaining Contingent Purchase Price to the Company in the second quarter of 2010 based upon the achievement of milestones related to the manufacture and supply of certain quantities of hemodialysis catheter products under the distribution agreement. The transfer price for hemodialysis catheter products delivered to Bard under the distribution agreement was equal to the Company's standard costs of goods, including related overhead, without mark-up and calculated in accordance with U.S. generally accepted accounting principles.

The Company initiated a voluntary recall of certain catheters based upon three field complaints of catheter malfunctions received in the third quarter of 2009. No patient injury or complications resulted from the malfunction. It was determined that under certain molding conditions, there was a possibility that insufficient bonding may occur which could cause the catheter to malfunction. As it could not be isolated to a particular lot, the Company initiated a voluntary recall of any inventory held by our distributors and their customers. As the manufacturer of record, the Company is responsible for ensuring that the product meets the product specifications and the associated product liability that may result in failure those specifications. Not included in discontinued operations are certain indirect costs of the Medical Products Business Unit that have been reclassified to selling, general and administrative expense of \$162 thousand for the nine months ended September 30, 2010. The voluntary recall was initiated in October 2009 and in February 2010, the Company determined that it had achieved a 100% effectiveness rating based upon the recall criteria. The U.S. Food and Drug Administration advised the Company in June 2010 that the recalls were terminated.

Spire Biomedical warrants that any of its catheter products found to be defective will be replaced. No warranty is made that the failure of the product will not occur, and Spire disclaims any responsibility for any medical complications. Spire Biomedical warrants that its services only will meet the agreed upon specifications.

There were no assets of the Medical Products Business Unit as of September 30, 2011 and December 31, 2010. The liabilities of the Medical Products Business Unit as of September 30, 2011 and December 31, 2010 are as follows:  
(in thousands)

	September 30, 2011	December 31, 2010
Liabilities of Discontinued Operations		
Current liabilities of discontinued operations		
Accounts payable	\$ 135	\$ 257
Accrued liabilities	—	109
Total current liabilities of discontinued operations	135	366
Total liabilities of discontinued operations	\$ 135	\$ 366

Condensed results of operations relating to the Medical Products Business Unit are as follows:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2011	2010	2011	2010
Net sales and revenues	\$—	\$—	\$—	\$1,656
Gross margin	\$—	\$—	\$—	\$(136)
Loss from discontinued operations before sale of business unit	\$—	\$—	\$—	\$(123)
Gain on sale of business unit	—	—	—	2,604
Income tax provision	—	—	—	(992)
Net Income from discontinued operations, net of tax	\$—	\$—	\$—	\$1,489

## 15. Subsequent Events

The Company evaluated subsequent events through the date of this filing and had no subsequent events to report.





## Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This Management's Discussion and Analysis of Financial Condition and Results of Operations section and other parts of this Report contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which statements involve risks and uncertainties. These statements relate to our future plans, objectives, expectations and intentions. These statements may be identified by the use of words such as "may", "could", "would", "should", "will", "expects", "anticipates", "intends", "plans", "believes", "estimates", and similar expressions. Our actual results and the timing of certain events may differ significantly from the results and timing described in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those factors discussed or referred to in the Annual Report on Form 10-K for the year ended December 31, 2010 and in subsequent period reports filed with the Securities and Exchange Commission, including this report. The following discussion and analysis of our financial condition and results of operations should be read in light of those factors and in conjunction with our accompanying Consolidated Financial Statements, including the Notes thereto.

### Overview

We develop, manufacture and market highly-engineered products and services in three principal business areas: (i) capital equipment for the photovoltaic solar industry, (ii) biomedical and (iii) optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all three business areas, discussed below.

In the photovoltaic solar area, we develop, manufacture and market specialized equipment for the production of terrestrial photovoltaic modules from solar cells, provide photovoltaic systems for application to powering buildings with connection to the utility grid and supply photovoltaic materials. Our equipment has been installed in approximately 200 factories in 50 countries. The equipment market is very competitive with major competitors located in Japan and Germany. Our flagship product is our Sun Simulator, which tests module performance. Our other product offerings include turn-key module lines and to a lesser extent other individual equipment. To compete we offer other services such as training and assistance with module certification. At times, we supply materials such as solar cells to certain customers. We also provide turn-key services to our customers to backward integrate to solar cell manufacturing.

In the optoelectronics area, we provide custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. We also provide materials testing services and perform services in support of sponsored research into practical applications of optoelectronic technologies. We have developed solar concentrator cell technology to provide high efficiency cells to the industry.

In the biomedical area, we provide value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; and perform sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

On December 14, 2009, we completed the sale of our Medical Products Business Unit, which developed and marketed coated and uncoated hemodialysis catheters and related devices for the treatment of chronic kidney disease (the "Medical Products Business Unit"), to Bard Access Systems, Inc. ("Bard"). Accordingly, the results of operations and liabilities of the Medical Products Business Unit are being presented herein as discontinued operations. See Note 14 to the unaudited condensed consolidated financial statements.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from our solar equipment line, delivery of solar systems and solar materials. Export sales, which amounted to 67% and 57% of net sales and revenues for the three and nine months ended September 30, 2011, respectively, and 30% and 37% of net sales and revenues for the three and nine months ended September 30, 2010, respectively, continue to constitute a significant portion of our net sales and revenues.

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## Results of Operations

The following table sets forth certain items as a percentage of net sales and revenues for the periods presented:

	Three Months Ended		Nine Months Ended September				
	September 30,		30,		2010		
	2011	2010	2011	2010	2011	2010	
Net sales and revenues	100	% 100	%	100	% 100	%	
Cost of sales and revenues	77	81		76	82		
Gross margin	23	19		24	18		
Selling, general and administrative expenses	(41	) (23	)	(29	) (22	)	
Internal research and development expenses	(1	) (1	)	(2	) (2	)	
Gains on termination of contracts	—	—		—	2		
Operating loss from continuing operations	(19	) (5	)	(7	) (4	)	
Other expense, net	(1	) —		—	—		
Loss from continuing operations before income tax benefit (provision)	(20	) (5	)	(7	) (4	)	
Income tax benefit (provision) - continuing operations	—	1		—	2		
Loss from continuing operations	(20	) (4	)	(7	) (2	)	
Income from discontinued operations, net of tax	—	—		—	2		
Net loss	(20	)% (4	)%	(7	)% —	%	

## Overall

Our total net sales and revenues for the nine months ended September 30, 2011 were \$42.0 million as compared to \$61.9 million for the nine months ended September 30, 2010, which represents a decrease of \$19.9 million or 32%. The decrease was primarily attributable to a \$18.0 million decrease in solar revenue, a \$1.5 million decrease in optoelectronics revenue and a decrease of \$321 thousand in biomedical revenue.

## Solar Business Unit

Sales in our solar business unit decreased 35% during the nine months ended September 30, 2011 to \$33.6 million as compared to \$51.6 million for the nine months ended September 30, 2010. The decrease is the result of a solar cell line and a solar systems project completed during 2010 and a decrease in solar cell materials in 2011, partially offset by an increase in solar module equipment sales in 2011.

## Biomedical Business Unit

Revenues on our biomedical business unit decreased 5% during the nine months ended September 30, 2011 to \$6.2 million as compared to \$6.5 million for the nine months ended September 30, 2010. The decrease was primarily attributable to a decrease in revenue from our research and development contracts.

## Optoelectronics Business Unit

Revenues in our optoelectronics business unit decreased 40% to \$2.3 million during the nine months ended September 30, 2011 as compared to \$3.8 million for the nine months ended September 30, 2010. The decrease was primarily attributable to decreased revenue with respect to the completion of a large government cost share contract in the third quarter of 2010.



## Three and Nine Months Ended September 30, 2011 Compared to Three and Nine Months Ended September 30, 2010

## Net Sales and Revenues

The following table categorizes our net sales and revenues for the periods presented:

(in thousands)	Three Months Ended September 30,		Decrease		
	2011	2010	\$	%	
Sales of goods	\$6,164	\$17,235	(11,071 )	(64 )	)%
Contract research and services revenues	2,779	3,410	(631 )	(19 )	)%
Net sales and revenues	\$8,943	\$20,645	(11,702 )	(57 )	)%

The 64% decrease in sales of goods for the three months ended September 30, 2011 as compared to the three months ended September 30, 2010 was primarily due to a decrease of \$7.2 million in solar system revenues, a decrease of \$2.5 million in solar cell material revenues and a decrease of \$1.4 million in solar module manufacturing equipment revenues. The decrease in sales of solar systems of 100% in 2011 as compared to 2010 was primarily due to the completion of four photovoltaic system projects to one customer in 2010 as compared to none in 2011. The decrease in sales of solar cell materials, all to one customer, of 100% in 2011 as compared to 2010 was primarily due to the completion of definite delivery commitments to a solar cell materials contract in the first quarter of 2011. The decrease in solar module equipment sales of 19% in 2011 as compared to 2010 was primarily due to a decline in sales of certain higher priced individual module equipment units delivered in 2011.

The 19% decrease in contract research and services revenues for the three months ended September 30, 2011 as compared to the three months ended September 30, 2010 is primarily attributable to a decrease of \$489 thousand in optoelectronics service revenue, a decrease of \$101 thousand in biomedical revenue and a decrease of \$40 thousand in solar research and development revenue. Revenue from our optoelectronics processing services decreased 39% in 2011 compared to 2010 as a result of decreased revenue due to the completion of a government cost share contract in the third quarter of 2010. Revenues from our biomedical services decreased 5% in 2011 as compared to 2010.

The following table categorizes our net sales and revenues for the periods presented:

(in thousands)	Nine Months Ended September 30,		Decrease		
	2011	2010	\$	%	
Sales of goods	\$33,542	\$51,520	\$(17,978 )	(35 )	)%
Contract research and services revenues	8,505	10,335	(1,830 )	(18 )	)%
Net sales and revenues	\$42,047	\$61,855	\$(19,808 )	(32 )	)%

The 35% decrease in sales of goods for the nine months ended September 30, 2011 as compared to the nine months ended September 30, 2010 was primarily due to a decrease of \$7.9 million in solar cell line revenues, a decrease of \$7.6 million in solar systems revenues and a decrease of \$3.3 million in solar cell material revenues, partially offset by an increase of \$627 thousand in solar module manufacturing equipment revenues. The decrease in sales of solar cell line equipment of 100% in 2011 as compared to 2010 was primarily due to the completion of a solar cell line to one customer in 2010 as compared to none in 2011. The decrease in sales of solar systems of 94% in 2011 as compared to 2010 was primarily due to the completion of one photovoltaic system project in 2011 as compared to six in 2010. The decrease in sales of solar cell materials, all to one customer, of 32% in 2011 as compared to 2010 was primarily due to the completion of definite delivery commitments to a solar cell materials contract in the first quarter of 2011. The increase in solar module equipment sales of 3% in 2011 as compared to 2010 was primarily due to sales from an increase in individual module equipment units delivered in 2011, partially offset by revenue of \$5.8 million from the partial delivery of a module manufacturing line in 2010.

The 18% decrease in contract research and services revenues for the nine months ended September 30, 2011 as compared to the nine months ended September 30, 2010 is primarily attributable to a decrease of \$1.5 million in optoelectronics service revenue and a decrease of \$321 thousand in biomedical revenue. Revenue from our optoelectronics processing services decreased 40% in 2011 compared to 2010 as a result of decreased revenue due to the completion of a government cost share contract in the third quarter of 2010. Revenues from our biomedical services decreased 5% in 2011 as compared to 2010.

Cost of Sales and Revenues

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The following table categorizes our cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

(in thousands)	Three Months Ended September 30,				Increase (Decrease)	
	2011	%	2010	%	\$	%
Cost of goods sold	\$4,499	73	% \$14,439	84	% \$(9,940 )	(69 )%
Cost of contract research and services	2,394	86	% 2,356	69	% 38	2 )%
Net cost of sales and revenues	\$6,893	77	% \$16,795	81	% \$(9,902 )	(59 )%

Cost of goods sold decreased 69% for the three months ended September 30, 2011 as compared to the three months ended September 30, 2010, primarily as a result of decreased costs related to solar systems, solar cell materials, solar module equipment and solar cell equipment. The decrease of solar system costs of 99% in 2011 as compared to 2010 was primarily due to the completion of four photovoltaic system projects in 2010 as compared to none in 2011. The decrease in costs of solar cell materials, all to one customer, of 100% in 2011 as compared to 2010 was primarily due to the completion of definite delivery commitments to a solar cell materials contract in the first quarter of 2011. The decrease in solar module equipment costs of 24% in 2011 as compared to 2010 was primarily due to a decrease in associated revenue. The decrease in costs of solar cell line equipment, of 100% in 2011 as compared to 2010 was primarily associated with the completion of a solar cell line to one customer in 2010 as compared to none in 2011. As a percentage of sales, cost of goods sold was 73% of sales of goods in 2011 as compared to 84% of sales of goods in 2010. This decrease in the percentage of sales in 2011 is due to a favorable product mix with higher margins in solar module equipment sales.

Cost of contract research and services increased 2% for the three months ended September 30, 2011 as compared to the three months ended September 30, 2010, primarily as a result of increased costs related to optoelectronics, partially offset by decreased costs related to biomedical services. Costs from our optoelectronics processing services increased 10% in 2011 compared to 2010 as a result of increased indirect costs due primarily to a lower utilization of capacity in 2011, partially offset by a decrease in direct costs associated to the completion of a government cost share contract in the third quarter of 2010. Costs from our biomedical services decreased 7% in 2011 compared to 2010 as a result of lower indirect employee related costs. Cost of contract research and services as a percentage of related revenue increased to 86% of related revenues in 2011 from 69% in 2010, primarily due to an increase of indirect costs in 2011 due primarily to a lower utilization of capacity in optoelectronics services in 2011.

Cost of sales and revenues also includes approximately \$22 thousand and \$23 thousand of stock-based compensation for the three months ended September 30, 2011 and 2010, respectively.

The following table categorizes our cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

(in thousands)	Nine Months Ended September 30,				Decrease	
	2011	%	2010	%	\$	%
Cost of goods sold	\$25,263	75	% \$42,978	83	% \$(17,715 )	(41 )%
Cost of contract research and services	6,871	81	% 7,607	74	% (736 )	(10 )%
Net cost of sales and revenues	\$32,134	76	% \$50,585	82	% \$(18,451 )	(36 )%

Cost of goods sold decreased 41% for the nine months ended September 30, 2011 as compared to the nine months ended September 30, 2010, primarily as a result of decreased costs related to solar cell equipment, solar systems, solar cell materials and solar module equipment. The decrease in costs of solar cell line equipment of 99% in 2011 as compared to 2010 was primarily associated with the completion of a solar cell line to one customer in 2010 as compared to none in 2011. The decrease of solar system costs of 92% in 2011 as compared to 2010 was primarily due to direct costs related to the completion of one photovoltaic system project in 2011 as compared to six projects completed in 2010. The decrease in costs of solar cell materials, all to one customer, of 30% in 2011 as compared to

2010 was primarily due to the completion of definite delivery commitments to a solar cell materials contract in the first quarter of 2011. The decrease in solar module equipment costs of 3% in 2011 as compared to 2010 was primarily due to a favorable product mix with higher margin equipment sold in 2011. As a percentage of sales, cost of goods sold was 75% of sales of goods in 2011 as compared to 83% of sales of goods in 2010. This decrease in the percentage of sales in 2011 is due to a favorable product mix with higher margins in solar module equipment sales.

Cost of contract research and services decreased 10% for the nine months ended September 30, 2011 as compared to the nine months ended September 30, 2010, primarily as a result of decreased costs related to optoelectronics and biomedical services. Costs from our optoelectronics processing services decreased 15% in 2011 compared to 2010 as a result of decreased revenue due to the completion of a government cost share contract in the third quarter of 2010. Costs from our biomedical services decreased



6% in 2011 compared to 2010 as a result of lower insurance and indirect employee related costs. Cost of contract research and services as a percentage of related revenue increased to 81% of related revenues in 2011 from 74% in 2010, primarily due to an increase of indirect costs in 2011 due primarily to lower insurance and indirect employee related costs in optoelectronics services in 2011.

Cost of sales and revenues also includes approximately \$80 thousand and \$78 thousand of stock-based compensation for the nine months ended September 30, 2011 and 2010, respectively.

### Operating Expenses

The following table categorizes our operating expenses for the periods presented, stated in dollars and as a percentage of total sales and revenues:

(in thousands)	Three Months Ended September 30,				Decrease	
	2011	%	2010	%	\$	%
Selling, general and administrative	\$3,678	41	\$4,620	23	\$(942)	(20)%
Internal research and development	114	1	280	1	(166)	(59)%
Operating expenses	\$3,792	42	\$4,900	24	\$(1,108)	(23)%

### Selling, General and Administrative Expenses

Selling, general and administrative expense decreased 20% in the three months ended September 30, 2011 as compared to the three months ended September 30, 2010, primarily as a result of a gain related to the change in value of the deferred compensation plan and a decrease in employee related expenses in the solar and biomedical business units along with a decrease in solar related commissions legal expenses. Selling, general and administrative expense increased to 41% of sales and revenues in 2011 as compared to 23% in 2010. The increase was primarily due to the decrease in sales and revenues.

Operating expenses include approximately \$63 thousand and \$96 thousand of stock-based compensation for the three months ended September 30, 2011 and 2010, respectively.

### Internal Research and Development

Internal research and development expense decreased 59% in the three months ended September 30, 2011 as compared to the three months ended September 30, 2010, primarily as a result of lower levels of research and development spent in the solar group. As a percentage of sales and revenue, internal research and development expenses remained at 1% of sales and revenues in 2011 and 2010.

The following table categorizes our operating expenses for the periods presented, stated in dollars and as a percentage of total sales and revenues:

(in thousands)	Nine Months Ended September 30,				Increase(Decrease)	
	2011	%	2010	%	\$	%
Selling, general and administrative	\$12,104	29	\$13,827	22	\$(1,723)	(12)%
Internal research and development	786	2	939	2	(153)	(16)%
Operating expenses	\$12,890	31	\$14,766	24	\$(1,876)	(13)%

Selling, General and Administrative Expenses

Selling, general and administrative expense decreased 12% in the nine months ended September 30, 2011 as compared to the nine months ended September 30, 2010, primarily as a result of a gain related to the change in value of the deferred compensation plan and a decrease in employee related expenses in the solar and biomedical business units along with a decrease in solar related travel, marketing and commission expenses, partially offset by an increase in amortized patent expense related to the write-off of an abandoned patent. Selling, general and administrative expense increased to 29% of sales and revenues in 2011 as compared to 22% in 2010. The increase was primarily due to the decrease in sales and revenues.

Operating expenses include approximately \$226 thousand and \$296 thousand of stock-based compensation for the nine months ended September 30, 2011 and 2010, respectively.

### Internal Research and Development

Internal research and development expense decreased 16% in the nine months ended September 30, 2011 as compared to the nine months ended September 30, 2010, primarily as a result of lower levels of research and development spent in the solar group. As a percentage of sales and revenue, internal research and development expenses remained at 2% of sales and revenues in 2011 and 2010.

### Gains on Termination of Contracts

In the fourth quarter of 2009, we determined that three purchase and sale agreements with Jiangxi Gemei Sci-Tech., LLC (“Jiangxi”) related to a module equipment line and cell equipment line were terminated. Jiangxi had failed to make payments as required by the agreements and has not responded to numerous communications by us. We made commitments to purchase equipment on behalf of Jiangxi and due to Jiangxi not making contractual payments, we entered into settlement agreements with these vendors in the fourth quarter of 2009 and first quarter of 2010. As a result of the settlement agreement entered into in the first quarter of 2010 and deposits paid by Jiangxi less settlements paid to vendors, we have recognized a gain on termination of contracts of \$837 thousand in the first quarter of 2010. See Note 13 to the unaudited condensed consolidated financial statements.

### Other Expense, Net

We earned interest income of zero and \$4 thousand for the three months ended September 30, 2011 and 2010, respectively. We incurred interest expense of \$26 thousand and \$28 thousand for the three months ended September 30, 2011 and 2010, respectively. We had currency exchange gains of approximately \$1 thousand and currency exchange losses of approximately \$8 thousand during the three months ended September 30, 2011 and 2010, respectively.

We earned interest income of zero and \$15 thousand for the nine months ended September 30, 2011 and 2010, respectively. We incurred interest expense of \$91 thousand and \$178 thousand for the nine months ended September 30, 2011 and 2010, respectively. We had currency exchange losses of approximately \$1 thousand and \$21 thousand during the nine months ended September 30, 2011 and 2010, respectively.

### Income Taxes

We recorded a state income tax provision of \$3 thousand and \$18 thousand for the three and nine months ended September 30, 2011, respectively. Gross federal net operating loss carryforwards were approximately \$12 million as of December 31, 2010 and expire at various times through 2030. We recorded a tax benefit on our loss from continuing operations of \$167 thousand and \$1.1 million for the three and nine months ended September 30, 2010, which was offset by a provision on our income from discontinued operations of zero and \$992 thousand for the three and nine months ended September 30, 2010, respectively. We have a full valuation allowance recorded against the net deferred tax assets at September 30, 2011 due to the uncertainty regarding realization of these assets in the future.

### Loss from Discontinued Operations

During the second quarter of 2009, we began pursuing an exclusive sales process of our Medical Products Business Unit. On December 14, 2009, we completed the sale of the Medical Products Business Unit to Bard Access Systems, Inc. Accordingly, the results and assets of the Medical Products Business Unit are being presented herein as discontinued operations.

We recorded net income from discontinued operations of zero and \$1.5 million for the three and nine months ended September 30, 2010, respectively. Included in discontinued operations for the nine months ended September 30, 2010 is a gain on sale of business unit to Bard of \$2.6 million and an income tax provision of \$1.0 million. Not included in discontinued operations are certain indirect costs of the Medical Products Business Unit that have been reclassified to selling, general and administrative expense of \$162 thousand for the nine months ended September 30, 2010. See Note 14 to the consolidated financial statements. Included in the gain of \$2.6 million is proceeds received from Bard of \$2.9 million, less licenses transferred to Bard of \$42 thousand and legal and professional fees related to complete the sale of \$204 thousand. See Note 14 to the unaudited condensed consolidated financial statements.

#### Net Loss

We reported net loss of \$1.8 million and \$915 thousand for the three months ended September 30, 2011 and 2010, respectively. Net loss increased approximately \$855 thousand, primarily due to \$1.8 million decrease in solar and optoelectronics margin, partially offset by a decrease in selling, general and administrative expenses of \$942 thousand.

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We reported a net loss of \$3.1 million and net loss of \$208 thousand for the nine months ended September 30, 2011 and 2010, respectively. Net loss increased approximately \$2.9 million, primarily due to \$1.4 million decrease in 2011 margin, partially offset by a decrease in selling, general and administrative expenses of \$1.7 million in 2011, and 2010 was favorably impacted by a \$2.6 million gain on sale of business unit and a \$837 thousand gain on termination of contracts.

#### Liquidity and Capital Resources

(in thousands)	September 30, 2011	December 31, 2010	Decrease \$	%	%
Cash and cash equivalents	\$2,324	\$6,259	\$(3,935)	)	(63)
Working capital	\$3,317	\$5,166	\$(1,849)	)	(36)

Cash and cash equivalents decreased due to cash used in operating activities and to a lesser extent cash used in investing and financing activities. The overall decrease in working capital is due to an increase in current liabilities, primarily advances on contracts in progress, partially offset by an increase in current assets, primarily inventories, net and deferred cost of goods sold. We have historically funded our operating cash requirements using operating cash flow, proceeds from the sale and licensing of technology and assets and proceeds from the sale of equity securities.

There are no material commitments by us for capital expenditures. At September 30, 2011, our accumulated deficit was approximately \$15.7 million, compared to accumulated deficit of approximately \$12.6 million as of December 31, 2010.

We have numerous options on how to fund future operational losses or working capital needs, including but not limited to sales of equity, bank debt or the sale or license of assets and technology, as we have done in the past; however, there are no assurances that we will be able to sell equity, obtain or access bank debt, or sell or license assets or technology on a timely basis and at appropriate values. We have developed several plans including cost containment efforts and outside financing to offset a decline in business due to global economic conditions. As a result, we believe we have sufficient resources to finance our current operations through at least September 30, 2012.

#### Loan Agreements

On June 22, 2009, we entered into two separate credit facilities with Silicon Valley Bank (the “Bank” or “SVB”) providing for credit lines of up to \$8 million in the aggregate: (i) an Amended and Restated Loan and Security Agreement (the “Restated Revolving Credit Facility”) pursuant to which the Bank agreed to provide us with a credit line of up to \$3 million and (ii) an Export-Import Bank Loan and Security Agreement (the “Ex-Im Facility”) pursuant to which the Bank agreed to provide us with a credit line of up to \$5 million to be guaranteed by the Export-Import Bank of the United States (the “EXIM Bank”). Our obligations under these two credit facilities were secured by substantially all of our assets.

In addition, under the Restated Revolving Credit Facility, our existing equipment credit facility with the Bank was amended whereby the parties agreed that there would be no additional availability under such facility and, based on an outstanding principal amount of \$1.2 million on June 22, 2009, we would continue to make monthly installments of principal of \$97 thousand plus accrued interest until the outstanding balance was paid in full (the “Equipment Term Loan”).

On November 16, 2009, we entered into two separate amended and restated credit facilities with the Bank continuing to provide for credit lines of up to \$8 million in the aggregate: (i) a Second Amended and Restated Loan and Security

Agreement (the “Second Restated Revolving Credit Facility”) pursuant to which the Bank agreed to continue to provide us with a credit line of up to \$3 million and (ii) an Amendment and Restated Export-Import Bank Loan and Security Agreement (the “Restated Ex-Im Facility”) pursuant to which the Bank agreed to continue to provide us with a credit line of up to \$5 million to be guaranteed by the EXIM Bank.

Our obligations under these two amended credit facilities are secured by substantially all of our assets. Advances under the Second Restated Revolving Credit Facility are limited to 80% of eligible receivables. Originally, interest on outstanding borrowings accrued at a rate per annum equal to the greater of (i) the prime rate plus 3.0% or (ii) 9.0%; with reductions in the rate if certain events occur, as defined. Advances under the Restated Ex-Im Facility are limited to (i) 90% of eligible receivables subject to a suitable foreign currency hedge agreement if applicable, plus (ii) 75% of all other eligible receivables billed in foreign currency, plus (iii) the 50% of the value of eligible inventory, as defined. Originally, interest on outstanding borrowings accrued at a rate per annum equal to the greater of (i) the prime rate plus 3.0% or (ii) 9.0%; with reductions in the rate if certain events occur, as defined.

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In addition, under the Second Restated Revolving Credit Facility, with respect to our outstanding Equipment Term Loan with the Bank, we were required to continue to make monthly installments of principal of \$97 thousand plus accrued interest until the outstanding balance was paid in full. Interest on the Equipment Term Loan accrued at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%. The final payment with respect to the Equipment Term Loan was made in June, 2010.

Under the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility, as long as any commitment remains outstanding under the facilities, we must comply with a financial covenant by maintaining cash and availability line of \$1.0 million. In addition, until all amounts under the credit facilities with the Bank are repaid, covenants under the credit facilities impose restrictions on our ability to, among other things, incur additional indebtedness, create or permit liens on our assets, merge, consolidate or dispose of assets (other than in the ordinary course of business), make dividend and other restricted payments, make certain debt or equity investments, make certain acquisitions, engage in certain transactions with affiliates or change the business conducted by us. Any failure by us to comply with the covenants and obligations under the credit facilities could result in an event of default, in which case the Bank may be entitled to declare all amounts owed to be due and payable immediately.

On June 15, 2010, we entered into with the Bank (i) the First Loan Modification Agreement amending certain terms of the Second Restated Revolving Credit Facility and (ii) the First Loan Modification Agreement amending certain terms of the Restated Ex-Im Facility (collectively, the "Loan Modifications"). Pursuant to the terms of the Loan Modifications, we agreed to (i) create a letter of credit sub-facility within the our existing credit line, (ii) decrease the interest rate with regard to financed eligible accounts from SVB Prime Rate plus 3.0% per annum to SVB Prime Rate plus 2.5% per annum while (iii) reducing the interest rate floor from 6.0% per annum to 4.0% per annum and (iv) extending the maturity date of the Second Restated Revolving Credit Facility and Restated Ex-Im Facility to December 31, 2011. In addition to the above, in the event we achieve certain levels of liquidity, based on cash on hand and availability under the credit facility, the Bank will waive the requirement that we cash collateralize any letters of credit issued by the Bank pursuant to the new letter of credit sub-facility in an aggregate amount up to \$1.5 million. Finally, because we have made all the required payments under the Equipment Term Loan, the Bank acknowledged that the Equipment Term Loan has been paid in full and all references to it in the Second Restated Revolving Credit Facility have been deleted.

On March 31, 2011, the Bank agreed to increase the letter of credit sub facility under our credit facility with the Bank from \$1.5 million to \$2.5 million. We used \$1.4 million of this sub-facility at September 30, 2011 and December 31, 2010, respectively. All other terms and conditions under the credit facility remain the same.

On November 8, 2011, we entered into with the Bank amendments to the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility providing that, during the period from November 8, 2011 until the earlier to occur of the date on which we deliver our November 2011 financial reports to the Bank or December 31, 2011, and provided we maintain liquidity at least equal to twice the amount of our advances drawn and letters of credit issued under the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility, we will be able to borrow (i) up to \$2 million under the Second Restated Revolving Credit Facility and (ii) up to \$5 million under the Restated Ex-Im Facility less the amount of outstanding letters of credit. Once we maintain liquidity of \$6 million the line will revert to the prior terms of the credit facilities, as previously amended, noted above. All other terms and conditions under the credit facilities remain the same.

Advances outstanding under the Second Restated Revolving Credit Facility were \$842 thousand at September 30, 2011 and December 31, 2010, respectively. Advances outstanding under the Restated Ex-Im Facility were \$315 thousand at September 30, 2011 and December 31, 2010, respectively. As of September 30, 2011, the interest rate per annum on the Second Restated Revolving Credit Facility and Restated Ex-Im Facility was 6.5% and 6.5%,

respectively. Combined availability under the Second Restated Revolving Credit Facility and the Restated Ex-Im Facility was \$2.1 million as of September 30, 2011.

#### Gain on Termination of Contracts

In the fourth quarter of 2009, We determined that three purchase and sale agreements with Jiangxi Gemei Sci-Tech., LLC (“Jiangxi”) related to a module equipment line and cell equipment line were terminated due to a breach of contract by Jiangxi. Jiangxi had failed to make payments as required by the agreements and has not responded to numerous communications by us. We made commitments to purchase equipment on behalf of Jiangxi and due to Jiangxi not making contractual payments, we entered into settlement agreements with these vendors in the fourth quarter of 2009 and first quarter of 2010. As a result of the settlement agreement entered into in the first quarter of 2010 and deposits paid by Jiangxi less settlements paid to vendors, we recognized a gain on termination of contracts of \$837 thousand in the first quarter of 2010. See Note 13 to the unaudited condensed consolidated financial statements.



### Foreign Currency Fluctuation

We sell almost exclusively in U.S. dollars, generally against a confirmed irrevocable letter of credit through a major United States bank. Accordingly, we are not directly affected by foreign exchange fluctuations on our current orders. However, fluctuations in foreign exchange rates do have an effect on our customers' access to U.S. dollars and on the pricing competition on certain pieces of equipment that we sell in selected markets. We have committed to purchase certain pieces of equipment from European vendors; these commitments are denominated in Euros. We bear the risk of any currency fluctuations that may be associated with these commitments. We attempt to hedge known transactions when possible to minimize foreign exchange risk. We had no hedging activity during the first three quarters of 2011 and 2010. Foreign exchange gain (loss) included in other expense was a gain of approximately \$1 thousand and a loss of approximately \$8 thousand during the three months ended September 30, 2011 and 2010, respectively. We had currency exchange losses of approximately \$1 thousand and \$21 thousand during the nine months ended September 30, 2011 and 2010, respectively.

### Related Party Transactions

On November 30, 2007, we entered into a new Lease Agreement (the "Bedford Lease") with SPI-Trust, a Trust of which Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary, with respect to 144,230 square feet of space comprising the entire building in which we have occupied space since December 1, 1985. The term of the Bedford Lease commenced on December 1, 2007 and was originally set to expire on November 30, 2012. The annual rental rate for the first year of the Bedford Lease was \$12.50 per square foot on a triple net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increased on each anniversary by \$0.75 per square foot.

On September 17, 2010, we entered into the First Amendment to Lease Agreement with SPI-Trust to amend the Bedford Lease. The term of the Bedford Lease was extended for an additional five (5) years to expire on November 30, 2017. The annual rental rate for the first year of the extended term (December 1, 2012 through November 30, 2013) is \$16.00 per square foot on a triple net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. After the first year of the extended term of the Bedford Lease, the annual rental rate increases on each anniversary by \$0.50 per square foot. We have the right to further extend the term of the Bedford Lease for an additional five (5) year period. If we exercise this right to further extend the term of the Bedford Lease, the annual rental rate for the first year of the further extended term will be the greater of: (a) the rental rate in effect immediately preceding the commencement of the extended term; or (b) the market rate at such time, and on each anniversary of the commencement of the extended term the rental rate will increase by \$0.50 per square foot. Additionally, SPITrust agreed to reimburse us up to \$50 thousand for all costs incurred by us in connection with any alterations or improvements to the premises or repairs or replacements to the heating and air conditioning systems. We believe that the terms of the Bedford Lease, as amended, are commercially reasonable. Rent expense under the Bedford Lease was \$578 thousand and \$529 thousand for the three months ended September 30, 2011 and 2010, respectively, and \$1.7 million and \$1.5 million for the nine months ended September 30, 2011 and 2010, respectively.

On August 29, 2008, we entered into a new Lease Agreement (the "Hudson Lease") with SPI-Trust, with respect to 90 thousand square feet of space comprising the entire building in which Spire Semiconductor has occupied space since June 1, 2003. The term of the Hudson Lease commenced on September 1, 2008, and continues for seven (7) years until August 31, 2015. We have the right to extend the term of the Hudson Lease for an additional five (5) year period. The annual rental rate for the first year of the Hudson Lease is \$12.50 per square foot on a triple-net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increases on each anniversary by \$0.75 per square foot. If we exercise our right to extend the term of the Hudson Lease, the annual rental rate for the first year of the extended term will be the greater of: (a) the rental rate in effect immediately preceding the commencement of the extended term; or (b) the market rate at such time, and on each

anniversary of the commencement of the extended term the rental rate will increase by \$0.75 per square foot. In addition, we are required to deposit with SPI-Trust \$300 thousand as security for performance by the Company for its covenants and obligations under the Hudson Lease. SPI-Trust is responsible, at its sole expense, to make certain defined tenant improvements to the building. We believe that the terms of the Hudson Lease are commercially reasonable and reflective of market rates. The lease agreement does not provide for a transfer of ownership at any point. The Hudson Lease is classified as a related party operating lease. Rent expense under the Hudson Lease was \$332 thousand for each of the three months ended September 30, 2011 and 2010, respectively, and \$996 thousand for each of the nine months ended September 30, 2011 and 2010, respectively.

#### Critical Accounting Policies

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting

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period. Among the significant estimates affecting our consolidated financial statements are those relating to revenue recognition, reserves for doubtful accounts, reserve for excess and obsolete inventory, impairment of long-lived assets, stock-based compensation and warranty reserves. We regularly evaluate our estimates and assumptions based upon historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. To the extent actual results differ from those estimates, our future results of operations may be affected. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements. Refer to Note 2 of the notes to consolidated financial statements in our Annual Report on Form 10-K for the year ended December 31, 2010 for a description of our significant accounting policies.

#### Contractual Obligations, Commercial Commitments and Off-Balance Sheet Arrangements

The following table summarizes our gross contractual obligations at September 30, 2011 and the maturity periods and the effect that such obligations are expected to have on our liquidity and cash flows in future periods:

Contractual Obligations (in thousands)	Payments Due by Period				
	Total	Less than 1 Year	2 - 3 Years	4 - 5 Years	More Than 5 Years
Second Restated Revolving Credit Facility (SVB)	\$842	\$842			
Restated Ex-Im Facility (SVB)	\$315	\$315			
Purchase obligations	\$2,419	\$2,350	\$69	\$—	
Unrelated party capital leases	\$70	\$46	\$24	\$—	
Operating leases:					
Unrelated party operating leases	\$334	\$164	\$170		
Related party operating leases	\$20,196	\$3,443	\$7,382	\$6,354	\$3,017

Purchase obligations include all open purchase orders outstanding regardless of whether they are cancelable or not. Included in purchase obligations are raw material and equipment needed to fulfill customer orders.

The Second Restated Revolving Credit Facility and Restated Ex-Im Facility does not include an interest component to the contractual obligation.

Outstanding letters of credit totaled \$1.4 million at September 30, 2011 and December 31, 2010, respectively. The letters of credit secure performance obligations and purchase commitments, and allow holders to draw funds up to the face amount of the letter of credit if we do not perform as contractually required. At September 30, 2011 and December 31, 2010, \$21 thousand was secured by restricted cash and \$1.4 million was secured by the Second Restated Revolving Credit Facility.

#### Item 3. Quantitative and Qualitative Disclosures about Market Risk

Not required as we are a smaller reporting company.

#### Item 4. Controls and Procedures

##### Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures are controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

As of the end of the period covered by this report on Form 10-Q, we conducted an evaluation, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, of our disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Exchange Act). Based upon this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that the our disclosure controls and procedures were not effective as of September 30, 2011

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because of the previously identified material weakness in our internal control over financial reporting which is described below, which we view as an integral part of our disclosure controls and procedures.

As previously reported in our Annual Report on Form 10-K, as filed with the Securities and Exchange Commission (SEC) on March 15, 2011, in connection with our assessment of the effectiveness of our internal control over financial reporting at the end of our last fiscal year, management identified a material weaknesses and several other significant deficiencies in our internal control over financial reporting as of December 31, 2010. The material weakness related to inadequate personnel with appropriate tax knowledge to prepare the deferred tax analysis and related disclosures timely at year end.

We retained resources during the quarter ended September 30, 2011 to improve on our material weakness related to the deferred tax analysis and related disclosures. Additionally, we have retained new software services to help improve our significant deficiencies in our internal control over financial reporting.

#### Changes in Internal Control Over Financial Reporting

Except as described above, there were no changes in our internal control over financial reporting that occurred during the quarter ended September 30, 2011 that have materially affected, or are reasonable likely to materially affect, our internal control over financial reporting.

## PART II. OTHER INFORMATION

### Item 1. Legal Proceedings

There have been no material changes to the legal proceedings disclosure included in Part I, Item 3 (“Legal Proceedings”) of our Annual Report on Form 10-K for the year ended December 31, 2010.

### Item 1A. Risk Factors

There have been no material changes in the Risk Factors described in Part I, Item 1A (“Risk Factors”) of our Annual Report on Form 10-K for the year ended December 31, 2010.

### Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

### Item 3. Defaults Upon Senior Securities

None.

### Item 5. Other Information

None.

### Item 6. Exhibits

- 31.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to §302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of the Chief Financial Officer and Treasurer pursuant to §302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002.
- 32.2 Certification of the Chief Financial Officer and Treasurer pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002.
- 101.INS\* XBRL Instance Document
- 101.SCH\* XBRL Taxonomy Extension Schema Document
- 101.CAL\* XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF\* XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB\* XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE\* XBRL Taxonomy Extension Presentation Linkbase Document

\* Pursuant to Rule 406T of Regulation S-T, the Interactive Data Files on Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Spire Corporation

Dated: November 10, 2011

By: /s/ Roger G. Little  
Roger G. Little  
Chairman of the Board, Chief Executive Officer and  
President  
(Principal Executive Officer)

Dated: November 10, 2011

By: /s/ Robert S. Lieberman  
Robert S. Lieberman  
Chief Financial Officer and Treasurer  
(Principal Financial Officer and Principal Accounting Officer)

EXHIBIT INDEX

Exhibit	Description
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