

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

**POST EFFECTIVE AMENDMENT NO. 2**

**TO**

**FORM S-3**

**REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933**

**DUNCAN ENERGY PARTNERS L.P.**

*(Exact name of registrant as specified in its charter)*

**Delaware**

*(State or other jurisdiction of  
incorporation or organization)*

**20-5639997**

*(I.R.S. Employer  
Identification Number)*

**1100 Louisiana, 10th Floor  
Houston, Texas 77002  
(713) 381-6500**

*(Address, including zip code, and telephone  
number, including area code, of registrant's  
principal executive offices)*

**Stephanie C. Hildebrandt  
1100 Louisiana, 10th Floor  
Houston, Texas 77002  
(713) 381-6500**

*(Name, address, including zip code, and telephone  
number, including area code,  
of agent for service)*

**With a copy to:**

**David C. Buck  
Andrews Kurth LLP  
600 Travis, Suite 4200  
Houston, Texas 77002  
(713) 220-4200**

**Approximate date of commencement of proposed sale to the public:** Not applicable. Termination of Registration Statement and deregistration of related securities that were not sold pursuant to the Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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 the definitions 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

(Do not check if a smaller reporting company.)

## DEREGISTRATION OF SECURITIES

On December 18, 2009, Duncan Energy Partners L.P., a Delaware limited partnership (the "Partnership"), filed a shelf registration statement on Form S-3 (Registration No. 333-163842) (as amended to date, the "Registration Statement") with the Securities and Exchange Commission (the "Commission"), which was deemed effective upon filing. The Registration Statement registered the offer and sale from time to time of 2,000,000 Common Units of the Partnership pursuant to the Partnership's Distribution Reinvestment Plan (the "Registered Securities").

Pursuant to the Agreement and Plan of Merger, dated as of April 28, 2011, by and among Enterprise Products Partners L.P. ("Enterprise"), Enterprise Products Holdings LLC ("Enterprise GP"), which is the general partner of Enterprise, EPD MergerCo LLC ("MergerCo"), which is a wholly owned subsidiary of Enterprise, the Partnership and DEP Holdings, LLC, MergerCo merged with and into the Partnership, with the Partnership surviving the merger as a wholly owned subsidiary of Enterprise, on September 7, 2011 (the "Merger").

In connection with the Merger, and in accordance with an undertaking made by the Partnership in the Registration Statement, the Partnership hereby removes from registration by means of this Post-Effective Amendment No. 2 any of the Registered Securities which remain unsold under the Registration Statement as of the date hereof.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, Duncan Energy Partners L.P. certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Post-Effective Amendment No. 2 to the Registration Statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Houston, State of Texas, on September 8, 2011.

**DUNCAN ENERGY PARTNERS L.P.**

By: DEP Holdings, LLC,  
its general partner

By: /s/ Michael A Creel  
Michael A. Creel  
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this Post-Effective Amendment No. 2 to the Registration Statement on Form S-3 has been signed by the following persons in the capacities indicated on September 8, 2011.

<u>Name</u>	<u>Title</u>
<u>/s/ Michael A. Creel</u> Michael A. Creel	Director, President and Chief Executive Officer (Principal Executive Officer)
<u>/s/ W. Randall Fowler</u> W. Randall Fowler	Director, Executive Vice President and Chief Financial Officer (Principal Financial Officer)
<u>/s/ Michael J. Knesek</u> Michael J. Knesek	Senior Vice President, Controller and Principal Accounting Officer