ENERPLUS RESOURCES FUND Form 6-K October 28, 2010

QuickLinks -- Click here to rapidly navigate through this document

Yes o

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Report of Foreign Issuer pursuant to Rule 13-a-16 or 15d-16 of the Securities Exchange Act of 1934

FOR THE MONTH OF October, 2010

COMMISSION FILE NUMBER 1-15150

The Dome Tower Suite 3000, 333 - 7th Avenue S.W. Calgary, Alberta Canada T2P 2Z1

(403) 298-2200

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F o Form 40-F ý
Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1)

Yes o No ý
Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7)

Yes o No ý
Indicate by check mark whether, by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the securities Exchange Act of 1934.

No ý

EXHIBIT INDEX

EXHIBIT 99.1 Arrangement Agreement dated October 22, 2010 among Enerplus Resources Fund, Enerplus Exchangeable Limited Partnership. EnerMark Inc. and Enerplus Corporation

SIGNATURE

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.

ENERPLUS RESOURCES FUND By EnerMark Inc.

By: /s/ DAVID A. MCCOY

David A. McCoy

Vice President, General Counsel & Corporate Secretary

DATE: October 28, 2010

QuickLinks

EXHIBIT INDEX SIGNATURE