



(51) International Patent Classification:

G06F 9/455 (2006.01) *G06G* 7/48 (2006.01)
E21B 43/12 (2006.01)

(21) International Application Number:

PCT/US2015/020297

(22) International Filing Date:

12 March 2015 (12.03.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/951,827 12 March 2014 (12.03.2014) US

(71) Applicant: LANDMARK GRAPHICS CORPORATION [US/US]; 2107 City West Blvd., Bldg. 2, Houston, Texas 77042 (US).

(72) Inventors: WONG, Terry; 13099 Westheimer Road, Apt. 605, Houston, Texas 77077 (US). FLEMING, Graham C.; 12014 Concho Bay Ct., Houston, Texas 77041 (US).

(74) Agents: TIDWELL, Mark et al.; Haynes and Boone, LLP, 2323 Victory Avenue, Suite 700, Dallas, Texas 75219 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: SIMULATING FLUID PRODUCTION IN A COMMON SURFACE NETWORK USING EOS MODELS WITH BLACK OIL MODELS

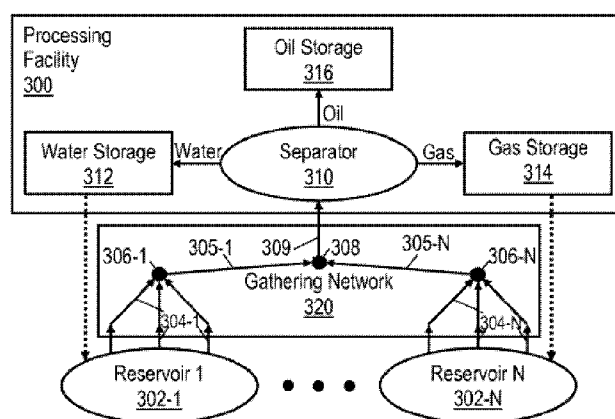


FIG. 3

(57) Abstract: System and methods of simulating fluid production in a multi-reservoir system with a common surface network are provided. Black oil data is matched with an equation of state (EOS) model representing different fluid components of each reservoir in the multi-reservoir system. The black oil data is converted into a two-component black oil model for each reservoir, based on the EOS model. Fluid production in the multi-reservoir system is simulated for at least one simulation point in the common surface network, based in part on the two-component black oil model of each reservoir. When fluids produced at the simulation point are determined to be from different reservoirs, properties of the fluids are calculated based on weaved EOS models of the different reservoirs. Otherwise, properties of the fluids are calculated using the two-component black oil model for the reservoir from which the fluids are produced.