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61/821,583 9 May 2013 (09.05.2013) US(71) Applicant: **LANDMARK GRAPHICS CORPORATION** [US/US]; 2107 City West Boulevard, Building 2, Houston, Texas 77042 (US).(72) Inventors: **YARUS, Jeffrey Marc**; 5234 N. Braeswood, Houston, Texas 77096 (US). **SRIVASTAVA, Rae Mo-han**; 134 Hillingdon Avenue, Toronto, Ontario M4C 5S4 (CA). **MAUCEC, Marko**; 6233 South Lima Way, Englewood, Colorado 80111 (US).(74) Agents: **RAJ, Vinu** et al.; Haynes and Boone, LLP, 2323 Victory Avenue, Suite 700, Dallas, TX 75219 (US).

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(54) Title: GRIDLESS SIMULATION OF A FLUVIO-DELTAIC ENVIRONMENT

0	1	1	1	0
0	0	1	0	0
0	0	?	1	0
0	0	1	1	0
1	0	1	1	0

FIGURE 1

(57) Abstract: The disclosed embodiments include a method, apparatus, and computer program product for performing gridless simulation of a fluvio-deltaic environment. For example, one disclosed embodiment includes a system that includes at least one processor, and at least one memory coupled to the at least one processor and storing instructions that when executed by the at least one processor performs operations that include generating a set of channel centerlines corresponding to a set of channels that are indicative of flow units in a fluvio-deltaic environment; and generating channel widths for each of the channel centerlines. In one embodiment, the operations for generating the set of channel centerlines of the reservoir include selecting a seed point for each channel, assigning each seed point a direction of propagation, and iteratively generating each channel.