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Sent: Mon Jun 28 12:48:59 2010
To: 'Mix, Kurt'
Cc: 'Sprague, Jonathan D'; David Barnett; 'William Burch'; Rogers, Bruce A (Houston); 'bobgrace@gsm-inc.com'
Subject: Flow and kill sensitivity - restricted inflow from the oil zone
Importance: Normal
Attachments: image001.jpg; MC252 Blowout Analysis Sensitivity Scenario A.pdf

Kurt,
Please find enclosed a requested summary of results with sensitivity wrt reservoir inflow and depletion.

Regards,
Ole

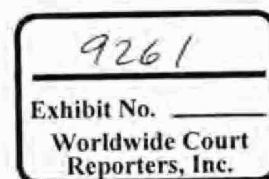
cid:3310015153_18375562

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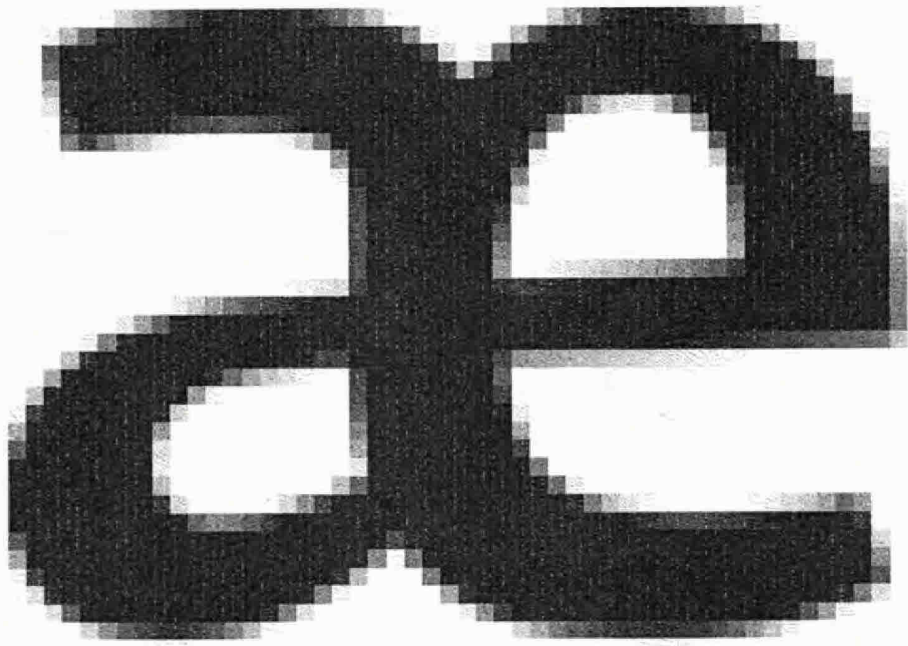
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Dynamic Kill MC252 - Sensitivity

Casing flow path scenario: Flow from the M56D-F oil sands down between the 7-in production casing and the open hole to TD, further up the inside of the 7-in casing and 9 7/8-in casing to wellhead/seabed.

Case		Inflow	PP, psi	WHP, psi	Oil Rate, bopd	FWP _{in} , psi	FWP _{in} , ppg	FBHP, psi	FBHP, ppg	Kill, bpm
A	Base Case	Original	11835	2245	63,000	9008	10.1	10571	11.3	33
B	Base case, 4300	Original	11835	4300	52,000	9664	10.8	10797	11.5	20
C	Depleted	Depleted	10835	2245	58,000	8369	9.4	9727	10.4	26
D	Depleted, 4300	Depleted	10835	4300	45,000	9058	10.1	9974	10.6	14
E	Depleted, restricted	R1	10835	2245	52,000	7699	8.6	8845	9.4	25
F	Depleted, severely restricted	R2	10835	2245	25,000	5375	6.0	5932	6.3	19

Inflow: Base case, depleted and/or restricted due to skin, partly open sand face or lower permeability than estimated (see figure on next page)

PP: Pore pressure, original or depleted by 1000 psi (estimated range at August 1st: 824-1339 psi)

WHP: Wellhead pressure; 2245 unrestricted equal to seabed pressure or 4300 psi as currently measured

FWP_{in}: Flowing wellbore pressure inside the casing at the depth of the intersection (17,220 ft). EMW at the intersection point

FBHP: Flowing bottom-hole pressure at the sand face. EMW at the sand face

Kill: Minimum required kill rate using 14.2 ppg mud

Note that Case F with a very low flowing bottom hole pressure will result in roughly more than 70% gas flow at the seabed due gas coming out of the oil already at the sand face.

Inflow Performance Relation

