

Top hat flow calculations

SAND2010-7890P

6/7/2010 rev 1

	Total oil flow kBBL/d ¹	Driving parameter Top hat pressure (psig)	Comments ²
LANL	38	1	2-phase flow
	71	5	Excel finite difference model
	96	10	
LLNL	45	1	Homogeneous mixture
	80	5	Sinda Fluint
	106	10	
SNL	39 - 42	1	Homogeneous mixture
	73 - 76	5	Darcy formula + home grown code
	97 - 99	10	

¹ common assumptions

- "Total oil flow" = Stock tank Barrel rate only without gas
- 2900 GOR
- 1150 psi exit pressure
- includes collection at surface
- 4 vents open
- 180 deg 0.125" skirt
- No p_{gh} difference used for skirt calculation

² Material property modeling
approaches are different

Break down of 1 psig case

6/7/2010

	Total oil flow kBBL/d ¹	Skirt	4 vents	Riser drill pipe
LANL	37767	3800	22800	11167
LLNL	45400	5500	22400	17500
SNL	39350 - 42050	3850	22800	12700-15400