



AUTHORITY FOR EXPENDITURE
DRILLING AND COMPLETION

Operator HighMark Energy Operating Well Number TBD Date 9/29/2016
Well Name Silver Oak 1-16H API Number 35-011-XXXXX AFE Number TBD
Operator WI TBD County / State 16-17N-12W Blaine County, OK

PROJECT: Drill, complete, and equip 1 mile horizontal Mississippian well w/ 25 stage cemented plug & perf completion. +/- 10,000' TVD; +/- 15,230' MD. 4,750' lateral length. 2,200 lb/ft.

INTANGIBLE COSTS

Minor	Description	Drilling - 8153	Completion - 8155	Total
100	Location, Roads & Survey	\$ 145,000	\$ 8,000	\$ 153,000
110	Surface Damages & Right of Way	25,000		\$ 25,000
120	Rig Move	200,000		\$ 200,000
140	Rig Cost - Daywork / Workover Rig	481,000	33,000	\$ 514,000
150	Coiled Tubing Unit		145,000	\$ 145,000
160	Fuel & Power	82,000		\$ 82,000
165	Drilling Water / Frac Water & Transfer	20,000	123,000	\$ 143,000
170	Bits & BHA / Downhole Rentals	196,000	30,000	\$ 226,000
175	Drill Pipe Rental	6,000		\$ 6,000
180	Open Hole Logging / Cased Hole Logging		5,000	\$ 5,000
185	Directional Drilling Services	164,000		\$ 164,000
190	Surface Equipment Rental	105,000	96,000	\$ 201,000
195	Field Office and Communications	33,000	13,000	\$ 46,000
200	Contract Service - Engineering & Geology	55,000	6,000	\$ 61,000
210	Tubular Inspection	6,000	3,000	\$ 9,000
220	Transportation	15,000	8,000	\$ 23,000
240	Fishing Tools & Services			\$ -
250	Mud & Chemicals	307,000	50,000	\$ 357,000
255	Mud Logging	23,000		\$ 23,000
260	Formation Evaluation	12,000		\$ 12,000
270	Cement Services & Float Equipment	130,000		\$ 130,000
280	Casing Crews	57,000		\$ 57,000
290	Stimulation		1,600,000	\$ 1,600,000
295	Pumping Services		50,000	\$ 50,000
300	Acidizing		8,000	\$ 8,000
315	Flowback & Well Testing		70,000	\$ 70,000
320	Mud Disposal / Salt Water Disposal	180,000	83,000	\$ 263,000
325	Environmental, Health & Safety	5,000	4,000	\$ 9,000
340	Perforating & Wireline Services		135,000	\$ 135,000
350	Wellsite Supervision	115,000	52,000	\$ 167,000
360	Other Labor	34,000	5,000	\$ 39,000
370	Surface Facility & Pipeline Installation Labor		50,000	\$ 50,000
700	Legal Expenses & Title	33,000		\$ 33,000
800	Other Expenses	12,000	8,000	\$ 20,000
850	Overhead	16,000	10,000	\$ 26,000
851	Insurance - Control of Well			\$ -
854	Contingency	123,000	130,000	\$ 253,000
	TOTAL INTANGIBLE	2,580,000	2,725,000	5,305,000

TANGIBLE COSTS

		Drilling - 8154	Completion - 8156	Total
100	Surface Casing	39,000		\$ 39,000
105	Intermediate Casing	215,000		\$ 215,000
115	Production Casing	300,000		\$ 300,000
120	Wellhead	18,000	32,000	\$ 50,000
110	Tubing		47,000	\$ 47,000
130	Downhole Equipment	16,000	10,000	\$ 26,000
135	Artificial Lift Equipment		12,000	\$ 12,000
140	Trucking	10,000	10,000	\$ 20,000
150	Conductor	12,000		\$ 12,000
160	Surface Facilities		240,000	\$ 240,000
170	Valves & Fittings		25,000	\$ 25,000
180	Flowlines		25,000	\$ 25,000
800	Other	5,000	4,000	\$ 9,000
	TOTAL INTANGIBLE	615,000	405,000	1,020,000
	TOTAL AFE COSTS	\$ 3,195,000	\$ 3,130,000	\$ 6,325,000

It is recognized that the amounts herein are estimates only and approval of this authorization shall extend to the actual costs incurred in conducting the operation specified whether more or less than that herein set out.

HighMark Approval

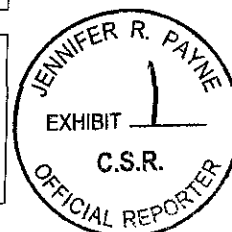
VP Operations Brandon Junker Date _____
COO Stephen Pugh Date _____

Partner Approval

Signature _____ Company _____
Printed Name _____ Date _____
Title/Position _____ Phone #/Email _____

We _____ do _____ DO NOT elect to be covered by HighMark Energy Operating, LLC's Well Control Insurance.
(please initial)

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