



Authorization For Expenditure

Company Entry CIMAREX ENERGY CO	Date Prepared October 24, 2015
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Location Anadarko	Well Name McCrary 1H-3130X	Project or Field Name CANA NORTHWEST PROSPECT	Property Number 350012-374.01	Wellbore ID 2215074
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Location 31-16N-12W, Blaine Co., OK	Blaine	OK	Oil <input checked="" type="checkbox"/>	Gas <input checked="" type="checkbox"/>	Expl <input checked="" type="checkbox"/>	Prod <input checked="" type="checkbox"/>
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Estimate Type Original Estimate	X	Estimate Date December 1, 2015	Est. Completion Date February 2, 2016	Formation Mississippi	TVD Measured Depth 21,420'
Revised Estimate					
Supplemental Estimate					11,540'

Project Description
Drill and complete a horizontal test. Drill to 1500', set surface casing. Drill to 9890', set intermediate casing. Drill to 11064' (KOP). Drill curve at 12 DLS build rate to +/- 11540' TVD and a +/- 9600' long lateral in the Meramec formation. Run and cement production casing. Stage frac in 41 stages. Drill out plugs. Run production tubing. Flow to sales through new facility.

Intangibles	Dry Hole Cost	After Casing Point	Completed Well Cost
Drilling Costs	\$3,963,000		\$3,963,000
Completion Costs		\$4,758,600	\$4,758,600
Total Intangible Costs	\$3,963,000	\$4,758,600	\$8,721,600

Tangibles			
Well Equipment	\$443,000	\$682,000	\$1,125,000
Lease Equipment		\$280,700	\$280,700
Total Tangible Well Cost	\$443,000	\$962,700	\$1,405,700

Plug and Abandon Cost	\$0	\$0	\$0
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Total Well Cost	\$4,406,000	\$5,721,300	\$10,127,300
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1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Well control insurance procured by Operator, provides, among other terms, for \$20,000,000 (100% W.I.) of Combined Single Limit coverage for well control and related redrilling and clean-up/pollution expense covering drilling (through completion) with a \$1,000,000 (100% W.I.) deductible.

Marketing Election
Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE
The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Cimarex Energy Co. Approval

Prepared By	Drilling and Completion Manager	Regional Manager

Joint Interest Approval

Company	By	Date



12/1/15



Project Cost Estimate

Lease Name:

	BCP - Drilling		ACP - Drilling		Completion	
	(Dry Hole Costs)				Estimate	
	Code	Cost	Code	Cost	Code	Cost
Roads & Location Preparation / Restoration	DIDC.100	\$180,000			STIM.100	\$23,000
Damages	DIDC.105	\$28,000				
Mud / Fluids Disposal Charges	DIDC.255	\$145,000			STIM.255	\$60,000
Day Rate	##### DH Days	48.50	ACP Days @	\$5.00 Per Day	DIDC.115	\$1,262,000
					DICC.120	\$130,000
Misc Preparation Cost (mouse hole, rat hole, pods, pile clusters, misc.)	DIDC.120	\$26,000				
Bits	DIDC.125	\$150,000	DICC.125	\$0	STIM.125	\$0
Fuel	\$2.00 Per Gallon	##### Gallons Per Day	DIDC.135	\$175,000	DICC.130	\$0
Water for Drilling Rig / Completion Fluids (Not Frac Water)	DIDC.140	\$18,000	DICC.135	\$1,000	STIM.135	\$0
Mud & Additives	DIDC.145	\$450,000				
Surface Rentals	DIDC.150	\$67,000	DICC.140	\$0	STIM.140	\$150,000
Downhole Rentals	DIDC.155	\$80,000			STIM.145	\$0
Formation Evaluation (DST, Coring including evaluation, G&G Services)	DIDC.160	\$0			STIM.150	\$0
Mud Logging	24.00 Days @	\$1,000.00 Per Day	DIDC.170	\$24,000		
Open Hole Logging			DIDC.180	\$0		
Cementing & Float Equipment	DIDC.185	\$35,000	DICC.155	\$60,000		
Tubular Inspections	DIDC.190	\$10,000	DICC.160	\$10,000	STIM.160	\$0
Casing Crews	DIDC.195	\$25,000	DICC.165	\$33,000	STIM.165	\$0
Extra Labor, Welding, Etc.	DIDC.200	\$15,000	DICC.170	\$5,000	STIM.170	\$5,000
Land Transportation (Trucking for tangibles)	DIDC.205	\$25,000	DICC.175	\$9,000	STIM.175	\$0
Supervision	\$4,000.00 Per Day		DIDC.210	\$214,000	DICC.180	\$20,000
Trailer House / Camp / Catering			DIDC.220	\$32,000	DICC.235	\$5,000
Other Misc Expenses			DIDC.225	\$1,000	DICC.190	\$0
Overhead			DIDC.232	\$10,000	DICC.195	\$5,000
Remedial Cementing			DIDC.231	\$0	STIM.215	\$0
MOB/DEMOB			DIDC.240	\$210,000		
Directional Drilling Services			DIDC.245	\$471,000		
Crane for Construction						
Solids Control			DIDC.260	\$40,000		
Well Control Equip (Shubbing Svcs.)			DIDC.265	\$40,000	DICC.240	\$7,000
Fishing & Sidetrack Operations			DIDC.270	\$0	DICC.245	\$0
Completion Rig					STIM.215	\$0
Coil Tubing					STIM.260	\$400,000
Completion Logging, Perforating, WL Units, WL Surveys					STIM.200	\$208,000
Composite Plugs					STIM.390	\$123,000
Stimulation Pumping Charges, Chemicals, Additives, Solid					STIM.210	\$2,368,000
Stimulation Water / Water Transfer / Water Storage					STIM.395	\$295,000
Cimarex Owned Frac / Rental Equipment					STIM.305	\$35,000
Legal / Regulatory / Curative			DIDC.300	\$20,000		
Well Control Insurance	\$1.00 Per Foot		DIDC.285	\$21,000		
Contingency	0.1 % of Drilling Intangibles		DIDC.435	\$189,000	DICC.220	\$14,000
Construction For Flow Lines					STIM.220	\$189,000
Construction For Sales P/L						
Total Intangible Cost			\$3,963,000		\$239,000	\$3,969,800

Tangible Well Equipment							
Casing	Size	Feet	\$ / Foot				
Drive Pipe	0'	0.00	\$0.00	DWEB.150	\$0		
Conductor Pipe	0	0.00	\$0.00	DWEB.130	\$0		
Water String	0	0.00	\$0.00	DWEB.135	\$0		
Surface Casing	13.375	1500.00	\$39.40	DWEB.140	\$59,000		
Intermediate Casing 1	9.625	9890.00	\$36.30	DWEB.145	\$359,000		
Intermediate Casing 2	0	0.00	\$0.00	DWEB.155	\$0		
Drilling Liner	0	0.00	\$0.00	DWEB.160	\$0		
Production Casing or Liner	5.5	21420.00	\$24.35		DWEA.100	\$522,000	
Production Tie-Back	0	0.00	\$0.00		DWEA.165	\$0	STIMT.101 \$0
Tubing	2.375	11160.00	\$5.65				STIMT.105 \$0
Wellhead, Tree, Chokes				DWEB.115	\$25,000	DWEA.120	\$45,000
Liner Hanger, Isolation Packer				DWEB.100	\$0	DWEA.125	\$0
Packer, Nipples							STIMT.400 \$5,000
Pumping Unit, Engine							STIMT.405 \$0
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)							STIMT.410 \$0
Tangible - Lease Equipment							
N/C Lease Equipment							
Tanks, Tanks Steps, Stairs							
Battery (Heater Treater, Separator, Gas Treating Equipment)							
Secondary Containments							
Overhead Power Distribution (electric line to facility)							
Facility Electrical & Automation							
SWD Connection							
Flow Lines (Line Pipe from wellhead to central facility)							
Pipeline to Sales							
Meters and Metering Equipment							
Total Tangibles				\$443,000		\$567,000	\$45,000

P&A Costs	DIDC.295	\$0	DICC.275	\$0		
Total Cost		\$4,426,000		\$666,000		\$4,814,000



Project Cost Estimate

Lease Name:

Intangibles				
Roads & Location Preparation / Restoration	CON.100	\$2,500	PCOM.100	\$1,000
Damages	CON.105	\$0		\$206,500
Mud / Fluids Disposal Charges			PCOM.105	\$30,000
Day Rate	***** DH Days	48.50	ACP Days @	\$5.00
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)			PCOM.125	\$0
Blits			PCOM.130	\$0
Fuel	\$2.00 Per Gallon	***** Gallons Per Day	PCOM.135	\$1,000
Water for Drilling Rig / Completion Fluids (Not Frac Water)				\$450,000
Mud & Additives	CON.140	\$3,000	PCOM.140	\$324,000
Surface Rentals			PCOM.145	\$0
Downhole Rentals				\$0
Formation Evaluation (DST, Coring including evaluation, G&G Services)				\$24,000
Mud Logging	24.00 Days @	\$1,000.00	Per Day	\$0
Open Hole Logging				\$95,000
Cementing & Float Equipment			PCOM.160	\$3,700
Tubular Inspections				\$58,000
Casing Crews	CON.170	\$27,000	PCOM.170	\$0
Extra Labor, Welding, Etc.	CON.175	\$4,000	PCOM.175	\$6,800
Land Transportation (Trucking for tangibles)	CON.180	\$5,100	PCOM.180	\$9,000
Supervision				\$53,000
Trailer House / Camp / Catering	CON.190	\$3,000	PCOM.190	\$0
Other Misc Expenses				\$15,000
Overhead			PCOM.215	\$0
Remedial Cementing				\$210,000
MOB/DEMOB				\$471,000
Directional Drilling Services	CON.230	\$4,000		\$4,000
Crane for Construction				\$40,000
Solids Control			PCOM.240	\$22,000
Well Control Equip (Snubbing Svcs.)			PCOM.245	\$0
Fishing & Sidetrack Operations			PCOM.115	\$14,000
Completion Rig			PCOM.260	\$0
Coil Tubing			PCOM.200	\$3,500
Completion Logging, Perforating, WL Units, WL Surveys			PCOM.190	\$0
Composite Plugs			PCOM.210	\$0
Stimulation Pumping Charges, Chemicals, Additives, Sand				\$295,000
Stimulation Water / Water Transfer / Water Storage				\$35,000
Cimarex Owned Frac / Rental Equipment	CON.300	\$0		\$20,000
Legal / Regulatory / Curative				\$21,000
Well Control Insurance	\$1.00 Per Foot		CON.220	\$2,700
Contingency	0.1 % of Drilling Intangibles		CON.310	\$3,500
Construction For Flow Lines	CON.265	\$0		\$0
Construction For Sales P/A		\$54,800		\$435,800
Total Intangible Cost				\$8,721,600

Intangible - Well Equipment	Size	Feet	\$ / Foot	
Casing	0	0.00	\$0.00	\$0
Drive Pipe	0	0.00	\$0.00	\$0
Conductor Pipe	0	0.00	\$0.00	\$0
Water String	13.375	1500.00	\$39.40	\$539,000
Surface Casing	9.625	9890.00	\$36.30	\$359,000
Intermediate Casing 1	0	0.00	\$0.00	\$0
Intermediate Casing 2	0	0.00	\$0.00	\$0
Drilling Liner	5.5	21420.00	\$24.35	\$522,000
Production Casing or Liner	0	0.00	\$0.00	\$0
Production Tie-Back	2.375	11160.00	\$5.65	\$68,200
Tubing				\$110,000
Wellhead, Tree, Chokes				\$0
Liner Hanger, Isolation Packer				\$1,800
Packer, Nipples				\$0
Pumping Unit, Engine				\$0
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)				\$0
Remedial Frac Equipment	CONT.400	\$50,800		\$50,800
N/C Lease Equipment	CONT.405	\$61,000		\$61,000
Tanks, Tanks Steps, Stairs	CONT.410	\$69,100		\$69,100
Battery (Heater Treater, Separator, Gas Treating Equipment)	CONT.415	\$10,200		\$10,200
Secondary Containments	CONT.420	\$3,000		\$3,000
Overhead Power Distribution (electric line to facility)	CONT.425	\$31,200		\$31,200
Facility Electrical & Automation	CONT.430	\$0		\$0
SWD Connection	CONT.435	\$23,200		\$23,200
Flow Lines (Line Pipe from wellhead to central facility)	CONT.440	\$0		\$0
Pipeline to Sales	CONT.445	\$32,200		\$32,200
Meters and Metering Equipment				\$70,000
Total Tangibles				\$1,405,700

P&A Costs	\$335,500	\$505,800	\$18,127,300
Total Cost			