



Authorization For Expenditure

Company Entity	Date Prepared
CIMAREX ENERGY CO	March 6, 2016

Region	Well Name	Prospect or Field Name	Property Number	Drilling AFE No.
Anadarko	HUGHES 1H-1918X	CANA NORTHWEST PROSPECT	350012-401.01	2215175

Location	County	State	Type Well
19-15N-11W, Blaine County, OK	Blaine	OK	Oil <input type="checkbox"/> Gas <input type="checkbox"/> Expl <input checked="" type="checkbox"/> Prod <input type="checkbox"/>

Estimate Type	Est. Start Date	Est. Comp Date	Formation	Ttl Measured Depth
Original Estimate	X		Mississippian	22,000'
Revised Estimate				Ttl Vertical Depth
Supplemental Estimate				12,000'

Project Description
Drill and complete a horizontal test. Drill to 1500', set surface casing. Drill to 10100', set intermediate casing. Drill to 11522' (KOP). Drill curve at 12 DLS build rate to +/- 12000' TVD and a +/- 9730' long lateral in the Mississippian formation. Run and cement production casing. Stage frac in 42 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	\$3,384,000		\$3,384,000
Completion Costs		\$5,545,500	\$5,545,500
Total Intangible Costs	\$3,384,000	\$5,545,500	\$8,929,500

Tangibles			
Well Equipment	\$494,000	\$642,800	\$1,136,800
Lease Equipment		\$333,600	\$333,600
Total Tangible Well Cost	\$494,000	\$976,400	\$1,470,400

Plug and Abandon Cost	\$0	\$0	\$0
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Total Well Cost	\$3,878,000	\$6,521,900	\$10,399,900
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Comments on Well Costs
1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance
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



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Project Cost Estimate

Lease Name:

	BCP - Drilling		ACP - Drilling		Completion /	
	(Dry Hole Cost)				Stimulation	
Intangibles	Codes		Codes		Codes	
Roads & Location Preparation / Restoration	DIDC.100	\$200,000			STIM.100	\$30,000
Damages	DIDC.105	\$28,000				
Mud / Fluids Disposal Charges	DIDC.255	\$120,000			STIM.255	\$120,000
Day Rate ##### DH Days 48.00 ACP Days @ \$0.00 Per Day	DIDC.115	\$859,000	DICC.120	\$104,000		
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)	DIDC.120	\$30,000				
Bits	DIDC.125	\$204,000	DICC.125	\$0	STIM.125	\$0
Fuel \$2.00 Per Gallon ##### Gallons Per Day	DIDC.135	\$173,000	DICC.130	\$0		
Water for Drilling Rig / Completion Fluids (Not Frac Water)	DIDC.140	\$20,000	DICC.135	\$1,000	STIM.135	\$0
Mud & Additives	DIDC.145	\$350,000				
Surface Rentals	DIDC.150	\$120,000	DICC.140	\$0	STIM.140	\$140,000
Downhole Rentals	DIDC.155	\$25,000			STIM.145	\$0
Formation Evaluation (DST, Coring including evaluation, G&G Services)	DIDC.160	\$0			STIM.150	\$0
Mud Logging 46.00 Days @ \$1,000.00 Per Day	DIDC.170	\$46,000				
Open Hole Logging	DIDC.180	\$0				
Cementing & Float Equipment	DIDC.185	\$64,000	DICC.155	\$115,000		
Tubular Inspections	DIDC.190	\$17,000	DICC.160	\$10,000	STIM.160	\$0
Casing Crews	DIDC.195	\$28,000	DICC.165	\$25,000	STIM.165	\$0
Extra Labor, Welding, Etc.	DIDC.200	\$18,000	DICC.170	\$5,000	STIM.170	\$0
Land Transportation (Trucking for tangibles)	DIDC.205	\$22,000	DICC.175	\$9,000	STIM.175	\$5,000
Supervision \$3,800.00 Per Day	DIDC.210	\$201,000	DICC.180	\$15,000	STIM.180	\$67,000
Trailer House / Camp / Catering	DIDC.280	\$45,000	DICC.255	\$5,000	STIM.280	\$13,000
Other Misc Expenses	DIDC.220	\$2,000	DICC.190	\$0	STIM.190	\$25,000
Overhead	DIDC.225	\$11,000	DICC.195	\$5,000		
Remedial Cementing	DIDC.231	\$0			STIM.215	\$0
MOB/DEMOB	DIDC.240	\$195,000				
Directional Drilling Services	DIDC.245	\$300,000				
Crane for Construction						
Solids Control	DIDC.260	\$43,000				
Well Control Equip (Snubbing Svcs.)	DIDC.265	\$60,000	DICC.240	\$10,000	STIM.240	\$15,000
Fishing & Sidetrack Operations	DIDC.270	\$0	DICC.245	\$0	STIM.245	\$0
Completion Rig					STIM.115	\$0
Coil Tubing					STIM.260	\$350,000
Completion Logging, Perforating, WL Units, WL Surveys					STIM.200	\$213,000
Composite Plugs					STIM.390	\$113,000
Stimulation Pumping Charges, Chemicals, Additives, Sand					STIM.210	\$2,881,000
Stimulation Water / Water Transfer / Water Storage					STIM.395	\$299,000
Cimarex Owned Frac / Rental Equipment					STIM.305	\$100,000
Legal / Regulatory / Curative	DIDC.300	\$20,000				
Well Control Insurance \$1.00 Per Foot	DIDC.285	\$22,000				
Contingency 5.0 % of Drilling Intangibles	DIDC.435	\$161,000	DICC.220	\$13,000	STIM.220	\$219,000
Construction For Flow Lines						
Construction For Sales P/L						
Total Intangible Cost		\$3,384,000		\$317,000		\$4,590,000

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	\$43.00	DWEB.140	\$65,000				
Intermediate Casing 1	9.625	10100.00	\$39.00	DWEB.145	\$394,000				
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	22000.00	\$22.00			DWEA.100	\$484,000		
Production Tie-Back	0	0.00	\$0.00			DWEA.165	\$0	STIMT.101	\$0
Tubing	2.375	11620.00	\$5.10					STIMT.105	\$0
Wellhead, Tree, Chokes				DWEB.115	\$35,000	DWEA.120	\$43,000	STIMT.120	\$40,000
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					\$494,000		\$527,000		\$45,000

P&A Costs	DIDC.295	\$0	DICC.275	\$0		
Total Cost		\$3,878,000		\$844,000		\$4,635,000



Project Cost Estimate

Lease Name:

Intangibles	Production		Post		Total Well
	Codes	Equipment / Construction	Codes	Completion	
Roads & Location Preparation / Restoration	CON.100	\$2,500	PCOM.100	\$1,000	\$233,500
Damages	CON.105	\$900			\$28,900
Mud / Fluids Disposal Charges			PCOM.255	\$144,000	\$384,000
Day Rate ##### DH Days 48.00 ACP Days @ \$0.00 Per Day					\$963,000
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)					\$30,000
Bits			PCOM.125	\$0	\$204,000
Fuel \$2.00 Per Gallon ##### Gallons Per Day			PCOM.130	\$0	\$173,000
Water for Drilling Rig / Completion Fluids (Not Frac Water)			PCOM.135	\$1,000	\$22,000
Mud & Additives					\$350,000
Surface Rentals	CON.140	\$3,000	PCOM.140	\$280,000	\$543,000
Downhole Rentals			PCOM.145	\$0	\$25,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)					\$0
Mud Logging 46.00 Days @ \$1,000.00 Per Day					\$46,000
Open Hole Logging					\$0
Cementing & Float Equipment					\$179,000
Tubular Inspections			PCOM.160	\$3,700	\$30,700
Casing Crews					\$53,000
Extra Labor, Welding, Etc.	CON.170	\$66,000	PCOM.170	\$0	\$89,000
Land Transportation (Trucking for tangibles)	CON.175	\$8,000	PCOM.175	\$6,800	\$50,800
Supervision \$3,800.00 Per Day	CON.180	\$8,500	PCOM.180	\$8,500	\$300,000
Trailer House / Camp / Catering					\$63,000
Other Misc Expenses	CON.190	\$3,000	PCOM.190	\$0	\$30,000
Overhead					\$16,000
Remedial Cementing			PCOM.215	\$0	\$0
MOB/DEMOB					\$195,000
Directional Drilling Services					\$300,000
Crane for Construction	CON.230	\$4,000			\$4,000
Solids Control					\$43,000
Well Control Equip (Snubbing Svcs.)			PCOM.240	\$22,000	\$107,000
Fishing & Sidetrack Operations			PCOM.245	\$0	\$0
Completion Rig			PCOM.115	\$14,000	\$14,000
Coil Tubing			PCOM.260	\$0	\$350,000
Completion Logging, Perforating, WL Units, WL Surveys			PCOM.200	\$0	\$213,000
Composite Plugs			PCOM.390	\$0	\$113,000
Stimulation Pumping Charges, Chemicals, Additives, Sand			PCOM.210	\$0	\$2,881,000
Stimulation Water / Water Transfer / Water Storage					\$299,000
Cimarex Owned Frac / Rental Equipment					\$100,000
Legal / Regulatory / Curative	CON.300	\$0			\$20,000
Well Control Insurance \$1.00 Per Foot					\$22,000
Contingency 5.0 % of Drilling Intangibles	CON.220	\$10,000	PCOM.220	\$48,100	\$451,100
Construction For Flow Lines	CON.310	\$3,500			\$3,500
Construction For Sales P/L	CON.265	\$0			\$0
Total Intangible Cost		\$109,400		\$529,100	\$8,929,500

Tangible - Well Equipment				
Casing	Size	Feet	\$ / Foot	
Drive Pipe	0	0.00	\$0.00	\$0
Conductor Pipe	0	0.00	\$0.00	\$0
Water String	0	0.00	\$0.00	\$0
Surface Casing	13.375	1500.00	\$43.00	\$65,000
Intermediate Casing 1	9.625	10100.00	\$39.00	\$394,000
Intermediate Casing 2	0	0.00	\$0.00	\$0
Drilling Liner	0	0.00	\$0.00	\$0
Production Casing or Liner	5.5	22000.00	\$22.00	\$484,000
Production Tie-Back	0	0.00	\$0.00	\$0
Tubing	2.375	11620.00	\$5.10	\$69,000
Wellhead, Tree, Chokes				\$118,000
Liner Hanger, Isolation Packer				\$0
Packer, Nipples				\$6,800
Pumping Unit, Engine				\$0
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)				\$0
Tangible - Lease Equipment				
N/C Lease Equipment	CONT.400	\$65,000		\$65,000
Tanks, Tanks Steps, Stairs	CONT.405	\$58,700		\$58,700
Battery (Heater Treater, Separator, Gas Treating Equipment)	CONT.410	\$115,700		\$115,700
Secondary Containments	CONT.415	\$8,000		\$8,000
Overhead Power Distribution (electric line to facility)	CONT.420	\$3,000		\$3,000
Facility Electrical & Automation	CONT.425	\$31,200		\$31,200
SWD Connection	CONT.430	\$0		\$0
Flow Lines (Line Pipe from wellhead to central facility)	CONT.435	\$23,200		\$23,200
Pipeline to Sales	CONT.440	\$0		\$0
Meters and Metering Equipment	CONT.445	\$28,800		\$28,800
Total Tangibles		\$333,600		\$70,800

P&A Costs				\$0
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Total Cost	\$443,000	\$599,900	\$10,399,900
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