# FORSPAN ASSESSMENT MODEL FOR CONTINUOUS ACCUMULATIONS--BASIC INPUT DATA FORM (Version 4, 10-5-00)

#### **IDENTIFICATION INFORMATION**

As	sessment Geologist:	R.M. Flores					Date:	10/18/2000
	gion:	North America	3				Number:	5
	ovince:	Powder River					Number:	5033
To	tal Petroleum System:.	Tertiary-Uppe	r Cretaceou	s Coalbed Met	nane		Number:	503301
As	sessment Unit:	Wasatch Forn	nation				Number:	50330181
Ва	sed on Data as of:	PI production	data current	through third	quarter 1999			
No	tes from Assessor	Gas is biogen	ic. Anderso	n coal of the Fo	ort Union For	mation as	an analog.	
Wł Nu Nu Est	sessment-Unit type: nat is the minimum tota mber of evaluated cells: mber of evaluated cells ablished (>24 cells > min.) dian total recovery per o	Oil (<20,000 ct al recovery pewith total recovery	fg/bo) <u>or</u> Ga r cell? 0 rery per cell ontier (1-24 ce min.): (mmbo	0.02 (m > minimum:	/bo) mbo for oil A 	Gas a.U.; bcfg for the second of the second		X
			_				0.0.0.0	
1.	sessment-Unit Probab <u>Attribute</u> CHARGE: Adequate per ROCKS: Adequate rese	troleum charge		sted cell with to		<u>&gt;</u> minimum	 	1.0 1.0
3. '	TIMING: Favorable geol	ogic timing for	an untested	cell with total r	ecovery <u>&gt;</u> mi	nimum		1.0
	sessment-Unit GEOLO		• `	,		-	1.0	
4. /	ACCESS: Adequate loc with total reco	overy <u>&gt;</u> minimu						1.0
	NO. OF UNTESTED	CELLS WITH	I POTENTIA	L FOR ADDIT	IONS TO RE	SERVES	IN NEXT 30	YEARS
1.	Total assessment-unit	area (acres): (		of a fixed value 4,435,000	) median <u>4</u>	,669,000	maximum	4,902,000
2.	Area per cell of unteste (values are inherently v		potential for minimum		serves in nex median		(acres): maximum	140
3.	Percentage of total ass	sessment-unit a	rea that is u minimum	ntested (%): (	uncertainty of median	f a fixed va	alue) maximum	100
4.	Percentage of untested next 30 years (%): ( a r (uncertainty of a fixed v	necessary crite		otal recovery p			s in maximum	24



#### **TOTAL RECOVERY PER CELL**

Total recovery per cell for untested cells having pote (values are inherently variable)					2
(mmbo for oil A.U.; bcfg for gas A.U.) minimum	0.02	median_	0.18	maximum_	3
AVERAGE COPRODU (uncertainty o Oil assessment unit: Gas/oil ratio (cfg/bo)	ICT RATIOS FO f a fixed value) minimum	R UNTESTE	D CELLS median		maximum
NGL/gas ratio (bngl/mmcfg)		<u> </u>		-	
Gas assessment unit: Liquids/gas ratio (bliq/mmcfg)	0	_	0	-	0
	erently variable)	UNTESTED			
Oil assessment unit:  API gravity of oil (degrees)	minimum	_	median	-	maximum
Sulfur content of oil (%)  Drilling depth (m)  Depth (m) of water (if applicable)		_		-	
Gas assessment unit:				-	
Inert-gas content (%)	2.00	_	3.00	_	4.00
CO <sub>2</sub> content (%)	3.00	_	5.00	_	8.00
Hydrogen-sulfide content (%)  Drilling depth (m)	<u>0.00</u>		260	-	0.00 450
Depth (m) of water (if applicable)		_	200	-	750

# ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO STATES Surface Allocations (uncertainty of a fixed value)

1. Wyoming	represents	97.46	_areal % of t	he assessme	nt unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			98 0		
2. Montana	_represents _	2.54	_areal % of t	he assessme	nt unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			2 0		
3	represents		_areal % of t	he assessme	nt unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					
4	_represents _		_areal % of t	he assessme	nt unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					

5	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
6	represents	areal % of the asses	ssment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
7	represents	areal % of the asses	ssment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
8	represents	areal % of the asses	ssment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				

# ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO LAND ENTITIES Surface Allocations (uncertainty of a fixed value)

1. Federal Lands	represents	10.64	_areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			25 0	
2. Private Lands	represents	81.00	_areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			68 0	
3. Tribal Lands	represents	0.40	_areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			0 0	
4. Other Lands	_represents _	0.23	_areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			0 0	

5. WY State Lands	_represents _	7.61	_areal % of the	ne assessme	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity			7		
Portion of volume % that is offshore (0-100%)			0		
6. MT State Lands	_represents _	0.11	_areal % of tl	he assessme	nt unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			0		
7	represents		_areal % of the	he assessme	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					
8	_represents _		_areal % of the	he assessme	nt unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					

9	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
10	represents	areal % of the asses	ssment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
11	represents	areal % of the asses	ssment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
12	represents	areal % of the asse	ssment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				

# ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO FEDERAL LAND SUBDIVISIONS Surface Allocations (uncertainty of a fixed value)

Bureau of Land Management (BLM)	_represents _	9.14 areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)		<u>21.46</u> 0	
2. BLM Wilderness Areas (BLMW)	represents	areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
3. BLM Roadless Areas (BLMR)	represents	areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
4. National Park Service (NPS)	_represents _	areal % of the assessm	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			

5. NPS Wilderness Areas (NPSW)	represents		areal % of th	ne assessme	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					
6. NPS Protected Withdrawals (NPSP)	_represents _		_areal % of th	ne assessme	ent unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median		maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					
7. US Forest Service (USFS)	_represents _	1.51	_areal % of th	ne assessme	ent unit
7. US Forest Service (USFS)  Oil in oil assessment unit:  Volume % in entity	represents _ minimum	1.51	areal % of the median	ne assessme	maximum
Oil in oil assessment unit:  Volume % in entity		1.51	<del>-</del>	ne assessme	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)  Gas in gas assessment unit:  Volume % in entity		1.51	3.54 0	ne assessme	maximum
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)  Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum  represents  minimum	1.51	3.54 0		maximum
Oil in oil assessment unit:  Volume % in entity	minimum  represents  minimum	1.51	3.54 0 areal % of the		maximum

USFS Roadless Areas (USFSR)	_represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
10. USFS Protected Withdrawals (USFSP)	_represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
11. US Fish and Wildlife Service (USFWS)	_represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
12. USFWS Wilderness Areas (USFWSW)	_represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			

13. USFWS Protected Withdrawals (USFWSP)	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
14. Wilderness Study Areas (WS)	represents	areal % of the assess	sment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
15. Department of Energy (DOE)	represents	areal % of the assess	sment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
16. Department of Defense (DOD)	represents	areal % of the assess	sment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			,	

17. Bureau of Reclamation (BOR)	of Reclamation (BOR) represents areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
18. Tennessee Valley Authority (TVA)	represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
19. Other Federal	represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			
20	represents	areal % of the asses	sment unit
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			

# ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO ECOSYSTEMS Surface Allocations (uncertainty of a fixed value)

Bighorn Mountains (BHMT)	represents	5.85	_areal % of the	assessment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			5.85		
2. Northwestern Great Plains (NWGP)	_represents _	15.41	_areal % of the	assessment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			15.41 0		
3. Powder River Basin (PRBA)	represents	78.73	_areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)			78.73 0		
4	_represents _		_areal % of the	assessment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum		median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)					

5	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
6	represents	areal % of the asses	sment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
7	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
8	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				

9	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
10	represents	areal % of the asses	sment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
11	represents	areal % of the assessment unit		
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				
12	represents	areal % of the asses	sment unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum	median	maximum	
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)				

# ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO LAND ENTITIES Subsurface Allocations (uncertainty of a fixed value)

Based on Data as of: Data through 1998			
All Federal Subsurface represents 48	_areal % of the assessment	unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum 	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)		50 0	
Other Subsurface represents 52	_areal % of the assessment	unit	
Oil in oil assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)	minimum 	median	maximum
Gas in gas assessment unit:  Volume % in entity  Portion of volume % that is offshore (0-100%)		50 0	



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