

**SEVENTH APPROXIMATION
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS (Version 6, 9 April 2003)**

IDENTIFICATION INFORMATION

Assessment Geologist:	<u>T.S. Dyman and S.M. Condon</u>	Date:	<u>4/18/2005</u>
Region:	<u>North America</u>	Number:	<u>5</u>
Province:	<u>Hanna, Laramie, Shirley Basins</u>	Number:	<u>5030</u>
Total Petroleum System:	<u>Phosporia</u>	Number:	<u>503001</u>
Assessment Unit:	<u>Tensleep-Casper Conventional Oil and Gas</u>	Number:	<u>50300101</u>
Based on Data as of:	<u>PI/Dwights 4/2004, NRG 2003 (data current through 2001)</u>		
Notes from Assessor:	<u>NRG reservoir growth function, 30 years</u>		

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) or Gas (≥20,000 cfg/bo overall): Oil

What is the minimum accumulation size? 0.5 mmboe grown
(the smallest accumulation that has potential to be added to reserves)

No. of discovered accumulations exceeding minimum size: Oil: 5 Gas: 0
Established (>13 accums.) _____ Frontier (1-13 accums.) X Hypothetical (no accums.) _____

Median size (grown) of discovered oil accumulations (mmb):
1st 3rd 1.5 2nd 3rd 2 3rd 3rd _____
Median size (grown) of discovered gas accumulations (bcfg):
1st 3rd _____ 2nd 3rd _____ 3rd 3rd _____

Assessment-Unit Probabilities:

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. CHARGE: Adequate petroleum charge for an undiscovered accum. ≥ minimum size:	<u>1.0</u>
2. ROCKS: Adequate reservoirs, traps, and seals for an undiscovered accum. ≥ minimum size:	<u>1.0</u>
3. TIMING OF GEOLOGIC EVENTS: Favorable timing for an undiscovered accum. ≥ minimum size:	<u>1.0</u>

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3): 1.0

UNDISCOVERED ACCUMULATIONS

No. of Undiscovered Accumulations: How many undiscovered accums. exist that are ≥ min. size?:
(uncertainty of fixed but unknown values)

Oil Accumulations:	minimum (>0) <u>1</u>	mode <u>7</u>	maximum <u>25</u>
Gas Accumulations:	minimum (>0) <u>1</u>	mode <u>3</u>	maximum <u>10</u>

Sizes of Undiscovered Accumulations: What are the sizes (**grown**) of the above accums?:
(variations in the sizes of undiscovered accumulations)

Oil in Oil Accumulations (mmb):	minimum <u>0.5</u>	median <u>1.5</u>	maximum <u>12</u>
Gas in Gas Accumulations (bcfg):	minimum <u>3</u>	median <u>9</u>	maximum <u>72</u>

AVERAGE RATIOS FOR UNDISCOVERED ACCUMS., TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

<u>Oil Accumulations:</u>	minimum	mode	maximum
Gas/oil ratio (cfg/bo)	<u>500</u>	<u>1000</u>	<u>1500</u>
NGL/gas ratio (bnl/mmcf)	<u>18</u>	<u>36</u>	<u>54</u>
<u>Gas Accumulations:</u>	minimum	mode	maximum
Liquids/gas ratio (bliq/mmcf)	<u>15</u>	<u>30</u>	<u>45</u>
Oil/gas ratio (bo/mmcf)	<u> </u>	<u> </u>	<u> </u>

SELECTED ANCILLARY DATA FOR UNDISCOVERED ACCUMULATIONS

(variations in the properties of undiscovered accumulations)

<u>Oil Accumulations:</u>	minimum	mode	maximum		
API gravity (degrees)	<u>15</u>	<u>30</u>	<u>55</u>		
Sulfur content of oil (%)	<u>2</u>	<u>3</u>	<u>4</u>		
Depth (m) of water (if applicable)	<u> </u>	<u> </u>	<u> </u>		
	minimum	F75	mode	F25	maximum
Drilling Depth (m)	<u>450</u>		<u>2100</u>		<u>5800</u>
<u>Gas Accumulations:</u>	minimum	mode	maximum		
Inert gas content (%)	<u>0.7</u>	<u>1.5</u>	<u>10</u>		
CO ₂ content (%)	<u>0.1</u>	<u>5</u>	<u>35</u>		
Hydrogen-sulfide content (%)	<u>0</u>	<u>0</u>	<u>0</u>		
Depth (m) of water (if applicable)	<u> </u>	<u> </u>	<u> </u>		
	minimum	F75	mode	F25	maximum
Drilling Depth (m)	<u>450</u>		<u>7500</u>		<u>9000</u>

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7. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

8. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

9. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

10. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

11. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

12. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

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

1. <u>Federal Lands</u>	represents	<u>30.88</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>45</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u>60</u>	<u> </u>
2. <u>Private Lands</u>	represents	<u>60.31</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>46</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u>34</u>	<u> </u>
3. <u>Tribal Lands</u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
4. <u>Other Lands</u>	represents	<u>1.25</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>1</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u>1</u>	<u> </u>
5. <u>WY State Lands</u>	represents	<u>7.48</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>8</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u>5</u>	<u> </u>
6. <u>CO State Lands</u>	represents	<u>0.08</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>0</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u>0</u>	<u> </u>

7. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

8. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

9. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

10. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

11. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

12. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

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

1.	<u>Bureau of Land Management (BLM)</u>	represents	<u>28.3</u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u>44.1</u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u>59.4</u>	<u> </u>
2.	<u>BLM Wilderness Areas (BLMW)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
3.	<u>BLM Roadless Areas (BLMR)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
4.	<u>National Park Service (NPS)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
5.	<u>NPS Wilderness Areas (NPSW)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
6.	<u>NPS Protected Withdrawals (NPSP)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>

Assessment Unit (name, no.)
Tensleep-Casper Conventional Oil and Gas, 50300101

7.	<u>US Forest Service (FS)</u>	represents	<u>2.06</u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u>0.45</u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u>0</u>	<u> </u>
8.	<u>USFS Wilderness Areas (FSW)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
9.	<u>USFS Roadless Areas (FSR)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
10.	<u>USFS Protected Withdrawals (FSP)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
11.	<u>US Fish and Wildlife Service (FWS)</u>	represents	<u>0.11</u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u>0</u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u>0</u>	<u> </u>
12.	<u>USFWS Wilderness Areas (FWSW)</u>	represents	<u> </u>	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity	<u> </u>	<u> </u>	<u> </u>

Assessment Unit (name, no.)
Tensleep-Casper Conventional Oil and Gas, 50300101

19. Other Federal represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

20. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

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

1. <u>Central Basin and Hills (CNBH)</u>	represents	84.89	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	82	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	100	_____
2. <u>Greater Green River Basin (GGRV)</u>	represents	2.92	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	8	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	0	_____
3. <u>Northern Parks and Ranges (NPRN)</u>	represents	12.19	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	10	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	0	_____
4. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
5. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
6. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

7. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

Gas in Gas Accumulations:

Volume % in entity	_____	_____	_____
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8. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

Gas in Gas Accumulations:

Volume % in entity	_____	_____	_____
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9. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

Gas in Gas Accumulations:

Volume % in entity	_____	_____	_____
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10. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

Gas in Gas Accumulations:

Volume % in entity	_____	_____	_____
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11. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

Gas in Gas Accumulations:

Volume % in entity	_____	_____	_____
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12. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____

Gas in Gas Accumulations:

Volume % in entity	_____	_____	_____
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