

Appendix 2.

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

**IDENTIFICATION INFORMATION**

Assessment Geologist:	<u>P.D. Warwick</u>	Date:	<u>22-Jan-07</u>
Region:	<u>North America</u>	Number:	<u>5</u>
Province:	<u>Western Gulf</u>	Number:	<u>5047</u>
Total Petroleum System:	<u>Upper Jurassic-Cretaceous-Tertiary Composite</u>	Number:	<u>504701</u>
Assessment Unit:	<u>Wilcox Expanded Fault Zone Gas and Oil</u>	Number:	<u>50470117</u>
Based on Data as of:	<u>Nehring Associates, Inc. (2006) (data current through 2004), IHS Energy Group (2005a,b) (data current through 2005)</u>		
Notes from Assessor:	<u>NRG reservoir growth factor</u>		

**CHARACTERISTICS OF ASSESSMENT UNIT**

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

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

No. of discovered accumulations exceeding minimum size:	Oil: <u>69</u>	Gas: <u>245</u>
Established (>13 accums.) <u>X</u> Frontier (1-13 accums.)	Hypothetical (no accums.)	

Median size (grown) of discovered oil accumulations (mmbo):			
	1st 3rd <u>3.6</u>	2nd 3rd <u>1.6</u>	3rd 3rd <u>1.2</u>
Median size (grown) of discovered gas accumulations (bcfg):			
	1st 3rd <u>43.6</u>	2nd 3rd <u>13.5</u>	3rd 3rd <u>16.7</u>

**Assessment-Unit Probabilities:**

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. <b>CHARGE:</b> Adequate petroleum charge for an undiscovered accum. ≥ minimum size:	<u>1.0</u>
2. <b>ROCKS:</b> Adequate reservoirs, traps, and seals for an undiscovered accum. ≥ minimum size:	<u>1.0</u>
3. <b>TIMING OF GEOLOGIC EVENTS:</b> 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>5</u>	mode <u>25</u>	maximum <u>75</u>
Gas Accumulations:	minimum (>0) <u>10</u>	mode <u>50</u>	maximum <u>175</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 (mmbo):	minimum <u>0.5</u>	median <u>1</u>	maximum <u>20</u>
Gas in Gas Accumulations (bcfg):	minimum <u>3</u>	median <u>14</u>	maximum <u>700</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>2258</u>	<u>4517</u>	<u>6775</u>
NGL/gas ratio (bnl/mmcfg)	<u>14.2</u>	<u>28.4</u>	<u>42.6</u>
<u>Gas Accumulations:</u>	minimum	mode	maximum
Liquids/gas ratio (bliq/mmcfg)	<u>14.9</u>	<u>29.9</u>	<u>44.8</u>
Oil/gas ratio (bo/mmcfg)	<u>          </u>	<u>          </u>	<u>          </u>

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**SELECTED ANCILLARY DATA FOR UNDISCOVERED ACCUMULATIONS**

(variations in the properties of undiscovered accumulations)

<u>Oil Accumulations:</u>	minimum	mode	maximum		
API gravity (degrees)	<u>19</u>	<u>45.8</u>	<u>55</u>		
Sulfur content of oil (%)	<u>0.1</u>	<u>0.1</u>	<u>0.9</u>		
Depth (m) of water (if applicable)	<u>0</u>	<u>10</u>	<u>20</u>		
	minimum	F75	mode	F25	maximum
Drilling Depth (m)	<u>1800</u>	<u>2400</u>	<u>3000</u>	<u>4300</u>	<u>4570</u>
<u>Gas Accumulations:</u>	minimum	mode	maximum		
Inert gas content (%)	<u>0.4</u>	<u>0.6</u>	<u>0.7</u>		
CO <sub>2</sub> content (%)	<u>0</u>	<u>2.8</u>	<u>10.3</u>		
Hydrogen-sulfide content (%)	<u>0</u>	<u>0</u>	<u>0</u>		
Depth (m) of water (if applicable)	<u>0</u>	<u>10</u>	<u>20</u>		
	minimum	F75	mode	F25	maximum
Drilling Depth (m)	<u>1800</u>	<u>2400</u>	<u>4300</u>	<u>4600</u>	<u>6100</u>

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

1.	Texas	represents	64.78	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity		64.78	
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity		64.78	
2.	Louisiana	represents	35.22	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity		35.22	
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity		35.22	
3.		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			
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	_____		_____	_____
<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	_____		_____	_____

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

1. <u>Federal lands</u>	represents	3.75	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	3.75	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	3.75	_____
2. <u>Private lands</u>	represents	32.48	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	32.48	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	32.48	_____
3. <u>Tribal lands</u>	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	_____	_____	_____
4. <u>Other lands</u>	represents	62.31	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	62.31	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	62.31	_____
5. <u>Tex. State lands</u>	represents	0.10	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	0.1	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	0.1	_____
6. <u>La. State lands</u>	represents	0.40	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	0.4	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	0.4	_____

Assessment Unit (name, no.)  
Wilcox Expanded Fault Zone Gas and Oil, 50470117

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7. <u>La. offshore</u>	represents	<u>0.96</u>	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode <u>0.96</u>	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity		<u>0.96</u>	
8. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			
9. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			
10. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			
11. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			
12. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<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	_____	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	_____	_____	_____
2. <u>BLM wilderness areas (BLMW)</u>	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	_____	_____	_____
3. <u>BLM roadless areas (BLMR)</u>	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	_____	_____	_____
4. <u>National Park Service (NPS)</u>	represents	0.72	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	0.72	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	0.72	_____
5. <u>NPS wilderness areas (NPSW)</u>	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. <u>NPS protected withdrawals (NPSP)</u>	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	_____	_____	_____



Assessment Unit (name, no.)  
 Wilcox Expanded Fault Zone Gas and Oil, 50470117

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7. <u>United States (U.S.) Forest Service (FS)</u>	represents	<u>2.43</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	<u>2.43</u>	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	<u>2.43</u>	_____
8. <u>U.S.FS wilderness areas (FSW)</u>	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. <u>U.S.FS roadless areas (FSR)</u>	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. <u>U.S.FS protected withdrawals (FSP)</u>	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. <u>U.S. Fish and Wildlife Service (FWS)</u>	represents	<u>0.19</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	<u>0.19</u>	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	<u>0.19</u>	_____
12. <u>U.S.FWS Wilderness Areas (FWSW)</u>	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	_____	_____	_____

Assessment Unit (name, no.)  
 Wilcox Expanded Fault Zone Gas and Oil, 50470117

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13. <u>U.S.FWS protected withdrawals (FWSP)</u>	_____	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	_____		_____	_____
14. <u>Wilderness study areas (WS)</u>	_____	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	_____		_____	_____
15. <u>U.S. Department of Energy (DOE)</u>	_____	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	_____		_____	_____
16. <u>U.S. Department of Defense (DOD)</u>	_____	represents	0.41	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		0.41	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		0.41	_____
17. <u>Bureau of Reclamation (BOR)</u>	_____	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	_____		_____	_____
18. <u>Tennessee Valley Authority (TVA)</u>	_____	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	_____		_____	_____

Assessment Unit (name, no.)  
Wilcox Expanded Fault Zone Gas and Oil, 50470117

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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 Gulf prairies and marshes (CGPM)</u>	represents	<u>13.65</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u>                    </u>	<u>13.65</u>	<u>                    </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u>                    </u>	<u>13.65</u>	<u>                    </u>
2. <u>Coastal plains and flatwoods, lower (CPFL)</u>	represents	<u>1.57</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u>                    </u>	<u>1.57</u>	<u>                    </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u>                    </u>	<u>1.57</u>	<u>                    </u>
3. <u>Coastal plains and flatwoods, western Gulf (CPFW)</u>	represents	<u>28.31</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u>                    </u>	<u>28.31</u>	<u>                    </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u>                    </u>	<u>28.31</u>	<u>                    </u>
4. <u>Eastern Gulf prairies and marshes (EGPM)</u>	represents	<u>0.52</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u>                    </u>	<u>0.52</u>	<u>                    </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u>                    </u>	<u>0.52</u>	<u>                    </u>
5. <u>Louisiana coast prairies and marshes (LCPM)</u>	represents	<u>7.26</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u>                    </u>	<u>7.26</u>	<u>                    </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u>                    </u>	<u>7.26</u>	<u>                    </u>
6. <u>Mid-coastal plains, western (MCPW)</u>	represents	<u>19.47</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u>                    </u>	<u>19.47</u>	<u>                    </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u>                    </u>	<u>19.47</u>	<u>                    </u>

Assessment Unit (name, no.)  
Wilcox Expanded Fault Zone Gas and Oil, 50470117

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7. <u>Mississippi alluvial basin (MABA)</u>	represents	<u>6.78</u>	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode <u>6.78</u>	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity		<u>6.78</u>	
8. <u>Oak woods and prairies (OWPR)</u>	represents	<u>15.34</u>	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode <u>15.34</u>	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity		<u>15.34</u>	
9. <u>Rio Grande plain (RGPL)</u>	represents	<u>6.13</u>	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode <u>6.13</u>	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity		<u>6.13</u>	
10. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			
11. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			
12. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u> Volume % in entity	minimum	mode	maximum
<u>Gas in Gas Accumulations:</u> Volume % in entity			