FORSPAN ASSESSMENT MODEL FOR CONTINUOUS ACCUMULATIONS--BASIC INPUT DATA FORM (NOGA, Version 9, 2-10-03)

IDENTIFICATION INFORMATION

Assessment Geologist:	P.H. Nelson and C.J. Schenk	Date:	30-Mar-11
Region:	North America	Number:	5
Province:	Southern Alaska	Number:	5003
Total Petroleum System:	Cook Inlet Composite Oil and Gas	Number:	500301
Assessment Unit:	Tuxedni-Naknek Continuous Gas	Number:	50030161
Based on Data as of:			
Notes from Assessor:			

CHARACTERISTICS OF ASSESSMENT UNIT

Assessment-unit type: Oil (<20,000 cfg/bo) **or Gas** (≥20,000 cfg/bo), incl. disc. & pot. additions: Gas

What is the minimum total recovery per cell? 0.02 (mmbo for oil A.U.; bcfg for gas A.U.)

Number of tested cells: 0

Number of tested cells with total recovery per cell ≥ minimum: 0

Established (discovered cells): _____ Hypothetical (no cells): X

Median total recovery per cell (for cells ≥ min.): (mmbo for oil A.U.; bcfg for gas A.U.)

1st 3rd discovered _____ 2nd 3rd _____ 3rd 3rd _____

Assessment-Unit Probabilities:

Attribute	Probability of occurrence (0-1.0)
1. **CHARGE:** Adequate petroleum charge for an untested cell with total recovery ≥ minimum.	1.0
2. **ROCKS:** Adequate reservoirs, traps, seals for an untested cell with total recovery ≥ minimum.	1.0
3. **TIMING:** Favorable geologic timing for an untested cell with total recovery ≥ minimum.	1.0

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

NO. OF UNTESTED CELLS WITH POTENTIAL FOR ADDITIONS TO RESERVES

1. Total assessment-unit area (acres): (uncertainty of a fixed value)

   calculated mean 224,000 minimum 201,600 mode 224,000 maximum 246,400

2. Area per cell of untested cells having potential for additions to reserves (acres): (values are inherently variable)

   calculated mean 180 minimum 80 mode 140 maximum 320

   uncertainty of mean: minimum 120 maximum 210

3. Percentage of total assessment-unit area that is untested (%): (uncertainty of a fixed value)

   calculated mean 100 minimum 100 mode 100 maximum 100

NO. OF UNTESTED CELLS WITH POTENTIAL FOR ADDITIONS TO RESERVES (Continued)

4. Percentage of untested assessment-unit area that has potential for additions to reserves (%):
(a necessary criterion is that total recovery per cell ≥ minimum; uncertainty of a fixed value)

calculated mean	minimum	mode	maximum
39.8	0.5	24	95

Geologic evidence for estimates:

23,000 ft contour= 1.3% Ro; large uncertainty on boundary
0.5%= 7 wells
23%= middle area X SR
64%= outer area X Sr

TOTAL RECOVERY PER CELL

Total recovery per cell for untested cells having potential for additions to reserves:
(values are inherently variable; mmbo for oil A.U.; bcfg for gas A.U.)

calculated mean	minimum	median	maximum
1.29	0.02	0.6	30

AVERAGE COPRODUCT RATIOS FOR UNTESTED CELLS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

	minimum	mode	maximum
Oil assessment unit:			
Gas/oil ratio (cfg/bo)			
NGL/gas ratio (bngl/mmcfg)			
Gas assessment unit:			
Liquids/gas ratio (bliq/mmcfg)	7	15	22

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

SELECTED ANCILLARY DATA FOR UNTESTED CELLS

(values are inherently variable)

Oil assessment unit:	minimum	mode	maximum
API gravity of oil (degrees)			
Sulfur content of oil (%)			
Depth (m) of water (if applicable)			

Drilling depth (m)

minimum	F75	mode	F25	maximum

Gas assessment unit:	minimum	mode	maximum
Inert-gas content (%)	0.00	0.80	2.00
CO_2 content (%)	0.00	0.10	0.50
Hydrogen sulfide content (%)	0.00	0.00	0.00
Heating value (BTU)	925	950	975
Depth (m) of water (if applicable)	0	10	50

Drilling depth (m)

minimum	F75	mode	F25	maximum
6000		7000		10000

Success ratios:	calculated mean	minimum	mode	maximum
Future success ratio (%)	86.67	75	90	95

Historic success ratio, tested cells (%) _____

Completion practices:

1.	Typical well-completion practices (conventional, open hole, open cavity, other)	conventional
2.	Fraction of wells drilled that are typically stimulated	1
3.	Predominant type of stimulation (none, frac, acid, other)	frac
4.	Fraction of wells drilled that are horizontal	1

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

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

1. Alaska represents 100 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		100	

2. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

3. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

4. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

5. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

6. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

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

1. Federal Lands represents 0.56 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		0.56	

2. Private Lands represents 19.95 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		19.95	

3. Tribal Lands represents 4.48 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		4.48	

4. Other Lands represents 1.47 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		1.47	

5. AK State Lands represents 1.25 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		1.25	

6. AK Offshore represents 72.29 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		72.29	

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

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

1. Bureau of Land Management (BLM) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

2. BLM Wilderness Areas (BLMW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

3. BLM Roadless Areas (BLMR) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

4. National Park Service (NPS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

5. NPS Wilderness Areas (NPSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

6. NPS Protected Withdrawals (NPSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

7. US Forest Service (FS) represents ____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

8. USFS Wilderness Areas (FSW) represents ____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

9. USFS Roadless Areas (FSR) represents ____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

10. USFS Protected Withdrawals (FSP) represents ____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

11. US Fish and Wildlife Service (FWS) represents 0.56 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		0.56	

12. USFWS Wilderness Areas (FWSW) represents ____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

13. USFWS Protected Withdrawals (FWSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

14. Wilderness Study Areas (WS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

15. Department of Energy (DOE) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

16. Department of Defense (DOD) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

17. Bureau of Reclamation (BOR) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

18. Tennessee Valley Authority (TVA) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)

19. Other Federal represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

20. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

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

1. Cook Inlet Lowlands (CILL) represents 27.71 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		27.71	

2. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

3. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

4. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

5. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

6. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Tuxedni-Naknek Continuous Gas, 50030161

7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			