**INPUT DATA FORM FOR WATER AND PROPPANT ASSOCIATED WITH
DEVELOPMENT OF CONTINUOUS PETROLEUM ACCUMULATIONS
(Version 1.0 February 1, 2015)**

IDENTIFICATION INFORMATION

Assessment Lead: _____ Date: _____

Associated Petroleum Assessment (Name): _____
    (Date) _____
    (Lead Geologist) _____
    _____
    _____
    _____

Region: _____ Number: _____
Province: _____ Number: _____
Total Petroleum System: _____ Number: _____
Assessment Unit: _____ Number: _____
Based on Data as of: _____

Notes from Assessor: _____
    _____
    _____

**PETROLEUM ASSESSMENT INFORMATION
(All information is drawn directly from associated petroleum assessment)**

Assessment-unit type: oil (<20,000 cfg/bo) _____   gas (>20,000 cfg/bo) _____
    heavy oil (<10 API) _____

Well type: vertical _____   horizontal _____
Major reservoir type (Choose one.):
    shale _____   low-permeability clastics _____
    coal _____   low-permeability carbonates _____
    diatomite _____

Minimum EUR per well _____ (mmbo for oil AU; bcfg for gas AU)

Number of tested wells: _____
Number of tested wells with EUR > minimum: _____
Historic success ratio, tested wells (%) _____

Assessment-Unit Probability:
    What is the probability that at least one well within the AU will have
        production capacity of at least the minimum EUR? _____

1. Productive area of accumulation (acres): (triangular)

    calculated mean _____   minimum _____   mode _____   maximum _____

2. Uncertainty about average drainage area of wells (acres): (triangular)

    calculated mean _____   minimum _____   mode _____   maximum _____

3. Percentage of total assessment-unit area that is untested (%): (triangular)

    calculated mean _____   minimum _____   mode _____   maximum _____

4. Percentage of untested assessment-unit area in sweet spots (%): (triangular)

    calculated mean _____   minimum _____   mode _____   maximum _____

Assessment Unit

Name: _____ Number: _____

INJECTION AND PRODUCTION PER WELL

SWEET SPOTS

5a. Future success ratio (%): (triangular)   **(From the underlying petroleum assessment)**

      calculated mean _____   minimum _____   mode _____   maximum _____

5b. Percentage of unsuccessful wells that are drilled and completed (%): (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5c. Uncertainty about average water per well for drilling/cement (gallons): (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5d. Uncertainty about average water per treatment for hydraulic fracturing (HF) (gallons): (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5e. Uncertainty about average number of hydraulic fracturing treatments per well: (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5f. Uncertainty about average proppant-to-water ratio for HF (lbs of proppant per gallon water): (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5g. Uncertainty about average percentage of HF water that returns as flowback (percentage): (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5h. Uncertainty about average produced water/petroleum ratio (bw/bo for oil; gal/mcfg for gas): (triangular)

      calculated mean _____   minimum _____   mode _____   maximum _____

5i. Uncertainty about average EUR (mmbo for oil; bcfg for gas): (shifted truncated lognormal) **(From petroleum assmnt)**

      calculated mean _____   minimum _____   median _____   maximum _____

INJECTION AND PRODUCTION PER WELL
NON-SWEET SPOTS
(Values may be identical to sweet spot values)

6a. Future success ratio (%): (triangular)   **(From the underlying petroleum assessment)**

calculated mean _____   minimum _____   mode _____   maximum _____

6b. Percentage of unsuccessful wells that are drilled and completed (%): (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6c. Uncertainty about average water per well for drilling/cement (gallons): (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6d. Uncertainty about average water per treatment for hydraulic fracturing (HF) (gallons): (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6e. Uncertainty about average number of hydraulic fracturing treatments per well: (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6f. Uncertainty about average proppant-to-water ratio for HF (lbs of proppant per gallon water): (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6g. Uncertainty about average percentage of HF water that returns as flowback (percentage): (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6h. Uncertainty about average produced water/petroleum ratio (bw/bo for oil; gal/mcfg for gas): (triangular)

calculated mean _____   minimum _____   mode _____   maximum _____

6i. Uncertainty about average EUR (mmbo for oil; bcfg for gas): (shifted truncated lognormal) **(From petroleum assmnt)**

calculated mean _____   minimum _____   median _____   maximum _____

Name: _____ Number: _____

ANCILLARY DATA pt 1

Petroleum-development-related

(no specified distribution type)

	minimum	median	maximum
TDS of produced waters (mg/L)	_____	_____	_____
Comments:	_____		
Drilling depth (m)	_____	_____	_____
Comments:	_____		
Lateral length (m)	_____	_____	_____
Comments:	_____		
_____	_____	_____	_____
Comments:	_____		

Wells per year (wells spud in this AU, for the most recent 5 years for which complete data are available):

year _____   wells _____   source _____
year _____   wells _____   source _____
year _____   wells _____   source _____
year _____   wells _____   source _____
year _____   wells _____   source _____

Comments: _____

Completion practices: Entry

Typical well-completion practice (conventional, open hole, other)   _____
Fraction of wells drilled that are typically stimulated   _____
Predominant type of stimulation (none, frac, acid, other)   _____
Typical frac type(s) (gel, slickwater, other)   _____
Typical number of hydraulic fracturing treatment programs per well   _____
Historic fraction of wells drilled that are horizontal   _____
Typical source(s) of drill/HF water (surface water, groundwater, recycled)   _____
Typical prefered max TDS of drill/HF water   _____
Typical proppant type(s) (sand, resin-coated sand, ceramic, other)   _____
Typical fate of water withdrawn from well (reuse, injection, other)   _____
Typical number of well laterals per well pad   _____

_____   _____

ANCILLARY DATA pt 2

Contextual water data

	Volume (10^6 gal)	Data year(s)

Mean annual surface water flow   _____   _____
    Data source: _____ Pub. date: _____
    Comments: _____

Annual surface water withdrawal   _____   _____
    Data source: _____ Pub. date: _____
    Comments: _____

Annual groundwater withdrawal   _____   _____
    Data source: _____ Pub. date: _____
    Comments: _____

Total annual precipitation   _____   _____
    Data source: _____ Pub. date: _____
    Comments: _____

Annual water use by major use categories:
    Agriculture   _____   _____
    Industry   _____   _____
    Municipal/household   _____   _____
    Thermoelectric   _____   _____

    _____   _____   _____
    _____   _____   _____
    Data source: _____ Pub. date: _____
    Comments: _____

Name: _____ Number: _____

ALLOCATIONS TO OTHER GEOGRAPHIC ENTITIES

Allocations to states

1. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

2. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

3. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

4. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

5. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

6. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

7. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

8. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

9. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

10. _____   is   _____ % of the AREA of the AU

mean VOLUME % in entity   _____

Assessment Unit
Name: _____ Number: _____

Allocations to hydrologic units

1. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

2. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

3. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

4. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

5. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

6. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

7. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

8. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

9. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

10. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

Assessment Unit
Name: _____ Number: _____

Allocations to counties

1. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

2. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

3. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

4. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

5. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

6. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

7. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

8. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

9. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

10. _____ in state: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

Assessment Unit
Name: _____ Number: _____

Allocations by land ownership categories

1. Federal Lands _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

2. Private Lands _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

3. Tribal Lands _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

4. Other Lands _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

5. State 1 Lands _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

6. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

7. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

8. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

9. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

10. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity _____

Assessment Unit

Name: _____ Number: _____

Allocations to Federal land designations

1. Bureau of Land Management (BLM) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

2. BLM Wilderness Areas (BLMW) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

3. BLM Roadless Areas (BLMR) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

4. National Park Service (NPS) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

5. NPS Wilderness Areas (NPSW) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

6. NPS Protected Withdrawals (NPSP) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

7. US Forest Service (FS) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

8. USFS Wilderness Areas (FSW) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

9. USFS Roadless Areas (FSR) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

10. USFS Protected Withdrawals (FSP) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

11. US Fish and Wildlife Service (FWS) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

12. USFWS Wilderness Areas (FWSW) _____   is   _____ % of the AREA of the AU

    mean VOLUME % in entity   _____

13. USFWS Protected Withdrawals (FWSP)_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

14. Wilderness Study Areas (WS)_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

15. Department of Energy (DOE)_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

16. Department of Defense (DOD)_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

17. Bureau of Reclamation (BOR)_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

18. Tennessee Valley Authority (TVA)_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

19. Other Federal_____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

20. _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

Name: _____ Assessment Unit _____ Number: _____

Allocations to Bailey's Ecoregions

1. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

2. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

3. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

4. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

5. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

6. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

7. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

8. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

9. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____

10. _____ Code: _____ is _____ % of the AREA of the AU

   mean VOLUME % in entity   _____