

Chapter 28

# **Tabular Data and Graphical Images in Support of the U.S. Geological Survey National Oil and Gas Assessment — The Uinta-Piceance Province (5020)**

*By* T.R. Klett, Ronald R. Charpentier, *and* Phuong Anh Le

Chapter 28 of

## **Petroleum Systems and Geologic Assessment of Oil and Gas in the Uinta-Piceance Province, Utah and Colorado**

*By* USGS Uinta-Piceance Assessment Team

U.S. Geological Survey Digital Data Series DDS-69-B



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Version 1.0      2003

For sale by U.S. Geological Survey, Information Services  
Box 25286, Denver Federal Center  
Denver, CO 80225

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Published in the Central Region, Denver, Colorado  
Manuscript approved for publication July 24, 2002

ISBN=0-607-99359-6

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# Tabular Data and Graphical Images in Support of the U.S. Geological Survey National Oil and Gas Assessment—The Uinta-Piceance Province (5020)

By T.R. Klett, Ronald R. Charpentier, and Phuong Anh Le

## Introduction

This chapter contains data used in support of the assessment process and archival data that permit the user to perform further analyses.

## Disclaimers

This publication was prepared by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed in this report, or represents that its use would not infringe privately owned rights. Reference therein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof.

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## Data Sources

Production data (including all volumetric and descriptive data such as cumulative production, remaining reserves, known recoverable volumes, major producing reservoirs, and petroleum type) and historical data (including field-discovery dates, well completion dates, exploration objectives, well depths, and so on) for fields, reservoirs, and wells

are derived from commercial databases purchased by the USGS, including (1) PetroROM Production Data (Petroleum Information/Dwights LLC, 1999a), (2) Well History Control System (Petroleum Information/Dwights LLC, 1999b), (3) PI/Dwights Plus US Production Data (IHS Energy Group, 2000a), (4) PI/Dwights Plus US Well Data (IHS Energy Group, 2000b), and (5) NRG Associates, Inc. Significant Oil and Gas Fields of the United States (NRG Associates, 2000). Data from these databases are subject to proprietary constraints, but derivative representations in the form of graphs and summary statistics were prepared for each assessment unit.

The PetroROM Production database and its successor, the PI/Dwights Plus US Production database, provide production data for wells, leases, or production units (collectively called entities in these databases). The Well History Control System and its successor, the PI/Dwights Plus US Well database, provide individual well data (including data for dry holes) that include well identification, locations, and information on penetrated formations. The NRG Associates, Inc. Significant Oil and Gas Fields of the United States database provides production data for fields and reservoirs.

The USGS, however, cannot verify the accuracy, completeness, or currency of data that are reported in commercial databases. To supplement commercial databases, additional data are obtained, where available, from operators, State and other Federal agencies, and so on.

## Data Overview

This chapter contains various data files supporting the U.S. Geological Survey National Oil and Gas Assessment report. These files contain supporting data for the assessment process and are the source for the various graphs, data tables, and summary tables. Data-table files are presented as tab-delimited text files (.tab files) in the folder named 28\_TABLES, usable in spreadsheet and database software. Graphical and summary-table files are presented as portable document format files (.pdf files).

## File Names

### Data Tables

eco####.tab  
 fed####.tab  
 inf####.tab  
 ins####.tab  
 kvol####.tab  
 own####.tab  
 sta####.tab  
 vol####.tab

### Summary Tables

c#####.pdf  
 d#####.pdf  
 u#####.pdf

### Graphs

em#####.pdf  
 fp#####.pdf  
 g#####.pdf  
 k#####.pdf

For identification purposes, the four symbols “####” represent the province code. Files with these numbers contain data for the entire province. Files having the six symbols “#####,” which represent the assessment-unit code, contain data only for that assessment unit.

## Numeric Codes

A hierarchical numeric code identifies each region, province, total petroleum system, and assessment unit. The criteria for assigning codes are uniform throughout the project and throughout all publications of the project. The numeric codes used in this study are:

Unit	Name	Code
Region	North America	5
Province	Uinta-Piceance Basin	5020
Total Petroleum Systems	Ferron Coal/Wasatch Plateau	502001
	Mesaverde	502002
	Mancos/Mowry	502003
	Phosphoria	502004
	Green River	502005
Assessment Units	Conventional Ferron Sandstone Gas	50200101

Unit	Name	Code
Assessment Units	Deep (6,000 feet plus) Coal and Sandstone Gas	50200161
	Northern Coal Fairway/Drunkards Wash	50200181
	Central Coal Fairway/Buzzards Bench	50200182
	Southern Coal Fairway	50200183
	Joes Valley and Messina Grabens	50200184
	Southern Coal Outcrop	50200185
	Uinta-Piceance Basin Conventional Gas	50200201
	Uinta Basin Continuous Gas	50200261
	Uinta Basin Transitional Gas	50200262
	Piceance Basin Continuous Gas	50200263
	Piceance Basin Transitional Gas	50200264
	Uinta Basin Blackhawk Coalbed Gas	50200281
	Mesaverde Group Coalbed Gas	50200282
	Piceance Basin Continuous Gas	50200361
	Uinta Basin Continuous Gas	50200362
	Uinta-Piceance Transitional and Migrated Gas	50200363
	Hanging Wall	50200401
	Paleozoic/Mesozoic Uinta Green River	50200402
	Conventional Oil and Gas	50200501
	Piceance Green River Conventional Oil	50200502
	Deep Uinta Overpressured Continuous Oil	50200561

The assessment-unit portion of the code (*last* two digits) defines the type of assessment unit. Numbers such as 01, 02, and so forth represent conventional assessment units; 61, 62, and so forth represent continuous oil or gas assessment units; and 81, 82, and so forth represent coalbed gas assessment units.

For convenience, some file names containing assessment unit numbers do not include the first two digits. For example, a summary table containing input data for the Conventional Ferron Sandstone Gas assessment unit is labeled “c200101.pdf.”

## Tabular Data

The eco####.tab, fed####.tab, own####.tab, and sta####.tab files contain volume-percent data of undiscovered petroleum allocated to States, general land-ownership parcels, Federal lands, and ecosystem regions. Blank cells represent no data.

The eco####.tab table contains 59 columns. The sum of the percents should equal those for the total area excluding offshore in the own####.tab file. Data columns for these files are:

- (1) Code—assessment-unit code number.
- (2) Name—assessment-unit name.
- (3) Area—area of the assessment unit in square kilometers.
- (4) Eco 1—name of first ecosystem that occupies all or part

- of the assessment-unit area.
- (5) E1 Area %—percent of assessment-unit area that is occupied by ecosystem 1.
  - (6) E1 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 1.
  - (7) E1 Gas % -- estimated percent of undiscovered gas volume allocated to ecosystem 1.
  - (8) Eco 2—name of second ecosystem that occupies part of the assessment-unit area.
  - (9) E2 Area %—percent of assessment-unit area that is occupied by ecosystem 2.
  - (10) E2 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 2.
  - (11) E2 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 2.
  - (12) Eco 3—name of third ecosystem that occupies part of the assessment-unit area.
  - (13) E3 Area %—percent of assessment-unit area that is occupied by ecosystem 3.
  - (14) E3 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 3.
  - (15) E3 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 3.
  - (16) Eco 4—name of fourth ecosystem that occupies part of the assessment-unit area.
  - (17) E4 Area %—percent of assessment-unit area that is occupied by ecosystem 4.
  - (18) E4 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 4.
  - (19) E4 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 4.
  - (20) Eco 5—name of fifth ecosystem that occupies part of the assessment-unit area.
  - (21) E5 Area %—percent of assessment-unit area that is occupied by ecosystem 5.
  - (22) E5 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 5.
  - (23) E5 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 5.
  - (24) Eco 6—name of sixth ecosystem that occupies part of the assessment-unit area.
  - (25) E6 Area %—percent of assessment-unit area that is occupied by ecosystem 6.
  - (26) E6 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 6.
  - (27) E6 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 6.
  - (28) Eco 7—name of seventh ecosystem that occupies part of the assessment-unit area.
  - (29) E7 Area %—percent of assessment-unit area that is occupied by ecosystem 7.
  - (30) E7 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 7.
  - (31) E7 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 7.
  - (32) Eco 8—name of eighth ecosystem that occupies part of the assessment-unit area.
  - (33) E8 Area %—percent of assessment-unit area that is occupied by ecosystem 8.
  - (34) E8 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 8.
  - (35) E8 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 8.
  - (36) Eco 9—name of ninth ecosystem that occupies part of the assessment-unit area.
  - (37) E9 Area %—percent of assessment-unit area that is occupied by ecosystem 9.
  - (38) E9 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 9.
  - (39) E9 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 9.
  - (40) Eco 10—name of tenth ecosystem that occupies part of the assessment-unit area.
  - (41) E10 Area %—percent of assessment-unit area that is occupied by ecosystem 10.
  - (42) E10 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 10.
  - (43) E10 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 10.
  - (44) Eco 11—name of eleventh ecosystem that occupies part of the assessment-unit area.
  - (45) E11 Area %—percent of assessment-unit area that is occupied by ecosystem 11.
  - (46) E11 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 11.
  - (47) E11 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 11.
  - (48) Eco 12—name of twelfth ecosystem that occupies part of the assessment-unit area.
  - (49) E12 Area %—percent of assessment-unit area that is occupied by ecosystem 12.
  - (50) E12 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 12.
  - (51) E12 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 12.
  - (52) Eco 13—name of thirteenth ecosystem that occupies part of the assessment-unit area.
  - (53) E13 Area %—percent of assessment-unit area that is occupied by ecosystem 13.
  - (54) E13 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 13.
  - (55) E13 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 13.
  - (56) Eco 14—name of fourteenth ecosystem that occupies part of the assessment-unit area.
  - (57) E14 Area %—percent of assessment-unit area that is occupied by ecosystem 14.
  - (58) E14 Oil %—estimated percent of undiscovered oil volume allocated to ecosystem 14.
  - (59) E14 Gas %—estimated percent of undiscovered gas volume allocated to ecosystem 14.

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The fed####.tab table contains 83 columns. The sum of the percents should equal those for Federal lands in the own####.tab file. Data columns for these files are:

- (1) Code—assessment-unit code number.
- (2) Name—assessment-unit name.
- (3) Area—area of the assessment unit in square kilometers.
- (4) BLM—“Bureau of Land Management (BLM),” name of Federal land that occupies all or part of the assessment-unit area.
- (5) BLM Area %—percent of assessment-unit area that is occupied by Bureau of Land Management lands.
- (6) BLM Oil %—estimated percent of undiscovered oil volume allocated to Bureau of Land Management lands.
- (7) BLM Gas %—estimated percent of undiscovered gas volume allocated to Bureau of Land Management lands.
- (8) BLMW—“BLM Wilderness Areas (BLMW),” name of Federal land that occupies all or part of the assessment-unit area.
- (9) BLMW Area %—percent of assessment-unit area that is occupied by Bureau of Land Management Wilderness Areas.
- (10) BLMW Oil %—estimated percent of undiscovered oil volume allocated to Bureau of Land Management Wilderness Areas.
- (11) BLMW Gas %—estimated percent of undiscovered gas volume allocated to Bureau of Land Management Wilderness Areas.
- (12) BLMR—“BLM Roadless Areas (BLMR),” name of Federal land that occupies all or part of the assessment-unit area.
- (13) BLMR Area %—percent of assessment-unit area that is occupied by Bureau of Land Management Roadless Areas.
- (14) BLMR Oil %—estimated percent of undiscovered oil volume allocated to Bureau of Land Management Roadless Areas.
- (15) BLMR Gas %—estimated percent of undiscovered gas volume allocated to Bureau of Land Management Roadless Areas.
- (16) NPS—“National Park Service (NPS),” name of Federal land that occupies all or part of the assessment-unit area.
- (17) NPS Area %—percent of assessment-unit area that is occupied by National Park Service lands.
- (18) NPS Oil %—estimated percent of undiscovered oil volume allocated to National Park Service lands.
- (19) NPS Gas %—estimated percent of undiscovered gas volume allocated to National Park Service lands.
- (20) NPSW—“NPS Wilderness Areas (NPSW),” name of Federal land that occupies all or part of the assessment-unit area.
- (21) NPSW Area %—percent of assessment-unit area that is occupied by National Park Service Wilderness Areas.
- (22) NPSW Oil %—estimated percent of undiscovered oil volume allocated to National Park Service Wilderness Areas.
- (23) NPSW Gas %—estimated percent of undiscovered gas volume allocated to National Park Service Wilderness Areas.
- (24) NPSP—“NPS Withdrawals (NPSP),” name of Federal land that occupies all or part of the assessment-unit area.
- (25) NPSP Area %—percent of assessment-unit area that is occupied by National Park Service Withdrawals.
- (26) NPSP Oil %—estimated percent of undiscovered oil volume allocated to National Park Service Withdrawals.
- (27) NPSP Gas %—estimated percent of undiscovered gas volume allocated to National Park Service Withdrawals.
- (28) FS—“Forest Service (FS),” name of Federal land that occupies all or part of the assessment-unit area.
- (29) FS Area %—percent of assessment-unit area that is occupied by USDA Forest Service lands.
- (30) FS Oil %—estimated percent of undiscovered oil volume allocated to USDA Forest Service lands.
- (31) FS Gas %—estimated percent of undiscovered gas volume allocated to USDA Forest Service lands.
- (32) FSW—“FS Wilderness Areas (FSW),” name of Federal land that occupies all or part of the assessment-unit area.
- (33) FSW Area %—percent of assessment-unit area that is occupied by USDA Forest Service Wilderness Areas.
- (34) FSW Oil %—estimated percent of undiscovered oil volume allocated to USDA Forest Service Wilderness Areas.
- (35) FSW Gas %—estimated percent of undiscovered gas volume allocated to USDA Forest Service Wilderness Areas.
- (36) FSR—“FS Roadless Areas (FSR),” name of Federal land that occupies all or part of the assessment-unit area.
- (37) FSR Area %—percent of assessment-unit area that is occupied by USDA Forest Service Roadless Areas.
- (38) FSR Oil %—estimated percent of undiscovered oil volume allocated to USDA Forest Service Roadless Areas.
- (39) FSR Gas %—estimated percent of undiscovered gas volume allocated to USDA Forest Service Roadless Areas.
- (40) FSP—“FS Protected Withdrawals (FSP),” name of Federal land that occupies all or part of the assessment-unit area.
- (41) FSP Area %—percent of assessment-unit area that is occupied by USDA Forest Service Protected Withdrawals.
- (42) FSP Oil %—estimated percent of undiscovered oil volume allocated to USDA Forest Service Protected Withdrawals.
- (43) FSP Gas %—estimated percent of undiscovered gas volume allocated to USDA Forest Service Protected Withdrawals.
- (44) FWS—“U.S. Fish and Wildlife Service (USFWS),” name of Federal land that occupies all or part of the assessment-unit area.
- (45) FWS Area %—percent of assessment-unit area that is occupied by U.S. Fish and Wildlife Service lands.
- (46) FWS Oil %—estimated percent of undiscovered oil

- volume allocated to U.S. Fish and Wildlife Service lands.
- (47) FWS Gas %—estimated percent of undiscovered gas volume allocated to U.S. Fish and Wildlife Service lands.
  - (48) FWSW—“USFWS Wilderness Areas (USFWSW),” name of Federal land that occupies all or part of the assessment-unit area.
  - (49) FWSWArea %—percent of assessment-unit area that is occupied by U.S. Fish and Wildlife Service Wilderness Areas.
  - (50) FWSW Oil %—estimated percent of undiscovered oil volume allocated to U.S. Fish and Wildlife Service Wilderness Areas.
  - (51) FWSW Gas %—estimated percent of undiscovered gas volume allocated to U.S. Fish and Wildlife Service Wilderness Areas.
  - (52) FWSP—“USFWS Protected Withdrawals (USFWSP),” name of Federal land that occupies all or part of the assessment-unit area.
  - (53) FWSPArea %—percent of assessment-unit area that is occupied by U.S. Fish and Wildlife Service Protected Withdrawals.
  - (54) FWSP Oil %—estimated percent of undiscovered oil volume allocated to U.S. Fish and Wildlife Service Protected Withdrawals.
  - (55) FWSP Gas %—estimated percent of undiscovered gas volume allocated to U.S. Fish and Wildlife Service Protected Withdrawals.
  - (56) WS—“Wilderness Study Areas (WS),” name of Federal land that occupies all or part of the assessment-unit area.
  - (57) WS Area %—percent of assessment-unit area that is occupied by Wilderness Study Areas.
  - (58) WS Oil %—estimated percent of undiscovered oil volume allocated to Wilderness Study Areas.
  - (59) WS Gas %—estimated percent of undiscovered gas volume allocated to Wilderness Study Areas.
  - (60) DOE—“Department of Energy (DOE),” name of Federal land that occupies all or part of the assessment-unit area.
  - (61) DOE Area %—percent of assessment-unit area that is occupied by Department of Energy lands.
  - (62) DOE Oil %—estimated percent of undiscovered oil volume allocated to Department of Energy lands.
  - (63) DOE Gas %—estimated percent of undiscovered gas volume allocated to Department of Energy lands.
  - (64) DOD—“Department of Defense (DOD),” name of Federal land that occupies all or part of the assessment-unit area.
  - (65) DOD Area %—percent of assessment-unit area that is occupied by Department of Defense lands.
  - (66) DOD Oil %—estimated percent of undiscovered oil volume allocated to Department of Defense lands.
  - (67) DOD Gas %—estimated percent of undiscovered gas volume allocated to Department of Defense lands.
  - (68) BOR—“Bureau of Reclamation (BOR),” name of Federal land that occupies all or part of the assessment-unit area.
  - (69) BOR Area %—percent of assessment-unit area that is occupied by Bureau of Reclamation lands.
  - (70) BOR Oil %—estimated percent of undiscovered oil volume allocated to Bureau of Reclamation lands.
  - (71) BOR Gas %—estimated percent of undiscovered gas volume allocated to Bureau of Reclamation lands.
  - (72) TVA—“Tennessee Valley Authority (TVA),” name of Federal land that occupies all or part of the assessment-unit area.
  - (73) TVA Area %—percent of assessment-unit area that is occupied by Tennessee Valley Authority lands.
  - (74) TVA Oil %—estimated percent of undiscovered oil volume allocated to Tennessee Valley Authority lands.
  - (75) TVA Gas %—estimated percent of undiscovered gas volume allocated to Tennessee Valley Authority lands.
  - (76) Other—“Other Federal,” other unspecified Federal lands that occupy all part of the assessment-unit area.
  - (77) Oth Area %—percent of assessment-unit area that is occupied by other unspecified Federal lands.
  - (78) Oth Oil %—estimated percent of undiscovered oil volume allocated to other unspecified Federal lands.
  - (79) Oth Gas %—estimated percent of undiscovered gas volume allocated to other unspecified Federal lands.
  - (80) Fed 20—name of additional specified Federal lands that occupy all or part of the assessment-unit area.
  - (81) F20 Area %—percent of assessment-unit area that is occupied by additional specified Federal lands.
  - (82) F20 Oil %—estimated percent of undiscovered oil volume allocated to additional specified Federal lands.
  - (83) F20 Gas %—estimated percent of undiscovered gas volume allocated to additional specified Federal lands.
- The own####.tab table contains 59 columns. The sum of the percents should equal 100. Data columns for these files are:
- (1) Code—assessment-unit code number.
  - (2) Name—assessment-unit name.
  - (3) Area—area of the assessment unit in square kilometers.
  - (4) Fed—“Federal Lands,” all Federal lands that occupy all or part of the assessment-unit area.
  - (5) Fed Area %—percent of assessment-unit area that is occupied by Federal lands.
  - (6) Fed Oil %—estimated percent of undiscovered oil volume allocated to Federal lands.
  - (7) Fed Gas %—estimated percent of undiscovered gas volume allocated to Federal lands.
  - (8) Pri—“Private Lands,” all private lands that occupy all or part of the assessment-unit area.
  - (9) Pri Area %—percent of assessment-unit area that is occupied by private lands.
  - (10) Pri Oil %—estimated percent of undiscovered oil volume allocated to private lands.
  - (11) Pri Gas %—estimated percent of undiscovered gas volume allocated to private lands.
  - (12) Tri—“Tribal Lands,” all tribal lands that occupy all or part of the assessment-unit area.
  - (13) Tri Area %—percent of assessment-unit area that is



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- occupied by tribal lands.
- (14) Tri Oil %—estimated percent of undiscovered oil volume allocated to tribal lands.
  - (15) Tri Gas %—estimated percent of undiscovered gas volume allocated to tribal lands.
  - (16) Oth—name of other unspecified lands or offshore areas that occupy all or part of the assessment-unit area.
  - (17) Oth Area %—percent of assessment-unit area that is occupied by other unspecified lands or offshore areas.
  - (18) Oth Oil %—estimated percent of undiscovered oil volume allocated to other unspecified lands or offshore areas.
  - (19) Oth Gas %—estimated percent of undiscovered gas volume allocated to other unspecified lands or offshore areas.
  - (20) State 1—name of first State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (21) S1 Area %—percent of assessment-unit area that is occupied by State 1-owned lands or waters.
  - (22) S1 Oil %—estimated percent of undiscovered oil volume allocated to State 1-owned lands or waters.
  - (23) S1 Gas %—estimated percent of undiscovered gas volume allocated to State 1-owned lands or waters.
  - (24) State 2—name of second State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (25) S2 Area %—percent of assessment-unit area that is occupied by State 2-owned lands or waters.
  - (26) S2 Oil %—estimated percent of undiscovered oil volume allocated to State 2-owned lands or waters.
  - (27) S2 Gas %—estimated percent of undiscovered gas volume allocated to State 2-owned lands or waters.
  - (28) State 3—name of third State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (29) S3 Area %—percent of assessment-unit area that is occupied by State 3-owned lands or waters.
  - (30) S3 Oil %—estimated percent of undiscovered oil volume allocated to State 3-owned lands or waters.
  - (31) S3 Gas %—estimated percent of undiscovered gas volume allocated to State 3-owned lands or waters.
  - (32) State 4—name of fourth State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (33) S4 Area %—percent of assessment-unit area that is occupied by State 4-owned lands or waters.
  - (34) S4 Oil %—estimated percent of undiscovered oil volume allocated to State 4-owned lands or waters.
  - (35) S4 Gas %—estimated percent of undiscovered gas volume allocated to State 4-owned lands or waters.
  - (36) State 5—name of fifth State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (37) S5 Area %—percent of assessment-unit area that is occupied by State 5-owned lands or waters.
  - (38) S5 Oil %—estimated percent of undiscovered oil volume allocated to State 5-owned lands or waters.
  - (39) S5 Gas %—estimated percent of undiscovered gas volume allocated to State 5-owned lands or waters.
  - (40) State 6—name of sixth State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (41) S6 Area %—percent of assessment-unit area that is occupied by State 6-owned lands or waters.
  - (42) S6 Oil %—estimated percent of undiscovered oil volume allocated to State 6-owned lands or waters.
  - (43) S6 Gas %—estimated percent of undiscovered gas volume allocated to State 6-owned lands or waters.
  - (44) State 7—name of seventh State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (45) S7 Area %—percent of assessment-unit area that is occupied by State 7-owned lands or waters.
  - (46) S7 Oil %—estimated percent of undiscovered oil volume allocated to State 7-owned lands or waters.
  - (47) S7 Gas %—estimated percent of undiscovered gas volume allocated to State 7-owned lands or waters.
  - (48) State 8—name of eighth State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (49) S8 Area %—percent of assessment-unit area that is occupied by State 8-owned lands or waters.
  - (50) S8 Oil %—estimated percent of undiscovered oil volume allocated to State 8-owned lands or waters.
  - (51) S8 Gas %—estimated percent of undiscovered gas volume allocated to State 8-owned lands or waters.
  - (52) State 9—name of ninth State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (53) S9 Area %—percent of assessment-unit area that is occupied by State 9-owned lands or waters.
  - (54) S9 Oil %—estimated percent of undiscovered oil volume allocated to State 9-owned lands or waters.
  - (55) S9 Gas %—estimated percent of undiscovered gas volume allocated to State 9-owned lands or waters.
  - (56) State 10—name of tenth State for which State-owned lands or waters occupy all or part of the assessment-unit area.
  - (57) S10 Area %—percent of assessment-unit area that is occupied by State 10-owned lands or waters.
  - (58) S10 Oil %—estimated percent of undiscovered oil volume allocated to State 10-owned lands or waters.
  - (59) S10 Gas %—estimated percent of undiscovered gas volume allocated to State 10-owned lands or waters.
- The sta####.tab table contains 59 columns. The sum of the percents should equal 100. Data columns for these files are:
- (1) Code—assessment-unit code number.
  - (2) Name—assessment-unit name.
  - (3) Area—area of the assessment unit in square kilometers.
  - (4) State 1—name of first State (onshore and offshore) that occupies all or part of the assessment-unit area.
  - (5) S1 Area %—percent of assessment-unit area that is

- occupied by State 1.
- (6) S1 Oil %—estimated percent of undiscovered oil volume allocated to State 1.
- (7) S1 Gas %—estimated percent of undiscovered gas volume allocated to State 1.
- (8) State 2—name of second State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (9) S2 Area %—percent of assessment-unit area that is occupied by State 2.
- (10) S2 Oil %—estimated percent of undiscovered oil volume allocated to State 2.
- (11) S2 Gas %—estimated percent of undiscovered gas volume allocated to State 2.
- (12) State 3—name of third State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (13) S3 Area %—percent of assessment-unit area that is occupied by State 3.
- (14) S3 Oil %—estimated percent of undiscovered oil volume allocated to State 3.
- (15) S3 Gas %—estimated percent of undiscovered gas volume allocated to State 3.
- (16) State 4—name of fourth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (17) S4 Area %—percent of assessment-unit area that is occupied by State 4.
- (18) S4 Oil %—estimated percent of undiscovered oil volume allocated to State 4.
- (19) S4 Gas %—estimated percent of undiscovered gas volume allocated to State 4.
- (20) State 5—name of fifth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (21) S5 Area %—percent of assessment-unit area that is occupied by State 5.
- (22) S5 Oil %—estimated percent of undiscovered oil volume allocated to State 5.
- (23) S5 Gas %—estimated percent of undiscovered gas volume allocated to State 5.
- (24) State 6—name of sixth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (25) S6 Area %—percent of assessment-unit area that is occupied by State 6.
- (26) S6 Oil %—estimated percent of undiscovered oil volume allocated to State 6.
- (27) S6 Gas %—estimated percent of undiscovered gas volume allocated to State 6.
- (28) State 7—name of seventh State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (29) S7 Area %—percent of assessment-unit area that is occupied by State 7.
- (30) S7 Oil %—estimated percent of undiscovered oil volume allocated to State 7.
- (31) S7 Gas %—estimated percent of undiscovered gas volume allocated to State 7.
- (32) State 8—name of eighth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (33) S8 Gas %—percent of assessment-unit area that is occupied by State 8.
- (34) S8 Oil %—estimated percent of undiscovered oil volume allocated to State 8.
- (35) S8 Gas %—estimated percent of undiscovered gas volume allocated to State 8.
- (36) State 9—name of ninth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (37) S9 Area %—percent of assessment-unit area that is occupied by State 9.
- (38) S9 Oil %—estimated percent of undiscovered oil volume allocated to State 9.
- (39) S9 Gas %—estimated percent of undiscovered gas volume allocated to State 9.
- (40) State 10—name of tenth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (41) S10 Area %—percent of assessment-unit area that is occupied by State 10.
- (42) S10 Oil %—estimated percent of undiscovered oil volume allocated to State 10.
- (43) S10 Gas %—estimated percent of undiscovered gas volume allocated to State 10.
- (44) State 11—name of eleventh State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (45) S11 Area %—percent of assessment-unit area that is occupied by State 11.
- (46) S11 Oil %—estimated percent of undiscovered oil volume allocated to State 11.
- (47) S11 Gas %—estimated percent of undiscovered gas volume allocated to State 11.
- (48) State 12—name of twelfth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (49) S12 Area %—percent of assessment-unit area that is occupied by State 12.
- (50) S12 Oil %—estimated percent of undiscovered oil volume allocated to State 12.
- (51) S12 Gas %—estimated percent of undiscovered gas volume allocated to State 12.
- (52) State 13—name of thirteenth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (53) S13 Area %—percent of assessment-unit area that is occupied by State 13.
- (54) S13 Oil %—estimated percent of undiscovered oil volume allocated to State 13.
- (55) S13 Gas %—estimated percent of undiscovered gas volume allocated to State 13.
- (56) State 14—name of fourteenth State (onshore and offshore) that occupies all or part of the assessment-unit area.
- (57) S14 Area %—percent of assessment-unit area that is occupied by State 14.
- (58) S14 Oil %—estimated percent of undiscovered oil volume allocated to State 14.
- (59) S14 Gas %—estimated percent of undiscovered gas volume allocated to State 14.

## 8 Petroleum Systems and Geologic Assessment of Oil and Gas in the Uinta-Piceance Province

The vol####.tab table contains estimates of undiscovered petroleum resources along with parameters that express uncertainty in these estimates. The table contains 40 columns. Blank cells represent no data. Data columns for these files are:

- (1) Code—assessment-unit code number.
- (2) Name—assessment-unit name.
- (3) Type—type of assessment unit, conventional, continuous oil, continuous gas, or coalbed gas.
- (4) Status—remarks indicating that assessment unit was not quantitatively assessed; otherwise blank.
- (5) Prob %—geologic probability of the assessment unit.
- (6) OILF95 MMB—the estimated value of undiscovered oil (oil in oil accumulations) such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of oil (MMBO).
- (7) OILF50 MMB—the estimated value of undiscovered oil (oil in oil accumulations) such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in millions of barrels of oil (MMBO).
- (8) OILF5 MMB—the estimated value of undiscovered oil (oil in oil accumulations) such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of oil (MMBO).
- (9) OILMN MMB—the estimated mean (average) value of undiscovered oil (oil in oil accumulations). The volume is given in millions of barrels of oil (MMBO).
- (10) OILSD MMB—the estimated standard deviation value of undiscovered oil (oil in oil accumulations). The volume is given in millions of barrels of oil (MMBO).
- (11) AGF95 BCF—the estimated value of undiscovered associated/dissolved gas (gas in oil accumulations) such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).
- (12) AGF50 BCF—the estimated value of undiscovered associated/dissolved gas (gas in oil accumulations) such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).
- (13) AGF5 BCF—the estimated value of undiscovered associated/dissolved gas (gas in oil accumulations) such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).
- (14) AGMB BCF—the estimated mean (average) value of undiscovered associated/dissolved gas (gas in oil accumulations). The volume is given in billions of cubic feet of gas (BCFG).
- (15) AGSD BCF—the estimated standard deviation value of undiscovered associated/dissolved gas (gas in oil accumulations). The volume is given in billions of cubic feet of gas (BCFG).
- (16) NGLF95 MMB—the estimated value of undiscovered natural gas liquids (NGL in oil accumulations) such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of NGL (MMBNGL).
- (17) NGLF50 MMB—the estimated value of undiscovered natural gas liquids (NGL in oil accumulations) such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in millions of barrels of NGL (MMBNGL).
- (18) NGLF5 MMB—the estimated value of undiscovered natural gas liquids (NGL in oil accumulations) such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of NGL (MMBNGL).
- (19) NGLMN MMB—the estimated mean (average) value of undiscovered natural gas liquids (NGL in oil accumulations). The volume is given in millions of barrels of NGL (MMBNGL).
- (20) NGLSD MMB—the estimated standard deviation value of undiscovered natural gas liquids (NGL in oil accumulations). The volume is given in millions of barrels of NGL (MMBNGL).
- (21) NGF95 BCF—the estimated value of undiscovered nonassociated gas (gas in gas accumulations) such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).
- (22) NGF50 BCF—the estimated value of undiscovered nonassociated gas (gas in gas accumulations) such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).
- (23) NGF5 BCF—the estimated value of undiscovered nonassociated gas (gas in gas accumulations) such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).
- (24) NGMN BCF—the estimated mean (average) value of undiscovered nonassociated gas (gas in gas accumulations). The volume is given in billions of cubic feet of gas (BCFG).
- (25) NGSD BCF—the estimated standard deviation value of undiscovered nonassociated gas (gas in gas accumulations). The volume is given in billions of cubic feet of gas (BCFG).
- (26) LIQF95 MMB—the estimated value of undiscovered liquids (oil and NGL in gas accumulations) such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of NGL (MMBL).
- (27) LIQF50 MMB—the estimated value of undiscovered liquids (oil and NGL in gas accumulations) such that

there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in millions of barrels of NGL (MMBL).

- (28) LIQF5 MMB—the estimated value of undiscovered liquids (oil and NGL in gas accumulations) such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of NGL (MMBL).
- (29) LIQMN MMB—the estimated mean (average) value of undiscovered liquids (oil and NGL in gas accumulations). The volume is given in millions of barrels of NGL (MMBL).
- (30) LIQSD MMB—the estimated standard deviation value of undiscovered liquids (oil and NGL in gas accumulations). The volume is given in millions of barrels of NGL (MMBL).
- (31) LOF95 MMB—the estimated size of the largest undiscovered oil accumulation such that there is a 95 percent probability of that accumulation being this amount or larger. The volume is given in millions of barrels of oil (MMBO).
- (32) LOF50 MMB—the estimated size of the largest undiscovered oil accumulation such that there is a 50 percent probability of that accumulation being this amount or larger. This is the median value. The volume is given in millions of barrels of oil (MMBO).
- (33) LOF5 MMB—the estimated size of the largest undiscovered oil accumulation such that there is a 5 percent probability of that accumulation being this amount or larger. The volume is given in millions of barrels of oil (MMBO).
- (34) LOMN MMB—the estimated mean (average) value of the largest undiscovered oil accumulation. The volume is given in millions of barrels of oil (MMBO).
- (35) LOSD MMB—the estimated standard deviation value of the largest undiscovered oil accumulation. The volume is given in millions of barrels of oil (MMBO).
- (36) LGF95 BCF—the estimated size of the largest undiscovered gas accumulation such that there is a 95 percent probability of that accumulation being this amount or larger. The volume is given in billions of cubic feet of gas (BCFG).
- (37) LGF50 BCF—the estimated size of the largest undiscovered gas accumulation such that there is a 50 percent probability of that accumulation being this amount or larger. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).
- (38) LGF5 BCF—the estimated size of the largest undiscovered gas accumulation such that there is a 5 percent probability of that accumulation being this amount or larger. The volume is given in billions of cubic feet of gas (BCFG).
- (39) LGMN BCF—the estimated mean (average) value of the largest undiscovered gas accumulation. The volume is given in billions of cubic feet of gas (BCFG).
- (40) LGSD BCF—the estimated standard deviation value of the largest undiscovered gas accumulation. The volume is given in billions of cubic feet of gas (BCFG).

The inf####.tab table contains input data from the FOR-SPAN Assessment Model for Continuous Accumulations—Basic Input Data Form used in this assessment. Blank cells represent no data. This table contains 79 columns. Data columns are:

- (1) Date—date of assessment.
- (2) Geol—assessing geologist’s name.
- (3) Regno—region code number.
- (4) Reg—region name.
- (5) Provno—province code number.
- (6) Prov—province name.
- (8) TPSno—total petroleum system code number.
- (9) TPS—total petroleum system name.
- (10) AUno—assessment-unit code number.
- (11) AU—assessment-unit name.
- (12) Data—data sources used to aid in completing the data-input form.
- (13) Comm—assessment unit type, the primary commodity type in the assessment unit, based on the gas to oil ratio of the petroleum endowment, which includes both the discovered and undiscovered petroleum. An assessment unit is characterized as being oil prone if the gas to oil ratio is less than 20,000 cubic feet of gas per barrel of oil; otherwise, it is gas prone.
- (14) RminMMBBBCF—minimum total recovery per cell considered for assessment, in million barrels of oil (MMBO) for oil assessment units or billion cubic feet of gas (BCFG) for gas assessment units.
- (15) Numtest1—number of tested cells in the assessment unit.
- (16) Numtest2—number of tested cells in the assessment unit that have total recoveries equal to or larger than the specified minimum total recovery per cell.
- (17) AUM—assessment-unit maturity, the exploration maturity of the assessment unit. Assessment-unit maturity is classified as “established” if more than 24 cells exceed the minimum total recovery, “frontier” if 1 to 24 cells exceed the minimum total recovery, or “hypothetical” if no cells exceed the minimum total recovery.
- (18) Med1MMBBBCF—median total recovery per cell of the set of tested cells equal to or greater than the minimum total recovery that constitute the first third of the total number of cells ranked according to date of discovery within the assessment unit, in million barrels of oil (MMBO) for oil assessment units or billion cubic feet of gas (BCFG) for gas assessment units.
- (19) Med2MMBBBCF—median total recovery per cell of the set of tested cells equal to or greater than the minimum total recovery that constitute the second third of the total number of cells ranked according to date of discovery within the assessment unit, in million barrels of oil (MMBO) for oil assessment units or billion cubic feet of gas (BCFG) for gas assessment units.

- gas (BCFG) for gas assessment units.
- (20) Med3MMBBCF—median total recovery per cell of the set of tested cells equal to or greater than the minimum total recovery that constitute the third third of the total number of cells ranked according to date of discovery within the assessment unit, in million barrels of oil (MMBO) for oil assessment units or billion cubic feet of gas (BCFG) for gas assessment units.
- (21) Prob1 %—charge probability, the probability for adequate petroleum charge for at least one untested cell equal to or larger than the minimum total recovery, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Charge probability is given as a fractional value from 0 to 1.0.
- (22) Prob2 %—rocks probability, the probability for adequate reservoirs, traps, and seals for at least one untested cell equal to or larger than the minimum total recovery, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Rocks probability is given as a fractional value from 0 to 1.0.
- (23) Prob3 %—timing probability, the probability for favorable geologic timing for at least one untested cell equal to or larger than the minimum total recovery, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Timing probability is given as a fractional value from 0 to 1.0.
- (24) Geoprob %—geologic probability, the product of charge, rocks, and timing probabilities. Geologic probability is given as a fractional value from 0 to 1.0.
- (25) Prob4 %—accessibility probability, the probability for adequate location for necessary petroleum-related activities to discover at least one untested cell equal to or larger than the minimum total recovery, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Accessibility probability is given as a fractional value from 0 to 1.0.
- (26) TAAmin a—minimum total assessment-unit area, the estimated minimum (F100) area of the assessment unit. The area is given in acres.
- (27) TAAmed a—median total assessment-unit area, the estimated median (F50) area of the assessment unit. The area is given in acres.
- (28) TAAmax a—maximum total assessment-unit area, the estimated maximum (F0) area of the assessment unit. The area is given in acres.
- (29) CAmin a—minimum area per cell of untested cells with potential, the estimated minimum (F100) area per cell of untested cells having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment) in the assessment unit. This area is equivalent to the drainage areas of wells. This area is given in acres.
- (30) CAmid a—median area per cell of untested cells with potential, the estimated median (F50) area per cell of untested cells having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment) in the assessment unit. This area is equivalent to the drainage areas of wells. This area is given in acres.
- (31) CAmid a—maximum area per cell of untested cells with potential, the estimated maximum (F0) area per cell of untested cells having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment) in the assessment unit. This area is equivalent to the drainage areas of wells. This area is given in acres.
- (32) TAAUmin %—estimated minimum (F100) percentage of the total assessment-unit area that is untested.
- (33) TAAUmed %—estimated median (F50) percentage of the total assessment-unit area that is untested.
- (34) TAAUmax %—estimated maximum (F0) percentage of the total assessment-unit area that is untested.
- (35) UAAPmin %—estimated minimum (F100) percentage of the untested area in the assessment unit having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment).
- (36) UAAPmed %—estimated median (F50) percentage of the untested area in the assessment unit having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment).
- (37) UAAPmax %—estimated maximum (F0) percentage of the untested area in the assessment unit having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment).
- (38) RminMMBBCF—estimated minimum (F100) total recovery per cell for untested cells in the assessment unit having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment). This volume is given as million barrels of oil (MMBO) for oil assessment units and billion cubic feet of gas (BCFG) for gas assessment units.
- (39) RmedMMBBCF—estimated median (F50) total recovery per cell for untested cells in the assessment unit having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment). This volume is given as million barrels of oil (MMBO) for oil assessment units and billion cubic feet of gas (BCFG) for gas assessment units.
- (40) RmaxMMBBCF—estimated maximum (F0) total recovery per cell for untested cells in the assessment unit having the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment). This volume is given as million barrels of oil (MMBO) for oil assessment units and billion cubic feet of gas (BCFG) for gas assessment units.
- (41) GminCF/B—estimated minimum (F100) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil (CFG/BO), of untested cells equal to or larger than the minimum total recovery in oil assessment units.
- (42) GmedCF/B—estimated median (F50) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil (CFG/BO), of untested cells equal to or larger than the minimum

- total recovery in oil assessment units.
- (43) GmaxCF/B—estimated maximum (F0) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil (CFG/BO), of untested cells equal to or larger than the minimum total recovery in oil assessment units.
  - (44) NminB/MMCF—estimated minimum (F100) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas (BNGL/MMCFG), of untested cells equal to or larger than the minimum total recovery in oil assessment units.
  - (45) NmedB/MMCF—estimated median (F50) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas (BNGL/MMCFG), of untested cells equal to or larger than the minimum total recovery in oil assessment units.
  - (46) NmaxB/MMCF—estimated maximum (F0) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas (BNGL/MMCFG), of untested cells equal to or larger than the minimum total recovery in oil assessment units.
  - (47) LminB/MMCF—estimated minimum (F100) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas (BNGL/MMCFG), of untested cells equal to or larger than the minimum total recovery in gas assessment units.
  - (48) LmedB/MMCF—estimated median (F50) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas (BNGL/MMCFG), of untested cells equal to or larger than the minimum total recovery in gas assessment units.
  - (49) LmaxB/MMCF—estimated maximum (F0) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas (BNGL/MMCFG), of untested cells equal to or larger than the minimum total recovery in gas assessment units.
  - (50) APImin deg—estimated minimum (F100) API gravity, in degrees, of oil in untested cells in oil assessment units.
  - (51) APImed deg—estimated median (F50) API gravity, in degrees, of oil in untested cells in oil assessment units.
  - (52) APImax deg—estimated maximum (F0) API gravity, in degrees, of oil in untested cells in oil assessment units.
  - (53) Smin %—estimated minimum (F100) sulfur content, in percent, of oil in untested cells in oil assessment units.
  - (54) Smed %—estimated median (F50) sulfur content, in percent, of oil in untested cells in oil assessment units.
  - (55) Smax %—estimated maximum (F0) sulfur content, in percent, of oil in untested cells in oil assessment units.
  - (56) ODmin m—estimated minimum (F100) drilling depth, in meters, of oil in untested cells in oil assessment units.
  - (57) ODmed m—estimated median (F50) drilling depth, in meters, of oil in untested cells in oil assessment units.
  - (58) ODmax m—estimated maximum (F0) drilling depth, in meters, of oil in untested cells in oil assessment units.
  - (59) OWDmin m—estimated minimum (F100) water depth, in meters, of oil in untested cells in oil assessment units (ocean, bays, or lakes; if applicable).
  - (60) OWDmed m—estimated median (F50) water depth, in meters, of oil in untested cells in oil assessment units (ocean, bays, or lakes; if applicable).
  - (61) OWDmax m—estimated maximum (F0) water depth, in meters, of oil in untested cells in oil assessment units (ocean, bays, or lakes; if applicable).
  - (62) IGmin %—estimated minimum (F100) inert gas content, in percent, of gas in untested cells in gas assessment units (nitrogen, helium, etc.).
  - (63) IGmed %—estimated median (F50) inert gas content, in percent, of gas in untested cells in gas assessment units (nitrogen, helium, etc.).
  - (64) IGmax %—estimated maximum (F0) inert gas content, in percent, of gas in untested cells in gas assessment units (nitrogen, helium, etc.).
  - (65) CO2min %—estimated minimum (F100) carbon dioxide content, in percent, of gas in untested cells in gas assessment units.
  - (66) CO2med %—estimated median (F50) carbon dioxide content, in percent, of gas in untested cells in gas assessment units.
  - (67) CO2max %—estimated maximum (F0) carbon dioxide content, in percent, of gas in untested cells in gas assessment units.
  - (68) H2Smin %—estimated minimum (F100) hydrogen sulfide content, in percent, of gas in untested cells in gas assessment units.
  - (69) H2Smed %—estimated median (F50) hydrogen sulfide content, in percent, of gas in untested cells in gas assessment units.
  - (70) H2Smax %—estimated maximum (F0) hydrogen sulfide content, in percent, of gas in untested cells in gas assessment units.
  - (71) GDmin m—estimated minimum (F100) drilling depth, in meters, of gas in untested cells in gas assessment units.
  - (72) GDmed m—estimated median (F50) drilling depth, in meters, of gas in untested cells in gas assessment units.
  - (73) GDmax m—estimated maximum (F0) drilling depth, in meters, of gas in untested cells in gas assessment units.
  - (74) GWDmin m—estimated minimum (F100) water depth, in meters, of gas in untested cells in gas assessment units (ocean, bays, or lakes; if applicable).
  - (75) GWDmed m—estimated median (F50) water depth, in meters, of gas in untested cells in gas assessment units (ocean, bays, or lakes; if applicable).
  - (76) GWDmax m—estimated maximum (F0) water depth, in meters, of gas in untested cells in gas assessment units (ocean, bays, or lakes; if applicable).
  - (77) TAAUPmin %—estimated minimum (F100) percentage of the assessment-unit area that is untested and has the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment). The percentage of the total assessment-unit area that is untested and has potential for additions to reserves was estimated for the earliest assessments instead of the percentage of untested assessment-unit

area with potential. It is reported for only four assessment units (50200161, 50200181, 50200182, and 50200183).

- (78) TAAUPmed %—estimated median (F50) percentage of the assessment-unit area that is untested and has the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment). The percentage of the total assessment-unit area that is untested and has potential for additions to reserves was estimated for the earliest assessments instead of the percentage of untested assessment-unit area with potential. It is reported for only four assessment units (50200161, 50200181, 50200182, and 50200183).
- (79) TAAUPmax %—estimated maximum (F0) percentage of the assessment-unit area that is untested and has the potential for additions to reserves in the specified time frame for the assessment (30 years for this assessment). The percentage of the total assessment-unit area that is untested and has potential for additions to reserves was estimated for the earliest assessments instead of the percentage of untested assessment-unit area with potential. It is reported for only four assessment units (50200161, 50200181, 50200182, and 50200183).

The ins####.tab table contains input data from the Seventh Approximation Data Forms for Conventional Assessment Units used in this assessment. Blank cells represent no data. This table contains 75 columns. Data columns are:

- (1) Date—date of assessment.
- (2) Geo—assessing geologist's name.
- (3) Regno—region code number.
- (4) Reg—region name.
- (5) Provno—province code number.
- (6) Prov—province name.
- (7) TPSno—total petroleum system code number.
- (8) TPS—total petroleum system name.
- (9) AUno—assessment-unit code number.
- (10) AU—assessment-unit name.
- (11) Data—data sources used to aid in completing the data-input form.
- (12) Comm—primary commodity type in the assessment unit, based on the gas to oil ratio of the petroleum endowment, which includes both the discovered and undiscovered petroleum. An assessment unit is characterized as being oil prone if the gas to oil ratio is less than 20,000 cubic feet of gas per barrel of oil; otherwise, it is gas prone.
- (13) Minsize MMB—minimum accumulation size considered for assessment, in million barrels of oil equivalent (MMBOE).
- (14) Numoil—number of oil accumulations equal to or larger than the minimum accumulation size discovered in the assessment unit.
- (15) Numgas—number of gas accumulations equal to or larger than the minimum accumulation size discovered in the assessment unit.
- (16) AUM—assessment-unit maturity, the exploration maturity of the assessment unit. Assessment-unit maturity is classified as “established” if more than 13 accumulations exceeding minimum size have been discovered, “frontier” if 1 to 13 accumulations exceeding minimum size have been discovered, or “hypothetical” if no accumulations exceeding minimum size have been discovered.
- (17) MedO1MMB—median size of the set of discovered oil accumulations that constitute the first third or half of the total number of oil accumulations ranked according to date of discovery within the assessment unit, in million barrels of oil (MMBO). This size is derived from known oil volumes that were adjusted upward to account for estimated future reserve growth. For this assessment, 30 years of reserve growth is considered.
- (18) MedO2MMB—median size of the set of discovered oil accumulations that constitute the second third or half of the total number of oil accumulations ranked according to date of discovery within the assessment unit, in million barrels of oil (MMBO). This size is derived from known oil volumes that were adjusted upward to account for estimated future reserve growth. For this assessment, 30 years of reserve growth is considered.
- (19) MedO3MMB—median size of the set of discovered oil accumulations that constitute the third third of the total number of oil accumulations ranked according to date of discovery within the assessment unit, in million barrels of oil (MMBO). This size is derived from known oil volumes that were adjusted upward to account for estimated future reserve growth. For this assessment, 30 years of reserve growth is considered.
- (20) MedG1BCF—median size of the set of discovered gas accumulations that constitute the first third or half of the total number of gas accumulations ranked according to date of discovery within the assessment unit, in billion cubic feet of gas (BCFG). This size is derived from known gas volumes that were adjusted upward to account for estimated future reserve growth. For this assessment, 30 years of reserve growth is considered.
- (21) MedG2BCF—median size of the set of discovered gas accumulations that constitute the second third or half of the total number of gas accumulations ranked according to date of discovery within the assessment unit, in billion cubic feet of gas (BCFG). This size is derived from known gas volumes that were adjusted upward to account for estimated future reserve growth. For this assessment, 30 years of reserve growth is considered.
- (22) MedG3BCF—median size of the set of discovered gas accumulations that constitute the third third of the total number of gas accumulations ranked according to date of discovery within the assessment unit, in billion cubic feet of gas (BCFG). This size is derived from known gas volumes that were adjusted upward to account for estimated future reserve growth. For this assessment, 30 years of reserve growth is considered.

- (23) Prob1 %—charge probability, the probability for adequate petroleum charge for at least one undiscovered accumulation equal to or larger than the minimum accumulation size, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Charge probability is given as a fractional value from 0 to 1.0.
- (24) Prob2 %—rocks probability, the probability for adequate reservoirs, traps, and seals for at least one undiscovered accumulation equal to or larger than the minimum accumulation size, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Rocks probability is given as a fractional value from 0 to 1.0.
- (25) Prob3 %—timing probability, the probability for favorable geologic timing for at least one undiscovered accumulation equal to or larger than the minimum accumulation size, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Timing probability is given as a fractional value from 0 to 1.0.
- (26) Geoprob %—geologic probability, the product of charge, rocks, and timing probabilities. Geologic probability is given as a fractional value from 0 to 1.0.
- (27) Prob4 %—accessibility probability, the probability for adequate location for necessary petroleum-related activities to discover at least one undiscovered accumulation equal to or larger than the minimum accumulation size, somewhere in the assessment unit, having the potential to be added to reserves in the next 30 years. Accessibility probability is given as a fractional value from 0 to 1.0.
- (28) NOmin—estimated minimum (F100) number of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (29) NOmed—estimated median (F50) number of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (30) NOmax—estimated maximum (F0) number of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (31) NGmin—estimated minimum (F100) number of undiscovered gas accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (32) NGmed—estimated median (F50) number of undiscovered gas accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (33) NGmax—estimated maximum (F0) number of undiscovered gas accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (34) SOminMMB—estimated minimum (F100) size, in million barrels of oil (MMBO), of undiscovered oil accumulations in the assessment unit.
- (35) SOMedMMB—estimated median (F50) size, in million barrels of oil (MMBO), of undiscovered oil accumulations in the assessment unit.
- (36) SOmaxMMB—estimated maximum (F0) size, in million barrels of oil (MMBO), of undiscovered oil accumulations in the assessment unit.
- (37) SGminBCF—estimated minimum (F100) size, in billion cubic feet of gas (BCFG), of undiscovered gas accumulations in the assessment unit.
- (38) SGmedBCF—estimated median (F50) size, in billion cubic feet of gas (BCFG), of undiscovered gas accumulations in the assessment unit.
- (39) SGmaxBCF—estimated maximum (F0) size, in billion cubic feet of gas (BCFG), of undiscovered gas accumulations in the assessment unit.
- (40) GminCF/B—estimated minimum (F100) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil (CFG/BO), of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (41) GmedCF/B—estimated median (F50) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil (CFG/BO), of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (42) GmaxCF/B—estimated maximum (F0) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil (CFG/BO), of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (43) NminB/MMCF—estimated minimum (F100) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas (BNGL/MMCFG), of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (44) NmedB/MMCF—estimated median (F50) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas (BNGL/MMCFG), of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (45) NmaxB/MMCF—estimated maximum (F0) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas (BNGL/MMCFG), of undiscovered oil accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (46) LminB/MMCF—estimated minimum (F100) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas (BL/MMCFG), of undiscovered gas accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (47) LmedB/MMCF—estimated median (F50) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas (BL/MMCFG), of undiscovered gas accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (48) LmaxB/MMCF—estimated maximum (F0) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas (BL/MMCFG), of undiscovered gas accumulations equal to or larger than the minimum accumulation size in the assessment unit.
- (49) APImin deg—estimated minimum (F100) API gravity, in degrees, of oil in undiscovered oil accumulations in



- the assessment unit.
- (50) API<sub>med</sub> deg—estimated median (F50) API gravity, in degrees, of oil in undiscovered oil accumulations in the assessment unit.
- (51) API<sub>max</sub> deg—estimated maximum (F0) API gravity, in degrees, of oil in undiscovered oil accumulations in the assessment unit.
- (52) S<sub>min</sub> %—estimated minimum (F100) sulfur content, in percent, of oil in undiscovered oil accumulations in the assessment unit.
- (53) S<sub>med</sub> %—estimated median (F50) sulfur content, in percent, of oil in undiscovered oil accumulations in the assessment unit.
- (54) S<sub>max</sub> %—estimated maximum (F0) sulfur content, in percent, of oil in undiscovered oil accumulations in the assessment unit.
- (55) OD<sub>min</sub> m—estimated minimum (F100) drilling depth, in meters, of undiscovered oil accumulations in the assessment unit.
- (56) OD<sub>med</sub> m—estimated median (F50) drilling depth, in meters, of undiscovered oil accumulations in the assessment unit.
- (57) OD<sub>max</sub> m—estimated maximum (F0) drilling depth, in meters, of undiscovered oil accumulations in the assessment unit.
- (58) OWD<sub>min</sub> m—estimated minimum (F100) water depth, in meters, of undiscovered oil accumulations in the assessment unit (ocean, bays, or lakes; if applicable).
- (59) OWD<sub>med</sub> m—estimated median (F50) water depth, in meters, of undiscovered oil accumulations in the assessment unit (ocean, bays, or lakes; if applicable).
- (60) OWD<sub>max</sub> m—estimated maximum (F0) water depth, in meters, of undiscovered oil accumulations in the assessment unit (ocean, bays, or lakes; if applicable).
- (61) IG<sub>min</sub> %—estimated minimum (F100) inert gas content, in percent, of gas in undiscovered gas accumulations in the assessment unit (nitrogen, helium, etc.).
- (62) IG<sub>med</sub> %—estimated median (F50) inert gas content, in percent, of gas in undiscovered gas accumulations in the assessment unit (nitrogen, helium, etc.).
- (63) IG<sub>max</sub> %—estimated maximum (F0) inert gas content, in percent, of gas in undiscovered gas accumulations in the assessment unit (nitrogen, helium, etc.).
- (64) CO<sub>2min</sub> %—estimated minimum (F100) carbon dioxide content, in percent, of gas in undiscovered gas accumulations in the assessment unit.
- (65) CO<sub>2med</sub> %—estimated median (F50) carbon dioxide content, in percent, of gas in undiscovered gas accumulations in the assessment unit.
- (66) CO<sub>2max</sub> %—estimated maximum (F0) carbon dioxide content, in percent, of gas in undiscovered gas accumulations in the assessment unit.
- (67) H<sub>2Smin</sub> %—estimated minimum (F100) hydrogen sulfide content, in percent, of gas in undiscovered gas accumulations in the assessment unit.
- (68) H<sub>2Smed</sub> %—estimated median (F50) hydrogen sulfide content, in percent, of gas in undiscovered gas accumulations in the assessment unit.
- (69) H<sub>2Smax</sub> %—estimated maximum (F0) hydrogen sulfide content, in percent, of gas in undiscovered gas accumulations in the assessment unit.
- (70) GD<sub>min</sub> m—estimated minimum (F100) drilling depth, in meters, of undiscovered gas accumulations in the assessment unit.
- (71) GD<sub>med</sub> m—estimated median (F50) drilling depth, in meters, of undiscovered gas accumulations in the assessment unit.
- (72) GD<sub>max</sub> m—estimated maximum (F0) drilling depth, in meters, of undiscovered gas accumulations in the assessment unit.
- (73) GWD<sub>min</sub> m—estimated minimum (F100) water depth, in meters, of undiscovered gas accumulations in the assessment unit (ocean, bays, or lakes; if applicable).
- (74) GWD<sub>med</sub> m—estimated median (F50) water depth, in meters, of undiscovered oil accumulations in the assessment unit (ocean, bays, or lakes; if applicable).
- (75) GWD<sub>max</sub> m—estimated maximum (F0) water depth, in meters, of undiscovered oil accumulations in the assessment unit (ocean, bays, or lakes; if applicable).

Data in the kvol####.tab table are derived from a commercially purchased database (NRG Associates, 2000) and are current through 1998. This table contains 15 columns. Blank cells represent no data. Data columns for these files are:

- (1) Code—assessment-unit code number.
- (2) Name—assessment-unit name.
- (3) Numres—number of reported reservoirs in the assessment unit.
- (4) CUMOIL MMB—cumulative production of oil from the reported reservoirs in the assessment unit. This volume is in million barrels of oil (MMBO).
- (5) REMOIL MMB—remaining oil reserves in the reported reservoirs in the assessment unit. This volume is in million barrels of oil (MMBO).
- (6) KROIL MMB—known recoverable oil volume (cumulative production plus remaining reserves) from the reported reservoirs in the assessment unit. This volume is in million barrels of oil (MMBO).
- (7) CUMGAS BCF—cumulative production of natural gas from the reported reservoirs in the assessment unit. This volume is in billion cubic feet of gas (BCFG).
- (8) REMGAS BCF—remaining natural gas reserves in the reported reservoirs in the assessment unit. This volume is in billion cubic feet of gas (BCFG).
- (9) KRGAS BCF—known recoverable natural gas volume (cumulative production plus remaining reserves) from the reported reservoirs in the assessment unit. This volume is in billion cubic feet of gas (BCFG).
- (10) CUMNGL MMB—cumulative production of natural gas liquids (NGL) from the reported reservoirs in the assessment unit. This volume is in million barrels of natural gas liquids (MMBNGL).

- (11) REMNGL MMB—remaining natural gas liquids (NGL) reserves in the reported reservoirs in the assessment unit. This volume is in million barrels of natural gas liquids (MMBNGL).
- (12) KRNGM MMB—known recoverable natural gas liquids (NGL) volume (cumulative production plus remaining reserves) from the reported reservoirs in the assessment unit. This volume is in million barrels of natural gas liquids (MMBNGL).
- (13) CUMPET MMB— cumulative production of petroleum (oil, gas, and NGL) from the reported reservoirs in the assessment unit. This volume is in million barrels of oil equivalent (MMBOE).
- (14) REMPET MMB—remaining petroleum (oil, gas, and NGL) reserves in the reported reservoirs in the assessment unit. This volume is in million barrels of oil equivalent (MMBOE).
- (15) KRPET MMB—known recoverable petroleum (oil, gas, and NGL) volume (cumulative production plus remaining reserves) from the reported reservoirs in the assessment unit. This volume is in million barrels of oil equivalent (MMBOE).

## Summary Tables

The c#####.pdf and u#####.pdf files are copies of the input data forms used in the assessment process. The c#####.pdf files contain the Seventh Approximation Data Forms for Conventional Assessment Units. The u#####.pdf files contain the FORSPAN Assessment Model for Continuous Accumulations—Basic Input Data Form. These data are defined in the inf#####.tab and ins#####.tab sections of this report.

The d#####.pdf files contain three tables of known and grown petroleum volumes in an assessment unit as a whole and in terms of discovery history. Grown field sizes are defined as known accumulation sizes that were adjusted upward to account for estimated future reserve growth. NA means not applicable and shown in place of volumes for which only one field is present.

## Graphical Data

The fp#####.pdf files contain graphs of input data and estimated petroleum resource volumes for continuous assessment units. The data are defined in the inf#####.tab and vol#####.tab sections of this report. The graphs contained in these files were derived from a report generated by a commercial software package. The quality of these pre-formatted graphs, therefore, does not necessarily meet USGS editorial standards.

The em#####.pdf files contain graphs of input data and estimated petroleum resource volumes for conventional assessment units. The data are defined in the ins#####.tab and vol#####.tab sections of this report. The graphs contained in these files were derived from a report generated by a commercial software package. The quality of these pre-formatted graphs, therefore, does not necessarily meet USGS editorial standards.

The g#####.pdf and k#####.pdf files contain graphs of exploration and discovery data for conventional assessment units. The volumetric data are defined in the kvol#####.tab sections of this report. These files are not provided if the total number of accumulations in the assessment unit, greater than or equal to the specified minimum size, is less than four.

Two sets of exploration-activity and discovery-history graphs are provided for each of the assessment units, one set showing known field sizes (cumulative production plus remaining reserves) and another showing field sizes that were adjusted to compensate for potential reserve growth that may occur in the next 30 years (labeled “grown”). Within each set of graphs, oil fields and gas fields are treated separately. The graphs include:

- Cumulative Number of New-Field Wildcat Wells vs. Drilling-Completion Year
- Number of New-Field Wildcat Wells vs. Drilling-Completion Year
- Oil- or Gas-Field Size (MMBO or BCFG) vs. Oil- or Gas-Field Rank by Size (With Respect to Discovery Halves or Thirds)
- Number of Oil or Gas Fields vs. Oil- or Gas-Field Size Classes (MMBO or BCFG) (With Respect to Discovery Halves or Thirds)
- Volume of Oil or Gas (MMBO or BCFG) vs. Oil- or Gas-Field Size Classes (MMBO or BCFG)
- Oil- or Gas-Field Size (MMBO or BCFG) vs. Field-Discovery Year
- Oil- or Gas-Field Size (MMBO or BCFG) vs. Cumulative Number of New-Field Wildcat Wells
- Cumulative Oil or Gas Volume (MMBO or BCFG) vs. Field-Discovery Year
- Cumulative Oil or Gas Volume (MMBO or BCFG) vs. Cumulative Number of New-Field Wildcat Wells
- Cumulative Number of Oil or Gas Fields vs. Field-Discovery Year
- Cumulative Number of Oil or Gas Fields vs. Cumulative Number of New-Field Wildcat Wells
- Reservoir Depth, Oil or Gas Fields (ft) vs. Field-Discovery Year
- Reservoir Depth, Oil or Gas Fields (ft) vs. Cumulative Number of New-Field Wildcat Wells
- Gas/Oil, Oil Fields (CFG/BO) vs. Mean Reservoir Depth (ft)
- NGL/Gas, Oil Fields (BNGL/MMCFG) vs. Mean Reservoir Depth (ft)

- Liquids/Gas, Gas Fields (BL/MMCFG) vs. Mean Reservoir Depth (ft)
- Number of Reservoirs in Oil Fields vs. API Gravity (Degrees)

If data are insufficient or do not exist, plots are not provided. Therefore, not all graphs are included in all files.

## File List

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### *Summary tables*

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### *Graphs—Continued*

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k200501.pdf

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- Petroleum Information/Dwights LLC, 1999b [includes data current as of December, 1998], Well History Control System: Englewood, Colo., Petroleum Information/Dwights LLC; database now available from IHS Energy Group, 15 Inverness Way East, D205, Englewood, CO 80112, U.S.A.



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