

RESERVOIR CLASS FIELD DEMONSTRATION

**U.S. DEPARTMENT OF ENERGY
National Energy Technology Laboratory
National Petroleum Technology Office**



**Publication & Presentation
Bibliography**

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Overview

The Reservoir Class Field Demonstration Program was initiated in FY92 in response to rapidly declining domestic production and the realization that huge volumes of oil are being abandoned in reservoirs because of uneconomic production techniques. This program is just one of the critical elements of the National Oil Program necessary to move Improved Oil Recovery (IOR) technology from the conceptual stage through research, pilot scale field experiments, and full-scale field demonstrations to industry acceptance and commercialization. Both the successful results and failures of the field demonstrations will provide focus to concurrent research programs. Elements of the field demonstrations that are suitable for broad industry application are being communicated to the industry through the oil program's technology transfer effort.

Significant events in the oil industry during 1998-1999, including company repositioning, mergers, sale of fields, and personnel layoffs, have effected important changes in DOE's Class projects. Several projects have moved field locations and transferred the technology developed in Phase I to other nearby fields in Phase II. Mergers have caused several fields to be sold, and a few projects have terminated early because of these changes.

The value of the research remains high, and publications and technology transfer presentations by project personnel continue to contribute a significant body of knowledge on the solution of problems in producing oil from mature domestic oil fields.

All Class I projects have been completed by the end of 2000. Final reports have been published on eight projects with two in press. A CD containing final reports from all eleven completed projects will be available in mid 2001. Three Class II projects were completed in 1998; the remaining four were completed in 2000, and two have been extended into 2001-2002. Seven of the Class III projects remain active; one came to a close in 1999 and one final report is in press.

In 2000 ten Class Revisit projects were awarded. Three of these cover Class I reservoirs, six are on Class II reservoirs and one in on an offshore Class III reservoir. One of the proejects is near term scheduled to end in 2001, the remaining nine projects will last from five to six years.

As part of the technology transfer effort, this listing of publications and presentations by the project operators has been compiled by the U.S. Department of Energy's (DOE) National Petroleum Technology Office (NPTO). DOE reports can be ordered through NPTO. To receive copies of other publications and presentations contact the project operator. Project operators, and the contact person for each project are listed in the section titled "Contacts".

Also available through NPTO is a book titled "Class Project Summary Sheets". Included in this book are maps showing project locations, tables of technologies addressed, and an overview of each project along with project results. This book is updated approximately every six months.

Additional information about NPTO programs can be found on our Website at: www.npto.doe.gov

Reservoirs were classified by depositional environment. The classifications are as follows:

Class I	Fluvial Dominated Deltaic Reservoirs
Class II	Shallow Shelf Carbonate Reservoirs
Class III	Slope & Basin Clastic Reservoirs
Class Revisit	Ten new projects starting in 2000 have been added

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Contacts

U.S. Department of Energy National Petroleum Technology Office

For Publication Information Contact:

Herb Tiedemann
P.O. Box 3628
Tulsa, OK 74101

Phone: 918-699-2017
Fax: 918-699-2005
e-mail: htiedema@npto.doe.gov

For Technical Information Contact

Rhonda Lindsey
P.O. Box 3628
Tulsa, OK 74101

Phone: 918-699-2037
Fax: 918-699-2005
e-mail: rlindsey@npto.doe.gov

Class Operators Address List Class Revisits

Ensign Operating Company 15120

David Wheeler
Ensign Operating Company
1225 17th St. Suite 1900
Denver, CO

PI

Tel: 303-293-9999.
Fax: 295-6168
E-mail: denver@ensignoil.com

Binger Operations 15121

Teresa Muhic
Nelson & Assoc.
P.O. Box 2850
Cody, WY 82414

PI

Tel: 307-587-2445
Fax: 307-527-4943
E-mail: nai@cody.wpt.net

Steve Slawson
Binger Operations, LLC
200 N. Harvey Suite 1412
Oklahoma City, OK 73102

Field operations

Joseph Sinner
Nelson & Assoc.
PO Box 2850
Cody, WY 82414

PI (9-2000)

Tel: 307-587-2445

Michigan Technological University 15122

Dr. James Wood Michigan Technical university 1400 Townsend Drive Houghton, MI 49931	PI	Tel: 906-487-2894 or 906-487-2531 Fax: 906-487-3371 E-mail: Jrw@mtu.edu
--	----	--

Luff Exploration 15123

Mark Sippel Petrotek Engineering Corp. 8000 E. Prentice Ave. #A1 Englewood, CO 80111	PI	Tel: 303-861-2468 Fax: 303-861-2481 E-mail: msippel@ix.netcom
---	----	--

Kenneth D. Luff Luff Exploration Company Denver, CO	Owner	Tel: 303-861-2468
---	-------	-------------------

University of Kansas Center for Research, Inc. 15124

Alan P. Byrnes The University of Kansas Center for Research, Inc. 2291 Irving Hill Dr. Lawrence, KS 66045	PI	Tel: 785-864-2177 Fax: 785-864-5317 E-mail: abyrnes@uks.uknas.edu
---	----	--

The University of Tulsa 15125

Dr. Mohan Kelkar University of Tulsa 600 S. College Ave Tulsa, OK 74104	PI	Tel: 918-631-3036 Fax: 918-631-2059 E-mail: mohan@utulsa.edu
--	----	--

Plains Illinois, Inc. 15126

Philip E. Hart Plains Illinois, Inc. P.O. Box 318 IL Hwy. 250 Bridgeport, IL	Owner/PI	Tel: 618-945-8600. Fax: 618-945-9203 E-mail: phart@plainsresources.com
--	----------	---

Ron Damm Plains Illinois, Inc. P.O. Box 318 IL Hwy. 250 Bridgeport, IL	PI	
--	----	--

Roger Bon
Utah Geological Survey
1594 West North Temple, Suite 3410
P.O. Box 146100
Salt Lake City, UT 84114

Tel: 801-537-3363
(Public relations)

Diversified Operating, 14954

Terry Cammon PI
Diversified Operating Corp.
15000 West 6th Ave., Suite 102
Golden, CO 80401

Tel: 303-384-9611
Fax: 303-384-9612

Oklahoma Geological Survey 14956

Dr. Charles Mankin PI
University of Oklahoma
Office of Research Admin.
1000 Asp Ave. Rm. 314
Norman, Ok 73019

Tel: 405-325-3031
Fax: 405-325-7069
E-mail: cjmankin@ou.edu

Michelle Summers
University of Oklahoma
Office of Research Admin.
1000 Asp Ave. Rm. 314
Norman, Ok 73019

Tel: 405-325-3031
(public relations)

Mary Banken
University of Oklahoma
Office of Research Admin.
1000 Asp Ave. Rm. 314
Norman, Ok 73019

Tel: 405-325-3131
(responsible for writing reports)

University of Kansas 14957

Dr. M. Lee Allison, Director
Kansas Geological Survey
2291 Irving Hill Drive
Campus West
Lawrence, KS 66045

Tel: 785-864-2911

Dr. Don Green PI
University of Kansas
Center for Research Inc.
2291 Irving Hill Dr.
Campus West
Lawrence KS 66045

Tel: 785-864-2911
Fax: 785-864-4967
E-mail: DWGCPE@KUHUB.CC.UKANS.EDU

Dr. Paul Willhite Co PI Tel: 785-864-2906
University of Kansas Fax: 785-864-4967
Center for Research Inc.
2291 Irving Hill Dr.
Campus West
Lawrence KS 66045

Rodney Reynolds Tel: 785-864-7398
Kansas Geological Survey Fax: 785-864-7399
2291 Irving Hill Drive (public relations)
Campus West
Lawrence, KS 66045

Inland Resources/Lomax Exploration 14958

Bill Pennington PI Tel: 303-292-0900
Inland Resources, Inc. Fax: 303-296-4070
410 Seventeenth St. Suite 700
Denver, CO 80202

University of Texas, Bureau of Economic Geology 14959

Dr. Paul Knox PI Tel: 512-471-1534
Bureau of Economic Geology Fax: 512-471-0140
University of Texas, Austin
University Station, Box 7726
Austin, TX 78713

Dr, Scott Tinkler Tel: 512-471-1534
Director Fax: 512-471-0140
Bureau of Economic Geology
University Station, Box 7726
Austin, TX 78713

Texaco E & P 14960

Tim Tipton PI Tel: 504-680-1728
Texaco E & P Fax: 504-680-6577
400 Poydrass St
New Orleans, LA 70130

Columbia Lamont Doherty Lab. 14961

Dr. Roger N. Anderson PI Tel: 914-359-2900
Columbia University Fax: 914-359-1631
Lamont-Doherty Earth Observatory E-mail: anderson@Ideo.Columbia.edu
Box 20 Low Memorial Library
New York, NY 10027

Hughes Eastern Corp. 14962

James O. Stephens PI
Hughes Eastern Corp.
403 Town Center Blvd #103
Ridgeland MS 39157-4843

Tel: 601-898-0051 ext. 305
Fax: 601-898-0233

Dr. Alex Vadie co PI
P. O. Box 5423
Mississippi State University
Mississippi State, Mississippi 39762

E-mail: vadie@ra.msstate.edu

Dr. Lewis Brown co PI
Dept. Biological Sciences
Mississippi State University
Mississippi State, Mississippi 39762

Tel: 601-325-7593

Amoco 14963

Travis Gillham PI
Amoco Production Co
501 W. Lake Blvd Rm. 9
P.O. Box 3092
Houston, TX 77253

Ken Haley PI
Amoco Production Co
501 W. Lake Blvd
P.O. Box 3092
Houston, TX 77253

CLASS II

Laguna 14982

Dr. Robert Trentham PI
Muskoka Consultants
203 W. Wall Suite 503
Wall Towers West
Midland, TX 79701

Tel: 915-686-9692
Fax: 915-683-5540
E-mail: muskoka@Texsonline.net

Michigan Technological University 14983

Dr. James Wood PI
Michigan Technical university
1400 Townsend Drive
Houghton, MI 49931

Tel: 906-487-2894
Fax: 906-487-3371
E-mail: Jrw@mtu.edu

Dr. Wayne Pennington 2nd PI
Michigan Technical University
1400 Townsend Drive
Houghton, MI 49931

Tel: 906-487-3573
Fax: 906-487-3371

Luff Exploration 14984

Larry A. Carrell PI
Luff Exploration Co.
1580 Lincoln St. Suite 850
Denver, CO 80203

Tel: 303-861-2468
Fax: 303-487-3371

Mark Sippel Consultant
Petrotek Engineering Corp.
8000 E. Prentice Ave. #A1
Englewood, CO 80111

Texaco E & P 14986

Scott Wehner PI
Texaco E & P
500 North Loraine
Midland, TX 79701

Tel: 915-688-2954
Fax: 915-688-2985
E-mail: wehnesc@texaco.com

University of Kansas 14987

Dr. Tim Carr PI
University of Kansas
Center for Research Inc.
2291 Irving Hill Dr.
Campus West
Lawrence, KS 66045

Tel: 785-864-3965
Fax: 785-864-5317
E-mail: tcarr@kgs.ukans.edu

Rodney Reynolds
Kansas Geological Survey
2291 Irving Hill Drive
Campus West
Lawrence, KS 66045

Tel: 785-864-7398
Fax: 785-864-7399

Utah Geological Survey 14988

Dr. Thomas Chidsey, Jr. PI
Utah Geological Survey
1594 West North Temple, Suite 3410
P.O. Box 146100
Salt Lake City, UT 84114

Tel: 801-537-3364 (work)
Tel: 801-571-5647 (home office)
Fax: 801-537-3400
E-mail: nrugs.tchidsey@state.ut.su

Roger Bon Tech Transfer
Utah Geological Survey
1594 West North Temple, Suite 3410
P.O. Box 146100
Salt Lake City, UT 84114

Tel: 801-537-3363

Fina, USA 14989

Jerry Nevans
FINA USA
6 Desta Dr. Suite 4400
Midland, TX 79705

PI

Tel: 915-688-0623

Dr. David K. Davies
D. K. Davies & Assoc.
1410 Stonehollow Dr.
Kingwood, TX 77339

Consultant

OXY 14990

Tom Beebe
OXY, USA
P. O. Box 50250
Midland, TX 79710

PI

Tel: 281-552-1038

Raj Kumar
OXY USA
P. O. Box 50250
Midland, TX 79710

Tel: 915-685-5616
Fax: 915-685-5635

George Watts
OXY USA
P. O. Box 50250
Midland, TX 79710

geophysist

Phillips Petroleum 14991

Crik Czirr
Phillips Petroleum
Permian Basin E & P
4001 Penbrook
Odessa, TX 79762

Contract Manager

Tel: 915-368-1379

Rex Owen
Phillips Petroleum
Permian Basin E & P
4001 Penbrook
Odessa, TX 79762

PI

Tel: 915-368-1206
Fax: 915-368-1330

Dr. Milind D. Deo Engineer Tel: 801-581-7629
University of Utah
3297 Merrill Engineering Bldg.
Salt lake City, UT 84112

Dr. Creties Jenkins Geologist
ARCO E&P
2300 West Plano Parkway
Plano, TX 75075

Thomas C. Zeiner Field Operator Tel: 661-326-5581
AERA Energy E-Mail: tczeiner@aeraenergy.com
P.O. Box 11164
Bakersfield CA 93389-1164

Chevron 14938

Dr. Mike Morea PI (former) Tel: 661-395-6355
Chevron USA Fax: 661-395-6304
5001 California Ave.
Bakersfield, CA 93309

Dr. Steve Smith Contract Manager Tel: 661-395-6388
Chevron USA Fax: 661-395-6304
5001 California Ave.
Bakersfield, CA 93309

Pat Perri new PI (Engineer) Tel: 661-395-6492
Chevron USA Fax: 661-395-6304
5001 California Ave.
Bakersfield, CA 93309

Tom Zalan Tel: 661-395-6391
Chevron USA
5001 California Ave.
Bakersfield, CA 93309

City of Long Beach 14939

Scott Hara PI Tel: 562-436-9918
Tidelands Oil Co. Fax: 562-495-1950
301 E. Ocean Blvd., Suite 300 E-mail: tidelands@laspe.org
Long beach, CA 90802

Roy Koerner Contract Manager Tel: 562-570-3922
City of Long Beach Fax: 562-570-3922
Department of Oil Properties
211 East Ocean Blvd., Suite 500
Long Beach, CA 90802

Dr. Don Clarke City Geologist Tel: 563-570-3900
City of Long Beach
Department of Oil Properties
211 East Ocean Blvd., Suite 500
Long Beach, CA 90802

ARCO/AERA 14940

Lowell Martinson Contract manager Tel: 661-665-5096
AERA Energy LLC
P.O. Box 1164
Bakersfield, CA 93389

Jeff Milton PI Tel: 661-326-5075
AERA Energy Fax: 661-326-5490
5050 California Ave. E-mail: jdmilton@aeraenergy.com
Bakersfield, CA 93309

Dr. Mike Laue PI during working life of project, now a consultant in Bakersfield, CA
ARCO Western Energy
Bakersfield, CA 93302

Strata 14941

Mark Murphy Contract Manager Tel: 505-622-11127
Strata Production Co. Fax: 505-623-6422
200 W. 1st. St., Suite 700
Roswell NM 88202

Dr. Bruce Stubbs PI Tel: 505-624-2800
P.O. Box 2885 Fax: 505-623-1777
200 W. 1st, Suite 536
Roswell NM 88202

Dr. Bob Hardage Consultant
Bureau of Economic Geology
University of Texas @ Austin
University Station, Box X
Austin, TX 78713

Dr. William Weiss
New Mexico Petroleum Recovery
New Mexico Institute of Mining & Technology
Socorro, NM 87801

Pioneer Natural Resources 14942 (formally Parker and Parsley)

Todd Yokum PI Tel: 915-571-1510
Pioneer Natural Resources Fax: 915-571-1685
5205 N. O-Connor Blvd, Ste. 1400 E-mail: yochamt@poneenrc.com
Irving TX 75039

Paul McDonald Manager
Pioneer Natural Resources
5205 N. O-Connor Blvd, Ste. 1400
Irving TX 75039

Tel: 915-571-1560
Fax: 915-571-1685

Dr. David Schechter Consultant
New Mexico Petroleum Recovery
New Mexico Institute of Mining & Technology
Socorro, NM 87801

ADVANCED CLASS WORK

Diversified Operating

Terry Cammon PI
1500 West 6th Ave. Suite 102
Golden CO 80201

Tel: 303-384-9611
Fax: 303-384-9612

Kansas Geological Survey

Lynn Watney PI
1930 Constant Avenue
Lawrence, Kansas 66047

Tel: 785-864-3965
Fax: 785-864-5053

Russell Petroleum, Inc.

Bob Barnett PI
536 North Highland
Chanute, KS 66720

Tel: 316-431-2650
Fax: 316-431-2671

Acronyms

<i>AAPG</i>	American Association of Petroleum Geologists
<i>BEG</i>	Bureau of Economic Geology, University of Texas, Austin
<i>BP</i>	British Petroleum
<i>CIPA</i>	California Independent Producers Association
<i>DOE</i>	Department of Energy
<i>DPA</i>	Digital Petroleum Atlas
<i>EAGE</i>	European Association of Geoscientists and Engineers
<i>EOR</i>	Enhanced Oil Recovery
<i>FDD</i>	Fluvial Dominated Deltaic
<i>GBRN</i>	Global Basin Research Network
<i>GIS</i>	Geo Information System
<i>IOR</i>	Improved Oil Recovery
<i>IPAA</i>	Independent Producers Association of America
<i>LSU</i>	Louisiana State University
<i>MEOR</i>	Microbial Enhanced Oil Recovery
<i>MOFRC</i>	Michigan Oil Field Research Consortium
<i>NIPER</i>	National Institute for Petroleum and Energy Research
<i>NPTO</i>	National Petroleum Technology Office
<i>NRC</i>	National Research Council
<i>OGS</i>	Oklahoma Geological Survey
<i>OTC</i>	Offshore Technology Conference
<i>PTTC</i>	Petroleum Technology Transfer Council
<i>RMAG</i>	Rocky Mountain Association of Geologists
<i>SBC</i>	Slope-Basin Clastics
<i>SEG</i>	Society of Exploration Geophysicists
<i>SEPM</i>	Society for Sedimentary Geology
<i>SIPES</i>	Society of Independent Professional Earth Scientists
<i>SPE</i>	Society of Petroleum Engineers
<i>SPWLA</i>	Society of Professional Well Log Analysts
<i>SRB</i>	Stanford Rock Borehole
<i>TCB</i>	Tijerina-Canales-Blucher
<i>TIPRO</i>	Texas Independent Producers and Royalty Owners
<i>UGS</i>	Utah Geological Survey
<i>WAG</i>	Water Alternating Gas

Class Revisit Projects

Ensign Operating Company

Eva South Field Project

Contract Number: DE-FC26-OOBC15120

Ensign is nearing the end of the near-term project, 2001.

Publications

Wheeler, D., J. A. Pope, and W. A. Miller. 2000. Improved Recovery at Eva South Unit. *The Class ACT*, DOE newsletter, Summer 2000, Volume 6, no. 2., p. 4-5.

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Presentations

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Binger Operations, LLC

East Binger Unit Project

Contract Number: DE-FC26-OOBC15121

Project is in Budget Period I
Class I project active through 2005

Publications

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Muhic, Teresa. 2000. Improved miscible nitrogen flood performance utilizing advanced reservoir characterization & horizontal laterals in a Class I reservoir – East Binger (Marchand) Unit. National Petroleum Technology Office, DOE, Oil Technology Program Contractor Review Meeting, June 27, 2000.

Michigan Technical University

Vernon Field Project

Contract Number: DE-FC26-OOBC15122

Project is in Budget Period I
Class II project active through 2005

Publications

Wood, J. R., T. J. Bornhorst, W. B. Harrison, D. A. Barnes, W. Quinlan and E. Taylor. 2001. Multi-lateral well pays off in Vernon Field, MI. *The Class ACT*, DOE newsletter, Winter 2001, Volume 7, no. 1, p. 8-10.

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Luff Exploration Company

Red River Formation Project

Contract Number: DE-FC26-OOBC15123

Project is in Budget Period I
Class II project active through 2003

Publications

Presentations

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University of Kansas

Hall-Gurney Field Project

Contract Number: DE-FC26-OOBC15124

Project is in Budget Period I
Class II project active through 2006

Publications

Presentations

Byrnes, Alan P. 2000. Field demonstration of carbon dioxide miscible flooding in the Lansing-Kansas City Formation, Central Kansas. National Petroleum Technology Office, DOE, Oil Technology Program Contractor Review Meeting, June 27, 2000.

University of Tulsa

West Carney Field Project

Contract Number: DE-FC26-OOBC15125

Project is in Budget Period I
Class II project Active through 2005

Publications

Presentations

Derby, J. R., M. Kelkar, J. Podpechan, B. Keefer, and Joe Mueller, 2000. Exploitation and Optimaization of reservoir performance in a retrograde-oil cut (ROC) Hunton reservoir, West Carney field, Lincoln, Co., Oklahoma: A 5-year, U. S. DOE-sponsored study. Petroleum Systems of Sedimentary Basins in the Southern Midcontinent, Oklahoma City, OK, March 28-29, 2000.

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Plains Illinois, Inc.

Lawrence Field Project

Contract Number: DE-FC26-OOBC15126

Project is in Budget Period I
Class I project Active through 2005

Publications

Presentations

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Venoco, Inc.

South Ellwood Field Offshore Project

Contract Number: DE-FC26-OOBC15127

Project is in Budget Period I
Class III project Active through 2005

Publications

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Utah Geological Survey

Paradox Basin Project

Contract Number: DE-FC26-OOBC15128

Project is in Budget Period I
Class II project Active through 2005

Publications

Presentations

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University of Alabama

Womack Hill Field Project

Contract Number: DE-FC26-OOBC15129

Project is in Budget Period I
Class II project Active through 2005

Publications

Mancini, E. A. 2000. Improved recovery from Smackover carbonates at Womack Field. *The Class ACT*, DOE newsletter, Volume 7, no. 1, Winter 2001, p. 8-10.

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Mancini, E. A. 2000. Improved oil recovery from Upper Jurassic Smackover carbonates (Class II reservoir) through the application of advanced technologies at Womack Hill oil field, Choctaw and Clarke Counties, Alabama, Eastern Gulf Coastal Plain. National Petroleum Technology Office, DOE, Oil Technology Program Contractor Review Meeting, June 27, 2000.

Class I Projects

Amoco Production Company

West Hackberry Tertiary Project

Contract Number: DE-FC22-93BC14963

BP Amoco has Elected not to Enter Budget Period II
Final Report on Budget Period I in Press

Publications

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Bureau of Economic Geology, University of Texas, Austin

Revitalizing Mature Oil Play Strategies for Finding and Producing Unrecovered Oil in Frio Fluvial-Deltaic Reservoirs of South Texas

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Publications

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Columbia University

Dynamic Enhanced Recovery Technologies

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Publications

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Diversified Operating Corporation

Improved Secondary Recovery Demonstration for the Sooner Unit

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Publications

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Hughes Eastern Corporation

Utilization of the Microflora Indigenous to and Present in Oil-Bearing Formations to Selectively Plug the More Porous Zones Thereby Increasing Oil Recovery During Waterflooding

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Publications

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Inland Resources/Lomax Exploration

Green River Formation Water Flood Demonstration Project

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Publications

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Oklahoma Geological Survey

Identification and Evaluation of Fluvial-Dominated Deltaic Reservoirs

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Publications

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Sierra Energy Company

Enhanced Oil Recovery Utilizing High-Angle Wells in the Frontier Formation, Badger Basin Field, Park County, Wyoming

Contract Number: DE-FC22-93BC14950

Project Terminated at the End of Budget Period I
Final Report, Budget Period I, Published December 1994

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Texaco Exploration & Production

Post Waterflood CO₂ Miscible Flood in Light Oil Fluvial-Dominated Deltaic Reservoirs

Contract Number: DE-FC22-93BC14960

Project Completed in 1997
Final Report in Progress

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University of Kansas
Improvement of Oil Recovery in Fluvial-Dominated
Deltaic Reservoirs in Kansas

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University of Tulsa

Integrated Approach Towards the Application of Horizontal Wells to Improve Waterflooding Performance (Glenn Pool Field, OK)

Contract Number: DE-FC22-93BC14951

Project Complete
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Publications

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Utah Geological Survey

Increased Oil Production and Reserves from Improved Completion Techniques in the Bluebell Field

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Project Complete
Final Report published January 2000

Publications

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Class II Projects

FINA, USA

Application of Integrated Reservoir Management and Reservoir Characterization to Optimize Infill Drilling

Contract Number: DE-FC22-93BC14989

Project Complete

Final Report published March 2000

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Laguna Petroleum

An Integrated Study of the Grayburg/San Andres Reservoir, Foster and South Cowden Fields, Ector County, Texas

Contract Number: DE-FC22-93BC14982

Project in Budget Period II

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Luff Exploration

Improved Recovery Demonstration for Williston Basin Carbonates

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Publications

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Michigan Tech University

Recovery of Bypassed Oil in the Dundee Formation Using Horizontal Drains

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Publications

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OXY USA, Inc

Application of Reservoir Characterization and Advanced Technology Improves Recovery and Economics in Lower Quality Shallow Shelf San Andres Reservoirs

Contract Number: DE-FC22-93BC14990

Project in Budget Period II

Project Active: Extension through September 2001

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Phillips Petroleum Company

Design and Implementation of a CO₂ Flood Utilizing Advanced Reservoir Characterization and Horizontal Injection Wells in a Shallow Shelf Carbonate Approaching Waterflood Depletion

Contract Number: DE-FC22-93BC14991

Project in Budget Period II

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Texaco Exploration & Production

CO₂ Huff-n-Puff Process in Light Oil Shallow Shelf Carbonate Reservoir (Central Vacuum Unit), Vacuum Field, Lea County, New Mexico

Contract Number: DE-FC22-93BC14986

Project Complete

Final Report Published February 1999

Publications

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University of Kansas

Improved Oil Recovery in Lower Meramecian (Mississippian) Carbonate Reservoirs of Kansas

Contract Number: DE-FC22-93BC14987

Project in Budget Period II

Project completed Fall 2000, final report in progress.

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Presentations, Continued

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Utah Geological Survey

Increased Oil Production and Reserves Utilizing Secondary/Tertiary Recovery Techniques on Small Reservoirs in the Paradox Basin, Utah

Contract Number: DE-FC22-93BC14988

Project in Budget Period II
Project Extension Through August 2002

Publications

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Economic Recovery of Oil Trapped at Fan Margins Using High Angle Wells and Multiple Hydraulic Fractures

Contract Number: DE-FC22-95BC14940

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Bureau of Economic Geology, University of Texas, Austin

Application of Advanced Reservoir Characterization, Simulation and Production Optimization Strategies to Maximize Recovery in Slope and Basin Clastic Reservoirs, West Texas (Delaware Basin)

Contract Number: DE-FC22-95BC14936

Project in Budget Period II

Project Active, Extension to March 31, 2001

Publications

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Dutton, S. P., M. D. Barton, H. H. Zirczy, and W. A. Flanders. 2000. Characterization of reservoir heterogeneity in slope and basin clastic reservoirs, Bell Canyon Formation, Delaware Basin, Texas. Transactions, Southwest Section AAPG, Abilene, TX. March, 2000.

Chevron USA, Inc.

Advanced Reservoir Characterization in the Antelope Shale to Establish the Viability of CO₂-Enhanced Oil Recovery in California's Monterey Formation Siliceous Shales

Contract Number: DE-FC22-95BC14938

Project in Budget Period II
Project Active in CO₂ pilot demonstration

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City of Long Beach—Steamflood

Increasing Heavy Oil Reserves in the Wilmington Oil Field through Advanced Reservoir Characterization and Thermal Production Technologies

Contract Number: DE-FC22-95BC14939

Project is at the end of Budget Period I
Project Active enters Budget Period II in March 2001

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City of Long Beach—Waterflood

Increasing Waterflood Reserves in the Wilmington Field through Improved Reservoir Characterization and Reservoir Management

Contract Number: DE-FC22-95BC14934

Project in Budget Period II

Project has requested extension to March 20, 2001.

Publications

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Pacific Offshore Operators

The Feasibility of Optimizing Recovery and Reserves from a Mature and Geologically Complex Multiple Turbidite Offshore California Reservoir through the Drilling and Completion of a Tri-Lateral Horizontal Well

Contract Number: DE-FC22-95BC14935

Project Completed
Final Report in Press

Publications

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Pioneer Natural Resources

Advanced Reservoir Characterization and Evaluation of CO₂-Gravity Drainage in the Naturally Fractured Spraberry Reservoir

Contract Number: DE-FC22-95BC14942

Project in Budget Period II

Publications

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Strata Production

Advanced Oil Recovery Technologies for Improved Recovery from Slope Basin Clastic Reservoirs, Nash Draw Brushy Canyon Pool, Eddy County, New Mexico

Contract Number: DE-FC22-95BC14941

Project in Budget Period II

Publications

Murphy, M., B. A. Hardage, F. D. Martin, R. P. Kendall, E. M. Whitney, B. A. Stubbs, B. Uszynski, and W. W. Weiss. 1997. *Advanced Oil Recovery Technologies for Improved Recovery from Slope Basin Clastic Reservoirs, Nash Draw Brushy Canyon Pool, Eddy County, New Mexico; Annual Report, September 25, 1995–September 24, 1996*. DOE Report No. DOE/BC/14941–6, September.

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Martin, F. D., M. B. Murphy, B. Stubbs, B. Uszynski, B. A. Hardage, R. P. Kendall, E. M. Whitney, and W. W. Weiss. 1997. Reservoir Characterization as a Risk Reduction Tool at the Nash Draw Pool. SPE Paper 38916, SPE Annual Technical Conference and Exhibition, San Antonio, Texas, October 6–8.

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Martin, F. David, Richard P. Kendall, Earl M. Whitney, Bob A. Hardage, Bruce A. Stubbs, Bruce Uszynski, and William W. Weiss. 1999. Advanced Reservoir Characterization for Improved Oil Recovery in a New Mexico Delaware Basin Project. *Reservoir Characterization—Recent Advances*, R. A. Schatzinger and J. F. Jordan (eds), AAPG Memoir 71. American Association of Petroleum Geologists, Tulsa, Oklahoma, p. 93–107.

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Presentations

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Hardage, Bob A. 1999. Interpretation of Complex Structure in a Limited-Quality 3-D Seismic Image, Bureau of Economic Geology. Poster Session 1999 Oil and Gas Conference, Dallas, Texas, June 28–30

University of Utah
**Reactivation of an Idle Lease to Increase Heavy Oil Recovery through Application of
Conventional Steam Drive Technology**

Contract Number: DE-FC22-95BC14937

Project in Budget Period II
Project extended through March 2001

Publications

Schamel, Stephen. 1996. Midway-Sunset—Full Steam Ahead! *Petroleum News*, Utah Geological Survey, May.

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Schamel, S., M. Deo, M. Deets, K. Olsen. 2000. *Reactivation of an Idle Lease to Increase Heavy Oil Recovery Through Application of Conventional Steam Drive Technology in a Low Dip Slope and Basin Reservoir in the Midway-Sunset Field, San Joaquin Basin, California; Annual Report June 13, 1998 to June 13, 1999*. DOE Report No. DOE/BC/14937-11. April, 2000. 43 p.

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Presentations

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Advanced Class Work

Diversified Operating Company

Polymer Treatments for "D" Sand Water Injection Wells

Contact Number: G4S60323

Project Complete
Final Report Published October 1998

Publications

Sippel, Mark. 1996. *Polymer Treatments for "D" Sand Water Injection Wells; Quarterly Report.* March.

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Kansas Geological Survey

Development and Demonstration of an Enhanced, Integrated Spreadsheet-Based Well Log Analysis Software

Contract Number: G4S60821

Project Complete
Final Report Published October 1998

Publications

Bohling, G. C., J. H. Doveton, and W. L. Watney. 1996. Systematic Identification of Sequence Stratigraphic Units from Wireline Logs. Pacht, J. A., R. E. Sheriff, and B. F. Perkins (eds.) *Stratigraphic Analysis—Utilizing Advanced Geophysical, Wireline and Borehole Technology for Petroleum Exploration and Production*. Gulf Coast Section Society of Economic Paleontologists and Mineralogist Foundation, 17th Annual Research Conference, Houston, Texas, p. 29–37.

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Presentations

1997. PFEFFER Demonstration. PTTC Workshop, Golden, Colorado, February.

Doveton, John H., W. J. Guy, and W. L. Watney. 1997. The Integration of Pore Measurements into Log Analysis Pattern Recognition Procedures: Methods and Examples. AAPG Annual Convention, Dallas, Texas, April 6–9.

Watney, W. L., J. C. Davis, J. M. Kruger, and J. Harff. 1997. Sediment Accommodation Regions: Fragmentation of a Subsiding Shelf. AAPG Annual Convention, Dallas, Texas, April 6–9.

Presentations, Continued

Doveton, J. 1997. PFEFFER Demonstration. Phillips Petroleum Company Workshop, April.

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Doveton, J. KIPLING Paper. 1997. SEPM Gulf Coast Section Meeting, Houston, Texas, December.

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Russell Petroleum, Inc

Optimizing the Air Flotation Water Treatment Process

Contract Number: G4S50904

Project Complete

Final Report Published September 1998

Publications

Michnick, M. J. 1995. Air Bubbles Clean Produced Water for Reinjection. Proceedings of the Eleventh Oil Recovery Conference, Contribution No. 13, Wichita, Kansas, March 14–15.

Barnett, G. B. 1995. Engineering Aspects of the Savonburg Class I Project. Proceedings of the Eleventh Oil Recovery Conference, Contribution No. 13, Wichita, Kansas, March 14–15.

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Schoeling, L. G., G. B. Barnett, M. J. Michnick, A. W. Walton, D. W. Green, and G. P. Willhite. 1996. Development of an Improved Waterflood Optimization Program in the Northeast Savonburg Waterflood. SPE/DOE Tenth Symposium on Improved Oil Recovery, Tulsa, Oklahoma, April 21–24.

Grabhorn, Merle. 1996. Innovation Saves Money for Russell Petroleum. *The Class Act* (newsletter), Spring.

1996. Purifying System Works to Keep State's Oil Industry Alive. *Chanute Tribune*, May 4.

Michnick, M. J. 1997. Problems in the Use of Air Flotation for Cleaning Produced Water. Proceedings of the Twelfth Oil Recovery Conference, Wichita, Kansas, March 19–20.

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Barnett, B. 1998. *Optimizing the Air Flotation Water Treatment Process; Final Report, May 1997*. DOE Report No. DOE/PC/91008–10, September.

DOE Publications from the Class Program

The following DOE publications on the Class Projects are available from the U.S. Department of Energy's National Petroleum Technology Office free of charge. Contact Herb Tiedemann (see Contact List, page iv)

Project Operator	Project Number	Code	Location	Report Type
Class I				
American Oil Recovery	BC14955-8		Mattoon Field, Illinois	1994-1995 Annual
Amoco Production Company	BC14963-10	96001225	West Hackberry Field, Louisiana	1994-1995 Annual
Amoco Production Company	BC14963-16	96001287	West Hackberry Field, Louisiana	1995-1996 Annual
Amoco Production Company	BC14963-19	96002711	West Hackberry Field, Louisiana	1997-1998 Annual
Bureau of Economic Geology, UT	BC14959-13	95000160	Vicksburg Fault Zone, Texas	1993-1994 Annual
Bureau of Economic Geology, UT	BC14959-15	95000190	Vicksburg Fault Zone, Texas	Topical
Bureau of Economic Geology, UT	BC14959-17	96001211	Vicksburg Fault Zone, Texas	1994-1995 Annual
Bureau of Economic Geology, UT	BC14959-21	96001255	Vicksburg Fault Zone, Texas	FINAL
Diversified Operating Corp.	BC14954-5	95000170	Sooner Unit, Colorado	1993 Annual
Diversified Operating Corp.	BC14954-14	96001265	Sooner Unit, Colorado	FINAL
Hughes Eastern Corporation	BC14962-7	95000177	North Blowhorn Field, Alabama	1994 Annual
Hughes Eastern Corporation	BC14962-10	96001218	North Blowhorn Field, Alabama	1995 Annual
Hughes Eastern Corporation	BC14962-16	97008691	North Blowhorn Field, Alabama	1996 Annual
Hughes Eastern Corporation	BC14962-21	98000551	North Blowhorn Field, Alabama	1997 Annual
Hughes Eastern Corporation	BC14962-22	OSTI: 8243	North Blowhorn Field, Alabama	1998 Annual
Hughes Eastern Corporation	BC14962-24	750872	North Blowhorn Field, Alabama	FINAL
Lomax Exploration	BC14958-8	95000113	Green River Formation, Utah	1994 Annual
Lomax Exploration	BC14958-11	95000182	Green River Formation, Utah	1995 Annual
Lomax Exploration	BC14958-15	96001264	Green River Formation, Utah	FINAL
Oklahoma Geological Survey	BC14956-16	98000547	Oklahoma FDD Reservoirs	FINAL
Texaco E & P	BC14960-8	95000173	Port Nueces Field, Texas	1994 Annual
University of Kansas	BC14957-7	95000161	Stewart/Savonburg, Kansas	1993-1994 Annual
University of Kansas	BC14957-14	96001242	Stewart/Savonburg, Kansas	1994-1995 Annual
University of Kansas	BC14957-16	96001261	Stewart/Savonburg, Kansas	1995-1996 Annual
University of Kansas	BC14957-23	OSTI: 2715	Stewart/Savonburg, Kansas	1997-1998 Annual
University of Kansas	BC14957-27	756344	Stewart/Savonburg, Kansas	FINAL

Project Operator	Project Number	Code	Location	Report Type
Class I				
University of Tulsa	BC14951-5	94000137	Glenn Pool Field, Oklahoma	1993-1994 Annual
University of Tulsa	BC14951-10	95000146	Glenn Pool Field, Oklahoma	1994-1995 Annual
University of Tulsa	BC14951-16	96001236	Glenn Pool Field, Oklahoma	1995-1996 Annual
University of Tulsa	BC14951-19	97007190	Glenn Pool Field, Oklahoma	1996-1997 Annual
University of Tulsa	BC14951-22	98000479	Glenn Pool Field, Oklahoma	1997 Annual
University of Tulsa	BC14951-26	OSTI:13821	Glenn Pool Field, Oklahoma	FINAL
Utah Geological Survey	BC14953-10	95000171	Bluebell Field, Utah	1994 Annual
Utah Geological Survey	BC14953-14	96001227	Bluebell Field, Utah	1995 Annual
Utah Geological Survey	BC14953-19	96001297	Bluebell Field, Utah	1996 Annual
Utah Geological Survey	BC14953-20	98000481	Bluebell Field, Utah	1997 Annual
Utah Geological Survey	BC14953-21	OSTI: 6089	Bluebell Field, Utah	1998 Annual
Utah Geological Survey	BC14953-26	750285	Bluebell Field, Utah	FINAL
Utah Geological Survey	BC14953-27	758140	Bluebell Field, Utah	Completion Tech
Utah Geological Survey	BC14953-28	758141	Bluebell Field, Utah	Well Models

Project Operator	Project Number	Code	Location	Report Type
Class II				
Fina USA	BC14989-10	96001262	North Robinson Field, Texas	1994-1995 Annual
Fina USA	BC14989-11	96001263	North Robinson Field, Texas	1995-1996 Annual
Fina USA	BC14989-14	96001271	North Robinson Field, Texas	Topical
Fina USA	BC14989-21	OSTI: 5128	North Robinson Field, Texas	1997-1998 Annual
Fina USA	BC14989-23	752175	North Robinson Field, Texas	FINAL
Laguna Petroleum	BC14982-12	98000462	Foster & S. Cowden Fields, Texas	1996-1997 Annual
Laguna Petroleum	BC14982-16	OSTI: 7917	Foster & S. Cowden Fields, Texas	1998 Annual
Laguna Petroleum	BC14982-in press		Foster & S. Cowden Fields, Texas	FINAL
Luff Exploration	BC14984-5	95000186	Williston Basin, Montana & North Dakota	1994 Annual
Luff Exploration	BC14984-10	96001254	Williston Basin, Montana & North Dakota	1995 Annual
Luff Exploration	BC14984-13	98000486	Williston Basin, Montana & North Dakota	Topical
Luff Exploration	BC14984-14	98000487	Williston Basin, Montana & North Dakota	Topical
Luff Exploration	BC14984-15	98000488	Williston Basin, Montana & North Dakota	Topical
Luff Exploration	BC14984-16	98000489	Williston Basin, Montana & North Dakota	Final
Michigan Tech. University	BC14983-5	95000181	Crystal Field, Michigan	1994-1995 Annual
Michigan Tech. University	BC14983-9	96001240	Crystal Field, Michigan	1995-1996 Annual
Michigan Tech. University	BC14983-14	98000536	Crystal Field, Michigan	Final
Oxy, USA, Inc.	BC14990-14	97000793	West Welch Field, Texas	Budget Period I
Oxy, USA, Inc.	BC14990-in press		West Welch Field, Texas	1997--1998 Annual
Phillips Petroleum Company	BC14991-7	96001234	South Cowden Field, Texas	1994-1995 Annual
Phillips Petroleum Company	BC14991-11	96001283	South Cowden Field, Texas	1995-1996 Annual
Phillips Petroleum Company	BC14991-13	96000461	South Cowden Field, Texas	1996-1997 Annual
Phillips Petroleum Company	BC14991-14	OSTI:2714	South Cowden Field, Texas	1997-1998 Annual
Phillips Petroleum Company	BC14991-17	OSTI:14468	South Cowden Field, Texas	1998--1998 Annual
Texaco E&P	BC14986-3	95000142	Central Vacuum Field, New Mexico	1994 Annual
Texaco E&P	BC14986-11	96001252	Central Vacuum Field, New Mexico	1995 Annual
Texaco E&P	BC14986-13	98000468	Central Vacuum Field, New Mexico	1996 Annual
Texaco E&P	BC14986-14	OSTI:3831	Central Vacuum Field, New Mexico and Slaughter Field, Texas	FINAL
University of Kansas	BC14987-5	96001245	Schaben Field, Kansas	1995 Annual
University of Kansas	BC14987-10	97008689	Schaben Field, Kansas	1996 Annual
University of Kansas	BC14987-12	OSTI: 8525	Schaben Field, Kansas	Budget Period I
University of Kansas	BC14987-in press		Schaben Field, Kansas	FINAL

Utah Geological Survey	BC14988-8	96001268	Paradox Basin, Utah	1995-1996 Annual
Utah Geological Survey	BC14988-9	96001301	Paradox Basin, Utah	1996-1997 Annual
Utah Geological Survey	BC14988-10	98000493	Paradox Basin, Utah	1997-1998 Annual
Utah Geological Survey	BC14988-12	OSTI:14245	Paradox Basin, Utah	1998-1999 Annual
Utah Geological Survey	BC14988-13	758925	Paradox Basin, Utah	1999-2000 Annual

Project Operator	Project Number	Code	Location	Report Type
Class III				
ARCO Western Energy		96001285	Yowlumne Field, California	1995-1996 Annual
Bureau of Economic Geology, UT	BC14936-5	96001244	Delaware Basin, Texas	1995 Annual
Bureau of Economic Geology, UT	BC14936-9	98000456	Delaware Basin, Texas	1996-1997 Annual
Bureau of Economic Geology, UT	BC14936-10	98000477	Delaware Basin, Texas	Topical - 4 Volumes
Bureau of Economic Geology, UT	BC14936-11	OSTI: 7432	Delaware Basin, Texas	1998 Annual
Bureau of Economic Geology, UT	BC14936-12	OSTI: 9727	East Ford Field	1999 Topical
Bureau of Economic Geology, UT	BC14936-15	755452	East Ford Field	1999-2000 Annual
Chevron USA, Inc.	BC14938-7	98000460	Buena Vista Hills Field, California	1996 Annual
Chevron USA, Inc.	BC14938-8	98000484	Buena Vista Hills Field, California	1997 Annual
Chevron USA, Inc.	BC14938-12	OSTI: 5127	Buena Vista Hills Field, California	1998 Annual
Chevron USA, Inc.	BC14938-15	753983	Lost Hills Field, California	1999 Annual
City of Long Beach-Steamflood	BC14939-8	97008690	Wilmingon Field, California	1995-1996 Annual
City of Long Beach-Steamflood	BC14939-9	OSTI: 8076	Wilmingon Field, California	1996-1997 Annual
City of Long Beach-Steamflood	BC14939-in press		Wilmingon Field, California	1997-1999 Annual
City of Long Beach-Waterflood	BC14934-7	96001299	Wilmingon Field, California	1995-1996 Annual
City of Long Beach-Waterflood	BC14934-8	OSTI: 5126	Wilmingon Field, California	1996-1997 Annual
Pacific Offshore Operators	BC14935-6	98000466	Carpinteria Field, California	1996 Annual
Pacific Offshore Operators	BC14935-6	98000466	Carpinteria Field, California	Budget Period 1
Pacific Offshore Operators	BC14935-in press		Carpinteria Field, California	FINAL
Parker & Parsley	BC14942-4	98000463	Spraberry Trend, Texas	1995-1996 Annual
Pioneer Natural Resources	BC14942-6	98000494	Spraberry Trend, Texas	1997 Annual
Pioneer Natural Resources	BC14942-7	OSTI: 3333	Spraberry Trend, Texas	1998 Annual
Pioneer Natural Resources	BC14942-9	753525	Spraberry Trend, Texas	1999 Annual
Strata Production	BC14941-6	97008428	Nash Draw Field, New Mexico	1996 Annual
Strata Production	BC14941-12	98000532	Nash Draw Field, New Mexico	1997 Annual
Strata Production	BC14941-13	OSTI: 3257	Nash Draw Field, New Mexico	1998 Annual
Strata Production	BC14941-14	OSTI: 3800	Nash Draw Field, New Mexico	Budget Period 1
University of Utah	BC14937-6	98000531	Midway-Sunset Field, California	1996 Annual
University of Utah	BC14937-8	OSTI: 3258	Midway-Sunset Field, California	1997 Annual
University of Utah	BC14937-9	OSTI: 8524	Midway-Sunset Field, California	1998 Annual
University of Utah	BC14937-11	753924	Midway-Sunset Field, California	1999 Annual
University of Utah	BC14937-12	772932	Midway-Sunset Field, California	2000 Annual

Project Operator	Project Number	Code	Location	Report Type
Advanced Class				
Diversified Operating Corp	91008-11	98000540	Sooner Unit, Colorado	Final
James E. Russell Petroleum	91008-10	98000539	Savonburg Field, Kansas	Final
Kansas Geological Survey	91008-12	98000541	Kansas Fields	Final

