PACKAGE CONTENTS

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"QUARTERLY TECHNICAL PROGRESS REPORT"

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TIDELANDS

OIL PRODUCTION COMPANY

OFFICE (310) 436-9918 FAX (310) 495-1950
GENERAL ENGINEERING CONTRACTOR
CALIFORNIA STATE LICENSE NUMBER 681859

July 28, 1995

AAD Document Control
U. S. Department of Energy
Pittsburgh Energy Technology Center
Wallace Road, Building 921
P. O. Box 10940, MS 921-143
Pittsburgh, PA 15236-0940
Contact: Mr. Keith Miles

Subject: Quarterly Technical Progress Report - Class III Mid-Term Project,
"Increasing Heavy Oil Reserves in the Wilmington Oil Field Through
Advanced Reservoir Characterization and Thermal Production
Technologies", DE-FC22-95BC14939.

As required by the "Federal Assistance Reporting Checklist", a Quarterly Technical Progress Report is submitted by Tidelands Oil Production Company and the City of Long Beach Department of Oil Properties. This report is due within 30 days after the end of each Calendar quarter. For simplicity in reading the report, Tidelands Oil Production Company will be referred to as "Tidelands", the City of Long Beach Department of Oil Properties will be referred to as "City", the University of Southern California will be referred to as "USC", and David K. Davies and Associates, Inc. will be referred to as "DKD".

If you require any other information or have any questions please feel free to call me at 310-436-9918 ext.351.

Sincerely,

Scott Hara
Chief Production Engineer

PSH:DOE\STCOM695.FRM

cc: Iraj Ershaghi - USC
David Davies - DKD
Don Clarke - City
Xen Colazas - City
James Hemphill - City
Dennis Sullivan - City
Ray Rockoff - City
Mark Kapelke - Tidelands
Chris Phillips - Tidelands
Julius Mondragon - Tidelands

**CLASS III MID-TERM PROJECT
"INCREASING HEAVY OIL RESERVES IN THE WILMINGTON OIL FIELD
THROUGH ADVANCED RESERVOIR CHARACTERIZATION AND THERMAL
PRODUCTION TECHNOLOGIES"**

Quarterly Technical Progress Report

City of Long Beach Department of Oil Properties
Tidelands Oil Production Company
University of Southern California
David K. Davies and Associates, Inc.

Date of Report: July 28, 1995

Cooperative Agreement No.: DE-FC22-95BC14939

Award Date: March 30, 1995
(Pre-award Approval Date - January 26, 1995)

Anticipated Completion Date: March 29, 1999 - Budget Period #1

DOE Award: \$6,711,101 Contract Total (Budget Period #1)
\$4,910,541 For 1995

Program Manager: Mr. Scott Hara, Project Coordinator and Steering Committee
Tidelands Oil Production Company (310) 495-9351

Principal Investigators: Mr. Don Clarke, Steering Committee
City of Long Beach Dept. of Oil Properties (310) 570-3915

Dr. Iraj Ershaghi, Steering Committee
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Mr. Christopher Phillips, Chief Geologist
Mr. Julius Mondragon, Staff Production Engineer
Tidelands Oil Production Company (310) 436-9918

Contracting Officer's Representative: Ms. Edith Allison, Bartlesville, OK. (918)337-4390

Reporting Period: March 30, 1995 to June 30, 1995

DEPARTMENT OF ENERGY CLASS III RESERVOIR PROGRAM
MID-TERM PROJECT
"INCREASING HEAVY OIL RESERVES IN THE WILMINGTON OIL FIELD THROUGH
ADVANCED RESERVOIR CHARACTERIZATION AND THERMAL PRODUCTION
TECHNOLOGIES"

Quarterly Technical Progress Report
Summary

General Discussion:

This is the first quarterly technical progress report for the project. Although the contract was awarded on March 30, 1995 and Pre-Award Approval was given on January 26, 1995, the partners of this project initiated work on October 1, 1994. As such, this progress report summarizes the work performed from project inception.

Through June 30, 1995, the project is on schedule and on budget. We have an aggressive schedule of work to be completed in 1995 as an estimated 73% of the DOE Contract funds for Budget Period #1, or \$4.9 million, will be spent this year. Through June, 1995, DOE funds expended totaled \$649,216. The Steering Committee has been meeting several times a month to keep personnel focused on the various aspects of the project.

An enlarged project schedule showing the time schedule for each task and sub-task for 1995 and 1996 is provided as Exhibit 1. A detailed account of our progress and near term plans by task and sub-task is provided in Exhibit 2. Exhibits 1 and 2 are updated monthly and provided to the Steering Committee members.

Status of Project by Activity:

● Activity 1 - Compilation and Analysis of Existing Data

The production and injection data, reservoir engineering data, and digitized and normalized log data were all completed sufficiently by the end of the quarter to start work on the basic reservoir engineering and geologic stochastic models. We will continue to search for more reservoir engineering reports and data. We should complete our quality control checks on the production and injection data base by early August. We should complete digitizing about 100 logs from the older wells by September.

- Activity 2 - Advanced Reservoir Characterization

Basic reservoir engineering analysis began June 1 and will continue to March, 1996.

Design work for the 5 observation/core holes, oil finger printing of the cored oil sands, and tracers surveys began in January, 1995. The wells will be drilled from July-August, 1995 and tracer injection work is projected to start in October, 1995. Water composition tests are performed continuously to monitor steam drive response (fresher water means more steam response).

A preliminary deterministic 3-D geologic model was completed in June which is sufficient to start work on the stochastic 3-D geologic model. Refinements to the deterministic model such as re-evaluating the fault picks should be completed by October 1. DKD visually inspected all existing core data and is actively developing a core-based log model from the data. DKD will incorporate the two new cored wells into the study and should complete the model by October. DKD and USC will use the core-based log model for developing the porosity-perm model and rock-log model.

USC is developing geostatistical routines for correlation studies to be used for the stochastic geologic model. Actual development of the model will begin in October.

- Activity 3 - Reservoir Simulation

USC continuing to evaluate the various thermal reservoir simulator programs on the market on a technical basis. Tidelands is dealing with the vendors on a financial basis. Goal is to select and negotiate terms for a specific software package by end of July and have simulator and computer onsite by October 1.

- Activity 4 - Reservoir Management

The four proposed horizontal wells (two injectors and two producers) have been designed, equipment has been ordered, and the wells will be drilled from mid-August through September. The associated well facilities have also been designed and ordered and will be installed from August to October to meet the planned well start-up of November 1, 1995. The steam transmission line under the Cerritos Channel has been designed, equipment has been ordered, and installation will begin in late July to meet the planned well start-up date.

Four existing steam injection wells were converted to hot water injection in March, 1995. Initial rates were kept low to minimize operational problems. Injection rates will be increased significantly in July.

DKD has begun detailed thin section, scanning electron microscope, and x-ray

diffraction work on the existing cores and wellbore scales to determine the mineralogy and source of the scales and how to prevent their occurrence. DKD and Tidelands began preliminary design of high temperature lab work on the cores in April and should be completed in August. Hycal Labs of Calgary will begin the high temperature lab work on the cores from the new wells in September.

Scott Hara and Julius Mondragon of Tidelands and David Davies of DKD attended the International Heavy Oil Symposium in Calgary, Alberta, Canada from June 17-June 21. Mr. Hara and Mr. Mondragon attended two classes related to recovery of heavy oil from horizontal wells. Of extreme interest was the course on "Steam Assisted Gravity Drainage (SAGD)" given by Dr. Roger Butler of the University of Calgary. The concepts of SAGD may be very applicable to the Tar II-A oil sands and we are considering implementing the recovery process in the horizontal well steam drive pilot and the existing steam drive. More evaluation of research papers and books will be performed next quarter.

- Activity 5 - Operational Management

Most of this work is dependent upon the results of the geochemistry work in Activity 4. Tidelands is testing a cyclic steam sand consolidation treatment on an existing steam drive well with a bad slotted liner completion which was running sand. This test can eliminate the need for installing expensive inner slotted liners with gravel packs when their slotted liner fails. We should get production results in the next quarter.

- Activity 6 - Implement Expansion Program

No work performed.

- Activity 7 - Technology Transfer

Since October 1, 1994, the project team members have participated in 30 technical transfer activities related to the Wilmington Field, including presentations, articles, field tours, mailing lists, data bases, and coordination of tech transfer meetings. The highlighted activities are shown below and a list of all of the technical transfer activities is included in Exhibit 2 under Activity 7.

1. Chris Phillips of Tidelands made a presentation on "The 3-D Deterministic Geologic Model" being developed for the project at the 1995 AAPG Pacific Section Meeting in San Francisco, CA. on May 3-5. Don Clarke and Mike Henry of the City were co-authors.

2. Mike Wood of UPRC made a presentation on "The Use Of Downhole Submersible Pumps In A High Temperature Steamflood" at the 1995 SPE Production Operations Symposium in Oklahoma City, OK. on April 2-4. Bruce Laughlin of UPRC and Doug Fuller and Robert Fickes of Tidelands were co-authors. This work was accomplished in our Wilmington Fault Block II-A Tar Zone steam drive project.
3. Louis Castanier of Stanford University made a presentation on "Steamflooding a Waterflooded Reservoir - Performance Evaluation and Prediction" at the 1995 SPE Western Regional Meeting in Bakersfield, CA. on March 8-10. Sameer Joshi (primary author) and W. E. Brigham of Stanford University and Mike Wood of UPRC were co-authors. Although no one from the project team was a co-author, this presentation was about our Wilmington Fault Block II-A Tar Zone steam drive project.
4. Several articles were published in trade journals and newspapers about this DOE project. Articles were published in the October 10, 1994 edition of the Long Beach Press - Telegram newspaper, in the October, 1994 issue of the SPE Los Angeles Basin Section Newsletter, in the December, 1994 issue of World Oil magazine, and in the March, 1995 issue of Petroleum Engineer International magazine.
5. Tidelands, the City, and USC held a technical transfer meeting of DOE Class III participants on May 15 in Valencia to discuss their desire to have specific joint activities, such as the 1996 AAPG National Meeting, the 1997 SPE Western Regional Meeting, and the 1998 Joint SPE Western Regional/AAPG Pacific Basin Section Meeting. Tidelands and City personnel have already begun with preliminary work on these meetings to promote technical sessions on slope and basin clastic reservoirs, advanced reservoir characterization, and enhanced oil recovery.

● Activity 8 - Project Management

Steering Committee meetings were held in April, May, and June. Exhibit 2 summarizes the Steering Committee reports. Executive Committee meetings were held in May and July. Refer to Exhibit 3 for the minutes of the Executive Committee minutes.

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EXHIBIT 1

**D.O.E. CLASS III RESERVOIR THERMAL EOR PROJECT
WILMINGTON FIELD FAULT BLOCK II-A TAR ZONE
BUDGET PERIOD NO. 1**

EXHIBIT 1-1
PROJECT SCHEDULE

ACTIVITY 1	
COMPILATION AND ANALYSIS OF EXISTING DATA	
TASK 1	DATA COMPILATION
SUB-TASK 1	WELL PRODUCTION/INJECTION
SUB-TASK 2	PVT/WATER COMP.
TASK 2	LOG DIGITIZATION AND NORMALIZATION
SUB-TASK 1	BUILD LOG DATA BASE
SUB-TASK 2	DIGITIZE WELL LOGS/ DIRECTIONAL DATA
SUB-TASK 3	NORMALIZE WELL LOGS/ MARKERS
ACTIVITY 2	
ADVANCED RESERVOIR CHARACTERIZATION	
TASK 1	BASIC RESERVOIR ENGINEERING
SUB-TASK 1	MATERIAL BALANCE STUDIES
SUB-TASK 2	WATERFLOOD RESPONSE
SUB-TASK 3	STEAMFLOOD RESPONSE
SUB-TASK 4	PRODUCTIVITY PROBLEM ANALYSIS
SUB-TASK 5	ANALYSIS OF INJECTION PROFILE SURVEYS
TASK 2	OBTAINING NEW CHARACTERIZATION DATA
SUB-TASK 1	MEASUREMENT WHILE DRILLING DATA
SUB-TASK 2	TRACER SURVEYS
SUB-TASK 3	WATER COMPOSITION TESTS
SUB-TASK 4	OIL FINGER PRINTING
SUB-TASK 5	DRILL 3 OBSERVATION AND 2 CORE HOLE/OBSERVATION WELLS

████████ CITY OF LONG BEACH
DEPT. OF OIL PROPERTIES

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████████ TIDELANDS OIL
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████████ DAVID K. DAVIES
& ASSOCIATES, INC.

**D.O.E. CLASS III RESERVOIR THERMAL EOR PROJECT
WILMINGTON FIELD FAULT BLOCK II-A TAR ZONE
BUDGET PERIOD NO. 1**

EXHIBIT 1-2
PROJECT SCHEDULE

**ACTIVITY 2
ADVANCED RESERVOIR
CHARACTERIZATION**

**TASK 3 DETERMINISTIC 3-D
GEOLOGIC MODEL**
**SUB-TASK 1 THREE DIMENSIONAL
EARTH VISION
STRUCTURE**
SUB-TASK 2 CORE BASED LOG MODEL
SUB-TASK 3 POROSITY-PERM. MODEL
SUB-TASK 4 ROCK-LOG MODEL

SUB-TASK 5 V-SHALE MODEL

**SUB-TASK 6 QUALITATIVE
CONDITIONING**
SUB-TASK 7 BASIN MODELING

SUB-TASK 8 UPDATING

**TASK 4 STOCHASTIC 3-D
GEOLOGIC MODELING**
**SUB-TASK 1a VERTICAL AND
HORIZONTAL
GEOSTATISTICAL SPATIAL
CORRELATION STUDIES**
SUB-TASK 1b KRIGING

SUB-TASK 1c CONDITIONAL SIMULATION

**SUB-TASK 2 INTERFACE WITH
DETERMINISTIC 3-D
GEOLOGIC MODEL**
**SUB-TASK 3 INTEGRATE TRACER
SURVEY**
**SUB-TASK 4a INTEGRATED
CONDITIONING**
SUB-TASK 4b UPDATING

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**DAVID K. DAVIES
& ASSOCIATES, INC.**

**D.O.E. CLASS III RESERVOIR THERMAL EOR PROJECT
WILMINGTON FIELD FAULT BLOCK II-A TAR ZONE
BUDGET PERIOD NO. 1**

EXHIBIT 1-3
PROJECT SCHEDULE

████████ CITY OF LONG BEACH
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**D.O.E. CLASS III RESERVOIR THERMAL EOR PROJECT
WILMINGTON FIELD FAULT BLOCK II-A TAR ZONE
BUDGET PERIOD NO. 1**

EXHIBIT 1-4
PROJECT SCHEDULE

**ACTIVITY 4
RESERVOIR
MANAGEMENT**

TASK 1	HORIZONTAL WELLS AND SURFACE LOCATIONS
SUB-TASK 1	HORIZONTAL WELLS
SUB-TASK 2	UNDERWATER STEAM TRANSMISSION LINE
SUB-TASK 3	STEAM SEPARATION AND DISTRIBUTION
TASK 2	HORIZONTAL WELL CYCLIC STEAM STIMULATION PILOT (4 WELLS, 2 PROD. 2 INJ.)
TASK 3	HORIZONTAL WELL STEAM DRIVE PILOT
TASK 4	HOT WATER ALTERNATING STEAM (WAS) DRIVE PILOT
TASK 5	GEOCHEMISTRY OF ROCK/ FLUID INTERACTIONS
TASK 6	STEAMDRIVE MECHANISMS
TASK 7	RESERVOIR SURVEILLANCE

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**D.O.E. CLASS III RESERVOIR THERMAL EOR PROJECT
WILMINGTON FIELD FAULT BLOCK II-A TAR ZONE
BUDGET PERIOD NO. 1**

EXHIBIT 1-5
PROJECT SCHEDULE

— CITY OF LONG BEACH
DEPT. OF OIL PROPERTIES

— UNIVERSITY OF
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**D.O.E. CLASS III RESERVOIR THERMAL EOR PROJECT
WILMINGTON FIELD FAULT BLOCK II-A TAR ZONE
BUDGET PERIOD NO. 1**

**EXHIBIT 1-6
PROJECT SCHEDULE**

**ACTIVITY 7
TECHNOLOGY TRANSFER**

TASK 1 DOE REPORTS
SUB-TASK 1 DOE PROGRESS REPORTS
SUB-TASK 2 PROJECT EVALUATION REPORT, CONTINUATION APPLICATION AND TOPICAL REPORTS.

TASK 2 PUBLICATIONS
SUB-TASK 1 PROFESSIONAL SOCIETIES
SUB-TASK 2 INDUSTRY TRADE JOURNALS AND NEWSPAPERS
SUB-TASK 3 SYMPOSIUM PROCEEDINGS
SUB-TASK 4 PROFESSIONAL SOCIETY NEWSLETTERS/MAILING LIST
SUB-TASK 5 DATABASE FILES

TASK 3 PRESENTATIONS
SUB-TASK 1 PROFESSIONAL SOCIETIES
SUB-TASK 2 INDUSTRY ORGANIZATIONS
SUB-TASK 3 NON-OIL INDUSTRY ORGANIZATIONS

TASK 4 ANNUAL FORUMS

TASK 5 SEMINAR SERIES

TASK 6 FIELD TOURS

**ACTIVITY 8
PROJECT MANAGEMENT**

TASK 1 EXECUTIVE COMMITTEE

TASK 2 STEERING COMMITTEE

**CITY OF LONG BEACH
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**DAVID K. DAVIES
& ASSOCIATES, INC.**

EXHIBIT 2

DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
<u>ACTIVITY 1 - COMPILATION AND ANALYSIS OF EXISTING DATA</u>			
1.1.1.1.	01-OCT-94	01-JUN-95	Completed production data base adequate for experimenting on Production Analyst. Continuing to quality control data base with deadline of August 4.
1.1.1.2.	01-OCT-94	01-JUN-95	Dr. Lyman Handy and Yucel Akutulu of USC and Tidelands personnel are retrieving and reviewing reservoir engineering data in preparation for Basic Reservoir Engineering in Activity 2 Task 1.
1.1.2.1.	01-OCT-94	01-SEP-95	A preliminary database of all logs run in each well in the Tar II-A zone has been created. Will be completed on schedule.
1.1.2.2.	01-OCT-94	01-SEP-95	Digitizing of 71 new wells in mainland (north) area completed so USC can commence stochastic geology work. Mike Henry of the City selected 100 older wells in expansion area on Terminal Island (south area) to digitize. Began digitizing in June and will try to complete on schedule.
1.1.2.3.	01-FEB-95	01-OCT-95	Completed log digitization and normalization of first 71 wells on June 16. Other 33 new wells in the mainland area will be processed as needed.

ACTIVITY 2 - ADVANCED RESERVOIR CHARACTERIZATION

1.2.1.	01-JUN-95	01-MAR-96	Dr. Lyman Handy and Yucel Akutulu of USC are familiarizing themselves with the
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DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
			Production Analyst computer software program and the historical production and injection database. They have begun evaluating the reservoir engineering data from Tidelands to perform preliminary material balance work. Pouya Amili of USC is performing preliminary correlation studies on projected steam drive recoveries from vertical and horizontal steam injectors and producers.
1.2.2.1.	01-FEB-95	01-NOV-95	MWD and logging while drilling work awarded to Anadrill on June 16. Anticipate drilling the five observation wells and four horizontal wells starting July 1 and completed by October 1.
1.2.2.2.	01-FEB-95	Ongoing	Dr. Ershaghi working with Ed Caballero of Advanced Technology Labs to identify non-radioactive reservoir tracers effective in high temperature environments. Further testing still needed but final tracers to be selected by August 15, 1995. Dr. Jalal Torabzadeh of Cal State Long Beach (but working for USC) will be developing an interpretation routine for tracer mapping of the permeability trends. We plan to start tracer injection in October, 1995.
1.2.2.3.	01-OCT-94	Ongoing	Tidelands has located historical records of water composition (salinity) tests and oil fingerprinting tests for Tar II-A wells. Tidelands is continually testing water in steam drive producers in the hot water injection well patterns to analyze drive response.
1.2.2.4.	01-OCT-94	Ongoing	Tidelands has located historical records of water composition (salinity) tests and oil fingerprinting tests for Tar II-A wells. We plan to finger print the oil from each sand body in the two core/observation wells.

**DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK**

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
1.2.2.5.	01-FEB-95	01-SEP-95	Tidelands plans to drill 3 observation wells and 2 core hole/observation wells starting July 1 and to be completed by August 31. Awarded core handling and analyses work to PTS Labs in Santa Fe Springs, CA. on May 31.
1.2.3.1.	01-OCT-94	01-OCT-95	Completed working model June 1. Chris Phillips of Tidelands, Mike Henry of the DOP, and Keith Jones of California State Lands Commission continuing to quality control fault picks and to prepare grids representing top of structure horizons for individual sands. Will complete on schedule.
1.2.3.2.	01-APR-95	01-DEC-95	Dave Davies currently working on development of this model. Completed preliminary report on facies of Fault Block II-A Tar Zone on May 25 based on macroscopic core descriptions performed in Long Beach from May 15-19. Will be completed on schedule.
1.2.3.3.	01-APR-95	01-DEC-95	Awaiting new core data from observation wells OB2-3 and OB2-5.
1.2.3.4.	01-APR-95	01-DEC-95	Tidelands to provide DKD with digitized and normalized log data, especially for cored wells. Al Brown, consultant for USC, reviewing the quality of the old well logs for use in correlating with the logs from existing and new cored wells to determine reservoir parameters in the Tar Zone expansion area under Terminal Island to the south. Omar Hamid of USC to begin development of neural network analyzer to assess similarities of various zones and sub-zones in terms of sequence stratigraphy using lithology (gamma ray) logs.

DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
1.2.3.5.	01-NOV-95	01-MAY-96	
1.2.3.6.	01-SEP-95	01-MAY-96	
1.2.3.7.	01-SEP-95	01-MAY-96	USC to begin literature search on slope and basin clastic reservoir studies.
1.2.3.8.	01-MAY-96	Ongoing	
1.2.4.1a.	01-JUL-95	01-FEB-96	Tony Doung and Mohammad Al-Qahtani of USC to begin development of geostatistical routines for correlations studies in a Unix environment and compatible with format on Earth Vision 3-D software on July 1.
1.2.4.1b.	01-SEP-95	01-MAY-96	
1.2.4.1c.	01-FEB-96	01-SEP-96	
1.2.4.2.	01-APR-95	01-APR-97	Tidelands, DOP, and California State Lands Commission have begun preparing grids representing top of structure horizons for individual sands.
1.2.4.3.	01-NOV-95	01-APR-97	
1.2.4.4a.	01-NOV-96	01-MAY-98	
1.2.4.4b.	01-MAY-98	Ongoing	

DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
<u>ACTIVITY 3 - RESERVOIR SIMULATION</u>			
1.3.1.1.	01-FEB-95	01-SEP-96	Iraj Ershaghi of USC continuing to evaluate the various thermal reservoir simulator programs on the market on a technical basis. Scott Hara of Tidelands is dealing with the vendors on a financial basis. Goal is to select and negotiate terms for a specific software package by end of July and have simulator and computer onsite by October 1.
1.3.1.2.	01-SEP-95	01-APR-97	
1.3.1.3.	01-NOV-95	01-APR-97	
1.3.1.4.	01-JAN-96	01-APR-97	
1.3.2.1.	01-SEP-96	01-OCT-97	
1.3.2.2.	01-APR-97	01-JAN-98	
1.3.2.3.	01-APR-97	01-MAY-98	
1.3.2.4.	01-OCT-97	Ongoing	

DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
<u>ACTIVITY 4 - RESERVOIR MANAGEMENT</u>			
1.4.1.1.	01-OCT-94	01-NOV-95	Preliminary planning and programming of four horizontal wells complete. Final bottom-hole targets will be determined after observation wells drilled. Plan to spud horizontal wells in mid August. On schedule for Nov 1 start-up.
1.4.1.2.	01-OCT-94	01-NOV-95	Engineering design work completed. Construction work awarded on June 23 and start construction in late July. Permits to construct should be received by mid July. All pipe was ordered in March. On schedule for Nov 1 start-up.
1.4.1.3.	01-FEB-95	01-NOV-95	Engineering for well facilities completed in May and equipment ordered. On schedule for Nov 1 start-up.
1.4.2.	01-NOV-95	01-MAR-97	
1.4.3.	01-AUG-96	Ongoing	
1.4.4.	01-OCT-94	Ongoing	During May and June, hot water injection down to only two wells and total injection of 600-1,000 BWPD due to sand consolidation workovers in steam drive wells. Evaluating alternatives for increasing hot water volumes, especially for when new wells are completed and treated for sand consolidation. Anticipate boosting hot water injection in late July.
1.4.5.	01-APR-95	01-MAY-96	Dave Davies has begun analyzing samples of fill (sand, scale, gravel pack) from wells

DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
			to determine possible reasons for formation damage in wells. There appears to be several types of scale in the Tar II-A thermal wells including calcites, dolomites, barites, anhydrites, and magnesium-silicates. Dave will begin analyzing produced water and injection water samples to locate sources of Mg-silicate. Awaiting new cores from Wells OB2-3 and OB2-5. Dave Davies, Scott Hara, and Julius Mondragon met with Hycal Labs in Calgary on June 22 to discuss the high temperature lab work required. Hycal to submit a cost estimate to perform work by July 31. Anticipate starting lab work in September.
1.4.6.	01-APR-95	01-MAY-96	Scott Hara and Julius Mondragon of Tidelands and Dave Davies of DKD attended the International Heavy Oil Symposium in Calgary, Alberta, Canada from June 17-June 21. Scott and Julius attended two classes related to recovery of heavy oil from horizontal wells. Of extreme interest was the course on "Steam Assisted Gravity Drainage (SAGD)" given by Dr. Roger Butler of the University of Calgary. The concepts of SAGD may be very applicable to the Tar II-A oil sands and we are considering implementing the recovery process in the horizontal well steam drive pilot and the existing steam drive. More evaluation of research papers and books will be performed next quarter.
1.4.7.	01-OCT-94	Ongoing	

ACTIVITY 5 - OPERATIONAL MANAGEMENT

DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
1.5.1.	01-OCT-94	01-MAY-97	Testing sand consolidation technique on existing wells with sand problems in lieu of inner liner gravel pack jobs. Will use completion method on new horizontal wells.
1.5.2.	01-FEB-95	01-MAY-97	Two existing horizontal wells in Fault Block I Tar Zone have minor sand problems. Treating both wells with new round of cyclic steam sand consolidation treatments. Attribute possible problem to too many perforations. Future wells will have less perfs.
1.5.3.	01-FEB-95	01-FEB-98	Evaluating the most effective way to complete injection wells to optimize steam-oil ratio and promote good initial oil production rates. See discussion in Activity 4 Task 6 above on SAGD.
1.5.4.	01-APR-95	01-MAY-97	Dave Davies has begun analysis work. See Activity 4 Task 5.
1.5.5.	01-APR-95	01-MAY-97	See Activity 4 Task 5.

ACTIVITY 6 - IMPLEMENT EXPANSION PROJECT

1.6.1.	01-APR-98	Ongoing	
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ACTIVITY 7 - TECHNOLOGY TRANSFER

1.7.1.1.	30-JUL-95	Ongoing	Quarterly report due July 30.
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**DOE CLASS III RESERVOIR THERMAL EOR MID-TERM PROJECT
BUDGET PERIOD #1
PROJECT STATUS REPORT BY TASK AND SUB-TASK**

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
1.7.1.2.	01-OCT-98	28-JAN-99	
1.7.2.1.	01-FEB-95	Ongoing	<p>Held tech transfer meeting of DOE Class III participants on May 15 in Valencia to discuss desire to have specific joint activities, such as the 1996 AAPG National Meeting, the 1997 SPE Western Regional Meeting, and the 1998 Joint SPE Western Regional/AAPG Pacific Basin Section Meeting. Tidelands and DOP personnel have already begun with preliminary work on these meetings to promote technical sessions on slope and basin clastic reservoirs, advanced reservoir characterization, and enhanced oil recovery.</p> <p>Chris Phillips of Tidelands made a presentation on "The 3-D Deterministic Geologic Model" being developed for the project at the 1995 AAPG Pacific Section Meeting in San Francisco, CA. on May 3-5. Don Clarke and Mike Henry of the City were co-authors.</p> <p>Mike Wood of UPRC made a presentation on "The Use Of Downhole Submersible Pumps In A High Temperature Steamflood" at the 1995 SPE Production Operations Symposium in Oklahoma City, OK. on April 2-4. Bruce Laughlin of UPRC and Doug Fuller and Robert Fickes of Tidelands were co-authors.</p> <p>Louis Castanier of Stanford made a presentation on "Steamflooding a Waterflooded Reservoir - Performance Evaluation and Prediction" at the 1995 SPE Western Regional Meeting in Bakersfield, CA. on March 8-10. Sameer Joshi (primary author) and W. E. Brigham of Stanford University and Mike Wood of UPRC were co-authors.</p>

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			Don Clarke chaired a technical session at the 1995 AAPG Pacific Section Meeting in San Francisco, CA. on May 3-5.
1.7.2.2.	01-FEB-95	Ongoing	<p>An article was submitted by Scott Hara of Tidelands on the City's and Tidelands' two DOE Class III Projects and published in the March, 1995 issue of Petroleum Engineer International magazine.</p> <p>An article was submitted by Iraj Ershaghi of USC on the two DOE Class III Projects in which USC is involved (the City's "Heavy Oil..." Wilmington project and Pacific Offshore Operators' project at Carpinteria Offshore) and published in the December, 1994 issue of World Oil magazine.</p> <p>An article which quoted James Hemphill of the City on the City's and Tidelands' two DOE Class III Projects was published in the October 10, 1994 edition of the Long Beach Press - Telegram newspaper.</p> <p>An article on the City's and Tidelands' two DOE Class III Projects was published in the October, 1994 issue of the SPE Los Angeles Basin Section Newsletter.</p>
1.7.2.3.	01-FEB-95	Ongoing	Don Clarke of the City and Dave Davies of DKD have been selected program chairmen of up to four technical sessions for the 1996 AAPG National Convention in May. All of the sessions will be on Slope and Basin Clastic Reservoirs or Enhanced Oil Recovery. Scott Hara has been selected as the Co-program Chairman of the entire 1997 SPE Western Regional Meeting to be held in Long Beach in June, 1997. The

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			preliminary plans show two technical sessions devoted to Slope and Basin Clastic Reservoirs.
1.7.2.4.	01-OCT-94	Ongoing	Scott Hara of Tidelands sent out letters to California Coastal members of AAPG on January 10, 1995 announcing our DOE projects and to contact him to be placed on a mailing list of future technical transfer activities.
1.7.2.5.	01-OCT-94	Ongoing	Tidelands and the City have been developing a complete historical production and injection data base for Fault Blocks II-V and portions of Fault Blocks I and VI in the Wilmington Field. This data base will be a valuable resource for future reservoir engineering and reservoir characterization studies performed on the Wilmington Field. We plan to complete the data base by the end of 1995 and make it available to the State of California Division of Oil and Gas.
1.7.3.1.	01-OCT-94	Ongoing	<p>Scott Hara was the co-chair for the Los Angeles Basin Section SPE Environmental and Study Group Forum for 1994-95 and will continue to be a co-chair for the 1995-96 session. He is currently planning the upcoming monthly meetings which will include presentations on the DOE project and on the Wilmington Field.</p> <p>Mark Shemaria of Tidelands made a presentation on "Oil Spill and Response" on April 19, 1995 at the monthly SPE Los Angeles Basin Section Environmental and Study Group Forum in Long Beach.</p> <p>Robert Fickes of Tidelands made a presentation on "Is 'the Average Cost Per KWH'</p>

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<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
			<p>a Valid Way to Evaluate Adding or Reducing Electric Loads?" on January 18, 1995 at the monthly SPE Los Angeles Basin Section Environmental and Study Group Forum in Long Beach.</p> <p>Dave Stepp of Tidelands made a presentation on "Treating Produced Water To Meet Water Injection Requirements Without the Use Of Filters and Dispersed Gas Flotation Units at the Wilmington Field" on January 18, 1995 at the monthly SPE Los Angeles Basin Section Environmental and Study Group Forum in Long Beach.</p> <p>Julius Mondragon made a presentation on "Novel Perforated Thermal Well Completions in Unconsolidated Sands" on October 19, 1994 at the monthly SPE Los Angeles Basin Section Environmental and Study Group Forum in Long Beach.</p> <p>Scott Walker of Tidelands made a presentation on "Results From Using Bridge Plugs and Tubing Sleeves to Reduce Water Cut in Wells With Long Slotted Liners and Gravel Packs" on October 19, 1994 at the monthly SPE Los Angeles Basin Section Environmental and Study Group Forum in Long Beach.</p> <p>Steve Siegwein of Tidelands made a presentation on "Drilling, Completion, and Production From Two Recent Horizontal Thermal Wells in the Tar Zone" on October 19, 1994 at the monthly SPE Los Angeles Basin Section Environmental and Study Group Forum in Long Beach.</p>
1.7.3.2.	01-OCT-94	Ongoing	Rick Cassinis of Tidelands made a presentation on the "Harbor Cogeneration Steam

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<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>	<u>PROJECT STATUS</u>
			Plant" on March 15, 1995 at the monthly Los Angeles Section of the Desk and Derrick Club in Long Beach.
			Don Clarke gave a presentation on and field tour of Wilmington to the Thai Ministry of Mineral Resources and Long Beach City Manager's Office on July 10, 1995.
1.7.3.3.	01-OCT-94	Ongoing	<p>Tidelands held a "Parent Shadow" day on April 28, 1995 in which company employees were encouraged to bring in their children to see what they did at work.</p> <p>Don Clarke made a presentation on Wilmington to the Long Beach Realtors Association on April 6, 1995.</p> <p>Don Clarke made a presentation on Wilmington to the Stephen's Middle School in Long Beach on May 9, 1995.</p>
1.7.4.	01-FEB-95	Ongoing	Based on discussions at the tech transfer meeting on May 15 discussed above, our team decided it would be premature to have an annual forum in 1995 since most of the other DOE Class III participants have barely started and have little to contribute. We are investigating other tech transfer options as a substitute, possibly a multi-media presentation.
1.7.5.	01-FEB-95	Ongoing	USC will be holding a monthly seminar series at the campus starting in September or October, 1995. Many of the seminars will have subjects related to Slope and Basin Clastic Reservoirs.

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PROJECT STATUS REPORT BY TASK AND SUB-TASK**

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1.7.6.	01-OCT-94	Ongoing	<p>Don Clarke gave a presentation on and field tour of Wilmington to the Los Angeles Trade Tech and Compton College on October 1, 1994.</p> <p>Don Clarke gave a presentation on and field tour of Wilmington to the Interstate Oil and Gas Compact Commission on December 5, 1994.</p> <p>Don Clarke, Jeff Blessener, and Henry Sun of the City gave a two day presentation on and field tour of Wilmington to a delegation from China on February 23-24, 1995.</p> <p>Don Clarke gave another presentation on and field tour of Wilmington to the Los Angeles Trade Tech and Compton College on March 18, 1995.</p> <p>Don Clarke gave a presentation on and field tour of Wilmington to the California State University of Long Beach Physics Dept. on June 1, 1995.</p> <p>Don Clarke gave a presentation on and field tour of Wilmington to the Salvation Army Volunteers on July 11, 1995.</p>
<u>ACTIVITY 8 - PROJECT MANAGEMENT</u>			
1.8.1.	01-APR-95	Ongoing	Meeting held on May 9, 1995. Next meeting planned for July 26, 1995.
1.8.2.	01-APR-95	Ongoing	Meetings held several times each month during May and June.

EXHIBIT 3

**MINUTES OF THE EXECUTIVE COMMITTEE MEETING
FOR THE DOE WATERFLOOD & STEAMFLOOD PROJECT**

Held at Tidelands Oil Production Company, 301 East Ocean Boulevard, Suite #300,
Long Beach, California, Tuesday, May 9, 1995 at 2:00 P.M. P.D.S.T.

Present for the meeting:

Ray Rockoff
Xen Colazas
James Hemphill
Marina Voskanian
Terry Smith
Jim Quay
Mark Kapelke
Don Burns
Scott Hara
Scott Walker
Don Foster

City of Long Beach Financial Mgmt
City of Long Beach DOP
City of Long Beach DOP
State Lands Commission
Tidelands Oil Production Company
Tidelands Oil Production Company
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Tidelands Oil Production Company
Tidelands Oil Production Company

Mr. Xen Colazas presided as Chairperson.

Mr. Colazas welcomed everyone to the first Executive Committee meeting for the DOE Waterflood and Steamflood projects. Mr. Colazas stated that the Committee will be meeting once-a-month until both projects are completed. Mr. Colazas informed the Committee that it is the duty of the Executive Committee to oversee both projects and direct the Project Managers how they are to proceed with their prospective projects and to ensure that all requirements of the Cooperative Agreement are met. The Project Managers are Scott Walker for the waterflood and Scott Hara for the steamflood. Mr. Colazas also informed the Committee that it is their duty to direct Mr. Don Foster on the financial aspects and to ensure that each project is staying within the budget.

Mr. Scott Walker, Waterflood Project Manager, presented the minutes of the Steering Committee held on April 24, 1995.

Mr. Walker stated that even though Budget Period 1 is specified as 24 months in the Co-op Agreement, the work should to be completed in 18 months. Stanford performed work outside of the indicated work schedule in Budget Period 1 of which costs will be absorbed by Stanford.

Mr. Walker stated that during Budget Period 1 most of the technical work will be completed in Activities 1, 2, and 3. An overview of each activity was read from the Minutes of the Steering Committee (see copy attached).

Mr. Don Foster commented that it is too early in the Budget Period to provide a cost comparison of actual costs to budgeted costs.

MINUTES OF THE EXECUTIVE COMMITTEE MEETING FOR THE DOE WATERFLOOD & STEAMFLOOD PROJECT

Held at Tidelands Oil Production Company, 301 East Ocean Boulevard, Suite #300,
Long Beach, California, Wednesday, July 26, 1995 at 8:00 A.M. P.D.S.T.

Present for the meeting:

Ray Rockoff	City of Long Beach Financial Mgmt
James Hemphill	City of Long Beach DOP
Dennis Sullivan	City of Long Beach DOP
Terry Smith	Tidelands Oil Production Company
Jim Quay	Tidelands Oil Production Company
Mark Kapelke	Tidelands Oil Production Company
Don Burns	Tidelands Oil Production Company
Scott Hara	Tidelands Oil Production Company
Scott Walker	Tidelands Oil Production Company
Don Foster	Tidelands Oil Production Company

Mr. Mark Kapelke presided as Chairperson.

Mr. Scott Hara, Steamflood Project Manager stated that the highlights of the Project is the commencement of drilling conventional core holes and the drilling of the Channel Crossing.

Mr. Hara highlighted the Project task-by-task as follows:

- 1.1 Data compilation is in the quality control stages and should be completed by mid-August.
- 1.2 Seventy to eighty digitized logs have been given to USC for evaluation.
- 2.1 The basic reservoir engineering has started and, currently, data are being pulled together.
- 2.2 Currently evaluating non-radioactive tracers. Three observation wells have been drilled. Presently drilling the first core hole.
- 2.3 Chris Phillips with Tidelands has completed the deterministic model.
- 2.4 Work has just started on the stochastic model, not enough activity to report anything.
- 3.1 Evaluating software from Scientific Software.
- 4.1 Well programs are at the City for approval of surface location and drilling procedures.

- 4.4 Hot water alternating steam (WAS) has commenced. Hot water injection rates were increased this week to 3500/bbls.
- 5.1 Dave Davies is continuing lab work.
- 7. All requirements are being met under Activity 7. A multi-media CD Rom is being considered for use over the Internet for both the steamflood and waterflood project.

Mr. Don Foster stated that the project is on budget. In June \$812,000 was spent on piping and casing.

Mr. Scott Walker, Waterflood Project Manager, presented the minutes of the Steering Committee held on July 21, 1995. An overview of each activity was read from the Minutes of the Steering Committee (see copy attached).

The highlights of the project were discussed including the continuing lab work from Stanford and the preparation of idle wells for logging. MPI will be logging the first wells with their pulsed acoustic tool next week.

Mr. Don Foster commented that it is too early in the Budget Period to provide a cost comparison of actual costs to budgeted costs.

Mr. Kapelke called the meeting adjourned at 9:00 A.M. P.D.S.T.

CDW