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PETROLEUM TECHNOLOGY TRANSFER COUNCIL

TECHNICAL PROGRESS REPORT - FY01

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ABSTRACT

The Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of helping U.S. independent oil and gas producers make timely, informed technology decisions during Fiscal Year 2001 (FY01). Functioning as a cohesive national organization, PTTC has active grassroots programs through its ten Regional Lead Organizations (RLOs). They bring research and academia to the table via their association with geological surveys and engineering departments. The regional directors interact with independent oil and gas producers through technology workshops, resource centers, websites, newsletters, various technical publications and other outreach efforts. These are guided by regional Producer Advisory Groups (PAGs), who are area operators and service companies working with the regional networks. The role of the national Headquarters (HQ) staff includes planning and managing the PTTC program, conducting nation wide technology transfer activities, and implementing a comprehensive communications effort.

The organization effectively combines federal funding through the Department of Energy's (DOE) Office of Fossil Energy, state, and industry funding to achieve important goals for all of these sectors. This integrated funding base, combined with industry volunteers guiding PTTC's activities and the dedication of national and regional staff, are achieving notable results. PTTC is increasingly recognized as a critical resource for information and access to technologies, especially for smaller companies without direct contact to R&D efforts.

This technical progress report summarizes PTTC's accomplishments during FY01, which lays the groundwork for further growth in the future. At a time of many industry changes and wide market movements, the organization itself is adapting to change. PTTC has built a reputation and expectation among producers and other industry participants to quickly distribute information addressing technical needs. The organization efficiently has an impact on business economics as the focus remains on proven applicable technologies, which target cost reduction and efficiency gains.

National-Level Program

PTTC's Board of Directors met three times during FY01 to review goals and objectives. The first Board meeting of the year was held jointly with the RLO Directors. Clark Southmayd with Oneok Resources Co. in Tulsa, Oklahoma, became Chair in March 2001. Mr. Southmayd assumed leadership from outgoing Chair Leo Schrider, Belden & Blake Corporation of North Canton, Ohio. James Bruning with Bruning Resources LLC in Fort Smith, Arkansas, became Vice Chair. New faces joined the Management and Budget (M&B) as well as the Nominating Committees, which benefit PTTC tremendously. New views and perspectives flowed into the organization in response to major industry changes. National officers are now on a one-year rotation versus a two-year stint in the past. The organization owes a great deal of appreciation to each and every member who give his or her time and expertise to make PTTC a continued success.

FY01 was a year of change for PTTC. To better connect with industry, PTTC relocated HQ from Washington, D.C. to Houston, Texas, completing the move during December 2000. This relocation enabled PTTC to establish key industry contacts and realize cost savings. Executive Director Don Duttlinger assembled a support staff in Houston who actively consolidate national and regional information for transfer and dissemination. Communication, database accuracy and web improvements are a key priority. Kathy Chapman, Director of Business Affairs, remained in the Washington area fulfilling her duties on contractual and financial issues. Lance Cole, National Project Manager, continued to serve PTTC on a contract basis from Tulsa, Oklahoma. More publications were started this year and the outreach expanded.

In his first full year as Executive Director, Mr. Duttlinger focused on building working relationships with DOE staff in Washington, Morgantown and Tulsa and determine improved ways to transfer the departments R&D efforts to industry. Duttlinger also focused on networking with industry, both independents of all sizes as well as the service sector to determine how PTTC might better serve their needs. In the process, he

has clarified the value within PTTC and identified potential avenues for future funding and expansion of PTTC's activities.

PTTC's national organization continues its oversight responsibility for the regional programs. As in past years, the annual planning/budgeting process involved the PAGs, HQ staff, and the Board. Regional activities continued well above minimum levels during FY01. The RLOs continue to make new connections with independent producers and strive to make a positive difference within industry.

PTTC continued its case study-oriented publication, the *Petroleum Technology Digest*, begun in September 1999. The *Digest* is a joint effort of PTTC and Gulf Publishing. PTTC works with industry compiling the case studies. Gulf Publishing publishes the *Digest* quarterly and currently distributes it within *World Oil* to more than 30,000 readers worldwide. PTTC distributed additional copies through its network. Three issues were developed during FY01—March 2001, May 2001 and September 2001. Since inception, PTTC has delivered 35 case studies through the *Digest*. Feedback is overwhelmingly positive. Producers have noted that they learned about and applied technologies new to their operations. Several technology providers have indicated that exposure through the *Digest* brought them new customers, from new service areas. As part of the agreement with Gulf Publishing, PTTC also made three contributions to the "Technology at Work" section in *World Oil*. In a new initiative, PTTC began providing monthly columns under Don Duttlinger's byline to the *American Oil and Gas Reporter*. Many producers have commented about the monthly presence in these "Tech Connections" columns, so they have become an important tool for increasing name awareness.

PTTC published *Solutions From the Field*, a compendium of technical ideas, solutions and contact information from 14 regional workshops, during August 1999. This report updated the *Best of PTTC Workshops* publication developed during 1997. The revised format allows more technology insights to be summarized, and considering that nearly 150 workshops per year have been conducted in recent years, capturing those insights is critical. PTTC strives to post two summaries per month on the national website. More than 85 summaries are now posted online. Website statistics indicate that more than 200 people each month view these summaries, equating to attendance at several workshops considering average regional attendance. Hardcopy editions are developed for special events.

Circulation of the quarterly newsletter, *PTTC Network News,* grew to more than 7,200 individuals--with nearly three-fourths from the exploration and production (E&P) sector. Nearly two-thirds of the E&P sector is independent producers. PTTC continued including the state-of-the-art summaries, which are developed by Karl Lang with Hart's/IRI Fuels Information Services, begun during 2000. PTTC enhanced its entire website network, both nationally and in all regions, to better interconnect them, increase their user friendliness, and enhance content. The national website now experiences over 8,000 user sessions per month with page views exceeding 53,000 per month. It provides timely calendar information, an archive for technology insights, national links, and serves as a gateway to the 10 regional websites. PTTC expanded its intranet site for internal communications titled PTTC Net, which is used by the National Board, RLO's and HQ staff. This is proving to be a great avenue for regional information transfer.

During FY01, PTTC supported technology transfer from DOE R&D projects, incorporating results from several projects in regional workshops in the Appalachian, Eastern Gulf, Midwest, North Midcontinent, Rocky Mountain, and West Coast regions. Topical coverage ranged from down hole oil/water separation to carbonate reservoir characterization to "Independents" projects. Additionally, PTTC coordinates frequently with the Natural Gas and Oil Technology Partnership (NGOTP) and the Rocky Mountain Oilfield Test Center (RMOTC). When opportunities arise, PTTC works cooperatively with other groups—professional societies, American Geological Institute (AGI), Drilling Engineering Association (DEA), Interstate Oil and Gas Compact Commission (IOGCC), and the Gas Technology Institute (formerly GRI) to name a few. This year, interactions were most frequent with the American Association of Petroleum Geologists (AAPG).

Regional-Level Program

In FY01, PTTC's regions held a total of 147 workshops drawing 6,338 individuals. Compared to the prior year, this represents a 5% increase in attendance while the number of workshops was essentially the same. Attendance averaged 43 individuals per workshop with 82% of attendees coming from the E&P industry. FY02 plans project about the same level of workshop activity as in FY01. Some regions are experimenting with new delivery mechanisms, such as online training, webcasting (real-time video/audio over the Internet) and video archiving on websites to reach more people.

The regional resource centers continued to function as a focal point or hub for contact with industry. The products and services available through these centers include: (1) access to information and data resources, (2) expert response to contacts and inquiries, (3) demonstration and training for E&P software, (4) information products, (5) special purpose databases, and (6) other outreach efforts. Total industry contacts in FY01 averaged more than six per day per regional resource center, a 24% increase from FY00 levels. Six regions reported more than 1,000 contacts during the year. By far the largest percentage of inquiries is for basic oil and gas data or calendar/event information. A small percentage of contacts, estimated in the 10 to 20 percent range, are true technical inquiries requiring professional expertise to respond. In some instances, RLO staff members proactively contact industry, with some regions noting up to 20% of contacts as PTTC-initiated.

Software training courses are offered within the regions. Combined, the regions conducted 26 software training courses, drawing more than 400 people. Through its partnership with the AAPG, Colorado School of Mines and private donors, the Rocky Mountain Region is able to offer the most extensive software training among the regions. The South Midcontinent Region, through its partnership with Oklahoma University's Geo Information Systems, offers extensive training on accessing Oklahoma's online database and mapping.

Where appropriate, regions develop information products that provide a service to industry and, in some cases, generate moderate revenues. In the Central Gulf Region, staff updated the popular Louisiana Desktop Well Reference (LDWR) CD-ROM at industry's insistence; even though similar data is now available online from the state agency. The Midwest Region and the Illinois State Geological Survey are developing base and custom mapping products. Through the TIPRO Internet outreach function, revenues are realized from web hosting and advertising.

Data access is an on-going industry priority, so all regions work to facilitate access to existing databases, exemplified by the Southwest Region's work improving access to New Mexico production data and the North Midcontinent Region's support of the Digital Petroleum Atlas. Under special circumstances requiring Board approval, PTTC's regions can and are developing special purpose databases, within funding constraints. A geological-oriented website developed in the Jackson satellite of the Eastern Gulf Region by the Mississippi Office of Geology continues to expand. The Midwest Region continues to develop its core and waterflood database, while the Michigan satellite is continually expanding its digital offerings. The Central Gulf Region updated its Louisiana seismic permit database.

Various outreach programs also emanate from the resource centers. The Central Gulf, Midwest, North Midcontinent and Southwest regions make targeted visits to producers. The West Coast Trouble Shooters program relies on industry volunteers to interact with industry. At the University of Southern California, PTTC partially supports the California Oil Mentoring Entrepreneurial Training (COMET) program. This is an education initiative that encourages student internships with independent petroleum companies. The North Midcontinent staff support the Kansas CO_2 initiative, and the South Midcontinent staff are involved with the Oklahoma Marginal Well Commission's Trade Fairs. Texas continues its highly effective Permian Basin Mentor (or Field Agent) program. The Central Gulf Region leverages efforts of LSU's downhole water sink consortium. Many other examples of cooperative interaction and outreach also exist.

Regional websites focus on calendar/event information, workshop summaries and presentations, case studies, technical reports of R&D project results, access to databases, and useful links to other sites. Regional website traffic varies considerably, but three regions (Texas, North Midcontinent, and Southwest) experience

higher traffic volumes. Use of a common website statistics program among the RLOs and HQ has improved consistency in reporting website statistics.

With Texas starting a regional newsletter early in FY01, eight of 10 regions now have a regional newsletter. The Appalachian Region relies solely on a lengthy online newsletter, and the Central Gulf Region relies on frequent coverage in *LIOGA News*. Frequency varies from quarterly to annual and combined circulation exceeds 22,000. To control costs, some regions decreased frequency this year. Most newsletters are new efforts started under PTTC, but some continue the newsletter tradition of the RLO organization. Typically, newsletters are also posted on the website. Some regions also develop special electronic newsletters on a more frequent basis for their websites.

51% of industry attendees at regional events are repeat attendees, that is, individuals that have previously attended an event in that region. This percentage reveals customer satisfaction—customers are coming back—while still indicating that a new audience is being drawn. 38**%** of producers who attend regional workshops respond "Yes" on feedback forms when asked if they are applying technologies based on knowledge gained through PTTC, confirming that producers are taking action with the information they receive. Anecdotal success stories also confirm impact at the regional level.

I. EXECUTIVE SUMMARY

In the early 1990s, industry and government energy experts recognized the urgent need for improved technology transfer processes for the U.S. upstream petroleum industry. As a result, domestic oil and natural gas producers established the Petroleum Technology Transfer Council (PTTC) in 1993 as a national not-for-profit organization. Well recognized as a growing organization, PTTC is now working towards greater efficiency and quality in its activities, both of which are essential for delivering value to its audience and achieving results.

PTTC's current direction is driven by a business plan developed during 1998. This plan, which involved the Board, the Regional Lead Organizations (RLOs), and Headquarters (HQ) staff, helped PTTC to clarify its true role and to identify how its efforts add value for different sectors. Insights gained during the process caused PTTC to update its mission statement to more accurately reflect its proactive commitment to industry. The official mission statement is:

PTTC benefits the nation by helping U.S. independent oil and natural gas producers make timely, informed technology decisions.

PTTC is a unique example of how an organization can utilize federal, state, and industry funding to achieve important goals for all of these sectors. This integrated funding base, combined with the guidance of industry volunteers and the dedication of its national and regional staff, is achieving notable results as evidenced by the organizational milestones presented in Appendix A. PTTC is increasingly recognized as a critical resource for information and access to technology—especially for smaller companies. Even now, PTTC is evaluating industry trends and lessons learned as it looks forward to position itself for increased impact during the upcoming 10 years.

Table 1 – Measures of PTTC's Regional Activities

	Workshops		Attendance		From E&P Industry	Outreach Contacts		
Time Period	**Annual**	**Cumulative**	**Annual**	**Cumulative**	**Attendance**	**%**	**Annual**	**Cumulative**
FY95	18	18	1,117	1,117				
FY96	46	64	3,801	4,918		83		
FY97	62	126	3,176	8,094		85	5,482	5,482
FY98	100	226	4,429	12,523	3,235	73	10,241	15,723
FY99	128	354	5,948	18,471	4,935	83	10,555	26,278
FY00	148	502	6,020	24,491	4,923	82	12,980	39,258
FY01	**147**	**649**	**6,338**	**30,829**	**5,227**	**82**	**16,051**	**55,309**
Averaging 43 attendees per workshop					**Averaging 6+ contacts per day/region**			

In FY01, regional activity remained at the record levels attained during FY00. Workshop attendance increased by 5% with the number of workshops remaining essentially the same. Attendance averaged 43 per workshop. The percentage of workshop attendees from industry held steady at more than 80%. Contact activity increased 24%, now averaging more than 6 contacts per day per region. Planned activity level during FY02 is near recent record levels.

Federal funds partially supporting PTTC's operation come through a multi-year grant (through April 2003) awarded by the U.S. Department of Energy's Office of Fossil Energy under the National Petroleum Technology Office and Strategic Center for Natural Gas within the Federal Energy Technology Laboratory. This report covers PTTC's technical progress during FY01, and illustrates PTTC's increasing impact on the domestic E&P industry.

Although a national organization, PTTC is regionally focused. Therefore, this report is divided into two primary sections:

- Chapter II addresses PTTC's progress at the national level. It is organized according to the task definitions within PTTC's current statement of work under the DOE grant.

- Chapter III reports progress at the regional level and, for the most part, aggregates information for the 10 regions so that common trends and results can be identified. This section is organized according to the core technology transfer functions that guide the RLOs.

- Appendix A presents national organizational milestones. Appendix B presents detailed information, by region, of FY01 regional accomplishments. Remaining appendices, which include Board and RLO Director rosters among others, provide background information.

II. RESULTS AT THE NATIONAL LEVEL

The Petroleum Technology Transfer Council (PTTC) functions as a cohesive national organization that implements industry's directives through both its national and regional programs. The role of the national Headquarters (HQ) includes planning and managing all aspects of the PTTC program, conducting nation-wide technology transfer activities, and implementing a comprehensive communications effort.

A. Planning and Managing the PTTC Program

There are many aspects of planning and managing the overall program. The financial aspects are documented in a separate Financial Report to DOE, which is submitted quarterly. This Technical Progress Report will focus on several other key areas – those involving human resources, strategic planning, and oversight of the regional programs.

1. Human Resources

Responsibilities in human resources require that there are experienced and knowledgeable staff members and contractors available to fulfill the requirements of PTTC's commitment with DOE and to perform the valuable technology transfer activities. It also involves working with industry to ensure that PTTC's Board and regional Producer Advisory Groups (PAGs) are filled with active volunteers.

a. *Headquarters Staff*

The HQ staff, which continued to work as a team in FY01 to accomplish many goals, includes:

--Donald F. Duttlinger, Executive Director since July 2000, led PTTC through its move from Washington, D.C., to Houston, Texas, and has built a support staff there. During FY01 Mr. Duttlinger focused on (1) building relationships with DOE staff in Washington, Morgantown, West Virginia, and Tulsa, Oklahoma, and (2) networking with industry, both large independents and the service sector, to determine how PTTC might better serve their needs. In this process he has clarified the value within PTTC and identified potential avenues for future funding and expansion of PTTC's activities.

--Lance Cole, National Project Manager, Sand Springs, Oklahoma, continued to serve under contract overseeing all of the RLO activities for compliance with PAG direction and national policies, and coordinating inter-regional efforts. He also ensured fulfillment of required reporting and deliverables for HQ, supported national communications efforts, served as technical adviser, and assisted in strategic planning and other special projects as needed.

--Kathy Chapman, Director of Business Affairs, who works remotely from the Washington area, has been with PTTC from its beginning. She is responsible for all contractual matters with DOE, the Regional Lead Organizations (RLOs), and other contractors. Being located in the Washington area, she also serves as PTTC's liaison to DOE Headquarters and other groups located there. In addition, she manages the financial and accounting systems and coordinates with Duttlinger and Cole on strategic issues.

--Norma Gutierrez, Office Manager, joined PTTC in Houston in July 2001. As Office Manager, she has rejuvenated PTTC's records management system. She facilitates internal communications, HQ interactions with the regions and industry, and provides executive assistant services to Mr. Duttlinger. For PTTC's first few months in Houston, Alma Smith provided office setup support and functioned as Communications Coordinator.

--Karina Fay, Administrator, joined PTTC in Houston in June 2001. As Administrator, she updates and manages PTTC's industry database, assists Ms. Gutierrez in records management, and serves as office receptionist. Her Management Information Services (MIS) degree will serve PTTC well as it moves forward in more efficient management of basic data and implementation with new web-based tools.

--Kristi Lovendahl, Tulsa, Oklahoma, serves PTTC on a contract basis providing: (1) desktop publishing services for the national newsletter, *PTTC Network News*, (2) website maintenance and design services, and (3) other special publications-oriented projects. Outsourcing of these vital services has proven very cost effective for PTTC.

For selected technology-oriented tasks, such as the *Petroleum Technology Digest*, workshop summaries, and *PTTC Network News*, HQ has retained consultants on an as-needed basis to perform specific tasks. Being of a technical nature, their efforts are mostly coordinated by Mr. Cole.

b. *Board of Directors*

Twenty-one industry volunteers serve on PTTC's Board of Directors. They include independent oil and gas producers representing the ten regions, in addition to the Chair, Vice Chair and Immediate Past Chair. Other Board members include representatives from national industry organizations, majors and service companies, and professional societies. Clark Southmayd, Jr., Oneok Resources Co., Tulsa, Oklahoma, replaced Leo Schrider from Belden & Blake Corp. as Chair in March 2001. James Bruning with Bruning Resources, LLC, Fort Smith, Arkansas, assumed Vice Chair responsibilities at that time. In a strategic decision that recognizes the depth of commitment required from national leaders and the positive benefits of new perspectives, the Board decided that, in the future, national leadership will be changed on an annual basis. Thus, there will be several official Board member changes at the March 2002 Board meeting. A Nominating Committee, composed of five members including the Chair, Immediate Past Chair, two PAG Chairs, and the Independent Petroleum Association of America (IPAA) representative coordinates nominations for leadership and committee changes.

PAG leadership in four regions also changed. Craig Howard, Howard Energy Corp. in Mt. Carmel, Illinois, replaced Lester Moore as PAG Chair for the Midwest Region. Gene Ames III, Ames Energy Corp. in San Antonio, Texas, replaced Larry Hulsey as PAG Chair for the Texas Region. A.M. "Mac" Alloway, Tony Oil Company in Tulsa, Oklahoma, replaced Jim Bruning, who had assumed Vice Chair responsibilities, as PAG Chair for the South Midcontinent Region. Mark Kapelke, Tidelands Production Co. in Long Beach, California, replaced Chris Hall as PAG Chair for the West Coast Region. Moore and Hall had served PTTC as PAG Chairs since inception. Rodney Reynolds, RLO Director of the North Midcontinent Region, also replaced Charlie Mankin as a non-voting representative for the RLOs.

During FY01, PTTC's Board met three times: (1) on October 26, 2000 in San Antonio, Texas, in conjunction with a meeting of the Independent Petroleum Association of America (IPAA); (2) on March 6-7, 2001 in Washington, D.C., as a joint meeting of the Board and RLOs and for visits to Capitol Hill; and (3) on July 9, 2001 in Long Beach, California. The Board switched its Capitol Hill visits to March, when funding decisions were being made, rather than July, as had been the practice, to increase their impact. Meeting agendas addressed required Board decisions and votes plus other topics of interest. Representatives from DOE are invited to each meeting to update Board members on their office's activities and provide their perspective and feedback about PTTC's services and activities.

c. *Management & Budget Committee*

PTTC's Management & Budget (M&B) Committee provides guidance to the HQ staff between Board meetings. The group meets approximately monthly by conference call with the Executive Director and other key staff. Recently, the M&B Committee has also been meeting jointly with the PAG Chairs at each Board meeting. Vice Chair James Bruning leads the Committee. New members include Brook Phifer, NiCO Resources LLC, Littleton, Colorado, from the Rocky Mountain Region, and Brian Sims, Madison, Mississippi, from the Eastern Gulf Region.

d. *Producer Advisory Groups*

Each region has a group of voluntary industry representatives serving as a local advisory group for the program. These PAGs work very closely with their corresponding RLO Director and are responsible for guiding the regional program. Their participation is especially critical during the annual planning

process, as the PAGs must approve the region's annual plan before submittal to PTTC. Their efforts are guided by PAG Guidelines approved in FY97 by the Board. PAG rosters are reviewed annually to verify contact information, determine who has been active and that all wish to continue serving, to check on the term expiration dates of PAG officers, and to ensure that the group is representative of the local independent producing industry. The HQ staff works with any PAG Chairs needing help in facilitating this process, especially in the case of PAGs that seek additional members and/or more active involvement by existing members.

2. Strategic Relocation of PTTC Headquarters

During the Board Meeting in October 2000, Executive Director Don Duttlinger, with support of the M&B Committee, focused Board attention on a strategic question: Should PTTC remain in Washington or relocate to an "oil patch" location? Following extended discussion, the Board decided that relocating PTTC HQ to an oil patch location would provide more networking opportunities with industry. These networking opportunities are essential for PTTC as it works to find a path to increase industry funding. Further input regarding location was gathered following the Board meeting. Through an official vote, the Board then approved PTTC's relocation to Houston, Texas. Within eight weeks, the move to Houston was accomplished. Although networking opportunities were the driving force behind the move, PTTC is also realizing savings in facility and overhead expenses.

3. Oversight of Regional Programs

HQ has oversight responsibility for the regions, an important aspect being the annual planning and budgeting process. RLO commitment, generally far above minimum levels, allowed regional activity to remain at record levels—more than 6,300 workshop participants from 147 workshops. Plans for FY02, approved during an October 2001 Board meeting, forecast continued high activity levels.

The Regional Directors met once during FY01, in the joint Board and RLO meeting in Washington in March 2001. Conference calls were held as needed to address special issues. Serving as the primary HQ contact with the RLOs, Mr. Cole works with RLO Directors and staff regarding implementation of the annual plans, potential technology transfer opportunities, and regional input for national communications. Mr. Cole occasionally interacts with PAG Chairs about regional concerns. During FY01, he participated, either in person or via conference call, in PAG meetings of four of 10 regions. Cole or Duttlinger also attended workshops or events in nine of ten regions.

From the start, PTTC has striven to capture and report data that demonstrate its impact on the US upstream oil and gas industry. Most data are activity-oriented statistics (# of workshops, attendance, resource center contacts, website usage, etc.). Over the years the quality of these statistics have improved as reporting methods have been clarified and new monitoring tools, such as the WebTrends software, employed. Since FY00, PTTC has been capturing and reporting a new measure of customer satisfaction—the % of industry attendees at a workshop who are repeat attenders. Of 136 workshops in FY01 where repeat attendance was reported, it averaged 51%, reflecting that individuals see value and are coming back. Repeat attenders are defined as those individuals who have previously attended a workshop in the region since PTTC's beginning. On the flip side, it is encouraging that, after eight years, nearly half of workshop attendees are new to PTTC activities.

Some examples of producers taking action and realizing production/profit increases are available at both the regional and national levels. However, the data are too limited to make general extrapolations about reserves or production added. And PTTC well recognizes that it is just one voice that industry listens to when making technology decisions.

One standardized question on the feedback form used at workshops asks respondents for a "Yes/No" answer to the question: *Have you used any new technologies based on knowledge gained through PTTC?* With data now available from 214 workshops, 38%, or more than a third of respondents, say "Yes." This value is consistent with percentages reported by the Gas Technology Institute, formerly GRI, when they surveyed readership of their *Gas Tips* magazine. About half of those who respond "Yes" provide cryptic

detail of the technology applied, but none provide sufficient detail for metrics. Extensive follow-up, which would require more resources than PTTC has, would be required to develop quantitative metrics.

Following Board direction, PTTC organized a metrics team consisting of HQ staff, representatives from the RLOs, and DOE staff early in FY01. Team members were provided activity statistics and a detailed analysis of feedback forms where those responding said "Yes" regarding technology application. In February, HQ staff met in Morgantown with DOE staff from Tulsa and Morgantown, Rodney Reynolds and Doug Patchen representing the RLOs, and PTTC's Board leadership—Chair Clark Southmayd and Immediate Past Chair Leo Schrider. Outcome was that DOE better understood the challenges PTTC faces gathering quantitative metrics regarding impact, and PTTC better realizes the importance of providing regular success anecdotes to DOE. Although PTTC made some progress in reporting success anecdotes to DOE during FY01, there is still much room for improvement.

B. Conducting National Technology Transfer Activities

Although most of PTTC's technology transfer activities occur in the regions, the HQ staff also has significant responsibility in this area. There are many mechanisms for this function, through: (1) technology alerts and field results in *PTTC Network News*, (2) responding to inquiries received through the national office, (3) surveying producers needs on a national level, (4) developing case study-oriented products, such as the *Petroleum Technology Digest*, (5) capturing the highlights of regional workshops in summaries posted on PTTC's website, (6) providing technical support for IPAA meetings, and (7) coordinating PTTC activities with DOE's oil and gas R&D programs and those of other national organizations.

1. Newsletter Articles and Alerts

Technology information is received from multiple sources for *PTTC Network News*. Some material comes in response to solicitations that HQ sends quarterly to a group of technology providers, while other material comes from staff proactively looking for technology advances of interest. Focus is generally on information or data that describe new commercially available technologies or promising R&D advances. Significant developments within the PTTC system or DOE's R&D program are also presented. Since 2000 PTTC has also been including state-of-the-art summaries on high interest topics. These summaries are developed by Karl Lang with Hart's/IRI Fuels Information Services. For the regional section, recent issues have included the bottom line and problem addressed of workshop summaries posted during the quarter. Key insights from case studies published in the *Petroleum Technology Digest* are also included.

2. Answering National Inquiries

On average, the HQ office receives 3 to 5 technical inquiries per week. These are forwarded to the appropriate RLO staff when (1) the inquiry is specific to a given region or (2) specialized expertise is known to exist within the regional resource centers. HQ staff responds directly to about two-thirds of the inquiries, often from small or regional vendors touting new products or technologies. If the technology is supported by field data and perceived to be of interest to independent producers, HQ staff develops an alert or article to be published in *PTTC Network News* or encourages a case study for *Petroleum Technology Digest*. In many cases, PTTC staff makes referrals to other individuals or organizations that offer potential for further developing and/or commercializing the technology.

3. Problem Identification/Needs Assessment

PTTC last assessed technology needs on a national basis through a survey in August 1999. Since this assessment is relatively current, PTTC did not conduct any national needs assessment during FY01. Within a couple years, PTTC anticipates repeating a national technology needs assessment to monitor changes and new directions. The regional offices perform ongoing needs assessment through feedback from workshop participants, contacts, PAG input, participation in local trade meetings, and other sources.

4. Petroleum Technology Digest

The *Petroleum Technology Digest*, begun in the fall of 1999, is a joint effort of PTTC and Gulf Publishing. PTTC solicits and compiles the case studies, and Gulf Publishing prints the *Digest* and

distributes it. Case studies, which are authored by both producers and the appropriate technology providers, are brief—just 1,200 words or less, but they are written in the bottom-line format that producers desire. Through 2000, the *Digest* was distributed as a supplement to *World Oil* to their producer readership in North America. Beginning in 2001, quarterly *Digests* are being incorporated within *World Oil* and distributed worldwide to more than 30,000 readers. Gulf Publishing had to make this switch since they were unable to sell sufficient advertising to support the *Digest* as a separate supplement. Although losing the status of being a separate supplement, the current approach achieves much broader distribution. Twelve case studies were published in three *Digests* during FY01—March, May and September 2001. Since inception, PTTC has delivered 32 detailed case studies to industry through the *Digest*. PTTC makes reprints and distributes them through the regions and trade shows, and they are also posted online on *World Oil's* website.

Industry response has been highly favorable and there are several anecdotes that producers are taking action—from early *Digests* through the most current. For producers, the case studies represent an opportunity to learn about technologies that may not be widely used in their area. For technology providers, the exposure provides access to geographical areas of the US where they may not have a marketing presence. In short, the *Digest* promotes inter-regional technology transfer. Although case studies appear brief, they are thorough and the resources required to nurture case study development remain significant. More and more authors are open to authoring, both producers and technology providers, but getting them to fulfill their commitment to develop a case study remains challenging.

5. Solutions From the Field

As early as 1997, PTTC began summarizing content of its regional workshops so that a larger audience could have access. Since August 1999, PTTC has been posting workshop summaries with key technology insights and speaker contact information on the national website as *Solutions From the Field*. Not counting pre-1998 summaries, 70 summaries are now posted online, and summaries for additional workshops are in progress. Website statistics indicate that a couple hundred people each month view these summaries, equating to several more workshops considering the average attendance at regional workshops. Highlights from summaries posted during a quarter are also presented in *PTTC Network News*. When desired for special events or trade shows, PTTC prints hardcopy editions.

6. Technical Support for IPAA Meetings

From inception, PTTC has striven to work cooperatively with IPAA to add a technology element to their meetings. In 1997 and 1998 Emerging Technologies Energy Conferences (ETECs) were held surrounding their annual meetings. ETEC was suspended during 1999 due to adverse conditions in industry and concerns that ETEC was making the annual meeting too long. Since then, primarily working through IPAA's Crude Oil Policy Committee, PTTC has provided speakers for technology-oriented sessions. For the October 2000 meeting, Randy Foutch with Lariat Petroleum Inc. in Tulsa described how a technology culture had been integral to Lariat's rapid growth. His presentation was subsequently posted on PTTC's national website. Bob Kiker, Texas's Permian Basin Mentor, also described how the Mentor effort was facilitating producer/vendor and vendor/vendor interaction.

7. Coordinating with DOE and Other Groups

Where appropriate, PTTC incorporates R&D findings from DOE projects into regional workshops. Cooperative efforts during FY01 included:

- The Appalachian Region helped recruit attendees for DOE/Maurer Technology's "Advanced Exploitation Technology" workshop in Morgantown, West Virginia, in Dec 2000. Although several individuals registered through this effort, there were a lot of no shows.
- An August 2001 Eastern Gulf Region workshop, "Smackover Microbial Reef Detection and Characterization," presented work from DOE-funded R&D at the University of Alabama.
- Workshops in Michigan as part of the Midwest Region's program addressed carbonate reservoirs (two DOE-funded projects) and improving recovery in old fields (related to a DOE-funded project).
- An August 2001 North Midcontinent Region workshop featured results and progress within the GEMINI project at the Kansas Geological Survey. This project is partially funded by DOE.

- The Rocky Mountain Region hosted a workshop on "New Technology for Handling Water During Production" that incorporated much of DOE's work on downhole oil/water separation.
- A February 2001West Coast Region workshop featured results from the DOE-funded Midway Sunset Demonstration project. Jim Barnes, project manager for DOE's Technology Development with Independents program, was also incorporated within the region's annual Trouble Shooters Forum in Bakersfield in September.

PTTC supports DOE's Natural Gas and Oil Technology Partnership (NGOTP) program, striving to include news from some project in each newsletter. PTTC staff also attends review panel meetings to stay abreast of R&D progress. In earlier years, PTTC actively recruited some review panel members.

When DOE issues solicitations appropriate for independents, PTTC's national/regional communications program alerts independents to the opportunities. Recognizing independents apprehension about the involved paperwork, RLO staff often provides personalized encouragement to help independents through the application process. Programs of particular relevance are the Technology Development with Independents Program and the Stripper Well Consortium managed by Pennsylvania State University. For the Independents Program, PTTC is aware that several proposals, some of which won awards, occurred specifically because of its active role in alerting independents. PTTC participated in the organizational meeting of the SWC, alerted PAG members and some large independents to opportunities within SWC, and supported the October 2001informational meetings in Texas and Oklahoma City. PTTC has particularly focused on stimulating interest from companies located outside the Appalachian Basin region. Unfortunately, to its knowledge, there have not been measurable results from this effort yet.

R&D results from several projects within DOE's Technology Development with Independents program and Stripper Gas Well program came to fruition during mid-2001. Late in FY01, PTTC coordinated with the regions and DOE staff within the Strategic Center for Natural Gas (SCNG) and National Petroleum Technology Office (NPTO) to hold a series of workshops across the country. From October 2001 through February 2002, eight workshops are planned. Recognizing the above and beyond nature of this effort, DOE is providing PTTC with supplemental funding specifically for the workshop series. Results and impact will be reported in FY02's annual report. In addition to transferring technology, one goal of these workshops is to alert industry to future funding opportunities from DOE. To get additional exposure, PTTC will also summarize results in a state-of-the-art summary within *PTTC Network News* (and on the website).

PTTC actively coordinates with the major professional societies. For the most part, cooperative opportunities are pursued at the regional level. Example workshops during the year included: (1) "Coalbed Methane Potential of the Gulf Coast," Oct 2000 in Houston, involving PTTC's Central and Eastern Gulf regions, the Texas Region, AAPG and others; (2) "Carbonate Reservoirs," October 2000 in El Paso, involving PTTC's Eastern Gulf Region, the AAPG and others; (3) "Improving Recovery in Old Fields," Sep 2001 in Kalamazoo, Michigan, involving AAPG's Eastern Section; and (4) "2000 CEED CO_2 Conference," Dec 2000 in Midland, involving the Society of Petroleum Engineers (SPE) and others. PTTC's North and South Midcontinent Regions are working with the conference committee for the April 2002 SPE/DOE Improved Oil Recovery Symposium to provide a PTTC session during "Independents Day." AAPG provides significant funding support for the software training center in Golden, Colorado. In the past, PTTC has co-sponsored Internet training workshops conducted by AAPG in Texas.

HQ staff also coordinates with other national organizations, including the American Geological Institute, Drilling Engineering Association, Interstate Oil and Gas Compact Commission, Gas Technology Institute, and the Artificial Lift Research and Development Consortium (an organization in the formative process). Coordination involves staying abreast of their activities, significant reports or products, and occasionally attending their meetings. Coverage is often provided within *PTTC Network News*, the national newsletter.

This year, PTTC was approached by Marcus Evans, a private firm that develops conferences, about becoming involved in one of their conferences entitled "Maximizing Recovery." The conference, held in

Houston in June 2001, focused on improved oil recovery technologies. The target audience was senior executives. Believing the topic relevant to its audience and wanting to increase name awareness with the target senior executive audience, PTTC cooperated with Marcus Evans. PTTC suggested topics that needed to be covered and recommended speakers, and Don Duttlinger chaired the conference. Although less than 50 people ultimately attended the conference, PTTC was exposed to a broad senior executive audience through promotional literature. Effective technology transfer occurred among attendees, and PTTC gathered case study results ultimately shared through a trade journal column. To increase name awareness, PTTC will evaluate future opportunities of this nature on a case-by-case basis.

8. Networking with Large Independents and The Service Sector

Since moving to Houston, one of Executive Director Don Duttlinger's focuses has been to increase PTTC's connections with large independents and the service company sector. This involves determining who are the company contacts involved in technical and corporate directive issues, then meeting with them to discuss their needs, acquaint them with PTTC and its accomplishments, and explore where there might be a match. PTTC's ultimate objective is to determine what adaptations are required to deliver value to these companies, and as value is being delivered, how these companies could provide industry financial support and take full advantage of the established outreach network.

C. Implementing a Comprehensive Communications Program

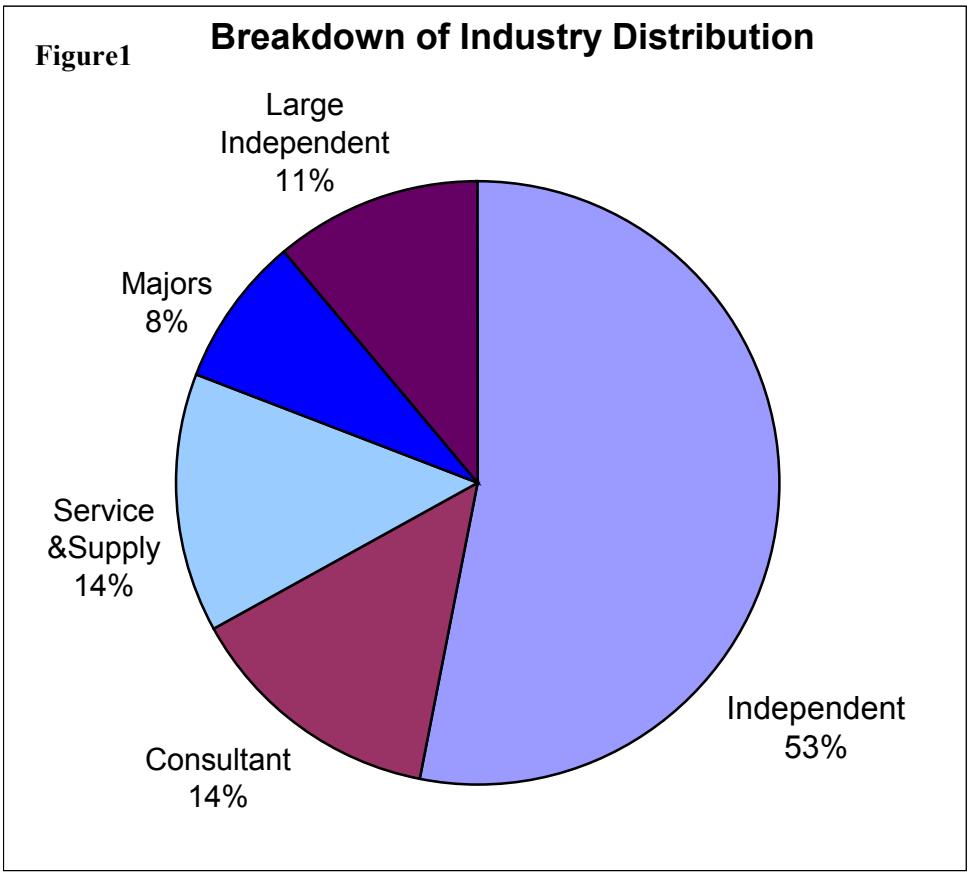
An effective national communications program is essential for increasing name awareness and impact. There are six components to PTTC's national communications program, including:

1. Booth/Display

PTTC staffed its display booth at four events during FY01: (1) SPE annual meeting in Dallas in October 2000, (2) North American Prospect Expo (NAPE) meeting in Houston in February 2001, (3) AAPG annual meeting in Denver in June 2001, and (4) at AAPG's prospect expo in Houston in August 2001. A redesigned booth was purchased late in the year. Occasionally, PTTC will lend its booth or graphics to the regions for their use at regional events.

2. Newsletter

PTTC's 16-page national newsletter, *PTTC Network News*, has been published quarterly since 1995. It incorporates feature articles, R&D and technology alerts, field results, and information from DOE's oil and natural gas programs as well as other technology providers. Features added during FY00—state-of-the-art summaries developed by Karl Lang with Hart's, an environmental page, and a spotlight column that provides detail on other organizations—were continued during FY01. Newsletter distribution has grown to over 7,200 individuals—with nearly three fourths of those from the E&P sector. Distribution within the E&P sector is shown within the following pie chart. Note that nearly two-thirds of the industry segment is independents.



PTTC Network News

3. Press Releases

HQ develops national press releases to convey information of a national or inter-regional scope. In earlier years, PTTC placed a higher priority on press releases, releasing six or more per year. As PTTC has matured, PTTC is focusing more on columns, case studies and articles to promote name recognition. The two press releases during FY01 were:

- PTTC Moves Headquarters Office to Houston (12/26/00)
- DOE PUMP Award to PTTC (5/03/01))

4. Contributions to Trade Publications

PTTC strives to leverage its outreach through the primary trade publications for independents—*Hart's E&P*, *World Oil*, and *American Oil & Gas Reporter*. As part of its arrangement with Gulf Publishing for the *Petroleum Technology Digest*, PTTC also contributes periodically to *World Oil's* "Technology at Work" section. In the past, PTTC has coordinated technical articles from the regions for *American Oil & Gas Reporter* and began a monthly column, "Tech Connections," for them in 2001. Response from industry indicates that the monthly column has been particularly effective in building name recognition.

Tech Connections, for *American Oil and Gas Reporter*

January 2001	Network of Web Sites Designed to Promote Sharing Among Producers
January 2001	Presidents Column by Leo Schrider
February 2001	Horizontal Drilling Successful in More Than Just Fractured Carbonates
March 2001	Modern Concepts Reduce Costs Associated with Rod & Tubing Failures
April 2001	PTTC Gathers Info on Some Recent Advances in Well Fracturing
May 2001	Problem Solving Ideas Come Through Presentations at SPE Symposium
June 2001	Trenton-Black River Driving Deep Exploration in Appalachian Basin
July 2001	Seismic Wave Stimulation May Be A Low-Cost Procedure for Enhanced Recovery
August 2001	Higher Recoveries Are Pushing More Drilling
September 2001	Hands-On Effort Helps California Producers

Technology at Work, for *World Oil*

December 2000	Stripper Well Consortium Established
February 2001	Three Independents Improve Mature Field Operations
August 2001	Shared Experiences from Extra-Recovery Projects

In mid-2000, PTTC initiated discussions with Hart's concerning an initiative to stimulate more rapid technology adoption. Producers with vexing problems (those for which solutions are not broadly known) could post their problems on PTTC's website. Technology providers who believe they have solutions could respond and PTTC would forward responses to the producers. Further action would be up to the producers. Technology developers who are looking for field tests could post information on Hart's website regarding the conditions needed for a field test, including any special incentive offers. Interested producers could respond directly. All who participate would be encouraged to publicly share the results/information. By late 2000, both PTTC and Hart's had conceptually agreed. However, implementation was delayed when ownership of Hart's changed. Hart's is still interested, but their lack of web resources is delaying implementation. With present staff resources, implementation would severely challenge PTTC.

5. Website

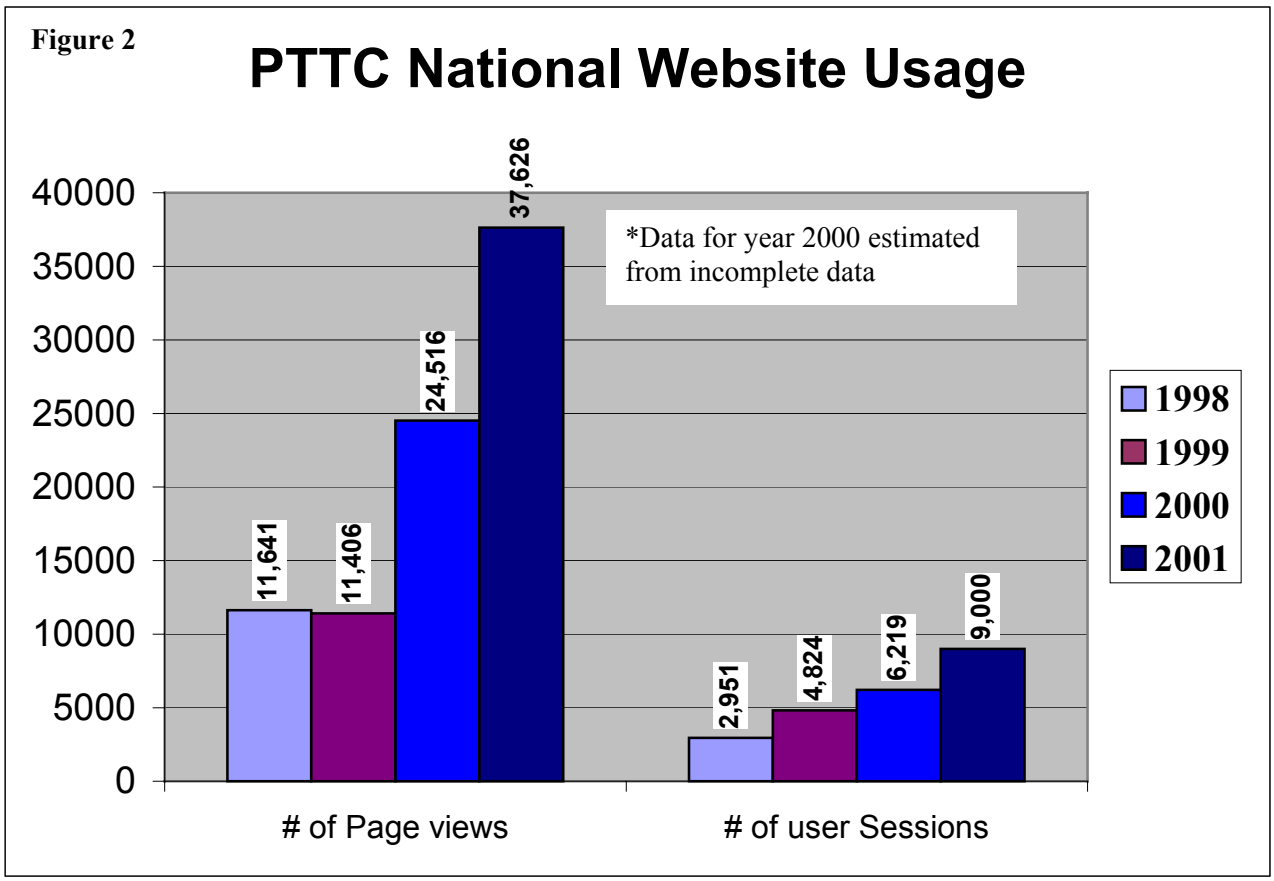
Launched in 1995, PTTC's national website (www.pttc.org) provides key content of national interest and links the network of 10 regional websites. It contains organizational information, a calendar of PTTC events, technical summaries, publications, press releases, selected links with descriptions of producer associations, and more. By serving as the gateway to the regional websites where extensive data, case studies and other technical information is contained, the website provides a valuable service to independents. It also provides a venue for special announcements, promotion of new products, and posting surveys. PTTC continued to place workshop summaries (*Solutions From the Field*), newsletters, links to *Digest* case studies, and other technical articles on the website. There was also a strong focus on maintaining a current PTTC calendar with links to detailed information on the regional websites. This year, PTTC also began including national events of other groups.

PTTC made a strategic decision that its entire website system, national and 10 regions, needed a major overhaul to enhance content and make it more user friendly. Improving consistency among the websites was seen as a major step in enhancing the network. HQ staff and the regional webmasters met in Los Angeles in December 2000 and brainstormed about structure, features and the balance between consistency and regional flexibility. HQ later developed the national website and templates for each region. From March through June, regional websites transitioned to the enhanced system. Although 100% consistency was not achieved, measurable steps forward were made. It should be noted that routine maintenance remains PTTC's Achilles heel in the website network since, for both HQ and the regions, staff resources remain extremely tight.

During 1998, PTTC (and the regions) began using WebTrends™ software to monitor website usage. Three indicators were agreed upon as the key criteria for measuring website traffic. Trends for the national website, recognizing that usage does fluctuate broadly, are:

- User sessions per month—steady growth through the years, rising to 9,000 by yearend.
- Page views per month—rapid growth with content additions, rising to 53,000+ by yearend several months after the entire website network had been enhanced.
- Average session length fluctuates widely.

Figure 2



6. Board and RLO Communications--PTTC Net

For a couple years, PTTC has been using an intranet website, named RLO Net, to facilitate communications among HQ and RLO staff. In conjunction with the enhancement of the national website, PTTC enhanced this intranet site for both Board and RLO usage. This expanded system, renamed PTTC Net, is accessible by user name and password. It provides Board members with ready access to roster and contact information, quarterly and annual reports, and policies and guidelines—an important filing function for busy Board members. For RLO staff, it serves administrative functions, such as deliverables, reporting forms, notification forms for calendar changes, etc. When staff changes occur, this represents a ready reference point to familiarize them with the internal workings of PTTC.

III. RESULTS AT THE REGIONAL LEVEL

PTTC's ten regions are the primary delivery mechanism for technology transfer. It is in the regions where PTTC connects most directly with independents—through workshops, resource centers, websites, newsletters, personal contacts, and other information sources.

Table 2 documents annual activity by region. Strict regional comparisons are discouraged because differences among regions are influenced by a variety of factors, including: (1) differing guidance from regional Producer Advisory Groups (PAGs), (2) single versus multi-state regions, (3) differing industry demographics, and (4) differing RLO Director philosophies. Notwithstanding, it is apparent that activity levels in some regions are significantly higher than in others. From a pure activity standpoint, the Rocky Mountain, South Midcontinent and West Coast Regions are extremely active. Contact levels vary widely among the regions, reflecting different activity levels and the difficulty in consistent reporting of contact statistics.

Table 2—FY01 Regional Activity

Region	Workshops					Contacts	Website User Sessions	Newsletter
	# of WS's	Total Attend.	Avg. Attend.	% from Industry	% Repeat Attend.		1st Qtr / 4th Qtr	
Appalachian	8	490	61	89	74	833	1,720 / 2,366	Online newsletter
Central Gulf	7	213	30	89	33	629	2,318 / 3,038	Info/columns In Assoc. NL
Eastern Gulf	9	415	46	64	54	653	2,704 /1,853	700 (Qtrly)
Midwest	7	254	36	81	56	1,241	3,361 /5,222	2,700 (Semi)
N. Midcontinent	8	403	50	81	51	2,458	15,696 / 22,854	4,836 (Qtrly)
Rocky Mountain	27	1,081	40	87	55	2,550	1,108 / 2,758	2,035 (Qtrly)
S. Midcontinent	51	1,762	35	88	55	2,556	2,175 / 2,246	6,343 (Qtrly)
Southwest	5	282	56	72	23	667	14,991 / 11,063	3,800 (Semi) + online
Texas	6	450	75	96	21	2,354 + TIPRO	9,895 /6,255 + TIPRO	1,138 (Qtrly) + Assoc.
West Coast	19	988	52	69	52	2,110	708 / 1,263	Annual + Info in Assoc. NL
All Regions	**147**	**6,338**	**43**	**82**	**57 (calc.) 51 (avg)**	**16,051**	54,676/58,918 (7 of 10 incr.)	

Website usage varies significantly among the regions, reflecting: (1) size of the industry audience, (2) regional emphasis on the website, and (3) website content, particularly O&G data. For the most part, within a region, usage increased steadily throughout FY01. It is too early to tell the impact of the system-wide website enhancement on website usage.

Table 3 illustrates the most current activity levels (4th Qtr FY01) and compares overall activity with FY00 levels. Activity levels remained at record levels, as they have since FY99.

Table 3 -- 4th Quarter FY01 Activities Overall Comparison with FY00 Activity Level							
Region	**Workshops**			**Industry Contacts**	**Website (mo. avg.)**		**Newsletter Function**
	No.	**Attend.**	**From E&P Industry (%)**		**User Session**	**Page Views**	
Appalachian	3	191	181 (95%)	143	2,366	6,561	Online newsletter—none this quarter
Central Gulf	1	21	20 (95%)	169	3,038	10,637	*LIOGA News* (July & Sep 2001)—circ. 800
Eastern Gulf	1	30	24 (80%)	162	1,853	3,542	Quarterly Newsletter – (9/01) circ. 700 (95% from industry)
Midwest	1	22	15 (68%)	411	5,222	10,451	Semi-annual newsletter—circ. 2,700 (95% industry) Sep 2001
N. Midcontinent	2	115	106 (92%)	685	22,854	111,214	Quarterly Newsletter – (7/01) circ. 4,838 (80% from industry)
Rocky Mountain	5	216	189 (88%)	846	2,758	10,722	Quarterly Newsletter – (8/01) circ. 2,035 (95% from industry)
S. Midcontinent	16	351	306 (87%)	742	2,246	Not Avail.	Quarterly Newsletter – (9/01) circ. 6,343 (98% industry)
Southwest	0	0	Not Applicable	143	11,063	69,387	Semi-annual PRRC newsletter (7/01) circ. 3,800, plus online
Texas	0	0	Not Applicable	692 (1,790 TIPRO)	6,255 (90,556 Outreach)	11,715 (279,660 Outreach)	Qtrly July 01 (circ. 1,138), online plus association newsletters
West Coast	2	100	76 (76%)	300 est.	1,263	11,765	Anniversary newsletter (not this quarter)—CIPA announcements
All Regions 4th Qtr FY01	**31**	**956**	**917 (96%)**	**4,293**			
All Regions FY01	**147**	**6,338**	**5,227 (82%)**	**16,051**	**FY01 versus FY00** **--1% decrease in # of workshops** **--5% increase in attendance** **--24% increase in contacts**		
All Regions FY99	148	6,020	4,923 (82%)	12,980			

While recognizing that there are different tools and approaches to satisfy different needs throughout the country, each of PTTC's regions performs the following core technology transfer functions as a minimum level of effort. These include:

- *Technology workshops*—quarterly or more often (average exceeded monthly during FY01)
- *Problem identification*—now relying primarily on feedback from workshop attendees and contacts
- *Resource centers*—mostly virtual, responding to inquiries and developing products
- *Internet*—basic calendar and technical information, emphasis varies by region
- *Newsletter*—regional newsletter or regular columns/announcements in association newsletters

A. Technology Workshops

Attendance of 6,338 represents a slight increase over FY00 levels. As expected, the regions draw a high percentage of attendees from industry with values ranging from 64% to 96%. Average attendance increased slightly, 43 in FY01 versus 41 in FY00. Of 136 workshops in FY01 where repeat attendance was reported, it averaged 51% (57% overall calculated), ranging from 21 to 74%. Repeat attendance reflects customer satisfaction in that producers are coming back, yet it indicates that PTTC continues to reach more individuals. Repeat attendance is measured as the % of industry attendees that had previously attended a workshop in that region.

B. Problem Identification

Primary sources for industry input regarding the topics of interest in the region are: (1) feedback from workshop participants, (2) trends apparent from inquiries and informal contacts at the resource center, and (3) insights from the PAG. Occasionally, the regions have used surveys. Several regions, including Central Gulf, Midwest, North Midcontinent and Southwest, proactively visit producers to learn their needs. The West Coast Trouble Shooters program provides a unique opportunity to learn what industry's needs are. As the Permian Basin Mentor, Bob Kiker gains key insights on the needs of independents there and across Texas. RLO staff maintains close ties with producer associations in most regions

C. Resource Centers

Resource center operations are the hub from which PTTC generates most of its regional products and services, including: (1) access to information/data, (2) response to inquiries, (3) upstream software demo/training, (4) information products, (5) special purpose databases, and (6) other outreach efforts. Among the regions, three regions could be said to have satellite centers (Midwest with its Michigan outreach through Bill Harrison, Eastern Gulf with its website/outreach with the Mississippi Office of Geology in Jackson, and Texas with its Mentor in the Permian Basin).

1. ***Access to Information/Data***—All resource centers provide access to basic information, data resources and libraries. Information resources are also available through the parent RLO organizations.
2. ***Response to Inquiries***—Industry contacts now average six per region per day. Contact level varies widely among the regions reflecting differences in the regional audiences, differing activity levels among the regions, and differing outreach philosophies among the RLOs. By far the largest percentage of contacts is for calendar/event information, followed by basic oil and gas data/statistics. It is estimated that 10-20% of the inquiries are true technical inquiries that require some research to develop an appropriate response. For these, the time required varies from a couple hours to a couple days. Beyond that level, referrals are made to appropriate consultants. Many of the responses involve connections to other individuals or organizations.
3. ***Upstream Software Demo/Training***—Nearly all regions conduct workshops dealing with various aspects of Internet/data access resources. All resource centers have donated technical software available for demonstration to interested parties. Only the Rocky Mountain Region maintains an extensive software training schedule. There, additional financial support from AAPG, private donors and the Colorado School of Mines makes the software training center viable. Over time, there has been discussion of similar centers in the Appalachian and South Midcontinent regions, but these have not developed to date. Of the remaining regions, about half had some form of software training during FY01, albeit at a lower activity level (one or two workshops per year). Through the University of Oklahoma's Geo Information Systems group, the South Midcontinent Region does offer several data access and mapping workshops each year.
4. ***Information Products***—Selected regions have developed information products to meet industry needs and generate some funds. Among the regions, the Central Gulf Region has been the most successful at product development, most notably the Louisiana Desktop Well Reference (LDWR) CD-ROM of well/lease data. Its success spurred the state agency to make the data available through the Internet. The Region had not planned to update the LDWR, but industry insisted so it was updated and CD-ROMs are provided upon request. The Midwest Region and the Illinois State Geological Survey are developing base and custom mapping products. Longer-term, the core and waterflood databases that the Midwest Region has been compiling may represent a revenue-generating product.
5. ***Special Purpose Databases***—Data access has always been high priority for independent operators. Most regions work hard to provide electronic data access through regional websites. The North Midcontinent and Southwest regions have a particularly strong digital data emphasis, and a Mississippi data

site partially developed with support from the Eastern Gulf Region now makes a large amount of digital data available to industry. In some cases, the regions develop special purpose databases—for example, the previously referenced LDWR CD in Louisiana. Responding to strong industry interest, the Central Gulf Region recently developed another product, a Louisiana seismic permit database, which has been placed online. The Midwest Region continues to expand its Illinois Basin core and waterflood database, and the Michigan outreach center has placed additional databases online. In summer 2001, the Rocky Mountain Region began developing a Data Exchange Network through its website. Purpose is to facilitate the capture and sharing of data "languishing in file rooms and basements." Through the Network, interested buyers/sellers can be more easily connected.

6. ***Other Outreach Efforts***—Beyond responding to inquiries, selected regions implement special outreach programs. It has been noted that the Central Gulf, Midwest, North Midcontinent and Southwest regions make targeted visits to producers throughout their region. In the West Coast, the Trouble Shooters program provides personalized assistance to interested operators. Also in the West Coast, the COMET program, a student education program partially supported with PTTC funds, encourages student internships with independents. In California, power cost reduction projects with the Electric Power Research Institute provide yet another opportunity for focused contact with operators. PTTC's PUMP award, which is beginning at the start of FY02, will enable more proactive outreach in the South Midcontinent and West Coast regions.

North Midcontinent staff support the Kansas CO_2 initiative, working closely with the Tertiary Oil Recovery Project at the University of Kansas and Kinder Morgan. The Central Gulf Region continues to provide modest support for LSU's Downhole Water Sink Consortium. South Midcontinent staff work closely with Oklahoma's Marginal Well Commission supporting their Trade Fairs, and with OU Geo Information Systems helping them promote access to the NRIS database via the Internet. Bob Kiker, the Permian Basin Mentor, has been instrumental in helping the Texas Region connect with producer associations across Texas and he is extremely well networked with professional societies and other technical groups in Midland, Texas.

All RLO Directors are active in professional societies appropriate for their discipline, several at the national/international level. Several RLOs have PTTC exhibits at appropriate regional, and sometimes national, meetings. Often, the exhibits are joint booths with their parent organization.

D. Internet

The regional websites are an evolutionary product continually undergoing refinement and expansion. Traffic levels vary significantly by region, depending upon regional emphasis, data/content and demographics of the regional audience. Overall, current traffic is about 60,000 user sessions per quarter. Seven of 10 regions recorded an increase comparing 4th to 1st Qtr FY01 usage. During 2nd Qtr FY01, PTTC implemented a system-wide enhancement across its website network, enhancing consistency which makes the sites more user friendly. Data is too preliminary to assess the impact on usage, but there has been qualitative feedback from the user audience how much more user friendly the website network is.

Although varying significantly, it is consistent that traffic increases when content (primarily data) of interest is added. Three regions draw significantly higher traffic—North Midcontinent, Southwest, and Texas. A strong digital data emphasis is the common denominator for the North Midcontinent and Southwest regions, while Texas statistics reflect the large audience in Texas. It is significant that the Midwest Region, which has a sparse small independent audience, draws more than 5,000 user sessions per month, plus additional visitors to the Michigan satellite website.

E. Newsletters

Despite the digital revolution, PTTC recognizes that a good portion of its audience still relies on printed material, so a newsletter function is still considered a core technology transfer function that each region must fulfill, through either a regional newsletter or regular columns/announcements in association newsletters. Eight

of 10 regions have a printed newsletter, most of which are also placed online. The Appalachian Region relies solely on a lengthy online newsletter, and the Central Gulf Region relies on announcements in *LIOGA News*. Frequency varies from annual (West Coast) to semi-annual (Midwest, North Midcontinent, and Southwest) to quarterly (Appalachian, Eastern Gulf, Rocky Mountain, South Midcontinent, and Texas). Combined distribution of the regional newsletters exceeds 22,000. Several regions promote or advertise regional events in operator association or society newsletters. Funding realities dictate that PTTC tightly control newsletter expenses. Regions periodically review and pare down their mailing lists and distribution via email is encouraged, although few in industry yet choose this option. In the North Midcontinent Region, frequency was reduced from quarterly to semi-annual.

F. Regional Success Anecdotes

The most direct measure of regional success is the percent of respondents who answer "Yes" to the question: *Have you used technology you learned about through PTTC?* Overall, 38% of respondents say "Yes." Percentages by region range from 14 to 49, but most are in the 20 to 43% range.

There are other anecdotes of success, but the quantity is limited by operator's wariness in sharing information and time limitations for personalized follow-up by RLO and HQ staff. Brief examples of success by region are summarized below:

Appalachian—This year particularly, the Appalachian Region has become the center of technology transfer related to the high interest Trenton-Black River play. Workshops have been sold out. Staff has developed expertise and technology connections that are frequently drawn upon by other groups. Trade journals frequently ask for comments, insights or quotes. One example of an independent taking action with Trenton –Black River information has been documented.

Central Gulf—Documented impact occurs mainly where PTTC funds support other efforts within LSU, a prime example being the Downhole Water Sink (DWS) Consortium. Schlumberger, which has implemented DWS technology in Venezuela, is seeking a cooperative agreement with LSU for worldwide licensure. The DWS group has signed a cooperative agreement with Chevron to implement DWS technology in the region. TMR Exploration Inc. has contracted with LSU's Petroleum Engineering Department and the Basin Research Section of the Louisiana Geological Survey for a geological/engineering study of the Wilcox in the Livingstone Field. Plans are to present results as a case study in future PTTC workshop activity. LSU staff coordinated a case study for *World Oil* as part of PTTC's *Petroleum Technology Digest*.

Eastern Gulf—The geological community relies heavily on regional workshops to present leading-edge geological concepts that quickly spread among the geological community. A cooperative effort begun with the Mississippi State Board of Registered Professional Geologists enables geologists to earn required CEU credits. As a follow-on to discussions during workshops, some operators have submitted successful R&D proposals to DOE, often partnering with the University of Alabama. Extensive geological information now online through the Mississippi satellite would not be there without PTTC's funding assistance.

Midwest—Only small amounts of PTTC funding have spawned significant outreach to Michigan operators in the form of at least a couple of workshops per year, plus development of a heavily data-oriented website. Continuing the data orientation, Illinois Basin staff are building an extensive database of core and water flood data, plus providing a standard and customized mapping service. A PUMP II award received by the Illinois Geological Survey for an enhanced database of Illinois Basin reservoirs will augment future regional efforts. Staff worked with industry documenting an Illinois Basin 3-D seismic case study in *World Oil* as part of PTTC's *Petroleum Technology Digest*. The operator implemented the project using knowledge gained through an earlier PTTC workshop. For technologies not widely used in the Illinois Basin, staff is focusing on bringing speakers from other regions where the technologies are being successfully used.

North Midcontinent—Success is measured by operator's willingness to share information about high interest topics, which include coalbed methane operations, gel polymer applications using larger treatments, small scale 3-D seismic surveys for locating small Arbuckle highs, and Arbuckle stimulation using solid propellant

technology. Further work enhancing knowledge in these areas was incorporated in PTTC's unsuccessful PUMP II proposal. Through website support and the Kansas Geological Survey, the region continues to make vast amounts of basic O&G data available online. In recent years, technical programs have been strong enough to draw attendees from multiple states.

Rocky Mountain—Based on positive experiences, other regional groups consider the Rocky Mountain Region as a good partner, so PTTC co-sponsors numerous events. In one way or another, the regional program becomes involved in nearly every event of technical significance in the Denver area. Not surprisingly for technology workshops, there is a strong orientation towards gas-related topics. The software training program continues strong with 14 of 27 workshops during FY01 being software-related. Staff began developing a Data Exchange Network during the summer of FY01. A logical extension to a case study layer was planned as part of PTTC's unsuccessful PUMP II proposal.

South Midcontinent—The most direct indicator of the South Midcontinent Region's success is the degree of leverage obtained through much greater than required contributions from the Oklahoma Geological Survey (OGS) and cooperative efforts with OU's Geo Information Systems and Oklahoma's Marginal Well Commission. The combined resources drew nearly 1,800 attendees (28% of PTTC's total attendance during FY01) to more than 50 events. OGS's effort remains strongly play-oriented, OU's Geo Information Systems concentrates on data access and mapping, and the Marginal Well Commission focuses on practical operations topics.

Southwest—Key indicators of the Southwest Region's success are: (1) the abundant O&G data placed online, (2) the region's ability to develop, through New Mexico Tech's Petroleum Recovery Research Center (PRRC), work efforts based on problems defined by operators, and (3) gas-oriented workshops highly lauded by operators as presenting "new" information. There is direct evidence that one operator changed his modus operandi as a result of newfound knowledge. PRRC has formed a corrosion and water study project addressing needs in both northwest and southeast New Mexico, and PRRC received a PUMP II award for a project addressing corrosion and water management issues.

Texas—With the assistance of Mentor Bob Kiker, the RLO is more effectively connecting with the various producer associations across the state. Half-day mini-workshops, such as one on wellbore management, entice industry to share their experience. The wellbore management workshop spawned future plans for an additional workshop in Texas, and one in New Mexico with the Southwest Region. Insights have also been featured in one of PTTC's columns. Outreach efforts have spawned several leads for case studies for PTTC's *Petroleum Technology Digest*. Last but not least, the Bureau of Economic Geology, The University of Texas at Austin, received a PUMP II award, in conjunction with the New Mexico Bureau of Mines and Minerals, to develop a "play portfolio" of major oil reservoirs in the Permian Basin, results of which will be partially spread through the regional program.

West Coast—Key indicators of the West Coast Region's success are: (1) leverage obtained through an EPRI-PEAC electrical cost reduction study, (2) continued one-on-one interaction with producers through the Trouble Shooters program, and (3) a week-long series of events in Alaska focusing on coalbed methane and shallow gas reservoirs. As in prior years, staff have adapted quickly to crisis needs, holding a workshop in March 2001 on the "Energy Crisis and Solutions for California Producers." Operators, some outside the PAG, continue to be actively involved in the regional Program Committee and PAG members are frequently involved in regional workshops as speakers or moderators. California's Energy Crisis precluded getting additional funding from the California Energy Commission, but the PAG is working closely with the California Independent Petroleum Association and state legislators to restore state funding.

G. Planning and Managing Each Regional Program

PAGs provide key input and direction for regional programs. Within the constraints of maintaining the core technology transfer functions, considerable flexibility is allowed the PAGs/RLOs to accomplish the regional program. PAGs provide guidance on strategic redirections, if needed, to better serve the regional audience and they approve the general topics for most of the workshops planned during the coming year. They, along with the

RLO Directors, determine relative emphasis of different elements of the PTTC program. HQ staff interacts extensively with both the PAGs and the RLO Directors during the annual planning process. During the year, HQ interactions are primarily with the RLO Directors. It is HQ responsibility to see that regional activity during the year remains within the loosely defined boundaries of the annual plan. Regional PAGs typically meet three times per year with some occurring via conference call. One of those meetings occurs in the August time frame when the PAGs guide and approve the region's annual plan and budget. PAG approval is subject to Board confirmation.

Staffing approaches vary by region. RLO Director roles vary from a managerial role to intimate involvement in day-to-day details. Some regions spread the PTTC workload among several staff part-time, while others accomplish the work with only a few dedicated people. Both approaches have proven effective. Regional responsibilities include having to submit to HQ on a timely basis the required reports, invoices, workshop notebooks, and other information and deliverables. Financial management requires discipline, and with inevitable interruptions in the flow of DOE funds, flexibility. RLOs must maintain some reserve, and to maintain the activity levels of recent years, may be required to make contributions beyond contractual requirements. The resolution of cash flow and related issues is truly an ongoing cooperative effort between the RLOs, HQ, and DOE.

Appendix A

PTTC's National Organizational Milestones

1993

- November-PTTC incorporated as national, not-for-profit organization.
- November-Founding Board of Directors meets (New Orleans, LA). Jim Russell voted Chair, Gene Ames, Jr. as Vice Chair, and Deborah Rowell as Executive Director.
- December-Initial meetings of Producer Advisory Groups (PAGs).

1994

- January-Phase I funding from DOE/BDM begins.
- January-All ten PAGs formed, Chair and Vice Chair elected in each region.
- February-First meeting of Permanent Board of Directors (Washington, DC). Same officers elected as by Founding Board.
- March-Headquarters staff make visits to potential Regional Lead Organizations (RLOs).
- March-Board adopts bylaws, elects Nominating Committee and members of Management and Budget (M&B) Committee. First M&B meeting held. (Dallas, TX).
- April-First meeting of RLO Directors (Tulsa, OK).
- May-First PTTC technical session at IPAA meeting (San Francisco, CA).
- May-Office space obtained for national PTTC Headquarters (HQ) – Separate from IPAA
- June-HQ staff hired.
- July-HQ establishes accounting system and database separate from IPAA.
- August-PTTC participates for first time in DOE oil program contractors review.
- September-PTTC submits 5-year Master Plan to DOE as main Phase I deliverable.
- September-PTTC's first national exhibit at conference - SPE annual meeting
- October-Tax-exempt status approved by IRS.
- November-Board conducts first (annual) strategic planning session (Phoenix, AZ).
- November-Phase II funding from DOE/BDM begins.

1995

- January-First annual audit of HQ financial systems.
- February-First joint meeting of PTTC Board and RLO Directors (Norman, OK). Election of officers (Chris Hall voted Chair and Bob Nance as Vice Chair).
- March-Contract signed with first RLO (North Midcontinent).
- March-First issue of "PTTC Network News" published as national quarterly newsletter.
- April-PTTC participates for first time in DOE natural gas contractors review.
- May-PTTC Board meeting includes discussions with IPAA leaders about lack of industry support for DOE oil and gas technology programs.
- June-National website went online.
- July-One year funding begins from Gas Research Institute for HQ activities.
- July-PTTC Chair Chris Hall leads Washington meeting with DOE officials to confirm industry support for oil and gas technology programs.
- August-RLO staff meet to discuss coordinating PTTC websites (Albuquerque, NM).
- December-HQ ended consulting contract with ICF Resources for technical assistance related to establishing new organization.

1996

- January-PTTC presents preliminary problem identification results to DOE meeting with National Petroleum Council R&D Task Force members (Washington, DC).
- March-Election of officers (Bob Nance voted Chair and Leo Schrider as Vice Chair) (Tuscaloosa, AL).
- March-Problem Identification Report published based on series of workshops.
- April-Executive Director begins monthly conference calls with M&B Committee.
- May-PTTC Chair Bob Nance added as member of IPAA Program Committee.
- June-Board meets in Washington and issues first long-run strategic plan. Conducts first group visits to Capitol Hill.
- July-Contract signed with tenth/final RLO (West Coast).
- July-RLO Directors and HQ staff meet with DOE officials in Morgantown, WV.
- October-HQ expands technical coverage in "PTTC Network News" (from 8 to 16 pages).
- November-Board ratifies updated bylaws. Adds 3 representatives from professional societies.
- November-DOE announces that its new outreach areas will be same as PTTC's 10 regions.
- December-Final regional resource center opened (West Coast).
- December-PTTC wins Honorable Mention award in contest for Organizational Excellence by American Society of Association Executives (ASAE).
- December-RLO Directors meet with DOE Outreach Team Leaders (Washington, DC).

1997

- January-PTTC signs cooperative agreement with AAPG to conduct joint workshops.
- February-RLO staff meet to coordinate training on E&P software donated by industry (Golden, CO)
- April-PTTC Chair Bob Nance gives presentation on industry needs at meeting of President's Committee of Advisors on Science and Technology (Dallas).
- May-PTTC releases "Best of PTTC Workshops" report.
- May-PTTC wins R&D award from National Energy Resources Organization.
- July-Board adopts new policies and procedures for HQ and regions.
- August-RLO Directors meet and ask HQ staff to convey their concerns to the M&B Committee about new policies and procedures (Dallas, TX).
- September-PTTC hosts tour of Los Alamos National Lab for IPAA Governors.
- November-Board adopts "Producer Advisory Group Guidelines".
- November-First national conference- ETEC '97 with IPAA and Cambridge Energy Research Associates (Houston, TX).
- December-PTTC national website named by ASAE as one of the nation's Top 10 Information Clearinghouse websites.

1998

- January-HQ establishes RLO-NET to improve communication with RLOs via Internet.
- February-First marketing brainstorming session with Board/RLO/HQ representatives (Golden, CO).
- May-DOE awards new grant to PTTC extending to April 2003 (replaces BDM contract).
- July-Board adopts new Business Plan with marketing focus.
- August-RLO Directors and HQ staff visit Sandia National Labs.
- September-HQ releases new logo and updated image for stationery, publications, etc.
- October-PTTC's first webcast of a workshop (West Coast).
- November-PTTC holds second national conference ETEC '98 with IPAA (New Orleans).
- November-HQ releases "E&P Software Sampler" on CD-ROM.
- December-Board launches Industry Crisis Action Plan, ratifies new mission statement and adopts "Guidelines for Professional and Ethical Conduct".

1999

- January-PTTC signs agreement with *World Oil* to publish case study digest.
- February-PTTC begins extending RLO subcontracts to April 2003.
- March-Board adopts "Conflict of Interest Policy" and elects officers (Leo Schrider elected as Chair and Clark Southmayd as Vice Chair).
- June-PTTC Chair Leo Schrider speaks at first DOE Oil & Gas Conference (Dallas, TX).
- July-Board meets in Washington, DC. Votes to add one RLO representative to Board.
- August-HQ releases "Solutions from the Field" report and starts adding workshop summaries to website.
- September-Inaugural issue of "Petroleum Technology Digest" released as supplement of *World Oil.*
- November-Deborah Rowell, PTTC's founding Executive Director, announces her intent to resign in June.
- December-Executive Search Committee, chaired by Bob Nance, begins search for new Executive Director.

2000

- January-PTTC signs agreement with Hart Publications to provide a state-of-the-art technology summary in each issue of *PTTC Network News*.
- February-PTTC Chair Leo Schrider and HQ staff meet with DOE in Washington to discuss funding.
- March-PTTC Board and RLO Directors meet jointly in Kansas City.
- April-West Coast region holds first PTTC event in Alaska.
- May-Second issue of semi-annual publication, "Petroleum Technology Digest" released with *World Oil.*
- June-Don Duttlinger selected as next PTTC Executive Director (effective July 1, 2000).
- November-Board approves strategic relocation of PTTC HQ to Houston after 7 years in Washington.
- December-Move of HQ Office to Houston completed.

2001

- January-PTTC begins monthly column "Tech Connections" with *The American Oil & Gas Reporter.*
- February-New National and Regional website design released with emphasis on key successful features and strong networking link.
- March-Clark Southmayd of Oneok Resources Company is elected new Chairman and Jim Bruning named Vice Chair of PTTC National Board during meeting in Washington, DC.
- March-PTTC Board and RLO Directors meet jointly in Washington, DC.
- Summer/fall-PTTC co-sponsors "Optimized Horizontal Drilling" workshop series.
- October-DOE and PTTC conduct a Traveling Workshop series planned at eight locations across the nation highlighting DOE's field-oriented R&D projects for independents.

Appendix B

SUMMARY OF PTTC REGIONAL ACTIVITY

(4th QUARTER—FY01)

Region	Workshops			Industry Contacts	Website (mo. avg.)		Newsletter Function
	No.	Attend.	From E&P Industry (%)		User Session	Page Views	
Appalachian	3	191	181 (95%)	143	2,366	6,561	Online newsletter (none this quarter)
Central Gulf	1	21	20 (95%)	169	3,038	10,637	*LIOGA News* (July and Sep 2001)—circ. 800
Eastern Gulf	1	30	24 (80%)	162	1,853	3,542	Quarterly Newsletter –circ. 700 (95% ind.) Sep 2001
Midwest	1	22	15 (68%)	411	5,222	10,541	Semi-annual—Sep 2001 Circ. 2700 (98% industry)
N. Midcontinent	2	115	106 (92%)	685	22,854	111,214	Semiannual—Aug 2001 Circ. 4838 (80% industry)
Rocky Mountain	5	216	189 (88%)	846	2,758	10,722	Quarterly Newsletter – (8/01) circ. 2035 (95% industry, 3% electronic)
S. Midcontinent	16	351	306 (87%)	742	2,246	Not Avail.	Quarterly Newsletter – (9/01) circ. 6343 (98% ind)
Southwest	0	0	0	143	11,063	69,387	Semi-annual PRRC (7/01 circ. 3800), mo. on-line
Texas	0	0	0	692 (1,790 TIPRO)	6,255 (90,556 Outreach)	11,715 (279,660 Outreach)	Assoc. newsletters (6200 combined). Qtrly July 01 (circ. 1138) 90% industry
West Coast	2	100	76 (76%)	300 est.	1,263	11,765	Anniversary newsletter (12/00) circ. 4000 plus announcements in CIPA
All Regions 4th Qtr FY01	**31**	**956**	**917**	**4,293**			
All Regions FY01	**147**	**6,338**	**5,227**	**16,051**	**FY01 versus FY00** **-- 1 % decrease in # of workshops** **-- 5 % increase in attendance** **-- 24 % increase in contacts**		
All Regions FY00	**148**	**6,020**	**4,923**	**12,980**			

Repeat Attendance at Workshops: Of 136 workshops during FY01 where repeat attendance was reported, the calculated average was 51%, or 57% calculated aggregating attendance. (Measured as % of industry attendees that had previously attended a workshop in that region).

PTTC Appalachian Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (11 events)			**478**	**414 (87%)**	
New Methods for Acquiring Permeability Data from Appalachian Basin Reservoir Rocks	Morgantown, WV	10/11/00	11	3 (27%)	100%
Nuts & Bolts of Digital Geologic Analysis	Akron, OH	10/25/00	37	25 (68%)	92%
Advanced Exploitation Technology for Managers	Morgantown, WV	12/13/00	26	15 (58%)	60%
Reconnaissance to the Reservoir (GeoGraphix trng)	Morgantown, WV	4/30/01	60	60 (100%)	72%
Trenton-Black River Exploration & Production	Morgantown, WV	5/01/01	165	151 (92%)	64%
Trenton-Black River (core workshop)	Morgantown, WV	8/06/01	48	45 (94%)	
Trenton-Black River Exploration & Production	Morgantown, WV	8/07/01	119	112 (94%)	53%
Coalbed Methane Short Course (IGT, WVU)	Morgantown, WV	8/13-15/01	24	24 (100%)	
Total FY01 Attendance (8 events)			**490**	**435 (89%)**	
Case Study of an Upper Devonian Sandstone Oil Reservoir	Morgantown, WV	10/23/01	18	11 (61%)	
Keys to Optimized Exploitation in Marginal Areas—Part A (w Maurer Technology Inc.)	Columbus, OH	11/01/01	19	17 (89%)	
Field-Oriented Research Projects -- Independents (DOE)	Washington, PA	11/08/01			
Keys to Optimized Exploitation in Marginal Areas—Part B (w Maurer Technology Inc.)	Washington, PA	12/14/01			

Application: 37% of producers answering the question on the workshop feedback form "Have you used any new technologies gained through PTTC events?" respond "Yes." (Based on data from 21 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter**	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	189	1,720	3,130		The region's high profile in the high interest Trenton-Black River has helped regional outreach considerably. Director Doug Patchen attends numerous meetings throughout the region.
2nd Qtr	250	2,024	3,789	Online (12 pp.)	
3rd Qtr	251	2,352	4,357	Online (19 pp.)	
4th Qtr	143	2,366	6,561		
Total FY01	**833**				

Regional Website: Usage grew steadily through the year, especially in the number of pages viewed. There has been a noticeable increase in the number of files downloaded. Files that are most frequently downloaded include the newsletter and summaries of research by independents funded by DOE. Late in 2000, the server was compromised, but service was not interrupted as files were transferred to another server. In mid-2001, files were again successfully transferred back to the PTTC service.

Workshops/Events: Trenton-Black River events highlighted the calendar during FY01. Demand exceeded space for the May workshop, so a repeat workshop with updated information was also held during August. A half-day core workshop preceded the second workshop. The region coordinated with DOE for Maurer Technology Inc.'s Advanced Exploitation (horizontal drilling) workshop in Morgantown, WV. During 2001, several PTTC regions have hosted this workshop, dividing content into two one-day workshops denoted as Part A and B. Both Part A and B workshops are scheduled during the 1st Qtr FY02. Workshops were held on four other topics. Although total workshop activity was down compared to FY00, record attendance at the Trenton-Black River events resulted in attendance for the year holding steady.

Resource Center: Reported contacts increased significantly this year, many of which were related to the surge in Trenton-Black River interest. Since Morgantown receives few visitors, the resource center is physically staffed only by appointment.

Outreach/Contacts/Newsletter: Beyond the outreach that occurs during workshops, Doug Patchen relies upon interacting with industry at producer association and professional society events throughout this multi-state region, covering more than 10 events this year. Participation varies from attending to network to giving a PTTC promotional talk to staffing a PTTC exhibit. Meetings include those associated with his national involvement within AAPG. In his AAPG role, Patchen explored opportunities for jointly conducting lower cost, one-day versions of selected AAPG short courses. Ultimately, AAPG decided not to officially participate but gave consent for PTTC to communicate directly with instructors. Patchen also assisted AAPG in developing the invitee list for the "AAPG President's Summit on National Energy Policy," which was held in Washington, D.C. during April. He played a similar role in helping DOE identify key individuals interested in gas hydrates research. He also participated in a Metrics Team meeting involving PTTC and DOE in Morgantown.

Problem Identification: Two primary tools are used for problem identification, networking at regional events and feedback from workshop participants. Although considered, a separate problem identification workshop was not held this year. Problem identification activities are incorporated within WVU's PUMP II project, which is starting early in FY02.

Follow-Up: There are definite indications that some Trenton-Black River workshop participants are taking action with insights they receive. Bill Goodwin, a PAG member with the Tennessee Oil and Gas Association, has shared how insights and excitement from the May workshop led he and a business partner to develop plans for deepening five wells in eastern Tennessee to the Trenton. If successful, there are many other deepening candidates already in their sights.

Case Studies: None were reported this year, however, staff with the West Virginia Geological Survey did develop a detailed case study of an Upper Devonian Sandstone oil reservoir that will be the focus of an October 2001 workshop.

PTTC Central Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (4 events)			**169**	**131 (78%)**	
Gulf Coast Coalbed Methane Potential (AAPG, Eastern Gulf & Texas Regions, La. Geo. Survey)	Houston, TX	10/28/00	20	18 (90%)	NA
Use and Misuse of Horizontal Wells (SPE)	Lafayette, LA	11/28/00	56	53 (95%)	NA
Developments in Well Stimulation and Slimhole Technology	Lafayette, LA	12/5/00	27	27 (100%)	3%
Drilling Optimization and Completion Technologies	Shreveport, LA	2/20/01	26	18 (69%)	22%
Optimized Horizontal Well Technology (Eastern Gulf, by Maurer Technology Inc.)	Jackson, MS	4/03/01		Reported by Eastern Gulf	
Managing Louisiana's Gas Resources	Baton Rouge, LA	5/09/01	22	14 (64%)	57%
DWS Production Design (SPE)	New Orleans, LA	5/24/01	41	39 (95%)	
Advances in Wireline Logging Technology	Shreveport, LA	9/13/01	21	20 (95%)	43%
Total FY01 Attendance (7 events, plus one with E. Gulf)			**213**	**189 (89%)**	
Field-Oriented Research Projects for Independents (w DOE and Central Gulf)	Jackson, MS	10/30/01		Will be reported by Eastern Gulf	
Louisiana Energy & The Environment (ASES)	Baton Rouge, LA	11/14/01			
Essentials of Subsurface Mapping	Lafayette, LA	1/23/02			
Field-Oriented Research Projects for Independents (w DOE and Central Gulf)	Tyler, TX	2/06/02		Will be reported by Texas	
Optimized Horizontal Well Technology, Parts A&B (Maurer Technology Inc. and Eastern Gulf Region)	New Orleans, LA	3/19-20/02			
Reservoir Characterization Technology	Shreveport, LA	April 02			

Application: 15% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 9 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 800 *LIOGA News*)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	142	2,318	7,564		Region effectively leverages other LSU initiatives. Several new approaches are being tried to stimulate more industry participation.
2nd Qtr	169	2,126	9,531	*Jan & Mar 2001*	
3rd Qtr	149	2,710	8,887		
4th Qtr	169	3,038	10,637	*Jul & Sep 2001*	
Total FY01	**629**				

Regional Website: Usage increased measurably through the year, particularly in the last half. Although other factors could be responsible, timing of the increase coincides with the system-wide enhancements PTTC made to its website network. Website effort consists mainly of routine maintenance.

Workshops/Events: Workshop activity and total attendance increased measurably during the year, including cooperative events with the Eastern Gulf and Texas regions. Topics primarily covered engineering and operations issues, although there were workshops on coalbed methane and advanced logging. One workshop dealt specifically with managing Louisiana's gas resources. To stimulate higher attendance, the region is exploring extended luncheon talks as an alternative delivery technique.

Resource Center: Since the Louisiana Department of Natural Resources (LA DNR) is now making O&G data available online through its SONRIS system, the region originally had not planned to update the Louisiana Desktop Well Reference (LDWR) CD-ROM. However, industry requested an update since some aspects of the

SONRIS system are not considered user friendly. Accordingly, staff updated the LDWR and are distributing it on demand. Staff is working with LA DNR to modify their system. Don Goddard developed and published the "Quick Look Handbook: Onshore Louisiana Petroleum Producing Formations" with other funding and is distributing it through PTTC. Based on reception, a second printing is planned.

Outreach/Contacts/Newsletter: About one-third of reported contacts are PTTC-initiated, reflecting a focused effort on expanding the regional audience. Coordinator Don Goddard periodically visits operators to gather information on needs and acquaint them with PTTC and upcoming activities. The region relies solely on articles or workshop announcements in the *LIOGA News* for the newsletter function. PTTC funds partially support outreach from LSU's Downhole Water Sink (DWS) Consortium. Many visits, talks, and meetings with operators occurred during the year. Increasing field applications and licensing agreements confirm effectiveness of the outreach.

Problem Identification: Industry needs and directions for future activities are determined through PAG input, interaction with workshop attendees and personal contacts. One area of emerging interest in northwest Louisiana is stimulating tight gas wells.

Follow-Up: Through the DWS program, a modified well completion based on log analysis was presented to the Helis Company in New Orleans and the well completed. Schlumberger, which has implemented DWS technology in Venezuela, is seeking a cooperative agreement with LSU for worldwide licensure. The DWS group has signed a cooperative agreement with Chevron to implement DWS technology in the region.

Case Studies: Coordinator Don Goddard solicited independents in the Shreveport area about having an integrated field study done by LSU, with the understanding that results would be shared through PTTC. TMR Exploration, Inc. contracted a field study of the Livingston Field (Wilcox) with LSU's Petroleum Engineering Department and the Basin Research Section of the Louisiana Geological Survey. By year-end, the geological phase had been completed and engineering work was on schedule to be completed early in FY02. Based on results of the study, horizontal infill drilling or secondary recovery projects may be recommended. Results will be shared as a case study in future PTTC workshops.

PTTC Eastern Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (11 events)			**379**	**304 (80 %)**	
Carbonate Reservoirs (w AAPG & others)	El Paso, TX	10/2-3/00	65	34 (52%)	3%
Coalbed Methane Potential of the Gulf Coast (AAPG, C. Gulf/Texas Regions, La. Geol. Survey)	Houston, TX	10/28/00	Reported by Central Gulf		
Underdeveloped Reservoirs	Jackson, MS	11/8/00	49	44 (90%)	70%
Geophysical Logging Technologies	Jackson, MS	12/6/00	70	33 (47%)	12%
SMT Kingdom Suite	Raymond, MS	1/29/01	17	11 (65%)	64%
Well Log Interpretation: Basic to Advanced (Mississippi State Board of Registered Prof. Geol.)	Jackson, MS	3/07/01	63	34 (54%)	50%
Optimized Horizontal Well Technology (Central Gulf, by Maurer Technology Inc.)	Jackson, MS	4/03/01	46	38 (83%)	68%
Natural Fracture and Reservoir Quality Prediction and Analysis	Jackson, MS	4/24/01	28	21 (75%)	86%
Essentials of Subsurface Mapping (w Mississippi State Board of Registered Professional Geologists)	Jackson, MS	5/23/01	47	26 (55%)	69%
Smackover Microbial Reef Detection and Characterization (DOE)	Jackson, MS	7/18/01	30	24 (80%)	67%
Total FY01 Attendance (9 events, plus with C. Gulf)			**415**	**265 (64 %)**	
Field-Oriented Research Projects for Independents (DOE, Central Gulf Region)	Jackson, MS	10/30/01			
Open Hole Log Interpretation (w Mississippi State Board of Registered Professional Geologists)	Jackson, MS	11/28/01			
Advanced Seismic Applications	Jackson, MS	Feb 02			
Optimized Horizontal Well Technology, Parts A&B (Maurer Technology Inc. and Central Gulf Region)	New Orleans, LA	3/19-20/02		Will be reported by Central Gulf	

Application: 30% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 14 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 700 with about 95% from industry)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	168	2,704	5,737		Region caters to a primarily geological-oriented audience. Cooperative effort with Mississippi State Board of Registered Professional Geologists is serving CEU needs of audience.
2nd Qtr	157	2,492	5,478	Jan & Mar 2001	
3rd Qtr	166	1,729	3,546	June 2001	
4th Qtr	162	1,853	3,542	September 2001	
Total FY01	**653**				

Regional Website: Historically, usage has steadily increased. Redesign associated with PTTC's system-wide enhancement may have affected user sessions in the latter half of FY01, but consistent growth from current levels is anticipated. Staff focuses on placing workshop summaries, presentations or regional reports online. Ernie Mancini was directly involved in AAPG's Hedberg Research Conference (August in Dallas), serving as editor of the program/abstracts. These abstracts have been placed online.

With partial funding support from the region, the Mississippi Office of Geology has developed and maintains a geological-oriented website for Mississippi data. Parameters reflecting usage are downloads of well folders, field folders, production maps, and searches.

Geological-Oriented Website Maintained by Mississippi Office of Geology				
	# of well folders	**# of field folders**	**# of searches**	**# of production maps**
1st Qtr	4,349	662		465
2nd Qtr	5,112	598		1,702
3rd Qtr	6,728		5,770	3,512
4th Qtr	3,375		3,656	2,812

Workshops/Events: Total workshop activity and attendance was on par with FY00 levels. In a new initiative this year, two of the workshops were co-sponsored by the Mississippi State Board of Registered Professional Geologists. In this effort, CEU credits are important to the audience. Primary geological-oriented topics this year included carbonate reservoirs, underdeveloped reservoirs, natural fracture and reservoir quality prediction, subsurface mapping and Smackover microbial reef detection and characterization (DOE-funded research). Logging technologies, coalbed methane and horizontal well technologies served all disciplines. One software workshop on seismic interpretation was held.

Resource Center: The region has the main resource center in Tuscaloosa and, through the Mississippi Office of Geology, maintains a satellite center in Jackson. Like most PTTC regions, the resource centers receive few personal visitors, instead relying on phone/email.

Outreach/Contacts/Newsletter: The region averages 2 to 3 contacts per day. Although lower than many regions, it is still significant. The two-page newsletter, which features workshop announcements and technology insights from prior workshops, is issued on a regular quarterly frequency and placed online. Ernie Mancini is active nationally and internationally in the geological community and he effectively leverages these contacts for PTTC purposes.

Problem Identification: The region relies on PAG input, feedback from workshop participants and contacts to determine appropriate topics for upcoming workshops. Typically, a few minutes of each workshop are devoted to getting participant input concerning future topics.

Follow-Up: University of Alabama staff is working with independents on seismic attributes of carbonates.

Case Studies: DOE- and industry-funded R&D project results are presented through the regional program. This year, the Appleton Field case study was posted on the website. Researchers are also working with an independent on the Womack Hill Field. Some of the abstracts from AAPG's Hedberg Research Conference relate to case studies.

PTTC Midwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (5 events)			**180**	**138 (77%)**	
New Albany Shale/Illinois Basin Data CD-ROM (w Indiana Geological Survey & GTI)	Bloomington, IN	10/17/00	41	29 (71%)	31%
New Research on Michigan Basin Carbonate Reservoirs (w Michigan O&G Association)	Mt. Pleasant, MI	10/19/00	30	26 (87%)	65%
Cost-Effective Maintenance and Surface Remediation Strategies for Producers	Grayville, IL	11/16/00	36	25 (69%)	48%
Cypress Sandstone Play-Based Workshop (Illinois O&G Association)	Evansville, IN	3/7/01	34	33 (97%)	33%
Keys for Choosing Horizontal Drilling Opportunities (by Maurer Technology Inc.)	Lansing, MI	3/28/01	63	51 (81%)	38%
Keys for Choosing Horizontal Drilling Opportunities (by Maurer Technology Inc.)	Grayville, IL	3/30/01	28	28 (100%)	74%
Improving Recovery from Old Fields (in conjunction w AAPG Eastern Section meeting)	Kalamazoo, MI	9/26/01	22	15 (68%)	100%
Total FY01 Attendance (7 events)			**254**	**207 (81%)**	
Video Seminar—Marginal Wells	Mt. Vernon, IL	10/22/01			
Video Seminar—Marginal Wells	Grayville, IL	10/23/01			
Field-Oriented Research Projects for Indep. (DOE)	Evansville, IN	11/01/01			
Benoist Sandstone Play (ISGS)	Mt. Vernon, IL	11/16/01			
Keys to Optimized Exploitation (Maurer Tech. Inc.)	Lansing, MI	12/10/01			
Keys to Optimized Exploitation (Maurer Tech. Inc.)	Grayville, IL	12/12/01			
Desktop Applications for Petroleum Professional	Illinois	Feb 02			
Field-Oriented Research Projects for Indep. (DOE)	Michigan	Feb 02			

Application: 42% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 9 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 2,700 w about 98% from industry)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	291	3,361	7,100		Online data draws high website traffic for a mature producing area. Michigan served through WMU satellite. Steve Gustison came on board as Coordinator during the year.
2nd Qtr	290	3,786	7,150	Jan 2001	
3rd Qtr	249	3,707	8,087		
4th Qtr	411	5,222	10,541	Sep 2001	
Total FY01	**1241**				

Regional Website: Website usage reflects only the primary Illinois Basin website since similar tracking software cannot be used on the Michigan satellite's server. Both websites make abundant O&G data accessible, which is primarily responsible for steadily increasing usage—as much as 30% per quarter. Early indications are that the system-wide website enhancement effort may also be increasing usage. Michigan's traffic is focused on databases, technical summaries, and local research efforts, as opposed to national trends and information.

Workshops/Events: Seven workshops were held at locations in Illinois, Indiana and Michigan. Activity was up over one-third from FY00 levels. Play-based workshops on the New Albany Shale in the Illinois Basin and the

Cypress Sandstone were delivered. Workshops in Michigan addressed carbonate reservoirs (two DOE-funded projects) and improving recovery in old fields (partially related to a DOE-funded project). The region also hosted Maurer Technology Inc.'s Optimized Horizontal Drilling workshop in both Michigan and Illinois. An Illinois workshop exposed producers to cost-effective maintenance and surface remediation topics. At PAG direction, there is an intentional lull in workshop activity during the summer months when operators are busy with fieldwork.

Resource Center: The Michigan satellite is focused on expanding the O&G data collection for industry, ultimately placing much of received data online. Geologist David Matthews has agreed to donate his data collection (gamma ray logs and research articles) covering the Antrim play to the Michigan satellite. The Michigan Center has contacted all universities and state governmental agencies about consolidating O&G information, and is receiving several responses. Central Michigan University provided a large cuttings database, and a hard copy of a core inventory was received from Wayne State University. Information has also been received from the Michigan Department of Natural Resources. Bill and Linda Harrison are working with Western Michigan University and DOE to obtain funding for an expanded Michigan Basin Core Laboratory. In Illinois, interns and summer-hire students are employed to expand the well information database. Steve Gustison has developed ArcView routines for quickly evaluating and sorting information, allowing more automation and improved mapping. The region provides both standardized and customized mapping services.

Outreach/Contacts/Newsletter: Contacts continued to average over four per day. The increase observed in the 4th Qtr primarily related to interactions associated with the Eastern Section AAPG meeting in Kalamazoo, MI. Bill Harrison chaired this event, which incorporated a PTTC workshop. The region also exhibited at the Illinois Oil and Gas Association meeting, Staff in Illinois and Michigan regularly attends professional society and producer association meetings. Illinois Basin staff makes personal visits to selected producers.

Problem Identification: The region relies on PAG input, feedback from workshop participants and contacts to guide regional priorities for each year's activities. A common thread in both the Illinois and Michigan basins has been the demand for more O&G data, which is being effectively served through the websites. General feedback indicates interest in advances in seismic technology, mapping software, and coalbed methane and unconventional gas reservoirs. Michigan operators continue to be interested in less costly, more efficient techniques for data analysis, as well as field studies with pre- and post-drilling results.

Follow-Up: Participants at the October 2000 workshop in Michigan on carbonate reservoirs indicated that they had used geochemical surveys and iodine sampling, high angle and horizontal drilling, and Michigan well data as a result of knowledge gained through PTTC. An Illinois Basin producer also has noted that he developed an Aux Vases oilfield in southern Illinois based on concepts presented at an Aux Vases workshop years earlier. A small scale 3-D seismic survey, documented as a case study (see below), also evolved from a prior PTTC workshop.

Case Studies: Steve Gustison worked with Shakespeare Oil Co. helping them document their use of a small-scale 3-D seismic survey for optimally locating a new Trenton limestone well. The case study appeared in *World Oil* in September 2001 as part of PTTC's *Petroleum Technology Digest*. Jim Wood with Michigan Tech also coordinated with Headquarters regarding a case study about use of surface geochemistry in a DOE-funded project in Michigan. PTTC's ad hoc review committee considered the information too preliminary for publishing.

PTTC North Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (10 events)			**532**	**445 (84 %)**	
Gelled Polymers & Their Applications	Wichita, KS	12/6/00	52	42 (81%)	62%
Practical Electrical Power Cost Reduction (SPE)	Wichita, KS	3/14/01	36	32 (89%)	58%
14th Oil Recovery Conference (TORP)	Wichita, KS	3/14-15/01	105	76 (72%)	63%
Optimized Exploitation and Horizontal Well Technology for Independent Operators (by KGS, Maurer Technology Inc.)	Wichita, KS	5/9-10/01	36	27 (75%)	53%
Cost-Effective Maintenance and Surface Remediation for Oil and Gas Producers (w Great Plains/Rocky Mountains Hazardous Substance Research Center, KIOGA, EKOGA)	Manhattan, KS	5/24/01	44	35 (79%)	39%
Digital Subsurface Mapping (Using GeoPlus PETRA) (KGS)	Wichita, KS	6/26/01	15	10 (67%)	54%
Introduction to Gemini (Geo-Engineering Modeling Through Internet Information) (KIOGA)	Wichita, KS	8/20/01	40	36 (90%)	45%
Fundamentals of Coalbed Methane Production (TORP, EKOGA)	Chanute, KS	9/21/01	75	70 (93%)	37%
Total FY01 Attendance (8 events)			**403**	**328 (81 %)**	
Optimized Horizontal Well Technology (Maurer Technology Inc.) Rescheduled from 9/14/01.	Wichita, KS	10/30/01			
Field-Oriented Research Projects for Indep. (DOE)	Wichita, KS	11/29/01			
Improved Oil Recovery Using Integrated Evaluation Techniques	Wichita, KS	Jan 02			
Technology Fair	Wichita, KS	Mar 02			

Application: 37% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 10 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 4838 w about 80% from industry)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	529	15,696	74,973		Through the Kansas Geological Survey, the region maintains a strong online data emphasis. There is a strong operations and engineering emphasis in workshops. Region maintains high level of contacts.
2nd Qtr	724	17,287	69,584	Feb 2001	
3rd Qtr	520	14,428	85,481		
4th Qtr	685	22,854	111,214	Aug 2001	
Total FY01	**2,458**				

Regional Website: Usage remains high and continues to show strong year-to-year growth, being up by more than 50%. Access by commercial domains remains high at 70%. Databases are continuously improved and expanded, and in many cases, search capabilities made easier. Data are now available for more than 400,000 wells in Kansas. For selected fields, comprehensive data is available through the Digital Petroleum Atlas. Staff maintains calendar and other sections, and are experimenting with digital image capture and integrating audio, video and images into a web course focused on Digital Subsurface Mapping. The Kansas GEMINI project (DOE, Kansas Geological Survey, and industry) is developing an interactive integrated website system for real-time geo-engineering. When fully developed, GEMINI will allow users to retrieve databases, upload information, and run public domain, web-based software interactively.

Workshops/Events: Workshop activity and total attendance were down slightly from FY00 levels. The 14th Oil Recovery Conference organized by the Tertiary Oil Recovery Project (TORP) at KU was a major cooperative event. A workshop held in conjunction with KIOGA's annual meeting featured the GEMINI project. At the EKOGA conference, Dwayne McCune focused on the data that should be collected during the drilling, completion and producing periods of a coalbed methane operation. Examples of how to use the data for problem identification and remediation, well spacing consideration, and reserve and economic analysis were presented. The Optimized Exploitation with Horizontal Technology" workshop conducted by Maurer Technologies Inc. during May was expanded to include an extra half-day session featuring Kansas case studies. The subsurface mapping workshop was a hands-on software workshop featuring GeoPlus PETRA, a software package in high demand by industry.

Resource Center: Leveraging earlier work, Dwayne McCune, using TORP and KU funding, developed a coalbed methane manual being offered through PTTC and other KU entities. Staff provides technical support to the DOE-funded project exploring CO_2 miscible flooding in the Lansing-Kansas City reservoir group in the central Kansas uplift. TORP and PTTC staff continues to coordinate with gel polymer vendors regarding a gel polymer database.

Outreach/Contacts/Newsletter: The region consistently has one of the highest contact levels among the regions, averaging nearly 10 contacts per day. Inquiries cover a broad spectrum of topics, including: coalbed methane, field-specific topics, well integrity, gel polymers and improved oil recovery, stimulation and environmental. Through the year, staff made targeted visits to operators exploring problems and technology solutions that appear to be working. Staff attended both the KIOGA (Wichita) and EKOGA (Chanute) meetings. The region exhibited at the TORP conference in March. Rodney Reynolds represented the RLO Directors at a Metrics Team Meeting in Morgantown, WV and at PTTC's July Board meeting in Long Beach. To reduce costs, the region decreased its newsletter frequency from quarterly to bi-annual, and staff is striving to develop an email database to potentially reduce distribution costs.

Problem Identification: Industry needs and directions for future activities are determined through PAG input, feedback from workshop participants, and contacts. Relative emphases of different elements of the program also are influenced by this input. Feedback early in the year indicated interest in waterflooding, hydraulic fracturing, gel polymers, polymers for gas wells, EPA assessments, new logging techniques, horizontal drilling, downhole injection, and methods of reducing lifting costs in carbonate reservoirs.

Follow-up: Staff identified three areas where new approaches are delivering promising results: (1) Arbuckle stimulation using solid propellants, (2) improved success with larger gel polymer treatments, and (3) using 3-D seismic for locating small Arbuckle highs. Work addressing these topics was incorporated within PTTC's unsuccessful PUMP II proposal. As an outgrowth of the March workshop on power cost reduction, staff is supporting Wichita State University's Center for Energy Studies in various field tests of their Beam Pump Energy Audit Tool.

Case Studies: Field results using solid propellant technologies for stimulating Arbuckle producers were shared through the newsletter. Plans are in place to further share information through other media. Initial contacts have been made regarding future case studies with operators reportedly having success using larger gel polymer treatments. In the December 2000 gel polymer workshop, Halliburton shared cost-benefit information from their Permian Basin treatment database. Considering all costs (diagnostics, analysis and treatment), the analysis indicated $70 of value for every $1 spent.

PTTC Rocky Mountain Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (26 events)			**1,020**	**815 (80 %)**	
RMAG 2000 Basin-Centered Gas (RMAG/GTI)	Denver, CO	10/6/00	468	419 (90%)	90%
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	10/12-13/00	15	10 (67%)	73%
Tensleep Water Shut-off, Seminar & Field Demo (RMOTC, DOE, State of Wyoming)	Casper, WY	10/13/00	7	6 (86%)	57%
GIS Resources for the Petroleum Professional (COGCC, WOGCC)	Denver, CO	10/20/00	22	18 (82%)	68%
Petroleum Potential of the Greybull Sandstone, Crow & Northern Cheyenne Reservations in South-central Montana (MT Bureau of Mines & Geology)	Billings, MT	10/24-25/00	44	30 (68%)	60%
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	11/2-3/00	19	17 (90%)	90%
GeoGraphix GESX Basic Training (AAPG)	Golden, CO	11/16/00	15	14 (93%)	87%
Desktop Applications (Microsoft Office) (AAPG)	Billings, MT	11/17/00	19	19 (100%)	84%
SMT Kingdom Suite (3dPAK, Basic Training)	Ft. Collins, CO	12/7/00	6	0 (0%)	0%
SMT Kingdom Suite (3dPAK, Basic Training)	Denver, CO	12/19/00	6	6 (100%)	83%
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	1/11-12/01	20	16 (80%)	70%
Cross-section Generation Utilizing MJ System's Raster Log Images and DigiRule's CrossLog Suite	Golden, CO	1/19/01	17	16 (94%)	47%
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	2/8-9/01	18	16 (89%)	50%
Petrophysics for the 21st Century	Golden, CO	2/23/01	10	8 (80%)	70%
Desktop Applications (AAPG)	Salt Lake City	3/17/01	8	4 (50%)	0%
New Technology for Handling Water During Production –DOWS (IPAMS, SPE Denver)	Denver, CO	4/6/01	26	24 (92%)	38%
Oil Spill Management: Issues in Production Fields (RMOTC, EPA)	Casper, WY	5/08/01	49	34 (69%)	20%
GeoPlus PETRA Basic Training	Golden, CO	5/10-11/01	20	20 (100%)	50%
Principles of Groundwater Flow and Hydrodynamics-- Rocky Mountain Basins (SPE, MT Geol. Soc.)	Billings, MT	5/17-18/01	20	16 (80%)	80%
Practical Reservoir Characterization for Independents (AAPG)	Denver, CO	6/1&2/01	18	18 (100%)	20%
Desktop Applications (Microsoft Office) for the Geoscience Professional (AAPG)	Golden, CO	6/2/01	20	20 (100%)	50%
Structural & Stratigraphic Interpretation of Borehole Imaging Logs (AAPG)	Golden, CO	6/3/01	18	18 (100%)	20%
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	7/17-18/01	20	20 (100%)	70%
Optimized Horizontal Drilling (Maurer Techn. Inc. and North Dakota Geological Survey)	Dickinson, ND	9/19/01	18	10 (56%)	28%
Optimized Horizontal Drilling (Maurer Techn. Inc., Denver Section, Petroleum Society CIM)	Denver, CO	9/21/01	38	36 (95%)	80%
SMT Kingdom Suite (2D/3D Pak Basic Training)	Golden, CO	9/27-28/01	10	5 (50%)	40%
Coalbed Methane Potential of the Denver (DJ) Basin (w Colorado Geological Survey)	Denver, CO	9/28/01	130	118 (91%)	80%
Total FY01 Attendance (27 events)			**1,081**	**938 (87 %)**	
Structural Traps & Fractured Reservoirs of the Rocky Mountain Region (w RMAG)	Denver, CO	10/01/01			
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	10/4-5/01			
Intro to Monte Carlo Simulation for O&G Industry	Golden, CO	11/02/01			
Field-Oriented Research Projects for Indep. (DOE)	Denver, CO	11/27/01			
Inexpensive, Rapid, Cross-Section Generation Utilizing MJ Systems' Raster Log Images and DigiRule's Crosslog Suite Software (AAPG)	Golden, CO	11/30/01			
Desktop Applications (Microsoft Office) for the Geoscience Professional (AAPG) Excel & Access	Golden, CO	1/18/02			
Desktop Applications (Microsoft Office) for the	Golden, CO	1/25/02			

Geoscience Professional (AAPG) PowerPoint & Graphics					
SMT Kingdom 2d/3dPAK+ (includes EarthPAK) Software Training	Golden, CO	2/6-8/02			
Geoplus PETRA Basic Training (AAPG)	Golden, CO	Feb 02			
Subsurface Fluid Pressures & Their Relation to Oil & Gas Generation, Migration and Accumulation (w Southwest Region)	Durango, CO	Feb 02			
ARIES Software Training	Golden, CO	Mar 02			
GeoGraphix Discovery Training (AAPG)	Denver, CO	Mar 02			

Application: 35% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 50 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 2035 w about 95% from industry)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	511	1,108	3,536	Nov 2000	Region maintains the strongest software training program, plus has an active technology workshop program working cooperatively with many groups. Workshops were held in five states.
2nd Qtr	694	991	3,135	Feb 2001	
3rd Qtr	499	1,804	5,698	May 2001	
4th Qtr	846	2,758	10,722	Aug 2001	
Total FY01	**2,550**				

Regional Website: Historically, there have been broad fluctuations in website traffic. In addition to the system-wide enhancement implemented by PTTC, the region made significant improvements, including an interactive calendar, online registration, newsletter format, and an updated "Guide to the Internet." Case studies are often posted. In mid-year, staff began developing the PTTC Data Exchange Network. This Network will provide a virtual clearing house, bringing together people interested in "data languishing in basements." Petro-Web, a Denver-based company specializing in internet data access and management solutions, contributed programming and computer expertise to develop the Network. PAG member Dave Noel works for PetroWeb. Two companies have agreed to sponsor the page. Contacts continue to be made with parties that are likely to post data (see resource center). Completion is anticipated early in FY02. An agreement was made with the Wyoming Geological Association to provide website maintenance (10 hrs per month for 2 months, followed by 4 hours per month for 10 months) in exchange for advertising. The added website work led to hiring an undergraduate assistant, Misti Williams, for 5 to 10 hours per week.

Workshops/Events: Workshop activity continued at the high levels exhibited in FY00. Twenty-seven workshops, about half software-oriented, were held. Workshops were held in five states—Colorado, Montana, North Dakota, Utah and Wyoming. Even with attendance limited at software workshops, attendance averaged 40 people per workshop. In a major cooperative effort, three events were held in conjunction with AAPG's annual meeting in Denver. Other large cooperative events included RMAG's Basin-Centered Gas Conference (Oct 2000) and Coalbed Methane Potential in the Denver (DJ) Basin (Sep 2001). Two environmental workshops were also held. Maurer Technology's Horizontal Drilling workshop was hosted in North Dakota and Denver.

Resource Center: Most effort focused on data gathering associated with the Data Exchange Network. An agreement was signed with the Wyoming Geological Association to share the cost of scanning 1,600 mudlogs, which will be posted on the exchange. A PhD candidate has also been retained to catalog data offered by CSM's Petroleum Engineering Department.

Outreach/Contacts/Newsletter: Staff consistently averages 500 to 600 contacts per quarter. The increase in contacts during the 4th Qtr reflects activity associated with soliciting attendees for the DOE hearing in Denver. The eight-page newsletter focuses on summarizing case studies or technical presentations perceived to be of

regional interest. Circulation has grown to more than 2,000. Although electronic subscriptions are offered, few individuals opt for electronic subscription. Sandra Mark attends several professional society conferences each year, networking with participants and identifying talks/speakers of interest. The region exhibits at the annual Prospect Fair and TechnoFest in Denver.

Problem Identification: Industry needs and directions for future activities are determined through PAG input, feedback from workshop participants, and contacts. Relative emphases of different elements of the program also are influenced by this input. The Data Exchange Network and the extensive software training program are direct results of regional input.

Follow-Up: Follow-up is conducted informally during breaks at workshops and through contacts. Occasional spontaneous emails from the regional audience attest to impact. Staff has earned a reputation for being a "good partner" in regional technology activities.

Case Studies: Case study information about gel polymer application featured in the RMOTC workshop (Oct 2000) was also published in *World Oil* in PTTC's *Petroleum Technology Digest*. At least a couple of brief case studies are typically found in each newsletter. Staff has also assisted Headquarters in pursuing other Rocky Mountain case studies.

PTTC South Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) industry	
Total FY00 Attendance (42 events)			**1,289**	**1,189 (92 %)**	
Hunton Play (OGS)	Norman, OK	10/17/00	124	103 (83%)	78%
Hunton Play (OGS)	Norman, OK	10/18/00	80	66 (83%)	84%
Arkansas-Oklahoma Coalbed Methane	Ft. Smith, AR	11/08/00	62	62 (100%)	
Asphaltene and Paraffin Control (MWC)	Oklahoma City, OK	11/13/00	33	33 (100%)	
Asphaltene and Paraffin Control (MWC)	Tulsa, OK	11/14/00	101	95 (94%)	43%
Hunton Play (OGS & TGS)	Tulsa, OK	11/28/00	40	37 (93%)	83%
Hunton Play (OGS & OCGS)	Oklahoma City, OK	11/29/00	27	24 (89%)	85%
NRIS/ArcExplorer & ArcView (OU GIS)	Oklahoma City, OK	2/22/01	16	12 (75%)	0%
NRIS/ArcExplorer & ArcView (OU GIS)	Oklahoma City, OK	2/23/01	11	11 (100%)	100%
Becoming a Bonded Operator-OCC Forms (MWC)	Ardmore, OK	2/23/01	2	2 (100%)	0%
Becoming a Bonded Operator-OCC Forms (MWC)	Oklahoma City, OK	3/02/01	49	49 (100%)	39%
Becoming a Bonded Operator-OCC Forms (MWC)	Tulsa, OK	3/15/01	54	53 (98%)	45%
Acquisition of Oil & Gas Properties (MWC)	Ardmore, OK	3/23/01	12	12 (100%)	8%
Oklahoma Coalbed Methane (OGS/OCGS)	Oklahoma City, OK	3/29/01	66	60 (91%)	53%
NRIS/ArcExplorer & ArcView (OU GIS)	Oklahoma City, OK	3/29/01	9	7 (78%)	0%
NRIS/ArcExplorer & ArcView (OU GIS)	Oklahoma City, OK	3/30/01	8	6 (75%)	100%
Acquisition of Oil & Gas Properties (MWC)	Pawhuska, OK	3/30/01	13	8 (62%)	25%
Springer Play (OGS)	Norman, OK	4/04/01	81	71 (88%)	88%
Springer Play (OGS)	Norman, OK	4/05/01	86	73 (85%)	92%
Springer Play Field Trip (OGS)	Ardmore, OK	4/10/01	42	32 (76%)	95%
Springer Play Field Trip (OGS)	Ardmore, OK	4/11/01	25	18 (72%)	92%
Acquisition of Oil & Gas Properties (MWC)	Oklahoma City, OK	4/11/01	36	36 (100%)	66%
Acquisition of Oil & Gas Properties (MWC)	Tulsa, OK	4/20/01	26	22 (85%)	38%
Basic Accounting Principles & Insurance (MWC)	Ardmore, OK	4/27/01	18	18 (100%)	66%
Basic Accounting Principles & Insurance (MWC)	Pawhuska, OK	5/04/01	5	5 (100%)	80%
Revisiting Old/Assessing New Plays in SMC (OGS)	Oklahoma City, OK	5/8&9/01	150	122 (81%)	73%
Mapping O&G Data w Arcview (OU GIS)	Oklahoma City, OK	5/11/01	15	15 (100%)	27%
Hunton Play Field Trip (OGS)	Ada, OK	5/22/01	24	11 (46%)	79%
Hunton Play Field Trip (OGS)	Ada, OK	5/23/01	17	10 (59%)	94%
Basic Accounting Principles & Insurance (MWC)	Oklahoma City, OK	5/25/01	50	50 (100%)	62%
Basic Accounting Principles & Insurance (MWC)	Tulsa, OK	6/01/01	31	31 (100%)	55%
Trade Fair (MWC)	Oklahoma City, OK	6/08/01	Estimated 1000 attendees		
Asphaltenes & Paraffin Problems (MWC)	Ardmore, OK	6/13/01	27	27 (100%)	37%
Mapping O&G Data w Arcview (OU GIS)	Oklahoma City, OK	6/15/01	13	13 (100%)	46%
Springer Play (OGS, OCGS)	Oklahoma City, OK	6/20/01	37	32 (86%)	78%
Springer Play (OGS, TGS)	Tulsa, OK	6/21/01	21	17 (81%)	52%
Legal & Regulatory Issues for O&G (MWC)	Oklahoma City, OK	7/06/01	29	23 (80%)	79%
Underbalanced Drilling (OGS, Maurer Technology)	Norman, OK	7/11/01	58	44 (76%)	69%
Legal & Regulatory Issues for O&G (MWC)	Tulsa, OK	7/13/01	28	26 (93%)	36%
Marketing of Oil & Gas (MWC)	Ardmore, OK	7/20/01	8	8 (100%)	50%
Marketing of Oil & Gas (MWC)	Pawhuska, OK	7/27/01	12	12 (100%)	60%
ArcView Oil and Gas Mapping (OU GIS)	Oklahoma City, OK	7/27/01	9	9 (100%)	22%
Marketing of Oil & Gas (MWC)	Oklahoma City, OK	8/03/01	42	28 (66%)	49%
Marketing of Oil & Gas (MWC)	Tulsa, OK	8/10/01	44	40 (93%)	68%
Well Operations--Engineering and Geology (MWC)	Ardmore, OK	8/17/01	5	5 (100%)	60%
Well Operations--Engineering and Geology (MWC)	Pawhuska, OK	8/24/01	18	18 (100%)	50%
Well Operations--Engineering and Geology (MWC)	Oklahoma City, OK	8/31/01	25	24 (96%)	44%
NRIS Web/Mapping (OU GIS)—two-day workshop	Oklahoma City, OK	9/6-7/01	9	9 (100%)	0%
Well Operations--Engineering and Geology (MWC)	Tulsa, OK	9/07/01	14	12 (85%)	79%
Field Opns--Pumpers and Cost Controls (MWC)	Ardmore, OK	9/14/01	15	15 (100%)	20%
Field Opns--Pumpers and Cost Controls (MWC)	Pawhuska, OK	9/21/01	13	13 (100%)	27%
Field Opns--Pumpers and Cost Controls (MWC)	Oklahoma City, OK	9/28/01	22	20 (93%)	43%

Total FY01 Attendance (51 events + MWC Trade Fair)			1,762	1,549 (88 %)	
Field Opns—Pumpers and Cost Controls (MWC)	Tulsa, OK	10/04/01			
Coalbed Methane (OGS), field trip	Poteau, OK	10/09/01			
Coalbed Methane (OGS), workshop	Poteau, OK	10/10/01			
Coalbed Methane (OGS), field trip	Poteau, OK	10/11/01			
NRIS Web/Mapping (OU GIS)—two-day workshop	Broken Arrow, OK	10/11-12/01			
Plugging: The Last Resort (MWC)	Pawhuska, OK	10/19/01			
Cleveland & Peru Plays (TGS)	Tulsa, OK	10/24/01			
Plugging: The Last Resort (MWC)	Oklahoma City, OK	10/26/01			
Plugging: The Last Resort (MWC)	Tulsa, OK	11/02/01			
Springer Play Field Trip (OGS)	Ardmore, OK	11/08/01			
Advanced ArcView Oil and Gas Mapping (OU GIS)	Broken Arrow, OK	11/09/01			
Soil Remediation (MWC)	Ardmore, OK	11/09/01			
NRIS/ArcView/ArcExplorer (OU GIS)	Tulsa, OK	11/11-12/01			
Soil Remediation (MWC)	Pawhuska, OK	11/16/01			
Norman's Groundwater, Garber Aquifer Field Trip	Norman, OK	11/17/01			
Soil Remediation (MWC)	Oklahoma City, OK	11/30/01			
Soil Remediation (MWC)	Tulsa, OK	12/14/01			
Joint Operating Agreements (MWC)	Duncan, OK	1/10/02			
Joint Operating Agreements (MWC)	Oklahoma City, OK	1/17/02			
Joint Operating Agreements (MWC)	Tulsa, OK	1/23/02			
Reducing Power Costs in Old Fields (MWC)	Duncan, OK	2/26/02			
Reducing Power Costs in Old Fields (MWC)	Oklahoma City, OK	2/27/02			
Reducing Power Costs in Old Fields (MWC)	Tulsa, OK	2/28/02			
Production Equipment Operations (MWC)	Duncan, OK	3/07/02			
Production Equipment Operations (MWC)	Oklahoma City, OK	3/14/02			
Production Equipment Operations (MWC)	Tulsa, OK	3/21/02			
Production Equipment Operations (MWC)	Woodward, OK	3/27/02			

Application: 49% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 57 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 6343 w about 98% from industry)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	686	2,175	Not Avail.	Nov 2000	Record activity results from strong funding from the Oklahoma Geological Survey and leverage through OU Geo Information Systems and the Marginal Well Commission.
2nd Qtr	525	2,401	Not Avail.	Jan 2001	
3rd Qtr	603	2,401	Not Avail.	Jun 2001	
4th Qtr	742	2,246	Not Avail.	Sep 2001	
Total FY01	**2,556**				

Regional Website: Usage statistics (not with Web Trends software) show traffic remaining steady. Online access to digital O&G data, a prominent function of some PTTC regional sites, is provided by OU's Geo Information Systems through the NRIS database. In 4th Qtr FY01 (the first time data was reported), this site experienced 58,903 hits.

Workshops/Events: The combined resources of the Oklahoma Geological Survey (OGS), Oklahoma's Marginal Well Commission (MWC), and OU's Geo Information Systems (OU GIS) delivered 51 events drawing 1,762 attendees. Twelve events were technology workshops organized by OGS. Primary topics included the Hunton Play, the Springer Play, coalbed methane, and underbalanced drilling. The MWC conducted 27 workshops, holding a Successful Operator series. The MWC also holds one or more Trade Fairs each year. OU GIS conducted eight NRIS data or mapping-oriented workshops. Four workshops were half-day versions of play-based workshops, held cooperatively with the Oklahoma City and Tulsa Geological Societies. For the play-based workshops, OGS develops the technical content and professional publications. This extensive

workshop schedule is only possible because of strong funding from OGS and the leverage obtained through cooperation with other groups.

Resource Center: Industry receives library support from the OGS library and OU's Youngblood Geological Library, none of which receive funding support through PTTC. Establishing a software training center similar to the Rocky Mountain center has been discussed, but nothing has been decided yet. Formal publications for the play-based workshops are sold through OGS.

Outreach/Contacts/Newsletter: The region averages nearly 10 contacts per working day, not including contacts by OU GIS and the MWC. The newsletter focuses on summarizing technical information from recent or upcoming workshops and calendar information. PTTC information is part of the OGS exhibit, which was taken to AAPG's annual meeting in Denver and the MWC Trade Fair.

Problem Identification: Industry needs and directions for future activities are determined through PAG input, feedback from workshop participants, and contacts. Relative emphases of different elements of the program also are influenced by this input. MWC activities keep the region in close touch with the needs of small marginal well operators. With implementation of PTTC's PUMP I project early in FY02, there will be a special focus next year on identifying major constraints (and solutions) on oil production.

Follow-Up: Follow-up is conducted informally during breaks at workshops and through resource center contacts. Consensus from feedback is that the total regional program is an important resource for smaller operators. Some direct applications of technology as a result of PTTC activity are known, but since industry would not give permission to share data, details are not available.

Case Studies: Case studies are primarily those shared during workshops. Each play-based workshop typically contains several brief field studies to illustrate concepts. The active workshop schedule precludes having much time for follow-up and documentation of case studies even if industry would share information.

PTTC Southwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (6 events)			**454**	**336 (74 %)**	
Infill Drilling Calculator/Production Curve Analysis	Farmington, NM	11/29/00	32	28 (88%)	53%
C115 Electronic Filing	Farmington, NM	11/29/00	12	11 (92%)	0%
2000 CO2 Conference (CEED, Texas Region, others)	Midland, TX	12/5&6/00	Reported by Texas Region		
Lewis Shale San Juan Basin: Approaches to Rocky Mountain Tight Gas Shale Plays	Albuquerque, NM	2/21/01	104	91 (87%)	36%
Low Permeability & Underdeveloped Natural Gas Reservoirs of New Mexico (NM Bur. Of Mines)	Socorro, NM (field trip to San Juan Basin)	4/5-7/01	91	56 (62%)	
Optimized Horizontal Well Technology (Texas Region, by Maurer Technology Inc.)	Midland, TX	5/11/01	Reported by Texas Region		
Reverse Osmosis Treatment of Produced Water	Hobbs, NM	6/26/01	43	16 (37%)	2%
Total FY01 Attendance (5 events, plus with Texas)			**282**	**202 (72 %)**	
Field-Oriented Research Projects for Independents (DOE, Texas Region)	Midland, TX	11/06/01	Will be reported by Texas Region		
2001 CO_2 Conference (CEED, Texas Region & Others)	Midland, TX	12/4-5/01	Will be reported by Texas Region		
Optimized Horizontal Well Technology (Maurer Technology Inc. and Texas Region)	Midland, TX	12/18/01	Will be reported by Texas Region		
Wellbore Management (Texas Region)	Artesia, NM	Feb 02			
Subsurface Fluid Pressures & Their Relation to Oil & Gas Generation, Migration and Accumulation (w Southwest Region)	Durango, CO	Feb 02	Will be reported by Rocky Mountain region		

Application: 38% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 5 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. @ yearend = 2800, plus monthly online for SE/NW)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	199	14,991	125,442		High website traffic with much of it data-related. Region has shown ability to initiate study/R&D projects at New Mexico Tech addressing high interest needs. Staff proactively visits operators.
2nd Qtr	225	12,980	134,313	Jan 2001 PRRC	
3rd Qtr	100	14,914	182,927		
4th Qtr	143	11,063	69,387	Jul 2001 PRRC	
Total FY01	**667**				

Regional Website: Usage reflects both the PTTC and precursor GO-TECH site. Both sites were redesigned when the system-wide enhancement of the PTTC network occurred. Database additions occurred throughout the year with one being a well information database for wells in counties not likely to be covered in commercial databases. Additional effort is being focused on improving the quality of data for early years and adding cumulative production data for pre-1970 production (not typically contained in electronic databases). The spreadsheet-based infill drilling calculator was also placed online. Database improvement and expansion is a continual effort.

Workshops/Events: Workshop activity was on par with FY00 levels. Total attendance was down, but two cooperative events reported by the Texas Region (2000 CEED CO_2 Conference and Maurer Technology's

Horizontal Drilling) are not reflected in the total. Not surprisingly, the workshops most widely attended were gas-related. The Lewis Shale San Juan Basin and Low Permeability and Underdeveloped Natural Gas Reservoirs of New Mexico workshops were directly gas-related. The Infill Drilling Calculator workshop, although appropriate for either gas or oil, is receiving more attention in the gas arena. The workshop on Reverse Osmosis Treatment of Produced Water reported progress in a New Mexico Tech R&D project addressing this critical regional need. As the calendar for the early part of FY02 reveals, the region is actively cooperating with the Texas and Rocky Mountain regions in future events.

Resource Center: Being remote from producers, resource center activity consists primarily of responding to industry inquiries. When needed, industry has access to the information resources of the Petroleum Recovery Research Center (PRRC) and NM Bureau of Mines and Mineral Resources. Most of the website database projects require data input and organization by resource center staff.

Outreach/Contacts/Newsletter: The region experiences 2 to 3 contacts per day, which is lower than many regions. To counteract being located remote from producers, staff proactively visit operators across New Mexico several times during the year. Staff has developed good connections within New Mexico's Oil Conservation Division and State Land Office, plus within operator associations. In many of the website data projects, staff are serving as an effective interface between the State and industry. For the newsletter function, staff develops a column in PRRC's bi-annual newsletter. There is also a monthly online newsletter for both southeast and northwest New Mexico. Changes in the newsletter function are planned during the coming year.

Problem Identification: Corrosion control, paraffin control and wellbore management are high interest topics. Operators and regulators have also expressed interest in better access to water quality data to help them make more timely decisions about spill remediation, permitting, etc.

Follow-Up: In direct response to problem identification input, PRRC and New Mexico Tech developed a successful proposal for DOE's PUMP II program. The proposal addressed water data and corrosion control issues. Dr. Gundiler at New Mexico Tech has also initiated a special corrosion mitigation effort covering both southeast and northwest New Mexico. A Colorado operator who attended the Low Permeability and Underdeveloped Natural Gas workshop and field trip noted that what he learned during the field trip would totally change the company's approach to developing and producing the Dakota in northwest New Mexico. At the earlier Lewis Shale workshop, Burlington Resources shared critical data and insights not previously public.

Case Studies: Case studies are typically part of each workshop. Staff has followed several leads for case studies for PTTC's *Petroleum Technology Digest*, but none have materialized as yet.

PTTC Texas Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (17 events)			**802**	**685 (85 %)**	
Coalbed Methane Potential of the Gulf Coast (AAPG, E. & C. Gulf regions, La. Geol. Survey)	Houston, TX	10/28/00	Reported by Central Gulf		
2000 CO_2 Annual Mtg (CEED, Southwest, others)	Midland, TX	12/5-6/00	207	202 (98%)	35%
Wellbore Management	Midland, TX	3/22/01	75	75 (100%)	11%
Predicting Reservoir Quality (Texas BEG and South Texas Geological Society)	San Antonio, TX	4/11/01	22	18 (82%)	
Optimized Horizontal Well Technology (by Maurer Technology Inc.)	Dallas, TX	5/07/01	18	17 (94%)	33%
Putting the Internet to Work (TIPRO)	Houston, TX	5/10/01	56	50 (89%)	8%
Optimized Horizontal Well Technology (w Southwest Region, by Maurer Technology Inc.)	Midland, TX	5/11/01	72	72 (100%)	17%
Total FY01 Attendance (6 events, plus with Southwest & E/C Gulf)			**450**	**434 (96 %)**	
Cross Section Generation (MJ Systems & Digirule)	Midland, TX	10/03/01			
Cross Section Generation (MJ Systems & Digirule)	Midland, TX	10/04/01			
Field-Oriented Research Projects for Independents (DOE, Southwest Region)	Midland, TX	11/06/01			
Cross Section Generation (MJ Systems & Digirule)	Farmers Branch, TX	11/15/01			
2001 CEED CO_2 Conference (CEED, Southwest)	Midland, TX	12/4-5/01			
Optimized Horizontal Well Technology, Part B (Maurer Technology Inc., Southwest Region)	Midland, TX	12/18/01			
Field-Oriented Research Projects for Independents (DOE, Central Gulf Region)	Tyler, TX	2/06/02			
Wellbore Management Workshop (w Southwest)	Artesia, NM	Feb 02	Will be reported by Southwest Region		

Application: 20% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 7 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. Avg.)**		**Newsletter** (Circ. @ yearend = 1138, plus promo in assoc. newsletters)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr (TIPRO)	686 (3,160)	9,895 (77,343)	15,656 (223,922)		Influence of the Permian Basin Mentor, Bob Kiker, is seen across the state. Factoring in TIPRO's website outreach, website usage is the highest among the regions. The Central Gulf, Eastern Gulf, and Texas regions are learning to work cooperatively to serve their sometimes overlapping audience.
2nd Qtr (TIPRO)	225 (2,620)	8,378 (81,242)	14,055 (239,187)	Jan 2001	
3rd Qtr (TIPRO)	751 (1,948)	5,944 (79,091)	10,460 (272,056)	Apr 2001	
4th Qtr (TIPRO)	692 (1,790)	6,255 (90,556)	11,715 (279,660)	Jul 2001	
Total FY01	**2,354**				

Regional Website: Basic website traffic is analogous to that reported by other PTTC regions. Expanded outreach traffic (TIPRO) reflects sections of TIPRO's website related to the region's emphasis on increasing independent producers knowledge and use of the Internet. TIPRO reports $14,140 of revenue from web hosting and advertising, plus $7,000 of sponsorships for the Internet workshop. Data and information of specific interest to Permian Basin operators is being provided on a satellite website (directly linked to the regional website) at the Center for Energy and Economic Diversification (CEED) in Midland. Unique sections of the regional website

include “Best of PTTC” and “Best of DOE.” The search engine used by the PTTC website network was also developed by the Texas Region.

Workshops/Events: Following a surge in FY00, workshop activity and attendance dropped back to historical levels, although it should be noted that a portion of the decrease resulted from scheduling delays. Major cooperative events were held with the Central and Eastern Gulf regions (Coalbed Methane Potential of the Gulf Coast) and Southwest Region (2000 CEED CO_2 Conference and Maurer Technology’s Optimized Horizontal Well Technology). TIPRO’s annual Internet workshop and the “Wellbore Management” workshop organized by Bob Kiker were also well attended.

Resource Center: Through the Texas Bureau of Economic Geology, The University of Texas at Austin, extensive geological and library resources are available for those willing to come to Austin. As in many regions, the resource center functions virtually as staff reach out across Texas.

Outreach/Contacts/Newsletter: The region averages nearly 10 contacts per day, not counting the extensive Internet-related contacts made by TIPRO, which exceed 35 per day. Bob Kiker has been instrumental in helping the region network with technical and professional society groups in the Permian Basin. He has also talked on behalf of the Region and Headquarters at major industry meetings, including IPAA’s Annual Meeting in San Antonio (October 2000). The region exhibited at the Permian Basin Oil Show (October 16-19), the West Texas Geological Society Fall Symposium (October 19-20), AAPG’s Prospect Expo (August 2001), and TIPRO’s Annual Meeting . Kiker also arranged poster sessions featuring case studies from the *Petroleum Technology Digest* at the Oil Show and the SPE Oil and Gas Recovery Conference (May 2001). Kiker has helped the region get promotional announcements in association newsletters across the state, plus strategic coverage in the *Midland Reporter Telegram*, which has a circulation of about 25,000. This complements the quarterly newsletter, *Producer News*, which is now distributed to more than 1,100. Some professional society sections also distribute promotional information. Kiker is on the steering committee for the Applied Petroleum Technology Academy, which provides training for foreign field workers.

Problem Identification: Industry needs and directions for future activities are determined primarily though interaction with workshop attendees, PAG input, resource center contacts, and Bob Kiker’s personal interaction with producers in the Permian Basin. The region actively responds to targets of opportunity for co-sponsoring workshops.

Follow-Up: The wellbore management workshop led to a PTTC column in the *American Oil and Gas Reporter* and future workshops in Amarillo and Artesia, New Mexico. Because of his involvement in wellbore management, Bob Kiker has been invited to attend meetings of the Permian Basin Operators Working Group. This group, which is industry-funded, focuses on artificial lift and well management.

Case Studies: Bob Kiker has been instrumental in getting leads for case studies for PTTC’s *Petroleum Technology Digest*. Two have been published so far and several are still being nurtured by Headquarters. Several case studies were featured in the wellbore management workshop. Jim Lea at Texas Tech requested reprints of the PTTC *Petroleum Technology Digest* case study on a walking beam-operated compressor for the Southwest Petroleum Short Course in Lubbock (April 2001).

PTTC West Coast Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY00 Attendance (16 events)			**717**	**464 (65 %)**	
Drilling Practices in California—New Technologies	Bakersfield, CA	10/26/00	55	43 (78%)	56%
Drilling Practices in California—New Technologies	Long Beach, CA	10/27/00	36	24 (67%)	50%
Applied Reservoir Management w Case Studies	Los Angeles, CA	12/8/00	64	35 (55%)	26%
Fracture Stimulation of California Diatomites	Bakersfield, CA	1/25/01	76	57 (75%)	74%
Trouble Shooters Field Visits	Bakersfield & Long Beach areas	2/12-18/01			
Midway Sunset Demonstration Project (DOE)	Bakersfield, CA	2/20/01	60	50 (83%)	70%
Cost Effective Technologies to Combat Corrosion	Bakersfield, CA	2/22/01	31	25 (81%)	60%
Cost Effective Technologies to Combat Corrosion	Long Beach, CA	2/23/01	36	27 (75%)	44%
Energy Crisis and Solutions for California Producers	Valencia, CA	3/15/01	96	83 (86%)	18%
Offshore California Revisited	Ventura, CA	4/25/01	39	23 (59%)	83%
Alaska Series of Events	Anchorage, AK				
--Kenai Peninsula field trip		4/30-5/1/01	42	27 (64%)	15%
--Hydraulic Fracturing short course		5/02/01	25	12 (48%)	25%
--Horizontal Drilling Short Course		5/03/01	21	15 (71%)	67%
--Dinner Workshop		5/03/01	59	35 (59%)	11%
--Alaska Coalbed and Shallow Resources workshop		5/04/01	78	53 (68%)	9%
Monterey Reservoirs, Onshore/Offshore, workshop	Santa Barbara, CA	6/20-21/01	93	63 (68%)	87%
Monterey Reservoirs, Onshore/Offshore, field trip	Santa Barbara, CA	6/21/01	55	32 (58%)	81%
COMET 2001	Los Angeles, CA	6/24-29/01	22	Not applicable	
EPRI-PEAC Electric Cost Reduction in Oil Fields	Santa Clarita, CA	7/19/01	56	44 (79%)	77%
Trouble Shooters Forum	Bakersfield, CA	9/20/01	44	32 (73%)	88%
Total FY01 Attendance (19 events)			**988**	**680 (69 %)**	
Water Management—From Production to Disposal	Santa Clarita, CA	10/18/01			
Economic Evaluation of O&G Producing Properties	Santa Clarita, CA	11/20/01			
Anniversary Forum—Reservoir Life Extension	Los Angeles, CA	12/07/01			
3-D Seismic for California Fields	Santa Clarita, CA	1/17/02			
Cold Heavy Oil Production	Santa Clarita, CA	2/21/02			
California Offshore/Monterey Database Review	Ventura, CA	3/14/02			
Dynamometer Card Analysis & Unit Balancing	Los Angeles, CA	3/26/02			

Application: 42% of producers answering the question on the workshop feedback form: "Have you used any new technologies gained through PTTC events?" respond "Yes." (based on data from 32 workshops)

Other FY01 Activity Indicators					
Time Period	**Contacts**	**Website Usage (mo. avg.)**		**Newsletter** (Circ. For anniversary issue = 4,000; plus CIPA announcements)	**General Outreach/Comments**
		User Sessions	**Page Views**		
1st Qtr	1,149	708		Dec 2000 (Ann. Issue)	An active workshop program serves both the Bakersfield and Los Angeles Basin areas, plus there's now an Alaska program. Trouble Shooters provide individualized outreach.
2nd Qtr	104	834	4,349		
3rd Qtr	557	1,238	7,001		
4th Qtr	300 est	1,263	11,765		
Total FY01	**2,110**				

Regional Website: This is the first year for which usage statistics determined by Web Trends software is available. A consistent growth in page views is evident. The region works to post presentations from most workshops online. Links are provided only to those signing a release. Workshops that were webcast, including the Anniversary Forum, are posted in Real Video format. The Region hosted a meeting of PTTC's webmasters

in December 2000 where effort focused on planning features and content for the system-wide enhancement that PTTC made during 2001. News and national information is posted to help stimulate usage.

Workshops/Events: The region conducted 19 events, five of which were associated with a series of events in Alaska. Total attendance increased versus FY00 levels, but most of the increase was due to the Alaskan series of events. For some topics, workshops were held in both Bakersfield and the Los Angeles Basin. Others were specific to a given area. Topics included: (1) Drilling Practices, (2) Fracture Stimulation of California Diatomites, (3) Corrosion Control, (4) Monterey Reservoirs, (5) Offshore California Revisited, (6) Power Cost Reduction, and (7) Applied Reservoir Management. The Power Cost Reduction workshop featured findings from a project funded by EPRI-PEAC to study electric cost reduction in California oil fields. The annual Trouble Shooters Forum presented some technologies new to California and outlined funding opportunities with DOE and the California Energy Commission.

Resource Center: Resource center activity consists primarily of responding to inquiries and coordinating the Trouble Shooter Program and visits. For the most part, the center functions as a virtual entity.

Outreach/Contacts/Newsletter: Contacts exceed 8 per day, not including focused mailings or emails broadcast to the regional audience. The region publishes an anniversary newsletter, which is distributed to about 4,000 people. Through the year, the region relies on regular announcements in CIPA's *Monday Morning Report* for promotion of regional events. The Trouble Shooters Program is a major outreach. Interested producers describe the problems for which they would like assistance, the Trouble Shooters respond whether they are qualified and interested, then the producers are allowed to select which Trouble Shooters they want to assist them. Trouble Shooters spend a few hours with producers, clarifying problems and offering potential solutions. Producers receive assistance with the expectation that results will be shared through the regional program. PTTC also provides limited support for the COMET program, where student interns work in industry following their training on the USC campus. The PAG, CIPA and staff coordinate closely in trying to keep state funding through the California Energy Commission coming to the regional program. Unfortunately, state funding was lost for FY02 due to California's budget crisis, which partially resulted from their energy crisis. Steps are in motion to re-secure state funding. Portions of Phase II work with EPRI-PEAC will provide some funding support and help moderate the impact of California's budget cuts. The West Coast PAG and Dr. Ershaghi hosted PTTC's July 9 Board meeting in Long Beach.

Problem Identification: A Program Committee within the PAG considers feedback from workshop participants, trends from contacts, and their personal experience to develop the topics for each year's program. Historically, topics for a couple workshops are modified during the year to address rapidly emerging needs or critical events. Dr. Ershaghi has proven particularly adept at organizing new events on short notice. With implementation of PTTC's PUMP I project early in FY02, there will be a special focus next year on identifying major constraints (and solutions) on oil production.

Follow-Up: The EPRI-PEAC workshop on electric cost reduction presented findings from 19 fields (more than 1,000 wells) on power usage and opportunities for cost reduction. Findings were also summarized in PTTC's column in the *American Oil and Gas Reporter* in September 2001.

Case Studies: Two regional activities, the Anniversary Forum and the Trouble Shooters Forum, have a strong case study emphasis. One of the presentations during the Anniversary Forum , Horizontal Wells Extend the Tulare Sands Play in Belridge Field, California, was published in the Mar 2001 *Petroleum Technology Digest*..

Appendix C

PTTC Regional Lead Organizations

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Appendix D

Petroleum Technology Transfer Council
Board of Directors

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(Note: Officers serve 1-yr. terms that extend through the next annual meeting of the Board)

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Central Gulf	Don Solanas	Arrowhead Exploration	Baton Rouge, LA
Eastern Gulf	Brian Sims	Independent	Madison, MS
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Southwest	David Boneau	Yates Petroleum Corp.	Artesia, NM
North Midcontinent	James Daniels	Murfin Drilling Co., Inc.	Wichita, KS
South Midcontinent	A.M. Mac Alloway	Tony Oil Company	Tulsa, Ok
Texas	Gene Ames III	Ames Energy Corp.	San Antonio, TX
West Coast	Mark Kapelke	Tidelands Production Co.	Long Beach, CA
Regional Lead Orgs. (non-voting)	Rodney Reynolds	Kansas University	Lawrence, KS

ORGANIZATIONS:

Indep. Petrol. Assoc. Of America	Barry Russell	IPAA	Washington, DC
Interstate Oil & Gas Compact Comm.	John T. King	MI Public Service Comm.	Lansing, MI
American Assoc. of Pet. Geologists	Chuck Noll	Copano Energy	Houston, TX
Society of Explor. Geophysicists	Glenn Breed	The Information Store	Houston, TX
Society of Petroleum Engineers	Michael Gatens, III	MGV Energy, Inc.	Calgary, Canada
Gas Technology Institute	Terry Keane	GTI	Houston, TX

INDUSTRY SECTORS:

Service Cos.	Jay Haskell	Schlumberger Oil Field Srvcs.	Caracas, Venezuela.
Major E&P Cos.	Greg Reep	Texaco Upstream Technology	Houston, TX

Alternate Directors

Representing:			
Appalachian	David Wozniak	Belden & Blake Corp.	North Canton, OH
Central Gulf	Joe Jacobs	Gas Masters of America, Inc.	Monroe, LA
Eastern Gulf	Robert Schneeflock	Paramount Petroleum Co.	Jackson, MS
Midwest	Bryan J. Dicus	Elysium Oil Company.	Crossville, IL
Rocky Mountain	George Fancher	Fancher Oil Co.	Denver, CO
Southwest	John Corbett	Northstar Oil & Gas	Farmington, NM
North Midcontinent	Nick Powell	Colt Energy, Inc.	Fairway, KS
South Midcontinent	George Fulco	Devon Energy	Oklahoma City, OK
Texas	Craig Clark	Apache Corporation.	Houston, TX
West Coast	James C. Hall	Drilling and Production.	Torrance, CA
Regional Lead Orgs.	Douglas Patchen	West Virginia University	Morgantown, WV
IOGCC	Tom Richmond	Montana Board of Oil & Gas	Billings, MT
SEG	Robert Graebner	The Information Store	Houston, TX
SPE	Joe Franz	Schlumberger	Pittsburgh, PA
GTI	Kent Perry	Gas Technology Institute	Chicago, IL
Service Cos.	Mo Cordes	Schlumberger	Sugarland, X
Major E&P Cos.	Larry Risley	Texaco, Inc.	Houston, TX

Management & Budget (M&B) Committee

Position:		
M&B Committee Chair, and Board Vice Chair	James Bruning	Forth Smith, AR
Current Board Chair	Wm. Clark Southmayd, Jr.	Tulsa, OK
Immediate Past Board Chair	Leo A. Schrider	North Canton, OH
M&B Committee Member	Brian Sims	Madison, MS
M&B Committee Member	Brook Phifer	Littleton, CO
Executive Director (ex-officio, non-voting)	Don Duttlinger	Houston, TX

Nominating Committee

Position:		
Current Board Chair	Wm. Clark Southmayd, Jr.	Tulsa, OK
Immediate Past Board Chair	Leo A. Schrider	North Canton, OH
IPAA Representative	Barry Russell	Washington, DC
PAG Chair	Dave Boneau	Artesia, NM
PAG Chair	Don Solanas	Baton Rouge, LA

Notes from the by-laws:

- The terms served by Alternate Directors are the same as for the Directors they represent.
- Officers do not have Alternates. Officers may succeed themselves.
- Members of the Nominating Committee and the Management & Budget Committee who are Officers have terms on these committees that are linked to their terms as Officers. Other committee members have terms that are concurrent with their Board membership.

Appendix E

Petroleum Technology Transfer Council

Guide for Professional and Ethical Conduct

The Petroleum Technology Transfer Council (PTTC) is a national not-for-profit organization that is tax-exempt under Section 501(c)(3) of the IRS code. PTTC is not a membership organization, although there are volunteer members of the Board of Directors, its committees, and the Producer Advisory Groups. This Guide for Professional and Ethical Conduct applies to all members of those groups, as well as the national and regional PTTC staff and contractors. These dedicated professionals recognize their responsibility to PTTC and those it serves in carrying out the organization's mission:

"PTTC benefits the nation by helping U.S. independent oil and gas producers make timely, informed technology decisions."

PTTC, embodied by its representatives and staff, recognizes its responsibility to pursue its mission while maintaining the high standards of professional and ethical conduct summarized below.

- **Ethical Behavior**: PTTC will be guided in all of its affairs by high standards of business ethics and professional conduct, striving to maintain honesty, integrity, fairness, impartiality, and trust. PTTC will strive to avoid making false, misleading, or unwarranted statements or representations.
- **Service, Quality, Professionalism**: Every PTTC action and activity will be performed in a manner that fosters the organization's mission. PTTC will professionally deliver products and services of the highest possible quality.
- **Confidentiality**: When those being served by PTTC require secrecy, PTTC will treat as confidential any knowledge of proprietary data or information as directed by those providing such data or information.
- **Referrals, Self-Interest**: For those it serves, PTTC will provide unbiased referrals to the best solution providers for their problems. PTTC will deny any use of its structure or program for individual or organizational self-interest. Any potential conflict of interest that might influence (or appear to influence) the judgment, fairness, and quality of PTTC's performance in any way will be disclosed immediately.
- **Copyrights, Cooperation**: PTTC will honor the copyrights and other intellectual property rights of speakers, authors, and other sources of published information. PTTC will appropriately recognize the work done by others, avoid plagiarism, and avoid accepting credit due to others.
- **Opportunity**: PTTC will make every effort to ensure that its structure and programs are carried out without bias due to race, religion, gender, age, national origin, or handicap.
- **Public Welfare**: PTTC will hold paramount the safety, health, and welfare of the public in all of its programs and activities, and act in accordance with all applicable laws.

Note: Statement adopted by the PTTC Board of Directors on December 6, 1998

Appendix F

Petroleum Technology Transfer Council

Conflict of Interest Policy Statement

The Petroleum Technology Transfer Council (PTTC) strives to carry out all of its activities in accordance with the "Guidelines for Professional and Ethical Conduct," as adopted by the Board of Directors on December 6, 1998. To further clarify PTTC's position on issues related to conflict of interest and confidentiality, the Board hereby adopts this "Conflict of Interest Policy Statement."

Need for Policy
Most individuals involved with PTTC have multiple interests and affiliations and many hold various positions of responsibility within the industry and community. In matters related to the mission of PTTC, Board members and alternates (which includes elected officers) are expected to uphold the interests of the Council and its obligations to the public trust.

This policy applies only to conflicts of interest in personal or business interests; it does not apply to political, philosophical, or professional differences of opinion. It recognizes that both real and apparent conflicts of interest sometimes occur in the course of conducting PTTC affairs. As a not-for-profit educational organization that is tax-exempt, it is important for PTTC to avoid even the appearance of a conflict of interest.

Conflict of Interest Policy
PTTC adopts this policy to serve as an official process through which any potential conflict of interest problems can be rendered harmless to all concerned. The policy requires that the following steps are taken:

A. All Board members and alternates shall disclose any real or apparent conflicts of interest in connection with PTTC's activities that they discover, or that have been brought to their attention. In this event, a written description of the situation shall be provided to the Executive Director who will take appropriate steps as needed, under the guidance of the Management and Budget Committee.

B. Any Board members and alternates making such a disclosure is prohibited from being involved in PTTC affairs that are specifically related to such conflicts, including making motions, voting, executing agreements, or taking any other similar action.

C. The official meeting minutes shall reflect that such disclosure was made, and that the Board member or alternate was absent from any discussion and vote on the matter in question.

D. A copy of this conflict of interest policy shall appear in the orientation materials for new directors and shall be included in all official reference materials for the Council.

Note: Statement adopted by PTTC Board of Directors on March 30, 1999

Statement of Identity

The Petroleum Technology Transfer Council (PTTC) enables independent operators to make timely, informed exploration and production (E&P) decisions through practical, targeted information and connections to technology solutions. As a regionally focused national non-profit organization, PTTC has an 8-year record of growth in meeting the technology needs of US independent oil and gas producers. PTTC's primary customers are independent producers, who drill 85 percent of all US wells. As a group, they produce 60 percent of US natural gas and 40 percent of crude oil.

Independents face technology decisions every day, such as whether to address an opportunity or problem with technology, what solution to use, whether it is cost-effective and how to use it. The PTTC program helps producers make these decisions through its three core services. First, it helps identify and clarify producers' problems and makes them aware of technology opportunities. Second, it educates producers about technology solution options. Third, it connects producers to these solution sources.Thus, by providing problem identification, education, and connections, PTTC achieves its mission:

"To strengthen the U.S. independent
oil and natural gas industry
for the benefit of consumers and the nation
by helping producers make
timely, informed technology decisions."

Through its 10 Regional Resource Centers, PTTC offers expert assistance, information resources, and referrals. Services also include demonstrations of E&P software solutions, and technology workshops held around the country on a variety of topics. In addition, PTTC's newsletters, websites, case studies and reports cover a range of information and databases.

All PTTC products and services – nationally and regionally – can be grouped into program lines: (1) exploration (2) drilling & completion, (3) development & reservoir, (4) operations & production, and (5) environmental.

PTTC is more than just an information clearinghouse. It supports producer technical decision processes – from early awareness of problems and opportunities to the point that the customer selects the right solution provider.

In addition to independent producers, PTTC focuses on two other market segments. The first group, technology solution providers, include service companies/vendors, the US Department of Energy, national labs, consultants, the Gas Research Institute, academia, professional societies, industry R&D organizations, etc. The other group is PTTC's supporters/funders.

PTTC delivers value to all the market segments it serves. Solution providers benefit when PTTC educates producers about technologies. Producers benefit when PTTC helps solution providers understand the needs of independent producers. Both groups benefit when technologies solve problems, leverage opportunities, and strengthen the industry.

The nation and energy consumers benefit when US petroleum supplies are made more reliable and secure by industry's improved access to E&P technology. , PTTC is the independent petroleum industry's

"Bridge to Solutions"

PTTC is primarily funded by the U.S. Department of Energy's Office of Fossil Energy through its National Energy Technology Laboratory.

Appendix H

Petroleum Technology Transfer Council

PTTC's Goal Categories

PTTC has chosen five categories of goals to direct its actions. Each is captured in a single word, which makes them more memorable; and each has several vision statements describing what success will be like.

1. **AWARENESS**

- PTTC is aware of its customers' problems and understands the context/underlying issues.
- Independent producers are aware of PTTC and its services at their local level, as well as nationally.
- Independents understand their technology needs, focusing beyond the symptoms of their problem.
- Independents are aware of the range of solutions available and of the benefits/risks of each.
- Technology solution providers are aware of PTTC and that it can help them reach independents.
- Solution providers understand the problems of independent producers, and their value as a market.

2. CONNECTIONS

- Independent producers rely on PTTC for connections to a range of technology solution options.
- Solution providers rely on PTTC for contacts with independent producers and access to that market.
- Independents learn how to successfully apply technologies as a result of PTTC referrals.
- Independents credit PTTC for their success in finding the right sources for technologies/information.
- Technology solution providers credit PTTC for improving their access to independents.

3. **PERFORMANCE**

- Producers make inquiries to PTTC as a result of its workshops, newsletters, websites, etc.
- Independent producers contact PTTC more than once for help, and request new products/services.
- Case studies about U.S. field-tested technologies are offered to PTTC for industry dissemination.
- Independents publicly commend PTTC's products/services and refer other producers to the RLOs.
- Technology solution providers offer financial support for PTTC events and other functions.
- Other groups want to conduct jointly-sponsored events or activities with PTTC.

4. CREDIBILITY

- PTTC is perceived by independents as the best choice for access to practical, real-world solutions.
- PTTC is recognized by technology solution providers as the best pathway to reach independents.
- The Board, PAGs, and committees have active participation and effective volunteer leaders.
- The Dept. of Energy values PTTC's unique abilities to strengthen the domestic oil and gas industry.
- PTTC has high name recognition in the industry and a positive image in outside markets.

5. FINANCES

- PTTC has achieved financial strength, which engenders confidence about the organization's future.
- PTTC activities are not limited by the number of customers that it can serve
- PTTC has the required cash flow and financial reserves to explore new outreach projects.
- RLOs receive sufficient funds on a timely basis so that regional programs remain effective.
- PTTC can charge enough for services and products to make them generally self supporting.

Note: Quantifiable objectives are being developed that will measure PTTC's progress toward achieving its goals.

Petroleum Technology Transfer Council

PTTC Program Lines

Since PTTC was formed in 1993, its programs have mainly focused on transferring individual technologies. Although very effective, it has been difficult to identify gaps, overlaps, or conflicts in various technologies across regions and topics. As part of the new business model, PTTC has selected five program lines that encompass the services and products being delivered to its customers. They were chosen to be general enough to survive for the long term, yet provide flexibility by topic and region:

PTTC Program Lines:

- **Exploration**
- **Drilling and Completion**
- **Development and Reservoir**
- **Operations and Production**
- **Environmental**

The transition from individual technology focus to program lines will be initiated during FY2000. Working together, the HQ and RLO staff will start finding ways to accomplish the following steps:

- Organize current products and services by program line.
- Identify and prioritize gaps in needed products and services, according to regional and other factors.
- Take action to close high-priority gaps by assembling the required resources (contacts with solution providers, workshop speakers, etc.) to provide comprehensive services/products in each program line.
- Develop quality assurance criteria to guide performance of each service and product.

The concept is that resources (information, reports, network of experts, etc.) would not necessarily be required in every region, but somewhere within the national PTTC organization. Each program line will include not only services, but also products. PTTC is beginning to build up more marketable products as it captures the results of regional workshops and other activities.
Several benefits are expected from the establishment of program lines:

- Having memorable names for program lines makes it easier for customers to find PTTC's services.
- It should be easier to measure effectiveness, completeness, and quality of products and services.
- HQ can better monitor PTTC's national and regional program, enabling efficiencies through streamlining and better sharing across regions.
- PTTC programs can be marketed more effectively to specific market segments.
- The system should enhance inter-regional technology transfer activities and reduce duplication of programs that can be more efficiently packaged as a generic product/service.
- Program lines should help emphasize PTTC's marketing message.
- It demonstrates PTTC's commitment to serve independent oil and gas producers with solution options that span across the total E&P technology spectrum.