



TECHNOLOGY CONNECTIONS

PETROLEUM TECHNOLOGY TRANSFER COUNCIL

**SEMI-ANNUAL
TECHNICAL PROGRESS REPORT**

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ABSTRACT

During FY00, the Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of helping U.S. independent oil and gas producers make timely, informed technology decisions. PTTC's national organization has active grassroots programs that connect with independents through its 10 Regional Lead Organizations (RLOs). These activities – including technology workshops, resource centers, websites, newsletters, and other outreach efforts – are guided by regional Producer Advisory Groups (PAGs). 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.

This technical progress report summarizes PTTC's accomplishments during FY00, which lay the groundwork for further growth in the future.

National-Level Program

PTTC's Board of Directors, met three times during FY00 -- one of those as a joint meeting with the RLO Directors. In late 1998, recognizing desperate conditions in the industry, the Board instituted an Industry Crisis Action Plan that refocused regional efforts on survival-oriented issues. The Board also adopted two policy statements to better guide its activities. The "Guide for Professional and Ethical Conduct" was adopted by the Board on December 6, 1998. (See Appendix D) At the recommendation of PTTC's auditors, a "Conflict of Interest Policy Statement" was adopted by the Board on March 30, 1999. (See Appendix E)

In an expected transition in Board leadership, Leo Schrider became Chair in March 1999, replacing Bob Nance; and Clark Southmayd became Vice Chair. To improve communication, the Board authorized adding a new position (on an ex officio, non-voting basis) to represent the RLOs. Charles Mankin, South Midcontinent Region, was selected by the RLOs to serve the first one-year term, beginning in FY00. Executive Director Deborah Rowell informed the Board on November 4, 1999 of her intention to resign the position, although it will not be effective until June 30, 2000. Having accomplished many of her goals in the establishment of PTTC, she wanted to give the Board ample time to make an orderly leadership transition. A search committee has been formed under the chairmanship of Bob Nance, PTTC's Immediate Past Chair.

In 1999, PTTC maintained program continuity by extending the RLO contracts through April 2003. They were originally scheduled to expire at the end of FY99. HQ received confirmation from both PAGs and RLOs of their continued interest before recommending contract extensions. Regional activities continued far above the core technology transfer functions during FY99. Further growth is forecast for FY00, although limited by funding levels.

An updated needs assessment report, *Technological Priorities of Independent Oil and Gas Producers*, was released by HQ, based on 1998 survey responses. The results, combined with extensive industry input in the regions, keeps PTTC programs focused on the highest priority needs of independent producers. The categories used in the survey are essentially the same as the five program lines that PTTC plans to launch in FY00. (See Appendix H).

In a joint effort with Gulf Publishing, PTTC released a new industry publication in 1999, the *Petroleum Technology Digest (PTD)*. Presenting nine case studies in a professionally packaged publication, *PTD* was distributed as a supplement with the September 1999 issue of *World Oil*. It was mailed to the North American subscribers of *World Oil* who are independent producers, as well as being distributed through PTTC channels. The total audience receiving *PTD* reached over 10,000 readers. Advertising was sold by Gulf Publishing, which was also responsible for layout and printing. PTTC worked with vendors and producers to develop the case studies, routing

them through an informal screening committee. Favorable industry response has led to plans to publish two more issues in 2000.

Another new publication was issued by the HQ office in August 1999 – *Solutions From the Field*. It was released as a compendium of technical ideas, solutions and contact information from 14 regional workshops, updating the *Best of PTTC Workshops* report issued in 1997. The revised format allowed more technology insights to be summarized. PTTC now conducts more than 100 workshops a year, so capturing technology insights from these workshops becomes ever more important. At least two new workshop summaries are being added each month to the national PTTC website, building an archive of valuable technology insights. Hardcopy editions will also be released periodically with updates.

Circulation of the quarterly newsletter, *PTTC Network News*, grew to about 7,000 individuals – with nearly two-thirds from the exploration and production (E&P) sector. The newsletter continued its goal of adding more technical content. The national website experienced about 6,000 user sessions per month in FY99, averaging 10 minutes each. The content has been continually improved – adding a site map, publication order form, and new gateway pages to the regional websites. It also provides timely calendar information, an archive for technology insights, and useful links to other organizations. Frequent press releases provide timely alerts to industry about key events, important developments and new products resulting from PTTC's efforts.

In November 1998, PTTC released a *Petroleum E&P Software Sampler* on CD-ROM. Developed by Sandra Mark of the Rocky Mountain Region working under contract for HQ, it presents information in a searchable format about software packages donated to PTTC's regions. The sampler has helped RLO staff to demonstrate software and can be used by operators to help determine which software products may be appropriate for their needs. The CD-ROM was originally sold for a nominal fee, but is currently being distributed free of charge. PTTC has not yet committed to developing an updated version.

During FY99, PTTC supported technology transfer from DOE R&D projects in the areas of: (1) fractured reservoirs, (2) microbial technologies, (3) coiled tubing safety, and (4) advanced stimulation for gas storage operations. Additionally, PTTC coordinates often with the Natural Gas and Oil Technology Partnership and the Rocky Mountain Oilfield Test Center. When opportunities arise, PTTC works cooperatively with other groups, including American Geological Institute, Drilling Engineering Association, Interstate Oil and Gas Compact Commission, and Gas Research Institute, to name a few.

Regional-Level Program

In FY99, PTTC's regions held a total of 128 workshops drawing 5,948 individuals. Compared to the prior year, this represents a 28% increase in the number of workshops and a 34% increase in attendance. Despite adverse industry circumstances, average attendance held steady in the range of mid-40s, with around three-fourths of attendees from the E&P industry. Fifteen of those workshops, which drew about 800 people, were survival-oriented events developed by the regions as part of PTTC's Industry Crisis Action Plan. A portion of the increased activity can be attributed to ever-expanding cooperation with other groups. FY00 plans project about the same level of activity as in FY99, which is approximately the maximum feasible with existing funding levels. Some regions are experimenting with new delivery mechanisms, such as on-line training webcasting, and video archiving 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 FY99 averaged approximately four per day per regional resource center, about the same as FY98 levels. Four regions reported more than 1,000 contacts during the year.

Both Internet and software training courses are offered within the regions. Combined, the regions conducted 30 software training courses, drawing nearly 400 people; plus another seven Internet training workshops, drawing 140 people. Internet training is also offered on-line. The computer resource center in the Rocky Mountain Region became fully operational during FY99. Supported by PTTC, the American Association of Petroleum Geologists, Colorado School of Mines, and private donors, it contains both PC and Unix labs. Reflecting the priorities of local producers, this center provides the most software training within PTTC—with 20 software/Internet courses during FY99 and an active schedule into FY00.

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 with the ONGARD database 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. For example, the Midwest Region is developing a core and waterflood database, while the Michigan outreach effort includes a log and horizontal well database. The Eastern Gulf region's Jackson satellite is almost exclusively focused on making Mississippi oil and gas data available electronically. Where appropriate, regions develop information products that provide a service to industry and generate moderate revenues for PTTC. The Louisiana Desktop Well Reference, a CD-ROM product containing production data in a GIS environment, has been most successful in terms of revenue, bringing in over \$12,000 in FY99. Its success has spawned interest from some other states/groups.

Various outreach programs also emanate from the resource centers. 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 CO₂ initiative, and the South Midcontinent staff are involved with the Oklahoma Marginal Well Commission's Trade Fairs. Texas began a pilot Mentor program in the Permian Basin. Many other examples of cooperative interaction 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. Six regions publish newsletters with distribution totaling about 19,000 people. Most are new efforts started under PTTC, but some continue the newsletter tradition of the RLO organization. Typically, newsletters are posted on the website. Some regions also develop special electronic versions more frequently for their websites.

Although not yet quantified, many individuals attend PTTC events repeatedly, demonstrating that they find value in the experience. Anecdotal success stories are still few in number since industry does not readily share them, but several examples of technology applications are included in this report. A significant percentage of producers who attend regional workshops respond "Yes" on feedback forms when asked if they are applying technologies based on knowledge gained through PTTC.

By all accounts, PTTC is connecting with more and more independent oil and gas producers throughout the country and making a positive difference

I. Executive Summary

Following a series of studies 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), a national not-for-profit organization, in 1994.

During its initial years, PTTC focused its efforts on building an effective, producer-driven national organization with strong regional resources for delivering technology to industry. In addition to its annual strategic plan, PTTC adopted a marketing plan in FY98, which is still in the process of being implemented.

Activity in the regions during the first half of FY00, as shown in Table 1, has been maintained at record high levels. Also, PTTC continues to expand its technical information products—most notably evidenced by the *Petroleum Technology Digest*, a case study supplement to *World Oil* released jointly with Gulf Publishing. Together, PTTC's regional and national activities are increasingly impacting industry.

Table 1 – PTTC's Regional Activities Maintained at Record Levels			
Time Period	# of workshops	Attendance	Industry Contacts at Resource Centers
FY96	46	3,801	N/A
FY97	62	3,176	5,482
FY98	100	4,429	10,241
FY99	128	5,948	10,555
1 st Half FY00	78	2,906	6,971
% change as compared to 1 st Half FY99	22% increase	essentially no change	34% increase

This report covers PTTC's technical progress during the 1st half of FY00, and illustrates its continuing active outreach to the independent oil and gas producing industry. The text is organized according to the specific tasks in PTTC's statement of work under its DOE contract. While PTTC is nationally-organized, its activities and programs are regionally-focused. Therefore, this report documents results in two parts.

Chapter II presents PTTC's progress at the national level. Chapter III presents progress at the regional level, as reflected in PTTC's internal quarterly report for the 2nd Qtr of FY00. Activity listings within Chapter II provide FY00 activities to date and future scheduled activities during the remainder of FY00. The list of FY99 activities is not complete due to space limitations of the report, but the full list of activities is posted on PTTC's national website.

II. RESULTS AND CONCLUSIONS AT THE NATIONAL LEVEL

The Petroleum Technology Transfer Council (PTTC) implements industry's directives through both its national and regional programs. The role of the national headquarters (HQ) organization includes: (a) planning and managing the PTTC program so that industry directives are carried out, (b) conducting nation-wide technology transfer activities, and (c) implementing a comprehensive communications effort. These efforts are discussed below.

A. Planning and Managing the PTTC Program

There are many aspects of planning and managing the overall program, especially since there are so many people involved in its operations. The financial aspects are documented in a separate Financial Report to DOE, which is submitted quarterly. This section focuses on the role of the Board of Directors, oversight of regional programs, problem identification, and evaluating program effectiveness.

1. Board of Directors

Twenty two industry volunteers serve on PTTC's Board of Directors representing the ten regions, various national organizations, and three technology-related professional societies. The Board also includes one representative each from: (1) major exploration and production (E&P) companies, (2) the petroleum service industry, and (3) PTTC's Regional Lead Organizations (RLOs).

During the first half of FY00, PTTC's Board met twice: (1) on November 4, 1999 in Dallas, TX and (2) on March 28, 2000 in Kansas City, MO.

In the November 1999 meeting, the Board: (1) approved the FY00 budget, (2) approved bylaw changes to add a new position for a representative of the RLO Directors and clarify certain other items, (3) ratified new Board members, and (4) conducted other business related to ongoing PTTC operations. During the meeting, PTTC's founding Executive Director Deborah Rowell announced her resignation effective June 30, 2000. This lead-time was intended to give the Board ample time to identify and select her replacement and have some overlap to ensure a smooth transition. The Board formed a Search Committee and authorized them to define the qualifications for the Executive Director position, solicit and evaluate applicants, and prepare a selection recommendation for Board approval. The Search Committee, chaired by immediate past-Chair Bob Nance, includes Larry Hulsey, Roger Slatt, Brian Sims, and, as *ex officio* members, Leo Schrider (Chair) and Clark Southmayd (Vice Chair).

The March 28 Board meeting, held jointly with the RLO Directors, was the annual meeting—when the election of officers takes place. All PTTC officers were re-elected for another year. The rest of the meeting was devoted to routine business, there being no major issues that required action. As has been recent custom, separate meetings were held involving the Management and Budget (M&B) Committee, PAG Chairs, and RLO Directors. These groups also held joint meetings. In addition, the Board met in executive session with the Search Committee to review progress being made in the selection of a new Executive Director.

The next Board meeting is scheduled on July 16-17, 2000 in Washington, DC, followed by coordinated visits to Capitol Hill on July 18.

2. Oversight of Regional Programs

HQ has oversight responsibility of the ten regional programs, to ensure that they are effectively serving industry and implementing the annual plans approved by the Producer Advisory Groups (PAGs) and Board.

HQ staff and RLO Directors met in New Orleans, LA on Dec. 12, 1999, immediately preceding the Interstate Oil and Gas Compact Commission's (IOGCC) annual meeting. Discussions dealt with PTTC technical products, RLO deliverables, mailing lists, funding, and reporting issues. There was a discussion about metrics which focused on: (1) industry feedback about applying technologies and (2) "repeat attendance" as a measure of PTTC effectiveness (see Evaluating Program Effectiveness below). There was much brainstorming about what tools PTTC will need to be using for tech transfer in 2-5 years. The group identified web-based courses/workshops as primary learning tools in the near future.

HQ Staff and RLO Directors also met in Kansas City on March 27, 2000. Between these meetings, HQ keeps in touch through monthly mailings to RLO Directors and the use of "RLO-Net," an internal, password protected, Internet system.

During this reporting period, HQ staff worked with all RLOs, but especially with the Appalachian and Texas regions. The original annual plan submitted by the Appalachian Region needed additional detail in several core technology transfer functions. The M&B Committee conditionally approved the plan, pending receipt of a detailed action plan from the region. Working with the HQ staff, as well as PAG Chair Kevin Smith and other PAG members, RLO Director Doug Patchen developed a detailed action plan, subsequently approved by everyone involved. During the first half of FY00, significant progress has been made. However, concern still exists about PAG involvement and outreach to other regional groups.

During the first half of FY00, HQ staff has also devoted special attention to Texas, mainly because of the change in RLO personnel. When negotiating the contract extension with the Texas Region during FY99, multiple issues were addressed which required ongoing HQ attention. This has involved providing guidance to new RLO staff, and encouraging the region to leverage Bob Kiker's (the Permian Basin Mentor) connections throughout Texas. Productivity and quality have increased with clearer role definitions. New RLO staff have adapted quickly to the PTTC vision, being particularly open to insights from HQ, the other regions, and PAG Chair Larry Hulsey. Working together, the RLO staff and Bob Kiker have started obtaining regular PTTC coverage in association newsletters and meetings. Industry feedback has become noticeably more positive.

3. Problem Identification

PTTC conducted a technology needs survey and released the results in August 1999 in a report titled *Technological Priorities of Independent Oil and Gas Operators*. At the Drilling Engineering Association's invitation, Lance Cole also shared the survey findings during their November 1999 quarterly meeting in Houston, TX. PTTC assisted on a similar effort by Concurrent Technology Corporation (CTC) to match potential technology solutions coming from federal R&D to specific short term needs of independents that were identified through

interviews. These findings were communicated to industry and the R&D community through *PTTC Network News*, CTC's website, and an article published in *World Oil*. At the national level, no major problem identification initiatives have been started during FY00.

4. Evaluating Program Effectiveness

Last year HQ and the RLOs agreed on which parameters to use for measuring traffic to PTTC's network of 11 websites. The following statistics were selected as the most representative: (1) number of user sessions, (2) number of page views, and (3) average session length. To further enhance consistency, all regions were asked to use a common Web Trends software package to gather statistics. The Web Trends package is incompatible with a few of the regional servers, but efforts are being made to solve these problems. Data indicate continually increasing website usage in the regions. Often, there are measurable jumps in traffic when major enhancements are made.

Starting in 1999, the regions began using standardized questions in their workshop feedback forms. To measure PTTC's effectiveness in stimulating individuals to apply new or underutilized technologies, one of the key questions asks respondents: "Have you used any new technologies based on knowledge gained through PTTC?" During FY99, more than one-third of those answering the question were responding "Yes." This was based on feedback from about 20% of the nearly 6000 workshop attendees. Updated statistics continue to confirm that one-third are responding "Yes." In FY99 and FY00 combined, there were 66 workshops that had this data available from attendees. There were other key questions on the feedback form that are also being analyzed.

For some time, PTTC has known that many individuals are frequent attendees at its regional workshops. Although this implies they are receiving value or they would not return, PTTC did not have data about repeat attendance. For its purposes, PTTC defines "repeat attendance" as the % of E&P industry attendees at a workshop who have been to a previous PTTC workshop in that region. The RLOs agreed to start compiling these statistics; data are available for some FY99 workshops and most FY00 workshops. Repeat percentages range from just a few percent, to over 80%. Typically though, repeat attendance is in the range of 25 to 75%. Among 30 workshops in the 2nd Quarter of FY00 where data were available, repeat attendance averaged 45%.

DOE's National Petroleum Technology Office (NPTO) conducted a strategic planning meeting in Tulsa, OK on Feb. 24-25. The meeting focused on metrics and the most meaningful way to evaluate results/impact of DOE-funded R&D projects. A summary was given of the University of Tulsa's work in this area. The group, which included Lance Cole, brainstormed about how metrics criteria vary as a function of the stage of project life. In PTTC's case, since it is now in its sixth year, there should be definitive data confirming project impact. This is an important challenge for PTTC to address in the coming year.

B. Conducting National-Level Technology Transfer Activities

Although most of PTTC's technology transfer activities occur in the regions, the HQ staff has increasing opportunities and responsibilities in this area. There are several mechanisms that HQ uses for this function: (1) through technology alerts and field results articles in *PTTC Network News*, (2) by responding to inquiries received through the national level, (3) by coordinating PTTC activities with DOE's oil and gas R&D programs and those

of other organizations, (4) by developing technology/case study products, and (5) by conducting the Emerging Technologies Energy Conference (ETEC), which may be developed again in the future.

1. Newsletter Articles

Technology information is received from multiple sources for *PTTC Network News*. About half of the material comes in response to solicitations that HQ sends quarterly to a group of technology providers who often contribute information. Staff screen the submissions to decide which material will be of greatest interest to independent producers. Often, focus is on information/data products or recent reports describing R&D advances.

Beginning with the 4th Quarter 1999 issue, *PTTC Network News* is highlighting the workshop summaries that have been posted to the website. By presenting those insights, PTTC hopes to entice readers to regularly visit the website to access the full summaries, plus the wealth of other information available. Beginning with the 1st Quarter 2000 issue, the newsletter included a state-of-the-art technology summary developed by Karl Lang of Hart Energy Publications. The initial state-of-the-art summary addressed e-commerce (see Technical Products).

2. Answering National Inquiries

On average, the HQ office receives a few technical inquiries per week on various subjects. HQ responds directly to most of the inquiries, in some cases, asking other organizations or information specialists within the regions to assist them. Requests 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 center. Many inquiries received through the website are from individuals located internationally. In most cases, referrals are made to other individuals or organizations with more expertise. Often, vendors with new products/services contact HQ staff. If the technology is supported by field data and perceived to be of interest to independent producers, HQ staff develops technology alerts for *PTTC Network News* and encourages technology developers/providers to submit case studies for PTTC publications, workshops, and websites.

3. Coordinating with DOE and Others

On February 10, 2000, PTTC Chair Leo Schrider and HQ Staff met with DOE Fossil Energy officials in Washington. The meeting covered a variety of topics, including the following:

Staff from DOE's oil and gas programs often approach PTTC about featuring DOE-funded R&D advances in regional events. To implement these functions, HQ serves in a coordinating role with the RLOs. During this reporting period, the Midwest and Rocky Mountain regions expressed interest in developing workshops focusing on Downhole Oil Water Separation (DOWS). Since DOE has been quite involved in DOWS research, Lance Cole coordinated with Arthur, Langhus, Layne (ALL), a contractor involved in the DOWS work. Implementation has been delayed pending supplementary funding from DOE for ALL's involvement, but progress is being made and PTTC workshops are anticipated during the summer/fall of 2000.

PTTC actively coordinates with DOE in several other areas. At DOE's request, Lance Cole participated in an "environmental program" brainstorming meeting in New Orleans,

following IOGCC's annual meeting in December 1999. He also attended program review meetings for DOE's Natural Gas and Oil Technology Partnership (NGOTP) held in Houston in November 1999, along with former PTTC Chair Chris Hall. PTTC regularly seeks input from the national labs for *PTTC Network News*.

PTTC actively promotes DOE solicitations oriented towards independents in both the oil and gas R&D programs. Open solicitations by NPTO and NETL are noted in *PTTC Network News*, as are project awards. Since many independents are unfamiliar with DOE's proposal process, RLO staff help explain it to interested parties. This regional encouragement is known to be responsible for several proposals that have been submitted to DOE in recent years. Where relevant to the topic, the regions attempt to incorporate R&D and case study results within regional activities.

PTTC co-hosted a joint session of the Crude Oil and Supply and Demand committees during IPAA's midyear meeting in San Francisco, CA on May 20. PTTC provided a case study for the program: Scott Hara, Tidelands Oil Production Company, made a presentation on "Well Completion Technique for Controlling Unconsolidated Sand Formations by Using Steam." Hara has previously shared Tidelands' experience with this technology in West Coast workshops and in technical papers.

4. Technical Products

PTTC continued its thrust towards developing technical products—a trend which began in 1998 with development of the "Petroleum E&P Software Sampler" on CD-ROM. HQ is currently reviewing whether to update the product.

In addition, PTTC has an agreement with Gulf Publishing to jointly publish the *Petroleum Technology Digest*. This new semi-annual report, which is distributed as a supplement with *World Oil*, contains six or more field case studies on topics of high interest to independents. PTTC's role is to identify and compile case studies, often having to nurture writing by industry authors. Gulf Publishing is responsible for publishing and distribution to *World Oil* readers in North America (over 10,000 readers). In addition, PTTC distributes a few thousand copies through its channels. The inaugural issue, distributed in September 1999, contained nine case studies. The second issue, distributed during May 2000, contains six case studies. Plans are already underway for a third issue in fall 2000.

In August 1999, PTTC published *Solutions From the Field*, a compilation of 14 workshop summaries from recent regional workshops. The information included bottom line technical insights, problems addressed, case studies, and contact information for workshop speakers. Since its publication, at least two summaries per month have been added online to the national website. Highlights from these workshop summaries are also published in *PTTC Network News*. Through April 2000, 38 summaries have been posted online, and national staff has begun summarizing an additional 18 workshops. Feedback about these summaries has been extremely positive. Producers are seeing value in the summaries, as evidenced by 1,400 of these files being downloaded during a recent month. Plans are underway to publish a new hardcopy version that would be updated periodically.

5. Emerging Technologies Energy Conference (ETEC)

ETEC, a cooperative effort of PTTC and the Independent Petroleum Association of America (IPAA), was held during 1997 in Houston and 1998 in New Orleans in conjunction

with IPAA's annual meeting. The major focus was on case study presentations involving both producers and technology developers/providers. Although well received, industry conditions during late 1998 and other factors led to indefinitely suspending plans for ETEC. As a partial substitute, the RLOs are being encouraged to cooperate in major regional events of professional societies and other groups. When it becomes mutually advantageous, PTTC and IPAA may organize future ETEC events.

C. Communications Program

PTTC's 16-page newsletter, *PTTC Network News*, has been published quarterly since 1994. PTTC currently prints 8,300 copies, distributing about 7,100 through its mailing list. Of those in the mailing list, 73% are from the E&P category (majors, independents, consultants, service and supply). Of those in the E&P category, 66% are independent oil and gas producers. The remaining copies are mainly distributed at trade shows and through the RLOs.

During this reporting period, two issues have been published: The 4th Quarter 1999 issue was distributed in late December 1999 and the 1st Quarter 2000 issue was distributed at the end of March. The newsletter ran its first reader feedback survey last year. The results are helping staff improve the publication. Several new features have been added lately, and advertisements are being increasingly sold.

The national PTTC exhibited at two major events during this time period: (1) SPE's annual technical conference in Houston, TX from Oct. 4-6 and (2) the North American Prospect Expo (NAPE) in Houston, TX from Feb. 1-3. Exhibiting at major industry conferences helps PTTC build name awareness, maintain contact with its audience, and make new contacts in industry. With a few exceptions, PTTC exhibits only at major national industry events. RLOs vary in the degree to which they exhibit at regional events.

From October 1999 through March 2000, three national press releases were issued:

- "Petroleum Technology Transfer Council Ratifies Two New Board Members" (11/09/99)
- "Rowell to Step Down as PTTC's Founding Executive Director" (1/05/00)
- "Petroleum Technology Transfer Council Ratifies Two New Board Members" (3/31/00)

When invited, PTTC develops columns/articles for trade journals. Two columns were published during this time period. (1) Staff assisted PTTC Chair Leo Schrider in preparing his column for *American Oil and Gas Reporter's* "Presidential" issue (January 2000). The column focused on technology needs of U.S. independents. (2) PTTC contributes periodic columns to *World Oil*. Lance Cole's February 2000 column highlighted PTTC's work in posting insights from technology workshops online. In addition, HQ staff coordinated and provided assistance for a *World Oil* column (June 2000) by Jack Moody of the MS Office of Geology, with an introduction by Deborah Rowell. Funding through the Eastern Gulf Region provided technical support for development of Mississippi's new online geological resources system.

Early in FY00, PTTC made an agreement with Karl Lang of Hart's/Phillip's Publications to develop state-of-the-art technology summaries on a quarterly basis. There was a need for one feature article in each issue to discuss a specific subject in detail. Topics for

these summaries are perceived to be of high interest to independents. The initial summary, developed during the 2nd Qtr of FY00, was about: “e-Commerce: What Can It Do For The Independent Oil and Gas Producer.” A 3½ page version was published within *PTTC Network News* and an extended article posted on the national website. Additionally, the article was part of EnergyResource 2000, a two week international web-based conference held beginning May 15. The next state-of-the-art-technology summary (June 2000) will address “Coalbed Methane—What’s New and Different.”

In the April 200 issue, *Hart’s E&P* published a two-page interview of Deborah Rowell discussing the formation of PTTC and its accomplishments. Reprints of the article are being obtained for organizational promotion. There have been many other articles on this topic printed lately.

PTTC’s national website serves as a gateway to the regions and a communications path for technology-related information emerging from the national program. Enhancements during this time period include: (1) posting/links to case studies released in the September 1999 issue of *Petroleum Technology Digest*, (2) posting of *Solutions From the Field* at the rate of two per month, (3) posting the e-commerce state-of-the-art summary, (4) updating the technology listings (from *PTTC Network News*) by deleting those that were no longer relevant, and (5) adding enhanced search capabilities. Qualifications and the application process for the Executive Director position have also been posted. Traffic at the national website during March 2000 was about 9,500 user sessions, with 22,000 page views. Session length averaged 13 ½ minutes.

III. RESULTS AND CONCLUSIONS AT THE REGIONAL LEVEL

Although nationally-organized, PTTC's ten regions are the primary delivery mechanism for technology transfer programs to industry. It is in the regions where PTTC reaches independent producers through workshops, resource centers, information resources, websites, newsletters, and personal contacts. Primary statistics illustrating the volume, and inferred impact, of PTTC activity are summarized below.

SUMMARY OF PTTC REGIONAL ACTIVITY

Table 2- (2nd QUARTER—FY00)

Region	Workshops			Industry Contacts	Website (mo. avg.)		Newsletter Function
	No.	Attend.	From E&P Industry (%)		User Session	Page Views	
Appalachian	1	10	8 (80%)	134	932	1,899	Periodic columns in IOGA newsletters — none this quarter, starting online
Central Gulf	1	43	22 (51%)	165	1,959	4,254	Workshop announcement in LIOGA newsletter— circ. 800
Eastern Gulf	4	180	151 (84%)	161	1,411	4,278	Quarterly Newsletter – (3/00) circ. 660 (95% from industry)
Midwest	2	61	53 (87%)	234	4,044	9,714	Semi-annual newsletter– (2/00) circ. 2900 (98% from industry)
N. Midcontinent	3	137	106 (77%)	626	12,099	59,032	Quarterly Newsletter – (1/00) circ. 4722 (80% from industry)
Rocky Mountain	8	163	149 (91%)	640	3,612	17,445	Quarterly Newsletter – (2/00) circ. 1393 (95% from industry)
S. Midcontinent	13	307	295 (96%)	365	2,119	Not Avail.	Quarterly Newsletter – (1/00) circ. 7376; (2/00) circ. 7561 (97% industry)
Southwest	0	0	0	30	12,021	54,060	Semi-annual PRRC newsletter (12/99) circ. 3400 (70% from industry), plus on-line newsletter
Texas	3	88	65 (74%)	539 (2,777 TIPRO)	8,785 (49,548 outreach)	10,681 (1,359,609 outreach)	Coordinating articles/ inserts in assoc. newsletters Combined circ. 6200
West Coast	5	244	158 (65%)	995	Not Avail.	Not Avail.	None this quarter. Leverage through CIPA
All Regions 2nd Qtr FY00	40	1,233	1,007 (82%)	3,889			
All Regions 1st Half FY00	78	2,906	2,420 (86%)	6,971	FY00 1st Half versus FY99 1st Half --22% increase in # of workshops --essentially no change in attendance --34% increase in contacts		
All Regions 1st Half FY99	64	2,926	2,369 (81%)	5,201			

Repeat Attendance: Of the 30 workshops where repeat attendance was reported, it averaged 45% (Measured as % of industry attendees that had previously attended a workshop in that region).

PTTC Appalachian Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Geological/Geophysical Mapping for the 21 st Century	Morgantown, WV	3/2/99	15	13 (83%)
Optimizing Production and Operating Efficiency of Existing Wells (by Ohio Geol. Survey)	Columbus, OH (may hold in KY)	3/23/99	50	45 (90%)
Wireline Logging & New Technologies for the Appalachian Basin	Morgantown, WV	4/7-8/99	41	34 (83%)
Affordable Geophysics in Tough Times	Morgantown, WV	5/18/99	30	24 (80%)
Microbial Options for Increasing Oil Recovery	Zanesville, OH	6/21/99	14	10 (71%)
Software Productivity Tools (Kentucky Geological Survey)	Lexington, KY	6/25/99	14	12 (86%)
Expanding the Petroleum Potential of the Appalachian Basin (PA Geological Survey)	Pittsburgh, PA	8/23/99	38	25 (66%)
Coal Bed Methane Production and Potential in Eastern Basins (w KY Geol. Survey & Midwest)	Lexington, KY	9/16/99	112	85 (76%)
Creating Oil- & Gas-Related Web Pages	Morgantown, WV	9/28/99	9	5 (56%)
Total FY99 Attendance *			371	287 (77%)
Using Ohio's Run Time O&G Database (w Ohio DNR)	Zanesville, OH	10/12/99	15	11 (73%)
Changing Face of Exploration in the Knox Play (w Ohio O&G Ass., Ohio Geol. Society, Ohio Geol. Survey)	Akron, OH	10/20/99	96	85 (89%)
Challenges of Drilling in Ordovician Trenton-Black River: Breathing New Life into Old Targets	Morgantown, WV	11/11/99	106	99 (93%)
DigiRule Software Workshop	Morgantown, WV	3/1/00	10	8 (80%)
Generating Products from Public Databases for the O&G Industry	Morgantown, WV	5/10/00		
Creating O&G Related Webpages	Lexington, KY	6/10/00		
Real Time Stimulation Solutions for Appalachian Basin	Morgantown, WV	6/14-15/00		
New Technology for Core and Reservoir Analysis	Morgantown, WV	8/01/00		
Core Workshop on Major and Future Gas Reservoirs	Lexington, KY	8/00		
New Technology for Coalbed Methane Development	Becley, WV	9/13/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 134 (17 PTTC-initiated)

Website (monthly average): 932 user sessions, 1899 page views, 10+ min. A newsletter section was added to the website, and several articles written and posted to it.

Workshops: The single workshop conducted during the quarter was a DigiRule software workshop. Three workshops are planned during the coming quarter.

Newsletter: IOGAs are being encouraged to visit the news button on the website and retrieve articles of interest for their newsletters. An online newsletter will be implemented in the coming quarter.

Outreach: In their coverage of the IOGA WV meeting (1/26/00), the *American Oil and Gas Reporter* summarized Doug Patchen's talk relative to the Appalachian PTTC program. The region staffed a PTTC exhibit in March at the northeast and southeast section meetings of the Geological Society of America. PTTC activities were also promoted at meetings in Tulsa, OK; Bridgeport, WV; and Morgantown, WV. Staff responded to an unusual request: the operator of a local limestone mine, upon referral from an O&G operator, contacted PTTC about help in identifying the source of oil leaking into the mine area. Further investigation and visual examination revealed that the oil was leaking from a higher oil zone through natural fractures.

Follow-up: Ongoing efforts.

Case Studies: Ongoing efforts.

Problem Identification: Ongoing efforts.

Other Info: Product sales--\$130 for Appalachian Gas Atlases.

PTTC Central Gulf Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Y2K Issues (w LIOGA)	Lafayette, LA	3/16/99	56	50 (89%)
Power Cost Reduction Methods in O&G Opns	Lafayette, LA	3/24/99	24	23 (96%)
Optimization of Gas Well Completion & Production Operations (w/SPE)	New Orleans, LA	3/30/99	64	63 (98%)
Optimization of Gas Well Completion & Production Operations (w/SPE)	Lafayette, LA	5/18/99	42	40 (95%)
Enhanced Production Methods	New Orleans, LA	6/23/99	20	20 (100%)
Coiled Tubing Operations & Safety Practices (Westport/DOE)	Lafayette, LA	7/20/99	48	46 (96%)
Developing a Model for Coalbed Methane E&P Technology in Louisiana (w LSU's BRI)	Baton Rouge, LA	9/1/99	38	27 (71%)
Total FY99 Attendance *			319	292 (92%)
Property Evaluations & Acquisitions: A Short Course	Baton Rouge, LA	12/2-3/99	35	30 (86%)
Downhole Water Separation Technology	Baton Rouge, LA	3/2/00	43	22 (51%)
Distributed Energy Resources in the Oil Patch (w Texas Region)	Houston, TX	5/15/00		
Use and Misuse of Horizontal Wells (SPE)	New Orleans, LA	9/26/00		
Use and Misuse of Horizontal Wells	Lafayette, LA	TBD		
Coalbed Methane Potential of the Gulf Coast (AAPG, Eastern and Texas Regions, Louisiana Geol. Survey)	Houston, TX	10/28/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 165 (17 PTTC-initiated)

Website (monthly average): 1959 user sessions, 4254 page views, 12 ¾ min. User sessions about 10% higher than prior quarter. Page views down slightly due to reformatting and combining pages.

Workshops: The "Downhole Water Separation" workshop presented basic concepts, application criteria, and field test results for several oil and gas downhole water separation technologies. Effort leverages ongoing work within the Downhole Water Sink Consortium at LSU. Interest has been high in the "Distributed Energy Resources" workshop planned on May 15 in Houston (being held jointly with the Texas Region). Some support for a professional development series (five topics) is planned during May 2000.

Newsletter: Announcement for Distributed Energy Resources workshop in *LIOGA News*

Outreach: Increase in contacts is primarily due to interest in the Distributed Energy Resources Initiative. Contacts also include those made for the Downhole Water Sink Consortium.

Follow-up: The Downhole Water Sink Consortium is a successful spinoff from initial PTTC effort. Industry, primarily large companies, provides \$135,000 of funding. PTTC funding provides support for contacts with smaller operators and for general tech transfer.

Case Studies: Ongoing efforts.

Problem Identification: Ongoing efforts. Future workshop topics, budget and the current staff opening for an outreach person were discussed in a March 3 PAG meeting held in conjunction with LIOGA's annual meeting in Point Clear, AL.

Other Info: Product sales (two Louisiana Desktop Well Reference CD-ROMs, one Environmental Handbook) = \$450. Seismic permit database project/product in progress (completion still anticipated during summer 2000).

PTTC Eastern Gulf Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Surface Hydrocarbon Detection (MS Geological Society)	Jackson, MS	2/10/99	58	48 (79%)
3-D Reservoir Modeling (Landmark Graphics)	Tuscaloosa, AL	3/17/99	16	3 (19%)
Eolian Reservoirs—Norphlet Formation, NE Gulf of Mexico	Jackson, MS	5/26/99	46	35 (76%)
Geographix Mapping (Landmark Graphics)	Tuscaloosa, AL	6/2/99	5	0 (0%)
Basin Analysis: Mississippi Interior Salt Basin (research funded by DOE)	Jackson, MS	7/21/99	38	29 (76%)
Lower Cretaceous Reservoirs	Jackson, MS	9/2/99	51	44 (86%)
2D/3D Seismic (Florida Independent Petroleum Producers Association—FLIPPA)	Perdido Key, FL	9/23/99	13	12 (92%)
Total FY99 Attendance*			322	208 (65%)
Digitizing Well Logs (Neuralog)	Tuscaloosa, AL	10/13/99	10	4 (40%)
Miocene Deposition & Petroleum Geology: Northern Gulf of Mexico	Jackson, MS	11/10/99	41	35 (85%)
Reservoir Description and Analysis	Jackson, MS	12/1/99	31	24 (77%)
Horizontal Drilling in Oil Shales	Jackson, MS	1/26/00	92	83 (90%)
2-D/3-D Data Loading (SMT Kingdom Suite)	Raymond, MS	2/23/00	27	20 (70%)
3-D Seismic Interpretation (SMT Kingdom Suite)	Raymond, MS	2/24/00	27	20 (70%)
Seals—Critical Element	Jackson, MS	3/29/00	34	28 (82%)
PETRA Geologic Software	Jackson, MS	4/11/00		
Unitization	Jackson, MS	5/24/00		
Modern Salt Tectonics	Jackson, MS	7/26/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 161 (no PTTC-initiated contacts)

Website (monthly average): 1411 user sessions, 4278 page views, 20 min. Additions to the website include an update on oil and gas production in Florida and a report on the Horizontal Drilling in Oil Shales workshop held during the quarter.

Workshops: One software (Seismic Microtechnology's 2D/3D Pak) and two exploration-oriented workshops were held during the quarter. The workshop focused on Horizontal Drilling in Oil Shales, oriented towards application to the Tuscaloosa Marine Shale, was particularly well attended. For the planned workshop on unitization, staff are coordinating closely with IOGCC.

Newsletter: March 2000 (quarterly circ. 660, 95% industry)

Outreach: Ongoing efforts.

Follow-up: Through Univ. of Alabama, staff are working with an independent on a proposal to DOE related to shallow gas production in the Mississippi Interior Salt Basin.

Case Studies: (see above additions to the website).

Problem Identification: Ongoing discussion of future topics at workshops held in Jackson, MS.

Other Info: None reported this quarter.

PTTC Midwest Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Low Oil Prices: Pricing, Legal Issues, Electrical Cost Reduction, Exchange of Ideas	Grayville, IL Mt. Vernon, IL	1/22/99 1/29/99	42 33	42 (100%) 32 (97%)
Wireline Logging Applications for the Michigan Basin (North Midcontinent Region-PfEFFER)	Mt. Pleasant, MI	2/18/99	61	59 (97%)
Coalbed Methane (w KY Geological Survey and Appalachian Region)	Lexington, KY	9/16/99	Reported by App. Region	
Total FY99 Attendance*			190	171 (90%)
Surface Exploration for Oil and Gas in Mature Basins—Assumptions, Applications and Recent Advances	Lansing, MI	12/10/99	47	35 (74%)
Old (Pre-1958) Wireline Log Interpretation	Grayville, IL	1/14/00	50	44 (88%)
Reservoir Engineering School	Grayville, IL	2/9-11/00	11	9 (82%)
Cypress Sandstone Workshop	Mt. Vernon, IL	4/5/00		
Downhole Water Separation	Lansing, MI	7/14/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 234 (1 PTTC-initiated)

Website (monthly average, IL): 4044 user sessions; 9714 page views; 17+ min. Usage represents about a 10% increase in the number of user sessions compared to prior quarter. The Michigan part of Midwest website (not reflected in above statistics) experienced a 30% increase in traffic compared to the prior quarter. The increase in Michigan reflects the addition of two searchable databases (core data from 5000 wells from Michigan Basin Core Research Lab; Michigan Geological Survey records for wells/fields, including production and abandonment data, for wells completed since 1920).

Workshops: Both workshops during the quarter were presented by recognized industry experts. Doug Hilchie presented the “Interpretation of Old Elogs” course, while James Smith presented the “Basic Reservoir Engineering” course. Featured workshop for the coming quarter is a “Cypress Sandstone” workshop in Illinois.

Newsletter: Feb 2000 (circulation 2900 with 98% from industry). Feature article was an expanded recap of last fall’s coal bed methane workshop in Lexington, KY. Dave Morse gave an interview with the *Evansville Tribune* in January discussing use of new technologies in Illinois Basin and PTTC’s role. In Michigan, Bill Harrison gave an interview for *Business Digest* (a local monthly publication) where he discussed research efforts in Michigan and PTTC’s role.

Outreach: Staff regularly attends association and professional society meetings. RLO exhibited at the Illinois Oil and Gas Association annual meeting (Evansville, IN on 3/9-10) and attended monthly meetings of Michigan Oil and Gas Association (Harrison). Professional society meetings include Illinois Geological Society and SPE Midwest Gas Storage section. The Michigan satellite center received donations of wireline logs, trade journals and texts, and 300 ft of core from an interval previously unavailable to the public. In Illinois, recruiting was successful. Richard Geier, a petroleum geologist with over 20 years industry experience, will assume PTTC Program Coordinator duties in April 2000. In a special outreach effort, Bill Harrison will discuss technology advances/research plans in DOE-funded projects in Michigan in a 2-hr session at the Michigan Oil and Gas Association monthly meeting (5/11/00).

Follow-up: Although no specific successes or case studies were identified, several leads were identified in recent workshop feedback forms.

Case Studies: Ongoing efforts.

Problem Identification: Michigan operators continue to indicate that they want more Michigan-specific data online; cost effective, efficient techniques for analyzing data; and more information on coalbed methane/seismic interpretation/recent developments. With increased prices, Illinois Basin operators are expressing increased interest in waterflooding, tertiary oil recovery, and reducing cost of operations.

Other Info: Products sold: 100 oil & gas maps (\$700)

PTTC North Midcontinent Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Coalbed Methane	Wichita, KS	6/3/99	123	112 (91%)
Applied 3-D Seismic Interpretation (AAPG mtg)	Wichita, KS	8/28/99	19	17 (89%)
Internet for the Petroleum Professional (KIOGA)	Wichita, KS	8/30/99	53	52 (98%)
3-D Seismic for Independent Operators (KIOGA)	Wichita, KS	8/30/99	42	41 (98%)
Latest Advances in Concepts & Technology (w Rocky Mountain Region @ AAPG reg. mtg)	Wichita, KS	8/31/99	100	N/A
Total FY99 Attendance*			776	684 (88%)
Designing, Implementing and Monitoring Waterfloods	Wichita, KS	11/3/99	54	41 (76%)
CO ₂ Flooding in the Morrow Formation (w Shell CO ₂ Company)	Wichita, KS	11/17/99	34	27 (79%)
Advances in Well Stimulation (SPE-Wichita)	Wichita, KS	2/9/00	61	58 (95%)
Reservoir Characteristics of Morrow/Incised Valley Fill	Wichita, KS	2/16/00	44	29 (66%)
Core workshop—Morrow/Incised Valley Fill	Wichita, KS	2/17/00	32	19 (59%)
“Independents Day” @ SPE/DOE IOR Symposium (SPE & South Midcontinent Region)	Tulsa, OK	4/4/00		
Accessing Digital Kansas Petroleum Data (Kansas Geological Society/Tim Lauer)	Wichita, KS	5/25/00		
CO ₂ Flooding in Central Kansas (Kinder Morgan)	Wichita, KS	6/00		
Log and Core Petrophysics (KIOGA)	Wichita, KS	8/00		
Artificial Lift Basics/Advances Including Methods of Reducing Electrical Consumption	Wichita, KS	9/00		
Environmental Remediation of Abandoned and Existing Wellsites (IOGCC & Kansas State Univ.)	Wichita, KS	TBD		

*Columns do not add to totals (not all events listed)

Industry Contacts: 626 (146 PTTC-initiated)

Website (monthly avg.): 12099 user sessions, 59032 page views; 22+ min.

Usage continues to increase, more than doubling from year to year. Databases are continuously improved and expanded and, in many cases, search capabilities made easier. Through the LAS electric log database, data are now available for over 400,000 wells in Kansas. A recent addition includes a link to KCC database of recent intents. The “Morrow Incised/Valley Fill Play” workshop is also online.

Workshops: The “Well Stimulation” workshop incorporated topics such as acidizing, fracturing, extreme overbalanced perforating, and wellbore damage removal. The “Morrow Incised Valley Fill Plays” workshop included a day-long technical session, followed by a core workshop the next day.

Newsletter: Jan 2000 (circulation 4,722 with 80% from industry). Feature article describing DOE’s funding of CO₂ pilot test in central Kansas uplift. Issue included additional articles and workshop announcements.

Outreach: Seven meetings with operators/organizations on varied technology-related topics occurred.

Follow-up: Several operators have expressed interest in contacting Baker Petrolite regarding their RESTORE program (organic wellbore damage removal) after hearing discussions/seeing field examples presented in the “Well Stimulation” workshop.

Case Studies: Operators continue to indicate they are willing to share case studies, but they (and PTTC) lack resources to capture/document these field applications. TORP and PTTC staff are coordinating with Polymer Systems Inc. to develop a database on gelled polymer treatments in Kansas (application, pre- and post-test results). DOE-funded projects/proposals involving horizontal drilling may provide future Kansas horizontal well case studies.

Problem Identification: Participants in workshops continue to express interest in a broad variety of topics, including water control in producing wells, completion design, regional stimulation technologies, 3-D seismic developments and case histories, horizontal wells, coiled tubing, and log analysis.

Other Info: None reported this quarter.

PTTC Rocky Mountain Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
3-D Pack Basic Training, Data Loading, Advanced Techniques-Seismic Micro Tech (AAPG)	Golden, CO	6/9-11/99	10	N/A (Note: RLO shows industry attendees as its total)
3-D Visual. w Low-Cost Software (Slicer/Dicer)	Golden, CO	6/14/99	5	N/A
Fundamentals of Geologic Data Management	Golden, CO	6/16-17/99	10	N/A
Future of Coalbed Methane Rockies (RMAG/GRI)	Denver, CO	6/22/99	500	N/A
3-D Applications Earthvision-Dyn. Graphics (AAPG)	Golden, CO	6/24-25/99	6	N/A
3-D Applications-Earthvision-Dyn. Graphics (AAPG)	Golden, CO	7/28-29/99	6	N/A
3Dpak Basic Training-Seismic Micro-Techn. (AAPG)	Golden, CO	8/20/99	5	N/A
Latest Advances in Concepts & Technology (w North Midcontinent Region @ AAPG reg. mtg)	Wichita, KS	8/31/99	Reported by North Mid.	Reported by North Mid.
Tying Geology to Seismic: Use of Synthetics, Cross Sections, and Log Modeling-GMA LogM (AAPG)	Golden, CO	9/15-17/99	10	N/A
Internet Guide for Petroleum Professional	Golden, CO	9/22-23/99	13	N/A
GES Basic Training (GeoGraphix)	Golden, CO	9/30/99	11	N/A
Total FY99 Attendance*			1524	(90% estimated)
PowerPoint Training for Petroleum Professionals	Golden, CO	10/21-22/99	16	N/A
Introduction to Unix	Golden, CO	10/23/99	6	N/A
NMR Logging-Petcom (AAPG)	Golden, CO	10/26-27/99	19	N/A
SeisX Basic Training-Paradigm (AAPG)	Golden, CO	11/18-19/99	6	N/A
Introduction to Unix	Golden, CO	12/4/99	5	N/A
Air Quality Permitting for Wyoming Producers	Casper, WY	1/13/00	77	76 (99%)
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	1/19-20/00	16	13 (81%)
PowerPoint Training for Petroleum Professionals	Golden, CO	1/26-27/00	17	13 (77%)
Predictive Flow Modeling of Wells and Reservoirs Using Vertex 1000	Golden, CO	2/15/00	7	7 (100%)
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	2/23-24/00	17	17 (100%)
Unix Training—1 st in a Series	Golden, CO	2/26/00	6	3 (50%)
GeoPlus PETRA Basic Training for Barrett Resources	Golden, CO	2/28 & 3/1	15	15 (100%)
Coiled Tubing: Operations & Safety Practices	Casper, WY	3/23/00	Canceled	
Log Analysis for Improved Reservoir Understanding (Digital Formation)	Golden, CO	3/24/00	8	5 (63%)
Unix: Intermediate Skills	Golden, CO	4/8/00		
Prediction of Reservoir Quality and Seal Potential by Capillary Pressure Analysis	Golden, CO	4/25/00		
Subsurface Fluid Pressures and Their Relation to Oil and Gas Generation, Migration and Accumulation	Billings, MT	5/16/00		
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	5/17-18/00		
Unix: Basic Shell Programming	Golden, CO	5/20/00		
2000 Conference on Hazardous Waste Research (Great Plains/Rocky Mountains Hazardous Substance Research Center)	Denver, CO	5/22-25/00		
>> Pre-conference tech transfer workshop		5/22/00		
>> Post-conference field trip, oil field waste disposal		5/25/00		
Seismic Micro-Technology--Kingdom Suite (AAPG)	Golden, CO	6/12-14/00		
Coalbed Methane Symposium (RMAG, GRI)	Denver, CO	6/20-22/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 640 (193 PTTC-initiated contacts)

Website (monthly average): 3612 user sessions; 17445 page views; 20 3/4 min.

Workshops: Seven of the eight workshops were software training courses, drawing 86 attendees. Often, software workshops incorporate technology training as well as the specific software package. AAPG supplementary funding continues to allow software workshops to be presented at extremely affordable fees. Interest among independent producers

has been very strong in GeoPlus's PETRA package, including a special class only for Barret Resources staff. Wyoming operators particularly appreciated the "Air Quality Permitting" workshop in Casper. A planned "Coiled Tubing" workshop was canceled when preregistration remained low. The list of planned activities is quite busy for the coming quarter. Major cooperative activities include the hazardous waste conference and the coalbed methane symposium.

Newsletter: Feb 2000 (circulation 1,393 with 95% from industry). Much of the content focused on case studies/workshop summaries available through PTTC's national website.

Outreach: RLO staffed a booth at the Colorado Legislative Reception in Denver (2/23/00). Sandra Mark made PTTC announcements at meetings of Denver Well Log Society and International Petroleum Society, plus was the luncheon speaker for RMAG on 1/21/00 (What's New in Computer Technology for the Petroleum Geologist). RLO will staff booth at the 8th Annual Horizontal Well Symposium in Bismarck, ND in May.

Follow-up: Ongoing efforts.

Case Studies: Ongoing efforts.

Problem Identification: Ongoing efforts.

Other Info: RLO Director Roger Slatt announced that he will be stepping down to take a new position. He will be replaced by Sandra Mark, who has been manager of PTTC's software training center for the past four years.

PTTC South Midcontinent Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Total FY99 Attendance*			1008	(87%)
Beam Pump Optimiz. (w Marginal Well Commission)	Tulsa, OK	10/14/99	19	19 (100%)
Waterflooding: Geological Perspectives (w OGS)	Norman, OK	10/20/99	58	46 (79%)
Oil & Gas Management (w Marginal Well Commission)	Oklahoma City, OK	10/22/99	57	57 (100%)
Morrow Gas Play in the OK Anadarko Basin (OGS)	Norman, OK	11/10/99	127	113 (88%)
Beam Pump Optimiz. (w Marginal Well Commission)	Enid, OK	11/10/99	24	24 (100%)
Oil & Gas Management (w Marginal Well Commission)	Tulsa, OK	11/12/99	52	52 (100%)
Oil & Gas Management (w Marginal Well Commission)	Wilburton, OK	11/19/99	16	16 (100%)
Internet Access to NRIS Data (Geo Info Sys)	Tulsa, OK	11/19/99	18	18 (100%)
Coalbed Methane (w OGS, OIPA)	Norman, OK	12/1/99	191	178 (93%)
Skinner and Prue FDD Plays (w OGS/OCGS)	Oklahoma City, OK	12/6/99	20	14 (70%)
Prue & Skinner FDD (w OGS/Tulsa Geol. Soc.)	Tulsa, OK	12/8/99	16	11 (69%)
Internet Access to NRIS Data (Geo Info Sys)	Tulsa, OK	12/9/99	4	4 (100%)
Internet Access to NRIS Data (Geo Info Sys)	Tulsa, OK	12/10/99	7	7 (100%)
Internet Access to NRIS Data and Mapping with ArcView and ArcExplorer (Geo Info Sys)	Tulsa, OK	2/8/00	7	7 (100%)
Internet Access to Digital Orthophoto Quads (Geo Info Sys)	Tulsa, OK	2/9/00	4	4 (100%)
Gas Mediation Update & Selected Forms (MWC)	Oklahoma City, OK	2/15/00	9	9 (100%)
Gas Mediation Update & Selected Forms (MWC)	Watonga, OK	2/17/00	4	4 (100%)
Morrow Gas Play OK Anadarko Basin (OGS, TGS)	Tulsa, OK	2/23/00	33	29 (88%)
Morrow Gas Play OK Anadarko Basin (OGS, OCGS)	Oklahoma City, OK	2/24/00	55	51 (93%)
Gas Mediation Update & Selected Forms (MWC)	Duncan, OK	2/24/00	7	7 (100%)
Gas Mediation Update & Selected Forms (MWC)	Tulsa, OK	2/29/00	20	20 (100%)
Internet Access to NRIS Data and Mapping with ArcView and ArcExplorer (Geo Info Sys)	Tulsa, OK	3/2/00	9	9 (100%)
Internet Access to Digital Orthophoto Quads (Geo Info Sys)	Tulsa, OK	3/3/00	8	8 (100%)
Plugging: The Last Resort (MWC)	Enid, OK	3/3/00	7	7 (100%)
Plugging: The Last Resort (MWC)	Oklahoma City, OK	3/10/00	16	16 (100%)
Petroleum Systems of Sedimentary Basins in the Southern Midcontinent (OGS, DOE, KGS)	Oklahoma City, OK	3/28-29/00	128	124 (97%)
"Independents Day" Forum @ SPE/DOE IOR Symposium (SPE/PTTC w/ NMC Region)	Tulsa, OK	4/4/00		
Electricity Efficiency and Deregulation (MWC)	Shawnee, OK	4/10/00		
Electricity Efficiency and Deregulation (MWC)	Enid, OK	4/24/00		
Topic to be Announced (Geo Info Sys)	Oklahoma City, OK	4/26/00		
Topic to be Announced (Geo Info Sys)	Oklahoma City, OK	4/27/00		
2D/3D Seismic (OGS, OCGS)	Oklahoma City, OK	5/17/00		
Coal Bed Methane (OGS, TGS)	Tulsa, OK	5/24/00		
Electricity Efficiency and Deregulation (MWC)	Pawhuska, OK	6/13/00		
Electricity Efficiency and Deregulation (MWC)	Ardmore, OK	6/15/00		
Hartshorne Play (OCGS, OGS)	Oklahoma City, OK	9/20/00		
Hartshorne Play (OGS, TGS)	Tulsa, OK	9/21/00		
Hunton Play (OGS)	Norman, OK	Tentative Sep or Oct		

*Columns do not add to totals (not all events listed)

Industry Contacts: 365 (11 PTTC-initiated contacts)

Website (monthly average): 2,119 user sessions (WebTrends software can not be used on OU server). Online registration for workshops has been added. A modest number of requests is received through the website, but usage has grown little from prior quarters.

Workshops: Schedule includes cooperative efforts with the Oklahoma City and Tulsa Geological Societies, Marginal Well Commission, OU Geo Info Systems, and Oklahoma Geological Survey. Combined resources delivered 13 workshops this quarter. Play-based workshops continue to be in strong demand. New play-based workshops typically draw full houses, while there is a continuing audience for repeats coordinated with the Tulsa and Oklahoma City Geological Societies. For the fall, two new workshops on the Hunton and Springer are planned. Interest in coalbed methane also remains high. Geo Information Systems continues to expand the content covered in their computer/Internet-oriented workshops, and there is always a faithful following for MWC workshops.

Newsletter: Due to a mailing delay, two newsletters were distributed this quarter (1/00 and 2/00—circ. 7,561 with 97% from industry).

Outreach: Contacts do not include those made by Geo Information Systems or the Marginal Well Commission. Booth plans (part of Oklahoma Geological Survey booth) include AAPG annual meeting in New Orleans (April), GIS day at the Capital (April) and MWC Trade Fair in Tulsa (May 12).

Follow-up: Ongoing efforts.

Case Studies: Ongoing efforts.

Problem Identification: Arkansas operators have expressed an interest in some of the workshops developed by the Marginal Well Commission. Discussions are in progress with the Marginal Well Commission to do so.

Other Info: None reported this quarter.

PTTC Southwest Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Excel Add-in Software (for filing OCD C-115)	Midland, TX	3/5/99	35	25 (71%)
Horizontal Drilling	Hobbs, NM	6/11/99	32	20 (63%)
Electronic Filing of C115 forms	Farmington, NM	6/14/99	NA	
Morrow Gas Play (w Roswell Geol. Society)	Roswell, NM	9/15-17/99	200	190 (95%)
Fractured Reservoir Characterization and Production (w Four Corners Geol. Society)	Farmington, NM	9/29/99	125	110 (88%)
Total FY99 Attendance *			522	426 (82%)
Combined CO ₂ Recovery Forum and Naturally Fractured Reservoir Forum (w PRRC)	Socorro, NM	10/28/99	48	26 (54%)
Compressor Noise Abatement (NMOGA,/PRRC)	Farmington, NM	10/29/99	110 estimated	100 (91%) estimated
CEED CO ₂ Conference (CEED, PTTC Texas, SPE, Shell CO ₂ , Mobil)	Midland, TX	12/7-8/99	Reported by Texas	
Emerging Technologies	Hobbs, NM	4/6/00		
MesaVerde Tight Gas Infill Drilling	Farmington, NM	5/11/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 30 (12 PTTC-initiated)

Website (monthly avg.): 12021 user sessions, 54060 page views; 10 min.

Map server difficulties continue to be an occasional problem on the website. A large portion of website traffic is related to accessing production data. Staff is continuing to add cumulative production data, and they are compiling a database of well information for all wells drilled in two NM counties (Roosevelt and Sandoval) as a pilot program. Completion is anticipated during the 3rd Quarter.

Workshops: No workshops were conducted this quarter. Effort focused on planning for the April/May workshops in Hobbs and Farmington.

Newsletter: Semi-annual PRRC newsletter (12/99) circ. 3400 (70% industry), w/ monthly on-line newsletter *Southwest Regional Review*. Download speed of online newsletter has been improved by making it available in smaller segments.

Outreach: Resource center staff made several visits during the quarter, typically discussing web activities and electronic filing plus other issues. Visits were made with: (1) representatives from three companies in Farmington concerned with water disposal issues, (2) two companies in Farmington including installation of electronic filing software, (3) three companies in Roswell for demonstration and loading of the C-115 loading software. Following a talk at a Landman's Association luncheon in Roswell, several other people expressed interest in receiving visits. Staff has also visited extensively with both the NM State Land Office and Oil Conservation Division about data storage and Internet access to information issues. The region staffed a booth at Natural Resources Day at the State Capital in Santa Fe (1/19-20).

Follow-up: Ongoing efforts.

Case Studies: Ongoing efforts.

Problem Identification: Ongoing efforts.

Other Info: None reported this quarter.

PTTC Texas Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
PTTC Discussions after monthly TIPRO Tuesday Luncheons in Houston, TX	Houston, TX	2/2/99 3 & 4/99	N/A	N/A
Use of the Internet (AAPG)	Midland, TX	3/6/99	20	N/A
Microbial Options for Increased Oil Recovery	Midland, TX	6/3/99	18	N/A
Mudlogging Technology—Mini-workshop	Midland, TX	9/16/99	25	N/A
Total FY99 Attendance*			163	135 (83%) estimated
Oil & Gas on the Internet (w AAPG)	Farmers Branch, TX	10/2/99	Not reported	Not reported
3D Geophysics for Geologists (w East Texas Geological Society)	Tyler, TX	10/18-21/99	24	20 (83%) estimated
Developing a Model for Coal Bed Methane Exploration Fairways and Gas-In-Place Analysis in Texas (w S Texas Geological Society)	San Antonio, TX	11/10/99	72	65 (90%) estimated
CEED CO ₂ Conference (CEED, PTTC Southwest, SPE, Shell CO ₂ , Mobil)	Midland, TX	12/7-8/99	118	100 (85%) estimated
Reservoir Characterization Technologies for the New Millennium	Midland, TX	2/1/00	26	18 (69%)
Vapor Recovery Workshop	Midland, TX	2/17/00	16	10 (63%)
Coalbed Methane Workshop (Houston Geol. Society)	Houston, TX	3/9/00	46	37 (80%)
Mini-workshops (Mudlogging & Vapor Recovery) and , Virtual Reality Demonstration (WeCTOGA, BEG)	Abilene, TX	4/4/00		
Virtual Reality Demonstration (NTOGA, BEG)	Wichita Falls, TX	4/26/00		
Virtual Reality Demonstration (PPROA, BEG)	Amarillo, TX	5/2/00		
CO ₂ Workshop (PBPA Energy Appreciation Week)	Midland, TX	5/2/00		
Putting the Internet to Work (TIPRO & others)	Dallas, TX	5/11/00		
Distributed Energy Resources (w Central Gulf)	Houston, TX	5/15/00		
ECAP and Electronic Info. Resources Seminar (RRC)	Midland, TX	5/16/00		
ECAP and Electronic Info. Resources Seminar (RRC)	Houston, TX	5/19/00		
ECAP and Electronic Info. Resources Seminar (RRC)	Pampa, TX	5/25/00		
ECAP and Electronic Info. Resources Seminar (RRC)	Corpus Christi, TX	5/25/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 539 (1 PTTC-initiated), plus 2,777 TIPRO contacts (Internet/software/demo)

Website (monthly average):

Basic PTTC function: 8,785 user sessions; 10,681 page views

Expanded Outreach function: 49,548 user sessions; 1,359,609

Combined (basic + outreach: 58,333 user sessions; 1,370,290 page views, 8 ¼-min

Basic website traffic is analogous to that experienced by other PTTC regions. Expanded outreach traffic reflects sections of website related to Texas Region's emphasis, conducted by TIPRO, on increasing independent producers knowledge and use of the Internet. Additionally, data/information of specific interest to Permian Basin operators is being provided on a website at CEED (directly linked to PTTC website).

Workshops: Three workshops during the quarter covered practical operations (vapor recovery), advanced reservoir characterization, and coalbed methane potential. In the coming quarter, activities are scheduled during meetings of NTOGA, WeCTOGA, PPROA, and PBPA. There is also a large Internet workshop in Dallas at the InfoMart, and a cooperative (with the Central Gulf Region) workshop on distributed energy resources (power generation). A series of cooperative workshops with the Texas RRC is also planned.

Newsletter: Staff are submitting PTTC news-related items to the state's producer associations. Most are regularly providing coverage. Combined circulation is nearly 6,200. The East Texas Geological Society is also emailing news to their membership.

Outreach: TIPRO demonstrated the PTTC regional website at the North American Prospect Expo in Houston on February 1-2. The Permian Basin program, led by Bob Kiker, exhibited at the SPE Oil and Gas Recovery Conference in Midland on March 21-23.

Follow-up: Ongoing efforts.

Case Studies: Ongoing efforts.

Problem Identification: Ongoing efforts.

Other Info: Web advertising revenue--\$2,150; Web hosting revenue--\$3,224

PTTC West Coast Region

FY99 and FY00 Attendance/Plans				
Topic (main cosponsors in parentheses)	Location	Date	Total Attendees	Attendees from Industry (%)
Managing Oilfield Under Adverse Economics	Bakersfield, CA	1/21/99	63	57 (90%)
Managing Oilfield Under Adverse Economics	Long Beach, CA	1/22/99	65	47 (72%)
Water Cut Control	Long Beach, CA	2/25/99	49	41 (84%)
Water Cut Control	Bakersfield, CA	2/26/99	31	25 (81%)
GeoQuest training (GeoQuest)	Bakersfield, CA	3/25/99	27	11 (41%)
Use of Well Logging in Reservoir Characterization and Management	Long Beach, CA	4/29/99	37	20 (54%)
	Bakersfield	4/30/99	39	24 (62%)
Combustion for California Oilfields	Bakersfield, CA	5/17/99	43	15 (35%)
Coiled Tubing Operations & Safety Practices (Westport, DOE)	Bakersfield, CA	6/10/99	31	11 (35%)
	Long Beach, CA	6/11/99	40	14 (35%)
COMET 99	Los Angeles, CA	6/28-7/2	44	44 (100%)
3-D Seismic	Los Angeles, CA	7/08/99	41	30 (73%)
3-D Seismic	Bakersfield, CA	7/09/99	32	17 (53%)
Troubleshooters Forum	Bakersfield, CA	9/24/99	42	24 (57%)
Total FY99 Attendance*			752	482 (64%)
Power Cost Reduction (w CIPA)	Long Beach, CA	10/28/99	27	14 (52%)
Power Cost Reduction (w CIPA)	Bakersfield, Ca	10/29/99	37	26 (70%)
Sand Control for California Oilfield Operations	Long Beach, CA	11/18/99	28	18 (64%)
Sand Control for California Oilfield Operations	Bakersfield, CA	11/19/99	26	15 (58%)
Reservoir Management-Slope and Basin Fields	Los Angeles, CA	12/10/99	53	27 (51%)
Applied Well Testing and Borehole Stimulation	Bakersfield, CA	1/20/00	18	16 (89%)
Applied Well Testing and Borehole Stimulation	Long Beach, CA	1/21/00	30	24 (80%)
Troubleshooters Field Visits	Southern CA	2/17/00	See outreach discussion	
Coalbed Methane Opportunities for Independents	Anchorage, AK			
>> Short course		3/1/00	60	36 (60%)
>> Field trip		3/2/00	50	32 (64%)
>> Workshop		3/3/00	86	50 (58%)
Mapping and Locating Bypassed Hydrocarbons	Long Beach, Ca	5/22/00		
Mapping and Locating Bypassed Hydrocarbons	Bakersfield, CA	5/23/00		
Troubleshooter Field Visits	Southern California	5/00		
"Independents Day" @ SPE LA Basin Annual Meeting	Long Beach, CA	6/21/00		
COMET 2000	Los Angeles, CA	7/9-14/00		
Surface Operations—Instrumentation and Control	Long Beach, CA	7/13/00		
Troubleshooter's Forum	Bakersfield, CA	9/22/00		

*Columns do not add to totals (not all events listed)

Industry Contacts: 995 (880 PTTC-initiated)

Website (monthly average): 374 user sessions, 2807 page views.

Staff are coordinating with the USC Information Technology Consulting team to determine if (or why not) the WebTrends software can be used for monitoring website traffic.

Workshops: The coalbed methane short course/field trip/workshop in Anchorage represents PTTC's first major event in Alaska. RLO staff had primary responsibility for organizing the events, which were intended to stimulate independents' interest in coalbed methane opportunities in Alaska. PTTC Chair Leo Schrider gave a short informational presentation. Three potential PAG members representing Alaska interests have been identified. Intent is to offer at least one major workshop each year in Alaska.

Newsletter: None this quarter. Leverage workshop announcements through CIPA.

Outreach: The high number of PTTC-initiated contacts during the quarter reflect industry contacts for the Trouble Shooters program (January), coordination for the Alaskan coalbed methane activities (February), and beginning outreach for COMET. For the Trouble Shooters program, descriptive flyers were mailed to 700 individuals, and six operators expressed interest. The operators' problems were summarized and presented to the Trouble Shooters, who receive nominal compensation for their effort, which is limited to eight hours. Operators choose from among those Trouble Shooters who express interest. Current status from the February field visits is: (1) one field visit has been conducted and the consultant is

preparing the report, (2) two other consultants are planning visits to three facilities, (3) one operator is still selecting the Trouble Shooter, and (4) one operator has not responded to follow-up. Results will be presented in the September 22 Trouble Shooters Forum in Bakersfield.

Follow-up: Dr. Ershaghi made a presentation before the Electric Power Research Institute (EPRI) on the importance of independent producers understanding electric conservation issues. As a result, the California Energy Commission (CEC) and EPRI have offered the region \$100,000 of funding to assist with educating operators and conducting field audits of local facilities. Efforts for additional funding through CEC are also in progress.

Case Studies: Two case studies were presented in the January workshop on “Applied Well Testing and Borehole Stimulation.” The case study presented by BJ Services on “Drilling Fluid Damage Removal Techniques” was particularly well received.

Problem Identification: The upcoming workshop on “Mapping and Locating Bypassed Hydrocarbons” is a direct result of meetings with Signal Hill Petroleum and feedback from workshop participants. Also, as a result of discussions at the March 2000 RLO meeting, staff is pursuing a software training workshop for GeoPlus PETRA software.

Other Info: None reported this quarter.

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