

# THE RECORD

Denver Geophysical Society



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**Denver Geophysical Society**  
 7144 E. Warren Dr.  
 Denver, CO 80224  
 303-757-2942  
 Fax: 303-753-8791  
[office@denvergeo.org](mailto:office@denvergeo.org)

**Editor — Scott Harman**  
 Buckley Powder CO..... 303-350-5147  
[scott@buckleypowder.com](mailto:scott@buckleypowder.com)

**Graphic Design — Vaughn Hamby**  
 Studioworks Design..... 303-808-9334  
[vaughnhamby@me.com](mailto:vaughnhamby@me.com)

#### 2009 DGS OFFICERS

**President — Larry Irons**  
 Fairfield Industries..... 303-716-1630  
[liron@fairfield.com](mailto:liron@fairfield.com)

**President Elect — Jim Applegate**  
 Applegate Exploration, LLC..... 303-725-3755  
[jimapple.66@alum.mines.edu](mailto:jimapple.66@alum.mines.edu)

**Secretary — Mary Sue Purcell**  
 Williams Production..... 303-606-4286  
[mary.purcell@williams.com](mailto:mary.purcell@williams.com)

**Treasurer — Julie Shemeta**  
 MEQ Geo, Inc..... 303-910-0760  
[julie.shemeta@gmail.com](mailto:julie.shemeta@gmail.com)

**Editor — Scott Harman**  
 Buckley Powder CO..... 303-350-5147  
[scott@buckleypowder.com](mailto:scott@buckleypowder.com)

**Past President — Nancy House**  
 EnCana Oil & Gas (USA)..... 720-876-3744  
[nancy.house@encana.com](mailto:nancy.house@encana.com)

**Prior Past President — Bill Pearson**  
 Pearson Technologies..... 303-989-2014  
[bpearson@pearsontechnologies.com](mailto:bpearson@pearsontechnologies.com)

#### COMMITTEES

**Advertising**  
 Call the DGS Business Office at..... 303-757-2942

**3D Seismic Symposium — R. Randy Ray**  
 R3 Exploration..... 720-989-8071  
 — Julie Shemeta  
 MEQ Geo, Inc..... 303-910-0760

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**Prospect Fair/Technofest — Jim Applegate**  
 Applegate Exploration, LLC..... 303-725-3755

**Sunshine Fund — Fran Leestma**  
 DGS Office..... 303-757-2942

**Website — Steve Krehbiel**  
 Geophysical Consultant..... 303-421-3326

#### Information for Contributors

Your editorial contributions are encouraged particularly about classes, seminars, personnel news, company news, or other items of interest to the geophysical community. All suggestions and manuscripts should be sent to the Editor, Denver Geophysical Society, 7144 E. Warren Dr., Denver, CO 80224 or to the DGS website at [office@denvergeo.org](mailto:office@denvergeo.org). Deadline for copy is the first of each month preceding publication date. We reserve the right to edit all material according to standard practices.

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## Submitting Content...

Articles to be considered for publication should be submitted at least one month before desired publication date. Notices for DGS events should be received by the 15th of the the month preceding the publication date.

Commentary



## For The Record

By Scott Harman  
DGS Editor

### Williams Production Winter Seismic Acquisition in the Piceance Basin: One Company's Quest to Overcome the Odds

Have you ever heard someone say "We can't do that because that is not how they have done it in the past?" Well the management of Green River Energy Resources (GRER) was not willing to take no for an answer and took the initiative to work with the governmental agencies to overcome very unfavorable odds. When presented with the opportunity by Mary Sue Purcell of Williams Production to spearhead a 3D/3C project called

Ryan Gulch in the Northern Piceance Basin, Green River saw this as a challenge to be tackled sooner rather than later. GRER President, DeWitt Morris knew it was much too late in the "normal" seismic season to get the permits for 2008 and even start to drill that fall. Rather than take the established approach and wait until the following summer, DeWitt took the uncanny tact that Green River could work with the governmental agencies and that the regulations would allow the project to be surveyed, drilled and recorded during the winter months without violating the National Environmental Policy Act (NEPA). With a few very limited exceptions, seismic activity in the winter months on federal lands in the Rockies had not been done since the early 1980's. Of course, prior to that time winter work was quite common throughout the west. Not only that but several of Green River's staff had been there during those early days of heliportable exploration. They all knew that despite the additional physical demands of working outside during the winter, seismic operations could most assuredly be conducted in the cold and snow. They had done it!

While Green River took the lead in the initiative, General Manager Mike Simons points out that in today's regulatory environment, "You can't accomplish these kind of challenges without the help of expert NEPA authorities" to represent the government's concerns in real time. Green River's policy is that seismic activity, properly executed does not necessarily interfere with the winter range for mule deer and elk, or nesting for raptor migration and sage grouse habitat concerns. Having a third party monitor from DJ Environmental on site for

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MARTY HALL  
US Marketing/Sales Manager

PGS Onshore, Inc. Tel: (720) 851-6152  
7785 Windwood Way Fax: (720) 851-6153  
PO Box 549 Mobile: (303) 885-8860  
Parker, Colorado 80134  
USA

E-mail: [marty.hall@pgsonshore.com](mailto:marty.hall@pgsonshore.com)  
[www.pgs.com](http://www.pgs.com)



**WesternGeco**

1625 Broadway, Suite 1300  
Denver, Colorado 80202  
Tel: 303-629-9250  
Fax: 303-595-0667  
Cell: 720-641-7512  
[jyoung7@denver.westerngeco.slb.com](mailto:jyoung7@denver.westerngeco.slb.com)

**John Young**  
Supervisor  
Seismic Data Processing

Direct: 303-389-4405



**BLACKHAWK**  
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**Jim Hild**

Manager/Senior Geophysicist

Direct 303/215-5453  
Mobile 303/229-1192  
[jhild@zapeng.com](mailto:jhild@zapeng.com)  
[www.zapeng.com](http://www.zapeng.com)

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**DAVID BUTLER, D.Sc.**  
SR. GEOPHYSICIST

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ZONGE GEOSCIENCES, INC.  
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FAX: (303) 424-0807

[www.microgeos.com](http://www.microgeos.com)  
[David.Butler@zonge.com](mailto:David.Butler@zonge.com)



**Tidelands Geophysical**

**Tom Pierce**  
Marketing Manager  
Tidelands Geophysical  
101 East Park Blvd., Suite 955  
Plano, TX 75074

Phone: (972) 881-1099  
Fax: (972) 424-3943

Email: [tpierce@tgscismic.com](mailto:tpierce@tgscismic.com)  
Web: [www.tgscismic.com](http://www.tgscismic.com)



**Richard (Dick) Davis**  
U.S. Marketing Consultant

6430 S. Fiddler's Green Circle  
Suite 100  
Greenwood Village, CO 80111

Phone: 303-287-5700  
Fax: 303-287-6688  
Cell: 303-945-0479  
E-mail: [dickd@conquestseismic.com](mailto:dickd@conquestseismic.com)  
[www.conquestseismic.com](http://www.conquestseismic.com)



## For The Record

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the duration of the job was viewed as being essential according to DeWitt Morris. The extra set of eyes gives the authorizing agency the comfort that permit conditions will be complied with and that no surprises will haunt them once the crew has departed. The additional cost of 3rd Party QA/QC monitoring was cheap considering the parties involved had this one chance to prove to the BLM and others on behalf of industry that winter seismic activity in the Rockies could be conducted in a manner beneficial to all interests. The BLM is beginning to see that

in areas like the Piceance Basin and as far north as Jonah Field where reservoir development is ongoing and surface occupancy or Right of Way actions such as drilling wells and laying pipelines are at their peak during summer months, to allow the more transient seismic activities to occur during winter months has many benefits. Not the least of which is the ability to better position wells for greater productivity the following summer, as Mary Sue will concur.

As DGS Editor, my hope is that this project can be used as a model and be replicated this winter and proceeding winters. Working with the governmental agencies rather than viewing them as being a potential "roadblock" to getting your permit is an avenue the industry as a whole should strive to take. Many companies take this approach and could still improve upon their efforts however others still view the BLM as a necessary evil to get permits. As DeWitt stated when I asked, "What is the secret?" he said "What was the first thing you learned in Sunday school? The golden rule, 'Do unto others as you would want them to do unto you'. Relationship building with all stakeholders has the potential to eliminate roadblocks and delays on current and future projects. If we can learn to just treat people in the field offices the way we'd like to be treated, we would all get a lot more done."

The government agencies have many hats to wear and assisting the BLM or other agencies as best you can to overcome their concerns about seismic activity, whether it is winter or summer is beneficial to the industry as a whole. Remember it is a lot easier to say no to someone you don't like than it is to a person that has treated you with respect.

I want to thank all those involved in this program, that have helped me gather information to write this article. I have wanted to write about this project since January when I first became Editor of *The Record*. Wanting to make sure everything went well and there were

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1625 Broadway, Suite 1300  
Denver, Colorado 80202  
Tel: 303-629-9250  
Fax: 303-595-0667  
Cell: 303-378-1584  
E-mail: mvervalin@denver.westerngeco.slb.com

**Michael Vervalin**  
DP Manager - Denver



410 17<sup>th</sup> Street, Suite 1140  
Denver, CO 80202, USA  
tel 1 303 825 7400  
fax 1 303 825 2233  
www.cggveritas.com

**Brad Nolan**  
Operations Manager  
brad.nolan@cggveritas.com

# EXCEL

**Geophysical Services**  
**Rick Bogehold**  
President

5690 DTC Boulevard  
Suite 150E  
Greenwood Village, CO 80111

DIRECT (303) 867-5323  
OFFICE (303) 694-9629  
FAX (303) 771-1646  
Rick@excelgeo.com



**Jeff Hislop**  
Manager of Geophysics

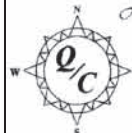
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Greenwood Village, CO 80111

Direct: 720-536-2332  
Office: 303-287-5700  
Cell: 303-704-1298  
E-mail: jeffh@conquestseismic.com  
www.conquestseismic.com



**Kendall Rogers, P. Geoph.**  
Account Manager  
Client Services

2200, 715 - 5 Avenue SW  
Calgary, Alberta, Canada  
T2P 5A2  
Direct: (403) 205 6180  
Tel: (403) 205 6000  
Fax: (403) 205 6206  
Cell: (403) 874 6133  
kendall.rogers@cggveritas.com



*John Meehan - Quality Control*

Oil & Gas Seismic Exploration  
5030 S. Inca, Englewood CO 80110  
303-907-7799  
email - johnmeehan@sprintmail.com

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no problems or complications I was asked to wait until this month. The drilling was completed in early April. PGS Onshore is still recording on this job at time of publication and is expected to finish in early May.

I have comments from most of the key players, including a phone interview with Paul Daggett from the BLM and an article from Mary Sue Purcell with Williams Production who has written an article from her viewpoint.

## Project Contractors Statements

### Green River Energy Resources, Inc.

“Drilling operations are now complete for the Ryan’s Gulch 3C/3D winter seismic program. This project consisting of 12,116 sixty foot shot-holes and over 21,000 receiver points commenced surveying in early October of 2008 and completion of data recording by PGS Onshore is anticipated toward the end of April or early May. At the peak of activity, as many as 140 seismic personnel have occupied the man-camp centrally located within the 3C/3D grid. Xtreme Drilling of Brighton, CO, GPX Surveys of Katy, TX and Minute Man Aviation of Missoula, MT have been instrumental in the project’s successful compliance with crucial NEPA timing restrictions. With cooperation from the Bureau of Land Management, White River Field Office, the Colorado Division of Wildlife and DJ Environmental Services, this Piceance Basin project is the first of its kind to be undertaken in the U.S. Rockies since the early 1980’s. Active participation of International Association of Geophysical Contractors, (Western U.S. Committee Chairman, Marty Hall) helped to facilitate the permitting of this 120 square mile project during winter months at an elevation of 7,500 feet and at temperatures descending to minus 30 degrees Fahrenheit. Mitigation of environmental constraints including archeological and paleontological avoidance, wintering mule deer and elk as well as raptor migration and Sage Grouse habitat have been addressed in accordance with the White River Resource Management Plan (RMP) and the BLM’s Handbook and Manual for Geophysical Operations (H3150). Following a detailed analysis of the “proposed action”, industry and agency worked together devising a schedule that allowed drilling and recording activities to continue in and around wildlife habitat without significant disturbance. A detailed account of the project from its inception will be presented


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777 South Broadway, Suite 200  
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Direct: 303-389-4461  
E-mail: jmathewson@denver.westerngeco.slb.com

**John Mathewson**  
Depth Imaging  
Supervisor

**HAMPSON-RUSSELL**  
A CGGVeritas Company

**Rob Mayer**  
Regional Manager  
Software and Services


10300 Town Park Drive  
Houston TX 77072 USA  
Support: 832 351 1188  
Tel.: 832 351 8317  
Mobile: 832 250 2892  
rob.mayer@cggveritas.com



**Joe A. Broussard III**  
Regional Manager

**DAWSON GEOPHYSICAL COMPANY**  
6301 N. Western Ave. Suite 210  
Oklahoma, OK 73118  
Phone: 405-848-7512 Ext. 501  
Fax: 405-848-7533  
Cell: 405-213-9859  
Email: broussard@dawson3d.com

**Scott Harman**  
Seismic



**Buckley Powder Co.**  
Englewood, Colorado

Telephone: 303 350 5147  
Cell: 303 619 7772  
Fax: 303 790 7033  
Home: 303 770 5721  
E-Mail: scott@buckleypowder.com

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## For The Record

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by Williams Production sometime following the completion of the project.”

DeWitt Morris,  
President

### Xtreme Drilling, LLC

“This project was a very unique opportunity to participate on a winter drilling project in the Rockies that has not been possible in many years. We want to thank Green River Energy Resources and Williams Production for the privilege of working on this project

with such a great group of companies and especially the people in the field. We feel a great sense of pride and accomplishment for being part of this project that many thought could not be done.”

Keith Burgess,  
Vice President

### DJ Environmental

“This operation has been an excellent example of ongoing cooperation between the BLM and the seismic permittee, Green River. We have been able to negotiate flexibility in the conditions of approval based on our (DJE) on site monitoring without encountering any delays in the project. All too often, permit conditions of approval are developed on a ‘worst case’ analysis and are not reflective of the actual impacts encountered with well-monitored geophysical operations. “

Tom Hare,  
Vice President

### Minuteman Aviation, Inc.

“Minuteman Aviation was involved in geophysical operations during the early days of Rocky Mountain exploration. We have recently (Summer 2008) joined Green River in support of their drilling effort. Things have certainly changed since those early days. Minuteman also provides service to the USDA Forest Service for fire suppression and so we get to see a lot of challenging operations. The Green River drillers are as good as it gets. They are very safety conscious around our helicopters and we appreciate the professional approach taken by these guys.”

Mike Mamuzich,  
President/Owner

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**Deborah Scott**  
Sales Representative

### TGC Industries, Inc.

P: 972.881.1099  
F: 972.424.3943  
C: 972.965.6242  
E: dscott@tgcseismic.com

Bank of America Plaza Tower  
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Plano, Texas 75074



**Russell R. Opfer**

Colorado State Bank Bldg. Cell 303-456-0089  
1600 Broadway, #1660 Office 303-592-5220  
Denver, CO 80202-4915 Fax 303-592-5225  
LGC Email: russell@lockhartgeo.com  
Opfer Exploration Email: opferexp@mac.com



**Randy Luckiw**  
Vice President  
USEC

Phone: 303-287-5700  
Fax: 303-287-6688  
Cell: 303-501-0039  
6430 S. Fiddler's Green Circle  
Suite 100  
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PARKER, COLORADO 80138  
(303) 840-7021

FAX: (303) 840-7166  
www.exdvpinc.com  
pbygott@exdvpinc.com



**Steve Solokis**  
Vice President  
US Operations

Phone: 303-287-5700  
Fax: 303-287-6688  
Cell: 303-324-2304  
6430 S. Fiddler's Green Circle  
Suite 100  
Greenwood Village, CO 80111 E-mail: steves@conquestseismic.com  
www.conquestseismic.com

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### Summary of Interview with Paul Daggett

*What was your first reaction about this proposal to do seismic activity in the Rockies in the winter?*

I thought there would be a lot of challenges to the contractor doing winter work in the Rockies. The way the process goes, the BLM has someone come forward with a proposal. Then the BLM goes forward with their research people looking at and putting in any mitigation that they feel are necessary for that particular resource. People come in with projects and we have to look at them when they come in regardless of the time of the year.

*Any concessions the BLM had to do for this particular project?*

As far as concessions from the BLM side I don't know of any thing we did any different for this particular

job. The resource management concerns may vary depending upon the time of the year; however, the BLM has their processes that they need to go through in regard to the resources concerns at that time.

*From the BLM viewpoint were there any advantages to doing seismic work in the winter?*

When you go back to the resource standpoint, you are running buggy vehicles or drills across the snow, it has a lot less impact on vegetation and you have a lot less of a chance of spinning out your tracks on the ground. We went back out later after some snow melt--- you knew where the route because the flagging was still there and it was really difficult to see where the tracks had gone through, so yeah it definitely was advantageous from that standpoint.

*Did the BLM have on sight observation?*

One of the requirements on this project was to have an independent third party monitor. This was critical in keeping the lines of communication open between the BLM and the company and getting things to

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**For more information contact**  
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**720-289-7519**  
**ashleytompkins5@gmail.com**



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## For The Record

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happen on the ground that we were hoping to see happen. What I learned in the process is you need to really look at who is hired as the third party contractor and what we really want them to be are the eyes and ears of the BLM. On the other hand, they are being paid by the company so I can understand where some people would see it as a conflict. It gives a lot more viability to the company to have someone out there to say you need to go in here and do this and we had weekly reports that were coming back where they were and what is going on and what they needed to do. They have been really good to work with and they understood everything that we had asked them to provide or do. Now that I look back on some of the projects in the past I think it is up to the BLM to make sure the third party consultant really understands what we are looking for and what is required.

*Would you do the same thing next year or do something different?*

It definitely was a very interesting and challenging project for everyone involved.

The BLM would consider another project again, after the success of this project we would review the potential for more winter work next year. The area is very diverse and there are a lot of wildlife concerns, if you move a few miles one way or another things change, so it depends on what area the proposed project would be in and the limitations on the resources in that area.

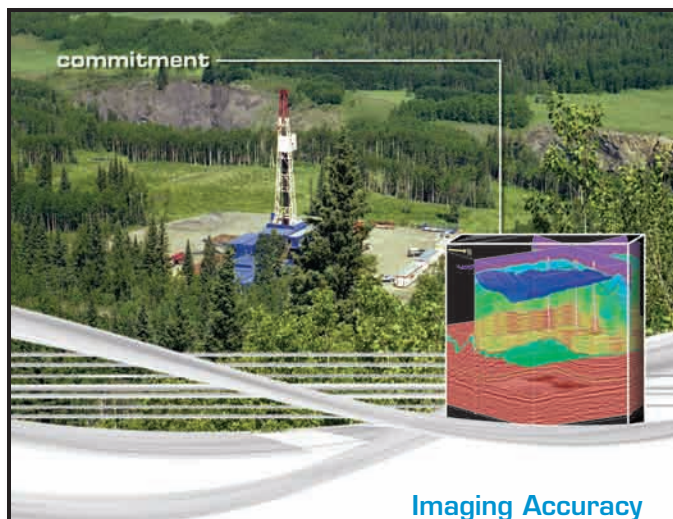
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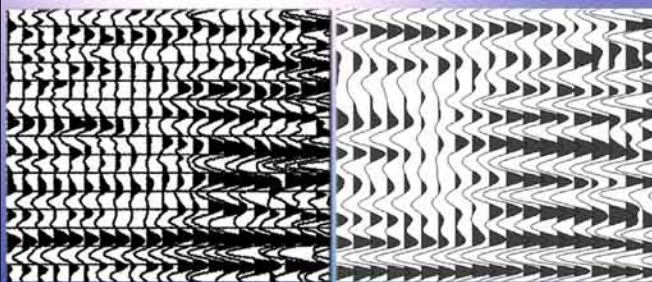
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## Executive Corner

By Mary Sue Purcell  
DGS Secretary &  
Williams Production

### Acquiring a 3D Survey on Federal Lands in Colorado During Winter Months

Nearly a year ago, Williams Production made the decision to acquire a proprietary 118 square mile 3D/3C survey in the Northern Piceance Basin of Colorado, covering the Ryan Gulch Unit. At

that time, it was felt that we were getting too late a start on planning to take advantage of the traditional fall acquisition time window on BLM lands for the 2008 season. In June '08, I picked up the phone and called DeWitt Morris of Green River Energy Resources and asked if he was available to help out with a project for the fall of 2009. To my surprise, he suggested we think about getting out there sooner, trying to acquire this 3D project during the next winter. "Really?" I asked. "Sure," he replied, "but don't get your hopes up, I'd only give this idea about a 7% chance of working." Despite the fact, that no one else here at Williams thought this plan had a snowball's chance, we decided to move forward. Cooperation between Green River Energy, DJ Environmental, SWCA, the White River BLM Office and the Colorado Division of Wildlife on issues related to critical NEPA compliance were delicately worked out between all the parties involved throughout the rest of the summer and fall months. At one point in the early autumn, DeWitt upped his chance of success to 15%, but told me to keep that opinion a secret. The BLM signed our permit in early December, and the drilling of shot holes commenced the next day. We were on our way to acquiring seismic data on federal lands in the Rockies during the winter months for the first time in nearly 25 years.

Looking back, it hasn't always been easy. Ryan Gulch is located in a remote part of northwestern

Colorado, complete with some steep topography at 7500' of elevation, far away from a town of reasonable size for housing all of the people it would take to make this project work. An early decision was made to establish a camp inside the boundary of the survey, and logistical planning related to this 3D took on another level of complexity.

The survey area is full of various wildlife strips that needed to be carefully maneuvered through by all. Drilling of shot holes needed to commence in the north, so the crews could be finished with an area of crucial winter range by December 31st. The recording crew PGS, needed to begin their activities in the south, in order to completely vacate an area of sage grouse leks by April 1st. The BLM graciously reduced the lek zone buffer from 4000' to 2000', allowing the crew to make this dead-line more easily. April 1st is the same day raptor strips set in, and we had numerous nests identified throughout the survey. Graceful negotiations allowed that radius around the nest to be reduced to 1000', and for the 3C sensors to be placed horizontally under sandbags rather than be skipped. The PGS crew was originally not allowed back into the northern area of crucial winter range until May 1st, but as of now has been permitted to start entering the area earlier by packing equipment in and once again laying the 3C phones horizontally under sandbags. Further concessions are still in negotiations.

As long as the snow pack stayed below 5', it was estimated we could keep working through the winter. Luck was on our side as snowfall has been relatively light all season long, something to be grateful for. Cold weather, however, didn't always cut us any slack. The drilling crew had not been out there for very long before they woke up to temperatures of -22 degrees, and several days of a total frozen camp (yes, even the toilets). Whiteout conditions were encountered more than once as various winter storms passed through the area.

Bear, elk, deer, and bobcats are local inhabitants here, and all have been sighted. One afternoon, a young male elk became hopelessly tangled in the

- continued on next page -

## Executive Corner

— continued from  
previous page —

layout of sensor cables, and any human help that was attempted by the crew made him more frantic. The CDOW was called, but could not come out until the next morning. Fortunately, when they arrived at 6:30 AM, the young elk was still alive. After tranquilizing him and getting him untangled, he was able to trot away fazed

but unhurt. I was grateful for this, as I didn't want this to be the survey where we killed an elk.

Good health was an issue, as it sometimes is in the winter. When I came down with a highly contagious form of norovirus on my way out to see the crew in January, I was politely told I wasn't welcome in camp with issues like that, since they were trying to keep the crew healthy. Shortly afterwards, most of the drilling crew got

sick anyway, everyone suffered through an upper respiratory virus that required antibiotics and a short stint of bed rest in town for all. In March, there was a scary incident where one of the supervisors on site experienced chest pains and was medevac'd into the hospital in Rifle. He was not having a heart attack, so he returned himself back to camp, where the medics immediately looked at him disapprovingly and took him to the hospital in Meeker. Turns out he was still recovering from a bout of pneumonia. Knock on wood, injuries to date have been minor, the most serious being a finger that required 11 stitches.

Drilling crews have been finished and gone now for a few weeks, and PGS is well over 50% complete on recording activities. They hope to be totally complete some time in May, and the bustling camp that often housed up to 140 people will then disappear. There is light at the end of the tunnel, and even DeWitt has to admit we are approaching a 100% chance of success for getting this 3D project finished.

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## Denver Geophysical Society Luncheon Notice

# May 14, 2009

## Techniques for Semi- automatic "True" Volume Interpretation of Structure and Stratigraphy

**Geoffrey A. Dorn**  
**TerraSpark Geosciences**

**At Wynkoop Brewing Company**  
**1634 18th Street at Wynkoop**

Room capacity - 100  
11:30 am Doors Open  
11:45 am Lunch Served  
12:30 pm Talk Begins

Reservation Deadline is  
Monday, April 11, 2009 at noon  
No reservations will be  
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Member Cost - \$21.00  
Nonmember Cost - \$28.00  
Meeting Only - \$5.00

**BY PHONE:** Call 303-757-2942 before the  
registration deadline.

**BY CREDIT CARD:** You can now register for the  
next luncheon through the web site at  
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deadline. DGS accepts: VISA, Master Card,  
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office by the deadline date and time.





## DGS Luncheon Speaker Abstract: Techniques for Semi-automatic "True" Volume Interpretation of Structure and Stratigraphy

**Geoffrey A. Dorn**  
**TerraSpark Geosciences**

### Abstract

Interpretation of a seismic volume for structure and depositional systems can be a very time-consuming process when conducted using traditional interpretation techniques. Traditional systems rely on the interpretation of horizons, faults and depositional features on inlines, crosslines, and time- or depth-slices in the seismic volume, and may include some automation in the form of horizon autotracking.

A new workflow and new interpretation techniques have been developed to enable "true" volume

interpretation - the interpretation of entire horizons, fault systems, and depositional features as complete 3-D surfaces in the seismic volume, where an entire surface is interpreted at once. The workflow includes the following steps:

- Structural Interpretation:
  - o Imaging and extraction of complete 3-D salt bodies;
  - o Automatic extraction fault surfaces;
  - o Predictive horizon surface interpretation
- Stratigraphic Interpretation:
  - o Creation of a stratal volume by removing all structural deformation from the 3-D seismic volume
  - o Imaging and semi-automatic extraction of channel systems in the stratal volume
  - o Inverse transformation of the extracted channel boundaries back to the domain of the input seismic volume

Automatically interpreting horizons, salt boundaries, canyons, and faults as complete 3-D surfaces in the volume significantly reduces the time and effort involved in structural interpretation. The domain transformation of the volume to create a structure-free stratal volume provides an ideal view of the data for identification and extraction of depositional features as 3-D bounding surfaces. Many depositional systems and features that would be completely missed in the input seismic volume become visible and interpretable in the stratal-slice volume. The inverse transformation of these depositional features

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**DGS Luncheon  
Speaker  
Abstract:  
Techniques for  
Semi-automatic  
"True" Volume  
Interpretation  
of Structure and  
Stratigraphy**

*— continued from  
previous page —*

into the original seismic volume allows all aspects of the interpreted geological structure and stratigraphy to be integrated into one view, leading to much more rapid and complete identification of prospects within the seismic volume.

## Biography

Dr. Dorn received his Ph.D. in exploration geophysics (Engineering Geoscience, 1980) from the University of California, Berkeley. He joined ARCO Exploration and Production Technology in the fall of 1980. From 1982 to 1987 he directed interactive interpretation research group at ARCO, leaving management in January of 1987 to pursue technical research interests in 3-D seismic interpretation and visualization.

He was named an ARCO Research Advisor in 1993 for his contributions in these areas. Returning to management in 1997, he formed and directed ARCO's Visualization Technology group.

After the acquisition of ARCO by BP, Dr. Dorn arranged BP's donation of ARCO's Visualization Technology center to the University of Colorado at Boulder (CU) forming the BP Center for Visualization. He was Director of this research center, as well as a Research Professor in the Department of Geological Sciences from 2001 - 2005. In January 2006, he completed a spin-out of the BP Center for Visualization from CU, forming TerraSpark Geosciences, LP.

Dr. Dorn was the Spring 2002 SEG Distinguished Lecturer, speaking on 3-D Visualization applied to resource exploration and development. His interests include 3-D visualization, 3-D/4-D seismic interpretation, and geophysical reservoir characterization. He is an active member of the SEG, EAGE, AAPG, and ACM SIGGRAPH.

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# Schedule of Events: May 2009

Luncheons

Meetings

Courses

Events

Conventions

Conferences

Symposiums

Holiday

					Fri 1	Sat 2
					SEG/EAGE DISC	
Sun 3	Mon 4	Tue 5	Wed 6	Thu 7	Fri 8	Sat 9
				NGOGP Joint Happy Hour		
Sun 10	Mon 11	Tue 12	Wed 13	Thu 14	Fri 15	Sat 16
Mother's Day		DGS Executive Committee Meeting		DGS Luncheon	RMAG Luncheon	
Sun 17	Mon 18	Tue 19	Wed 20	Thu 21	Fri 22	Sat 23
Sun 24	Mon 25	Tue 26	Wed 27	Thu 28	Fri 29	Sat 30
	Memorial Day					
Sun 31						





# Schedule of Events: June 2009

**Luncheons**

**Meetings**

**Courses**

**Events**

**Conventions**

**Conferences**

**Symposiums**

**Holiday**

	Mon 1	Tue 2	Wed 3	Thu 4	Fri 5	Sat 6
		DGS Executive Committee Meeting		DGS Luncheon	RMAG Luncheon	
Sun 7	Mon 8	Tue 9	Wed 10	Thu 11	Fri 12	Sat 13
AAPG Annual Convention-Denver	AAPG Annual Convention-Denver	AAPG Annual Convention-Denver	AAPG Annual Convention-Denver			
Sun 14	Mon 15	Tue 16	Wed 17	Thu 18	Fri 19	Sat 20
Flag Day					RMAG Luncheon	
Sun 21	Mon 22	Tue 23	Wed 24	Thu 25	Fri 26	Sat 27
Father's Day					DGS YP Putt-Putt Golf Tournament	
Sun 28	Mon 29	Tue 30				



## Cover Photo for May 2009 Record



Pictures taken by Green River Energy Resources and Williams Production of the Ryan Gulch 3D project this winter in the Piceance Basin



# 1st Annual Putt Putt Golf Tournament

Presented by The Young Professionals of The Denver Geophysical Society



## Who's Your Caddy?

**Friday, June 26th 2009**

Colorado Journey Mini-Golf

Cornerstone Park, 5150 S. Windermere St., Englewood, CO 80110

**2 PM Shotgun Start**

**18 - Foursomes Competing for the  
Title of Champion Putt Putter**

**Award Ceremony to Follow**

**Ditty Bags for Everyone**

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**Best & Worst Score Prize**

**Door Prizes**

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Contact Ashley Tompkins,  
[ashleytompkins5@gmail.com](mailto:ashleytompkins5@gmail.com) - (720) 289-7519



## Ryan Gulch 3D Survey

By Mary Sue Purcell,  
Williams Production,  
and Mike Simons  
Green River Energy  
Resources



Mary Sue  
Purcell  
helping to  
drill the final  
hole on the  
Ryan Gulch  
3D project.

Photo of a bobcat  
taken by Green River  
Energy's powderman  
Rich Frafellet back in  
February.



This photo is of the  
man camp located out  
at Ryan Gulch. The  
camp is housing per-  
sonnel from both the  
drilling crews and  
acquisition crew, hous-  
ing up to 120 people  
at the highest level of  
occupancy.



## Ryan Gulch 3D Survey

*— continued from  
previous page —*



This photo taken from helicopter, shows the topography challenges of the Ryan Gulch 3D job.

One of the two weathered-out days... these are views of the winter storm from the man camp.



This is the staging area for PGS, flying out a cache bag of sensors, cables, recording boxes.



## DGS Executive Board Meeting Minutes

**Minutes of the DGS Executive Board Meeting**  
**Tuesday, March 10, 2009**  
**Fairfield Industries Conference Room**  
**1776 Lincoln Street #1200**  
**Denver, Colorado 80202**

Present: Bill Pearson (BP), John Browder (JB), Jim Applegate (JA), Larry Irons (LI), Nancy House (NH), Ashley Tompkins (AT), Scott Harman (SH), Jim Gaiser (JG), Mary Sue Purcell (MP).

Absent: Julie Shemeta (JS)

Board meeting called to order at 4:45 PM by President Larry Irons

### Office Report – John Browder

JB supplied monthly stats. The June 11 luncheon date has been changed to June 4 due to the AAPG convention in Denver.

A contract for the 2009 Christmas luncheon has been signed with the Sheraton. A deposit of \$1000, which was negotiated down from an initial \$3,250, is due April 30th.

### Event Coordinator Report – Ashley Tompkins

JG addressed plans for Continuing Education Week. He presented a list of considerations for choosing the CE Week courses. Three scenarios were presented to make up the week. Out of the scenarios, three courses were agreed upon to have JG contact the instructors to see if they would be available to offer their courses during the CE Week. NH mentioned that perhaps a conference room at EnCana could be considered for the week, helping to also bring down costs.

AT provided stats from the IGT Symposium. Final registration was 105 with 94 in attendance. Sponsorship was \$6,850, and the event went smoothly and was considered a good success by all. Ashley would like the Board to grant the IGT committee approval to plan a similar event for 2010. BP complimented Ashley, John, and Fran on a job well done, noting how smoothly everything went. JA proposed a motion to hold a 2010 IGT Symposium, and the motion passed.

AT discussed the current plans for the upcoming Student Challenge Bowl this March 26 and the Young Professional Putt-Putt golf on June 26, tentatively set up at South Suburban. JA moved to approve

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## DGS Executive Board Meeting Minutes

– continued from  
previous page –

the Putt-Putt golf budget and the motion passed. Other YP events are in the planning stages, with additional proposals and budgets to be presented to the Board in the future.

AT presented a proposed budget for the DGS Golf Tournament. AT reported that sponsors are currently being contacted. NH moved that the Board approve this preliminary budget and the motion passed. Advertising for this event was discussed.

### Secretary Report – Mary Sue Purcell

No changes were noted, and LI moved that the minutes be approved.

### Treasury Report – Julie Shemeta

JS is out of the country and JA gave her report in her absence. The budget and fiscal year comparison reports and charts were reviewed. Should the Board be reviewing our Investment Portfolio at this time? We should be reviewing the risk involved in what we are currently investing. JS or JA will contact the bank to discuss this.

### Editor and Webmaster Report – Scott Harman

Still waiting on IHS on the idea of having them provide a Rockies crew count that could be included in the *Record*. SH discussed ideas on how to upgrade the *Record*. SH suggested we increase the business card rates to match others. After discussion it was agreed to increase the business card ad rates to \$180/year.

NH discussed how the DGS website does not have a true service directory, but only a filter on business ads. It was agreed that there was a need to form a committee on how to best create a living, accurate service directory on the DGS website. NH volunteered to head the committee and both LI and SH volunteered to be members. Any proposed ideas will need to be presented to the Board for consideration.

The *Record's* table of contents page will now have hot-linked to each article. Re-doing the webpage was also discussed, and a written proposal will be forthcoming on that.

### Vice President Report – Jim Applegate

JA discussed the upcoming line-up of luncheon speakers, and work being done to finalize plans for some of the months not yet committed. JA presented sample speaker awards that will be ordered for the upcoming year.

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(email) mkramer@interactive-es.com



**Jim Pfeiffer**  
Senior Geophysicist

Direct 303/215-5455  
jpfeiffer@zapeng.com  
www.zapeng.com

301 Commercial Road, Suite B  
Golden, Colorado 80401  
Tel 303/278-8700  
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Denver, Colorado 80202

Tel: 303-629-9250  
Fax: 303-595-0667

ddangle@denver.westerngeco.slb.com

**David S. Dangle**

QC Supervisor  
Seismic Data Processing



1625 Broadway, Suite 1300  
Denver, Colorado 80202

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**Bruce W. Hootman**

Principal Area Geophysicist

Cell: 720-201-7892

#### INTERACTIVE EARTH SCIENCES CORPORATION

**PETER H. NORTHROP**

GEOPHYSICIST

2D/3D Seismic • Workstation Interpretation  
Depth Migration • Seismic Project Management

730 17th Street  
Suite 999  
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## DGS Executive Board Meeting Minutes

— continued from  
previous page —

SEG Spring Distinguished Lecturer is April 23rd at CSM. Mines is in charge of organizing the event. DISC is to be held on May 1st.

### President's Report –

#### Larry Irons

LI congratulated the committee on a successful IGT Symposium and to all those individuals who worked on it. LI echoed sentiments

that this was a job well done. He had spoken with numerous seismic interpreters and found their reactions to be very positive.

### Past President's Report – Nancy House

The DGS-SEG Foundation scholarship consolidation contracts and agreements have been signed, faxed, and emailed to the SEG office.

An obituary and announcement for a named scholarship in honor of Brent Miller will be submitted to the

SEG for publication in the Leading Edge. A similar notice needs to be included in the *Record*.

Planning and sponsorship details were discussed concerning the upcoming Student Challenge Bowl. Ideally, sponsorship needs to be \$5,000, and more effort is needed for soliciting sponsors.

### Prior Past President's Report – Bill Pearson

BP reported on the upcoming 3D Symposium, to be held on March 27th. Current registration is over 400, with a hope of hitting 500. Sponsorship for this year is down slightly.

### New Business

LI presented a letter he received from the SEG Foundation requesting additional funding from DGS for an another \$5000 donation. Discussion ensued on how address this request. LI will investigate further and will report back to the Board following his discussion about timing with the SEG.

The meeting was adjourned at 7:14 PM.



## DGS New Members

Angola, Omar  
Dombrowski, Timothy  
Fadeley, Henry  
Gardosh, Michael  
Givan, Annika  
Goolsby, Steven  
Henriksen, Sverre  
Kohn, Marshall  
Laitrakull, Kasira  
Leaver, Jay  
Lopez, Crucelis  
Martinez, John  
Riebel, Tom  
Rigg, Natasha  
Russell, Mark  
Shaak, Rachel  
Sharma, Ravi  
Schupack, Ben  
Torre-Sastre, Humberto  
Tschanz, Dawn

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Half Page Horizontal	7.25" wide by 4.75" tall	\$188	\$519	\$972	\$1848
Half Page Vertical	3.5" wide by 9.75" tall	\$188	\$519	\$972	\$1848
Third Page Horizontal	7.25" wide by 3.1" tall	\$128	\$348	\$630	\$1176
Quarter Page Vertical	3.5" wide by 4.75" tall	\$98	\$270	\$498	\$948
Sixth Page Horizontal	3.5" wide by 3.1" tall	\$68	\$180	\$336	\$636
Eighth Page Horizontal	3.5" wide by 2.25" tall	\$56	\$147	\$228	\$408
Business Cards	2.625" wide by 1.5" tall	—	—	—	\$180

- 2) Ads should be set up as digital files at a minimum of 200 dpi (dots per inch), preferably near 300 dpi resolution, at the final sizing as displayed in the *The Record*.
- 3) Ads need to be set up exactly to the size dimensions of your ad type selected above.
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- 5) The preferable final graphic format for any ad is **.pdf (with all fonts set to be embedded)** which is the same format as the final production of each *Record*. Other acceptable file formats include **.psd, .jpg, .ai, .eps, or .tif**.
- 6) Ad files can be sent as an attachment via email to *Denver Geophysical Society* at [office@denvergeo.org](mailto:office@denvergeo.org) and will then be forwarded to Vaughn Hamby at [vaughnhamby@mac.com](mailto:vaughnhamby@mac.com) for inclusion in *The Record* upon Editor approval.
- 7) For further information please contact:   

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7.25" wide  
by  
9.75" tall

### HALF PAGE VERTICAL AD

3.5" wide  
by  
9.75" tall

### THIRD PAGE HORIZONTAL AD

7.25" wide  
by  
3.1" tall

### HALF PAGE HORIZONTAL AD

7.25" wide  
by  
4.75" tall

### TWO-THIRDS PAGE HORIZONTAL AD

7.25" wide  
by  
6.4" tall

### QUARTER PAGE VERTICAL AD

3.5" wide  
by  
4.75" tall

### SIXTH PAGE HORIZONTAL AD

3.5" wide  
by  
3.1" tall