Alpine

The Alpine field on the Alaskan North Slope has been produced with a WAG (water alternating miscible gas) EOR process since startup in 2000 and is about halfway to its expected ultimate recovery. The first 3D seismic data set over the field was acquired in 1996. A new 3-D seismic dataset was acquired in 2010 for improved reservoir characterization and to monitor reservoir changes due to production. To help justify the 2010 survey, a time-lapse feasibility study was carried out that predicted the magnitude of the 4D signal from the Alpine reservoir.

Well-based (1-D) scenario modeling and ‘Sim2Seis’ reservoir simulator-based (3D) modeling were carried out for changes in elastic parameters and in upscaled seismic response. The core rock physics model had two main components: Gassmann fluid substitution for saturation changes and a pressure model calibrated to ultrasonic measurements on core. The seismic synthetic modeling utilized wavelet bandwidth and S/N levels from experience with land acquisition at nearby fields. 4D signal modeling showed the expected MWAG signature to be present but subtle with respect to the expected 4D NRMS (noise) levels of 20-30%.

(continued)
The 2010 monitor survey was acquired for the best 3D image at the expense of 4D repeatability. Acquisition differences were partially overcome by dedicated 4D parallel processing of base and monitor surveys, but the resulting 4D NRMS levels are high ~40%. Despite the non-ideal nature of the 4D experiment, the 4D difference data shows a clear signal (rock softening) aligned with current injectors. The 4D observations suggest a much larger response than that can be observed solely from a combination of pressure and fluid response on the rock.

The 4D seismic signal is consistent with the opening of fractures in the reservoir zone due to high water pressure injection. A fractured rock physics model has been incorporated in the Sim2Seis workflow. Incorporating fractures in the seismic modeling has allowed matching of the synthetic with 4D seismic field data. Ongoing efforts are focused on calibration and understanding of the fracture phenomena.

An understanding of the 4D signal is necessary to correctly interpret the changes in fluid saturation and optimize recovery, to assign a more accurate monetary value to 4D seismic, and to best plan the timing of repeat survey acquisition. The inclusion of fracturing in the 4D seismic modeling workflow is new and can also help explain why 4D velocity decreases around injector wells are often observed to be larger than expected.

**Milne Point**

The Milne Point field is 100% owned and operated by BP Alaska. During mapping of the Kuparuk section in the early 2000s, amplitude blooms located around injectors were noticed on an OBC survey that was shot in 2001 that were not present on a previous dataset shot before field start-up. From this, many new drilling locations were identified and the data have been used in a qualitative sense to aid in identifying new drilling locations.

BP recently acquired another OBC survey in the summer of 2012 over the same area. This talk will focus on the uses and qualitative observations of the 2001 data and the current plans around a 4D processing project utilizing the 2001 and 2012 datasets.

**About the Speakers:**

Leo Brown is a staff geophysicist at ConocoPhillips Alaska currently working Western North Slope Development. He has held exploration and rock physicist positions in Norway and Houston with ConocoPhillips and worked as an engineering geophysicist for Geovision Geophysical Services Company. He holds a BS in Geology from Brigham Young University, MS in Geotechnical Engineering from University of Texas at Austin, and MS in Geophysics from Colorado School of Mines.

Daniel Yancey began his career with BP Alaska in 2005 after earning a B.S. and M.S. in geophysics from Virginia Tech. He has done geophysical work for most reservoirs operated by BP on the North Slope. Additionally, he has worked the sub-salt Paleogene section in the Gulf of Mexico Exploration Team for BP in Houston, Texas. He is currently one of the geophysicists working on the Milne Point field.

**From the President’s Desk:**

Last month I had the opportunity to discuss the role of the Alaska Geological Society in regards to community involvement. Aaron Rowbotham, a geological science major at the University of Alaska Anchorage, was working on a profile paper of the AGS for an English class and had asked for an interview. This sent me scrambling to the AGS website to brush up on our charter and by-laws to see exactly what statements we’ve made regarding community involvement. The documents each have articles stating our purpose, parts of which seem to be specifically directed at professional geologists. However, both documents do have essentially the same simple statement, to promote an interest and understanding of Alaska geology and related earth sciences. With no specific group identified I took this to mean the promotion could take place in the general community. Although I had little doubt I was glad to see our legal documents didn’t make us out to be a clubby, insular group of stuffy professionals.

In practice our community involvement is mainly through educational funding and support of educational activities. Mr. Rowbotham’s paper aptly reflected this and many other aspects of the AGS. In concluding his paper he asked a question, “Now why is this group important at all?” His answer is that geology is all around us, especially in a state like Alaska, and everyone would be wise to know more about it. I’m sure there are ways for the society to expand our footprint in the community but it is also something we can do as individuals. Look for opportunities to point out the geology in your home, your yard and your community to the people you know outside the AGS.

~ Matt
THE ALASKA GEOLOGICAL SOCIETY


Thursday, August 22, 2013    James McCalpin, Geo-Haz; The Mountains Are Falling Apart; A Spectrum of Mass Failures; Rockslides, Sackuns and Unfolding
Thursday, September 19, 2013    Sue Karl, USGS; Quaternary Volcanoes in Southeast Alaska
Thursday, October 17, 2013    Erin E. Donaghy, Northern Arizona Univ.; South-Central Alaska: Modification of a Forearc Basin by Spreading Ridge Subduction
Thursday, November 21, 2013    John Decker, Niko Resources; Seabed mapping and the search for oil and gas seeps offshore
Thursday, December 12, 2013    Leo Brown, COP & Daniel Yancey, BP, “4D Seismic at Alpine Field & Time-lapse 3D/4D observations at Simpson Lagoon, Milne Pt.”
Thursday, January 16, 2014    Richard O. Lease, USGS; Title to be announced
Thursday, February 20, 2014    David Houseknecht, USGS, “Alaska’s North Slope and the Chukchi Shelf”
Monday, April 14, 2014    John Kaldi, University of Adelaide, “Carbon Capture and Storage”, Main Conference Rooms A, B, C at BP Exploration Alaska
Thursday, April 17, 2014    Gerry Van Kooten, Calvin College, “Exploration of Alaska’s Interior Basins and the Impact of Recent Drilling”
Thursday, May 15, 2014    Keynote Speaker at the AGS Technical Conference, University of Alaska. Anchorage

If you would like to volunteer a talk or would like to suggest a speaker, please contact Monte Mabry at 230-4488.

My Pet Rock

Trystan Herriott
Alaska Division of Geological & Geophysical Surveys

Oblique aerial view southwestward of Middle–Late Jurassic Chinitna and Naknek Formations northeast of Oil Bay, Iniskin Peninsula, lower Cook Inlet. This vista exemplifies the typical weathering profiles of mappable units in the area. Recent DGGS-led geologic studies on the Iniskin Peninsula will serve as a basis to better understand basin evolution and hydrocarbon potential of Mesozoic strata in the Cook Inlet forearc region. Jns is approximately 285 meters thick for sense of scale. Chinitna Formation: Jcp—Pavloff Siltstone Member. Naknek Formation: Jns—lower sandstone member; Jns—Snug Harbor Siltstone Member; Jnp—Pomeroy Arkoise Member.
Environmental consulting - field sampling - geochemistry - hydrology

An 8(a)-certified native-owned corporation, APCS has extensive experience providing baseline environmental services to minerals exploration and oil development projects throughout the state. We develop and implement environmental sampling plans, with rigorous QA/QC controls that meet state and federal permitting standards. Our professional staff provide expertise to the mining industry with a focus on:

- Groundwater monitoring
- Surface hydrology
- Groundwater geochemistry
- Water quality monitoring
- Permitting
- GIS services

4241 B Street, Suite 100
Anchorage, AK 99503
t: (907) 677 9451
f: (907) 677 9452
www.apcservicesllc.com

AGS Logo T-Shirts  ($25 ea.)
(Black shown – also available in Gray and Dark Blue)
Limited sizes available so gets yours early !!!
The Jurassic of Cook Inlet and the Alaska Peninsula has long been recognized as representing the most complete succession of Jurassic stratigraphy of anywhere within North America (Arkell, 1956; Poulton et al., 1992). Its fossil record is outstanding, with numerous publications on both ammonites and bivalves, and now even dinosaurs (Drucnkenmiller et al., 2011 and Fowell et al., 2011) and marine reptiles (Blodgett et al., 1995; Weems and Blodgett, 1996). However, the fossil record for other major biotic groups of this region remains undocumented, with the exception of some initial efforts to record that of the brachiopods (Lazar et al., 2009; Schemm-Gregory and Blodgett, 2012).

Middle Jurassic strata of the Iniskin Peninsula are extremely abundant on the Iniskin Peninsula and at Tuxedni Bay, but their detailed taxonomic study has only been undertaken by Eichwald (1871). These described species are mostly large inoceramid bivalves (Eichwald, 1871; Blodgett, 2012), all of which are now referred to the genus Retroceramus. Eichwald’s described inoceramid specimens were collected in and around Tuxedni Bay on the west side of Cook Inlet. They are especially common at the aptly named Fossil Point along its south shore, where they are the most easily recognizable fossils found in exposures there (Fig. 8). Publications referring to their presence in various exposures around Tuxedni Bay include Stanton and Martin (1905), Martin (1926), Detterman (1963), and Detterman and Hartsock (1966). Ralph W. Imlay (1908-1989), regarded as the foremost expert on Alaska’s Jurassic fossils, recognized only two of Eichwald’s species are being taxonomically valid, with the remaining two being regarded as merely synonyms or variants.

Recently we have been able to document the presence of significant megafossils in cores from two wells (IBA #1 and Beal #1 – see Fig. 1 for their location) drilled on the Iniskin Peninsula. Their presence was noted as part of an ongoing study of megafossils found in cores and certain microfaunal groups (such as Foraminifera and Radiolaria) found in both Mesozoic-age cores and cuttings from the North Slope and southern Alaska.

The Jurassic of Cook Inlet and the Alaska Peninsula has long been recognized as representing the most complete succession of Jurassic stratigraphy of anywhere within North America (Arkell, 1956; Poulton et al., 1992). Its fossil record is outstanding, with numerous publications on both ammonites and bivalves, and now even dinosaurs (Drucnkenmiller et al., 2011 and Fowell et al., 2011) and marine reptiles (Blodgett et al., 1995; Weems and Blodgett, 1996). However, the fossil record for other major biotic groups of this region remains undocumented, with the exception of some initial efforts to record that of the brachiopods (Lazar et al., 2009; Schemm-Gregory and Blodgett, 2012).

Middle Jurassic strata of the Iniskin Peninsula and analogous rocks to the north at Tuxedni Bay (both on the west side of Cook Inlet) have been studied earlier by numerous workers (Stanton and Martin, 1905; Martin and Katz, 1912; Martin, 1926; Moffit, 1927; Kellum, 1945; Kirschner and Minard, 1948; Hartsock, 1954; Detterman, 1963; Detterman and Hartsock, 1966). The Middle Jurassic of the Cook Inlet has been relatively well documented in terms of its ammonite fauna in a number of papers including the pioneering effort of Eichwald (1871 – first paleontological documentation of Jurassic fauna from Alaska (or the West Coast of North America)), as well as that of Imlay (1953, 1961, 1962a, 1962b, 1964, 1965, 1975, 1980, 1982, 1984), Imlay and Detterman (1973), and Poulton et al. (1992). Middle Jurassic bivalves from the Cook Inlet region are extremely abundant on the Iniskin Peninsula and at Tuxedni Bay, but their detailed taxonomic study has only been undertaken by Eichwald (1871). These described species are mostly large inoceramid bivalves (Eichwald, 1871; Blodgett, 2012), all of which are now referred to the genus Retroceramus. Eichwald’s described inoceramid specimens were collected in and around Tuxedni Bay on the west side of Cook Inlet. They are especially common at the aptly named Fossil Point along its south shore, where they are the most easily recognizable fossils found in exposures there (Fig. 8). Publications referring to their presence in various exposures around Tuxedni Bay include Stanton and Martin (1905), Martin (1926), Detterman (1963), and Detterman and Hartsock (1966). Ralph W. Imlay (1908-1989), regarded as the foremost expert on Alaska’s Jurassic fossils, recognized only two of Eichwald’s species are being taxonomically valid, with the remaining two being regarded as merely synonyms or variants.
Figure 1. Index map of the Iniskin Peninsula showing the location of the IBA #1 and Beal #1 wells (modified from Roderick, 1997).

Figure 2. Portion of article from the Alaska Prospector newspaper, Valdez, Alaska, April 30, 1903, p. 1 presenting an account of the earliest attempt at oil exploration on the Iniskin Peninsula.

Figure 3. A. Alaska Petroleum Company oil derrick, Oil Bay, 1904. B. IBA #1 well flowing API 47 gravity oil. C. IBA #1 well site.
Figure 4. Obituary of Russell E. Havenstrite from the Anchorage Daily Times, March 18, 1958

Figure 5. Famous Hollywood investors (Mae West, Walt and Roy Disney, and Boris Karloff) in Russell Havenstrite’s oil exploration efforts on the Iniskin Peninsula. Other Hollywood luminaries financing the Alaska oil ventures of Havenstrite included Darryl Zanuck, Cecil B. de Mille, Oliver Hardy, Stan Laurel, and Bing Crosby.

Figure 6. Article from Anchorage Daily Times, March 19, 1957 concerning the visit by Boris Karloff to visit the site of the Beal #1 well.

Figure 7. Retroceramus ambiguous Eichwald from a depth of 1201 feet in the Beal #1 well. Markings on ruler are in centimeters.

Figure 8. Retroceramus ambiguous Eichwald. A. As illustrated in Eichwald (1871) based on specimens from Tuxedni Bay. B. Specimens of the same species collected by MMS (BOEM) geologists at Fossil Point in Tuxedni Bay.

Figure 9. A. Retroceramus shell fragment (light-colored band) showing prismatic shell structure from core interval 6727-6739 feet in the Beal #1 well. B. An indeterminate species of Retroceramus from core interval 3742-3758 feet in the Beal #1 well. Scale markings in centimeters.

Figure 10. Belemnite guard from a depth of 2114 feet in the Beal #1 well. Markings on ruler are in centimeters.
REFERENCES


Eichwald, E., 1871, Geognostisch-Palaeontologische Bemerkungen über die Halbinsel Mangischlak und die Aleutischen Inseln: Buchdr. der Kaiserlichen Akademie der Wissenschaften, St. Petersburg, 200 p., 20 pls.


Membership Note

Membership renewal is Nov. 1; Annual dues for membership in AGS are:

Full members: $25  Students: $5
AGS Technical Conference
Cook Inlet - Gateway to Alaska

Thursday, May 15, 2014 at University of Alaska, Anchorage
Conference Field Trip on Friday, May 16, 2014

If you would like to help organize the conference contact Chad Hults: chults@usgs.gov

---

**Calendar of Events**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Organization</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/11/13</td>
<td>11:30 – 1:00pm</td>
<td>AMA/SME</td>
<td>Lunchtime seminar. Speaker - Kurt Parkan, Donlin Gold.</td>
<td>Sourdough Mining Company Anchorage</td>
</tr>
<tr>
<td>12/12/13</td>
<td>11:30 – 1:00pm</td>
<td>Alaska Geological Society</td>
<td>Leo Brown and Daniel Yancey ConocoPhillips Alaska and BP Exploration Alaska “4-d seismic at Alpine Field, Alaska” &amp; “3d/4d observations at Simpson Lagoon, Milne Point, Alaska”. Joint meeting with Geophysical Society of Alaska</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>1/8/14</td>
<td>11:30 – 1:00pm</td>
<td>AMA/SME</td>
<td>Lunchtime seminar. Speaker – Cecil Ulrich, URS Corporation</td>
<td>Sourdough Mining Company Anchorage</td>
</tr>
<tr>
<td>1/15/14</td>
<td>12:00pm – 1:00pm</td>
<td>Alaska Arc User Group (GIS)</td>
<td>AAUG monthly meeting,</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>1/16/14</td>
<td>11:30 – 1:00pm</td>
<td>Alaska Geological Society</td>
<td>Richard Lease, USGS Topic TBA</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>1/21/14</td>
<td>11:30am – 1:00pm</td>
<td>ASCE</td>
<td>Monthly meeting</td>
<td>Moose Lodge, Anchorage</td>
</tr>
<tr>
<td>2/12/14</td>
<td>11:30am – 1:00pm</td>
<td>Society of Petroleum Engineers</td>
<td>Arctic Petroleum Resources: Basis for Petroleum Activities. Anatoly Zolotukhin, Professor at the Gubkin Russian State University of Oil and Gas</td>
<td>BP Building, Anchorage</td>
</tr>
<tr>
<td>2/20/14</td>
<td>11:30 – 1:00pm</td>
<td>Alaska Geological Society</td>
<td>David Housenhecht -USGS, Geologist - “Alaska’s North Slope and the Chukchi Shelf”</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>3/20/14</td>
<td>11:30 – 1:00pm</td>
<td>Alaska Geological Society</td>
<td>Greg Wilson, ConocoPhillips Alaska “Devil’s Paw Prospect, Chukchi Sea Alaska” Joint meeting with Geophysical Society of Alaska</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>4/7/14 – 4/13/14</td>
<td>Alaska Miners Association</td>
<td>24th Fairbanks Biennial Conference</td>
<td>Carlson Center, Fairbanks</td>
<td></td>
</tr>
<tr>
<td>4/14/14</td>
<td>11:30 – 1:00pm</td>
<td>Alaska Geological Society</td>
<td>John Kaldi University of Adelaide; Distinguished Lecturer “Carbon Capture and Storage” Joint meeting with Society of Petroleum Engineers Alaska Section</td>
<td></td>
</tr>
<tr>
<td>4/17/14</td>
<td>11:30 – 1:00pm</td>
<td>Alaska Geological Society</td>
<td>Gerry Van Kooten Professor of Geology-Calvin College, consulting Geologist “Exploration of Alaska’s interior basins and the impact of recent drilling”</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>5/15/14</td>
<td>9:00am – 5:00pm</td>
<td>Alaska Geological Society</td>
<td>AGS Technical Conference – Cook Inlet Gateway to Alaska</td>
<td>UAA Conoco-Phillips Building, Anchorage</td>
</tr>
<tr>
<td>5/16/14</td>
<td>9:00am – 5:00pm</td>
<td>Alaska Geological Society</td>
<td>Conference Field Trip</td>
<td>UAA Conoco-Phillips Building, Anchorage</td>
</tr>
</tbody>
</table>
Enhanced Alaska Digital Well Log Data Since 1989

**OCS**, 95 out of 100 Alaska OCS wells. Mud logs for some.

**North Aleutian Basin** wells, onshore and offshore.

**North Slope**, 556 wildcats and key field wells.

**Kuparuk River Field**, first 567 wells drilled (pre-1985).

**Southern Alaska**, 1063 wells including all wildcats and many field wells. Directional surveys for most.

All digital log files
- Are depth shifted to match resistivity curves.
- Have core data rendered as a depth-shifted well log curve.
- Have SP both in original form and as a straightened curve.
- Have standardized mnemonics.
- Have Volume of Shale curves, derived from gamma ray for North Slope, derived from SP for Cook Inlet.
- Allow you to specify your own choice of mnemonics before delivery.
- Are updated periodically with new wildcat wells.
- Are delivered in LAS 2.0 format.

**Contact Dan Shier:** 303-278-1261 dan@rockypine.com www.rockypine.com
The Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage AK 99510
On the web at: http://www.alaskageology.org

The Alaska Geological Society is an organization which seeks to promote interest in and understanding of Geology and the related Earth Sciences, and to provide a common organization for those individuals interested in geology and the related Earth Sciences.

This newsletter is the monthly (September-May) publication of the Alaska Geological Society, Inc. Number of newsletters/month: ~300

EDITOR
Ken Helmold
Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage, AK 99510
e-mail: ken.helmold@alaska.gov
(907) 269-8673 (office)

MEMBERSHIP INFORMATION

AGS annual memberships expire November 1. The annual membership fee is $20/year. You may download a membership application from the AGS website and return it at a luncheon meeting, or mail it to the address above.

Contact membership coordinator Ken Helmold with changes or updates (e-mail: ken.helmold@alaska.gov; phone: 907-269-8673)

All AGS publications are now available for on-line purchase on our website. Check to see the complete catalogue:
http://www.alaskageology.org/publications

ADVERTISING RATES

Advertisements may be purchased at the following rates:
1/10 Page—$190/9mo, $75/1mo; size=1.8 x 3.5 inch
1/4 Page—$375/9mo, $95/1mo; size=4.5 x 3.5 or 2.2 x 7.5 inch
1/3 Page—$470/9mo, $105/1mo; size=7.0 x 3.5 or 3.0 x 7.5 inch
1/2 Page—$655/9mo, $125/1mo; size=9.0 x 3.5 or 4.5 x 7.5 inch
Full Page—$755/9mo, $165/1mo; size=7.5 x 9.0 inch

1mo rate=(9mo rate/9)+$50 (rounded up).

Contact Keith Torrance (614) 264-4506 for advertising information.

---

**skills**
- Project Management
- Geophysics
- Geology
- Petrophysics
- Engineering

**Areas of Expertise**
- North Slope
- Cook Inlet
- Interior Basins
- Bristol Bay
- Gulf of Alaska

**Data**
- Digital Well Logs
- Raw and interpreted data
- Well History
- Directional Surveys
- Formation Tops
- Seismic
  - USGS NPRA lines
- GIS
- Land Status
- Well locations

**Tools**
- Subsurface mapping tools
- Seismic interpretation tools
- Petrophysical interpretation tools
- ArcView/GIS tools

We can provide clients with individuals to fill specific needs, or with integrated teams to manage exploration and development projects.

For information about PRA including background material and a complete listing of our consultant staff, please visit our website at: www.petroak.com.

Contact us at:

**PRA**

3601 C Street, Suite 822
Anchorage, AK 99503

---

**ROCK SOLID SERVICE**

www.corelab.com • 713-328-2748

© 2013 Core Laboratories. All rights reserved.

The Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage AK 99510
On the web at: http://www.alaskageology.org

The Alaska Geological Society is an organization which seeks to promote interest in and understanding of Geology and the related Earth Sciences, and to provide a common organization for those individuals interested in geology and the related Earth Sciences.

This newsletter is the monthly (September-May) publication of the Alaska Geological Society, Inc. Number of newsletters/month: ~300

EDITOR
Ken Helmold
Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage, AK 99510
e-mail: ken.helmold@alaska.gov
(907) 269-8673 (office)

MEMBERSHIP INFORMATION

AGS annual memberships expire November 1. The annual membership fee is $20/year. You may download a membership application from the AGS website and return it at a luncheon meeting, or mail it to the address above.

Contact membership coordinator Ken Helmold with changes or updates (e-mail: ken.helmold@alaska.gov; phone: 907-269-8673)

All AGS publications are now available for on-line purchase on our website. Check to see the complete catalogue:
http://www.alaskageology.org/publications

ADVERTISING RATES

Advertisements may be purchased at the following rates:
1/10 Page—$190/9mo, $75/1mo; size=1.8 x 3.5 inch
1/4 Page—$375/9mo, $95/1mo; size=4.5 x 3.5 or 2.2 x 7.5 inch
1/3 Page—$470/9mo, $105/1mo; size=7.0 x 3.5 or 3.0 x 7.5 inch
1/2 Page—$655/9mo, $125/1mo; size=9.0 x 3.5 or 4.5 x 7.5 inch
Full Page—$755/9mo, $165/1mo; size=7.5 x 9.0 inch

1mo rate=(9mo rate/9)+$50 (rounded up).

Contact Keith Torrance (614) 264-4506 for advertising information.
## 2012 - 2013 Alaska Geological Society Board

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Phone</th>
<th>e-mail</th>
<th>Workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Matt Frankforter</td>
<td>777-8376</td>
<td>mfrankforter at hilcorp.com</td>
<td>Hilcorp Alaska, LLC</td>
</tr>
<tr>
<td>Past-President</td>
<td>Art Banet</td>
<td></td>
<td>banetak at gci.net</td>
<td>BLM emeritus</td>
</tr>
<tr>
<td>President-Elect</td>
<td>Keith Torrance</td>
<td>677-9451</td>
<td>ktorrance at apcservicesllc.com</td>
<td>APC Services LLC</td>
</tr>
<tr>
<td>Vice-President</td>
<td>Monte Mabry</td>
<td>564-4028</td>
<td>monte.mabry at bp.com</td>
<td>BP</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Al Hunter</td>
<td>947-9010</td>
<td>paleoeman at mac.com</td>
<td></td>
</tr>
<tr>
<td>Secretary</td>
<td>Eric Cannon</td>
<td>344-6001</td>
<td>eccannon at gmail.com</td>
<td>Golder Associate Inc.</td>
</tr>
<tr>
<td>Director 12-2014</td>
<td>Chad Hults</td>
<td>786-7417</td>
<td>chults at usgs.gov</td>
<td>USGS</td>
</tr>
<tr>
<td>Director 12-2014</td>
<td>Trystan Herriott</td>
<td>451-5011</td>
<td>trystan.herriott at alaska.gov</td>
<td>DGGS</td>
</tr>
<tr>
<td>Director 12-2014</td>
<td>Kirk Sherwood</td>
<td>334-5337</td>
<td>kirk.sherwood at boem.gov</td>
<td>BOEM</td>
</tr>
<tr>
<td>Director 13-2015</td>
<td>Richard Lease</td>
<td>786-7169</td>
<td>release at usgs.gov</td>
<td>USGS</td>
</tr>
<tr>
<td>Director 13-2015</td>
<td>Tom Morahan</td>
<td>230-1672</td>
<td>tmorahan at petroak.com</td>
<td>PRA</td>
</tr>
<tr>
<td>Director 13-2015</td>
<td>Jim Brown</td>
<td>276-2675</td>
<td>jbrown at alaskapacific.edu</td>
<td>Alaska Pacific University</td>
</tr>
</tbody>
</table>

## Committees and Delegates

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Phone</th>
<th>e-mail</th>
<th>Workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAPG Delegate</td>
<td>Marwan Wartes</td>
<td>451-5056</td>
<td>marwan.wartes at alaska.gov</td>
<td>DGGS</td>
</tr>
<tr>
<td>Advertising</td>
<td>Keith Torrance</td>
<td>677-9451</td>
<td>ktorrance at apcservicesllc.com</td>
<td>APC Services LLC</td>
</tr>
<tr>
<td>Com. Ed./Science Fair</td>
<td>Jana DaSilva Lage</td>
<td>677-7883</td>
<td>jdasilva5 at hotmail.com</td>
<td>AeroMetric</td>
</tr>
<tr>
<td>Field Trips</td>
<td>Chad Hults</td>
<td>786-7417</td>
<td>chults at usgs.gov</td>
<td>USGS</td>
</tr>
<tr>
<td>Bylaws</td>
<td>Sue Karl</td>
<td>786-7428</td>
<td>skarl at usgs.gov</td>
<td>USGS</td>
</tr>
<tr>
<td>Memberships</td>
<td>Ken Helmold</td>
<td>269-8673</td>
<td>ken.helmold at alaska.gov</td>
<td>AK DOG</td>
</tr>
<tr>
<td>Newsletter Editor</td>
<td>Ken Helmold</td>
<td>269-8673</td>
<td>ken.helmold at alaska.gov</td>
<td>AK DOG</td>
</tr>
<tr>
<td>Publications</td>
<td>Peter Johnson</td>
<td>334-5329</td>
<td>peter.johnson at boem.gov</td>
<td>BOEM</td>
</tr>
<tr>
<td>Scholarship</td>
<td>Sue Karl</td>
<td>786-7428</td>
<td>skarl at usgs.gov</td>
<td>USGS</td>
</tr>
<tr>
<td>Website</td>
<td>Jan Hazen</td>
<td></td>
<td>jhaz at homestead-graphics.com</td>
<td>Consultant</td>
</tr>
<tr>
<td>Fundraising</td>
<td>Sunny Foster</td>
<td>269-8707</td>
<td>sunny.remmy at alaska.gov</td>
<td>DNR / DOG</td>
</tr>
</tbody>
</table>

---

Alaska Geological Society, Inc.
P. O. Box 101288
Anchorage, AK 99510