

Transportation:

Air Service:

Twelve airlines currently serve Tucson International Airport (TIA), providing non-stop service to 16 cities and connections to more than 121 destinations. There are 60 daily flights with approximately 7,700 seats available.

For more information go to the TIA website at: www.tucsonairport.org/html/tia_airlinelinks.html

Rental Cars:

Seven rental car agencies are located at Tucson International Airport (TIA) for your convenience.

- Alamo 1-800-327-9633, 520-807-0446
- Avis 1-800-331-1212, 520-294-1494
- Budget 1-800-527-0700, 520-573-8475
- Dollar 1-800-800-4000, 520-573-8486
- Enterprise 1-800-736-8222, 520-573-5336
- Hertz 1-800-654-3131, 520-573-5201
- National 1-800-227-7368, 520-806-4255

Shuttle Service:

Shuttle service is available from Tucson International Airport directly to the Viscount. Typical transportation charges are approximately \$20.00 (one way) \$32.00 (round trip).

If you are interested in this Shuttle service, contact Arizona Stagecoach at (520) 881-4111 when you arrive.



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of Transportation



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5th Biennial Workshop

INTERSTATE TECHNICAL GROUP ON ABANDONED UNDERGROUND MINES

APRIL 21-23, 2004
Tucson, AZ

REGISTER
TODAY

Welcome:

The 5th Biennial Workshop offered by the Interstate Technical Group on Abandoned Underground Mines (ITGAUM) will focus on subjects related to the effects of mine development on highway planning, design, construction, maintenance and infrastructure development. Related topics pertaining to sub-structure exploration and geophysical testing, which identify potential hazards associated with abandoned mines will also be addressed and relevant case histories will also be discussed.

This important transportation-related workshop on abandoned underground mines is co-hosted by the Arizona Department of Transportation, the Arizona State Mine Inspectors Office, and the Arizona Geological Survey and co-sponsored by both the Federal Highway Administration and the Transportation Research Board.

Call the Viscount Hotel
By March 19 at
1-800-527-9666

and mention you are with the
Interstate Technology Group #4421
for a lodging rate of \$58 per night

Conference Site:

The 5th Biennial ITGAUM workshop will be held at the Viscount Suite Hotel, 4855 East Broadway, in Tucson, AZ, 85711. The hotel is located in mid-town Tucson near the intersection of Swan Rd. and East Broadway Boulevard, approximately 2 miles east of the Randolph Park Municipal Golf Course.

Tucson is located in southeastern Arizona Sonora Desert Region. April temperatures range from 80 to 95 degrees. The hotel is within easy access to the Saguaro National Park, the Coronado National Forest and the historic western and mining communities of Tombstone and Bisbee.

Registration Information:

Name: _____
Agency: _____
Address: _____

City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

To pay your register fee, please complete this form with your **\$135.00** check made payable to:

"Cardinal Information Resources, Inc"

Forward this form and your check by April 5, 2004 to:

ITGAUM
C/o ADOT, Geotech Design
1221 N 21st Avenue, Phoenix, AZ 85009

**Credit cards cannot be accepted. The registration fee includes technical sessions, refreshments at breaks, Wednesday field trip (lunch included), and workshop proceedings.*

All speakers must pay full registration.
Late and "walk in" registrants will be charged an additional \$30.00 fee.
(No exceptions)

Lodging:

Reservations are the responsibility of each attendee. A block of rooms has been reserved at the discounted rate of **\$58.00 per night** at the Viscount for participants. The rates will be honored until all rooms are assigned. **Another group has already reserved a large block of rooms so it may be prudent to reserve your room early.**
<http://www.viscountsuite.com>,
<http://www.phoenix-az-hotels.com/tucson/viscount-suite-hotel.htm>

**Registrants can pick up their Workshop information packets, in the Viscount Suite Hotel lobby area:*
Tuesday, April 20, 2004
4:00 p.m. to 7:00 p.m.
Wednesday, April 21, 2004
7:30 a.m. to 5:00 p.m.

Preliminary Agenda:

TUESDAY, APRIL 20

4:00 p.m. –7:00 p.m.

Welcome IceBreaker, Viscount
Registration, Viscount Suites Lobby

WEDNESDAY, APRIL 21

7:30 a.m. Registration, Viscount Suites Lobby

8:00 a.m. Welcoming Remarks ITGAUM 2004

Nick Priznar ADOT; Thomas Lefchik FHWA;
Larry Fellows, Director AZ Geological Survey;
David Hamn, Assistant State Mine Inspector

Technical Session I: Member Presentations

8:20 a.m. Review of recent projects with mine-related
considerations in Arizona”

Nick Priznar, Engineering Geologist, Arizona DOT

8:40 a.m. An overview of California’s efforts to
address abandoned underground mines

Michael Robinson, Haz. Waste Coord, Caltrans

9:00 a.m. Abandoned underground coal mines under
new alignment, U.S. 54 — Fort Scott, KS

Richard Ryan, Regional Geologist, KDOT

9:20 a.m. Use of geophysical methods, investigation
by drilling, and remediation of Highway T
subsidence, Macon County, MO

George H. Davis R.G. Missouri DOT,
David C. Smith, Missouri Dept of Nat’l Resources

9:40 a.m. Update of activities in Ohio

L. Rick Ruegsegger P.E., ODOT

9:00 a.m. Underground mining impacts as
experienced by North Carolina

Mr. David Hering, Project Engineering
Geologist, NCDOT

9:20 a.m. Coffee Break

9:40 a.m. MSHA/OSM geophysics demonstrations to
locate abandoned mines

Dr. Kevin Wu, MSHA

10:00 a.m. Abandoned Mine Issues

Priscilla Duskin, Engineer Geologist III, NYSDOT

10:20 a.m. Iowa Update

Matthew Trainum, Geologist, Iowa DOT

10:40 a.m. Michigan Abandoned Mine Issues

Richard Endres, Foundation Analysis Engineer,
Michigan DOT

11:00 a.m. Indiana Abandoned Mine Project Update

Jon Paauwe, Geotechnical Geologist III,
Indiana DOT

11:20 a.m. TRB Meeting Information Update

L. Rick Ruegsegger, P.E., ODOT

11:40 a.m. Mr. William Dodd N. Dakota Pub. Service Com.

12:00 LUNCH (Provided)

1:00 p.m. Arizona Abandoned and Inactive
Mines Program

Alene McCracken, AZ State Mine Inspector Office

Technical Session II: Subsidence

1:20 p.m. Real-time monitoring of subsidence over
an inactive mine in Virginia using TDR

Kevin M. O’Connor, GeoTDR, Inc. (Ohio)
Joseph Crawford, USG Co. (Illinois)
Kelvin Price, USG Co. (Virginia)
Roger Sharpe, USG Co. (Illinois)

1:40 p.m. Stability evaluation and remediation of a
critical northern Canadian highway over
an abandoned gold mine

Dr. Marc C. Bétournay, Senior Scientist Natural
Resources, Canada

2:00 p.m. The stability analysis of I-196 over the
Domtar Gypsum Mine, Grand Rapids, MI

Stan Vitton, Assoc. Professor, Michigan Tech
Tom Hynes, Supervising Engineer,
Pavement Structures Group, Michigan DOT

2:20p.m. Mine Map Interpretation

Laurance Beck, Skelly and Loy, (Pennsylvania)

Break

3:00 p.m. Subsidence management of the New
Mineral City Mine, Fort Dodge, IA

Joseph Crawford, US Gypsum Co., (Illinois)
Jon Blazic, US Gypsum Co., (Iowa)
Matt Benzie, US Gypsum Co., (Iowa)
Kevin O’Connor, GeoTDR, Inc., (Ohio)

3:20 p.m. Disruption to transportation systems
caused by abandoned mine workings

Colin J.F.P. Jones, University of Newcastle UK

3:40 p.m. Synthetic aperture radar interferometry
(InSAR) in defining mine-related ground
deformation/subsidence hazards

Ralph Weeks, AMEC Earth and Environmental

4:00 p.m. Caving and Subsidence at San Manuel, AZ

Lou Sandibak, Geologist/Engineer

THURSDAY, APRIL 23 Field Trip To San Manuel Mine (Courtesy of BHP Copper)

8:00 a.m. Depart Viscount Hotel
(Est. Travel Time 1 hour)

Upon arriving at the Mine, we will inspect
and view subsidence features; break for
lunch; and resume with the inspection of
abandoned highway alignment and
review of other subsidence features.
We will conclude our trip observing mine
closure activities, and depart the Mine
enroute to the hotel at 2:00 p.m.

FRIDAY, APRIL 23

7:00 a.m. ITGAUM Group Breakfast Discussion

8:00 a.m. Rock mass displacements and surface
disruptions anticipated from weak
rock masses of metal mines

Dr. Marc C. Bétournay Senior Scientist,
Natural Resources (Canada)

8:40 a.m. Tunnel enlargement and rehabilitation

Richard Humphries, Golder Associates Inc.,
(Georgia)

Technical Session III: Geophysical Techniques

9:10 a.m. Characterizing potential bridging ground
conditions using the refraction micro
tremor (ReMi) surface seismic technique

Michael L. Rucker, PE, AMEC Earth and
Environmental Inc., (Arizona)

9:30 a.m. Case Studies: 2-D and 3-D Resistivity for
locating voids beneath highways

Richard W. Hammack, National Energy
Technology Laboratory, (Pennsylvania)

9:50 a.m. Electrical imaging of deep-mine voids

Peter J. Hutchinson, Laura S. Barta, The
Hutchinson Group, Ltd., (Pennsylvania)

10:10 a.m. Electromagnetic geophysical techniques
for location of abandoned mines

Dr. Ben K. Sternberg, Professor, and Director,
Laboratory for Advanced Subsurface Imaging,
University of Arizona

10:30 a.m. Break

Technical Session IV: Void Assessment

10:50 a.m. Underground workings detection in the
Fimston Pit KCGM

J. Jiang, Kalgoorlie Consolidated Gold Mines,
(Kalgoorlie, Western Australia)

11:10 a.m. Investigating the potential impacts of
roadway widening near the Arabian
Mine, SR 68, Mohave County, AZ

Robert Cummings, Saguario Geo Services (Arizona)
Nick Priznar, Engineering Geologist, Arizona DOT

11:30 a.m. Identifying abandoned mineshafts &
shallow mine workings close to railways

Prof. M.C. Forde, Univ. of Edinburgh, Scotland

11:50 a.m. Seismic imaging as a means to
investigate abandoned underground mines

Edwin J. Kase, NSA Geotechnical Services, Inc.
Timothy Ross, NSA Geotechnical Services, Inc.
Robert W. Henthorne, Chief Geologist, Kansas DOT

Lunch

1:00 p.m. A comparison of non-invasive
geophysical methods for mapping near
surface voids

Khamis Haramy & Matthew De Marco, Central Federal
Lands Highway Division, FHWA Denver
Todd M. Meglich, Blackhawk GeoServices, (Colorado)

1:30 p.m. Grouting in abandoned coal mines

David Knott, P.E. HDR Engineering, Pennsylvania

2:00 p.m. Historical landslides and assessing
future risk for the development of the
Jerome Rest Area

Scott D. Neely, P.E. Geotechnical Services
Manager Terracon, Phoenix, AZ

2:30 p.m. Ground penetrating radar: An effective
tool for locating dry caves along S.R. 69
near Mayer, Yavapai County, AZ

Kenneth M. Euge R.G., Principal Geologist,
Kerry Hennon, R.Gp., Jason C. Williams, G.I.T.,
Geological Consultants Inc., Arizona
Nick Priznar, Geologist, ADOT, Arizona

3:00 p.m. OPEN DISCUSSION

4:00 p.m. END OF PROGRAM