



Coal Mining Spatial Data Standards ASTM Task Group: Progress Report

Thomas A. Galya (Co-Chair)

Physical Scientist

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Charleston, WV

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VA-DMME

Big Stone Gap, VA

**ASTM Task Group Members
Include: SRA, Federal,
Industry, and Environmental
Sectors**

ASTM Data Standards Task Members

Name	Organization
Alan Wilhelm	OSM, Western Region Office
Arielle Avishai	OSM Appalachian Region Office
Brenda Steele	OSM, Western Region Office
Bruce Johnson	ND Public Service Commission
Daniel Kestner (Co-chair)	VA Department of Mines, Minerals and Energy
Darrell Trent	Patriot Coal Company
Jo Gault	OSM, Knoxville Field Office
Kathy Rossman	OH Division of Mineral Resources Management
Mike Shank	WV Department of Environmental Protection
Robert Hughes	Lucerne PA Conservation District
Joe Taranto	PA Department of Environmental Protection
Tom Galya (Co-chair)	OSM, Charleston Field Office

Joe Ritchey, Facilitator for the American Society of Testing Materials (ASTM) process
Julie Maitra, Liaison for the Federal Geographic Data Committee (FGDC) process
Sandin Phillipson, Advisor, Mining Safety and Health Administration (MSHA)

ASTM Task Group Members



Coal Mining Spatial Data First Two Standards

- 09/06 formation of the ASTM Data Standards Task
- Assignment to Task Group at Denver meeting:
 - Surface Mining Boundary Standard
 - Underground Mine Extents Standard

Coal Surface Mining Permit Boundary (CSMO) Standard

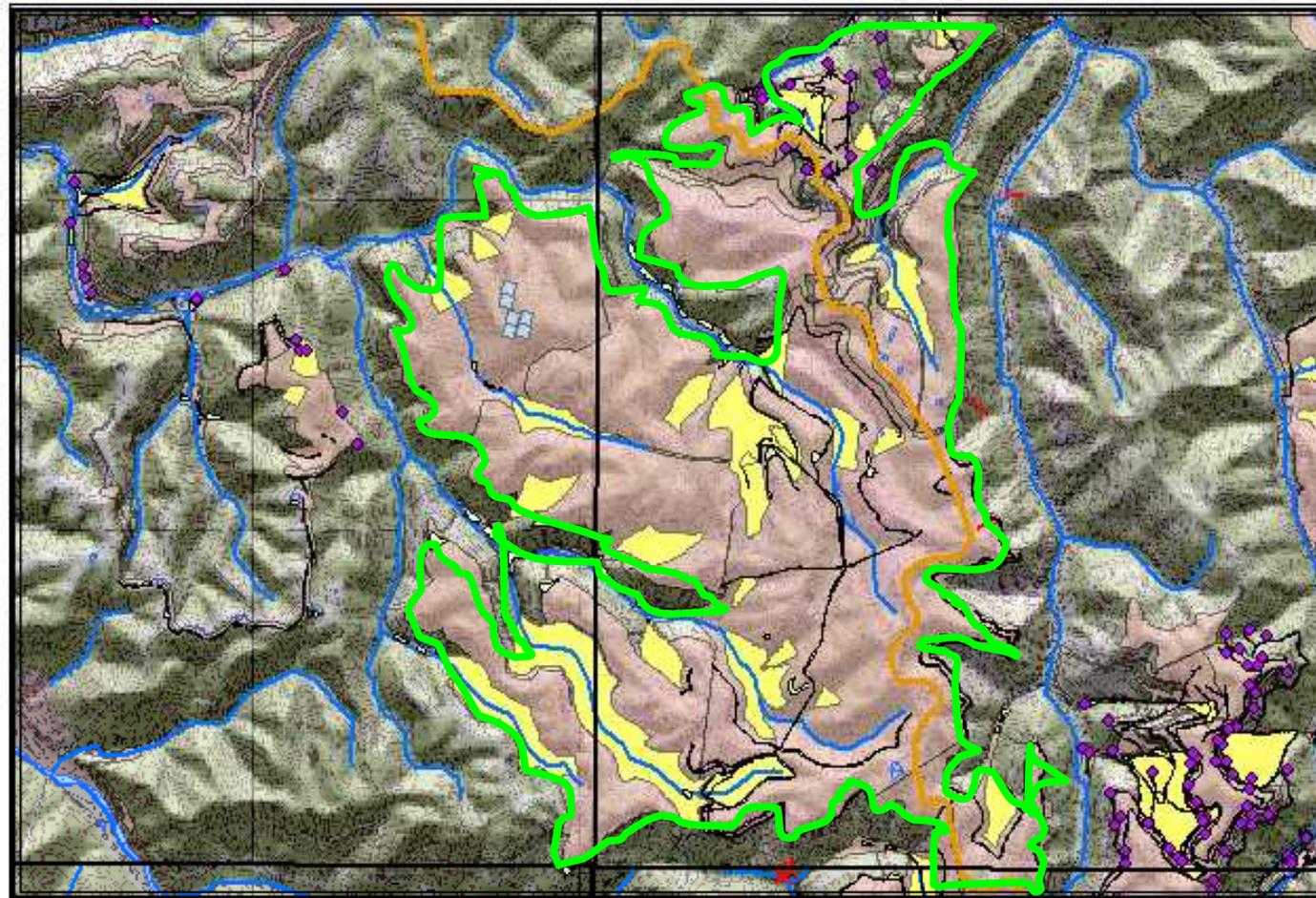
Surface Mining Boundary (CSMO) Standard Attributes

TABLE 1 Attributes

Coal Surface Mining Boundary Attribute	Definition	Example	Data Type	Domain	Comment
Permittee	To whom the permit is issued	ACME Coal Mining Co., Inc.	Text	Text, NA	
Permit ID	Unique identifier	1201834	Text	Numbers, alphanumeric text, NA	
Permit Status	Status of mine permit	Active	Text	Active, inactive, NA	Status of mine according to the permit
Contact	Regulatory Authority for Permit	Virginia Department of Mines, Minerals, and Energy	Text	Alphanumeric text	
National ID	State/tribal Abbrev. + Permit ID	VA1201834	Text	Alphanumeric text	
Data Status	Last Edit Date	01/30/07	Date	Last Updated/Changed	To determine last update of data

Coal Surface Mining Boundary

Proposed remote sensing project area, Magnum-Catenary, LLC, Kayford Mountain, WV



Legend

- USGS quadrangles
- AM L deep mine portals
- NPDES permit outlets
- Area streams
- Watershed boundaries
- Permit drains
- Wetlands
- Magnum mine valley fills
- Magnum Coal Co. permits
- 8-3010-00 planting test plots



4,000 2,000 0 4,000 8,000 12,000 16,000 20,000
feet

The Surface Mining Boundary CSMO Standard Does *Not* Address

- Pre-SMCRA Surface Mining Operations
- Permit Bond Releases
- Permit Bond Forfeitures

Form and Style for ASTM Standards-CSMO

Required Sections – Assignments and Group Review

- Scope
- Reference Documents
- Terminology
- Significance and Use
- Procedure
- Keywords

Home Documents and Lists Create Site Settings Help Up to DSM - Collaboration Web Site

ASTM Data Standards Team
Shared Documents
Standard 2- Underground Mine Extents/UG standard assignments

Select a View
All Documents
Explorer View

Actions
Alert me
Export to spreadsheet
Modify settings and columns

Share a document with the team by adding it to this document library.

New Document | Upload Document | Up | New Folder | Filter | Edit in Datasheet

Type	Name	Modified	Modified By	Checked Out To
Folder	C.19 Scope (Brenda and Tom)	10/1/2007 12:51 PM	Arielle Avishai	
Folder	C.20 Referenced documents (Joe R, Robert and Jo Gault)	10/1/2007 12:51 PM	Arielle Avishai	
Folder	C.21 Terminology (Daniel, Joe T, Darrell)	10/1/2007 12:51 PM	Arielle Avishai	
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Folder	C.25 procedure (Alan, Daniel, Bruce, Joe T and Kathy)	10/1/2007 12:51 PM	Arielle Avishai	
Folder	C.28 Keywords (Alan)	10/1/2007 12:51 PM	Arielle Avishai	

Hard at work at the Albuquerque meeting



ASTM Approval Process: Surface Mining Permit Boundary Standard

- 1/07 Task Group Meeting, Costa Mesa, CA
 - FGDC participation in meeting
 - Draft CSMO Standard in ASTM Form and Style
Sections by task group; revised at Sharepoint site
- 04/07 ASTM Sub-committee ballot
- 06/07 Task Group Meeting, Norfolk VA
 - Review & edit balloted CSMO draft ASTM standard
 - + FGDC participation in meeting
 - + Address Sub-committee review and revise draft standard; submit to Main Committee
- 07/07 ASTM Main Committee balloting and approval
- 9/07 Final ASTM approval on D-7384-07 Standard

ASTM Subcommittee Ballot

ASTM Ballot - Windows Internet Explorer

http://myastm.astm.org/BALLOT/filtrexx40.cgi?+P+LETTER_BALLOT+D1801000107+/usr6/htdocs/newpilot.com/BALLOT/REVISITBALLOT_C

Google

Go | Bookmarks | 16 blocked | Check | AutoLink | AutoFill | Send to | Settings

ASTM Ballot

SUB COMMITTEE BALLOT [Help Desk](#)



Sub Committee: D18.01
Letter Ballot: D18.01 (07-01)
Issue Date: MAY 01, 2007
Closing Date: MAY 31, 2007
Society Review:
Staff Manager: Robert J Morgan
E-Mail: rmorgan@astm.org

TO ACCESS SUPPORTING DOCUMENTATION:
Individual Documents: click on the hyper-linked item description on the ballot, below. For best results, use Adobe Acrobat 4.0 or higher.
All Documents: To download all supporting documents (EXE file), click [ALL DOCUMENTS](#) (Need help with an EXE file? Click [help/EXE](#))

TO SAVE YOUR VOTE and return at a later time, simply click the 'Save' button at the top or bottom of the ballot form. You may return up until the ballot closing date to alter your vote (unless you have submitted your ballot to ASTM).

TO VIEW YOUR VOTE AFTER SUBMITAL:
Open Ballot: Click on appropriate committee ballot link on ballot page; you will be able to view but not change your vote.
Closed Ballot: Click on 'View Closed Ballots' link on ballot page. Closed ballots are posted for up to one year from closing date.

FOR BEST RESULTS, use Internet Explorer 5.0, Netscape 6.2 or AOL 7.0. If you have disabled Javascript within your browser's preferences or options, you will not be able to submit your vote online. *This form does not support all Mac platforms; Mac users experiencing problems should contact their staff manager for hard copies of the ballot.*

[Return to Members only Page](#)

Item No.	Sub No.	Item
1		PRACTICE FOR Practice for Minimum Geospatial Data for a Coal Surface Mining Boundary WK15258 (REFERENCE Z3843Z) TECHNICAL CONTACT: Joseph D Ritchey ritcheyj@p2s.com (505) 661-7958

[Return to Members only Page](#)

ASTM Subcommittee Ballot Results

PAGE 1
06/01/07

SUBCOMMITTEE BALLOT REPORT D18.01 (07-01)
 BALLOT ISSUE DATE: 05/01/07 CLOSING DATE: 05/31/07 NEXT SUB COMMITTEE MEETING IS 06/24/07 IN NOFOLK, VA
 REVISIONS, NEW STANDARDS AND WITHDRAWALS WITHOUT NEGATIVES WILL BE ON NEXT MAIN COMMITTEE BALLOT

STAFF MANAGER: Robert J Morgan

SUBCOMMITTEE OFFICERS: SUB CHRNM Joseph D Ritchey

 NO OF ITEMS BALLOTS SENT BALLOTS RETURNED PERCENT RETURN
 D18.0100 1 78 52 66.66

Please note that only voting members are counted in the tally of ballots. Also note that negative votes and comments from voting and non-official voting members shall be considered in accordance with the "Regulations Governing ASTM Technical Committees". Ballot report information and statements accompanying negative votes and comments shall not be reproduced or circulated in whole or part, outside of ASTM Committee activities, except with the approval of the Chairman of the committee having jurisdiction and President of the Society.

ITEM	SUB	ACTION		APF	NEG	ABST	PCNT
001	01	PRACTICE FOR Practice for Minimum Geospatial Data for a Coal Surface Mining Boundary TECHNICAL CONTACT : Joseph D Ritchey WORK ITEM: WK15258 COMMENTS: * Robert H Sydnor * Jack A Touseull	D18.0100	8.00	0.00	44.00	100.00

* INDICATES NON-OFFICIAL VOTING MEMBER

Example Comment

Affirmative with Comment

Date: 5/2/2007
Ballot Number: D18.01 (01-07) Close Date: MAY 31, 2007
Item Number: 001 PRACTICE FOR Practice for Minimum Geospatial Data for a Coal Surface Mining Boundary WK15258 (REFERENCE Z3843Z)
TECHNICAL CONTACT: Joseph D Ritchey
ritcheyj@p2s.com
(505) 661-7958

Member's Name: Robert H Sydnor
Address: California Geological Survey
4930 Huntridge Ln
FAIR OAKS CA 95628
Phone Nr: 9163234399 Fax Nr: 9163224765
Email Address: robert.sydnor@conservation.ca.gov
File Attachment:
Statement:
This is an important new standard and I support it. I have several editorial suggestions:
2.2: add the year of publication for FIPS Publication 70-1, this will help the user to use the proper year. Also add the website address for NTIS, since this is more relevant than the Springfield, Virginia address.
3.2.2 attribute: For a mapping standard, it seem extraneous to use an electrical cable for an example. Choose a better example.

ASTM Main Committee Ballot Results

MAIN COMMITTEE BALLOT REPORT D18 (07-04)							PAGE 2
ITEM	SUB	ACTION		APF	NEG	ABST	08/28/07 PCNT
001	01	PRACTICE FOR MINIMUM GEOSPATIAL DATA FOR A COAL SURFACE MINING PERMIT BOUNDARY TECHNICAL CONTACT : Joseph D Ritchey WORK ITEM: WK15258	D18	88.00	0.00	289.00	100.00
		COMMENTS: (MAIN/SUB) Keith R Rademacher (MAIN ONLY) Richard E Gray	D18.0100	13.00	0.00	41.00	100.00
002	01	REAPPROVAL OF D6820-02 TECHNICAL CONTACT : Susan C Soloyanis PH D WORK ITEM: WK16065	D18	129.00	0.00	248.00	100.00
003	02	REVISION OF D1452-07 TECHNICAL CONTACT : Kenneth R Bell WORK ITEM: WK15985	D18	186.00	0.00	191.00	100.00
		COMMENTS: (MAIN ONLY) John M Siwula (MAIN/SUB) Holger H Hartmaier	D18.0200	45.00	0.00	30.00	100.00
004	02	REVISION OF D1586-99 TECHNICAL CONTACT : William F Edelen JR WORK ITEM: WK5220	D18	174.00	0.00	203.00	100.00
		NEGATIVE VOTERS: * Thomas S Le Donne					
		COMMENTS: Don W Lieberknecht James A Frampton Michael J Luebbers * Charles Smith Holger H Hartmaier Joram M Amir					
005	03	TEST METHODS FOR DETERMINATION OF MAXIMUM DRY UNIT WEIGHT AND WATER CONTENT RANGE FOR EFFECTIVE COMPACTION OF GRANULAR SOILS USING A VIBRATING HAMMER TECHNICAL CONTACT : Vincent P Drnevich WORK ITEM: WK6735	D18	129.00	0.00	248.00	100.00
			D18.0300	20.00	0.00	31.00	100.00

ASTM Main Committee Ballot Results

PAGE 1
08/28/07

MAIN COMMITTEE BALLOT REPORT D18 (07-04)
 BALLOT ISSUE DATE: 07/24/07 CLOSING DATE: 08/24/07 NEXT COMMITTEE MEETING IS 01/31/08 IN TAMPA, FL
 THESE ITEMS APPEAR ON AUGUST 2007 SOCIETY REVIEW

STAFF MANAGER: Robert J Morgan

COMMITTEE OFFICERS:

CHAIRMAN	James A Horton
V-C	Keith B Hoddinott
V-C	John T Germaine
V-C	Gary N Durham
V-C	Donald W Shanklin
1ST V-C	Ronald J Ebelhar
2ND V-C	Keith R Rademacher
SECRETARY	Jeanne M Asquith
M/S SEC	Jan C Wildman

SUBCHAIRMAN (0100)	Joseph D Ritchey
(0200)	Kenneth R Bell
(0300)	Ronald E Holsinger
(0600)	Ronald C Chaney
(0800)	William F Edelen JR
(0900)	Willard L De Groff
(1100)	Paul J Bullock
(1500)	Eric A Berger
(1900)	Bernie Gorski
(2200)	Keith B Hoddinott
(2400)	John W Carson

	NO OF ITEMS	BALLOTS SENT	BALLOTS RETURNED	PERCENT RETURN
D18	24	579	377	65.11
D18.0100	1	74	54	72.97
D18.0200	1	122	75	61.47
D18.0300	1	81	51	62.96
D18.0600	1	31	19	61.29
D18.0800	2	46	34	73.91
D18.1500	1	27	19	70.37
D18.2200	3	12	8	66.66

Please note that only voting members are counted in the tally of ballots. Also note that negative votes and comments from voting and non-official voting members shall be considered in accordance with the "Regulations Governing ASTM Technical Committees". Ballot report information and statements accompanying negative votes and comments shall not be reproduced or circulated in whole or part, outside if ASTM Committee activities, except with the approval of the Chairman of the committee having jurisdiction and President of the Society.

ASTM D 7384-07 CSMO Standard



Designation: D 7384 – 07

Standard Practice for Minimum Geospatial Data for a Coal Surface Mining Permit Boundary¹

This standard is issued under the fixed designation D 7384; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the minimum elements for the accurate location and description of data for defining a coal surface mining permit boundary.

1.1.1 This practice addresses coal mining geospatial data relative to the Surface Mining Control and Reclamation Act of 1977 (SMCRA).² This geospatial data shall be obtained from each state or federal, or both, coal mining Regulatory Authority (RA) authorized under SMCRA to regulate coal surface mining operations (CSMO). Each RA shall be the authoritative data source (ADS) for coal mining geospatial data.

1.1.2 As used in this practice, a coal surface mining boundary represents an area where coal removal and reclamation has occurred or is occurring within a defined CSMO.

1.2 This practice is limited to coal surface mining operations after passage of SMCRA.

1.3 This practice does not address pre-SMCRA mining, permit bond releases, and permit bond forfeitures of CSMOs.

1.4 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1.5 This practice offers a set of instructions for performing one or more specific operations. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.

¹ This practice is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.01 on Surface and Subsurface Characterization.

Current edition approved Sept. 1, 2007. Published September 2007.

² Public Law 95-87, the Surface Mining Control and Reclamation Act of 1977 (SMCRA), passed August 3, 1977, as amended.

2. Referenced Documents

2.1 *ASTM Standards:*³

D 653 Terminology Relating to Soil, Rock, and Contained Fluids

D 5254 Practice for Minimum Set of Data Elements to Identify a Ground-Water Site

D 5911 Practice for Minimum Set of Data Elements to Identify a Soil Sampling Site

2.2 *ANSI Standards:*⁴

ANSI INCITS 61-1986 (R2002) Geographic Point Locations for Information Interchange, Representation of (formerly ANSI X3.61-1986 (R1997))

ANSI INCITS 320-1998 (R2003) Information technology—Spatial Data Transfer

2.3 *Federal Geographic Data Committee Standards*⁵

FGDC-STD-001 Content Standard for Digital Geospatial Metadata

2.4 *Code of Federal Regulations:*⁶

30 CFR Part 700 et seq.

3. Terminology

3.1 Except as listed or noted below, all definitions are in accordance with Terminology D 653.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *active CSMO*—a CSMO that has ongoing coal production and/or reclamation activities.

3.2.2 *attribute*—a defined characteristic of a feature type (for example, an attribute of Permit Status feature type = active).

3.2.3 *authoritative data source*—a recognized source as defined in SMCRA.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁵ Available from Federal Geographic Data Committee, 590 National Center, Reston, VA 20192, www.fgdc.gov.

⁶ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

How will the Standard be Enforced?

- Adoption of format by program states and tribes
- Data sharing procedures by OSM for formatting
 - State/Federal data share model and prototype project
- Volunteer standard recommendation by over-site body
- FGDC recognition

How will Program Users Gain Access to Standard?

- “Office” share of standard documentation
- Access and knowledge base from ASTM International by website and publications
- OSM technical training and technology transfer of standard practices and procedures
- Implementation at OSM level by data share procedures being established in prototype project

How does use of the Standard Impact Work (program levels)?

- Standard based on work already being done by most programs
- Transfer of knowledge for transitional workforce
- Increased consistency provides common basis for regulatory enforcement actions for border areas
- Consistent methodology and model for programs starting to create datasets

How does Standard Impact Industry, Environmental Organizations and Others?

- Increase understanding and commonality from state to state – regional and national big pictures
- Potential to clarify permitting procedures

What is the Purpose of Seeking Recognition from FGDC?

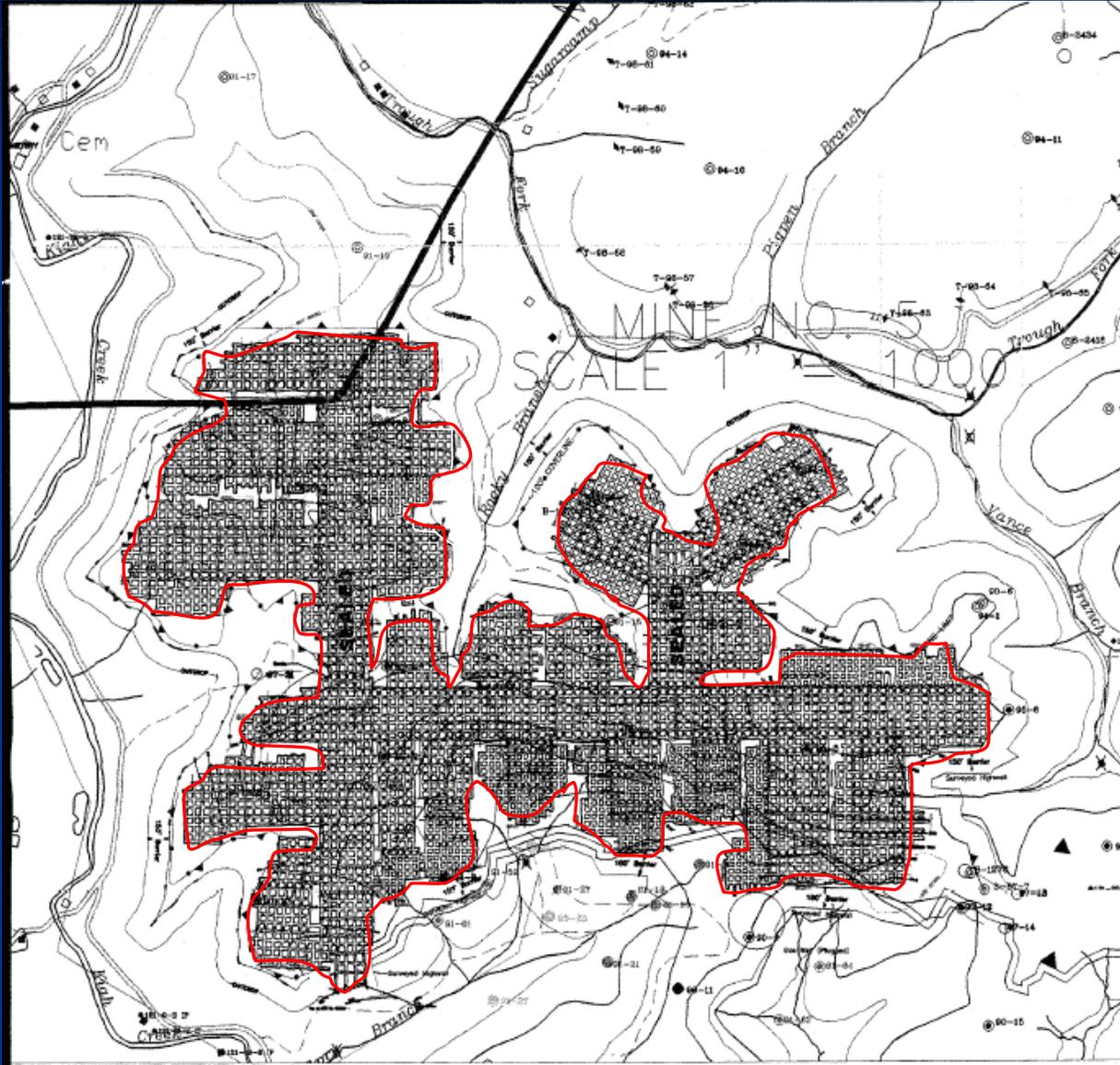
- Legitimacy of Standard
- Role of geospatial technology in coal mining
- National energy strategy
- Primacy program funding – Federal dollars

Why doesn't Existing Geospatial Standards Fulfill needs of Coal Mining Community?

- Unique form and function
- Specific to industry

Underground Mine Extents (UCMO) Standard

Underground Mine Extents



Form and Style for ASTM Standards-UCMO

Required Sections – Assignments and Group Review

- Scope
- Reference Documents
- Terminology
- Significance and Use
- Procedure
- Keywords

Home Documents and Lists Create Site Settings Help Up to DSM - Collaboration Web Site

ASTM Data Standards Team
Shared Documents
Standard 2- Underground Mine Extents/UG standard assignments

Select a View
All Documents
Explorer View

Actions
Alert me
Export to spreadsheet
Modify settings and columns

Share a document with the team by adding it to this document library.

New Document | Upload Document | Up | New Folder | Filter | Edit in Datasheet

Type	Name	Modified	Modified By	Checked Out To
Folder	C.19 Scope (Brenda and Tom)	10/1/2007 12:51 PM	Arielle Avishai	
Folder	C.20 Referenced documents (Joe R, Robert and Jo Gault)	10/1/2007 12:51 PM	Arielle Avishai	
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Folder	C.28 Keywords (Alan)	10/1/2007 12:51 PM	Arielle Avishai	

Underground Mine Standard Attributes

Underground Coal Mining Extent ¶ Attribute	Definition	Example	Data Type	Domain	Comment	¶	Cardinality/Multiplicity
State/Tribe Mine ID*	Unique identifier*	2939829*	Text*	Alphanumeric*	**	**	**
MSHA ID*	Not unique but does link to other data sets*	39-39022*	Text*	Alphanumeric*	**	**	**
Company*	Responsibility*	XYZ Coal Co.*	Text*	Alphanumeric*	**	**	**
Mine Name*	Common name for mine*	Peterson Mine*	Text*	Alphanumeric*	**	**	**
Coal Bed Name*	Geologic name, as reported in the permit document **	Appleton no. 2*	Text*	Alphanumeric*	**	**	**
Coal Bed Elevation*	Mean Sea Level elevation (msl), as reported in the permit document**	893 msl*	Text*	Alphanumeric*	**	**	**
Source Map Year***	Latest year on map *	1977*	Text*	Year*	**	**	**
National ID*	State/tribal Abbrev. + Mine ID*	WV1201834*	Text*	Alphanumeric*	**	**	**
Contact*	Source for Data *	West Virginia Department of Environmental Protection*	Text*	Alphanumeric, added automatically*	**	**	**
Data Status*	Last Edit Date*	01/30/2007*	Date*	Last Updated/ Changed*	To determine last update of data*	**	**
Comment*	Any additional comment, as reported by the RA*	Multi seam, combined surface & underground operation*	Text¶	Alphanumeric*	**	**	**
Mine_Status*	Status*	Active*	Text*	Active, inactive, abandoned,*	**	**	**
Mine_Type*	Type of underground mining operation*	Longwall*	Text*	Longwall, R&P*	**	**	**

* - This draft document was prepared by the Geospatial Data Standards Task Group at their 9/18/07 meeting.¶

** - The source document may not represent the "final" mine extent¶

The Underground Mine Extents UCMO Standard Limitations

- Does Not Address
 - Permit Bond Releases
 - Permit Bond Forfeitures
- Addresses
 - Pre-SMCRA Underground Mining Operations

Schedule-Underground Mine Extents (UCMO) Standard Approval

- 09/07 Task Group developed attributes; Revise ASTM Standard Sections, Albuquerque Mtg.
- 10/07 Editing of Draft Sections by Task Group
- 11/07 Editing of Draft sections of UCMO
 - 11/30 Submittal of ASTM UCMO Standard, sub-committee
- 12/07 Plan ASTM Subcommittee Ballot
- 01/08 ASTM Task Group Meeting, Tampa
 - Review and revise draft underground mine extents Standard
- 03/08 ASTM Main Committee Ballot
- ??/08 Standard Approval

The FGDC Standard

Progress On FGDC Approval for the ASTM D-7384-07 Standard

- 9/06 Task Group Formation with FGDC participation, Denver meeting
- FGDC provided guidance at Task Group meetings
- 09/07 ASTM D-7384-07 Standard Approval
- 10/07 Request submitted to FGDC for consideration
 - Benefits to federal government
 - Process in which Standard was developed
 - Restrictions/limitations (copy write) of Standard
- 12/07 Presentation to FGDC to request Standard approval
- Anticipate FGDC Approval '08

FGDC Standard Approval

- ASTM Task Group requests a status of *Recommendation* from the FGDC
- A FGDC *Recommendation* it's use is voluntary in accordance with federal guidance
 - The use of the FGDC standard should be viewed as recommendations or guidelines to address SMCRA data requirements

ASTM Task Group 2007-2008 Plans

■ Meetings

- Meeting with FGDC in DC for consideration of approval of the D-7384-07 Standard, May 2008
- ASTM meeting in Tampa, FL., January 2008
 - + Main Committee balloting on UCMO Standard
- OSM Atlanta Geospatial meeting, March 2008
 - + ASTM Task Group presentation at meeting
 - + One day meeting at end of Geospatial meeting
- ASTM Meeting in Denver, CO June 2008
- Task Group Meeting in Salt Lake City, UT, Oct. 2008

■ Standards for future coal mining datasets

- OSM Geospatial meeting data stewards decide future standards

Potential Standards -

- Generated list of potential standards – June 2007
Norfolk, VA
- Refined list of potential standards and prepared survey for distribution to data stewards – Sept. 2007
Albuquerque, NM
- Reviewed data steward surveys & compiled results –
Jan. 2008 Tampa, FL
- Presentation of potential data standard to data stewards – March 2008 Atlanta, GA

Summary - Accomplishments

- **ASTM Approval of the Surface Mining Boundary**
 - ASTM Standard D7384-07
- **Complete draft of the Underground Mine Extents (UCMO) Standard**
 - Submittal of Standard on November 30, 2007 to the ASTM for sub-Committee Balloting
- **Compilation of Future Standards from ASTM Task Group to NCMGC for consideration as next standards**
- **Submittal of ASTM Standard D7384-07 to the FGDC for consideration of approval, December 2007**

When The Day's Work is
Over, it's Time to Relax:

Sandia Peak Tram Sightseeing
and Dinner at Sandiago's
Restaurant



The End