



Designation: D7631 – 10

Standard Practice for Minimum Geospatial Data for a Coal Mining Environmental Resource Monitoring Location¹

This standard is issued under the fixed designation D7631; 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 geospatial data for defining a coal mining environmental resource monitoring location (ERML).

1.1.1 This practice addresses coal mining geospatial environmental resource monitoring data relative to the Surface Mining Control and Reclamation Act of 1977 (SMCRA).² This geospatial data shall be obtained from each state, tribal, or federal, or combinations thereof, coal mining regulatory authority (RA) authorized under SMCRA to regulate surface coal mining operations (SCMO). Each RA shall be the authoritative data source (ADS) for coal mining geospatial data.

1.1.2 As used in this practice, coal mining ERML's represents points where surface, groundwater, and geologic drill hole chemistry are used to determine any probable hydrologic consequences where coal removal, reclamation and related supporting activities has occurred, is occurring, or is planned and authorized by the RA within a defined SCMO. These locations may also include dam safety, impoundments, diversions, air quality, air blasts (blasting), construction (refuse piles), and subsidence.

1.1.3 This standard is one of several that have been approved or are in development related to SMCRA approved coal mining operations. Also under development is a terminology standard. Initial development of these standards is being done on an individual basis; however, they may be consolidated to reduce repetition of information between them.

1.2 This practice applies to pre-SMCRA and post-SMCRA ERML's.

1.3 *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 regulator limitations prior to use.*

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*³

D653 Terminology Relating to Soil, Rock, and Contained Fluids

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 Project 1574-D Information Technology—Geographic Information Framework Data Content Standard, Part 5 Governmental Unit and Other Geographic

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.

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

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.

Locations of Environmental Resource Monitoring Locations.

FGDC Project 1574-D Information Technology—Geographic Information Framework Data Content Standard, Part 5 Governmental Unit and Other Geographic Area Boundaries

2.4 *Code of Federal Regulations*:⁶

30 CFR Part 700, et seq.

30 CFR Part 800, et seq.

3. Terminology

3.1 *Definitions*—Except as listed or noted below, all definitions are in accordance with Terminology **D653**.

3.2 *Definitions of Terms Specific to This Standard*:⁷

3.2.1 *Attribute*—A defined characteristic of a feature (for example, surface water monitoring point).

3.2.2 *Attribute Value*—A specific quality or quantity assigned to an attribute for a specific feature.

3.2.3 *Authoritative Data Source*—A recognized source as defined in SMCRA.

3.2.4 *Contact*—Jurisdictional regulatory authority responsible for issuance and compliance of a coal-mining permit.

3.2.5 *Environmental Resource Monitoring Location Point*—A geometric point that specifies the locations of environmental resources associated with permitted SCMOs, as indicated on the latest map approved by the RA.

3.2.6 *Feature*—Geographical representation of discrete real world phenomena. For this standard the geographical representation is usually realized in a digital information system such as a GIS represented as points, lines, and polygons.

3.2.7 *National ID*—Permit ID assigned to SCMO by RA, prefixed with state or tribal abbreviation.

3.2.8 *National Map Data Steward (NMDS)*—The OSM designated liaison with the RA.

3.2.9 *National Pollutant Discharge Elimination System (NPDES)*—A permit program authorized by the Clean Water Act that controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

3.2.10 *North American Vertical Datum of 1988 (NAVD)*—the vertical control datum established for vertical control surveying in the United States based upon the general adjustment of the North American Datum of 1988.

3.2.11 *Office of Surface Mining Reclamation and Enforcement (OSM)*—OSM is the federal government bureau established under Title II of SMCRA, found within the United States Department of Interior (DOI). The SMCRA provides OSM a legal basis for assigning primary responsibility for regulation of coal mining operations and reclamation of abandoned mine land (AML) to the states and Indian tribes. Twenty-four coal resource states have been granted primary regulatory authority,

also known as “primacy,” and the exclusive jurisdiction of the implementation of SMCRA. In coal states that do not have primacy and some federal and Indian lands, OSM issues the coal mine permits, conducts the inspections, and handles the enforcement and reclamation responsibilities.

3.2.12 *Permit*—Written authorization to conduct coal mining and reclamation operations issued by an RA to a permittee.

3.2.13 *Permit ID*—Unique identifier assigned by the RA for administrative purposes.

3.2.14 *Permittee*—An entity to whom a permit has been issued, by an RA, to conduct coal mining and reclamation operations.

3.2.15 *Point*—A zero-dimensional geometric object that specifies geographic location.

3.2.16 *Preferred Domain*—A list or range of permissible values for a specified attribute.

3.2.17 *Regulatory Authority*—Entity(s) with jurisdiction over the regulation of coal or non-coal mining, or both, and reclamation operations or mitigation, or both, of AML problems under a program approved by the Secretary of the United States Department of the Interior.

3.2.18 *SCMRA Entities*—State and tribal regulatory authorities established under SMCRA and recognized by a national governmental agency for the purpose of regulating a land area where coal mining operations and reclamation are conducted.

3.2.19 *State*—A state of the United States of America. The twenty-four “primacy” states include Alabama, Alaska, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

3.2.20 *Tribe*—Any Native American or Alaskan Native tribe, band, group, or community having a governing body recognized by the DOI Secretary that has assumed full regulatory authority over the administration and enforcement of coal mining operations or AML on Native American lands. Navajo, Hopi, and Crow tribes have initiated efforts to assume primacy in being the RA.

3.3 *Acronyms Specific to this Standard*:

3.3.1 *ADS*—authoritative data source

3.3.2 *CFR*—Code of Federal Regulations

3.3.3 *NAVD*—North American Vertical Datum

3.3.4 *DOI*—U.S. Department of the Interior

3.3.5 *ERML*—Environmental Resource Monitoring Location

3.3.6 *FGDC*—Federal Geodetic Data Committee

3.3.7 *GIO*—Geospatial Information Officer within OSM, oversees compilation of SMCRA-related data

3.3.8 *GIS*—Geographic Information System

3.3.9 *NAD*—North American Datum

3.3.10 *NPDES*—National Pollutant Discharge Elimination System

3.3.11 *OSM*—Office of Surface Mining Reclamation and Enforcement

3.3.12 *RA*—Regulatory Authority

3.3.13 *SCMO*—surface coal mining operations

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>.

⁷ The terms defined here are consistent with terms defined in 30 CFR Part 700, et seq., 30 CFR Part 800, et seq., though not verbatim.