CS-6 Image Formatting for Well Data

Revised: July 2006

1.0 PURPOSE

This standard initially applies to digital representations of well logs or well reports and associated enclosures produced either as a native file or by scanning. The standard will subsequently be updated as the requirements to submit other data and media types are identified.

2.0 DEFINITIONS

2.1 IMAGE FILES

Graphic files (held in either Vector or Raster formats) of analogue data. Typical formats include PDF, CGM and TIFF. Neither Digital nor Image formats can be read by the human eye in their native form but must first be displayed or plotted from the computer files in which they are stored.

2.2 HARDCOPY DOCUMENTS

Include paper and film documents that may be read by the human eye without the need of any technology.

2.3 DIGITAL DATA

Well log curves in LIS, DLIS and other industry formats in which data is held as discrete digital values. Data in these formats is not included in the scope of this standard.

CDA will accept image files according to the specifications detailed below in section 2 and will also accept hardcopy documents. Hardcopy documents will be scanned upon receipt according to the scanning specifications detailed below (Section 1). Hardcopy and image files are deemed to be identical and where both exist only the image version should be submitted to CDA.

CDA aims to move towards digital only submission of data and to eliminate the need for hardcopy scanning.

3.0 SCANNING

All scanning undertaken by CDA will be either to PDF or TIFF format

3.1 PURPOSE OF SCANNING

To provide an archive
To realise cost reduction by reducing the number of versions of hard copy
To improve accessibility to the data

3.2 The objective of the standard is to comply with the baseline TIFF specification. TIFF extensions are not included within the standard as it cannot be guaranteed that these will be implemented within a particular product. TIFF specification revision 6 has been used as the base for this standard.

3.3 BLACK AND WHITE ITEMS

Header tags As per TIFF standard
Resolution / 200 dpi (composite logs at 300 dpi)
Thresholds
Compression CCITT group IV
Tiling No
Grey scale Bilevel
File formats TIFF

3.4 GREY SCALE ITEMS

Header tags As per TIFF standard
Resolution / 200 dpi
Thresholds
Compression None
Tiling No
Grey scale 256 levels of grey
File formats LZW Compressed TIFF

3.5 COLOUR ITEMS

Header tags As per TIFF standard
Resolution / 200 dpi
Thresholds
Compression None
Tiling No
Palette colour 256 colours
File formats LZW Compressed TIFF

3.6 PDF

Documents scanned to PDF should be a minimum 200dpi.

3.7 GENERAL COMMENTS ON SCANNING

Every effort should be made during the scanning process to maximise quality of the image and minimise file size. Colour scanning should only be applied to individual pages where the use of colour is fundamental to the interpretation of the report or log.

A useable file size should be produced but not at the expense of image quality. If an image over 50MB is produced this should be split prior to submission.

4.0 IMAGE FORMATS

DEFINITIONS

4.1 CGM (Computer Graphics Metafile)

Is an open file format designed for the digital storage of illustrations as either Raster or Vector data or both. The CGM standard is a published International Standard (ISO 8632), an American National Standard (ANSI X3.122) and a Federal Information Processing Standard (FIPS 128). MIL-D-28003 is the US Department of Defense implementation of FIPS PUB 128 and MIL-STD-2301 for NIST. The CGM standard is being developed and maintained through a coordinated effort of ISO SC24 and ANSI X3H3, and the U.S. and international standards are identical.

4.2 MetafileCGM

Is a proprietary Baker Atlas Vector format for Image files [that conforms with the CGM format standard].

4.3 PDF (Portable Document Format)

Is a proprietary Raster format of Adobe Systems Incorporated.

4.4 PDS (Picture Description System)

Is a proprietary Schlumberger graphics metafile format used to describe, store and transport well logs. PDS is a Vector format

4.5 TIFF (Tagged Image File Format)

Is a Raster file format that is designed to promote the interchange of image data and originated in 1986 when vendors worked together to create a standard file format for images used in desktop publishing. CDA's standard for TIFF is set out in Section 1.

4.6 VECTOR FORMATS

Describe images in high level geometric terms such as lines, circles, arcs, ellipses, polygons, text strings and cell arrays. They are distinct from Raster files which represent images as a series of pixels.

5.0 WELL LOGS

5.1 INPUT STANDARDS

It is preferred that image files for well logs be submitted to CDA in an approved Vector format such as CGM or PDS.

Where no Vector format version is available, CDA will accept well log image files in the TIFF format stipulated in Section 1.

PDF format logs may be accepted in instances where there is no alternative recognised Vector format file or scannable hardcopy version available. PDF versions of logs should preferably be continuous feed with no page breaks.

Where no Image file exists for a well log, CDA will create a TIFF image file (to the standard set out in Section 1) from a Hardcopy version through the document scanning process.

5.2 STORAGE STANDARDS

CDA will store Image files for well logs in the format in which they are originally input (i.e. in CGM, PDS, PDF or TIFF).

5.3 OUTPUT STANDARDS

Image files for well logs will be available as output in the same format in which they were originally input to CDA.

6.0 WELL REPORTS

6.1 INPUT STANDARDS

Image files for well reports should be submitted to CDA in either PDF or TIFF format.

The version of PDF with image searchable text is preferred but the standard PDF version is also accepted by CDA.

Where no Image file exists for a well report, CDA will create a TIFF image file (to the standard set out in Section 1) or a PDF file through the Hardcopy scanning process.

Word and Excel files should be converted to PDF before submission. If this is not possible for Excel files the file should be saved as a .csv text file before submission.

6.2 STORAGE STANDARDS

CDA will store Image files for well reports in the format in which they are input (i.e. in PDF or TIFF).

6.3 OUTPUT STANDARDS

Image files for well reports will be available as output in the same format in which they were input to CDA.