Electronic Transfer of Geotechnical and Geoenvironmental Data

AGS4

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Comment and feedback from the wider geotechnical and geoenvironmental industry has also been fundamental to the ongoing evolution of the AGS Format, ensuring that the needs of the industry and its clients continue to be met.

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FOREWORD

The AGS Data Management Working Party continually monitors the use of the AGS format within the industry and strives to ensure its relevance to current working practice.

In response to new laboratory industry standards and updated UK practice the AGS4 Addendum October 2011 document has been updated and amended and shall be known as “AGS 4.0.4”. Detailed amendments are listed in Appendix 3.

The newly defined headings should be viewed as user defined headings and thus, if used, the DICT group needs to be present in the AGS 4.0.4 submission.

All current abbreviations are applicable to AGS 4.0.4.

Whilst the AGS Format is used throughout the world, this document is specifically written for use in accordance with UK practice. Guidance notes for its use with other codes and standards are available from the AGS website.

Jackie Bland
Working Party Chair 2010-Present

Publication History

Edition Reference	Date of issue	Amendments
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4.0.1	March 2011	Addendum to 4.0
4.0.2	May 2011	Addendum to 4.0
4.0.3	October 2011	Addendum to 4.0
4.0.4	February 2017	For amendments see Appendix 3

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APPENDICES

1 INTRODUCTION

The AGS Format has now been accepted by many in ground engineering as being appropriate to electronic data transfer and storage. Prior to this there was a proliferation of software systems and associated data formats that differed both in form and purpose even though much of their content was common. This was recognised by the Association of Geotechnical and Geoenvironmental Specialists (AGS) in 1991 and led to the setting up of a Working Party to establish an interchange format which allowed transfer of data between systems with minimal change to the systems themselves. The outcome of this work was embodied in the First Edition of this document published in 1992. The Second and Third Editions, published in 1994 and 1999 respectively, contained a series of updates and developments reflecting the ongoing needs of the industry.

The producers of geotechnical and geoenvironmental data have adopted systems for the efficient preparation and presentation of reports in printed format and the receivers for its analysis. Clearly, the transfer of data by electronic means to the receiver's systems, without the need for a printed interface, helps to minimise costs, time and the potential for error. It also encourages more and better use of the data. However, much remains to be done to encourage the use of data in the electronic format and the ongoing development of the AGS Format seeks to encourage its use not only in ground investigation but also in the design, bidding and construction phases of the project.

The capability of a geotechnical and geoenvironmental data system to accept or produce AGS Format data allows the data system operator to continue to use their own individual and bespoke processes and working methods, such as familiar data capture or processing forms, without compromising the ability to exchange data with clients, partners or suppliers. This aids the implementation and continual improvement of quality assurance procedures within data producers and receivers. Storage and access to the data is rendered far more efficient and the format also facilitates the establishment of data archives by producers, receivers and national bodies.

This document describes an update of the AGS Format and continues the trend of updating the Format in response to industry requirements. The AGS4 rules have been revised and the Data Dictionary extensively updated to extend the range of data that can be transferred and reflect the requirements of the implementation of Eurocodes, accreditation and quality assurance. The changes also extend the functionality of the AGS Format to encompass the data processes prior to reporting; for example, new data groups allow transmittal of laboratory schedule requirements.

2 SCOPE

The transmission by electronic means of data recorded during ground investigations and ground engineering construction related activities is a realistic objective. The AGS Format allows for transfer of data presented on forms such as exploratory hole records (e.g. boreholes and trial pits), in situ test data, laboratory test results including geoenvironmental testing and monitoring.

The transmission of report texts (introductory text, summaries, discussions and interpretations) is not within this scope. The transfer is limited to data without typographic or rendering information, such as font, underline or paragraph format. Typically these documents would be transmitted in standard file formats such as Adobe Portable Document Format (PDF) which retain the published format of the documents. Similarly, the format of the transmission of drawings and photographs, if required, is covered by other standards. AGS4, however, includes the transmittal of these documents within an AGS submission using the FILE Group, such that reports, drawings and photographs may also be transferred in a coordinated manner by electronic means.

3 USER SUPPORT

The AGS has made provision on its website (www.ags.org.uk) for:

- Downloading of this document
- Provision of standard abbreviations
- Guidance documents
- Example files
- Discussion boards

These resources aim to provide users with the appropriate materials to support implementation and use of the AGS Format. The discussion boards assist in identification of user needs and support the development of the format to meet industry requirements. The website is also used to communicate amendments to registered users.

Appendix 1 provides further information on the services provided to AGS Format users via the website.

4 INTERNAL, PRELIMINARY AND FINAL DATA

The precise use of AGS Format data files within the project process and data management activities is not pre-determined. The data files are structured in order to allow the presentation of preliminary data as well as its updating during the course of a project, prior to issue of the final data.

AGS4 includes new Groups relating to the transmittal of laboratory testing requirements; these data form part of the project process and do not form part of the final data report.

Preliminary data in electronic format can be useful on major projects where design is undertaken during the period of the investigation. However, the need for this facility should be very carefully considered by the receivers before including it in their Contract Specifications since it will require the imposition of rigorous management procedures. The highlighting of change in data is considered to pose significant difficulties and hence preliminary data should be replaced by subsequent data and not merely updated by it. Where the highlighting of change is required, this should be a facility incorporated in the receiver's software. This does not preclude submission of parts of the data on separate media but the producer must ensure that the data within all separate issues are compatible and that updates are carried through all sub-sets of the data.

Each issue shall be given a unique issue sequence reference. AGS4 includes the new transmittal group, TRAN, to manage this process and include information about the data transfer within the transferred file.

Clear labelling of files and media and conventions for its security and management are vital to the implementation of a practical system. These aspects are dealt with in Appendix 2.

5 MANAGEMENT

In order to provide a framework, within which the data can be used, it is necessary to have specifications that fall into the following categories:

- National Specification
- General Specification
- Particular Specification

The National Specification in the UK, the 'UK Specification for Ground Investigation'[1], includes the general requirement for data in electronic format. To fully specify the data deliverable requirements, the General clauses for a contract may re-iterate these points and typically Particular Specification clauses should be presented to fully define the data format and deliverable requirements. AGS4 includes many headings for which data can be collected during a geotechnical or geoenvironmental investigation.

[1] Site Investigation in Construction: 3 – Specification for ground investigation. Thomas Telford. 1993.

However, the actual data transferred from the producer to the receiver is described in the particular *CONTRACT SPECIFICATION* between the two parties.

The more precise the information presented in the Particular Specification, the more likely that the data deliverable provided by the supplier will meet expectations. Notes on the approach to development of Particular Specification clauses are presented in a Guidance Document published on the AGS Format website.

AGS4 provides the facility to include user defined groups and headings for specific data requirements. It is important to note that adding additional headings can be very disruptive to producer's internal processes and may result in considerable extra cost. The specification of additional or user defined fields, therefore, should only be done if absolutely necessary.

6 UPDATING

To meet the rapidly changing needs of its users the AGS Format must continue to develop. The publication of a First Edition (1992) and a Second Edition (1994), were in hard copy forms. However, the broadening of the user base has required greater flexibility for dissemination of amendments. The AGS website has been used since the Third Edition (2004) to publish subsequent updates. Whilst placing the Format in open access on the website permits more frequent updates, all changes are subject to rigorous control and notification procedures.

Extensions to the AGS Format will continue to be necessary from time to time and details are given in Appendix 1 of how updates are notified to the user community.

Any problems in the use of this document should be brought to the attention of the AGS via the discussion board on the website. Problems with proprietary software should be directed to the suppliers.

7 INTERNATIONAL USE OF THE AGS FORMAT

The requirements for other countries to adopt and use the AGS Format as a national data transfer standard are defined in a Guidance Document on the AGS website. The documentation includes the approach to be followed that permits implementation of the AGS Format for transfer in accordance with the technical standards of that country.

8 RULES

8.1 The Rules

The following rules shall be used when creating an AGS4 data file ('*data file*').

Rule 1
The data file shall be entirely composed of ASCII characters.

Rule 2
Each data file shall contain one or more data GROUPs. Each data GROUP shall comprise a number of GROUP HEADER rows and must have one or more DATA rows.

Rule 2a
Each row is located on a separate line, delimited by a new line consisting of a carriage return (ASCII character 13) and a line feed (ASCII character 10).

Rule 2b
The GROUP HEADER rows fully define the data presented within the DATA rows for that group (Rule 8). As a minimum, the GROUP HEADER rows comprise GROUP, HEADING, UNIT and TYPE rows presented in that order.

Rule 3
Each row in the data file must start with a DATA DESCRIPTOR that defines the contents of that row. The following Data Descriptors are used as described below:

- Each GROUP row shall be preceded by the "GROUP" Data Descriptor.
- Each HEADING row shall be preceded by the "HEADING" Data Descriptor.
- Each UNIT row shall be preceded by the "UNIT" Data Descriptor.
- Each TYPE row shall be preceded by the "TYPE" Data Descriptor.
- Each DATA row shall be preceded by the "DATA" Data Descriptor.

Rule 4
Within each GROUP, the DATA items are contained in data FIELDs. Each data FIELD contains a single data VARIABLE in each row. Each DATA row of a data file will contain one or more data FIELDs.

The GROUP row contains only one DATA item, the GROUP name, in addition to the Data Descriptor (Rule 3). All other rows in the GROUP have a number of DATA items defined by the HEADING row.

Rule 5
DATA DESCRIPTORS, GROUP names, data field HEADINGs, data field UNITs, data field TYPEs, and data VARIABLEs shall be enclosed in double quotes ("..."). Any quotes within a data item must be defined with a second quote e.g. "he said ""hello""".

Rule 6
The DATA DESCRIPTORS, GROUP names, data field HEADINGs, data field UNITs, data field TYPEs, and data VARIABLEs in each line of the data file shall be separated by a comma (,). No carriage returns (ASCII character 13) or line feeds (ASCII character 10) are allowed in or between data VARIABLEs within a DATA row.

Rule 7
The order of data FIELDs in each line within a GROUP is defined at the start of each GROUP in the HEADING row. HEADINGs shall be in the order described in the AGS FORMAT DATA DICTIONARY (Section 8 of this document).

Rule 8
Data VARIABLEs shall be presented in the units of measurement and type that are described by the appropriate data field UNIT and data field TYPE defined at the start of the GROUP within the GROUP HEADER rows.

Rule 9
Data HEADING and GROUP names shall be taken from the AGS FORMAT DATA DICTIONARY. In cases where there is no suitable entry, a user-defined GROUP and/or HEADING may be used in accordance with Rule 18. Any user-defined HEADINGs shall be included at the end of the HEADING row after the standard HEADINGs in the order defined in the DICT group (see Rule 18a).

Rule 10
HEADINGs are defined as KEY, REQUIRED or OTHER.

- KEY fields are necessary to uniquely define the data.
- REQUIRED fields are necessary to allow interpretation of the data file.
- OTHER fields are included depending on the scope of the data file and availability of data to be included.

Rule 10a
In every GROUP, certain HEADINGs are defined as KEY. There shall not be more than one row of data in each GROUP with the same combination of KEY field entries. KEY fields must appear in each GROUP, but may contain null data (see Rule 12).

Rule 10b
Some HEADINGs are marked as REQUIRED. REQUIRED fields must appear in the data GROUPs where they are indicated in the AGS FORMAT DATA DICTIONARY. These fields require data entry and cannot be null (i.e. left blank or empty).

Rule 10c
Links are made between data rows in GROUPs by the KEY fields. Every entry made in the KEY fields in any GROUP must have an equivalent entry in its PARENT GROUP. The PARENT GROUP must be included within the data file. GROUP parentage is defined in Section 7.3.

Rule 11
HEADINGs defined as a data TYPE of 'Record Link' (RL) can be used to link data rows to entries in GROUPs outside of the defined hierarchy (Rule 10c) or DICT group for user defined GROUPs.

A heading of data TYPE 'Record Link' shall comprise:
The GROUP name followed by the KEY FIELDs defining the cross-referenced data row, in the order presented in the AGS4 Data Dictionary (Section 8).

Rule 11a
Each GROUP/KEY FIELD shall be separated by a delimiter character. This single delimiter character shall be defined in TRAN_DLIM. The default being "|" (ASCII character 124).

Rule 11b
A heading of data TYPE 'Record Link' can refer to more than one combination of GROUP and KEY FIELDs.

The combination shall be separated by a defined concatenation character. This single concatenation character shall be defined in TRAN_RCON. The default being "+" (ASCII character 43).

Rule 11c
Any heading of data TYPE 'Record Link' included in a data file shall cross-reference to the KEY FIELDs of data rows in the GROUP referred to by the heading contents.

Rule 12
Data does not have to be included against each HEADING unless REQUIRED (Rule 10b). The data FIELD can be null; a null entry is defined as "" (two quotes together).

Rule 13
Each data file shall contain the PROJ GROUP which shall contain only one data row and, as a minimum, shall contain data under the headings defined as REQUIRED (Rule 10b).

Rule 14
Each data file shall contain the TRAN GROUP which shall contain only one data row and, as a minimum, shall contain data under the headings defined as REQUIRED (Rule 10b).

Rule 15
Each data file shall contain the UNIT GROUP to list *all* units used within the data file.

Every unit of measurement entered in the UNIT row of a GROUP or data entered in a FIELD where the field TYPE is defined as "PU" (for example ERES_RUNI, GCHM_UNIT or MOND_UNIT FIELDs) shall be listed and defined in the UNIT GROUP.

Rule 16
Each data file shall contain the ABBR GROUP when abbreviations have been included in the data file.

The abbreviations listed in the ABBR GROUP shall include definitions for all abbreviations entered in a FIELD where the data TYPE is defined as "PA" or any abbreviation needing definition used within any other heading data type.

Rule 16a
Where multiple abbreviations are required to fully codify a FIELD, the abbreviations shall be separated by a defined concatenation character. This single concatenation character shall be defined in TRAN_RCON. The default being "+" (ASCII character 43)

Each abbreviation used in such combinations shall be listed separately in the ABBR GROUP.
e.g. "CP+RC" must have entries for both "CP" and "RC" in ABBR GROUP, together with their full definition.

Rule 17
Each data file shall contain the TYPE GROUP to define the field TYPEs used within the data file.

Every data type entered in the TYPE row of a GROUP shall be listed and defined in the TYPE GROUP.

Rule 18
Each data file shall contain the DICT GROUP where non-standard GROUP and HEADING names have been included in the data file.

Rule 18a
The order in which the user-defined HEADINGs are listed in the DICT GROUP shall define the order in which these HEADINGS are appended to an existing GROUP or appear in a user-defined GROUP.

This order also defines the sequence in which such HEADINGS are used in a heading of data TYPE 'Record Link' (Rule 11).

Rule 19
A GROUP name shall not be more than 4 characters long and shall consist of uppercase letters and numbers only.

Rule 19a
A HEADING name shall not be more than 9 characters long and shall consist of uppercase letters, numbers or the underscore character only.

Rule 19b
HEADING names shall start with the GROUP name followed by an underscore character.
e.g. "NGRP_HED1"

Where a HEADING refers to an existing HEADING within another GROUP, the HEADING name added to the group shall bear the same name.
e.g. "CMPG_TESN" in the "CMPT" GROUP.

Rule 20
Additional computer files (e.g. digital images) can be included within a data submission. Each such file shall be defined in a FILE GROUP.

The additional files shall be transferred in a sub-folder named FILE. This FILE sub-folder shall contain additional sub-folders each named by the FILE_FSET reference. Each FILE_FSET named folder will contain the files listed in the FILE GROUP.

8.2 Notes on the Rules

A fundamental consideration in developing the Rules has been that potential users of the AGS Format should be able to use standard software tools to produce the data files.

The spreadsheet is the most basic tool for the task and the revised Rules presented in AGS4 simplify the process of creating data from spreadsheet software. Likewise, data files produced according to the Rules can be read directly by spreadsheet software.

Although the Rules make it possible for users to manipulate data files using spreadsheets alone, it is to be expected that more specific software will be used to automate the reading and writing of data files. These software systems may range from simple data entry and edit programs through to complete database systems with AGS Format data import and export capability.

Another fundamental point is that the resulting data file has been designed to be easy to read with minimal computer software. The data files do not replace the printed reports to which they relate, however, the layout does allow data items to be readily identified should the need arise.

The following notes explain some points of detail in the Rules.

Note i
ASCII 'CSV' Files
The Rules define ASCII data files of a type commonly referred to as Comma Separated Value (CSV). The data items are separated by commas and surrounded by quotes (").

It should be noted that not all software is able to read and write CSV files to the requirements of the AGS Format.

Note ii
HEADINGs, KEY and REQUIRED Fields
The HEADINGs should be seen as the equivalent of a field name within a database. However, the term HEADING is used within the rules to highlight that this document defines a data transfer format and not a database schema.

KEY FIELDs are important for maintaining data integrity. Without this, the receiving software may not be able to create the inter-relationships within the data in a meaningful way. For the purpose of creating data files, this means that data entered into the combination of KEY FIELDs must be unique in each GROUP and that the corresponding entries are made in the PARENT GROUP where required by Rule 10c.

REQUIRED Fields (Rule 10b) are critical to interpreting the data file. Without data in these fields the user or receiving software may not be able to access the data or process the information within.

Note that there is no requirement to include all HEADINGs in a GROUP. The general approach should be to only include the HEADINGs for which data is required or provided (Rule 10). This is subject to meeting the requirement to include all KEY and REQUIRED fields (Rules 10a and 10b).

Note iii
Units and Data Types
Suggested units of measurement and data types for each of the HEADINGs are given in the Data Dictionary (Section 8). These represent the typical units of measurement that are used in the UK. They will either be the appropriate SI units or the unit defined by the particular Eurocode or British Standard relating to the measurement data under that specific HEADING.

It is recognised that situations will occur where neither the SI unit nor the suggested unit of measurement are appropriate. In these cases, the unit of measurement and/or data TYPE for the results presented may be changed from the one shown in this document and the results presented according to the revised data UNIT / data TYPE.

All entries in the UNIT row must be defined in the UNIT GROUP (Rule 15). All entries in the TYPE row must be fully defined in the TYPE GROUP (Rule 17).

Note iv
Sample Referencing
The SAMP Group has 5 KEY FIELDs which comprise 4 descriptive FIELDs (LOCA_ID, SAMP_TOP, SAMP_TYPE, SAMP_REF) and a single non descriptive ID (SAMP_ID).

If descriptive information regarding the sample is not to be disclosed to the data receiver (for example a laboratory), then the single SAMP_ID field is used and the remaining 4 KEY FIELDs are transmitted as null values. If no such requirement exists then the 4 descriptive fields can be used and the SAMP_ID can either be transmitted or contain a null value.

This approach is extended to all GROUPs that are descended from SAMP in the Group Hierarchy (Section 7.3). Laboratory test results may, therefore, be reported using the single or descriptive Key Field options to reference the parent sample depending on what reference system was given to the laboratory.

Samples that have a null LOCA_ID in the SAMP Group are required to have a null parent entry in the LOCA group when submitted to comply with Rule 10c.

Note: where these options for sample data exchange are deployed, there may be requirements for additional data acceptance protocols for both data receivers and data producers to ensure that data containing only partial KEY FIELD information can be successfully recombined if data is to be round-tripped.

Note v
Record Link data TYPE (RL) (Rule 11)
A data TYPE of 'Record Link' appears in the SAMP group (Heading SAMP_LINK) and provides a method for linking sample data to other data records; in particular the sample source; for example, a monitoring instrument or test that created the sample. This may provide the data receiver with additional information that may be used to interpret testing data related to the sample.

The reference within a Record Link data item is formed using the syntax defined in Rule 11 of:

- GROUP
- The data under the KEY HEADINGs in the order defined in the Data Dictionary (Section 8) (or DICT GROUP for user defined groups)
- Each component of the link being separated by a delimiter of "|" (the pipe character, ASCII Character 124).

For example: "SAMP|BH1|4.50|1|D|UX123"

where
SAMP = The Sample data group
BH1 = LOCA_ID
4.50 = SAMP_TOP
1 = SAMP_REF
D = SAMP_TYPE
UX123 = SAMP_ID

Note: Each value must be presented as it is defined in this document.
e.g. the sample top depth is to 2DP

This facility allows a link to exist between a sample and a monitoring point or other process / test such

as the SPT.

Multiple links can be created by concatenation using the separator defined in TRAN_RCON (default being "+", ASCII Character 43).

Examples:

"MONG|BH1|Pipe1" links a sample to the specific monitoring point of its origin.

"ISPT|BH1|4.50+CDIA|BH1|2.00|200" links a sample to the SPT test from which the sample was derived and also references the casing depth at the time of sampling.

The simplicity or complexity of the link depends on user requirements or specification.

Note vi
Associated files
Where other digital files or file sets are associated with data, the file association should be made with the relevant data type and record.

For example:

- Site location plans would be associated with the PROJ group.
- Photographs of core should be recorded against the core run records within the CORE group.
- Sample logging sheets if included with the data file would be associated with the SAMP group and against the relevant sample.
- Logging files from in situ tests should be associated with the appropriate test group.

Note vii
Example AGS Format data file
The following is an example of AGS Format. This demonstrates the basics of the format construct and is not complete.

```
"GROUP","PROJ"
"HEADING","PROJ_ID","PROJ_NAME","PROJ_LOC","PROJ_CLNT","PROJ_CONT","PROJ_ENG"
"UNIT","","","","","",""
"TYPE","ID","X","X","X","X","X"
"DATA","121415","ACME Gas Works Redevelopment"," Anytown","ACME Enterprises","ACME Drilling Ltd","ACME Consulting"

"GROUP","TRAN"
"HEADING","TRAN_ISNO","TRAN_DATE","TRAN_PROD","TRAN_STAT","TRAN_DESC","TRAN_AGS","TRAN_RECV","TRAN_DLIM","TR
AN_RCON"
"UNIT","","yyyy-mm-dd","","","","","","","","
"TYPE","X","DT","X","X","X","X","X","X","X"
"DATA","1","2009-04-01","ACME Drilling Ltd","DRAFT","Draft Logs only","4.0","ACME Consulting","|","+"

"GROUP","TYPE"
"HEADING","TYPE_TYPE","TYPE_DESC"
"UNIT","",""
"TYPE","X","X"
"DATA","ID","Unique Identifier”
"DATA","X,"Text"
"DATA","PA,"Text listed in ABBR Group”
"DATA","DT","  Date time in international format "
"DATA","2DP","  Value; 2 decimal places"

"GROUP","UNIT"
"HEADING","UNIT_TYPE","UNIT_DESC"
"UNIT","",""
"TYPE","X","X"
"DATA","m","metres"
"DATA","yyyy-mm-dd","date"

"GROUP","LOCA"
```

```
"HEADING","LOCA_ID","LOCA_NATE","LOCA_NATN"
"UNIT","","m","m"
"TYPE","ID","2DP","2DP"
"DATA","327-16A","523145.00","178456.12"

"GROUP","SAMP"
"HEADING","LOCA_ID","SAMP_TOP","SAMP_REF","SAMP_TYPE","SAMP_ID","SAMP_BASE","SAMP_CONT"
"UNIT","","m","","","","m",""
"TYPE","ID","2DP","X","PA","ID","2DP","X"
"DATA","327-16A","24.55","24","U","ABC121415010","25.00",""
```

8.3 Group Hierarchy

AGS4 Groups are organised in a hierarchy with an inverted tree like structure. At the top of the tree is the PROJ Group, with the majority of other Groups below this.

One of the Groups immediately below PROJ is Location Details (LOCA). All the in situ testing data lies directly below LOCA; for example SPT results in the ISPT Group. LOCA is termed the 'parent' Group of ISPT and ISPT is termed a 'child' Group of LOCA. The parent group of all the laboratory testing is sample data (SAMP).

Each Group has only one parent defined in the Hierarchy, but there can be many Groups below each parent. Each Group is linked to its parent (the Group above it in the hierarchy) by the Key Fields. Equally, each Group is linked to the Group(s) below it by Key Fields. For this structure to work, and the link to be made correctly between related Groups, the data in the Key Fields must be consistent and unique. If a data Group is included in an AGS submission, its Parent Group must also be included (Rule 10c), this applies all the way up to the top of the tree. Therefore, for example, the SAMP Group must always be present in the submission if there is any triaxial testing included in the TRIG group.

The following table defines the Group hierarchy by indicating the parent for each Group. The Key Fields that create the link between these Groups are indicated in the Data Dictionary that follows in Section 9.

It should be noted that there are ten Groups that are not part of this hierarchy and relate to the data file submission and description. The PROJ, TRAN, ABBR, TYPE, DICT, FILE, UNIT, LBSG, PREM and STND Groups each have a general purpose to describe the contents of the data file as follows:

- The PROJ, TRAN, ABBR, TYPE and UNIT Groups must always be included in an AGS file as they define the project, the submission details and the abbreviations, data types & units used within the data file.
- The DICT Group must be included if any user defined Groups or Headings are present.
- The FILE Group must be included if any associated files (non-AGS format files) are included in the submission (Rule 20).
- The STND Group may be used to list the various standards and specifications that define the methods by which the data has been collected.
- LBSG may be used to list test scheduling references used on a project.
- The PREM group may be used to give time-related remarks that refer to the project as a whole and not to any specific location or test.

Group Name	Contents	Notes	Parent Group	Page
Project / Data Transmission Details				
PROJ	Project Information	Required in all files (Rule 13)	-	
ABBR	Abbreviation Definitions	Required in all files (Rule 16)	-	
DICT	User Defined Groups and Headings	Required in all files which include user defined groups and/or headings (Rule 18)	-	
FILE	Associated Files	Required in file if FILE_FSET data provided in any group (Rule 19)	-	
TRAN	Data File Transmission Information / Data Status	Required in all files (Rule 14)	-	
TYPE	Definition of Data Types	Required in all files (Rule 17)	-	
UNIT	Definition of Units	Required in all files (Rule 15)	-	
Materials Laboratory Testing (Aggregates)				
AAVT	Aggregate Abrasion Tests		SAMP	
ACVT	Aggregate Crushing Value Tests		SAMP	
AELO	Aggregate Elongation Index Tests		SAMP	
AFLK	Aggregate Flakiness Tests		SAMP	
AIVT	Aggregate Impact Value Tests		SAMP	
ALOS	Los Angeles Abrasion Tests		SAMP	
APSV	Aggregate Polished Stone Tests		SAMP	
ARTW	Aggregate Determination of the Resistance to Wear (micro-Deval)		SAMP	
ASDI	Slake Durability Index Tests		SAMP	
ASNS	Aggregate Soundness Tests		SAMP	
AWAD	Aggregate Water Absorption Tests		SAMP	
Locations and Exploratory Hole Construction Details				
BKFL	Exploratory Hole Backfill Details		LOCA	
Geotechnical Laboratory Testing (Soils and Rocks)				
CBRG	California Bearing Ratio Tests - General		SAMP	
CBRT	California Bearing Ratio Tests - Data		CBRG	
Locations and Exploratory Hole Construction Details				
CDIA	Casing Diameter by Depth		LOCA	
CHIS	Chiselling Details		LOCA	
Samples, Amalgamated Specimens and Laboratory Test Scheduling				
CHOC	Chain of Custody Information		SAMP	
Geotechnical Laboratory Testing (Soils and Rocks)				
CMPG	Compaction Tests - General		SAMP	
CMPT	Compaction Tests - Data		CMPG	
CONG	Consolidation Tests - General		SAMP	
CONS	Consolidation Tests - Data		CONG	

Group Name	Contents	Notes	Parent Group	Page
Locations and Exploratory Hole Construction Details				
CORE	Coring Information		LOCA	
Geotechnical in situ Testing				
DCPG	Dynamic Cone Penetrometer Tests - General		LOCA	
DCPT	Dynamic Cone Penetrometer Tests - Data		DCPG	
Geological Descriptions and Information				
DETL	Stratum Detail Descriptions		LOCA	
DISC	Discontinuity Data		LOCA	
Locations and Exploratory Hole Construction Details				
DOBS	Drilling/Advancement Observations & Parameters		LOCA	
Geotechnical in situ Testing				
DPRG	Dynamic Probe Tests - General		LOCA	
DPRB	Dynamic Probe Tests - Data		DPRG	
Locations and Exploratory Hole Construction Details				
DREM	Depth Related Remarks		LOCA	
Field and Laboratory Environmental Testing				
ERES	Environmental Contaminant Testing		SAMP	
Geotechnical Laboratory Testing (Soils and Rocks)				
ESCG	Effective Stress Consolidation Tests - General		SAMP	
ESCT	Effective Stress Consolidation Tests - Data		ESCG	
Locations and Exploratory Hole Construction Details				
FLSH	Drilling Flush Details		LOCA	
Geological Descriptions and Information				
FRAC	Fracture Spacing		LOCA	
Geotechnical Laboratory Testing (Soils and Rocks)				
FRST	Frost Susceptibility Tests		SAMP	
GCHM	Geotechnical Chemistry Testing	This group is reserved for soil / water chemistry testing associated with geotechnical design assessments. Environmental contamination testing should be recorded in Group ERES	SAMP	
Geological Descriptions and Information				
GEOL	Field Geological Descriptions		LOCA	
Geotechnical Laboratory Testing (Soils and Rocks)				
GRAG	Particle Size Distribution Analysis - General		SAMP	

Group Name	Contents	Notes	Parent Group	Page
GRAT	Particle Size Distribution Analysis - Data		GRAG	
Locations and Exploratory Hole Construction Details				
HDIA	Hole Diameter by Depth		LOCA	
HDPH	Depth Related Exploratory Hole Information		LOCA	
HORN	Exploratory Hole Orientation and Inclination		LOCA	
Geotechnical in situ Testing				
ICBR	In Situ California Bearing Ratio Tests		LOCA	
IDEN	In Situ Density Tests		LOCA	
Geoenvironmental in situ Testing				
IFID	On Site Volatile Headspace Testing Using Flame Ionisation Detector		LOCA	
Geotechnical in situ Testing				
IPEN	In Situ Hand Penetrometer Tests		LOCA	
Geoenvironmental in situ Testing				
IPID	On Site Volatile Headspace Testing by Photo Ionisation Detector		LOCA	
Geotechnical in situ Testing				
IPRG	In Situ Permeability Tests - General		LOCA	
IPRT	In Situ Permeability Tests - Data		IPRG	
IRDX	In Situ Redox Tests		LOCA	
IRES	In Situ Resistivity Tests		LOCA	
ISAG	Soakaway Tests - General		LOCA	
ISAT	Soakaway Tests - Data		ISAG	
ISPT	Standard Penetration Test Results		LOCA	
IVAN	In Situ Vane Tests		LOCA	
Samples, Amalgamated Specimens and Laboratory Test Scheduling				
LBSG	Testing Schedule		-	
LBST	Testing Schedule Details		LBSG	
Geotechnical Laboratory Testing (Soils and Rocks)				
LDEN	Density Tests		SAMP	
LDYN	Dynamic Testing		SAMP	
LLIN	Linear Shrinkage Tests		SAMP	
LLPL	Liquid and Plastic Limit Tests		SAMP	
LNMC	Water/Moisture Content Tests		SAMP	
Locations and Exploratory Hole Construction Details				
LOCA	Location Details		PROJ	
Geotechnical Laboratory Testing (Soils and Rocks)				
LPDN	Particle Density Tests		SAMP	

Group Name	Contents	Notes	Parent Group	Page
LPEN	Laboratory Hand Penetrometer Tests		SAMP	
LRES	Laboratory Resistivity Tests		SAMP	
LSLT	Shrinkage Limit Tests		SAMP	
LSTG	Initial Consumption of Lime Tests - General		SAMP	
LSTT	Initial Consumption of Lime Tests - Data		LSTG	
LSWL	Swelling Index Testing		SAMP	
LVAN	Laboratory Vane Tests		SAMP	
MCVG	MCV Tests - General		SAMP	
MCVT	MCV Tests - Data		MCVG	
Monitoring Installations, Instruments and Readings				
MOND	Monitoring Readings		MONG	
MONG	Monitoring Installations and Instruments		LOCA	
PIPE	Monitoring Installation Pipe Work		LOCA	
Geotechnical in situ Testing				
PLTG	Plate Loading Tests - General		LOCA	
PLTT	Plate Loading Tests - Data		PLTG	
PMTD	Pressuremeter Test Data		PMTG	
PMTG	Pressuremeter Test Results - General		LOCA	
PMTL	Pressuremeter Test Results - Individual Loops		PMTG	
Project / Data Transmission Details				
PREM	Project Specific Time Related Remarks		-	
Locations and Exploratory Hole Construction Details				
PTIM	Boring/Drilling Progress by Time		LOCA	
Geotechnical Laboratory Testing (Soils and Rocks)				
PTST	Laboratory Permeability Tests		SAMP	
Geotechnical in situ Testing				
PUMG	Pumping Tests - General		LOCA	
PUMT	Pumping Tests - Data		PUMG	
Geotechnical Laboratory Testing (Soils and Rocks)				
RCCV	Chalk Crushing Value Tests		SAMP	
RDEN	Rock Porosity and Density Tests		SAMP	
RELD	Relative Density Tests		SAMP	
RPLT	Point Load Testing		SAMP	
RSCH	Schmidt Rebound Hardness Tests		SAMP	
RSHR	Shore Scleroscope Hardness Tests		SAMP	
RTEN	Tensile Strength Testing		SAMP	

Group Name	Contents	Notes	Parent Group	Page
RUCS	Rock Uniaxial Compressive Strength and Deformability Tests		SAMP	
RWCO	Water Content of Rock Tests		SAMP	
Samples, Amalgamated Specimens and Laboratory Test Scheduling				
SAMP	Sample Information		LOCA	
Geotechnical in situ Testing				
SCDG	Static Cone Dissipation Tests - General		SCPG	
SCDT	Static Cone Dissipation Tests - Data		SCDG	
SCPG	Static Cone Penetration Tests - General		LOCA	
SCPP	Static Cone Penetration Tests - Derived Parameters		SCPG	
SCPT	Static Cone Penetration Tests - Data		SCPG	
Geotechnical Laboratory Testing (Soils and Rocks)				
SHBG	Shear Box Testing - General		SAMP	
SHBT	Shear Box Testing - Data		SHBG	
Project / Data Transmission Details				
STND	Standards / Specifications		-	
Geotechnical Laboratory Testing (Soils and Rocks)				
SUCT	Suction Tests		SAMP	
Materials Laboratory Testing (Aggregates)				
TNPC	Ten Per Cent Fines		SAMP	
Geotechnical Laboratory Testing (Soils and Rocks)				
TREG	Triaxial Tests - Effective Stress - General		SAMP	
TRET	Triaxial Tests - Effective Stress - Data		TREG	
Locations and Exploratory Hole Construction Details				
TREM	Location Specific Time Related Remarks		LOCA	
Geotechnical Laboratory Testing (Soils and Rocks)				
TRIG	Triaxial Tests - Total Stress - General		SAMP	
TRIT	Triaxial Tests - Total Stress - Data		TRIG	
Locations and Exploratory Hole Construction Details				
WADD	Water Added Records		LOCA	
Geological Descriptions and Information				
WETH	Weathering		LOCA	
Locations and Exploratory Hole Construction Details				
WINS	Dynamic Sampling Run Details		LOCA	
WSTG	Water Strike - General		LOCA	
WSTD	Water Strike - Details		WSTG	

9 DATA DICTIONARY

9.1 Heading Status

Each Field Heading has a defined status as listed below:

Status	Description	Example / Notes
*	KEY FIELD These headings must be included in the group and the data in the heading fields (or combination of heading fields) within the group must be unique.	Rule 10a refers.
R	REQUIRED FIELD For the data file to be interpretable these headings shall be included in the groups. Data under these headings shall not be null.	Rule 10b & Rule 12 refers. The AGS Edition Reference must be included under the TRAN_AGS heading to associate the file to the document that contains the specification of field headings.
	OTHER The presence of these headings and data under these headings are dictated by the scope of the specification.	It is preferred that headings are only included in a data file where the data is to be transferred as specified in the contract documents.

9.2 Data Types

The suggested TYPE of data for each heading is defined in the Data Dictionary. The abbreviations used on the TYPE row shall be as defined below and those used in any data file shall be fully defined in the TYPE group (Rule 17). It should be noted that the TYPE and UNIT selected for a heading are inter-linked.

Type	Description	Example / Notes
ID	Unique Identifier	An ID is a unique identifier used across the project.
PA	Text listed in ABBR Group	Abbreviations listed in ABBR group. Rule 16 refers. A list of standard abbreviations is available from the AGS website. Other abbreviations may be defined as required. Multiple abbreviations can be used in a data VARIABLE. Where this occurs, abbreviations are joined using the concatenation character defined in TRAN_RCON (a "+" character by default).
PT	Text listed in TYPE Group	Abbreviations listed in TYPE group. Rule 17 refers.
PU	Text listed in UNIT Group	Abbreviations listed in UNIT group. Rule 15 refers. A list of standard units is available from the AGS website.

Type	Description	Example / Notes
X	Text	Abbreviations used in text data are to be listed in ABBR group. Rule 16 refers.
XN	Text / numeric	There are some measured parameters that are typically numeric but can have a valid result that is text; examples include plastic limit (34 or NP) and depth of water in a borehole (2.34 or dry). Abbreviations used in text data are to be listed in ABBR group. Rule 16 refers.
T	Elapsed Time	e.g. hh:mm:ss
DT	Date time in international format	Ref: ISO 8601:2004 e.g. yyyy-mm-ddThh:mm:ss.sssZ(+hh:mm) or yyyy-mm-dd or hh:mm:ss or yyyy This format is flexible and can be used in full or part according to user requirements
MC	British Standard BS1377 : Part 2 reported moisture content	
*n*DP	Value with required number of decimal places	e.g. 2DP = 2 decimal places = 2.34
*n*SF	Value with required number of significant figures	e.g. 2SF = 2 significant figures = 1.2, 10
*n*SCI	Scientific Notation with required number of decimal places	e.g. 73100 as 2SCI = 7.31E4; 73100 as 1SCI = 7.3E4
U	Value with a variable format	This is used for fields that contain values with differing accuracy; e.g. ERES_RVAL.
DMS	Degrees:Minutes:Seconds	e.g. 51:28:52.498
YN	Yes or No	Data in the file will be either a *Y* or *N* e.g. Y These fields if included in a data group should include data to prevent any possible mis-interpretation.
RL	Record Link	Rule 11 refers. Text in specified format that refers to one or more records in other Groups by Key fields.

9.3 Units of Measurement

The suggested units for each heading are provided in the Data Dictionary. The suggested units are reflective of specifications and standards used in the UK.

9.4 Examples

Typical examples are given against most of the Data Fields to indicate the type of information which may be expected. They are not intended to be representative of any one data row and hence may not be mutually compatible.

9.5 Data Groups

Group Name: PROJ - Project Information					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**PROJ_ID**		ID	Project identifier	121415
	PROJ_NAME		X	Project title	ACME Gas Works Redevelopment
	PROJ_LOC		X	Location of site	High Street, Anytown
	PROJ_CLNT		X	Client name	ACME Enterprises
	PROJ_CONT		X	Contractors name	ACME Drilling Ltd
	PROJ_ENG		X	Project Engineer	ACME Consulting
	PROJ_MEMO		X	General project comments	
	FILE_FSET		X	Associated file reference (eg project specification, site location drawings)	FS1

Notes for Guidance

• PROJ is required in all AGS4 files (Rule 13).

• PROJ_ENG should contain the details of the consultant/designer for the project.

Group Name: ABBR - Abbreviation Definitions					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**ABBR_HDNG**		X	Field heading in group	LOCA_TYPE
*R	**ABBR_CODE**		X	Abbreviation used	TP
R	**ABBR_DESC**		X	Description of abbreviation	Trial Pit
	ABBR_LIST		X	Source of abbreviation	AGS4
	ABBR_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg contract data specification)	FS1

Notes for Guidance

• ABBR is required in all AGS4 data files and describes all abbreviations used in headings defined by the PA data type (Rule 16).

• The ABBR and CODE groups in AGS3 have been consolidated into a single listing.

• The AGS Format website (www.ags.org.uk) lists the standard abbreviations.

• Additional abbreviations, used in any heading in the file, must be defined in this group.

• ABBR_LIST details the list from which the ABBR_CODE originates. For standard AGS headings this value would be 'AGS4' to refer to the AGS website.

Group Name: DICT - User Defined Groups and Headings					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**DICT_TYPE**		PA	Flag to indicate definition is a GROUP or HEADING (ie can be either of GROUP or HEADING)	HEADING
*R	**DICT_GRP**		X	Group name	NGRP
*	**DICT_HDNG**		X	Heading name (Note: This data is REQUIRED where DICT_TYPE="HEADING")	NGRP_HED1
	DICT_STAT		PA	Heading status KEY, REQUIRED or OTHER (Note: This data is REQUIRED where DICT_TYPE="HEADING")	OTHER
	DICT_DTYP		PT	Type of data and format (Note: This data is REQUIRED where DICT_TYPE="HEADING")	2DP (see AGS Data Dictionary 8.1.2)
R	**DICT_DESC**		X	Description	New group heading 1
	DICT_UNIT		PU	Units (Note: This data is REQUIRED where DICT_TYPE="HEADING")	mg/kg
	DICT_EXMP		X	Example	20
	DICT_PGRP		X	Parent group name (Note: This data is REQUIRED where DICT_TYPE="GROUP")	LOCA
	DICT_REM		X	Remarks	
	FILE_FSET		X	Associated file reference	FS1

Notes for Guidance

• DICT is required in all AGS4 files where user defined groups and/or headings are specified (Rule 18).

• DICT_STAT defines the status of the heading. This shall contain the data 'KEY', 'REQUIRED', 'KEY+REQUIRED' or 'OTHER', where OTHER denotes the field is neither key nor required (Rule 10).

• DICT_PGRP allows for inclusion of the parent group name when the DICT_TYPE is "GROUP". This permits data integrity checking where data files include user defined groups.

• If the DICT_TYPE is HEADING, then there should be data present under DICT_GRP, DICT_HDNG, DICT_STAT, DICT_UNIT, DICT_DTYP and DICT_DESC. Where the heading has no unit then the DICT_UNIT field should be set to "-" to clearly indicate this.

• If the DICT_TYPE is GROUP the DICT_GRP, DICT_DESC shall contain data and the DICT_HDNG, DICT_STAT, DICT_DTYP and DICT_UNIT headings shall contain NULL values.

Group Name: FILE - Associated Files					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**FILE_FSET**		X	File set reference	FS128
*R	**FILE_NAME**		X	File name	BH1_Core_West.JPG
	FILE_DESC		X	Description of content	BH1 Core photo box 8
	FILE_TYPE		PA	File type	JPG
	FILE_PROG		X	Parent program and version number	Irfanview v4.10
	FILE_DOCT		PA	Document type	PH
	FILE_DATE	yyyy-mm-ddThh:mm	DT	File date	2009-04-01T10:45
	FILE_REM		X	Comments on file	

Notes for Guidance

• Rule 20 defines how associated files are to be included in AGS submissions.

Group Name: TRAN - Data File Transmission Information / Data Status					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**TRAN_ISNO**		X	Issue sequence reference	1
R	**TRAN_DATE**	yyyy-mm-dd	DT	Date of production of data file	2009-04-01
R	**TRAN_PROD**		X	Data file producer	ACME Drilling Ltd
R	**TRAN_STAT**		X	Status of data within submission	Draft
	TRAN_DESC		X	Description of data transferred	Draft logs only
R	**TRAN_AGS**		X	AGS Edition Reference	4.0.4
R	**TRAN_RECV**		X	Data file recipient	ACME Consulting
	TRAN_DLIM		X	Record Link data type Delimiter	|
	TRAN_RCON		X	Concatenator	+
	TRAN_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg data file QA check records)	FS1

Notes for Guidance

• TRAN is required in all AGS4 files (Rule 14).

• Delimiter and concatenator characters (TRAN_DLIM & TRAN_RCON) need to be defined if Record Link data or multiple concatenated abbreviations are included in the file. These characters cannot be used in IDs and abbreviations that are referred to in data key sets.

Group Name: TYPE - Definition of Data Types					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**TYPE_TYPE**		X	Data type code	0DP
R	**TYPE_DESC**		X	Description	Numeric, zero decimal places
	FILE_FSET		X	Associated file reference	FS1

Notes for Guidance

• TYPE is required in all AGS4 files (Rule 17).

• The AGS Data Transfer Format website (www.ags.org.uk) lists the standard data type definitions.

Group Name: UNIT - Definition of Units					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*R	**UNIT_UNIT**		X	Unit	Ohm m
R	**UNIT_DESC**		X	Description	Ohm metres
	UNIT_REM		X	Remarks	
	FILE_FSET		X	Associated file reference	FS1

Notes for Guidance

• UNIT is required in all AGS4 files (Rule 15) and defines all units used for data headings and within data records (eg GCHM, MOND and ERES).

• The AGS Data Transfer Format website (www.ags.org.uk) lists the standard unit definitions.

Group Name: AAVT - Aggregate Abrasion Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	AAVT_AAV		2SF	Aggregate Abrasion Value	8.3
	AAVT_REM		X	Remarks	
	AAVT_METH		X	Test method	BS 812: Part 113: 1990
	AAVT_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	AAVT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: ACVT - Aggregate Crushing Value Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	ACVT_ACV	%	0DP	Aggregate Crushing Value	17
	ACVT_FRAC		X	Size fraction from which test portion was obtained	10-14mm aggregate
	ACVT_REM		X	Remarks	

Group Name: ACVT - Aggregate Crushing Value Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	ACVT_METH		X	Test method	BS 812: Part 110: 1990
	ACVT_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	ACVT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: AELO - Aggregate Elongation Index Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	AELO_EI		0DP	Aggregate elongation index	9
	AELO_REM		X	Remarks	
	AELO_METH		X	Test method	
	AELO_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	AELO_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: AFLK - Aggregate Flakiness Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	AFLK_FI	%	0DP	Aggregate flakiness index	9
	AFLK_MASS	kg	1DP	Mass of test portion	35.1
	AFLK_REM		X	Remarks	
	AFLK_METH		X	Test method	BS EN 933-3: 1997
	AFLK_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	AFLK_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: AIVT - Aggregate Impact Value Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	AIVT_AIV1	%	2DP	Aggregate impact value test 1	15.01
	AIVT_AIV2	%	2DP	Aggregate impact value test 2	15.03
	AIVT_AIV	%	1DP	Mean aggregate impact value	15.0

Group Name: AIVT - Aggregate Impact Value Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	AIVT_FRAC		X	Size fraction from which test portion was obtained	50% between 8mm and 10mm, 25% between 10mm and 11.2mm, 25% between 11.2mm and 12.5mm
	AIVT_PDEN	Mg/m3	2DP	Particle density of size fraction between 8 mm and 12.5mm	2.53
	AIVT_REM		X	Remarks	
	AIVT_METH		X	Test method	BS EN 1097-2: 1998
	AIVT_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	AIVT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: ALOS - Los Angeles Abrasion Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	ALOS_LOSA		0DP	Los Angeles coefficient	15
	ALOS_LOPW	%	0DP	Los Angeles percentage wear	10
	ALOS_LOWR		0DP	Los Angeles wear ratio	8
	ALOS_FRAC		X	Size fraction from which test portion was obtained	10-14mm with between 60% and 70% passing a 12.5mm test sieve.
	ALOS_CHAR		X	Ball load or charge grading	11 steel balls 45-49mm, total load 4800g
	ALOS_REM		X	Remarks	
	ALOS_METH		X	Test method	BS EN 1097-2: 1998
	ALOS_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc

Group Name: ALOS - Los Angeles Abrasion Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	ALOS_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• Headings are included for both BS1377 and ISRM test specifications.

Group Name: APSV - Aggregate Polished Stone Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	APSV_AAV		0DP	Aggregate polished stone value	67
	APSV_REM		X	Remarks	
	APSV_METH		X	Test method	BS 812: Part 114: 1989
	APSV_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	APSV_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: ARTW - Aggregate Determination of the Resistance to Wear (micro-Deval)					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	ARTW_FRAC		X	Size fraction on which sample obtained	10 to 14mm aggregate grading a)
	ARTW_TYPE		PA	Type of test	Wet
	ARTW_MD1		1DP	Micro-Deval coefficient for test specimen one	24.3
	ARTW_MD2		1DP	Micro-Deval coefficient for test specimen two	24.3
	ARTW_MDE		0DP	Mean micro-Deval value (dry)	24
	ARTW_MDS		0DP	Mean micro-Deval value (wet)	24
	ARTW_DATE	yyyy-mm-dd	DT	Date control 2 polished stone value first run	2003-02-10
	ARTW_REM		X	Remarks	
	ARTW_METH		X	Test method	BS 1097-1: 1996
	ARTW_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	ARTW_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: ASDI - Slake Durability Index Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a

Group Name: ASDI - Slake Durability Index Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	ASDI_SDI1	%	1DP	First cycle slake durability index (if ASDI_SDI1 or ASDI_SDI2 is between 0% and 10%)	6.1
	ASDI_SDI2	%	1DP	Second cycle slake durability index	8.6
	ASDI_SOLN		X	Nature and temperature of slaking fluid	Tap water at 20 degC
	ASDI_INDR		X	Appearance of fragments retained in the drum	All fragments showing partial disintegration
	ASDI_PADR		X	Appearance of fragments passing through the drum	Fine particles in suspension with thin layer of larger particles in base of trough.
	ASDI_REM		X	Remarks	
	ASDI_METH		X	Test method	ISRM : Suggested method for determining slake durability index.
	ASDI_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	ASDI_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: ASNS - Aggregate Soundness Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	ASNS_SOUN	%	0DP	Aggregate soundness test	12
	ASNS_FRAC		X	Size fraction from which test portion was obtained	10-14mm aggregate
	ASNS_REM		X	Remarks	
	ASNS_METH		X	Test method	BS 812 : Part 121-Magnesium sulfate
	ASNS_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	ASNS_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: AWAD - Aggregate Water Absorption Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey angular limestone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	AWAD_WTAB	%	1DP	Aggregate water absorption	2.6
	AWAD_REM		X	Remarks	

Group Name: AWAD - Aggregate Water Absorption Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	AWAD_METH		X	Test method	BS 812 - Gas jar method 10 mm aggregate
	AWAD_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	AWAD_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: BKFL - Exploratory Hole Backfill Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**BKFL_TOP**	m	2DP	Depth to top of section	1.40
	BKFL_BASE	m	2DP	Depth to base of section	11.40
	BKFL_DESC		X	Backfill description	Arisings
	BKFL_LEG		PA	Backfill legend abbreviation	901
	BKFL_DATE	yyyy-mm-dd	DT	Date of completion of backfill	2004-04-01
	BKFL_REM		X	Backfill remarks including how it was placed	
	FILE_FSET		X	Associated file reference (eg drilling journals)	FS20

Notes for Guidance

• None

Group Name: CBRG - California Bearing Ratio Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Stored at constant water/moisture content for 7 days, then soaked for 7 days, maintained at 20±2°C throughout
	CBRG_COND		PA	Sample condition	Undisturbed
	CBRG_NMC	%	X	Natural water/moisture content of specimen prior to test	16.4
	CBRG_200	%	0DP	Weight percent retained on 20mm sieve	10
	CBRG_STAB	%	2SF	Amount of stabiliser added	23
	CBRG_STYP		X	Type of stabiliser added	Cement
	CBRG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	Specimen lifted during penetration
	CBRG_METH		X	Test method including remoulding	BS1377: Part 4: 1990 4.5kg compactive effort
	CBRG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	CBRG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS16

Notes for Guidance

• Initial water/moisture content required for each stage of testing, heading added to CBRT group and removed from CBRG.

• New headings added to permit details of test method, laboratory and test accreditation to be included in data.

Group Name: CBRT - California Bearing Ratio Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010

Group Name: CBRT - California Bearing Ratio Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**CBRT_TESN**		X	Test reference	1
	CBRT_TOP	%	2SF	CBR at top	6.4
	CBRT_BASE	%	2SF	CBR at bottom	5.2
	CBRT_MCT	%	X	Water / moisture content at top after test	15.1
	CBRT_MCBT	%	X	Water/Moisture content at bottom after test	14.2
	CBRT_IMC	%	X	Initial water/moisture content	21.3
	CBRT_BDEN	Mg/m3	2DP	Initial bulk density	1.84
	CBRT_DDEN	Mg/m3	2DP	Initial Dry density	1.60
	CBRT_SURC	kPa	0DP	Surcharge pressure applied	10
	CBRT_SKDT		X	Details of soaking	4 days in tap water
	CBRT_SWEL	mm	1DP	Amount of swell recorded during soaking (if applicable)	3.0
	CBRT_REM		X	Test specific remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS16

Notes for Guidance

• CBRT_SWEL should be used to report the amount of swelling recorded on the specimen in each test.

• CBRT_IMC allows the initial water/moisture content of the CBR test sample to be recorded which may differ from the after test water content especially if the sample is pre-soaked.

• CBRT_REM allows commentary for the addition of test specific remarks. For example, where CBR is tested at natural water/moisture content, natural water content +2% and natural water content -2% or to include details of whether curve correction was applied.

Group Name: CDIA - Casing Diameter by Depth					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**CDIA_DPTH**	m	2DP	Depth of base of casing recorded in CDIA_DIAM	18.00
*	**CDIA_DIAM**	mm	0DP	Casing diameter	200
	CDIA_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg casing cement records)	FS20

Notes for Guidance

• CDIA is used to transfer details of casing in the completed hole.

Group Name: CHIS - Chiselling Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**CHIS_FROM**	m	2DP	Depth at start of chiselling	5.20
	CHIS_TO	m	2DP	Depth at end of chiselling	5.35
	CHIS_TIME	hh:mm	T	Time taken	00:30
	CHIS_STAR	yyyy-mm-ddThh:mm	DT	Start time	2004-04-01T09:00
	CHIS_TOOL		X	Chiselling tool used	Shell
	CHIS_REM		X	Notes on chiselling	Chiselling sandstone boulder
	FILE_FSET		X	Associated file reference (eg drilling journals)	FS20

Notes for Guidance

• CHIS is to be used to transfer details of chiselling carried out when using a cable percussion rig to advance a borehole.

Group Name: CHOC - Chain of Custody Information					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**CHOC_REF**		X	Chain of custody reference	A1241/1
	CHOC_FROM		X	Samples despatched from	ACME Sampling Ltd
	CHOC_TO		X	Samples despatched to	ACME Laboratories plc
	CHOC_DDIS	yyyy-mm-dd	DT	Date dispatched	2009-09-20
	CHOC_BTCH		X	Batch reference	S234-1
	CHOC_REM		X	Remarks	
	CHOC_CONT		0DP	Number of sample containers	1
	FILE_FSET		X	Associated file reference (chain of custody sheets)	FS99

Notes for Guidance

• The CHOC group is used to transfer chain of custody information relating to samples.

Group Name: CMPG - Compaction Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**CMPG_TESN**		X	Test number	1
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Stored at constant water/moisture content for 7 days, then soaked for 7 days, maintained at 20±2°C throughout
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	CMPG_TYPE		PA	Compaction test type	2.5kg / 4.5kg / Vibro
	CMPG_MOLD		PA	Compaction mould type	1 litre / CBR
	CMPG_375	%	0DP	Weight percent of material retained on 37.5mm sieve	7
	CMPG_200	%	0DP	Weight percent of material retained on 20mm sieve	15
	CMPG_PDEN	Mg/m3	XN	Particle density with prefix # if value assumed	#2.65
	CMPG_MAXD	Mg/m3	2DP	Maximum dry density	2.06
	CMPG_MCOP	%	2SF	Moisture content at maximum dry density (Optimum)	14
	CMPG_STAB	%	2SF	Amount of stabiliser added	23
	CMPG_STYP		X	Type of stabiliser added	Cement
	CMPG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	Single sample used
	CMPG_METH		X	Test method	BS1377:Part 4:1990,cl 3.3
	CMPG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	CMPG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS23

Notes for Guidance

• None

Group Name: CMPT - Compaction Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**CMPG_TESN**		X	Test number	1
*	**CMPT_TESN**		X	Compaction point number	1
	CMPT_MC	%	X	Water/moisture content	7.8
	CMPT_DDEN	Mg/m3	3DP	Dry density at CMPT_MC moisture content	1.852
	CMPT_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS23

Notes for Guidance

• None

Group Name: CONG - Consolidation Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Sample from base of U100 sample, axis vertical
	CONG_TYPE		PA	Type of consolidation test	Oedometer / Hydraulic Cell / Expandability
	CONG_COND		PA	Sample condition	Undisturbed / Remoulded
	CONG_SDIA	mm	2DP	Test specimen diameter	75.15
	CONG_HIGT	mm	2DP	Test specimen height	19.25
	CONG_MCI	%	X	Initial water/moisture content	21.1
	CONG_MCF	%	X	Final water/moisture content	18.8
	CONG_BDEN	Mg/m3	2DP	Initial bulk density	2.12
	CONG_DDEN	Mg/m3	2DP	Initial dry density	1.75

Group Name: CONG - Consolidation Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	CONG_PDEN	Mg/m3	XN	Particle density with prefix # if value assumed	#2.65
	CONG_SATR	%	0DP	Initial degree of saturation	98
	CONG_SPRS	kPa	2SF	Swelling pressure	100
	CONG_SATH	%	1DP	Height change of specimen on saturation, or flooding as percentage of original height (BS1377 Settlement on saturation test)	1.1
	CONG_IVR		3DP	Initial voids ratio	0.800
	CONG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	Swell test prior to standard Oedometer
	CONG_METH		X	Test method	K H Head
	CONG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	CONG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS9

Notes for Guidance

• CONG_IVR should be used to report the initial voids ratio at the start of testing.

Group Name: CONS - Consolidation Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**CONS_INCN**		X	Oedometer stress increment	3
	CONS_IVR		3DP	Voids ratio at start of increment	0.800
	CONS_INCF	kPa	0DP	Stress at end of stress increment/decrement	400
	CONS_INCE		2DP	Voids ratio at end of stress increment	0.62
	CONS_INMV	m2/MN	2SF	Reported coefficient of volume compressibility over stress increment	0.32
	CONS_INSC		2SF	Coefficient of secondary compression over stress increment	0.12
	CONS_CVRT	m2/yr	2SF	Coefficient of consolidation over stress increment determined by the root time method	2.1

Group Name: CONS - Consolidation Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	CONS_CVLG	m2/yr	2SF	Coefficient of consolidation over stress increment determined by the log time method	4.1
	CONS_TEMP	degC	1DP	Average temperature over stress increment	22.0
	CONS_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS9

Notes for Guidance

• CONS_IVR description clarified to the voids ratio at the start of the increment rather than repeat the initial voids ratio on each record in the CONS group as listed in previous editions.

• CONS_TEMP added. BS1377 requires lab temperature at which test was carried out, but since Cv is corrected to 20degC from the temperature over the stage, it has to be per stage (but may be same throughout).

• BS allows reporting of either CONS_CVRT or CONS_CVLG or both, the laboratory will populate these headings as appropriate.

Group Name: CORE - Coring Information					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**CORE_TOP**	m	2DP	Depth to top of core run	2.54
*	**CORE_BASE**	m	2DP	Depth to base of core run	3.54
	CORE_PREC	%	0DP	Percentage of core recovered in core run (TCR)	32
	CORE_SREC	%	0DP	Percentage of solid core recovered in core run (SCR)	23
	CORE_RQD	%	0DP	Rock Quality Designation for core run (RQD)	20
	CORE_DIAM	mm	0DP	Core diameter	75
	CORE_DURN	hh:mm	T	Time taken to drill core run	00:05
	CORE_REM		X	Remarks	Rods dropped 200mm at 3.10m
	FILE_FSET		X	Associated file reference (eg photographs of rock cores)	FS5

Notes for Guidance

• CORE is used to transfer details of rotary coring in rock and soil materials.

• The data transferred for coring in rock will be more extensive than for soil coring; specifically the SCR and RQD are not determined for soil cores.

• CORE_DURN permits the inclusion of the time duration for the core run to be drilled if this is a specified additional measured parameter.

Group Name: DCPG - Dynamic Cone Penetrometer Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DCPG_DATE**	yyyy-mm-dd	DT	Test date	2003-03-20
*	**DCPG_TESN**		X	Test reference	1
*	**DCPG_DPTH**	m	2DP	Depth from surface to start of test	0.30
	DCPG_ZERO	mm	0DP	Zero reading	223
	DCPG_LREM		X	Details of surface and base layers removed prior to/during the test (if applicable)	Asphalt surface layer removed by coring to allow testing of sub-base layers
	DCPG_REM		X	Test remarks	Test terminated at 0.53m penetration due to significant lean away from vertical
	DCPG_ENV		X	Details of weather and environmental conditions during test	Sunny and warm
	DCPG_METH		X	Test method	DMRB HD29/08 Section 7.27
	DCPG_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	DCPG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg field record sheets)	FS26

Notes for Guidance

• DCPG and DCPT are used together to record dynamic cone penetrometer (DCP) tests.

• DCPG_REM should be used to record test set up including surface type, surface condition, base type, thickness of base (if removed) mm (ref TRL Project PR/INT/277/04).

• It is suggested that if CBR values derived from DCP tests are to be transferred in the AGS data then these should be included in the ICBR group.

Group Name: DCPT - Dynamic Cone Penetrometer Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DCPG_DATE**	yyyy-mm-dd	DT	Test date	2003-03-20
*	**DCPG_TESN**		X	Test reference	1
*	**DCPG_DPTH**	m	2DP	Depth from surface to start of test	0.30
*	**DCPT_CBLO**		0DP	Cumulative blows	1
	DCPT_PEN	mm	0DP	Penetration at DCPT_CBLO	9
	DCPT_DEL	hh:mm	T	Delay before increment started	00:00
	DCPT_REM		X	Test reading remarks	

Notes for Guidance

Group Name: DCPT - Dynamic Cone Penetrometer Tests - Data				
Status	**Heading**	**Suggested Unit / Type**	**Description**	**Example**

• None

Group Name: DETL - Stratum Detail Descriptions					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DETL_TOP**	m	2DP	Depth to top of detail description	3.46
*	**DETL_BASE**	m	2DP	Depth to base of detail description	3.76
	DETL_DESC		X	Detail description	Claystone
	DETL_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg logging field sheets)	FS4

Notes for Guidance

• DETL is used to include geological details to the geological description of a stratum typically included in the margins of a borehole log.

• A geological description in DETL_DESC should be considered as a supplement to the main stratum description given in GEOL_DESC of the GEOL Group. Detailed descriptions should be given a single depth (which is repeated in both the DETL_TOP and DETL_BASE headings), only if it has no significant thickness, or if it marks the top of a gradational change in the nature of the stratum. For example, "27.65m Marl parting" or "35.65m Becoming very sandy". If the change in the stratum is not gradational it is generally preferable to give depth ranges. For example, "6.50 to 8.70m Sandy", is generally preferable to "Sandy below 6.50m". The depth or depth range of the detailed feature may be repeated within the description. Since the detailed descriptions are a supplement to the main description, detailed description depth ranges should not cross main stratum boundaries.

Group Name: DISC - Discontinuity Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DISC_TOP**	m	2DP	Depth to top in hole, or distance to start on traverse, of discontinuity zone, or discontinuity	10.26
*	**DISC_BASE**	m	2DP	Depth to base in hole, or distance to end on traverse, of discontinuity zone	12.67
*	**FRAC_SET**		X	Discontinuity set reference	J3
*	**DISC_NUMB**		X	Discontinuity reference	57
	DISC_TYPE		PA	Type of discontinuity	Joint
	DISC_DIP	deg	0DP	Dip of discontinuity	8
	DISC_DIR	deg	0DP	Dip direction of discontinuity	247
	DISC_RGH		X	Small scale roughness	Smooth
	DISC_PLAN		X	Medium scale roughness	Planar
	DISC_WAVE	m	1DP	Large scale roughness, wavelength	15.1
	DISC_AMP	m	1DP	Large scale roughness, amplitude	0.5
	DISC_JRC		0DP	Joint Roughness Coefficient	10
	DISC_APP		X	Surface appearance	Slightly polished

	DISC_APT	mm	0DP	Discontinuity aperture measurement	2
	DISC_APOB		X	Discontinuity aperture observation	Infilled
	DISC_INFM		X	Infilling material	Soft clay
	DISC_TERM		PA	Discontinuity termination (lower, upper)	XR
	DISC_PERS	m	1DP	Persistence measurement	10.5
	DISC_STR	MPa	0DP	Discontinuity wall strength	50
	DISC_WETH		X	Discontinuity wall weathering	Slightly weathered
	DISC_SEEP		X	Seepage rating	Small
	DISC_FLOW	l/s	0DP	Water flow estimate	2
	DISC_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg logging field sheets)	FS24

Notes for Guidance

• DISC is used to record detailed discontinuity logging typically carried out in rock exposures and rock core.

• Discontinuity spacing data is recorded in the FRAC group.

• Changes have been made to bring the Group in line with BS EN ISO 14689-1. References to ISRM have been removed as BS EN ISO 14689-1 is compatible with previous standards. Terminology has been amended to reflect current requirements.

REPORTING DISCONTINUITY LOGGING DATA

Discontinuity logging may be carried out as part of a scanline survey of a rock face, or as a detailed fracture log of borehole core.

a) The logging may take one of three forms, the first two being the commonest:

• The recording of the nature of individual discontinuities. All discontinuity descriptions are given in the DISC Group. The FRAC Group is not used. The spacing between individual discontinuities may be assessed from their depths.

• The recording of the typical nature of sets of discontinuities. The typical description for a discontinuity set is given in the DISC Group and the typical spacing is given in the FRAC Group. Individual discontinuities are not described.

• The recording of the nature of individual discontinuities, with each discontinuity assigned to a discontinuity set. The individual discontinuity descriptions are given in the DISC Group and the typical spacing of a discontinuity set is given in the FRAC Group.

b) If individual discontinuities have been logged along a scanline or in a borehole, then the reporting procedure is as follows:

• The nature of the individual discontinuities is recorded in the DISC Group.

• For scanline logging, the location of each discontinuity is given in DISC_TOP as a distance from the start of the traverse along a scanline. The DISC_BASE should be completed to allow for checks against the discontinuity dip.

• For borehole cores, the location of each discontinuity is given as a depth in either DISC_TOP for horizontal to sub horizontal discontinuities or DISC_TOP and DISC_BASE for vertical to inclined discontinuities.

• Each discontinuity is numbered sequentially in DISC_NUMB from the top of the borehole, or from the start of the traverse.

• If each discontinuity has been assigned to a discontinuity set, then the set reference number should be given in FRAC_SET (see c below). The use of FRAC_SET is optional when individual discontinuities are logged.

• The orientation and nature of each discontinuity is reported using the remaining fields in DISC.

• For borehole logs the surface nature of the discontinuity is described using a combination of DISC_RGH, DISC_PLAN, DISC_JRC, DISC_APP, DISC_STR and DISC_WETH. It is generally not reliable to measure the aperture of a discontinuity in borehole core as the effect of drilling disturbance is unknown. However, the thickness of any discontinuity infill should be given in DISC_APT, and the nature of the infill given in DISC_INFM. Discontinuity dip can be given in DISC_DIP for vertical boreholes, and inclined boreholes with orientated core. Discontinuity dip direction can only be given in DISC_DIR if the core is orientated. In an inclined borehole with un-orientated core only relative discontinuity dip can be given with respect to the normal to the core axis.

• For scanline logs all the above details of discontinuity orientation and nature can be given, together with the large scale waviness, true discontinuity aperture, discontinuity termination (using the abbreviations defined on the AGS website), and water seepage observations.

• The format of the DISC Group is applicable to most descriptive schemes, other than ISRM (1978). Alternative schemes may be used on agreement between the Provider and Receiver.

c) If sets or zones of discontinuities have been logged along a scanline or in a borehole, then the reporting procedure is as follows:

• The discontinuity sets or zones are recorded in a combination of the DISC and FRAC Groups. The DISC Group is used to record either the typical orientation and nature of each set or zone of discontinuities, or the individual discontinuities. The FRAC Group is used to record the spacing of the discontinuities in each set or zone.

• The start and end of each set or zone of discontinuities of similar nature is given in DISC_TOP and DISC_BASE, either as depth in a borehole, or as distance from the start of the traverse along a scanline. The start and end of each set or zone of discontinuities with a similar spacing is given in FRAC_FROM and FRAC_TO. Normally the "nature" and "spacing" zones will coincide, and, therefore, DISC_TOP and DISC_BASE will be the same as FRAC_FROM and FRAC_TO.

• DISC_NUMB is left blank when logging discontinuity sets or zones.

• Each discontinuity set or zone must be given a unique set reference number in FRAC_SET. For example, joint sets may be numbered J1, J2, J3 etc., bedding discontinuities as B1, B2 etc. The use of FRAC_SET provides the link between the DISC and FRAC Groups.

• The typical orientation and nature of each discontinuity set or zone is reported using the remaining fields in DISC.

The spacing of the discontinuities within each discontinuity set or zone is reported in the FRAC Group, giving the minimum, average (typical), and maximum spacing in mm of the fractures in that set or zone, using the FRAC_IMIN, FRAC_IAVE and FRAC_IMAX fields. Alternatively, the average (typical) number of fractures per metre can be given in FRAC_FI.

Group Name: DOBS - Drilling/Advancement Observations & Parameters

Status	Heading	Suggested Unit / Type		Description	Example
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DOBS_TOP**	m	2DP	Depth to top of reported section	6.20
*	**DOBS_BASE**	m	2DP	Depth to base of reported section	7.20
*	**DOBS_SET**		X	Readings set reference	A
	DOBS_DURN	hh:mm:ss	T	Duration to advance reported section	00:05:00
	DOBS_STIM	yyyy-mm-ddThh:mm:ss	DT	Date and time of start of reported section	2010-12-02T14:05:15
	DOBS_ETIM	yyyy-mm-ddThh:mm:ss	DT	Date and time at end of reported section	2010-12-02T14:10:15
	DOBS_DHRT	Nm	1DP	Drill head rotational torque	250.5
	DOBS_DHRS	rpm	0DP	Drill head rotational speed	76
	DOBS_PENR	m/hr	1DP	Penetration rate	2.0
	DOBS_HAMM		YN	Hammering used during section	N
	DOBS_THRP	bar	1DP	Pressure of downthrust system	30.0
	DOBS_RESP	bar	1DP	Pressure of restraining (holdback) system	25.0
	DOBS_TORP	bar	1DP	Torque pressure	20.0
	DOBS_TORQ	Nm	1DP	Torque applied to top of drill rods	250.0
	DOBS_THST	kN	1DP	Downward thrust on bit	5.0
	DOBS_REST	kN	1DP	Restraining (holdback) force	5.0
	DOBS_HAMP	bar	1DP	Supply pressure to downhole hammer	80.0
	DOBS_SPEN	MJ/m3	1DP	Specific energy	500.0
	DOBS_FMPO	kPa	1DP	Flushing medium pressure at the output of the pump over flush zone	15.3
	DOBS_FMCR	l/min	1DP	Flushing medium circulation rate (input) over flush zone	1.2
	DOBS_FMRR	l/min	1DP	Flushing medium recovery rate over flush zone	1.1

	DOBS_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg drilling journals or log files)	FS36

Notes for Guidance

• DOBS is to be used to record information on hole advancement and drilling parameters, for example open hole rotary drilling information.

• DOBS records are data relating to the drilling parameters over a depth range. Where instrumentation on drilling rigs provides point readings of these parameters, this data should either be collated to summarise parameters over appropriate depth ranges, or reported with the start and end of each depth range to represent a point reading.

• DOBS_SET allows for multiple readings to be included in the group in circumstances for example where a hole depth section is re-drilled.

• FLSH should be used to record other flushing related information.

• It is suggested that DOBS can be used to transfer information recorded from instrumented drilling rigs. Additional fields maybe required to fully transfer the information.

Group Name: DPRG - Dynamic Probe Tests - General

Status	Heading	Suggested Unit / Type		Description	Example
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DPRG_TESN**		X	Test reference	1
	DPRG_DATE	yyyy-mm-dd	DT	Test date	2003-03-20
	DPRG_TYPE		PA	Dynamic probe type	DPL
	DPRG_METH		X	Test method	BS EN ISO 22476-2
	DPRG_MASS	kg	0DP	Hammer mass	50
	DPRG_DROP	mm	0DP	Standard drop	500
	DPRG_CONE	mm	0DP	Cone base diameter	43
	DPRG_ROD	mm	0DP	Rod diameter	35
	DPRG_TANV		X	Type of anvil	
	DPRG_DAMP		X	Type of anvil damper	None
	DPRG_TIP	m	2DP	Depth of cone if left in ground	8.00
	DPRG_REM		X	General remarks	Hole backfilled on completion
	DPRG_ANG	deg	0DP	Cone angle	90
	DPRG_RMSS	kg/m	1DP	Rod mass	9.0
	DPRG_PARF		X	Precautions against rod friction	
	DPRG_PDIU		X	Pre-drilling if used	
	DPRG_BCF		X	Blow count frequency	
	DPRG_GW	m	2DP	Groundwater level	1.00
	DPRG_REET		X	Reasons for early end of test	
	DPRG_ENV		X	Details of weather and environmental conditions during test	Heavy rain
	DPRG_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	DPRG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

Group Name: DPRG - Dynamic Probe Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS25

Notes for Guidance

• The cone angle and rod mass (per unit length) have been included to provide additional test data for defining non-standard equipment such as the Mackintosh Probe.

Group Name: DPRB - Dynamic Probe Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DPRG_TESN**		X	Test reference	1
*	**DPRB_DPTH**	m	2DP	Depth to start of dynamic probe increment	2.50
	DPRB_BLOW		0DP	Dynamic probe blows for increment DPRB_INC	7
	DPRB_CBLW		0DP	Cumulative blows for test	35
	DPRB_TORQ	Nm	0DP	Maximum torque required to rotate rods	75
	DPRB_DEL	hh:mm	T	Delay before increment started	00:00
	DPRB_INC	mm	0DP	Dynamic probe increment	100
	DPRB_REM		X	Notes on events during increment	
	FILE_FSET		X	Associated file reference	FS25

Notes for Guidance

• None

Group Name: DREM - Depth Related Remarks					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**DREM_TOP**	m	2DP	Depth of remark (DREM_REM)	12.50
*	**DREM_BASE**	m	2DP	Base depth	13.80
	DREM_REM		X	Depth related remark	Driving boulder ahead of casing
	FILE_FSET		X	Associated file reference (eg drilling journals)	FS5

Notes for Guidance

• DREM may be used for all remarks and notes that are related to a specific depth in the borehole or trial pit, that are not geological. Typically this includes drillers comments usually found on the boring or drilling journal.

• DREM is used for reporting incidents during drilling (such as "Fishing for broken U100"), drilling records that don't readily fit in any other groups (such as "Pushing boulder ahead of casing"), observations that are not strictly geological (such as "Strong petrol smell").

Group Name: ERES - Environmental Contaminant Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location Identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	ES
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Laboratory specimen reference or Laboratory ID	CL/477627
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*R	**ERES_CODE**		PA	Chemical code	7440-42-8
*	**ERES_METH**		X	Test method	In house method no 231241
*R	**ERES_MATX**		PA	Laboratory test matrix	LIQUID
*	**ERES_RTYP**		PA	Run type (Initial or Reanalysis)	INITIAL
	ERES_TESN		X	Test reference	2
	ERES_NAME		X	Chemical name	Boron
	ERES_TNAM		X	Laboratory analytical test name	MQ45
	ERES_RVAL		U	Result value	0.25
R	**ERES_RUNI**		PU	Result unit	mg/l
	ERES_RTXT		X	Reported result	<2.3
	ERES_RTCD		PA	Result type	TRG
	ERES_RRES		YN	Reportable result	Y
	ERES_DETF		YN	Detect flag	Y
	ERES_ORG		YN	Organic	N
	ERES_IQLF		X	Interpreted qualifiers	<
	ERES_LQLF		X	Laboratory qualifiers	<
	ERES_RDLM		U	Reporting detection limit	10
	ERES_MDLM		U	Method detection limit	1
	ERES_QLM		U	Quantification limit	10
	ERES_DUNI		PU	Unit of detection / quantification limits	mg/l
	ERES_TICP	%	0DP	Tentatively Identified Compound (TIC) probability	93
	ERES_TICT	s	0DP	Tentatively Identified Compound (TIC) retention time	203
	ERES_RDAT	yyyy-mm-dd	DT	Sample receipt date at laboratory	2006-11-15
	ERES_SGRP		X	Sample delivery or batch code	ERS151106
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	ERES_DTIM	yyyy-mm-ddThh:mm	DT	Analysis date and time date	2006-11-17T12:10
	ERES_TEST		X	Test Name as defined in LBST_TEST during electronic scheduling	VOC

Group Name: ERES - Environmental Contaminant Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	ERES_TORD		X	Total or dissolved	Total
	ERES_LOCN		PA	Analysis location	LAB
	ERES_BAS		PA	Basis	WET
	ERES_DIL		0DP	Dilution factor	10
	ERES_LMTH		X	Leachate preparation method	10:1 Leachate method
	ERES_LDTM	yyyy-mm-ddThh:mm	DT	Leachate preparation date and time	2006-11-16T10:00
	ERES_IREF		X	Instrument Reference No or Identifier	GCMS19
	ERES_SIZE	mm	0DP	Size of material removed prior to test; value given indicates lowest sized material removed	2
	ERES_PERP	%	1DP	Percentage of material removed	10.1
	ERES_REM		X	Remarks	
	ERES_LAB		X	Name of testing laboratory/Organisation	ACME Laboratories plc
	ERES_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS13

Notes for Guidance

• ERES provides for the transfer of geoenvironmental chemical testing data. Linked to the SAMP group this results group is suitable for both results of geoenvironmental testing carried out in the field or in a chemical test laboratory.

• Geotechnical chemical testing, relating to ground aggressivity, is to be transferred using the GCHM group.

• The headings listed in ERES represent a range of attributes to describe chemical test results to cater for both simple and extended reporting requirements. It is important to note that there is no requirement to complete all headings in data files for every analysis carried out. Only the key headings and the headings that are relevant to the testing and test result specification need be completed or used. Where additional QC data is required then further user defined headings may be necessary to transfer additional information. It is imperative that data providers and data receivers agree the specification for ERES data at the outset of a project.

• SPEC_REF should include the laboratory test specimen reference, or Laboratory ID; the unique reference the laboratory assigns to the test specimen (in AGS 3 this data was typically included in CNMT_LBID).

• ERES_CODEs must be freely available in the public domain. All ERES_CODEs included in the file are to be listed in the ABBR group. New ERES_CODE values should be registered on the AGS website before use.

• The ERES_CODE together with a matrix (ERES_MATX) should provide full definition of the chemical and phase of the material that has been tested. Note that ERES_CODE and ERES_MATX are REQUIRED fields.

• ERES_RUNI is a REQUIRED field (Rule 10b) which enforces the inclusion of units in the data file for test results. Where a test result has no unit, the ERES_RUNI data shall be set to "-" to clarify this.

• Units included in ERES_RUNI must be fully defined in the UNIT group (Rule 15). It is possible that units require conversion when the data is received and amalgamated into project databases to ensure that data are consistent across monitoring tranches and appropriate for the assessment.

• It is suggested that in some cases it might be appropriate to make the ERES_IREF data a set of codes referring to full instrument details in the ABBR group. In this case the heading type would be changed to 'PA'.

• The headings ERES_TICP and ERES_TICT allow for inclusion of tentatively identified compounds. Note that ERES_RTCD would be flagged as 'Tentative' if this were the case for a record.

• The accreditation status and reference number are included under the ERES_CRED heading where appropriate. Where a test has more than one accreditation status these should be concatenated into the ERES_CRED field using the + character by default or character specified in TRAN_RCON.

• ERES_SIZE and ERES_PERP are additions to cover the reporting requirements for geotechnical testing (eg BS1377) for which the result only relates to the size of material tested.

• ERES_RVAL should be left blank and detection limits defined if the test was below the detection limits.

• ERES_TEST should be completed with the test name (LBST_TEST) if the test was scheduled using LBST group. This provides traceability between schedule and results where this is important.

Group Name: ESCG - Effective Stress Consolidation Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	ESCG_TYPE		PA	Test type	CD
	ESCG_CELL		X	Type of equipment used	250mm dia Hydraulic cell
	ESCG_COND		PA	Sample condition	Undisturbed
	ESCG_SDIA	mm	2DP	Test specimen diameter	100.15
	ESCG_HIGT	mm	2DP	Test specimen height	100.25
	ESCG_MCI	%	X	Initial water/moisture content	21.2
	ESCG_MCF	%	X	Final water/moisture content	18.6
	ESCG_BDEN	Mg/m3	2DP	Initial bulk density	2.12
	ESCG_BDEF	Mg/m3	2DP	Final bulk density	2.20
	ESCG_DDEN	Mg/m3	2DP	Initial dry density	1.75
	ESCG_PDEN	Mg/m3	XN	Particle density with prefix # if value assumed	#2.65
	ESCG_IVR		3DP	Initial voids ratio	0.812
	ESCG_SATR	%	0DP	Initial degree of saturation	98
	ESCG_LOAD		X	Type of loading (strain)	Equal, Free, triaxial
	ESCG_DRAG		X	Type of drainage	To top, both ends, radial inwards, radial outwards
	ESCG_PPM		X	Pore pressure measurement location	Centre base, offset
	ESCG_SPRS	kPa	2SF	Swelling pressure, if measured	100
	ESCG_SATM		X	Method of saturation	Back pressure, cell only, water permeation
	ESCG_SINC	kPa	0DP	Saturation increments	50
	ESCG_SDIF	kPa	0DP	Differential pressure during saturation	10
	ESCG_CELF	kPa	0DP	Cell or diaphragm pressure at end of saturation	310
	ESCG_BACF	kPa	0DP	Back pressure at end of saturation	300
	ESCG_BVAL		2DP	B value at end of saturation	0.96
	ESCG_SVOL	ml	1DP	Volume of water taken in during saturation	10.0
	ESCG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	Sample from base of U100 sample, axis vertical
	ESCG_METH		X	Test method	BS1377, part 6, cl 5

Group Name: ESCG - Effective Stress Consolidation Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	ESCG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	ESCG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS9

Notes for Guidance

• ESCG and ESCT are primarily designed to take data from the consolidation tests detailed in BS1377 Part 6 including hydraulic cells such as the Rowe cell. Other types of testing can be included but headings should only be populated where the data is consistent with those of the BS tests and ambiguity of terminology should be avoided.

• ESCG_IVR should be used to report the initial voids ratio at the start of testing. This will not necessarily be the same as the voids ratio at the start of first stage consolidation ESCT_VR0 due to saturation.

Group Name: ESCT - Effective Stress Consolidation Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**ESCT_INCN**		X	Consolidation stage number	3
	ESCT_REM		X	Additional stage specific details	Stage terminated at 90% pwp dissipation
	ESCT_INCC	kPa	0DP	Cell or diaphragm pressure applied during stage	600
	ESCT_INCB	kPa	0DP	Back pressure applied during stage	300
	ESCT_PWP0	kPa	0DP	Pore pressure at end of undrained loading	580
	ESCT_PWPF	kPa	0DP	Pore pressure at end of consolidation stage	300
	ESCT_INCF	kPa	0DP	Effective stress at end of consolidation stage	310
	ESCT_VR0		3DP	Voids ratio at start of increment	0.801
	ESCT_VRE		3DP	Voids ratio at end of stress increment	0.621
	ESCT_DISS	%	0DP	Percentage pore pressure dissipation at end of stage	98
	ESCT_DSET	mm	3DP	Settlement measured during consolidation stage	0.234
	ESCT_DVOL	ml	1DP	Volume change measured during consolidation stage	22.1
	ESCT_INMV	m2/MN	2SF	Reported coefficient of volume compressibility over stress increment	0.32

Group Name: ESCT - Effective Stress Consolidation Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	ESCT_INCV	m2/yr	2SF	Reported coefficient of consolidation over stress increment	4.1
	ESCT_INSC		2SF	Coefficient of secondary compression over stress increment	0.12
	ESCT_CVME		X	Method used for deriving Cv	Log time PWP, root time settlement
	ESCT_TEMP	degC	1DP	Average temperature over stress increment	22.0
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS9

Notes for Guidance

• ESCT_DVOL - consolidation (flow of water out of specimen) to be reported as positive and dilatancy or swelling (flow of water into specimen) to be reported as negative.

Group Name: FLSH - Drilling Flush Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**FLSH_TOP**	m	2DP	Depth to top of flush zone	10.00
*	**FLSH_BASE**	m	2DP	Depth to bottom of flush zone	20.00
	FLSH_TYPE		PA	Type of flush	Water
	FLSH_RETN	%	0DP	Flush return minimum (as percentage)	50
	FLSH_RETX	%	0DP	Flush return maximum (as percentage)	70
	FLSH_COL		X	Colour of flush return	White
	FLSH_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg drilling journal, mud logging or test records)	FS5

Notes for Guidance

• None

Group Name: FRAC - Fracture Spacing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**FRAC_FROM**	m	2DP	Depth to top in hole, or distance to start on traverse, of the zone	31.20
*	**FRAC_TO**	m	2DP	Depth to base in hole, or distance to end on traverse, of the zone	33.65
*	**FRAC_SET**		X	Discontinuity set reference	J3
	FRAC_IMAX	mm	XN	Maximum fracture spacing over zone	350
	FRAC_IAVE	mm	XN	Average fracture (modal) spacing over zone	220
	FRAC_IMIN	mm	XN	Minimum fracture spacing over zone	NI
	FRAC_FI		XN	Fracture Index / frequency over zone (fractures per metre)	15
	FRAC_REM		X	Comments on fracture set	2
	FILE_FSET		X	Associated file reference (eg logging field sheets)	FS4

Notes for Guidance

• FRAC is used to include fracture set details derived from rock core. Fracture information collected from scanline surveys of rock exposures or similar should be recorded in the DISC group.

• It is not typical to define fracture set spacing's as both min/avg/max fracture spacing and Fracture Index. The requirement for one or other should be specified.

Group Name: FRST - Frost Susceptibility Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	FRST_COND		PA	Sample condition	Recompaction
	FRST_DDEN	Mg/m3	2DP	Dry density of specimens after preparation	1.96
	FRST_MC	%	X	water/moisture content of specimens at preparation	24
	FRST_HVE1	mm	1DP	Frost heave, first specimen	3.0
	FRST_HVE2	mm	1DP	Frost heave, second specimen	4.5
	FRST_HVE3	mm	1DP	Frost heave, third specimen	3.5
	FRST_HVE	mm	1DP	Mean heave of 3 specimens	3.6

Group Name: FRST - Frost Susceptibility Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FRST_STAB	%	2SF	Amount of stabiliser added	23
	FRST_STYP		X	Type of stabiliser added	Cement
	FRST_REM		X	Notes on frost susceptibility testing as per TRRL SR 829	
	FRST_METH		X	Test method	BS EN 1997-2
	FRST_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	FRST_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS20

Notes for Guidance

• BS 812 requires the results of three specimens and the mean to be reported. However, all three specimens are prepared to exactly the same density and water/moisture content and hence both the standard and the data format only require one density and water content.

Group Name: GCHM - Geotechnical Chemistry Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*R	**GCHM_CODE**		PA	Determinand	AS
*	**GCHM_METH**		X	Test method	BS1377-3
*R	**GCHM_TTYP**		PA	Test type	Solid_21 Water Extract
	GCHM_RESL		U	Test result	14.23
R	**GCHM_UNIT**		PU	Test result units	mg/l
	GCHM_NAME		X	Client/laboratory preferred name of determinand	Water Soluble Sulfate
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	2:1 water/soil extract
	GCHM_REM		X	Remarks on test	
	GCHM_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	GCHM_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

Group Name: GCHM - Geotechnical Chemistry Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS23
	GCHM_RTXT		X	Reported test result	<0.01
	GCHM_DLM		U	Limit of detection	0.01

Notes for Guidance

• GCHM is used to report chemical testing carried out for geotechnical design. It is to be used for testing in accordance with BS1377-3:1990 (Amendment 1), testing for use in the assessment described in BRE Special Digest 1 (2005) and/or buried steel testing described in the Design Manual for Roads and Bridges; BD42/00 (Volume 2, Section 1, Part 2) and BD12/01 (Volume 2, Section 2, Part 6). Chemical testing for contamination or water quality testing is reported in ERES. Laboratory resistivity test results should be reported using the LRES Group.

• The GCHM_CODE abbreviations to report testing to BRE Special Digest 1 and BS 1377-3 would be:

PH = Acidity/alkalinity (pH value to nearest 0.1)

WS = Water-soluble sulfate (as mg/l SO4)

AS = Acid-soluble sulfate (as % SO4)

TS = Total sulfur (as % S)

WMG = Water/soil extract Magnesium (as mg/l)

NH4 = Ammonium ion (as mg/l)

CL = Chloride (as mg/l)

NO3 = Nitrate (as mg/l)

ACO2 = Aggressive Carbon dioxide (as mg/l)

CO2 = Carbonate content (as %CO2)

LOI = Loss on ignition (as %)

OGM = Organic matter content (as %)

TDS = Total dissolved solids (in mg/l to 2SF)

CACO3 = Chalk content (as %CaCO3)

• The GCHM_CODE abbreviations to report testing of buried steel would be:

REDOX = Redox Potential (as mV)

• All GCHM_CODE abbreviations reported in this group are to be listed in the ABBR group.

• The GCHM_TTYP abbreviations would be limited to SOLID_21WAT, SOLID_ACID, SOLID_TOT and WATER to report testing to BRE Special Digest 1 and BS 1377-3.

• GCHM_UNIT is a REQUIRED field (Rule 10b) which enforces the inclusion of units for all test results. Where a test result has no unit, the GCHM_UNIT data shall be set to "-".

• Units reported in GCHM_UNIT must be fully defined in the UNIT group (Rule 15). It is possible that units require conversion when the data is received and amalgamated into project databases to ensure that data are consistent across testing tranches and appropriate for the assessment.

• For a chalk content test carried out to BS1377-3, it would be good practice to report both a Carbonate content (as CO2) and the chalk content (as %CaCO3).

Group Name: GEOL - Field Geological Descriptions					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**GEOL_TOP**	m	2DP	Depth to the top of stratum	16.21
*	**GEOL_BASE**	m	2DP	Depth to the base of description	17.25
	GEOL_DESC		X	General description of stratum	Stiff grey silty CLAY
	GEOL_LEG		PA	Legend code	102
	GEOL_GEOL		PA	Geology code	LC
	GEOL_GEO2		PA	Second geology code	SAND
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	GEOL_BGS		PA	BGS Lexicon code	CHAM
	GEOL_FORM		X	Geological formation or stratum name	Charmouth Mudstone Formation
	GEOL_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg logging field sheets, photographs of exposures)	FS4

Notes for Guidance

• GEOL is used to transfer the field descriptions of geological materials required by EN ISO 14688-1 and 14689-1, and as described in guidance including BS5930 (amended).

• GEOL_GEOL and GEOL_GEO2 can contain codes that are defined by the organisation supervising the investigation and may be an organisation or project based classification of the strata. The codification is typically determined by the investigation supervisor, designer or consultant. The inclusion of the codification by a ground investigation contractor and provision in the AGS format files has to be specified in full in the investigation specification as codification is typically not a requirement of investigation standards.

• A suggested use of the GEOL_GEOL and GEOL_GEO2 codes is as follows:

a) The geology code GEOL_GEOL relates to the Geological Name of each geological unit, for example:

RA as an abbreviation for Recent Alluvium

LC as an abbreviation for London Clay

b) The second geology code GEOL_GEO2 is an abbreviation for the material type of each stratum, for example:

CS as an abbreviation for sandy CLAY

C as an abbreviation for CLAY

The BGS classification system (http://nora.nerc.ac.uk/9179/) could be a suitable classification for use on particular projects.

• The stratum code GEOL_STAT may be used as the reference letter or number of each stratum on a trial pit log. Its sole purpose is to link the stratum shown on the face sketch of the trial pit to the stratum description given elsewhere on the log. It is therefore not used on borehole logs and it is not used on simple trial pit logs which are presented in borehole log format, without a face sketch. GEOL_STAT is usually just the numbers 1, 2, 3 etc or the letters A, B, C etc.

• GEOL_STAT also appears in the SAMP Group and several of the in situ testing Groups so that it is possible to indicate which stratum on a trial pit face a sample was taken from, or an in situ test carried out in.

• GEOL_BGS can be included if required to contain the abbreviations from the British Geological Survey (BGS) lexicon of strata that is associated with the stratum. There is a list of these abbreviations provided and maintained on the BGS website: www.bgs.ac.uk/lexicon/home.html.

• BS5930 (amended) states that the geological formation may also be named. Typically this information is presented as part of the exploratory hole log at the end of stratum description. If this is required, this data must be specified and the data is not included in GEOL_DESC but transferred in an additional heading GEOL_FORM. There is a link between GEOL_FORM and GEOL_BGS, however, the use of GEOL_FORM will include for strata that do not have BGS Lexicon codes; for example, types of MADE GROUND such as embankment fill.

• If more detailed information on material weathering grades is required then these details are to be included in the WETH group.

Group Name: GRAG - Particle Size Distribution Analysis - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	GRAG_UC		1SF	Uniformity coefficient D60/D10	10
	GRAG_VCRE	%	1DP	Percentage of material tested greater than 63mm (cobbles)	0.0
	GRAG_GRAV	%	1DP	Percentage of material tested in range 63mm to 2mm (gravel)	30.1
	GRAG_SAND	%	1DP	Percentage of material tested in range 2mm to 63um (sand)	40.4
	GRAG_SILT	%	1DP	Percentage of material tested in range 63um to 2um (silt)	14.5
	GRAG_CLAY	%	1DP	Percentage of material tested less than 2um (clay)	15.0
	GRAG_FINE	%	1DP	Percentage less than 63um	29.5
	GRAG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	
	GRAG_METH		X	Test method	BS1377
	GRAG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	GRAG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	F21

Notes for Guidance

• GRAG is to be used to transfer the general information on particle size distribution testing including laboratory name and test accreditation details to be transferred within the AGS Format file. The GRAD group in AGS 2 and 3 was not capable of efficiently transferring this data.

• The data in GRAG_CRED indicates the accreditation status of the testing as a whole. Therefore if part of the test method used, for example the pipette rather than the sieve, is not accredited, the GRAG_CRED should be appropriately qualified or left empty.

Group Name: GRAT - Particle Size Distribution Analysis - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**GRAT_SIZE**	mm	3SF	Sieve or particle size	3.35
	GRAT_PERP	%	0DP	Percentage passing/finer than GRAT_SIZE	25
	GRAT_TYPE		PA	Test type	WS
	GRAT_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	F21

Notes for Guidance

• The GRAT group transfers data similar to GRAD (AGS Versions 1-3) but has been added to link to a new parent group, GRAG.

Group Name: HDIA - Hole Diameter by Depth					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**HDIA_DPTH**	m	2DP	Depth of base of hole at the diameter recorded in HDIA_DIAM	16.00
*	**HDIA_DIAM**	mm	0DP	Hole diameter	200
	HDIA_REM		X	Remarks	Cased to full depth
	FILE_FSET		X	Associated file reference (eg drilling journals)	FS5

Notes for Guidance

• HDIA describes the profile of final exploratory hole. Casing information for the final hole construction should be recorded in the CDIA group.

• HDIA_REM allows additional information on the hole construction to be included in the data file as necessary.

Group Name: HDPH - Depth Related Exploratory Hole Information					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**HDPH_TOP**	m	2DP	Depth to top of section	1.40
*	**HDPH_BASE**	m	2DP	Depth to base of section	3.40
*	**HDPH_TYPE**		PA	Type of depth related information	TP
	HDPH_STAR	yyyy-mm-ddThh:mm	DT	Date and time of start of section	2004-04-01T09:00
	HDPH_ENDD	yyyy-mm-ddThh:mm	DT	Date and time of end of section	2004-04-01T11:30
	HDPH_CREW		X	Name of rig/drill crew	Bill Mallard
	HDPH_EXC		X	Plant used	JCB 3CX
	HDPH_SHOR		X	Shoring/support used	None
	HDPH_STAB		X	Stability of trial pit / trial trench or logged traverse length	Stable during excavation
	HDPH_DIML	m	2DP	Trial pit / trial trench or logged traverse length	27.56
	HDPH_DIMW	m	2DP	Trial pit / trial trench or logged traverse width	1.35
	HDPH_DBIT		X	Drill bit used	Stepped ABC
	HDPH_BCON		X	Bit condition	Good
	HDPH_BTYP		X	Barrel type	Triple tube
	HDPH_BLEN	m	2DP	Barrel length	3.00
	HDPH_LOG		X	Definitive person responsible for logging the section	ANO
	HDPH_LOGD	yyyy-mm-dd	DT	Start date of hole section logging	2008-04-01
	HDPH_REM		X	Remarks	Breaker required
	HDPH_ENV		X	Details of weather and environmental conditions during hole section construction	Dry, rain, standing water
	HDPH_METH		X	Details of method of hole section construction	Odex
	HDPH_CONT		X	Contractor	ACME Drilling Ltd
	FILE_FSET		X	Associated file reference (eg drilling journals, hole orientation data)	FS21

Notes for Guidance

• HDPH is used to record information regarding exploratory hole construction. The HDPH group subdivides the hole development by depth such that the differing methods used to advance a hole or pit (or holes developed using combined methods) are explicitly described As a minimum, one record will exist in HDPH for each record in the LOCA group if the AGS file is transferring hole construction details.

• Records of orientation and inclination of the exploratory hole should be included in the HORN group.

• Records in HDPH should be continuous and non-overlapping.

• HDPH_LOG and HDPH_LOGD have been added to include the name of the person describing the strata in this section of the exploratory hole and date as required in ISO 14688-1 (Section 6) and EN ISO 14689-1 (Section 5). It is not deemed necessary to detail this information further for example in the GEOL group.

Group Name: HORN - Exploratory Hole Orientation and Inclination					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**HORN_TOP**	m	2DP	Depth to top of exploratory hole section	0.00
*	**HORN_BASE**	m	2DP	Depth to base of exploratory hole section	10.15
	HORN_ORNT	deg	0DP	Orientation of exploratory hole section or traverse (degrees from north)	210
	HORN_INCL	deg	0DP	Inclination of exploratory hole section or traverse (measured positively down from horizontal)	65
	HORN_REM		X	Remarks relating to orientation and inclination of hole section	
	FILE_FSET		X	Associated file reference (eg contract data specification)	FS22

Notes for Guidance

• HORN is used to record the details of exploratory hole orientation and inclination.

Group Name: ICBR - In Situ California Bearing Ratio Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**ICBR_DPTH**	m	2DP	Depth to top of CBR test	0.50
*	**ICBR_TESN**		X	Test reference	2
	ICBR_ICBR	%	2SF	CBR value	1.2
	ICBR_MC	%	X	Water/moisture content relating to test	25
	ICBR_DATE	yyyy-mm-dd	DT	Test date	2003-03-20
	ICBR_KENT		X	Details of kentledge (reaction load)	2t Landrover
	ICBR_SEAT	N	0DP	Seating force	10
	ICBR_SURC	kPa	0DP	Surcharge pressure	15
	ICBR_TYPE		PA	Type of CBR	Mexecone
	ICBR_REM		X	Remarks	Material >20mm below plunger, test terminated early, water ingress
	ICBR_ENV		X	Details of weather and environmental conditions during test	Sunny and frosty
	ICBR_METH		X	Test method	Manufacturer's instructions
	ICBR_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	ICBR_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

Group Name: ICBR - In Situ California Bearing Ratio Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS25

Notes for Guidance

• ICBR_TYPE allows a description or abbreviation to be included to categorise the equipment and method of measurement.

• ICBR_SEAT allows the plunger seating force to be included in the data as required.

• ICBR_SURC allows the surcharge pressure to be recorded and the description for the ICBR_REM heading has been modified.

• ICBR_CONT allows the name of a specialist sub-contracting organisation to be credited with the testing.

Group Name: IDEN - In Situ Density Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IDEN_DPTH**	m	2DP	Depth of in situ density test	1.25
*	**IDEN_TESN**		X	Test reference	2
	IDEN_DATE	yyyy-mm-dd	DT	Test date	2003-02-23
	IDEN_TYPE		PA	Type of density test performed	Core
	IDEN_IDEN	Mg/m3	2DP	In situ bulk density (after any calibration / corrections applied, ie reported value)	1.86
	IDEN_MC	%	X	Water/moisture content relating to in situ test (after any calibration / corrections applied, ie reported value)	18.0
	IDEN_STAB	%	2SF	Amount of stabiliser added	23
	IDEN_STYP		X	Type of stabiliser added	Cement
	IDEN_REM		X	Remarks	Uncorrected NDG values reported
	IDEN_ENV		X	Details of weather and environmental conditions during test	Cloudy and wet
	IDEN_METH		X	Test method	BS1377 part 9
	IDEN_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IDEN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS25

Notes for Guidance

• None.

Group Name: IFID - On Site Volatile Headspace Testing Using Flame Ionisation Detector					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IFID_DPTH**	m	2DP	Depth of headspace test sample	1.00
*	**IFID_TESN**		X	Test reference	2
	IFID_DATE	yyyy-mm-dd	DT	Test date	2003-02-20
	IFID_RES	ppmv	XN	Result of FID analysis	10
	IFID_REM		X	Remarks on test	
	IFID_ENV		X	Details of weather and environmental conditions during test	Misty
	IFID_METH		X	Details of FID used and method description	Flame ionisation detector
	IFID_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IFID_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS23

Notes for Guidance

• IFID is used to record the results of on-site volatile testing by means of headspace analysis using flame ionisation detectors.

• IFID_CRED added to permit details of any test accreditation if appropriate to be included in data.

Group Name: IPEN - In Situ Hand Penetrometer Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IPEN_DPTH**	m	2DP	Depth of test	13.50
*	**IPEN_TESN**		X	Test reference	2
	IPEN_IPEN	kPa	XN	Hand penetrometer result	6.8 or >20
	IPEN_DATE	yyyy-mm-dd	DT	Test date	2003-02-28
	IPEN_REM		X	Remarks on test	
	IPEN_ENV		X	Details of weather and environmental conditions during test	Dry and warm
	IPEN_METH		X	Test method	BS1377 Part 9
	IPEN_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IPEN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

Group Name: IPEN - In Situ Hand Penetrometer Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• None

Group Name: IPID - On Site Volatile Headspace Testing by Photo Ionisation Detector					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IPID_DPTH**	m	2DP	Depth of headspace test sample	1.00
*	**IPID_TESN**		X	Test reference	3
	IPID_DATE	yyyy-mm-dd	DT	Test date	2003-02-20
	IPID_TEMP	degC	1DP	Ambient temperature at time of test	15.1
	IPID_RES	ppmv	XN	Result of PID analysis	10.00
	IPID_REM		X	Remarks on test	
	IPID_ENV		X	Details of weather and environmental conditions during test	Cloudy with light rain
	IPID_METH		X	Details of PID used and method description	Carried out on temporary samples using photo ionisation detector fitted with 10.6 eV lamp
	IPID_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IPID_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS45

Notes for Guidance

• IPID is used to record the results of on-site volatile testing by means of headspace analysis using photo ionisation detectors.

• IPID_CRED added to permit details of any test accreditation if appropriate to be included in data.

• Clause 7.9.8 of the updated SISG Specification advises ambient weather and temperature to be recorded at time of test. IPID_ENV and IPID_TEMP added to include this information.

Group Name: IPRG - In Situ Permeability Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IPRG_TOP**	m	2DP	Depth to top of test zone	12.20
*	**IPRG_TESN**		X	Test reference	2
*	**IPRG_BASE**	m	2DP	Depth to base of test zone	12.95
*	**IPRG_STG**		0DP	Stage number of multistage packer test	1
	IPRG_TYPE		PA	Type of test	Constant Head
	IPRG_PRWL	m	2DP	Depth to water in borehole or piezometer immediately prior to test	10.60
	IPRG_SWAL	m	2DP	Depth to water at start of test	5.40
	IPRG_TDIA	m	2DP	Diameter of test zone	0.15
	IPRG_SDIA	m	3DP	Diameter of standpipe or casing	0.019
	IPRG_IPRM	m/s	1SCI	Permeability	5.1E-9
	IPRG_FLOW	l/s	1DP	Average flow during packer test stage	2.3
	IPRG_AWL	m	2DP	Depth to assumed standing water level	10.00
	IPRG_HEAD	m	2DP	Applied total head of water during test stage at centre of packer test zone	20.50
	IPRG_DATE	yyyy-mm-dd	DT	Test date	2008-01-23
	IPRG_REM		X	Test remarks	
	IPRG_ENV		X	Details of weather and environmental conditions during test	Sunny and warm
	IPRG_METH		X	Test method	BS5930
	IPRG_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IPRG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS26

Notes for Guidance

• None.

Group Name: IPRT - In Situ Permeability Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IPRG_TOP**	m	2DP	Depth to top of test zone	12.20
*	**IPRG_TESN**		X	Test reference	2
*	**IPRG_BASE**	m	2DP	Depth to base of test zone	12.95
*	**IPRG_STG**		0DP	Stage number of multistage packer test	1

Group Name: IPRT - In Situ Permeability Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**IPRT_TIME**	hh:mm:ss	T	Elapsed time	00:12:00
	IPRT_DPTH	m	2DP	Depth to water at time IPRT_TIME	2.45
	IPRT_REM		X	Test reading remark	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS26

Notes for Guidance

• The IPRT group allows for transfer of the water level with time readings taken during the test where this is required in the test specification.

Group Name: IRDX - In Situ Redox Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IRDX_DPTH**	m	2DP	Depth of redox test	1.00
*	**IRDX_TESN**		X	Test reference	2
	IRDX_DATE	yyyy-mm-dd	DT	Test date	2003-02-04
	IRDX_PH		1DP	pH	7.0
	IRDX_MPOT		0DP	Mean value of the potential of the two platinum probes	-50
	IRDX_IRDX	mV	0DP	Redox potential	400
	IRDX_REM		X	Details of redox test and probe type	
	IRDX_ENV		X	Details of weather and environmental conditions during test	Cloudy with light rain
	IRDX_METH		X	Test method	
	IRDX_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IRDX_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS26

Notes for Guidance

• None.

Group Name: IRES - In Situ Resistivity Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IRES_DPTH**	m	2DP	Depth to which in situ resistivity test relates	1.00
*	**IRES_TESN**		X	Test reference	1
	IRES_BASE	m	2DP	Base depth to which in-situ resistivity test relates	2.00
	IRES_TYPE		PA	Type of resistivity test	SCHL
	IRES_DATE	yyyy-mm-dd	DT	Test date	2003-03-20
	IRES_IRES	ohm m	2SF	Mean value of the apparent resistivity	2500
	IRES_RES1	ohm m	2SF	First value of apparent resistivity when more than 15% different to mean	30
	IRES_RES2	ohm m	2SF	Second value of apparent resistivity when more than 15% different to mean	10
	IRES_REM		X	Details of test eg. electrode spacing and configuration	
	IRES_ENV		X	Details of weather and environmental conditions during test	Misty and cold
	IRES_METH		X	Test method	BS1377: Part 9
	IRES_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IRES_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS26

Notes for Guidance

• None.

Group Name: ISAG - Soakaway Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**ISAG_TESN**		X	Test reference	1
	ISAG_DATE	yyyy-mm-dd	DT	Test date	2010-02-28
	ISAG_DURN	hh:mm	T	Test duration	00:35
	ISAG_PWID	m	2DP	Soakaway pit width	2.00
	ISAG_PLEN	m	2DP	Soakaway pit length	1.00
	ISAG_PDIA	m	2DP	Soakaway pit diameter	1.50
	ISAG_DPTS	m	2DP	Soakaway pit depth at start of test	1.55
	ISAG_DPTE	m	2DP	Soakaway pit depth at end of test	1.55
	ISAG_CONS		X	Description of soakaway construction	Vertical sides trimmed square with granular fill and observation tube
	ISAG_SI		2SCI	Soil infiltration rate	6.80E-6
	ISAG_PORO	%	0DP	Fill porosity	10
	ISAG_REM		X	Remarks	Unable to calculate infiltration rate. No fall in water level during test period.
	ISAG_ENV		X	Details of weather and environmental conditions during test	Raining
	ISAG_METH		X	Test method	BRE Digest 365
	ISAG_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	ISAG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS11

Notes for Guidance

• None

Group Name: ISAT - Soakaway Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**ISAG_TESN**		X	Test reference	1
*	**ISAT_TIME**	hh:mm:ss	T	Elapsed time	05:00
	ISAT_DPTH	m	2DP	Depth to water	0.18
	ISAT_REM		X	Remark relating to test reading	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• None

Group Name: ISPT - Standard Penetration Test Results					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**ISPT_TOP**	m	2DP	Depth to top of test	13.50
	ISPT_SEAT		0DP	Number of blows for seating drive	14
	ISPT_MAIN		0DP	Number of blows for main test drive	35
	ISPT_NPEN	mm	0DP	Total penetration for seating drive and test drive	450
	ISPT_NVAL		0DP	SPT 'N' value	35
	ISPT_REP		X	SPT reported result	6,8/8,9,9,9 N=35
	ISPT_CAS	m	2DP	Casing depth at time of test	12.00
	ISPT_WAT	m	XN	Depth to water at time of test	2.50 or Dry
	ISPT_TYPE		PA	Type of SPT test	S
	ISPT_HAM		X	Hammer serial number from manufacturer	AB1234
	ISPT_ERAT	%	0DP	Energy ratio of the hammer	60
	ISPT_SWP	mm	0DP	Self-weight penetration	25
	ISPT_INC1		0DP	Number of blows for 1st Increment (Seating)	6
	ISPT_INC2		0DP	Number of blows for 2nd Increment (Seating)	8
	ISPT_INC3		0DP	Number of blows for 1st Increment (Test)	8
	ISPT_INC4		0DP	Number of blows for 2nd Increment (Test)	9
	ISPT_INC5		0DP	Number of blows for 3rd Increment (Test)	9
	ISPT_INC6		0DP	Number of blows for 4th Increment (Test)	9
	ISPT_PEN1	mm	0DP	Penetration for 1st Increment (Seating Drive)	75
	ISPT_PEN2	mm	0DP	Penetration for 2nd Increment (Seating Drive)	75
	ISPT_PEN3	mm	0DP	Penetration for 1st Increment (Test)	75
	ISPT_PEN4	mm	0DP	Penetration for 2nd Increment (Test)	75
	ISPT_PEN5	mm	0DP	Penetration for 3rd Increment (Test)	75
	ISPT_PEN6	mm	0DP	Penetration for 4th Increment (Test)	75
	ISPT_ROCK		YN	SPT carried out in soft rock	N
	ISPT_REM		X	Remarks	Borehole topped up with water prior to test
	ISPT_ENV		X	Details of weather and environmental conditions during test	Raining
	ISPT_METH		X	Test method	BS EN ISO 22476-3 : 2005
	ISPT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• If the test was extended to 100 blows (as described in ISO 22476-3), then data variable under ISPT_ROCK should be 'Y'. To avoid ambiguity, in cases where the test was not extended the ISPT_ROCK data should be 'N' (see Section 8.2).

• Where appropriate or requested, SPT equipment calibration certificates could be referred to in the FILE_FSET field.

Group Name: IVAN - In Situ Vane Tests

Status	Heading	Suggested Unit / Type		Description	Example
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**IVAN_DPTH**	m	2DP	Depth of vane test	13.50
*	**IVAN_TESN**		X	Test reference	2
	IVAN_TYPE		PA	Vane type	Borehole
	IVAN_IVAN	kPa	XN	Vane test result	60 or >80
	IVAN_IVAR	kPa	XN	Vane test remoulded result	45 or >80
	IVAN_DATE	yyyy-mm-dd	DT	Test date	2003-02-28
	IVAN_REM		X	Details of vane test, vane size	
	IVAN_ENV		X	Details of weather and environmental conditions during test	Dry and warm
	IVAN_METH		X	Test method	BS1377 Part 9
	IVAN_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	IVAN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• IVAN_ENV allows records of environmental conditions to be recorded. Where the test is down hole this field should be left empty as this has no bearing on the measurement made.

• IVAN_IVAN and IVAN_IVAR data should generally be numeric. A text form can only be used by addition of a prefixing operator to denote greater than or less than conditions ie >200 when readings are above the reporting limit of the testing equipment.

Group Name: LBSG - Testing Schedule					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LBSG_REF**		X	Schedule reference	2
	LBSG_DATE	yyyy-mm-dd	DT	Date of issue	2009-01-31
	LBSG_FROM		X	Schedule prepared by	ACME Consulting
	LBSG_TO		X	Schedule issued to	ACME Laboratories plc
	LBSG_DUE	yyyy-mm-dd	DT	Date schedule to be completed and reported	2009-04-01
	LBSG_REM		X	Comments on schedule	
	LBSG_STAT		X	Status of schedule	Complete
	FILE_FSET		X	Associated file reference (eg schedule sheets)	FS1

Notes for Guidance

• The LBSG group is used to describe the testing schedules generated on a project.

• This group, together with LBST (test details), would typically be used in data files that are transferred as part of the investigation and testing process. These groups would not necessarily be included in a data file that represented final reporting data.

• A data row in this group represents the issue of a schedule to a laboratory to testing organisation.

• Any general requirements for the test schedule, for example, dates for completion, contact details, should be included in this group. Details of the test required are provided in the LBST group against the samples.

Group Name: LBST - Testing Schedule Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**LBSG_REF**		X	Testing schedule reference	2
*	**LBST_TEST**		X	Test Name	Suite A
	CHOC_REF		X	Chain of custody reference	A1241/1
	LBST_TTYP		X	Full test method or standard	California Bearing Ratio (BS 1377:1990:Pt 4, Section 7)
	LBST_METH		X	Method and test parameters	Point, 34 kPa surcharge.
	LBST_PREP		X	Preparation requirements	BS1377 part 9
	LBST_DEPN		X	Dependent test options	Advise if sample insufficient for testing
	LBST_STAT		PA	Status of laboratory test	In progress
	LBST_REM		X	Remarks	
	LBST_DUE	yyyy-mm-dd	DT	Test results due date	2009-10-05
	LBST_DETL		X	Details of testing carried out or reasons for no testing possible	

Group Name: LBST - Testing Schedule Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	LBST_DONE	yyyy-mm-dd	DT	Date test completed	2009-10-01
	FILE_FSET		X	Associated file reference	FS99

Notes for Guidance

• The LBST group is used to describe instructions and requirements to be passed to the laboratory regarding testing on samples.

• Each data row represents a test on a sample. Therefore sample details will be repeated for each test scheduled on that sample.

• LBSG_REF provides the link between the test and the test schedule details.

• LBST_TEST is the specific code or name of the particular test required on the sample. Whilst these will be drawn from standards, the test names are typically unique to laboratories or maybe linked to a particular contract specification. At the outset of scheduling testing the list of test names that are particular to a project or contract should ascertained and used as a pick-list in any information system generating LBST data. It is envisaged that laboratories or contract specifications can provide coded lists for test details that would be suitable for LBST_TEST data.

• The headings of LBST_TTYP, LBST_METH, LBST_PREP, LBST_DEPN allow for descriptions of the test name/method or standard, specific method details or test parameters, test specimen preparation and dependent options or comments. For any test some or all of these data items may be required to fully define the test. An example of the type of information that could be included under these headings could be:

LBST_TEST = “CBR”

LBST_TTYP = “California Bearing Ratio. BS1377 : 1990 : Part 4 , Section 7”

LBST_METH = “Top and Base. Surcharge mass 100 kPa”

LBST_PREP = “Recompacted (see Remarks for compaction details), Soaked”

LBST_DEPN = “Advise if sample unsuitable”

• The group also includes headings that can be used by the testing laboratory to report testing progress or highlight problems with carrying out the instructed testing; LBST_STAT, LBST_DETL and LBST_DONE. If data is provided under these headings to the organisation that schedules the tests, they can use the information to track progress and monitor completion

• LBST_STAT is used to describe the status of testing. Typically this would include standard phrases rather than detailed descriptions such as ‘Scheduled’, ‘Restricted’, ‘In progress’, ‘Completed’.

• Details of testing restrictions, for example insufficient or unsuitable sample, should be included under LBST_DETL. The transfer of LBST could provide a suitable method for laboratories to advise on testing restrictions, for example, returning a file containing all LBST records with an LBST_STAT of ‘Restricted’.

Group Name: LDEN - Density Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LDEN_TYPE		PA	Type of test performed	LINEAR
	LDEN_COND		PA	Sample condition	Undisturbed
	LDEN_SMTY		PA	Type of sample	BLOCK SAMPLE
	LDEN_MC	%	X	Water/moisture content	57
	LDEN_BDEN	Mg/m3	2DP	Bulk density	1.66
	LDEN_DDEN	Mg/m3	2DP	Dry density	1.06
	LDEN_REM		X	Remarks	
	LDEN_METH		X	Test method	BS1377: Part 2: 1990: Clause 7.2
	LDEN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LDEN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• Measurements of density on rock materials should be reported in RDEN.

Group Name: LDYN - Dynamic Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LDYN_PWAV	m/s	0DP	P-wave velocity	3000
	LDYN_SWAV	m/s	0DP	S-wave velocity	1800
	LDYN_EMOD	GPa	0DP	Dynamic elastic modulus	20
	LDYN_SG	GPa	0DP	Shear modulus derived from LDYN_SWAV	8
	LDYN_REM		X	Remarks	
	LDYN_METH		X	Test method	ISRM : Suggested method
	LDYN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LDYN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• LDYN is to be used to report dynamic testing on soil and rock materials.

• The measurements of bulk density, dry density, water/moisture content, porosity and saturation that described the test specimen condition related to these tests should be recorded in RDEN.

Group Name: LLIN - Linear Shrinkage Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Specimen prepared by cone and quartering
	LLIN_LS	%	0DP	Linear shrinkage	11
	LLIN_425	%	0DP	Percentage passing 425µm sieve	12
	LLIN_PREP		X	Method of preparation	Wet sieve
	LLIN_REM		X	Remarks	
	LLIN_METH		X	Test method	BS1377: Part 2: 1990: Clause 6.5
	LLIN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LLIN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• The LLIN group is included to transfer linear shrinkage tests. Shrinkage limit is to be transferred using the LSLT group.

Group Name: LLPL - Liquid and Plastic Limit Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LLPL_LL	%	2SF	Liquid limit	62
	LLPL_PL	%	XN	Plastic limit	38 or NP
	LLPL_PI		2SF	Plasticity Index	23
	LLPL_425	%	2SF	Percentage passing 425µm sieve	12
	LLPL_PREP		X	Method of preparation	Wet sieve
	LLPL_STAB	%	2SF	Amount of stabiliser added	23
	LLPL_STYP		X	Type of stabiliser added	Cement
	LLPL_REM		X	Remarks	1 point liquid limit test
	LLPL_METH		X	Test method	BS1377: Part 2: 1990: Clause 4.4 and 5
	LLPL_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LLPL_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: LNMC - Water/Moisture Content Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay

Group Name: LNMC - Water/Moisture Content Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LNMC_MC	%	X	Water/moisture content	57
	LNMC_TEMP	degC	0DP	Temperature sample dried at	105
	LNMC_STAB	%	2SF	Amount of stabiliser added	23
	LNMC_STYP		X	Type of stabiliser added	Cement
	LNMC_ISNT		YN	Is test result assumed to be a natural water/moisture content	Y
	LNMC_COMM		X	Reason water/moisture content is assumed to be other than natural	
	LNMC_REM		X	Remarks	
	LNMC_METH		X	Test method	BS1377: Part 2: 1990: Clause 3.2
	LNMC_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LNMC_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• This group should be retained for water (moisture) content tests (usually synonymous with 'as received') carried out as individual or separate tests. Where a water content is measured as part of another test (e.g. a triaxial test), the water content should be transferred in that group under the appropriate heading.

• Water/Moisture content corrected for material >425um and fluid content are not included as automatic headings. Apart from being very rarely used (in the UK), these are usually dependent upon assumptions about representativity, water content retention in coarse material or salt content in pore water. It is better left to the recipient of the data to interpret these other parameters which are not specified requirements of water content (or index) standards. It could be argued that if fluid content were to be included here, it should also be in all tests with water content.

Group Name: LOCA - Location Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
	LOCA_TYPE		PA	Type of activity	CP+RC
	LOCA_STAT		PA	Status of information relating to this position	PRELIM
	LOCA_NATE	m	2DP	National Grid Easting of location or start of traverse	523145.00
	LOCA_NATN	m	2DP	National Grid Northing of location or start of traverse	178456.12
	LOCA_GREF		PA	National grid referencing system used	OSGB
	LOCA_GL	m	2DP	Ground level relative to datum of location or start of traverse	16.23
	LOCA_REM		X	General remarks	
	LOCA_FDEP	m	2DP	Final depth	32.60
	LOCA_STAR	yyyy-mm-dd	DT	Date of start of activity	1991-03-18
	LOCA_PURP		X	Purpose of activity at this location	Groundwater observation well
	LOCA_TERM		X	Reason for activity termination	Abandoned on engineer's instruction
	LOCA_ENDD	yyyy-mm-dd	DT	End date of activity	1991-03-22
	LOCA_LETT		X	OSGB letter grid reference	TQ231784
	LOCA_LOCX	m	2DP	Local grid x co-ordinate or start of traverse	565.23
	LOCA_LOCY	m	2DP	Local grid y co-ordinate or start of traverse	421.12
	LOCA_LOCZ	m	2DP	Level or start of traverse to local datum	106.63
	LOCA_LREF		X	Local grid referencing system used	London grid 1
	LOCA_DATM		X	Local datum referencing system used	Anytown datum
	LOCA_ETRV	m	2DP	National Grid Easting of end of traverse	523195.12
	LOCA_NTRV	m	2DP	National Grid Northing of end of traverse	178486.12
	LOCA_LTRV	m	2DP	Ground level relative to datum of end of traverse	9.67
	LOCA_XTRL	m	2DP	Local grid easting of end of traverse	523195.12
	LOCA_YTRL	m	2DP	Local grid northing of end of traverse	178486.12
	LOCA_ZTRL	m	2DP	Local elevation of end of traverse	9.67
	LOCA_LAT		DMS	Latitude of location or start of traverse	51:28:52.498
	LOCA_LON		DMS	Longitude of location or start of traverse	34:10:34.23
	LOCA_ELAT		DMS	Latitude of end of traverse	51:28:52.550
	LOCA_ELON		DMS	Longitude of end of traverse	34:10:34.23
	LOCA_LLZ		X	Projection Format	WGS84
	LOCA_LOCM		X	Method of location	dGPS

Group Name: LOCA - Location Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	LOCA_LOCA		X	Site location sub division (within project) code or description	Sub-station 1
	LOCA_CLST		X	Investigation phase grouping code or description	Phase 2a
	LOCA_ALID		X	Alignment Identifier	Tunnel Alignment P
	LOCA_OFFS		2DP	Offset	10.35
	LOCA_CNGE		X	Chainage	500+123.23
	LOCA_TRAN		X	Reference to or details of algorithm used to calculate local grid reference, local ground levels or chainage	Coordinate transforms document ref 100-23-A, dated 16 April 2010
	FILE_FSET		X	Associated file reference (e.g. boring or pitting instructions, location photographs)	FS2
	LOCA_NATD		X	National Datum Referencing System used	OD Newlyn
	LOCA_ORID		X	Original Hole ID	BH1
	LOCA_ORJO		X	Original Job Reference	ABC1965
	LOCA_ORCO		X	Originating Company	ABC Labs

Notes for Guidance

• LOCA is used to transfer the spatial location of all positions where data has been recorded. This includes the location of exploratory holes, sampling points or other locations where an observation / test has been made, or a sample / measurement taken.

• The LOCA_TYPE code is used to categorise the type of activity that has occurred at the location.

• The details of exploratory hole construction are contained in the HDPH group. If LOCA_TYPE codes are used that represent the type of exploratory hole construction then they must be correlated with the code or combinations of codes in HDPH_TYPE. Alternatively the code 'EH' could be used to represent an Exploratory Hole the details of which are contained in HDPH.

• If the AGS data file includes information on construction items, then LOCA would also include references to these locations.

• LOCA_ID must be unique for the project and should be unique for the site to allow for consolidation of data. Consideration of this needs to be made at the outset of the project. Typically the consulting engineer or designer allows for this in specifying hole or location identifiers.

• LOCA_FDEP will generally be null for location points other than exploratory holes, pits, piles or other below ground constructed elements.

• Two headings, LOCA_LOCA and LOCA_CLST, provide a heading for tags of hole groupings. These groupings would typically be specified by the Investigation Supervisor/Designer rather than the GI Contractor. LOCA_LOCA is to be used to define the grouping of a hole by site location, whereas LOCA_CLST is typically used to indicate investigation phase. If codes are used to define these location or phase data, then the codes must be defined in the ABBR group.

• LOCA_OFFS, LOCA_CNGE and LOCA_ALID allow location data to be presented by chainage and offset to an alignment as typically used for location on road and rail projects. The data included in these headings will probably be expressed in project related units. For example, offset can be defined as positive or negative (eg +10 or -12). Chainage on UK railway projects may well be expressed in miles and chains (eg 10 mi 1 ch)

• Three headings, LOCA_ORID, LOCA_ORJO and LOCA_ORCO, provide headings to record the original location data for holes from other investigations. These fields are only required if combining data from other projects, where it has been necessary to change LOCA_ID from the original, in order to facilitate the uniqueness of LOCA_IDs within the current project (Rule 10a).

Group Name: LPDN - Particle Density Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LPDN_PDEN	Mg/m3	XN	Particle density with prefix # if value assumed	#2.65
	LPDN_TYPE		PA	Type of test	Small PYK
	LPDN_REM		X	Remarks	Test on material <2mm only
	LPDN_METH		X	Test method	BS1377: Part 2: 1990: Clause 8.3
	LPDN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LPDN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: LPEN - Laboratory Hand Penetrometer Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LPEN_PPEN	kPa	0DP	Hand penetrometer undrained shear strength	40

Group Name: LPEN - Laboratory Hand Penetrometer Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	LPEN_MC	%	X	Water/moisture content local to test, if measured	23.7
	LPEN_REM		X	Remarks	Gravel present
	LPEN_METH		X	Test method	Manufacturers instructions
	LPEN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LPEN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: LRES - Laboratory Resistivity Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LRES_BDEN	Mg/m3	2DP	Bulk density	2.12
	LRES_DDEN	Mg/m3	2DP	Dry density	1.84
	LRES_MC	%	X	Water/moisture content	15.2
	LRES_COND		X	Sample condition including details of remoulding	Remoulded
	LRES_LRES	ohm m	0DP	Temperature corrected (20 degC) resistivity	45
	LRES_CDIA	mm	0DP	Diameter of container	450
	LRES_CCSA	mm2	0DP	Container cross-sectional area	25000
	LRES_CLEN	mm	0DP	Length of container	100
	LRES_TEMP	degC	0DP	Temperature at which test performed	22
	LRES_ELEC		X	Type of electrodes including material	Steel discs
	LRES_PENT		X	Dimensions of probes, diameter, spacing, penetration into the soil	15mm diameter probes 100mm penetrating 75mm into test specimen

Group Name: LRES - Laboratory Resistivity Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
				specimen and whether inserted into ends or side	
	LRES_CSHP		X	Shape of container	Cylinder
	LRES_WAT	ml	0DP	Volume of water required to saturate the soil	750
	LRES_WRES	ohm m	3SF	Water resitivity	0.690
	LRES_PART		X	Approximate percentage of large particles removed prior to test	None
	LRES_REM		X	Remarks	
	LRES_METH		X	Test method	
	LRES_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LRES_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• The water conductivity LRES_WCND may be included from relevant testing. For tests with natural water content values may come from suitable water collected in boreholes or, where water is added, a combination of in situ values and those of the added water.

• The method used including the container shape (LRES_CSHP) and test geometry (LRES_PENT) should be included.

Group Name: LSLT - Shrinkage Limit Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LSLT_SLIM	%	2SF	Shrinkage limit	17
	LSLT_SHRA		0DP	Shrinkage ratio	
	LSLT_IDEN	Mg/m3	2DP	Initial density	1.66
	LSLT_MCI	%	X	Initial water/moisture content of test specimen	20
	LSLT_425	%	0DP	Percentage passing 425µm sieve	12
	LSLT_REM		X	Remarks	

Group Name: LSLT - Shrinkage Limit Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	LSLT_METH		X	Test method	BS1377: Part 2: 1990: Clause 6.3
	LSLT_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LSLT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• Group LSLT is to be used to report shrinkage limit tests on soils.

• The LLIN group is to be used to report linear shrinkage tests.

Group Name: LSTG - Initial Consumption of Lime Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LSTG_ICL	%	2SF	Initial consumption of lime	4.4
	LSTG_PH		1DP	pH value used for interpretation of LSTG_ICL	12.6
	LSTG_LIME		X	Details of lime used for test	Laboratory grade Calcium Hydroxide
	LSTG_SUIT		1DP	pH of saturated lime solution (suitability)	12.4
	LSTG_425	%	2SF	Percentage of soil passing 425µm sieve	82
	LSTG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	
	LSTG_METH		X	Test method	
	LSTG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LSTG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

Group Name: LSTG - Initial Consumption of Lime Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS15

Notes for Guidance

• None

Group Name: LSTT - Initial Consumption of Lime Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**LSTT_TESN**		X	Test reference	1
	LSTT_LCON	%	1DP	Percentage of lime added	2.5
	LSTT_PH		1DP	pH of lime/soil suspension	12.4
	LSTT_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS15

Notes for Guidance

• None

Group Name: LSWL - Swelling Index Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LSWL_SWPR	kPa	0DP	Swelling Pressure Index	50
	LSWL_SWSI	%	1DP	Swelling Strain Index	0.5

Group Name: LSWL - Swelling Index Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	LSWL_MCI	%	1DP	Initial water content of test specimen	5.6
	LSWL_SDIA	mm	1DP	Specimen diameter	63.2
	LSWL_THCK	mm	1DP	Specimen thickness	50.1
	LSWL_BDEN	kg/m3	0DP	Initial bulk density	2240
	LSWL_DDEN	kg/m3	0DP	Initial dry density	1870
	LSWL_REM		X	Remarks	
	LSWL_METH		X	Test method	ISRM : Suggested method
	LSWL_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LSWL_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• The LSWL group should be used for swelling tests on both soil and rock materials.

Group Name: LVAN - Laboratory Vane Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	LVAN_VNPK	kPa	XN	Vane undrained shear strength (peak)	35
	LVAN_VNRM	kPa	XN	Vane undrained shear strength (remoulded)	25
	LVAN_MC	%	X	Water/moisture content local to the test	57.9
	LVAN_SIZE	mm	1DP	Equivalent diameter of vane	12.7
	LVAN_VLEN	mm	1DP	Length of vane	12.7
	LVAN_REM		X	Remarks	Test performed in U100, test on CBR specimen

Group Name: LVAN - Laboratory Vane Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	LVAN_METH		X	Test method, including type of vane	Pilcon Hand vane BS1377: Part 7: Clause 3 Laboratory vane
	LVAN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	LVAN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• LVAN_VNPK and LVAN_VNRM should generally be numeric data. A text form can only be used by addition of a prefixing operator to denote greater than or less than conditions ie >200 when readings are above the reporting limit of the testing equipment.

Group Name: MCVG - MCV Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Stored at constant water/moisture content for 7 days, then soaked for 7 days, maintained at 20±2°C throughout
	MCVG_200	%	0DP	Weight percent of sample retained on 20 mm sieve	15
	MCVG_NMC	%	X	Natural water/moisture content below 20 mm	21
	MCVG_STAB	%	2SF	Amount of stabiliser added	23
	MCVG_STYP		X	Type of stabiliser added	Cement
	MCVG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	
	MCVG_METH		X	Test method	BS1377 Part 4, cl 5.4, 5.5 or 5.6
	MCVG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	MCVG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS15

Notes for Guidance

• None

Group Name: MCVT - MCV Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55

Group Name: MCVT - MCV Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**MCVT_TESN**		X	Test reference	1
	MCVT_MC	%	X	Water/moisture content for MCVT_TESN	17.7
	MCVT_CURV		X	Method of interpretation of the test curve	Steepest straight line
	MCVT_RELK		1DP	MCV value for MCVT_TESN	12.3
	MCVT_BDEN	Mg/m3	2DP	After test bulk density for MCVT_TESN	2.02
	MCVT_DIFF	mm	1DP	Difference between initial (n) and final (3n) blows in rapid assessment test	4.5
	MCVT_RAPD		X	Stronger or weaker than pre-calibrated standard	Weaker
	MCVT_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS15

Notes for Guidance

• MCVT_BDEN is included to allow reporting of bulk density of the specimen after test. However, the requirement and procedure for this is not covered by BS1377.

• MCVT_DIFF and MCVT_RAPD are proposed to allow adequate and unambiguous reporting of a rapid assessment test.

Group Name: MONG - Monitoring Installations and Instruments					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**MONG_ID**		X	Monitoring point reference	P1
*	**MONG_DIS**	m	2DP	Initial distance of monitoring point from LOCA_ID	2.30
	PIPE_REF		X	Pipe reference	Pipe1
	MONG_DATE	yyyy-mm-dd	DT	Installation date	2003-01-01
	MONG_TYPE		PA	Instrument type	TS
	MONG_DETL		X	Details of instrument	Total Station
	MONG_TRZ	m	2DP	Distance to start of response zone from LOCA_ID datum	5.50
	MONG_BRZ	m	2DP	Distance to end of response zone from LOCA_ID datum	7.50
	MONG_BRGA	deg	0DP	Bearing of monitoring axis A (compass bearing)	90
	MONG_BRGB	deg	0DP	Bearing of monitoring axis B (compass bearing)	180
	MONG_BRGC	deg	0DP	Bearing of monitoring axis C (compass bearing)	270
	MONG_INCA	deg	0DP	Inclination of instrument axis A (measured positively down from horizontal)	

Group Name: MONG - Monitoring Installations and Instruments					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	MONG_INCB	deg	0DP	Inclination of instrument axis B (measured positively down from horizontal)	
	MONG_INCC	deg	0DP	Inclination of instrument axis C (measured positively down from horizontal)	
	MONG_RSCA		X	Reading sign convention in direction A	Displacement to East +ve
	MONG_RSCB		X	Reading sign convention in direction B	Displacement to South +ve
	MONG_RSCC		X	Reading sign convention in direction C	Displacement up +ve
	MONG_REM		X	Remarks	Behind wall
	MONG_CONT		X	Contractor who installed monitoring instrument	ACME Instruments Ltd
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS27

Notes for Guidance

• Each monitoring point should have a unique identification detailed in MONG_ID. Typically this reflects the actual reference or marking on the instrument.

• MONG_DETL should be used to describe the instrument/sensor location or parameter in specific terms.

• MONG_CONT used to include details of which organisation installed the monitoring device.

Group Name: MOND - Monitoring Readings					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**MONG_ID**		X	Monitoring point reference	P1
*	**MONG_DIS**	m	2DP	Initial distance of monitoring point from LOCA_ID	2.30
*	**MOND_DTIM**	yyyy-mm-ddThh:mm	DT	Date and time of reading	2003-02-20T13:40
*	**MOND_TYPE**		PA	Reading type	WDEP
*	**MOND_REF**		X	Reading reference	2
	MOND_INST		X	Instrument reference / serial number	14124-1
	MOND_RDNG		XN	Reading	10.34
R	**MOND_UNIT**		PU	Units of reading	m
	MOND_METH		X	Measurement method	
	MOND_LIM		U	Instrument/method reading/detection limit	
	MOND_ULIM		U	Instrument/method upper reading/detection (when appropriate)	
	MOND_NAME		X	Client preferred name of measurement	
	MOND_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000

Group Name: MOND - Monitoring Readings					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	MOND_CONT		X	Organisation taking reading	ACME Monitoring
	MOND_REM		X	Comments on reading	
	FILE_FSET		X	Associated file reference (eg monitoring field sheets, instrument logging file)	FS28

Notes for Guidance

• MOND is used to transfer measurements or readings from instruments or geoenvironmental monitoring equipment. Geoenvironmental sampling and laboratory testing (should be included in the SAMP/ERES groups).

• This group covers the scope of data included in AGS3 within groups MONR and ICCT.

• MOND_TYPE defines the reading but not the instrument type nor units (which are defined by MONG_TYPE and MOND_UNIT respectively). Examples of MOND_TYPE abbreviations include:

WDEP = Depth to water from LOCA_ID datum

TEMP = Atmospheric temperature

STRA = Strain in direction A

FLOW = Flow

CURR = Current

GCARD = Carbon dioxide concentration

GOX = Oxygen concentration

GMETH = Measured methane as percentage of LEL

A full list of abbreviations is provided on the AGS website www.ags.org.uk.

• MOND_UNIT is a REQUIRED field (Rule 10b) which enforces the inclusion of units for all monitoring point readings in the data file. Where a reading has no unit, the MOND_UNIT data shall be set to "-" to clearly state this fact.

• Units included in MOND_UNIT must be fully defined in the UNIT group (Rule 15). It is possible that units require conversion when the data is received and amalgamated into project databases to ensure that data are consistent across monitoring tranches and appropriate for the assessment.

• Where an instrument records more than one parameter with each reading, for example the three components for a survey total station, or the temperature and pressure then each reading has separate entry.

• Allowance has been made for recording peak and steady gas concentrations which are a requirement of the SISG specification and CIRIA C665 report.

• If an incident affects a particular instrument or a particular data reading in a single instrument then it is best reported as a remark in MOND_REM on the date and time at which it occurred or was noted, and associated with the particular reading that is affected eg 'Installation vandalised. Cover damaged'.

• If there is an event on the site that is of a more general nature that may affect the results on a number of instruments then this can be reported in PREM or TREM as a time related remark.

Group Name: PIPE - Monitoring Installation Pipe Work					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PIPE_REF**		X	Pipe reference	Pipe1
*	**PIPE_TOP**	m	2DP	Top of construction zone	0.00
*	**PIPE_BASE**	m	2DP	Base of construction zone	2.50
	PIPE_DIAM	mm	0DP	Diameter of pipe	75
	PIPE_TYPE		PA	Type of pipe	Slotted
	PIPE_CONS		X	Details of pipe construction	
	PIPE_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg drilling journals)	FS32

Notes for Guidance

• PIPE is to be used to transfer pipe work lengths installed in an exploratory hole to provide instrumentation access.

• A data row is included for each pipe length/type/diameter combination in a hole.

• PIPE_TYPE would typically be an abbreviation and define the graphics used to represent the installation pipe work on reports or diagrams.

Group Name: PLTG - Plate Loading Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PLTG_DPTH**	m	2DP	Test depth	1.23
*	**PLTG_TESN**		X	Test reference	1
*	**PLTG_CYC**		X	Load cycle	1
	PLTG_PDIA	mm	0DP	Plate diameter	600
	PLTG_SEAT	kN	1DP	Seating load including apparatus mass	10.0
	PLTG_FA0		2DP	Factor a0	0.00
	PLTG_FA1		2DP	Factor a1	12.65
	PLTG_FA2		2DP	Factor a2	-7.58
	PLTG_SMOD	MPa	1DP	Strain modulus	15.8
	PLTG_EV2	MPa	1DP	Elastic modulus for second loading cycle	83.0
	PLTG_MOSR	MPa/m	1DP	Modulus of subgrade reaction	60.8
	PLTG_EMOD	MPa	1DP	Elastic modulus	21.7
	PLTG_DATE	yyyy-mm-dd	DT	Test date	2008-07-23
	PLTG_STAB	%	2SF	Amount of stabiliser added	23
	PLTG_STYP		X	Type of stabiliser added	Cement
	PLTG_REM		X	Remarks	
	PLTG_ENV		X	Details of weather and environmental conditions during test	Dry and warm
	PLTG_METH		X	Test method	DIN18134 Strain Modulus
	PLTG_CONT		X	Name of testing organisation	ACME On-site Testing Ltd
	PLTG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS11

Notes for Guidance

• PLTG is to be used to transfer plate load tests. One data row in this group represents a test and loading cycle.

• The Factors a0, a1 and a2 are determined in testing carried out to the DIN standard and would not be appropriate for testing to other standards.

• PLTG_EV2 is normally only completed when PLTG_CYC = 2.

Group Name: PLTT - Plate Loading Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PLTG_DPTH**	m	2DP	Test depth	1.23
*	**PLTG_TESN**		X	Test reference	1
*	**PLTG_CYC**		X	Load cycle	1
*	**PLTT_STG**		X	Load stage	1
*	**PLTT_TIME**	min	1DP	Stage elapsed time	0.5
	PLTT_LOAD	kN	1DP	Applied load	10.0
	PLTT_SET1	mm	2DP	Settlement Gauge 1	0.86
	PLTT_SET2	mm	2DP	Settlement Gauge 2	0.74
	PLTT_SET3	mm	2DP	Settlement Gauge 3	0.91
	PLTT_SET4	mm	2DP	Settlement Gauge 4	0.00
	PLTT_REM		X	Comments on reading	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• PLTT is used to transfer the load settlement readings from a test/load cycle of a plate load test.

Group Name: PMTG - Pressuremeter Test Results - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PMTG_DPTH**	m	2DP	Depth of test	2.70
*	**PMTG_TESN**		X	Test reference	1
	PMTG_DATE	yyyy-mm-dd	DT	Date of test	1993-12-23
	PMTG_WAT	m	2DP	Measured or assumed ground water level	1.53
	PMTG_CONT		X	Subcontractors name	An Contractor Ltd
	PMTG_CREW		X	Operators details	ANO/TBA
	PMTG_REF		X	Instrument reference / serial number	PMT123456
	PMTG_TYPE		PA	Pressuremeter type	SBP
	PMTG_DIAM	mm	2DP	Uninflated diameter of pressuremeter	82.90
	PMTG_HO	kPa	0DP	Estimated in situ horizontal stress	700
	PMTG_GI	MPa	0DP	Initial shear modulus	70
	PMTG_CU	kPa	0DP	Undrained shear strength	420
	PMTG_PL	kPa	0DP	Limit pressure	3400
	PMTG_AF	deg	1DP	Angle of friction	39.0
	PMTG_AD	deg	0DP	Angle of dilation	10

	PMTG_AFCV	deg	1DP	Angle of friction at constant volume (*cv) used	35.0
	PMTG_METH		X	Method(s) used to determine derived soil parameters (including those in PMTL).	
	PMTG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	PMTG_ENV		X	Details of weather and environmental conditions during test	Rain, standing water close to test area
	PMTG_REM		X	Remarks	6 arms used in determination of average
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS11

Notes for Guidance

• PMTG (together with PMTD and PMTL) are used to record pressuremeter tests using standard pressuremeters, including Menard type pressuremeters, self-boring pressuremeters, pre-bored pressuremeters (dilatometers) and full-displacement pressuremeters (eg cone pressuremeters). It is not the intention of these data groups to provide detailed test data. If this is required the information can be transferred as attached files listed under a FILE_FSET grouping.

• Interpretation of parameters is conventionally carried out on average displacements measured on the three instrument axes (generally by 3 or 6 arms). If one or more arms/axes are excluded this should be noted in PMTG_REM.

Group Name: PMTD - Pressuremeter Test Data

Status	Heading	Suggested Unit / Type		Description	Example
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PMTG_DPTH**	m	2DP	Depth of test	2.70
*	**PMTG_TESN**		X	Test reference	1
*	**PMTD_SEQ**		0DP	Sequence number	1
	PMTD_ARM1	mm	3DP	Axis 1 displacement	1.003
	PMTD_ARM2	mm	3DP	Axis 2 displacement	1.004
	PMTD_ARM3	mm	3DP	Axis 3 displacement	1.005
	PMTD_TPC	kPa	1DP	Total pressure	54.4
	PMTD_PPA	kPa	1DP	Pore pressure cell A	2.9
	PMTD_PPB	kPa	1DP	Pore pressure cell B	2.9
	PMTD_VOL	cm3	1DP	Volume change in test cell	2.6
	PMTD_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• Axis displacement is the change in diameter across the outside of the pressuremeter membrane (and Chinese lantern strips or other protective sheath if fitted) as measured on the inside of the membrane by a single arm (3 arm pressuremeter) or pair of diametrically opposite arms (6 arm pressuremeter) and adjusted for the thickness of the membrane (including effects of membrane compression and thinning with expansion). If additional arms are present on the equipment, then to transfer the additional displacement information additional headings should be added e.g. PMTD_ARM4 etc. (refer Rule 19).

• Pressuremeters not fitted with internal strain arms (eg, Menard type pressuremeters), where the volumetric expansion of the pressuremeter is measured by recording the volume of fluid entering the system, will have no data for PMTD_ARM1, 2 and 3. The volume change in the test cell entered in PMTD_VOL is the volumetric change measured at the surface corrected for line expansion, etc.

• Previous requirements to record the pressure against each arm/axis of the equipment have been removed and replaced with the total pressure in the test cell PMTD_TPC. The total pressure is measured inside the pressuremeter with a

pressure cell. The measured pressure is corrected for the inherent stiffness of the membrane – the amount of pressure to inflate the membrane when the pressuremeter is out of the ground. This amount is assessed by a membrane calibration where the membrane is inflated in free air. The pressure correction is subtracted from the measured pressure to get the pressure exerted on the ground.

• PMTD_TPC is the pressure imposed by the outside of the membrane; i.e., that required to expand the pressuremeter, corrected for the inherent membrane stiffness. For modern type pressuremeters this is normally measured inside the pressuremeter by one or more electronic transducers. For instruments without internal pressure transducers, where the pressure is measured at the surface, PMTD_TPC will also include corrected for the elevation head due to the difference in height between the pressuremeter instrument in the borehole and the measuring equipment at the surface.

Group Name: PMTL - Pressuremeter Test Results - Individual Loops					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PMTG_DPTH**	m	2DP	Depth of test	2.70
*	**PMTG_TESN**		X	Test reference	1
*	~~**PMTD_SEQ**~~		~~0DP~~	~~Sequence number~~	~~1~~ **(Marked for deletion in next version)**
*	**PMTL_LNO**		0DP	Unload/reload loop number	1
	PMTL_GAA	MPa	0DP	Unload/reload shear modulus, average	139
	PMTL_SINC	%	2DP	Mean strain	3.48
	PMTL_PINC	kPa	0DP	Mean pressure	1586
	PMTL_STRA	%	3DP	Strain range or amplitude	0.105
	PMTL_PRSA	kPa	0DP	Pressure range or amplitude	284
	PMTL_NLSA	MPa	3DP	Shear stress coefficient (from Bolton and Whittle, 1999)	2.921
	PMTL_NLSB		3DP	Linearity exponent (from Bolton and Whittle, 1999)	0.538
	PMTL_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS11

Notes for Guidance

• PMTL is used to transfer summary details of test loops. If detailed information is required on test loop data this would be provided as attached files and listed under FILE_FSET in the PMTG group.

• Additional headings PMTL_NLSA and PMTL_NLSB have been added to include for data from Bolton and Whittle's (1999) interpretation of unload-reload loops to derive non-linear stiffness parameters is becoming more routine. The interpretation gives two parameters, sometimes referred to as the linearity exponent and shear stress coefficient (Beta and alpha respective).

• The PMTD_SEQ heading is marked for deletion in the next issue, is erroneous, and is not required to be filled in. It must, however, remain in the data file (as a null entry) to conform to Rule 12 (Key Fields).

Group Name: PREM - Project Specific Time Related Remarks					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**PREM_DTIM**	yyyy-mm-ddThh:mm	DT	Date and time of remark or start of event	2001-05-16T12:00
	PREM_COMP		X	Component or sub-activity	Slab G12
	PREM_REM		X	Time related remark	Completion of concrete pour
	PREM_DURN	hh:mm:ss	T	Duration of event or activity	01:25:00
	PREM_ETIM	yyyy-mm-ddThh:mm	DT	Date and time of end of event	2001-05-16T16:00
	FILE_FSET		X	Associated file reference (eg site journal records)	FS28

Notes for Guidance

• PREM may be used to report a site diary of key events e.g. 'Heavy rain for 2 days, site flooded'.

• TREM should be used to record general remarks that are related to a site location.

• PREM_ETIM and PREM_DURN could be different depending on the nature of the activity or commentary. Where there are differences in elapsed time and duration these would be explained or expanded on in PREM_REM.

Group Name: PTIM - Boring/Drilling Progress by Time					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PTIM_DTIM**	yyyy-mm-ddThh:mm	DT	Date and time of progress reading	1991-03-01T14:35
	PTIM_DPTH	m	2DP	Hole depth	22.13
	PTIM_CAS	m	2DP	Depth of casing	20.50
	PTIM_WAT	m	XN	Depth to water	16.56 or Dry
	PTIM_REM		X	Remarks	Stopped drilling on client's instruction
	FILE_FSET		X	Associated file reference (eg drilling journals)	FS21

Notes for Guidance

• PTIM is used to record information on the development of the exploratory hole. Readings of depth of hole, casing and water level are required at the start and end of shift, as a minimum by BS 5930:1999.

Group Name: PTST - Laboratory Permeability Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**PTST_TESN**		X	Test reference	2
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	PTST_COND		PA	Sample condition	Undisturbed
	PTST_SZUN	mm	0DP	Size cut off of material too coarse for testing	5
	PTST_UNS	%	0DP	Proportion of material removed above PTST	36
	PTST_DIAM	mm	2DP	Specimen diameter	102.52
	PTST_LEN	mm	2DP	Specimen length	200.22
	PTST_MC	%	X	Initial water/moisture content of test specimen	20
	PTST_BDEN	Mg/m3	2DP	Initial bulk density of test specimen	2.24
	PTST_DDEN	Mg/m3	2DP	Initial dry density	1.87
	PTST_IDIA	mm	2DP	Diameter of drain for radial permeability in hydraulic cell	3.75
	PTST_DMET		X	Method of forming central drain	Bored using mandrel and filled with saturated sand
	PTST_VOID		3DP	Initial voids ratio	0.375
	PTST_K	m/s	1SCI	Coefficient of permeability	4.1E-6
	PTST_TSTR	kPa	0DP	Mean effective stress at which permeability measured (when measured in triaxial or hydraulic cell).	112
	PTST_HYGR		0DP	Hydraulic gradient at which permeability measured (for constant head test).	1
	PTST_ISAT	%	2SF	Initial degree of saturation	72
	PTST_SAT		X	Details of saturation, where appropriate	Back pressure, Bf = 0.96
	PTST_CONS		X	Details of consolidation, where appropriate	Drainage to top with pwp at base
	PTST_PDEN	Mg/m3	XN	Particle density with prefix # if value assumed	#2.65
	PTST_TYPE		PA	Type of permeability measurement	Falling head
	PTST_CELL		PA	Type of permeameter	Triaxial cell
	PTST_REM		X	Remarks on test	

Group Name: PTST - Laboratory Permeability Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	PTST_METH		X	Test method	BS1377 Part 5 or part 6, KH Head vol 2 or vol 3, EA Accelerated test
	PTST_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	PTST_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS28

Notes for Guidance

• The suggested units for PTST_PDEN have been amended to Mg/m3.

• New headings added to permit details of test method, laboratory and test accreditation to be included in data.

Group Name: PUMG - Pumping Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PUMG_TEST**		X	Test reference	1991-03-16#1
	PUMG_CONT		X	Contractor	PUMP Ltd
	PUMG_METH		X	Method of testing	BS 6316
	PUMG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	PUMG_ENV		X	Details of weather and environmental conditions during test	Heavy rain
	PUMG_REM		X	Remarks on test	Double packer
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS11

Notes for Guidance

• PUMG is to be used to record the general arrangements and details of pumping test.

Group Name: PUMT - Pumping Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**PUMG_TEST**		X	Test reference	1991-03-16#1
*	**PUMT_DTIM**	yyyy-mm-ddThh:mm	DT	Date and time of reading	1991-03-16T13:25
	PUMT_DPTH	m	2DP	Depth to water below ground	12.50
	PUMT_QUAT	l/s	1DP	Pumping rate from hole	0.8
	PUMT_REM		X	Remarks	

Group Name: PUMT - Pumping Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS29

Notes for Guidance

• The general information about the pumping test should be recorded in the PUMG group.

• Records for observation holes and piezometers during the tests can be recorded in MONG and MOND.

Group Name: RCCV - Chalk Crushing Value Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**RCCV_TESN**		X	Test reference	3
	SPEC_DESC		X	Specimen description	White chalk
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RCCV_MC	%	X	Water content of specimen tested	2.1
	RCCV_CCV		1DP	Chalk crushing value	5.6
	RCCV_100	%	0DP	Percentage larger than 10mm in original sample	85
	RCCV_REM		X	Remarks	
	RCCV_METH		X	Test method	BS 1377 Part 4 Cl 6
	RCCV_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RCCV_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• Group added to report data specific to the Chalk Crushing Value test to BS1377 part 4 Clause 6. This group replaces the CHLK group included in AGS Format 2 and 3.

• The saturated water/moisture content should be reported in RDEN_SMC.

Group Name: RDEN - Rock Porosity and Density Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RDEN_MC	%	X	Water content of specimen	2.1
	RDEN_SMC	%	X	Saturated water content	2.3
	RDEN_BDEN	kg/m3	0DP	Bulk density	2260
	RDEN_DDEN	kg/m3	0DP	Dry density	2210
	RDEN_PORO	%	1DP	Porosity	17.3
	RDEN_PDEN	kg/m3	0DP	Apparent particle density	2750
	RDEN_TEMP	degC	0DP	Temperature sample dried at	60
	RDEN_REM		X	Remarks	Average of three reported
	RDEN_METH		X	Test method	ISRM : Suggested method for determining porosity/density using saturation and calliper technique.
	RDEN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RDEN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10
	RDEN_IDEN	Mg/m3	2DP	Intact dry density	1.78

Notes for Guidance

• Measurements of density on soil materials should be reported in LDEN.

• RDEN_PDEN is denoted as the 'apparent particle density' reflecting fact that it is calculated rather than measured. This may not be the same as the particle density of the solid material.

Group Name: RELD - Relative Density Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RELD_DMAX	Mg/m3	2DP	Maximum dry density	2.15
	RELD_375	%	0DP	Weight percent of sample retained on 37.5mm sieve	7
	RELD_063	%	0DP	Weight percent of sample retained on 6.3mm sieve	10
	RELD_020	%	0DP	Weight percent of sample retained on 2mm sieve	5
	RELD_DMIN	Mg/m3	2DP	Minimum dry density	1.65
	RELD_REM		X	Remarks on test	Material >37.5 replaced with smaller material
	RELD_METH		X	Test method	BS1377 part 4, cl 4.2 and 4.4 or 4.3 and 4.5 or in house method
	RELD_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RELD_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS24

Notes for Guidance

• The maximum and minimum on sands has the possibility of being on two different sizes, <6.3mm (max) and <2mm (min). Since the minimum density is a discreet test the percentage retained 2mm should be the total and not that between 6.3 and 2mm - as may be derived in practice.

Group Name: RPLT - Point Load Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RPLT_PLS	MPa	2DP	Uncorrected point load (Is)	2.32
	RPLT_PLSI	MPa	2DP	Size corrected point load index (Is 50)	2.53
	RPLT_PLTF		PA	Point load test type	A+L
	RPLT_MC	%	1DP	Water content of point load test specimen	2.1
	RPLT_REM		X	Remarks	Saturated specimen
	RPLT_METH		X	Test method	ISRM : 2007 : Suggested method for determining point load strength. Int J Rock Mech Min Sci & Geomech Abstr, Vol 22, No 2, pp 51-60
	RPLT_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RPLT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• A list has been defined for RPLT_PLTF to include the test abbreviations derived from the ISRM Suggested Method (ISRM, 2007). Typically a test will include combined abbreviations to represent the sample type/orientation and the direction of the test with respect to bedding. For example a piece of core tested across the diameter and along the bedding direction will be coded as A+L. Reference: ISRM : 2007 : The Complete ISRM Suggested Methods for Rock Characterisation , Testing and Monitoring : 1974-2006.

Group Name: RSCH - Schmidt Rebound Hardness Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RSCH_SCHV		0DP	Schmidt hardness value	12
	RSCH_AXIS		X	Orientation of the hammer axis in the test	
	RSCH_CLAM		X	Method of clamping specimen	V-block
	RSCH_REM		X	Remarks	
	RSCH_METH		X	Test method	ISRM : Suggested method for determination of Schmidt rebound hardness
	RSCH_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RSCH_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: RSHR - Shore Scleroscope Hardness Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions

Group Name: RSHR - Shore Scleroscope Hardness Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	RSHR_SHOR		1DP	Average Shore hardness value	29.7
	RSHR_AXIS		X	Orientation of the test surface relative to bedding	
	RSHR_NUM		0DP	Number of tests conducted	20
	RSHR_REM		X	Remarks	
	RSHR_METH		X	Test method	ISRM : Suggested method for determination of Shore Scleroscope hardness
	RSHR_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RSHR_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: RTEN - Tensile Strength Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RTEN_SDIA	mm	1DP	Specimen diameter	54.1
	RTEN_LEN	mm	1DP	Specimen thickness	27.2
	RTEN_MC	%	1DP	Water content of test specimen	3.7
	RTEN_COND		X	Condition of specimen as tested	Natural, saturated, dried at 105 degC
	RTEN_DURN	mm:ss	T	Test duration	00:25
	RTEN_STRA	N/s	0DP	Stress rate	200
	RTEN_TENS	MPa	3SF	Tensile strength	50.1
	RTEN_MODE		X	Mode of failure	Shear
	RTEN_MACH		X	Testing machine	Denison 7225

Group Name: RTEN - Tensile Strength Testing					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	RTEN_REM		X	Remarks	
	RTEN_METH		X	Test method	ISRM : Suggested method for determination of indirect tensile strength by the Brazil test
	RTEN_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RTEN_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: RUCS - Rock Uniaxial Compressive Strength and Deformability Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RUCS_SDIA	mm	1DP	Specimen diameter	86.7
	RUCS_LEN	mm	1DP	Specimen length	235.3
	RUCS_MC	%	1DP	Water content of specimen tested	3.7
	RUCS_COND		X	Condition of specimen as tested	Natural, saturated, dried at 105 degC
	RUCS_DURN	mm:ss	T	Test duration	06:54
	RUCS_STRA	MPa/s	1DP	Stress rate	0.5
	RUCS_UCS	MPa	3SF	Uniaxial compressive strength	16.8
	RUCS_MODE		X	Mode of failure	Shear
	RUCS_E	GPa	3SF	Young's modulus	221
	RUCS_MU		2DP	Poisson's ratio	0.32
	RUCS_ESTR		X	Stress level at which modulus has been measured	0-50%UCS, 20MPa
	RUCS_ETYP		PA	Method of determination of Young's modulus	Secant or Tangent

Group Name: RUCS - Rock Uniaxial Compressive Strength and Deformability Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	RUCS_MACH		X	Type of testing machine	Denison 7225
	RUCS_REM		X	Remarks	Specimen tested outside required 2.5-3.0 diameter to length ratio
	RUCS_METH		X	Test method	ISRM : Suggested method for determination of Uniaxial Compressive Strength
	RUCS_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RUCS_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• Note that units and accuracy for UCS are not prescribed in ISRM and the conventional MPa to 3SF is adopted here. ISRM defines GPa to 3SF for Young's modulus and as such this is also adopted. ISRM suggests 3 significant figures for Poisson's ratio but conventionally this is reported to 2 decimal places and this has been adopted.

• ISRM specifies stress rate MPa/s but most tests are performed at a rate of loading kN/s or kN/min, and sometimes under strain controlled conditions for deformability. The results should always be converted and reported as MPa/s where necessary.

Group Name: RWCO - Water Content of Rock Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Brown sandstone
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	RWCO_MC	%	X	Water content	2.2
	RWCO_TEMP	degC	0DP	Temperature sample dried at	60
	RWCO_REM		X	Remarks	
	RWCO_METH		X	Test method	ISRM : Suggested method for determining water content
	RWCO_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	RWCO_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000

Group Name: RWCO - Water Content of Rock Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS10

Notes for Guidance

• None

Group Name: SAMP - Sample Information					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique identifier	ABC121415010
	SAMP_BASE	m	2DP	Depth to base of sample	25.00
	SAMP_DTIM	yyyy-mm-ddThh:mm	DT	Date and time sample taken	1991-03-26T09:28
	SAMP_UBLO		0DP	Number of blows required to drive sampler	35
	SAMP_CONT		X	Sample container	Metal UT100 tube
	SAMP_PREP		X	Details of sample preparation at time of sampling	Preservative added
	SAMP_SDIA	mm	0DP	Sample diameter	100
	SAMP_WDEP	m	2DP	Depth to water below ground surface at time of sampling	4.50
	SAMP_RECV	%	0DP	Percentage of sample recovered	60
	SAMP_TECH		X	Sampling technique/method	Purged
	SAMP_MATX		X	Sample matrix	Surface water
	SAMP_TYPC		X	Sample QA type (Normal, blank or spike)	Normal
	SAMP_WHO		X	Samplers initials or name	MS
	SAMP_WHY		X	Reason for sampling	Routine monitoring sample
	SAMP_REM		X	Sample remarks	
	SAMP_DESC		X	Sample/specimen description	Grey silty CLAY
	SAMP_DESD	yyyy-mm-dd	DT	Date sample described	2008-11-03
	SAMP_LOG		X	Person responsible for sample/specimen description	AN Other
	SAMP_COND		X	Condition and representativeness of sample	Sample softened, or fractured by drilling
	SAMP_CLSS		X	Sample classification as required by EN ISO 14688-1	5
	SAMP_BAR	Bar	1DP	Barometric pressure at time of sampling	99.1
	SAMP_TEMP	degC	0DP	Sample temperature at time of sampling	8
	SAMP_PRES	Bar	1DP	Gas pressure (above barometric)	0.2
	SAMP_FLOW	l/min	1DP	Gas flow rate	0.2
	SAMP_ETIM	yyyy-mm-ddThh:mm	DT	Date and time sampling completed	1991-05-01T10:03
	SAMP_DURN	hh:mm:ss	T	Sampling duration	30:15:00
	SAMP_CAPT		X	Caption used to describe sample	BH1,1.00m,B+BH2,1.00m,B
	SAMP_LINK		RL	Sample record link	MONG|BH1|Pipe1
	GEOL_STAT		X	Stratum reference shown on trial pit or traverse sketch	1

Group Name: SAMP - Sample Information					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FILE_FSET		X	Associated file reference (eg sampling field sheets, sample description records)	FS67
	SAMP_RECL	mm	0DP	Length of sample recovered	205

Notes for Guidance

• The SAMP group is used to record all samples; eg those taken during field sampling or monitoring or sub-samples created in the laboratory.

• SAMP_ID has been added to the sample key set. Unique sample identifiers can be used to enhance the process of reintegration of testing results from subcontract laboratories and/or used to contain barcode or pre-made label references. The addition of the SAMP_ID heading into the SAMP group provides greater flexibility for accommodating different process methodologies. A full explanation of example uses of SAMP_ID are given in on the AGS website.

• SAMP_ID does not have to be used and can be NULL (Rule 12). The remaining descriptive key/label headings can be used on their own.

• SAMP_LINK has been added to permit the source of samples to be fully detailed. The SAMP_LINK field is a Record Link (RL) format as defined in Rule 11 and accompanying Note v.

• In selecting abbreviations for use in SAMP_TYPE, allowance should be made for use of additional codification or suffixes to standard abbreviations to reflect the sample types and collection methods applying to measurement / payment purposes.

• SAMP_PREP allow details of the sample preparation to be included. This would typically be used to detail the precautions taken with samples for further chemical or environmental testing.

• SAMP_LOG and SAMP_DESD allow inclusion of the name of the person describing the sample and date this was carried out as required in ISO 14688-1, Section 6 and EN ISO 14689-1, Section 5.

• SAMP_COND has been included to provide for any comments on condition, representativeness and reliability of the sample which are requirements of EN ISO 14688-1 (Section 6) and BS 5930 respectively. This heading together with the sample recovery SAMP_RECV provide useful data to those specifying laboratory scheduling. Data included if not 100%.

• The requirement of EN ISO 14688-1 (Section 6) and EN ISO 14689-1 (Section 5) to record the details of origin, collection and handling of samples are included in the associated groups.

• SAMP_ETIM and SAMP_DURN allow for data that describes the duration of sampling event if that is required. This can be important in environmental sampling applications.

• SAMP_CAPT provides for description of sample composition in the case of an amalgamated sample.

• SAMP_RECL is intended primarily for tube samples.

Group Name: SCDG - Static Cone Dissipation Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SCPG_TESN**		X	Test reference or push number	3
*	**SCDG_DPTH**	m	2DP	Depth of dissipation test	5.20
	SCDG_PWPI	MPa	3DP	Measured or assumed initial pore water pressure	0.400
	SCDG_PWPE	MPa	3DP	Measured or assumed equilibrium pore water pressure	0.035
	SCDG_DDIS	%	0DP	Degree of dissipation for analysis	50
	SCDG_T	s	0DP	Time to achieve degree of dissipation stated in SCDG_DDIS	258
	SCDG_CV	m2/yr	1DP	Coefficient of consolidation (vertical)	26.0
	SCDG_CVMT		X	Method(s) used to determine vertical coefficient of consolidation	
	SCDG_CH	m2/yr	1DP	Coefficient of consolidation (horizontal)	8.6
	SCDG_CHMT		X	Method(s) used to determine horizontal coefficient of consolidation	
	SCDG_REM		X	Remarks	
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS19

Notes for Guidance

• SCDG is to be used to record the general information relating to dissipation tests carried out during static cone penetrometer testing.

Group Name: SCDT - Static Cone Dissipation Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SCPG_TESN**		X	Test reference or push number	3
*	**SCDG_DPTH**	m	2DP	Depth of dissipation test	5.20
*	**SCDT_SECS**	s	0DP	Seconds elapsed since start of test	50
	SCDT_RES	MPa	3DP	Cone resistance	0.801
	SCDT_PWP1	MPa	4DP	Face porewater pressure (u1)	
	SCDT_PWP2	MPa	4DP	Shoulder porewater pressure (u2)	0.0814
	SCDT_PWP3	MPa	4DP	Top of sleeve porewater pressure (u3)	
	SCDT_REM		X	Comments	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS19

Notes for Guidance

• SCDT is used to include the dissipation test readings converted from the measurement data using any required calibration factors.

Group Name: SCPG - Static Cone Penetration Tests - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SCPG_TESN**		X	Test reference or push number	3
	SCPG_TYPE		PA	Cone test type	PC
	SCPG_REF		X	Cone reference	S15.CFIP.A27
	SCPG_CSA	cm2	0DP	Surface area of cone tip	15
	SCPG_RATE	mm/s	0DP	Nominal rate of penetration of the cone	20
	SCPG_FILT		X	Type of filter material used	HDPE
	SCPG_FRIC		YN	Friction reducer used	Y
	SCPG_WAT	m	2DP	Groundwater level at time of test	3.50
	SCPG_WATA		X	Origin of water level in SCPG_WAT	Assumed from measurements in nearby boreholes
	SCPG_REM		X	Comments on testing and basis of any interpretated parameters included in SCPT and SCPP	
	SCPG_ENV		X	Details of weather and environmental conditions during test	Sunny
	SCPG_CONT		X	Subcontractors name	An Contractor Ltd
	SCPG_METH		X	Standard followed for testing	NEN 5140
	SCPG_CRED		X	Accrediting body and reference number (when appropriate)	
	SCPG_CAR		1DP	Cone area ratio used to calculate qt	0.8
	SCPG_SLAR		1DP	Sleeve area ratio used to calculate ft	1.0
	FILE_FSET		X	Associated file reference (eg cone calibration records)	FS18

Notes for Guidance

• SCPG is used to record the general information about static cone penetration tests.

• Pressuremeter tests using CPT equipment (e.g. cone or driven pressuremeter) should be recorded in the PMTG and associated groups.

• SCPG_FILT and SCPG_FRIC are included as they are reporting requirements of BS1377.

• SCPG_WATA is required to clarify origin of water level recorded in SCPG_WAT.

• SCPG_REM is used to transfer comments on the test and any interpreted parameters. SCPG_REM may refer to the STND group where full information on standards and references could be provided.

• CPT testing is frequently carried out by specialist sub-contractors. SCPG_CONT is included to record name of specialist sub-contractor.

• SCPG_CAR and SCPG_SLAR are included to transfer information used to calculate qt and ft.

Group Name: SCPT - Static Cone Penetration Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SCPG_TESN**		X	Test reference or push number	3
*	**SCPT_DPTH**	m	2DP	Depth of result	7.12
	SCPT_RES	MPa	3DP	Cone resistance (qc)	18.065

Group Name: SCPT - Static Cone Penetration Tests - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	SCPT_FRES	MPa	4DP	Local unit side friction resistance (fs)	0.0968
	SCPT_PWP1	MPa	4DP	Face porewater pressure (u1)	
	SCPT_PWP2	MPa	4DP	Shoulder porewater pressure (u2)	0.0118
	SCPT_PWP3	MPa	4DP	Top of sleeve porewater pressure (u3)	
	SCPT_CON	µS/cm	4DP	Conductivity	
	SCPT_TEMP	degC	4DP	Temperature	8.4000
	SCPT_PH		4DP	pH reading	6.9000
	SCPT_SLP1	deg	4DP	Slope indicator no. 1	1.7136
	SCPT_SLP2	deg	4DP	Slope indicator no. 2	
	SCPT_REDX	mV	4DP	Redox potential reading	
	SCPT_MAGT		4DP	Magnetic flux - Total (calculated)	
	SCPT_MAGX		4DP	Magnetic flux - X	
	SCPT_MAGY		4DP	Magnetic flux - Y	
	SCPT_MAGZ		4DP	Magnetic flux - Z	
	SCPT_SMP	%	4DP	Soil moisture	
	SCPT_NGAM	counts/s	4DP	Natural gamma radiation	
	SCPT_REM		X	Remarks	
	SCPT_FRR	%	2DP	Friction ratio (Rf)	0.54
	SCPT_QT	MPa	4DP	Corrected cone resistance (qt) piezocone only	18.0668
	SCPT_FT	MPa	4DP	Corrected sleeve resistance (ft) piezocone only	0.1235
	SCPT_QE	MPa	4DP	Effective cone resistance (qe) piezocone only	18.0532
	SCPT_BDEN	Mg/m3	2DP	Bulk density of material (measured or assumed)	2.21
	SCPT_CPO	kPa	2DP	Total vertical stress (based on SCPT_BDEN)	210.46
	SCPT_CPOD	kPa	2DP	Effective vertical stress (calculated from SCPT_CPO and SCPT_ISPP or SCPG_WAT)	107.56
	SCPT_QNET	MPa	4DP	Net cone resistance (qn)	17.8563
	SCPT_FRRC	%	2DP	Corrected friction ratio (Rf') piezocone only	2.76
	SCPT_EXPP	MPa	4DP	Excess pore pressure (u-uo) piezocone only	-0.0911
	SCPT_BQ		4DP	Pore pressure ratio (Bq) piezocone only	-0.0051
	SCPT_ISPP	MPa	4DP	In situ pore pressure (uo) (measured or assumed where not simple hydrostatic based on SCPG_WAT)	0.2000
	SCPT_NQT		4DP	Normalised cone resistance (Qt)	166.0125
	SCPT_NFR	%	4DP	Normalised friction ratio (Fr)	0.5423
	FILE_FSET		X	Associated file reference (eg raw field data)	FS18

Group Name: SCPT - Static Cone Penetration Tests - Data				
Status	**Heading**	**Suggested Unit / Type**	**Description**	**Example**

Notes for Guidance

• SCPT is used to include the readings from the cone converted from the measurement data using any required calibration factors and other mathematical formulae employed by the measurement contractor in accordance with the specification.

• Readings included in group will depend on the test carried out. For example, the ground parameters measured and included in this group will depend on test type / cone.

• The fluorescence intensity, photo-multiplier tube readings, PID, FID and conductivity data require graphic interpretation. These have been removed.

• SCPT_BDEN and SCPT_ISPP allow for complex assumptions on density and piezometric profiles. Explanation of these assumptions is required within SCPG_REM.

• The requirements for transfer of data in SCPT should be fully specified at the outset of testing in the investigation specification.

Group Name: SCPP - Static Cone Penetration Tests - Derived Parameters					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SCPG_TESN**		X	Test reference or push number	3
*	**SCPP_TOP**	m	2DP	Depth to top of layer	5.20
*	**SCPP_BASE**	m	2DP	Depth to base of layer	5.30
*	**SCPP_REF**		X	Interpretation reference	ACME CPT Testing Ltd
	SCPP_REM		X	Remarks	
	SCPP_CSBT		X	Interpreted Soil Type	3 - Clays
	SCPP_CSU	kPa	1DP	Undrained Shear Strength (Su); fine soils only	
	SCPP_CRD	%	1DP	Relative density (Dr); coarse soils only	90.1
	SCPP_CPHI	deg	1DP	Internal Friction Angle; coarse soils only	42.7
	SCPP_CIC		1DP	Soil Behaviour Type Index (Ic)	1.5
	SCPP_CSPT		0DP	Equivalent SPT N60 value	32
	FILE_FSET		X	Associated file reference	FS18

Notes for Guidance

• The SCPP group is to be used to transfer derived soil parameters determined from CPT test data. The requirement for this information as part of ground investigation reporting must be full specified at the outset of the investigation. The specification may need to detail the interpretative method(s) to be used.

• The interpretation is given a reference in SCPP_REF that defines who and possibly how the interpretation has been carried out.

• Details of the standards and methods used to carry out calculations need to be included in SCPG_REM. SCPG_REM may in turn refer to the STND group where full information on standards and references may be provided.

• Where soil type interpretation leading to borehole style stratum descriptions is carried out the information should be entered in GEOL.

• The coefficient of consolidation is calculated from dissipation testing data which is included in SCDG and SCDT.

Group Name: SHBG - Shear Box Testing - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	SHBG_TYPE		PA	Test type	Small SBOX
	SHBG_COND		PA	Sample condition	Undisturbed
	SHBG_CONS		X	Specific condition statements	Recompacted to specified density
	SHBG_PCOH	kPa	2SF	Peak cohesion intercept	5.1
	SHBG_PHI	deg	1DP	Peak angle of friction	26.5
	SHBG_RCOH	kPa	2SF	Residual cohesion intercept	1.3
	SHBG_RPHI	deg	1DP	Residual angle of friction	13.0
	SHBG_ENCA		X	Method of encapsulation of specimens tested	Resin
	SHBG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	c' and phi' derived by linear regression, c' assumed zero etc
	SHBG_METH		X	Test method	BS1377 Part 7
	SHBG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	SHBG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS18

Notes for Guidance

• Group SHBG and SHBT contain the processed results from soil or rock joint shear box tests. Raw data, such as the stresses and displacements at all points of the test are not included.

Group Name: SHBT - Shear Box Testing - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U

Group Name: SHBT - Shear Box Testing - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**SHBT_TESN**		X	Shear box stage/specimen reference	1
	SHBT_BDEN	Mg/m3	2DP	Initial bulk density	1.96
	SHBT_DDEN	Mg/m3	2DP	Initial dry density	1.63
	SHBT_NORM	kPa	0DP	Normal stress applied	100
	SHBT_DISP	mm/min	2SF	Displacement rate for peak stress stage	0.024
	SHBT_DISR	mm/min	2SF	Displacement rate for residual stress stage	0.12
	SHBT_REVS		0DP	Number of traverses if residual test	3
	SHBT_PEAK	kPa	1DP	Peak shear stress	65.5
	SHBT_RES	kPa	1DP	Residual shear stress	47.2
	SHBT_PDIS	mm	2DP	Horizontal displacement at peak shear stress	2.35
	SHBT_RDIS	mm	2DP	Horizontal displacement at residual shear stress	12.41
	SHBT_PDIN	mm	2DP	Vertical displacement at peak shear stress	1.24
	SHBT_RDIN	mm	2DP	Vertical displacement at residual shear stress	-4.23
	SHBT_PDEN	Mg/m3	XN	Particle density with prefix # if value assumed	#2.65
	SHBT_IVR		3DP	Initial voids ratio	0.526
	SHBT_MCI	%	X	Initial water/moisture content	20
	SHBT_MCF	%	X	Final water/moisture content	18
	SHBT_DIA1	mm	2DP	Specimen diameter in direction of shear (rock joints)	85.21
	SHBT_DIA2	mm	2DP	Specimen diameter perpendicular to shear (rock joints)	89.34
	SHBT_HGT	mm	2DP	Specimen height	80.02
	SHBT_CRIT		X	Failure/residual strength criterion used	Stress ratio
	SHBT_REM		X	Remarks	Reached end of travel
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS18

Notes for Guidance

• SHBT_PDIN & SHBT_RDIN - consolidation (flow of water out of specimen) to be reported as positive and dilatancy or swelling (flow of water into specimen) to be reported as negative.

Group Name: STND - Standards / Specifications				
Status	**Heading**	**Suggested Unit / Type**	**Description**	**Example**

*	**STND_REF**		X	Reference of standard	BS EN ISO 14688-1:2002
	STND_TTLE		X	Document Title	Geotechnical investigation and testing - Identification and classification of soil - Part 1: Identification and description
	STND_SCPE		X	Scope of data collected to this standard	Soil descriptions; field logging and laboratory test specimens
	STND_REM		X	Comments	
	FILE_FSET		X	Associated file reference (eg contract specific specifications)	FS1

Notes for Guidance

• STND may be used to state a list of standards, specifications and other reference documents that define the methods to which data has been collected and reported. For example, EN ISO 14688 - 1 (Section 6) and EN ISO 14689 - 1 (Section 5) describes that it should be clearly stated that the descriptions are based on visual and manual identification.

• Information on the scope of the data collected to each standard is included in STND_SCPE.

Group Name: SUCT - Suction Tests

Status	Heading	Suggested Unit / Type		Description	Example
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	SUCT_DIAM	mm	2DP	Specimen diameter	100.25
	SUCT_LEN	mm	2DP	Specimen length	99.65
	SUCT_COND		PA	Sample condition	Undisturbed
	SUCT_BDEN	Mg/m3	2DP	Initial bulk density	1.96
	SUCT_DDEN	Mg/m3	2DP	Initial dry density	1.63
	SUCT_MC	%	2SF	Initial water/moisture content	20
	SUCT_VAL	kPa	0DP	Suction value	50
	SUCT_REM		X	Remarks	
	SUCT_METH		X	Test method	BRE IP4/93, suction probe in triaxial
	SUCT_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	SUCT_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked

Group Name: SUCT - Suction Tests					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS98

Notes for Guidance

• None.

Group Name: TNPC - Ten Per Cent Fines					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	TNPC_TESN		X	Test reference	1
	TNPC_DRY		X	10% fines values on dry aggregate	75
	TNPC_WET		X	10% fines values on wet aggregate	60
	TNPC_REM		X	Remarks	
	TNPC_METH		X	Test method	
	TNPC_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	TNPC_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS19

Notes for Guidance

• None.

Group Name: TREG - Triaxial Tests - Effective Stress - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	TREG_TYPE		PA	Test type	CU
	TREG_COND		PA	Sample condition	Undisturbed

Group Name: TREG - Triaxial Tests - Effective Stress - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	TREG_COH	kPa	0DP	Cohesion intercept associated with TREG_PHI	
	TREG_PHI	deg	1DP	Angle of friction for effective shear strength triaxial test	32.0
	TREG_FCR		X	Failure criterion	Maximum deviator stress
	TREG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	Peak stress ratio, side drains fitted
	TREG_METH		X	Test method	BS1377 pt 8
	TREG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	TREG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS7

Notes for Guidance

• TREG and TRET have been to be used for the reporting of effective stress testing.

Group Name: TRET - Triaxial Tests - Effective Stress - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
*	**TRET_TESN**		X	Triaxial test/stage number	1
	TRET_SDIA	mm	2DP	Specimen diameter	38.25
	TRET_LEN	mm	2DP	Specimen length	76.50
	TRET_IMC	%	X	Specimen initial water/moisture content	15.5
	TRET_FMC	%	X	Specimen final water/moisture content	14.9
	TRET_BDEN	Mg/m3	2DP	Initial bulk density	2.12
	TRET_DDEN	Mg/m3	2DP	Initial dry density	1.84
	TRET_SAT		X	Method of saturation	Back pressure, cell pressure, none
	TRET_CONS		X	Details of consolidation stage	Drainage to both ends with radial boundary
	TRET_CONP	kPa	0DP	Effective stress at end of consolidation/ start of shear stage	100

Group Name: TRET - Triaxial Tests - Effective Stress - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	TRET_CELL	kPa	0DP	Total cell pressure during shearing stage	400
	TRET_PWPI	kPa	0DP	Porewater pressure at start of shear stage	50
	TRET_STRR	%/hr	1DP	Rate of axial strain during shear	1.5
	TRET_STRN	%	1DP	Axial strain at failure	9.0
	TRET_DEVF	kPa	0DP	Deviator stress at failure	360
	TRET_PWPF	kPa	0DP	Porewater pressure at failure	60
	TRET_STV	%	2DP	Volumetric strain at failure (drained only)	2.56
	TRET_MODE		X	Mode of failure	Brittle
	TRET_REM		X	Comments	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS7

Notes for Guidance

• The information in this group is only used in conjunction with the detailed laboratory reports.

• TRET_STV - consolidation (flow of water out of specimen) to be reported as positive and dilatancy or swelling (flow of water into specimen) to be reported as negative.

Group Name: TREM - Location Specific Time Related Remarks					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**TREM_DTIM**	yyyy-mm-ddThh:mm	DT	Date and time of remark or start of event	2001-05-16T12:00
	TREM_COMP		X	Component or sub-activity	Slab G12
	TREM_REM		X	Time related remark	Completion of concrete pour
	TREM_DURN	hh:mm:ss	T	Duration of event or activity	01:25:00
	TREM_ETIM	yyyy-mm-ddThh:mm	DT	Date and time of end of event	2001-05-16T12:30
	FILE_FSET		X	Associated file reference (eg site journal records)	FS28

Notes for Guidance

• TREM_COMP allows comments to be related to specific activities or components of work occurring at the location given by LOCA_ID. This heading can be used to tag similar construction activities occurring at multiple locations or identify specific construction elements.

• TREM_DURN allows the length of time associated with a particular event to be included if this is appropriate.

Group Name: TRIG - Triaxial Tests - Total Stress - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.55
	SPEC_DESC		X	Specimen description	Grey slightly gravelly clay
	SPEC_PREP		X	Details of specimen preparation including time between preparation and testing	Prepared according to client instructions
	TRIG_TYPE		PA	Test type	UU
	TRIG_COND		PA	Sample condition	Undisturbed
	TRIG_REM		X	Remarks including commentary on effect of specimen disturbance on test result	
	TRIG_METH		X	Test method	BS1377, ASTM, ISO /TS17892
	TRIG_LAB		X	Name of testing laboratory/organisation	ACME Laboratories plc
	TRIG_CRED		X	Accrediting body and reference number (when appropriate)	UKAS 0000
	TEST_STAT		X	Test status	Checked
	FILE_FSET		X	Associated file reference (eg equipment calibrations)	FS7

Notes for Guidance

• The data reported from total and effective stress testing is different therefore TREG and TRET has been added for the reporting of effective stress testing.

• Standard testing methods normally report the Cu value against each test specimen and defer from providing an assessed Cu value for a set of specimens from a sample. This data is therefore included in the TRIT group.

Group Name: TRIT - Triaxial Tests - Total Stress - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**SAMP_TOP**	m	2DP	Depth to top of sample	24.55
*	**SAMP_REF**		X	Sample reference	24
*	**SAMP_TYPE**		PA	Sample type	U
*	**SAMP_ID**		ID	Sample unique global identifier	ABC121415010
*	**SPEC_REF**		X	Specimen reference	1a
*	**SPEC_DPTH**	m	2DP	Depth to top of test specimen	24.75
*	**TRIT_TESN**		X	Triaxial test/stage reference	1
	TRIT_SDIA	mm	2DP	Specimen diameter	38.25
	TRIT_SLEN	mm	2DP	Specimen length	76.45

Group Name: TRIT - Triaxial Tests - Total Stress - Data					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
	TRIT_IMC	%	X	Specimen initial water/moisture content	15.7
	TRIT_FMC	%	X	Specimen final water/moisture content	14.9
	TRIT_CELL	kPa	0DP	Total cell pressure	100
	TRIT_DEVF	kPa	0DP	Corrected deviator stress at failure	360
	TRIT_BDEN	Mg/m3	2DP	Initial bulk density	2.12
	TRIT_DDEN	Mg/m3	2DP	Initial dry density	1.84
	TRIT_STRN	%	2SF	Axial strain at failure	9.5
	TRIT_CU	kPa	0DP	Undrained Shear Strength at failure	180
	TRIT_MODE		X	Mode of failure	Brittle
	TRIT_REM		X	Comments	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS7

Notes for Guidance

• Individual stage undrained shear strength values should be included as TRIT_CU. Interpretation is usually beyond the remit of the geotechnical testing laboratory.

• The information in this group is only used in conjunction with the detailed laboratory reports.

Group Name: WADD - Water Added Records					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**WADD_TOP**	m	2DP	Depth to top of reported section	10.50
*	**WADD_BASE**	m	2DP	Depth to base of reported section	20.50
	WADD_VOLM	l	0DP	Amount of water added	10
	WADD_METH		X	Boring/drilling method associated with addition of water (HDPH_TYPE abbreviation)	CP
	WADD_REM		X	Remarks related to addition of water requirements, method	
	FILE_FSET		X	Associated file reference (eg drilling journal)	FS20

Notes for Guidance

• WADD is to be used to record details of water added to exploratory holes.

Group Name: WETH - Weathering					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**WETH_TOP**	m	2DP	Depth to top of weathering subdivision	3.50
*	**WETH_BASE**	m	2DP	Depth to base of weathering subdivision	3.95
	WETH_SCH		PA	Weathering scheme	BS 5930:1999 AMEND 1
	WETH_SYS		PA	Material or mass weathering system	MASS CLASS
	WETH_WETH		X	Weathering classifier for WETH_SCH and WETH_SYS	B
	WETH_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg logging sheets)	FS4

Notes for Guidance

• WETH_SCH and WETH_SYS are used to identify the weathering scheme utilised and whether it is the material or mass that is described.

• BS 5930 : 1999 (Pre Amendment 1) offers the five 'Approaches' to identifying and classifying the state of weathering in cores and rock faces which are as given in EGGS WP Rock Weathering (1995). Despite the EN system, this is the preferred scheme although if strict adherence to EN ISO is required Approaches 2 and 3 are not available.

• BS EN 14689-1:2003 or BS5930 : 1999 (Amendment 1) provides a scale of weathering stages of rock mass which then relates a description to Grades = 0 to 5. However, the EN states that “more specific local classifications may be available and can be used where they are useful and unambiguous”. This has been interpreted to meaning Approaches 4 and 5 (Classes A - E) of BS 5930 : 1999 (pre Amendment 1). Approaches 2 and 3 are no longer available for use. BS 5930 Amendment 1 also states that other descriptions of the weathering state can be used. Geoguide 3 is an alternative.

• This means that as well as special descriptions specific to rock types (eg in the UK: Chalk, Mercia Mudstone) other systems can be used. This then allows the use of:

Grades = I to VI, Zones = 1 to 6, Classes = A to E, for example, or more complex classifiers. These are all systems/methods currently practised in the UK. The BS and EN refer to weathering of rocks but there have also been weathering classifications derived for soils (Solid strata on BGS maps) such as the London Clay.

Group Name: WINS - Dynamic Sampling Run Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**WINS_TESN**		X	Sampler run reference	2
*	**WINS_TOP**	m	2DP	Top of sampling run	17.20
*	**WINS_BASE**	m	2DP	Base of sampling run	20.00
	WINS_DIAM	mm	0DP	Internal diameter of sampler	97
	WINS_DURN	hh:mm:ss	T	Duration of sampling run	00:30:00
	WINS_REC	%	0DP	Sample recovery	50
	WINS_REM		X	Remarks about sampling run	
	FILE_FSET		X	Associated file reference (eg field records)	FS28

Notes for Guidance

• WINS is used to record the details of dynamic sampling runs.

Group Name: WSTG - Water Strike - General					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**WSTG_DPTH**	m	2DP	Depth to water strike	17.20
	WSTG_DTIM	yyyy-mm-ddThh:mm	DT	Date and time of water strike	1991-03-19T16:40
	WSTG_SEAL	m	2DP	Depth at which water strike sealed by casing	19.10
	WSTG_CAS	m	2DP	Casing depth at time of water strike	15.70
	WSTG_REM		X	Remarks	Steady flow of water into hole
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS28

Notes for Guidance

• WSTG and WSTD are used to record information on the behaviour of water encountered during development of an exploratory hole.

• Water levels recorded during sampling or testing in exploratory holes are recorded in the appropriate group together with the related data. Water readings in installations (eg piezometers) are recorded in Group MOND.

Group Name: WSTD - Water Strike - Details					
Status	**Heading**	**Suggested Unit / Type**		**Description**	**Example**
*	**LOCA_ID**		ID	Location identifier	327-16A
*	**WSTG_DPTH**	m	2DP	Depth to water strike	17.20
*	**WSTD_NMIN**	min	0DP	Minutes after strike	20
	WSTD_POST	m	2DP	Depth to water after WSTD_NMIN minutes	10.23
	WSTD_REM		X	Remarks	
	FILE_FSET		X	Associated file reference (eg test result sheets)	FS28

Notes for Guidance

• See notes provided with WSTG.

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APPENDIX 1

User Support

1 Introduction

The AGS website is designed to support users of the AGS Format. The website address is www.ags.org.uk.

It contains this publication, in Adobe PDF, together with the latest AGS Format abbreviations (ABBR) and other resources to assist those using the format or developing software applications to interpret AGS Format data files. The site also contains a discussion board where users can discuss questions with the AGS Format committee members and other users.

2 Discussion Board

The discussion board is an area of the website that has been designed for the support of AGS Format users. If there is any doubt on the use of a particular aspect of the Format, consult the discussion board for previous questions and discussions on the subject.

If an answer cannot be found, place a new discussion on the discussion board. The board is monitored by the AGS Data Management Working Party members.

Full instructions on how to use the discussion board are available on the website.

2 Guidance and Example AGS data files

Guidance on the recommended usage of the AGS Format is published on the website.

In addition, example AGS data files are posted on the website. The example files provide practical demonstration of the format.

5 AGS Format Abbreviations (ABBR), Units (UNIT) and Data Types (TYPE)

The latest copies of AGS abbreviations, units and data types can be viewed and downloaded from the website.

Users should check the list of ABBR abbreviations before defining a non-standard abbreviation. If the required item is not listed on the website, please submit your suggestion.

All suggestions will be considered and commented on by the AGS Data Management Working Party. Appropriate abbreviations will be added to the website list.

6 Downloading This Publication

The document can be downloaded in PDF format from the AGS website free of charge. The document is distributed as shareware and can be read without charge.

7 AGS Format Registration

Companies that use the AGS Format to exchange data electronically are required to register with the AGS. A full list of registered companies is available on the website. Registration forms and information on current charges can be downloaded from the website.

If your company receives AGS Format data, ensure that your data producer is registered to use the AGS Format.

8 Update Notification

Registered users of the Format will receive news and updates by email.

9 Registration Benefits

Registered users of the format will also:

- Be sent the data dictionary in CSV and Excel file formats.
- Be able to use the AGS Data Logo on their reports (see below).
- Be able to download example AGS files and abbreviation lists from the website.
- Be included on the list of registered users.
- Make suggestions for future editions of the AGS Format or additional abbreviations via the discussion forum.

A list of Registered Users is given on the AGS website at www.ags.org.uk.

The AGS wishes to encourage Data Providers to declare on their paper reports when the data contained within the report is also available in AGS Format. This will become of considerable benefit to third party Receivers, who are not the primary Receivers that commissioned the report. To this end the AGS provides the following AGS Format logo to Registered Users of the Format.

The logo should be used as follows:

- The logo should be included in a prominent position on the front cover, or inside front cover, of the Factual Report to indicate that the data contained within the report has also been provided to the primary Receiver in AGS Format.

- The logo should also be included on every log or test result sheet within a report, as logs and results sheets are frequently separated from the main text of the report.

- The logo is only to be used by Registered Users of the Format.

Note that we intend to retain the logo representing a 3½" floppy disc as homage to the origin of the AGS Format.

10 Suggestions for Future Additions

Registered users of the format will be able to suggest additions to the data dictionary via the website. All suggestions will be considered and commented on by the AGS committee and all appropriate suggestions will be included in the next release of the format.

APPENDIX 2

Data Management

Data Management

Refer to BS8574:2014 ‘Code of practice for the management of geotechnical data for ground engineering projects’ and the project or organization specific data management plan.

Transmittal record

The Producer will produce a transmittal record for each submission of data with the minimum following details:

The heading 'AGS Format Data'
The project identification (PROJ_ID)
The unique issue sequence reference (TRAN_ISNO)
The name of the Receiver (TRAN_RECV)
The date of issue to the Receiver (TRAN_DATE)
The name of the Producer (TRAN_PROD)
The AGS Edition Reference (TRAN_AGS)
A general description of the data transferred and/or a file listing for associated files

In addition the transmittal record will detail the following for each AGS Format data file within the data submission, including all associated files:

The file name including the extension
The date of file creation
The time of file creation
The file size
A general description of the data contained in each file and/or a file listing for associated files

A transmittal record should be prepared for each data set and accompany it each time a data set is issued. An example follows:

Suggested Format for a Transmittal Record

AGS Format Data
Transmittal Record

Project Identification	
Client	
From	

Issue Sequence Number	AGS Edition Reference	Issued To & Date of Issue		General Notes

File Name	Creation Date	Creation Time	File Size	General Description of data transferred

APPENDIX 3

Overview of Changes in AGS4

1 Summary of rule changes from AGS3 to AGS4

- The full ASCII character set now permitted (Rule 1).
- The rule limiting line length to 240 characters in previous versions of the AGS Format has been removed together with the requirement for continuation <CONT> lines.
- ** and * prefixes to group names and headings removed.
- ? prefix is no longer required for user defined groups or headings.
- All lines now to include leading data descriptors (Rule 3)
  - "GROUP"
  - "HEADING"
  - "UNIT"
  - "TYPE"
  - "DATA"
- Group headings should also be ordered in accordance with the groups in the data dictionary document (this document, Section 8) with the headings for the UDFs (User Defined Fields) following in the order defined in the DICT GROUP- Rules 4 and 5.

2 CODE Group

2.1 CODE has been removed and its contents included in the ABBR group.

3 Data Types and Heading Status

3.1 Although all entries in a transfer file are still alpha-numeric the concept of “Data types” are now included. Of particular interest are:

3.1.1 The special data type for moisture content (MC) and that this changes with the value as required by the appropriate BS.

3.1.2 The Record Link data type that allows cross-hierarchical links between data in groups. Currently this is only in use in the SAMP Group.

3.2 International date/time format fields added or amended. (yyyy-mm-ddThh:mm:ss.sssZ(+hh:mm))

3.3 The concept of KEY, REQUIRED and OTHER has been included. KEY fields are those which are needed to uniquely define the data entry, whilst REQUIRED fields are those attributes which are needed to interpret the file and its contents.

4 LOCA Group

4.1 The HOLE group renamed LOCA. This is to emphasize that not all samples and observations are made in boreholes. The acronym HOLE (Hole Or Location Equivalent) has been replaced with the more logical LOCA.

5 SAMP Group

5.1 This includes all samples taken in the field, laboratory samples, including those prepared for individual tests, derived from another sample or group of samples, or samples taken for monitoring.

5.2 Sample Key Fields have been extended to include SAMP_ID, a unique identifier which can be used as required. This can be used to develop systems where the samples are referenced by bar codes. Those using the present 4 Key Fields described in AGS 3.1 to define their samples can continue to do so.

5.3 Each and every sample will have a unique key set from (LOCA_ID, SAMP_TOP, SAMP_REF, SAMP_TYPE, and SAMP_ID) following the usual AGS rules.

5.4 SAMP_LINK has been added to enable samples to be linked to other tests or observations. The format of the SAMP_LINK is group|keyheading|keyheading e.g. MONG|BH1|Pipe1 (where the delimiters are defined in TRAN_DLIM as vertical bar characters “|”).

5.5 For monitoring, the sample will still need a unique key set from the above list, which could be SAMP_ID. It can be linked to MONG using the SAMP_LINK.

6 ERES Group

6.1 A new group ERES has been included for environmental testing to replace CNMT which was considered to be insufficient for current environmental testing and the extended data requirements associated with more complex testing records.

7 GCHM Group

7.1 A new group GCHM has been added for geotechnical chemistry testing which is considered to be different to the Environmental testing reported in ERES. This group has been prepared to contain all the data required for aggressivity testing of soil and water in accordance with British Standard 1377-3 and BRE Special Digest 1.

8 Rock Testing Groups

8.1 Each rock test now has its own group:

RCCV - Chalk Crushing Value Tests
RDEN - Rock Porosity and Density Tests
RPLT - Point Load Testing
RSCH - Schmidt Rebound Hardness Tests
RSHR - Shore Scleroscope Hardness Tests
RTEN - Tensile Strength Testing
RUCS - Rock Uniaxial Compressive Strength and Deformability Tests
RWCO - Water Content of Rock Tests

8.2 Materials / Aggregate testing is reported separately with each test having its own group:

AAVT - Aggregate Abrasion Tests
ACVT - Aggregate Crushing Value Tests
AELO - Aggregate Elongation Index Tests
AFLK - Aggregate Flakiness Tests
AIVT - Aggregate Impact Value Tests
ALOS - Los Angeles Abrasion Tests
APSV - Aggregate Polished Stone Tests
ARTW - Aggregate Determination of the Resistance to Wear (micro-Deval)
ASDI - Slake Durability Index Tests
ASNS - Aggregate Soundness Tests
AWAD - Aggregate Water Absorption Tests

9 Soil Testing Groups

9.1 Each Soil test now has its own group:

CBRG - California Bearing Ratio Tests - General
CBRT - California Bearing Ratio Tests - Data
CMPG - Compaction Tests - General
CMPT - Compaction Tests - Data
CONG - Consolidation Tests - General
CONS - Consolidation Tests - Data
ESCG - Effective Stress Consolidation Tests - General
ESCT - Effective Stress Consolidation Tests - Data
FRST - Frost Susceptibility Tests
GCHM - Geotechnical Chemistry Testing
GRAG - Particle Size Distribution Analysis - General
GRAT - Particle Size Distribution Analysis - Data
LDEN - Density Tests
LDYN - Dynamic Testing
LLIN - Linear Shrinkage Tests
LLPL - Liquid and Plastic Limit Tests
LNMC - Moisture Content Tests
LPDN - Particle Density Tests
LPEN - Laboratory Hand Penetrometer Tests
LSLT - Shrinkage Limit Tests

LSTG - Initial Consumption of Lime Tests - General
LSTT - Initial Consumption of Lime Tests - Data
LSWL - Swelling Index Testing
LVAN - Laboratory Vane Tests
MCVG - MCV Tests - General
MCVT - MCV Tests - Data
PTST - Laboratory Permeability Tests
RELD - Relative Density Tests
SHBG - Shear Box Testing - General
SHBT - Shear Box Testing - Data
SUCT - Suction Tests
TNPC - Ten Per Cent Fines
TREG - Triaxial Tests - Effective Stress - General
TRET - Triaxial Tests - Effective Stress - Data
TRIG - Triaxial Tests - Total Stress - General
TRIT - Triaxial Tests - Total Stress - Data

9.2 Effective stress testing.

Triaxial effective stress results groups TREG & TRET have been added. Effective Stress Consolidation testing added in groups ESCG and ESCT.

10 Monitoring Installations & Readings Groups

10.1 MONP has been renamed MONG and MONR has been replaced with a new group MOND (Monitoring test Data) with paired results fields so that readings from any instrument type can be recorded.

10.2 PIPE group added to transfer details of instrumentation installations.

11 In situ Testing Groups

11.1 PLTG & PLTT have been added to report plate bearing testing to British Standard 1377 part 9 and EN1997-2.

11.2 DCPG & DCPT have been included to record dynamic cone penetrometer testing (the ‘TRL probe’) separate from dynamic probing.

12 Drilling Observations Groups

12.1 DOBS has been added to allow transfer of drilling observations. The group provides facility for instrumented drilling measurements to be transferred where this is required.

12.2 WADD has been included to allow for details of addition of water to exploratory holes.

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SUMMARY OF AMENDMENTS TO VERSION 4.0 DOCUMENT

October 2011

- Section 7 added to provide notes on Internationalization of the AGS Format.
- Note on associated files added to Section 8.2 Notes on rules.
- Section 9.3 Units of Measurement section updated/clarified.
- Ø characters in heading names corrected to 0 characters.
- uS/cm corrected to µS/cm (LRES and SCPT groups).
- Specimen depth fields amended to “Depth of top of specimen” to clarify the required data.
- _REM heading added to CMPT, DETL, FRAC, GEOL, GRAT, MCVT, PLTT, PMTL, SCDT, TRET and TRIT groups.
- _TESN heading added to laboratory testing groups. To allow for test reference data to be included.
- CBRG notes for guidance corrected.
- CHOC_REF updated to a key field (CHOC group).
- CMPG_TESN added to CMPG and CMPT as key
- Description of FILE_FSET updated in group descriptions to provide examples of the types of files that could be associated with the data.
- DICT_UNIT type corrected to PU (DICT group).
- HDPH group notes for guidance amended.
- HORN group added to include exploratory hole orientation and inclination data. Same removed from HDPH group.
- IPID_RES suggested type changed to 2DP.
- Example added for IRES_TYPE
- Example for ISPT_METH updated.
- ISPT notes for guidance extended.
- LNMC group title amended to Moisture Content Test. LNMC_ISNT added. Notes for guidance updated.
- LRES_WCND changed to LRES_WRES to express results as water resistivity in ohm m.
- LSLT_MCI added.
- MOND group extended to include measurement methods, limits and accreditation information (Headings MOND_METH, MOND_CRED, MOND_LIM, MOND_ULIM added).
- MONG_BRGC example corrected
- Heading PMTL_RRM corrected to PMTL_REM (PMTL group).
- PTST_TYPE type changed to PA and example updated.
- RCCV_TESN included as key
- Heading RCCV_10 corrected to RCCV_100 (RCCV group).

- RDEN_TEMP added.
- RWCO_TEMP added.
- SCDG_CH and SCDG_CHMT added
- SCPG_TYPE example corrected.
- SCPT_DPR removed.
- TREM_ETIM added.
- Index extended.
- Appendix 3 ('Notes on Specifying AGS Format Data Deliverables') removed.

February 2017

- The term 'Moisture content' has been replaced with the term 'Water content' in accordance with BS EN ISO 17892-1:2014. There is no provision for an additional heading for this data. Instead, the data type for every moisture content heading has been changed from 'MC' to 'X' to allow transmission of results both in the pre-existing and new form to be carried in a file. The headings changed are listed below:
    - CBRG_NMC, CBRT_MCT, CBRT_MCBT, CBRT_IMC
    - CMPT_MC
    - CONG_MCI, CONG_MCF
    - ESCG_MCI, ESCG_MCF
    - FRST_MC
    - ICBR_MC
    - IDEN_MC
    - LDEN_MC
    - LNMC_MC
    - LPEN_MC
    - LRES_MC
    - LSLT_MCI
    - LVAN_MC
    - MCVG_NMC, MCVT_MC
    - PTST_MC
    - RCCV_MC
    - RDEN_MC, RDEN_SMC
    - RWCO_MC
    - SHBT_MCI, SHBT_MCF
    - SUCT_MC
    - TRET_IMC, TRET_FMC
    - TRIT_IMC, TRIT_FMC
- PMTD_SEQ heading in the 'Pressuremeter Test Results – Individual Loops' (PMTL) group is marked for deletion. It must remain in each AGS 4.0.4 submission as a NULL heading (see Rule 12).
- A National datum heading LOCA_NATD has been added to the LOCA group.
- LOCA_ORID, LOCA_ORJO, LOCA_ORCO have been added to facilitate combined archived project data in a data submission.
- A new heading to record the length of a sample SAMP_RECL has been added to the SAMP group.
- Fracture spacing headings have a new data type of 'XN' to allow both numeric and text data to be transmitted. The following headings have been changed - FRAC_FI, FRAC_IAVE, FRAC_IMAX.
- CHOC_REF data type has been changed from ID to 'X'. An 'ID' data type implied a uniqueness throughout the entire data submission.

- LVAN_VNPK and LVAN_VNRM data type has been changed from 0DP to XN to allow text values such as '>140' to be recorded where appropriate.
- A new heading RDEN_IDEN for Intact Dry Density has been added to the RDEN group.
- RPLT_PLS and RPLT_PLSI data type changed to 2DP from 1DP.
- TRIT_CU data type changed to 0DP from 2SF.
- Window Sampling amended to Dynamic sampling throughout document.
- IPID_RES data type changed to XN to allow both text and numeric data to be reported.
- Two new headings have been added to GCHM. GCHM_DLM for the detection limit and GCHM_RTXT for the reported value.
- In Appendix 3 8.1 Rock Testing Groups listing of RELD Relative Density Test was incorrectly listed and has been moved to 9.1 Soil Testing Groups.
- Under section 8 Rules, item 8.3 Group Hierarchy, there are 10 groups that are not part of the parent-child hierarchy - PREM was missing from the list and has now been included.
- All additional headings have been added at the end of the groups to allow users to combine data files from different AGS4 versions without having to re-order headings (see Rule 7). This is especially useful if manual edits are required.