

DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

**VELOCITY SURVEY
REPORTER'S HANDBOOK**

For Use in Reporting Velocity Surveys for Outer Continental Shelf Wells

**Revision 2
(applies to all wells that reach total depth date
on or after April 20, 2004)**

Foreword

This Velocity Survey Reporter's Handbook is designed to aid the person submitting these reports addressed in the operating regulations 30 CFR Part 250. Requirements for submitting a copy of the velocity survey report and digital survey data are detailed on the following pages.

This revision incorporates changes resulting from issuance of Notices to Lessees and numbering changes reflected in the Code of Federal Regulations.

This document can be found online at:

http://www.gomr.mms.gov/homepg/mmsforms/REPHANDBK_VELSVY.pdf

This Velocity Survey Reporting Handbook provides guidance for lessees/operators to submit velocity survey data to MMS in accordance with reporting requirements under 30 CFR 250.468(a). The MMS may also require additional well reports and records of operations (30 CFR 250.469).

A significant update in this handbook includes CFR Section numbering changes as well any reporting requirements changes resulting from 30 CFR 250.468(a) and NTL No. 2004-G07 and its Attachments for Well Records Submittal. Highlights include:

- 30 CFR 250.468 and 469 replace Sections 401 and 416.
- 30 CFR 250.466 and 467, respectively, stipulate what surveys must be kept and submitted and how long these records must be kept.
- Section 468(a) supercedes 416, and as a result, **both velocity survey profiles and velocity check-shot surveys must be submitted** – whereas Section 416 only required the velocity check-shot survey be submitted to MMS.
- 30 CFR 250.468 allows each Region to specify well records reporting and submission guidelines.
- 30 CFR 250.469 allows the MMS to require additional well reports and records of operations.
- NTL No. 2004-G07 supercedes NTL No. Nos. 97-06 (and its Attachments) and NTL No. 98-18. It provides updated guidance on submitting velocity surveys as well as other well records for Gulf of Mexico Region (GOMR) OCS boreholes. One notable change for velocity surveys in NTL 2004-G07 regards reporting format. The format has been modified to expand the columns for True Vertical Depth and One-Way Travel Time from 5 to 8 to include two decimal places for each column.
- As a reminder, NTL No. 2002-G12 describes requirements for datums and datum transformations for the GOMR for well data.

Code of Federal Regulations (CFR)

The Code of Federal Regulations (CFR) (e.g. 30 CFR 250) provides general and permanent rules published in the Federal Register. The Code is divided into 50 titles (e.g. Title 30 – Mineral Resources) which represent broad areas subject to Federal regulations. Each title is divided into chapters (e.g. Chapter II – Minerals Management Service, Department of the Interior) which usually bear the name of the issuing agency. Each chapter is further sub-divided into parts (e.g. Part 250 – Oil and Gas and Sulfur Operations in the Outer Continental Shelf) covering specific regulatory areas. Title 30 – Mineral Resources – Chapter II – Minerals Management Service (MMS), Department of the Interior, Part 250 – Oil and Gas and Sulphur Operations in the Outer Continental Shelf (OCS) contains regulations for OCS mineral activities. The CFR can be found online at: <http://www.gpoaccess.gov/cfr/index.html> and 30 CFR 250 are found online at: http://www.access.gpo.gov/nara/cfr/waisidx_99/30cfr250_99.html.

Who must file?

Any operator of a lease or unit on the Federal OCS who has drilled a well for the purposes of exploration for, or development of, oil or gas resources. This includes wells currently drilling, previously drilled and temporarily abandoned, or previously drilled and completed.

What information must be filed?

According to 30 CFR 250.468(a), “you must submit copies of logs or charts of electrical, radioactive, sonic, and other well-logging operations; directional and vertical-well surveys; velocity profiles and surveys; and analysis of cores to MMS.” The MMS may also require additional well reports and records of operations (30 CFR 250.469). Under these authorities, the well records that you must submit to the MMS GOMR include the following:

1) Velocity Seismic Profiles

Submit the results from *all velocity measuring surveys* (in cased or uncased holes) as well as concurrently run directional surveys for *both vertical and directional* wells if different from directional surveys generated. Submit *digitally* recorded data on an IBM PC compatible formatted diskette or CD ROM in industry standard formats (LAS, DLIS, ASCII, CGM, TIFF, JPG, SEGY, DOC), to include but not limited to:

- the Normal Incidence VSP
- Acoustic Log Calibration Report
- any referenced information within the report correlative with the acquisition, such as digital images, digital raw and computed survey data and directionals

2) Velocity Surveys (Time-Depth Pairs/Checkshots)

Submit one digital copy and one paper copy of the velocity survey (time-depth pairs/checkshots). Make sure that the paper copy is comparable to the digital copy. Submit these survey results on IBM PC compatible 3.5-inch diskettes or CD ROMs coded in ASCII (see **Appendix** of this Handbook). Legible, exact copies of service company report or log should be submitted. The report should include or be annotated with:

- API number
- well name and number
- well name suffix
- contractor or service provider
- contact name (phone number or e-mail address)

Note that the format has been modified to expand the length of the column from 5 to 8 associated in recording One-Way Travel Time.

Use the specific formatting for all velocity data described in the **Appendix**, “Digital Exchange Format for Velocity Surveys.” We encourage direct submittal of the completed survey(s) from the acquiring service company.

When must the Survey be submitted?

30 CFR 250.468 allows each Region to specify well records reporting and submission guidelines. NTL No. 2004-G07 specifies that **velocity surveys (in the GOMR OCS) must be submitted within 30 days of the “Date Operations Completed”** of the last logging run (MWD/LWD or wireline) that you report in Item 13 of the Well Activity Report (Form MMS-133) for each 12-digit wellbore, sidetrack, and/or bypass.

The MMS GOMR recognizes that in certain situations (e.g., hole or mechanical problems) it is not practical to submit individual sidetrack or bypass data for short penetrated intervals. In those cases, you may request a departure from us for the timely submittal of such data. If you request it, the MMS GOMR Technical Data Management Section (TDMS) Office may grant you a departure under 30 CFR 250.142 for a new required date for submitting the data pertaining to that well.

Where reports and related correspondence must be sent.

Related correspondence, inquiries, and data should be submitted to the appropriate OCS Region at the corresponding address below.

For GOMR data, data files may be sent via email at the discretion of the operator in lieu of mailing.

However, note that the MMS gateway is not encryption-protected at this time. When digital data submission is sent by E-mail also include the name, address, and telephone number of the person to contact to provide additional information.

Region	Mail Velocity Surveys to:	Send comments or questions to:
Gulf of Mexico and Atlantic Region	Minerals Management Service (MS 5020) Technical Data Management Section 1201 Elmwood Park Boulevard New Orleans, Louisiana 70123-2394 Phone: (504) 736-2887 Fax: (504) 736-2857	Keith Welsh 504-736-2539 or Keith.Welsh@mms.gov E-mail: tdms@mms.gov
Alaska Region	Minerals Management Service (MS8200) Office of Field Operations 949 E 36 th Avenue, Suite 308 Anchorage, Alaska 99508-4363 Phone: (907) 271-6065	Doug Choromanski 907-271-6448 or Douglas.Choromanski@mms.gov
Pacific Region	Minerals Management Service (MS 7100) Office of Reservoir Evaluation and Production 770 Paseo Camarillo Camarillo, California 93010 Phone: (805) 389-7700 Fax: (504) 736-2857	Mike Brickey 805-389-7701 or Michael.Brickey@mms.gov E-mail: rep@mms.gov

Amended Reporting and Situations requiring correction.

In the event of an incorrectly identified survey or misidentified survey information, please submit corrected information to the appropriate address cited above with a notation to indicate that information is a corrected copy. Examples of misidentified information may include wrong API number, wrong well name suffix, wrong well bore name, or invalid survey data points, etc.

Related Links:

The Code of Federal Regulations can be found at:

<http://www.gpoaccess.gov/cfr/index.html> (CFR main link)

http://www.access.gpo.gov/nara/cfr/waisidx_99/30cfr250_99.html (30 CFR 250)

An overview of OCS Regulations and Auxiliary links can be found at:

http://www.gomr.mms.gov/homepg/regulate/regs/reg_sum.html

Notice to Lessees and Information to Lessees and Operators can be found at:

<http://www.gomr.mms.gov/homepg/regulate/regs/ntlltl.html>

[NTL No. 2004-N03 Directional and Inclination Survey Data Submission Requirements](#)

Effective Date: July 26, 2004

[NTL No. 2004-G07 Well Records Submittal \(pdf file\)](#)

Effective Date: April 20, 2004

Note: Attachment 2 has been replaced with NTL No. 2004-N03

[NTL No. 2004-G07 Addendum 1 Change of MMS Contractor Receiving Digital Well Log Drilling Records and Additional Well Log Curves to Submit](#)

Effective Date: June 1, 2004

[NTL No. 2000-G03 Functional Responsibility of MMS Regulations](#)

Effective Date: January 28, 2000

[NTL No. 2000-N07 Well Naming and Numbering Standards](#)

Effective Date: May 1, 2001

[NTL No. 2002-G05 Open Hole Log and Survey Information for the Weekly Activity Report](#)

Effective Date: June 11, 2002

[NTL No. 2002-G12 Revised North American Datum 83 Implementation Plan for the Gulf of Mexico](#)

Effective Date: November 4, 2002

NTLs for the Alaska OCS Region can be found at:

<http://www.mms.gov/alaska/regs/NTLS.HTM>

NTLs for the Pacific OCS Region can be found at:

<http://www.mms.gov/omm/pacific/offshore/ntls/ntllist.htm>

NOAA National Geodetic Survey links

[National Spatial Reference System: Datums, Networks, Coordinate Systems](#)

[Multi-Purpose Land Information Systems: The Guidebook](#) (pdf format)

[The State Coordinate Systems \(A Manual for Surveyors\) SP 235](#) (pdf format)

Appendix

Velocity Surveys Digital Exchange Format

Definition of terms

1. A record consists of 80 bytes, including the carriage-return and line-feed (HEX 'ODOA').
2. A file is a group of header records and data records physically separated by an inter-record gap (a blank record) and terminating with a control Z (HEX '1A').

Specifications for digital reporting of data on diskette or compact disc

1. Suitable for any IBM PC computer or compatible.
2. 3.5" diskette or compact disc.
3. ASCII mode standard.
4. A file cannot span multiple diskettes or compact discs.
5. A diskette or compact disc may contain numerous velocity surveys.
6. The diskette or CD label should identify each wellbore with a 12-digit API number, Lease Number, Well Name/Number, and Well Name Suffix.
7. The label should identify the name, address, and telephone number of the person to contact should problems occur when loading the data.

How to report through E-mail (GOM OCS only)

In lieu of data submittal via mail, data may be forwarded to TDMS via E-mail at tdms@mms.gov.

Note: The MMS gateway is not encryption-protected at this time. When submitting digital data E-mail, provide:

1. File suitable for any IBM PC computer or compatible.
2. ASCII mode standard.
3. May contain numerous velocity surveys.
4. Identify the name, address, and telephone number of the person to contact should problems occur when loading the data.

Subdivision of contents

1. A velocity survey will contain header record(s), data record(s), and terminate with an end-of-file marker.

2. Header records should precede the first data record in the file. There should be a set of header records for each borehole with a unique 12-digit API number.
3. As many data records as necessary may be used within a file.

Format for headers

The header records should be in a format that consists of the following items. Identify each header record with an “H” as the first character of the record, a blank space, then followed by the relevant data. There should be a set of header records for each borehole with a unique 12-digit API number. Header lines should not exceed 80 columns (characters). Also, enter a *<carriage return>* after the last column used in each header record in lieu of blank spaces.

Header #1 - This is a mandatory formatted first header record

1. Header Record ID - The letter H to identify the record as a header record in column 1 followed by a space in column 2.
2. API Number (12 numeric characters available beginning in column 3) - The 12-digit unique identifier to a wellbore assigned by the MMS District office. The full 12-digit identifier that identifies the well and the wellbore, as prescribed by the American Petroleum Institute D-9 Committee, appearing in Bulletin D-12 published April 1966. This data element occupies columns 3 through 14 followed by a space in column 15.
3. Date Survey Conducted (6 numeric characters available beginning in column 16) - The year, month, and day (in format YYMMDD) the final survey was conducted. This data element occupies columns 16 through 21. End with a *<carriage return>*.

An example header record on line 1 would read: **H 608123456701 980113***<carriage return>*

Optional header records

In addition to mandatory, formatted first header record, it is strongly recommended that other relevant information pertaining to the conditions under which the survey was conducted be included in the header section. Examples of other header records are

Type of Survey - The method used to conduct the velocity survey, e.g., Borehole seismic analysis, seismic acquisition tool, vertical seismic profile, etc.

Example: **H Survey Type Check Shot***<carriage return>*

Contractor - The name of the company (up to 78 characters beginning in column three) that conducted the survey.

Example: **H Marine Surveys**<carriage return>

Total Depth of Well - The total measured depth of the well in feet.

Example: **H TD 13700**

Other recommended record headers would include:

- Area Code of the block at the bottomhole location (2 characters in format AA);
- Block Number of the block at the bottomhole location (6 characters in format ANNNNA);
- Bottomhole Lease Number (6 characters in format ANNNNN)
- OCS lease number assigned to the well by the MMS to the lease that occupies the bottomhole location of the borehole (5 characters in format NNNNN).
- Well Name/Number (5 characters in format AANNN) Name assigned to a well varies (e.g., AJ001, 003) Also refer to Well Naming and Numbering Standards, NTL2000-N07.
- Well Name Suffix (8 characters in format AANNAANN) The name submitted that identifies the borehole as a sidetrack (e.g., ST01BP00) or bypass (e.g., ST01BP01). The original borehole suffix would be stated as ST00BP00.

An example of header records containing these items would read:

H HI 999 G99999 AJ001 ST01BP00<carriage return>

Format for data records

Each survey data record should contain information recorded at a given measurement point in the wellbore. Provide a data record for each measurement point. Arrange survey data records beginning from surface to the bottom of the wellbore.

Item	Column	Format	Description
1.	1-8	NNNNN.NN	TVD = True Vertical Depth: The vertical distance, in feet, from sea level to the measurement point. Use a zero in column 1 when the depth is less than 10000 feet. Spaces or commas should not be used.
2.	9-16	NNNNN.NN	One-Way Travel Time: The one-way vertical travel time in milliseconds, corrected to sea level.
3.	17-80		Unused space for future use.

Data records would be recorded as:
NNNNN.NN(TVD)NNNNN.NN(One-Way Travel Time)<carriage return>

Complete file format recommended for velocity surveys

H? NNNNNNNNNNNN (API #)? YYMMDD (Date Velocity Run)<carriage return>
H? Type of Survey<carriage return>
H? Survey Company<carriage return>
H? Total Depth<carriage return>
H? Area Code? Block#? Lease#? Well Name? Well Name Suffix<carriage return>
(Insert blank line between header records and data records)
NNNNN.NNNNNNN.NN

Generic example of the format for velocity surveys

H 608123456701 980113
H Check Shot
H Marine Surveys
H HI 999 G99999 SD001 ST01BP00

00119.3300023.44
08881.3301233.44
09381.3301287.44
09881.3301338.44
10271.3301378.44