

Clarification of Issues Associated with the New Archaeology [NTL 2002-G01](#) Resulting from 13 March 2002 Workshop in Houston, TX

***First Note** - This new NTL supersedes **ALL** previous NTLs and LTLs.

- 1) **Question:** What is the effective date of the new NTL? **Answer:** March 15, 2002
- 2) **Question:** What about new leases say I leased a block in 2001 and it is not yet surveyed? **Answer:** NTL 2002-G01 supersedes all previous NTLs and LTLs, therefore, if you have a lease that was leased under NTL 98-06 and it has not been surveyed before March 15, 2002 it now fall under NTL 2002-G01. You must conduct a new survey using NTL 2002-G01 survey guidelines.
- 3) **Question:** What if I began a survey on a block/pipeline prior to March 15, 2002 and because of weather/equipment delays we didn't finish until after March 15, 2002? **Answer:** The Minerals Management Service would accept the survey.
- 4) **Question:** What if I bought a lease in 2000, had it surveyed in 2001 but haven't yet submitted it to the Minerals Management Service? Will this survey comply with NTL 2002-G01? **Answer:** Archaeological reports surveyed under "older" NTLs and not previously submitted to the Minerals Management Service have to be submitted for a compliance review. This report will be reviewed on a case-by-case basis for compliance.
- 5) **Question:** I have an old lease block survey farmed-out to me, can I use that survey and will it comply with NTL 2002-G01? **Answer:** Farm-out archaeological lease block reports always fall under the NTL they were originally surveyed under and are acceptable as long as the lease number doesn't change. Once a lease block expires, is terminated or is relinquished these blocks would fall under NTL 2002-G01.
- 6) **Question:** Is there an official or unofficial grace period for survey companies to 'come-on-line' with the purchase and testing of new equipment to meet the new survey requirements specified in NTL 2002-G01. **Answer:** Officially no, however, the Minerals Management Service realizes there may be some extra time required to work out the "bugs." As the archaeologists at the MMS have always said in the past, if you have problems call us from the field to discuss it. If the problem occurs during the weekend leave us a voice mail message and contact us on following Monday.

New Requirements under NTL 2002-01

- 1) **First section of NTL (pages 1 through 5):** This section includes more background information on archaeological resources, how to determine if a particular lease block requires an archaeological assessment, and refers to the attached appendices for guidelines on conducting an archaeological survey and preparing an archaeological assessment. "**MMS GOMR Notification**" (page 2) includes a [URL](#) that provides the most up to date list of archaeology blocks and survey requirements.
- 2) **Archaeological Resource Surveys (page 2):** This section identifies special cases, which may allow for an exception to conducting a new archaeological survey. **Q:** part C, If previous remote sensing survey data was not digitally recorded, will it be acceptable? **A:** If data is submitted for a lease block or site-specific survey under a new lease number, or for a right-of-way pipeline, that data will be required to comply with the new NTL. If the data is submitted under an old lease number, or a lease term pipeline with a previously submitted report on file, then it falls under NTL 98-06.
- 3) **Archaeological Resource Surveys, Part E (page 3):** **Q:** Regarding different survey data acquisition instrumentation, will multi-beam work in lieu of sidescan? **A:** The multi-beam data must produce comparable or better resolution data. If you have questions, contact the Minerals

Management Service archaeologists prior to conducting the survey to discuss methodology, also include your discussion with MMS archaeologists, date and issue resolution in the report.

- 4) **Archaeological Resource Surveys, Part F (page 3):** In Historic Shipwrecks Blocks, 50-meter survey is required out to 200 meter water depth, in water depths greater than 200 meters, the survey lane spacing may be conducted at a maximum of 300 meters. These are maximum MMS requirements, tighter spacing can be conducted.
- 5) **Archaeological Resource Reports (pages 3-4), some of this text was previously located in Enclosure 2, Section III of NTL 98-06:** This section reflects the specific guidelines on how and when to submit a report. Item B makes reference to submitting archaeological assessments in digital format. **Q:** Do we still require paper copies of reports? **A:** Yes, one paper copy of the report is required.
- 6) **Archaeological Resource Reports, Part B (page 3):** **Q:** What are acceptable digital formats? **A:** Reports must be submitted in standard PDF and DWG formats. We will also accept maps in ARCVIEW format, which is actually preferred, however this format is not required. If digital data is submitted in ARCVIEW format, these data must be in the NAD27 coordinate system.
- 7) **Archaeological Resource Reports, Part D (pages 3-4):** This refers to submitting an old archaeological assessment for a newly leased block. If an operator wishes to submit an old archaeological assessment for a newly leased block, which was prepared under a previous lease number and NTL, the operator is advised to submit this report for compliance review *prior* to submitting their EP, DOCD, or lease-term pipeline application. **NOTE:** If the data was not recorded as outlined in NTL 2002-G01, it will most likely not be acceptable.
- 8) **Reviewing Archaeological Resources Reports (page 4). This information was previously located in Enclosure 2, Section III of NTL 98-06:** Text in this section has been slightly modified.
- 9) **Paperwork Reduction Act (pages 4-5):** Text in this section has been slightly modified.
- 10) **Contacts and Mailing Addresses (page 5): This section provides** information on how to contact Minerals Management Service personnel.
- 11) **Appendix 1, Section II:** This section has been expanded from NTL 98-06 Enclosure 1, Section III, A. Navigation precision of +/-5 meters in water depths less than 200 meters (656 feet), and +/-15 meters in water depths greater than 200 meters (656 feet) is now required. The old requirement (98-06) stated "system must have an accuracy of 5 meters or less." **Q:** Regarding the 12.5 meter intermediate positions along the vessel track. **A:** This is included to ensure that GPS positions are being digitally logged at regular close intervals, and is very similar to requirement in NTL 98-06. This information does not have to be plotted on the maps, however, it must be made available if requested. It is designed to avoid only logging position at shotpoints.
- 12) **Appendix 1, Section II:** This section also includes a requirement for acoustic positioning of towed sensors in water depths greater than 91 meters. **Q:** What is the accuracy requirement for acoustic positioning? Is a USBL system required? **A:** The MMS is not specifically requiring a USBL acoustic positioning system, however, the more accurate the positioning system, the less restrictive any potential avoidance areas will be.
- 13) **Appendix 1, Section III, Archaeological Resource Survey Part:** This section was previously located in NTL 98-06 Enclosure 1, Section III, B, Survey Patterns.
- 14) **Appendix 1, Section III:** Important new change here for the water depth cutoff relating to Historic Shipwreck High Probability Survey Blocks. The new requirement moves the 50-meter survey requirement from 60-meter (197 feet) water depth to **200-meter (656 feet) depth.**

- 15) **Appendix 1, Section III, B:** This section revises the coverage area for site-specific surveys from 914 meters (3,000 feet) to **1,800 meters (5,906 feet)**. This change was made to be consistent with F.O. requirements.
- 16) **Appendix 1, Section III, C:** Important new change here. Right-of-way pipelines now require an offset parallel line on one side of the centerline approximately 50 meters from the centerline (in order to alleviate problem with the blind spot under the sensor). **Q:** Regarding minimum survey requirement for 300 meter survey, is centerline, 50-meter offset, and two offsets at 300 meters from centerline sufficient? **A:** This is acceptable, provided it covers the entire area of impact and overlap coverage under the centerline.
- 17) **Q:** What is the accepted outermost boundary for anchor placement (survey line or sonar coverage)? **A:** The Sonar coverage area is considered the outermost boundary (same as 98-06), which must include any seafloor area to be impacted by anchoring or construction.
- 18) **Q:** How will the new NTL affect centerline coverage requirement on pipelines if they need to be rerouted? **A:** Same as they were affected by 98-06, potential reroute options should be proposed/considered when establishing survey methodology.
- 19) **Q:** Are all systems required on the 50 meter offset? **A:** No, only sidescan and magnetometer are required, however we encourage use of all systems on all survey lines.
- 20) **Appendix 1, Section III, D:** **Q:** Define the term “cover the route” **A:** This refers to lease term pipelines and refers to complete coverage by all sensors, including overlapping sonar sweeps between lines.
- 21) **Appendix 1, Section IV, Archaeological Resource Survey Data Acquisition Instrumentation:** From NTL 98-06 Enclosure 1, Section II, Data Acquisition Instrumentation. **Q:** Regarding risks of digital data recordings, what if system fails? **A:** If a system fails in the field, we would expect that it would only affect a minimal number of survey lines before a fix can be made. If the system fails early, cannot be replaced, and will affect the entire survey we would expect to be contacted by the survey company to discuss possible options. A best effort approach will be acceptable, however, any deviations from the current NTL that will leave a digital data gap in the report must be addressed in the archaeological assessment.
- 22) **Appendix 1, Section IV, A:** All archaeological resource surveys in water depths less than 200 meters (656 feet) require a magnetometer survey. NTL 98-06 included no specific depth requirements, and included a statement that a magnetometer survey was only required for historic and historic/prehistoric blocks. The reason for this change is because many newly identified wrecks have been located outside 50-meter blocks and in deeper water. This affects only about 2.8% (224) of all blocks (8,012) requiring an archaeological survey, and about 25% (55) of those blocks (or .7% of all blocks requiring archaeological survey) are currently leased. If your survey falls in one of these blocks contact us prior to conducting the survey to discuss options.
- 23) **Q:** There is a concern of possible magnetometer cable entanglement in deeper waters. **A:** We understand that most surveys with magnetometer at these depths would be conducted using a tethered unit. Again, contact us to discuss survey methodologies prior to proceeding.
- 24) **Q:** What about requirement for keeping magnetometer sensor within 6 meters of seafloor in deepwater? **A:** Again, this will effect only a very small number of deepwater lease blocks and we will review deepwater projects on a case-by-case basis, provided you contact us. As in the past and until deepwater magnetometer instrumentation technology becomes more dependable we feel the primary shipwreck search sensor will be the high-resolution side-scan sonar. At this time and until magnetometer technology improves if the magnetometer is tethered to the deepwater unit we will accept this instrument array and a high magnetometer tow sensor depth.

- 25) **Q:** What about towing magnetometer only in deep water? **A:** We suggest contacting us if this is the case, it really depends upon what type of wreck has been reported in the survey area.
- 26) **Appendix 1, Section IV, B:** This section has been expanded to clarify that 100% coverage is required for sonar surveys in archaeology blocks. We require a dual-channel, dual-frequency, towed sonar sensor. For detailed inspection of seafloor contacts (e.g., suspected shipwrecks) we also require additional lines at 500kHz where needed. Lanespacing and display range must be appropriate for water depth. We also require that sonar data be displayed on a graphic recorder capable of adjusting for slant range effects and variable speed. Sonar data must be recorded digitally. For pipelines surveys, image process and output data in mosaic form as geo-referenced TIF format. **Section V** (e.g. side-scan sonar coverage chart) provides suggested coverage areas. You **do not** need to submit a mosaic of **all** routes, but you will be expected to produce these data if requested.
- 27) **Q:** Is 200 kHz chirp sidescan acceptable in lieu of 500 kHz standard? **A:** Only if the chirp sidescan data resolution is comparable. This should be discussed in report.
- 28) **Q:** Who decides if additional survey coverage of a seafloor feature is necessary (e.g. detailed sonar inspections of seafloor contacts)? **A:** If the Party Manager identifies a potential shipwreck in the survey area, they should be able to make the decision to run further survey in that area. By doing this, it may be possible to positively identify a vessel as modern, or as historic, in which case we may be able to release surrounding blocks from archaeological survey requirements.
- 29) **Q:** If a shipwreck is identified during a survey, do we need to halt operations, as outlined in regulation 30 CFR 250.194? No, this regulation refers specifically to any operations that could impact an archaeological resource, if identified during construction then all operations must be halted and the operator must contact the Regional Director. However, if a shipwreck is identified during the survey phase, it may be beneficial to the operator to obtain as much high-resolution remote sensing data as possible to help identify the vessel and any associated debris field.
- 30) **Q:** Are sonar mosaics required for entire pipeline routes or only for archaeology blocks? **A:** Sonar mosaics are only required for Historic Shipwreck blocks. However, if something is found outside of a lease block that requires an archaeological assessment, a mosaic will be required for that area too.
- 31) **Appendix 1, Section IV, C:** Subbottom Profiler specifies the operating bandwidth range at 1.4 to 4.5 kHz (98-06 did not). The sensor must exceed the depth of disturbance, achieve a resolution of vertical bed separation of at least one foot in upper 15 meters (98-06 specified one to two meters resolution), and data must be recorded digitally. **Q:** Are there any guidelines for depth of disturbance? **A:** We assume the engineer/construction contractor can make the best determination of this.
- 32) **Q:** Are Chirp systems outside of bandwidth range acceptable? **A:** A Chirp system is acceptable provided the data is of comparable or of better quality than standard subbottom systems.
- 33) **Appendix 1, Section IV, D:** The depth sounder must be hull mounted, data must be displayed on a graphic recorder, logged digitally and continuously. Must use a heave compensator with the system. Also must calibrate water column sound velocity at start and end of survey with CTD sensor.
- 34) **Q:** Will the ruling be toward heave compensation where appropriate? **A:** The heave compensation option should be used to provide better data quality when surveying in rough seas. Systems fixed to hull in over the side position should be included as hull mounted when properly installed.
- 35) **Q:** Is a velocity probe needed at beginning/end of each session separated by weather delays on the same block or pipeline survey? **A:** If these data will not be compromised, then it is not needed at the beginning/end of each session. The point here is that we are looking for high survey quality data.

- 36) **Q:** Will MMS set a depth cutoff? **A:** At this time, MMS will not set a depth cut-off for velocity probes. However, for deeper water the instrumentation does need to be calibrated somehow, which also should be discussed in report.
- 37) **Appendix 1, Section V:** This chart provides Suggested Sidescan Sonar Coverage Areas.
- 38) **Appendix 2, Section I:** **Q:** When should the archaeologist sign a letter report? **A:** An archaeologist must sign any archaeological assessment/report before submittal to the MMS in order to be considered for archaeological review.
- 39) **Q:** Is a geophysicists signature required for archaeology report update? **A:** No.
- 40) **Appendix 2, Section I:** Information on submitting reports on CD-ROM as PDF files with maps in DWG format. **Q:** Are copies of digital remote sensing data required? **A:** Yes, digital data samples are required. Data sample requirements have not changed.
- 41) **Q:** Are digitally stored sensor data required? **A:** No, unless specifically requested.
- 42) ***** Appendix 2, Section I:** The following paragraph was omitted from the final draft of NTL 2002-G01: All original data used to prepare the archaeological resource report must be maintained by the lessee or permittee and be made available to the GOMR upon request at any time prior to lease termination or pipeline right-of-way relinquishment. **This is still required.**
- 43) **Appendix 2, Section I:** This section moved discussion of number of copies required to the beginning of the NTL under Archaeological Resource Reports, part B, page 3.
- 44) **Appendix 2, Section II, C, 6:** **Q:** How should original daily operations logs be submitted if report is provided on CD-ROM? **A:** We suggest scanning it and including it in the PDF document.
- 45) **Appendix 2, Section II, C, 8:** This item is new. An explanation of any problems encountered during the survey, and reasons why you were unable to comply to the guidelines in the new NTL must be included in the archaeological assessment.
- 46) **Appendix 2, Section II, D:** This section reads almost exactly the same as NTL 98-06. The phrase "UTM, Lambert, or geographic" should read UTM, Lambert, and geographic. **Q:** How do we orient survey maps, with X/Y grid north or true north? **A:** All maps date should be oriented grid north.
- 47) **Q:** Are navigation post plots required for all sensors? **A:** We suggest providing only vessel navigation on the paper map, but provide all sensor position files on the CD.
- 48) **Q:** Can pipeline survey maps be oriented along the survey route to optimize space? **A:** Yes
- 49) ***** Appendix 2, Section II, D, 1:** The following statement was omitted from the final draft of NTL 2002-G01: When areas of potential prehistoric resources are identified, the recommended avoidance areas must be clearly identified on the map.
- 50) **Appendix 2, Section II, D, 3:** Specific symbols for unidentified magnetic anomalies and sidescan sonar targets have been included. Identify these symbols with a unique number that ties to the unidentified magnetic anomalies and unidentified sidescan sonar targets tables. In congested areas you may use map(s) scaled at 1:6000. All recommended avoidance areas must be plotted. **Q:** Can a different symbol be used for sonar targets. **A:** We are requiring a box/cross symbol for all unidentified sonar contacts to standardize report maps.
- 51) **Q:** If a shipwreck has been identified can a shipwreck symbol be used instead of the box/cross symbol? Yes, the use of the NOAA shipwreck symbols or our box/cross symbols are both acceptable for shipwrecks.

- 52) **Appendix 2, Section II, D, 5:** Guidelines for layers of DWG maps. There is a slight discrepancy here between Layer three requirements and requirements for unidentified mag anomalies on maps. Mag anomalies on layer three should be identified the same as on map with a unique number that ties to the unidentified magnetic anomalies table.
- 53) **Q:** Is it ok to use more CAD layers than are listed? **A:** Yes
- 54) **Q:** Will MMS issue a summary of suggested standards for layers/symbols/colors/etc. **A:** Standardized layers, symbols, and are under development at this time.
- 55) **Appendix 2, Section II, E, 1:** This section provides a [URL](#) to access a list of references for current literature on prehistoric sites.
- 56) **Appendix 2, Section II, F:** **ALL** archaeological assessments must include a discussion and evaluation of the potential for historic shipwrecks.
- 57) **Appendix 2, Section II, F, 1 (formerly item 2, NTL 98-06):** This section now clearly states that X/Y coordinates of the center of each unidentified magnetometer anomaly and recommended avoidance area must be included in the table of unidentified magnetic anomalies. This section also refers to a suggested table format at the end of the document. The phrase “sensor tow depth” should read sensor tow **height**.
- 58) **Q:** Do anomaly avoidance zones include general hazards? **A:** Not for archaeological purposes.
- 59) **Q:** Can MMS provide guidance on avoidance criteria? **A:** No, we do not typically review all of the survey data, therefore we must rely on the reviewing archaeologist to make these decisions. However, we would stress that a 100 gamma anomaly should not be considered as a cutoff point.
- 60) **Appendix 2, Section II, F, 2 (formerly item 3, 98-06):** Changes list of sonar contacts to a suggested table format and states specific information to be included, also refers to sample table format at end of document.
- 61) **Appendix 2, Section II, F, 3 (formerly item 4, 98-06):** text reads the same.
- 62) **Appendix 2, Section II, F, 4 (formerly item 5, 98-06):** text reads the same.
- 63) **Appendix 2, Section II, F, 5 (formerly item 6, 98-06):** addition of statement to include discussion of potential shipwreck preservation potential in terms of bottom sediment type and thickness.
- 64) **Appendix 2, Section II, F, 6 (formerly item 7, 98-06):** text reads the same.
- 65) **Appendix 2, Section II, G:** This section is slightly revised. **Q:** Are copies of digital remote sensing data required? **A:** Yes, the remote-sensing data sample requirements have not changed.
- 66) **Appendix 2, Section II, G, 2:** For pipeline surveys, include a digital copy of the computer-generated mosaics in Historic Shipwreck Blocks as a geo-referenced TIF file. If these are extremely lengthy pipelines contact us, we may advise to submit only a partial mosaic.
- 67) **Q:** If an infield flowline is covered by a previous archaeology survey, will a mosaic be required? **A:** Not if it is a lease-term pipeline. Right-of-ways will require a mosaic.
- 68) **Q:** What if original survey was conducted prior to 3/15/02? **A:** See previous question.
- 69) **Appendix 2, Section II, G, 3: Q:** Can digital magnetometer data be submitted in lieu of three complete lines of analog data? **A:** Yes, provided it is in a viewable format.

- 70) **Appendix 2, Section II, I:** This section is slightly revised.
- 71) **Appendix 2, Section III, A and B:** This is a new section that includes suggested formats for tables of unidentified magnetic anomalies and unidentified sidescan sonar targets. **Q:** Can the coordinate system be included at the top of the sonar and magnetometer tables, rather than as a separate column? **Q:** Can the column titled "Min. Avoid. Dist". be changed to "Archaeologist's Recommended Minimum Avoidance Distance" **Q:** Too many columns. **A:** The tables included in the NTL are suggested formats, not required forms. We do require all the data that is included in the suggested formats. It is up to those preparing the reports to determine the final format.
- 72) **Q:** What are the minimum data columns required for magnetometer and sonar tables on maps? **A:** We have no requirements for either tables on maps, therefore there are no minimum data columns requirements.
- 73) **NOTE:** We will randomly request **ALL** remote-sensing data from lease block surveys to evaluate the data quality. We plan to do this at least once a year per operator.
- 74) **NOTE:** If you deviate from the requirements as outlined in the new NTL, you must address this in the report.
- 75) **Q:** Can you provide an explanation of stipulations. **A:** There are no longer any archaeological stipulations, only regulations such as: If you discover any archaeological resource while conducting operations in the lease area, you must immediately halt operations within the area of the discovery and report the discovery to the Regional Director. If investigations determine that the resource is significant, the Regional Director will tell you how to protect it. These regulations are outlined in [30 CFR 250.194](#).
- 76) **Q:** What will be the first lease number affected by the new NTL? **A:** There is no specific first lease number that will be affected. Since NTL 2002-G-1 supercedes all other NTLs and LTLs all surveys conducted after March 14, 2002, will be required to comply with new NTL. We will not change survey lane spacing requirements for previously leased blocks until the lease number changes, therefore, any blocks in water depths of 60 meters to 200 meters, leased prior to March 15, 2002, will remain at 300 meter survey lane spacing. However, if a potential resource has been identified within one of these blocks, we may require additional surveys (at 50 meter spacing) in up to 25% of the block. A notice will be sent to all operators affected by this.

Past Problems with Archaeological Assessments

Below is a list of some of the most common problems we have had with archaeological reports over the last two years.

Quality Control Problems:

- 1) Equipment descriptions/instrument settings in appendix do not match descriptions given in report.
- 2) Magnetometer table sensor depths not calculated properly.
- 3) If survey technician identifies poor data quality during survey, then those lines with unacceptable data should be re-run.
- 4) Incomplete magnetometer/sidescan sonar tables (e.g., X/Y coordinates missing, scales missing on sonar records).

- 5) Poor quality representative data samples (photocopies are either too light or too dark).
- 6) Missing required data (e.g., copies of all unidentified sonar contacts, 100% [less than 3 miles] or 25% [greater than 3 miles] of centerline mag data for right-of-way pipelines, three complete lines of mag data for block surveys, samples of subbottom profiler data for each type of relict landform identified in the report).
- 7) Signature page(s) missing.
- 8) Unclear recommendations.
- 9) Potential inundated sites recommended for avoidance are often not clear on maps.
- 10) Operator submits EP, DOCD, or pipeline application with old Archaeological Assessment under new lease number, prior to submitting old assessment for compliance (BS) review.

Insufficient Survey Coverage Issues:

- 1) Insufficient sonar coverage in shallow water.
- 2) Magnetometer sensor not towed at the appropriate depth.
- 3) Missing centerline data on pipeline curves for right-of-ways.