

## Industrial Hygiene Field Operations Manual (IHFOM) – Record of Changes

Chapter	Paragraph	Description	File Date*
Chapter 6 Industrial Ventilation	All	Updated references.	8 MAR 2022
Chapter 9 Respiratory Protection	All, added Appendices 9-B, 9-C, and 9-D.	Updated Chapter 9 to add links to Respirator Toolbox. Added newly developed checklists as appendices.	13 SEP 2021
Chapter 8 Equipment Maintenance and Calibration	Appendix 8-C	Updated Chapter 8 to reinsert the Equipment Repair or Replacement Decision Chart at Appendix 8-C and updated the reference.	23 AUG 2021
Chapter 8 Equipment Maintenance and Calibration	All	Updated Chapter 8 to reflect current guidance for industrial hygiene sampling equipment and calibration.	23 JUN 2021
Chapter 2 Industrial Hygiene Surveys and Survey Reports	5e, Appendix 2-D	Updated Chapter 2 to add additional reference for reproductive and developmental hazards identification. Added exception for weapons qualifications only noise exposures for an otherwise Priority 3 Shop.	4 JUN 2021
Sampling Form	NMCPHC 5100/18	Fixed typo for Post Cal Date. Added field for DOEHRS Sample #. Reduced the columns down to three workers in order to allow more room for writing. Fixed wrapping/font issues throughout. Moved explanations and definitions pages to attachment. Added CUI designation block and drop down CUI headers/footers in accordance with DoD CUI guidance.	17 MAY 2021
Chapter 6 Industrial Ventilation	5k	Updated Chapter 6 to match policy guidance on BSC certification by accredited personnel.	10 MAY 2021
Chapter 2 Industrial Hygiene Surveys and Survey Reports	2f, 2g, 2j, Appendix 2-D	Updated Chapter 2 to match Occupational Exposure Limit definition to policy guidance. Added control and medical surveillance criteria definition. Added clarification on what is a significant hazard. Added DoD guidance requiring labs that use infectious agents and toxins to get an annual survey.	22 MAR 2021



Chapter	Paragraph	Description	File Date*
Chapter 5 Noise Survey	All, added Appendix 5-A	Updated Chapter 5 to include the latest guidance on impulse noise measurement and evaluation including the addition of Appendix 5-A. Updated reference links.	11 FEB 2021
Chapter 3 Sampling Procedures	2e, 2g, 12a, 13a, 16a, 17b, 17c	Updated Chapter 3 to match Occupational Exposure Limit definition to policy guidance. Added a definition of inspirability. Clarified that media must be analyzed before expiration date.	11 FEB 2021
Chapter 6 Industrial Ventilation	5j	Updated Chapter 6 to match policy guidance and added clarification note on BSC certification.	22 JAN 2021
Chapter 4 Exposure Assessment Strategies	2q	Updated Chapter 4 to match Occupational Exposure Limit definition to policy guidance.	22 JAN 2021
Chapter 3 Sampling Procedures	12a, 13a, 16a, 17b, 17c	Updated Chapter 3 to clarify that media must be analyzed before expiration date.	12 MAR 2020
All	All	Updated all revision dates to 22 NOV 2019 to correspond to IHFOM reissuance. Minor formatting changes throughout. Substantive edits are listed below under the respective Chapters.	22 NOV 2019
Chapter 1 Introduction	1	Updated Chapter 1 to clarify that the IHFOM is guidance and does not dictate policy unless referencing policy documents.	22 NOV 2019
Chapter 6 Industrial Ventilation	5g, 5j	Updated Chapter 6 to clarify that annual ventilation assessments should be done. Clarified accreditation requirements for personnel who certify BSCs.	22 NOV 2019
Chapter 3 Sampling Procedures	12	Updated Chapter 3 to remove directions on how to perform gravimetric analysis.	22 NOV 2019



Chapter	Paragraph	Description	File Date*
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 to reflect current guidance on the required sections in an industrial hygiene survey. Clarified the definition of survey dates. Updated ototoxin references. Updated reference from TOXNET to PubChem. Updated requirements for noting AUL deficiencies to match requirements in OPNAVINST 5100.23 Series.	22 NOV 2019
Sampling Form	NMCPHC 5100/15	Minor cosmetic changes.	30 SEP 2019
Sampling Form	NMCPHC 5100/23	Formerly NMCPHC 5100/15.2; Brought form back as 5100/23.	30 SEP 2019
Chapter 13 Indoor Environmental Quality	All	Updated Chapter 13 formatting. Combined all documents into one file for ease of use.	23 SEP 2019
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 to include the need to identify and annotate ototoxins and two possible references to use. Added design review and change notification statements to put into IH survey. Clarified roles and responsibilities for supporting detachments.	17 SEP 2019
Chapter 4 Exposure Assessment Strategies	All	Updated Chapter 4 to include additions, rewording, and restructuring for clarity.	16 SEP 2019
Chapter 11 Ultraviolet Radiation	All	Updated Chapter 11 formatting.	30 JUL 2019
Chapter 5 Noise Surveys	All	Updated Chapter 5 formatting. Removed BUMEDNOTE 6260 and updated references. Changed limit from 96 dBA to 104 dBA for when double hearing protection is required. Removed requirement for derating hearing protection devices (50% of the NRR).	22 JUL 2019
Chapter 6 Industrial Ventilation	Reference 6-8	Updated reference 6-8 NSF/ANSI 49-2018 to latest edition.	24 JUN 2019



Chapter	Paragraph	Description	File Date*
Chapter 2 Industrial Hygiene Surveys and Survey Reports	3a(1) and 3a(2); Appendix 2-A, 5e(1) and 5e(2)	Updated Chapter 2 to include language to assess primarily workplace hazards that present a significant risk. Added need to identify and annotate skin or respiratory sensitizers in addition to reproductive or developmental hazards and carcinogens.	19 JUN 2019
Chapter 10 Personal Protective Equipment and Chemical Protective Clothing	All	Updated Chapter 10 formatting.	11 JUN 2019
Chapter 8 Equipment Maintenance and Calibration	All	Updated Chapter 8 formatting.	10 JUN 2019
Chapter 9 Respiratory Protection	All	Updated Chapter 9 formatting.	10 JUN 2019
Chapter 12 Hazardous Materials Spills/Waste Operations	All	Updated Chapter 12 formatting.	23 MAY 2019
Chapter 7 Asbestos Monitoring Procedures	All	Updated Chapter 7 formatting.	23 APR 2019
Chapter 6 Industrial Ventilation	All	Updated Chapter 6 formatting.	16 APR 2019
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 formatting. Clarify IH program office support requirements for Detachments.	16 APR 2019
Chapter 4 Exposure Assessment Strategies	All	Updated Chapter 4 formatting. Updated OEL definition.	11 MAR 2019
Chapter 1 Introduction	All	Updated Chapter 1 formatting. Changed Commanding Officer to Commander.	11 MAR 2019
Chapter 3 Sampling Procedures	All	Updated Chapter 3 formatting. Updated OEL definition.	1 MAR 2019
Sampling Forms	NMCPHC 5100/13 and NMCPHC 5100/14	Corrected definition of Lower Flow Rate.	1 MAR 2019



Chapter	Paragraph	Description	File Date*
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 formatting. Updated reproductive hazard reference. Updated medical surveillance guidance. Updated OEL definition.	1 FEB 2019
Chapter 8 Equipment Maintenance and Calibration	All	Updated Chapter 8 formatting.	10 JAN 2019
Chapter 13 Indoor Environmental Quality	All	Updated Chapter 13 formatting and appendices.	14 DEC 2018
Chapter 6 Industrial Ventilation	All	Updated Chapter 6 to reflect current guidance. This update included reformatting the chapter and adding a link to specific ship design criteria.	21 NOV 2018
Chapter 10 Personal Protective Equipment and Chemical Protective Clothing	All	Updated Chapter 10 formatting and hyperlinks.	7 NOV 2018
Chapter 9 Respiratory Protection	All	Updated Chapter 9 to reflect current guidance. This update included reformatting the chapter and updating any hyperlinks.	1 NOV 2018
Chapter 12 Hazardous Materials Spills/Waste Operations	All	Updated Chapter 12 to reflect current guidance. This update also included reformatting the chapter and updating any hyperlinks.	28 SEP 2018
Chapter 7 Asbestos Monitoring Procedures	All	Updated Chapter 7 to reflect current guidance. This update included reformatting the chapter and updating any hyperlinks.	28 SEP 2018
Chapter 5 Noise Surveys	3b(6), 4b(5), 7c, 7d, 7e, 9b	Updated Chapter 5 to remove specific mention of 96dBA or 165 dB(P) for double hearing protection and remove the limit of hearing protection.	31 AUG 2018
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 with minor cosmetic updates.	5 JUL 2018
Chapter 4 Exposure Assessment Strategies	All	Updated Chapter 4 with minor cosmetic updates.	5 JUL 2018



Chapter	Paragraph	Description	File Date*
Chapter 1 Introduction	All	Updated Chapter 1 to reflect current guidance. This update also included reformatting the chapter and updating any hyperlinks.	26 JUN 2018
Chapter 11 Ultraviolet Radiation	All	Updated Chapter 11 with minor cosmetic updates.	26 JUN 2018
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 to reflect current survey guidance. This update also included reformatting the chapter and updating any hyperlinks.	26 JUN 2018
Chapter 3 Sampling Procedures	All	Updated Chapter 3 to reflect current sampling guidance. This update also included reformatting the chapter and updating any hyperlinks. Removed outdated appendices.	26 JUN 2018
Chapter 4 Exposure Assessment Strategies	All	Updated Chapter 4 to reflect current exposure assessment guidance. This update also included reformatting the chapter and updating any hyperlinks.	26 JUN 2018
Chapter 5 Noise Surveys	All	Updated Chapter 5 with minor cosmetic updates.	26 JUN 2018
Chapter 5 Noise Surveys	12	Updated Chapter 5 to just reference the ANSI Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms.	25 APR 2018
Sampling Forms	NMCPHC 5100/17	Changed the >96 to at 96 for when to record a noise hazardous radius for double hearing protection.	21 FEB 2018
Sampling Forms Definitions	NMCPHC 5100/17	Changed the >96 to greater than or equal to 96 for when to record a noise hazardous radius for double hearing protection.	21 FEB 2018
<del>Sampling Forms and Sampling Forms Definitions</del>	All	<del>Linked forms on IHFOM webpage to Naval Forms Online</del>	<del>21 FEB 2018</del>
Chapter 11 Ultraviolet Radiation	All	Updated Chapter 11 to reflect current guidance for ultraviolet radiation. This update also included reformatting the chapter and updating any hyperlinks. Received permission from ACGIH to use their current tables and figure.	30 NOV 2017



Chapter	Paragraph	Description	File Date*
Chapter 2 Industrial Hygiene Surveys and Survey Reports	3a(7)	Remove ship template information and added ship repository information.	16 NOV 2017
Chapter 2 Industrial Hygiene Surveys and Survey Reports	3a, 3b, 3g, 3h, and Reference 2-4	Added associating personnel to particular shops, processes and similar exposure groups (SEGs). Added referral to Appendix 2-F. Added discussion of the BUMEDINST 5100.13 requirement to use DOEHRs-IH. Added reference 2-4 BUMEDINST 5100.13 series.	5 Oct 2017
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-F	Added Appendix 2-F to discuss procedures for managing and transferring data between industrial hygiene program offices.	5 Oct 2017
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-A, 5e	Added associating personnel to particular shops, processes and SEGs. Added information on SEG assessments.	5 Oct 2017
Chapter 4 Exposure Assessment Strategies	All	General review of Chapter 4 to compare against the latest edition of AIHA, A Strategy for Assessing and Managing Occupational Exposures and minor updates.	1 SEP 2017
Audiometric Booth Certification Form	Footer	Added form number and minor cosmetic changes.	10 JUL 2017
Chapter 2 Industrial Hygiene Surveys and Survey Reports	2e	Add OEL definition to match Chapter 3 and Chapter 4.	18 MAY 2017
Chapter 5 Noise Surveys	5f	Minor typographical change.	6 APR 2017
Chapter 5 Noise Surveys	8 and Reference 5-11	Minor typographical and cosmetic changes.	10 MAR 2017
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2 A, 5e(1)(d) through (f), and 5f(8)	Updated Chapter 2 to reflect current guidance for annotating carcinogen in surveys.	21 DEC 2016
Chapter 5 Noise Surveys	All	Updated Chapter 5 to reflect current guidance for noise. This update included reformatting the chapter and updating any hyperlinks.	17 NOV 2016



Chapter	Paragraph	Description	File Date*
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Reviewed, compared and updated Chapter 2 to include necessary afloat survey format, template and notification of completion guidance from Chapter 14.	14 NOV 2016
Chapter 14 Afloat Industrial Hygiene Survey Reports	All	Deleted. Necessary afloat survey format, template and notification of completion guidance now included in Chapter 2.	14 NOV 2016
Table of Contents	Chapter 14	Removed Chapter 14.	14 NOV 2016
Chapter 3 Sampling Procedures	1e	Added OSHA substance specific section 6(b) of the OSH Act of 1970 rulemaking OELs.	19 Oct 2016
Chapter 4 Exposure Assessment Strategies	2o	Added OSHA substance specific section 6(b) of the OSH Act of 1970 rulemaking OELs.	19 Oct 2016
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Reviewed, updated and streamlined information.	28 JUL 2016
Chapter 3 Sampling Procedures	1e	Removed “as published in the IHFOM” since the IHFOM does not publish OELs.	1 APR 2016
Chapter 4 Exposure Assessment Strategies	2o	Removed “as published in the IHFOM” since the IHFOM does not publish OELs.	1 APR 2016
Chapter 2 Industrial Hygiene Surveys and Survey Reports	4a and 4c	Added clarification on what is included on an Exposure Monitoring Plan.	21 DEC 2015
Chapter 2 Industrial Hygiene Surveys and Survey Reports	1 and 3e(2)	Added clarification on industrial hygiene role in environmental exposure assessments and determining personnel exposures to chemicals from an environmental source.	8 DEC 2015
Chapter 8 Equipment Maintenance and Calibration	4b	Updated information on equipment that is calibrated at the NMCPHC Calibration Laboratory.	2 DEC 2015
Chapter 8 Equipment Maintenance and Calibration	7	Adding clarification on field calibration of personal sampling pumps.	2 DEC 2015





Chapter	Paragraph	Description	File Date*
Chapter 13 Indoor Environmental Quality	Section: 13.1 Appendix G	Clarified information from ASHRAE references for guidance on carbon dioxide and relative humidity.	7 JUL 2015
Chapter 4 Exposure Assessment Strategies	4d(4)(b) <u>2</u>	Updated Table 4.3 - Exposure Effect Ratings to remove action level (AL) nomenclature with regards to the 95th percentile exposure point estimate (as used in DOEHRS-IH), and have only the 50% OEL equivalent to the nomenclature used in the AIHA exposure assessment strategy reference.	7 JUL 2015
Chapter 3 Sampling Procedures	1b	Corrected minor typographical error regarding acronyms.	7 JUL 2015
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-D, Table 2	Updated Table 2-Exposure Effects Rating Categorization to make consistent with Chapter 4, removing action level (AL) nomenclature with regards to the 95th percentile exposure point estimate (as used in DOEHRS-IH) and having only the 50% OEL equivalent to the nomenclature used in the AIHA exposure assessment strategy reference.	7 JUL 2015
Chapter 3 Sampling Procedures	All	Updated Chapter 3 Definition for OEL based on BUMED input.	10 JUN 2015
Chapter 4 Exposure Assessment Strategies	All	Updated Chapter 4 Definition for OEL based on BUMED input.	10 JUN 2015
Chapter 13 Indoor Environmental Quality	Sections: 13.1, 13.1 Appendix G, 13.2, 13.3, 13.2 Appendix A and 13.6	Revised and updated the Indoor Environmental Quality Chapter 13 Section 1, Section 2, Section 3 and Section 6. Some of the updates included content, primarily in Section 1 Appendix G. This update also included updating references and updating any hyperlinks.	2 JUN 2015
Chapter 14 Afloat Industrial Hygiene Survey Reports	3	Corrected and/or updated hyperlinks.	2 JUN 2015



Chapter	Paragraph	Description	File Date*
Chapter 9 Respiratory Protection	4c(2)	Updated Chapter 9 to remove the reference to OSHA 1989 With Changes Through 1992, Table Z-1-A, Table Z-2 previously included in this manual.	6 APR 2015
Chapter 10 Personal Protective Equipment and Chemical Protective Clothing	2a(3); Appendix 10-A, 3d; and Appendix 10-C	Updated Chapter 10 to remove the reference to OSHA 1989 With Changes Through 1992, Table Z-1-A, Table Z-2 previously included in this manual.	6 APR 2015
Chapter 6 Industrial Ventilation	All	Updated Chapter 6 to reflect current guidance for industrial ventilation. This update included reformatting the chapter and updating any hyperlinks.	9 FEB 2015
Chapter 4 Exposure Assessment Strategies	2d and 4d(6)(a)	Updated Chapter 4 to clarify information on handling censored (less than limit of detection (LOD) or limit of quantification (LOQ) data.	20 JAN 2015
Chapter 1 Introduction	All	Updated Chapter 1. This update included reformatting the chapter and updating any hyperlinks.	29 DEC 2014
Table of Contents	Appendix A	Removed Appendix A - Final Rule Limits Promulgated By OSHA In 1989 With Changes Through 1992, Table Z-1-A, Table Z-2. This update also included reformatting the Table of Contents.	29 DEC 2014
Title Page	All	Removed Title Page, as it was outdated, given that continual maintenance updates (since the last full revision and publication in March 1999) have been made in electronic format and are available on the IHFOM webpage.	29 DEC 2014
Chapter 12 Hazardous Materials Spills/Waste Operations	All	Updated Chapter 12 to reflect current guidance for the industrial hygienists' role in hazardous materials spills/waste operations. This update also included reformatting the chapter and updating any hyperlinks.	10 DEC 2014



Chapter	Paragraph	Description	File Date*
Chapter 11 Ultraviolet Radiation	All	Updated Chapter 11 to reflect current guidance for ultraviolet radiation. This update also included reformatting the chapter and updating any hyperlinks.	9 DEC 2014
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-D	Updated tables to match Chapter 4 for DOEHRS-IH exposure assessment matrices.	13 NOV 2014
Chapter 3 Sampling Procedures	All	Updated Chapter 3 Definitions to match with Chapter 4 and reformatted entire chapter to current layout.	13 NOV 2014
Chapter 7 Asbestos Monitoring Procedures	All	Updated Chapter 7 to reflect current guidance for asbestos monitoring procedures. This update also included reformatting the chapter and updating any hyperlinks.	26 SEP 2014
Chapter 4 Exposure Assessment Strategies	All	Updated Chapter 4 to reflect current guidance and reflect DOEHRS-IH exposure assessment matrices. This update also included reformatting the chapter and updating any hyperlinks.	22 SEP to 13 NOV 2014
Sampling Forms Definitions	NMCPHC 5100/13 NMCPHC 5100/14 NMCPHC 5100/15.1 NMCPHC 5100/15.2 NMCPHC 5100/16 NMCPHC 5100/18 NMCPHC 5100/19 NMCPHC 5100/20	Minor cosmetic change.	19 SEP 2014
Chapter 8 Equipment Maintenance and Calibration	All	Updated Chapter 8 to reflect current guidance for industrial hygiene sampling equipment. This update also included updating any hyperlinks.	19 SEP 2014
Chapter 5 Noise Surveys	Appendix 5-B and Audiometric Booth Certification Form	Changed Appendix 5-B cosmetically to highlight certain information at the request of the audiologist.	11 SEP 2014
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-D	Updated tables to reflect DOEHRS-IH exposure assessment matrices.	11 SEP 2014



Chapter	Paragraph	Description	File Date*
Chapter 3 Sampling Procedures	All	Updated Chapter 3 to reflect current guidance for industrial hygiene sampling procedures. This update also included reformatting the chapter and updating any hyperlinks.	11 SEP 2014
Chapter 10 Personal Protective Equipment and Chemical Protective Clothing	All	Updated Chapter 10 to reflect current guidance for personal protective equipment. This update also included reformatting the chapter and updating any hyperlinks.	17 JUL 2014
Chapter 13 Indoor Environmental Quality	Sections: 13 Introduction, 13.1, 13.1 Appendix G, 13.2, 13.2 Appendix B, 13.3, 13.4, 13.5 and 13.6	Revised and updated the Indoor Environmental Quality Chapter 13 Introduction, Section 1, Section 2, Section 3, Section 4, Section 5 and Section 6. Some of the updates included content, primarily in Sections 1, 2, 3 and Section1 Appendix G. This update also included reformatting the chapter and updating any hyperlinks.	8 JUL 2014
Chapter 9 Respiratory Protection	Appendix 9-A, Footnote C of Assigned Protection Factors table	Updated footnote regarding assigned protection factor information for helmet/hooded Powered Air-Purifying Respirator (PAPR) and Supplied-Air Respirator (SAR).	7 JUL 2014
Chapter 9 Respiratory Protection	All	Updated Chapter 9 to reflect current guidance for respiratory protection. This update also included reformatting the chapter and updating any hyperlinks.	22 MAY 2014
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated Chapter 2 and reorganized and added appendices to reflect current guidance and upcoming policy changes for conducting industrial hygiene surveys. This update also included reformatting the chapter and updating any hyperlinks.	9 to 21 MAY 2014
Chapter 5 Noise Surveys	7, 8 and 11/12 (References)	Updated Chapter 5 to reflect current guidance (BUMED Note 6260) and upcoming policy changes for noise surveys. This update also included reformatting the chapter and updating any hyperlinks.	9 MAY 2014



Chapter	Paragraph	Description	File Date*
Sampling Forms	NMCPHC 5100/13 NMCPHC 5100/14 NMCPHC 5100/15.1 NMCPHC 5100/15.2 NMCPHC 5100/17 NMCPHC 5100/18 NMCPHC 5100/19 NMCPHC 5100/20	Updated sampling forms.	28 JUN 2013
Sampling Forms Definitions	NMCPHC 5100/13 NMCPHC 5100/14 NMCPHC 5100/15.1 NMCPHC 5100/15.2 NMCPHC 5100/17 NMCPHC 5100/18 NMCPHC 5100/19 NMCPHC 5100/20	Updated sampling forms definitions.	28 JUN 2013
Appendix A	Table Z-1A	Fix typo for Dieldrin TWA value.	23 APR 2013
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-A, 3c and 4h(5)	Minor cosmetic change.	12 MAR 2013
Chapter 3 Sampling Procedures	12	Minor cosmetic wording change.	27 FEB 2013
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-A, 3g and 4g	Updated industrial hygienist's role in recommending medical surveillance.	27 FEB 2013
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-B	Added a new Appendix 2-B on recommended formats for medical surveillance summaries.	27 FEB 2013
Chapter 13 Indoor Environmental Quality	Sections: 13.3	Revised and updated the Indoor Environmental Quality Chapter 13 Section 3 with information from the new World Health Organization guidelines, NAVFAC interim guidance and United Facilities Guide Specification, and checked links, and updated references resources.	26 FEB 2013
Chapter 3 Sampling Procedures	11b and 11f	Updated outdated statement regarding thoracic and inhalable OELs.	26 FEB 2013



Chapter	Paragraph	Description	File Date*
Chapter 3 Sampling Procedures	18	Removed the year from the ACGIH Latest Edition TLVs® and BEIs, Threshold Limit Values for Chemical Substances and Physical Agents reference.	26 FEB 2013
Chapter 3 Sampling Procedures	1b, 3a, 3b and 5b	Minor cosmetic wording change.	26 FEB 2013
Chapter 4 Exposure Assessment Strategies	4d(4)(e)(i)	Minor cosmetic wording change.	26 FEB 2013
Chapter 13 Indoor Environmental Quality	Section: 13.1 Appendix G	Revised and updated the Indoor Environmental Quality Chapter 13 Section 1 Appendix G National Ambient Air Quality and World Health Organization standards, checked links, and updated references resources.	12 FEB 2013
Entire IHFOM including Appendices, Sampling Forms, Sampling Forms Definitions and webpage links	All	Checked and updated hyperlinks.	19 DEC 2012 to 13 FEB 2013
Chapter 9 Respiratory Protection (Draft)	All	Removed Chapter 9 Draft.	17 DEC 2012
Appendix A	Table Z-1A	Removed typographical error in CAS number.	12 DEC 2012
Chapter 3 Sampling Procedures	Appendix 3-B	Revised Appendix 3-B. The previous Appendix B detailed a risk assessment process for determining health-based criteria to which wipe sampling results for a specific contaminant could be compared. That has been replaced by a process for collecting wipe samples of metal dusts in sufficient numbers to allow for useful statistical analysis and decision making. This process is specifically focused on sampling in non-industrial areas such as lunch rooms and includes criteria for metals of interest in such non-industrial areas. The risk assessment process is still available from NMCPHC upon request.	14 NOV 2012



Chapter	Paragraph	Description	File Date*
Appendix A	Table Z-1A	Removed multiple typographical errors in CAS number, exposure limit and skin designations	4 Oct 2012
Appendix A	Table Z-2	Removed Fluoride as dust since it was not cross-referenced in Table Z-1-A, per 29 CFR 1910.1000 7-1-1992 Edition or cross-referenced due to later OSHA 6b single substance standards.	4 Oct 2012
Chapter 3 Sampling Procedures	17 c (3)	Made it generic to metals and not focusing on Lead alone. Referred the reader to the new Appendix 3-B for the Surface Contamination Risk Assessment guide.	21 MAY to 28 JUN 2012
Chapter 3 Sampling Procedures	18	Removed References 3-17 and 3-18 as they are for lead-based paint assessments in housing. This should not be done by BUMED industrial hygienists unless they are Certified Lead Based Paint (LBP) Inspectors or Risk Assessors and there is a Memorandum of Understanding (MOU) between the housing manager and the Medical Treatment Facility (MTF) to perform this function.	21 MAY to 28 JUN 2012
Chapter 3 Sampling Procedures	Appendix 3-B	Rewrote Appendix 3-B. Originally, it contained information regarding lead wipe sampling for housing. Now, it is the Surface Contamination Risk Assessment guide.	21 MAY to 28 JUN 2012
Chapter 13 Indoor Environmental Quality	Section: 13 Introduction	Removed a reference that was in error, mentioning Sections 13.7 and 13.8, which do not exist.	13 FEB 2012
Title Page	All	Updated hyperlinks.	27 APR 2011
Chapter 2 Industrial Hygiene Surveys and Survey Reports	All	Updated hyperlinks.	27 APR 2011
Chapter 3 Sampling Procedures	All	Updated hyperlinks.	27 APR 2011
Chapter 5 Noise Surveys	All	Updated hyperlinks and some minor cosmetic changes.	27 APR 2011



Chapter	Paragraph	Description	File Date*
Chapter 7 Asbestos Monitoring Procedures	All	Updated hyperlinks.	27 APR 2011
Chapter 8 Equipment Maintenance and Calibration	All	Updated hyperlinks.	27 APR 2011
Chapter 9 Respiratory Protection (Draft)	All	Updated hyperlinks.	27 APR 2011
Chapter 13 Indoor Environmental Quality	Sections: 13 Introduction, 13.1, 13.1 Appendix G, 13.2,13.3, 13.5 and 13.6	Updated hyperlinks.	27 APR 2011
Sampling Forms Definitions	NMCPHC 5100/13 NMCPHC 5100/14 NMCPHC 5100/15.1 NMCPHC 5100/15.2 NMCPHC 5100/16 NMCPHC 5100/17 NMCPHC 5100/18 NMCPHC 5100/19 NMCPHC 5100/20	Updated hyperlinks.	27 APR 2011
Record of Changes	All	Updated hyperlinks.	27 APR 2011
Audiometric Booth Certification Form	All	Removed IHFOM Chapter 5 revision date, since IHFOM Internet updates can be made at any time and having the date on the form would require the form to be updated anytime Chapter 5 had an update whether it was related to the form or not.	27 APR 2011
Chapter 5 Noise Surveys	All	Updated hyperlinks.	18 APR 2011
Chapter 5 Noise Surveys	Appendix 5-B and Audiometric Booth Certification Form	Changed Appendix 5-B to include a link to a new, single, combined audiometric booth certification form and added the new form	12 APR 2011
Chapter 14 Afloat Industrial Hygiene Survey Reports	1 and 3	Revised and updated the Standardized Afloat Industrial Hygiene Survey Reports with input from the BUMED Regional Industrial Hygiene.	10 JAN 2011
Sampling Forms	NMCPHC 5100/19 NMCPHC 5100/20	Updated sampling forms.	29 Oct 2010





Chapter	Paragraph	Description	File Date*
Sampling Forms Definitions	NMCPHC 5100/19 NMCPHC 5100/20	Updated sampling forms definitions.	29 Oct 2010
Chapter 5 Noise Surveys	11a	Changed the requirement of ambient noise levels in audiometric test booths needing to be at least 10dB below the maximum allowable sound pressure levels/maximum permissible ambient noise levels (MPANLs) to needing to be only 3dB below. This was due primarily to the feasibility of finding Type 1 Sound Level Meters to measure that low.	8 SEP 2010
Chapter 5 Noise Surveys	11c	Changed the requirement of needing to be able to measure to 10dB below the maximum allowable sound pressure levels /maximum permissible ambient noise levels (MPANLs) for audiometric test booth certification to needing to be able to measure only 3dB below. This was due primarily to the feasibility of finding Type 1 Sound Level Meters to measure that low.	8 SEP 2010
Chapter 5 Noise Surveys	Appendix 5-B and Audiometric Booth Certification Form	Updated links to audiology test booth certification forms. Updated the audiology test booth certification forms to include the latest references and to be fillable .pdf forms.	27 JUL 2010
Chapter 5 Noise Surveys	All	Updated the chapter to reflect changes in Navy noise policy due to be released in OPNAVINST 5100.23H.	29 JAN 2010
Sampling Forms Definitions	All	Updated sampling forms definitions to reflect the requirements of using DOEHRS-IH better.	18 NOV 2009
Chapter 6 Industrial Ventilation	2b	Minor cosmetic change.	18 NOV 2009
Chapter 3 Sampling Procedures	Appendix 3-A, 3	Included information on the changeover from using Navy Industrial Hygiene OPCODEs to the DOEHRS-IH Process Category/Common Process/Process Method picklists.	18 NOV 2009



Chapter	Paragraph	Description	File Date*
Chapter 13 Indoor Environmental Quality	Section: 13.1 Appendix G	Revised and updated the Indoor Environmental Quality Chapter 13 Section 1 Appendix G standards, checked links and updated references resources.	18 NOV 2009
Chapter 13 Indoor Environmental Quality	Sections: 13.1, 13.2, 13.2 Appendix A and 13.3	Revised and updated the Indoor Environmental Quality Chapter 13 Section 1, Section 2, Section 2 Appendix A and Section 3 with information from the new World Health Organization and New York City guidelines, checked links and updated references resources.	18 NOV 2009
Sampling Forms	All	Updated sampling forms to reflect the requirements of using DOEHRS-IH better.	17 to 18 NOV 2009
Chapter 13 Indoor Environmental Quality	Section: 13.6	Checked links, updated resources and added or removed laboratories based upon the current American Industrial Hygiene Association (AIHA) accreditation list to Indoor Environmental Quality Chapter 13 Section 6.	24 JUN 2009
Chapter 9 Respiratory Protection (Draft)	All	Updated website links.	18 JUN 2009
Chapter 8 Equipment Maintenance and Calibration	4b	Updated information on NMCPHC Calibration Laboratory.	15 JUN 2009
Chapter 5 Noise Surveys	All	Updated website links.	21 MAY 2009
Chapter 6 Industrial Ventilation	2b, 5d and 9	Added information regarding performing Biological Safety Cabinet surveys.	31 JAN 2009
Chapter 2 Industrial Hygiene Surveys and Survey Reports	3c	Added information regarding performing Biological Safety Cabinet surveys. Updated hyperlinks.	31 JAN 2009
Chapter 4 Exposure Assessment Strategies	All	General update of Chapter 4.	15 JAN 2009



Chapter	Paragraph	Description	File Date*
Chapter 9 Respiratory Protection (Draft)	All	Added draft for an update to Chapter 9. This will not replace the existing Chapter 9 until after full Industrial Hygiene Management review. <del>For a list of changes to Chapter 9 see: Summary_of_Changes_to_Draft_IHFO M_Chapter_9.pdf</del>	8 JAN to 31 MAR 2009
Chapter 5 Noise Surveys	9	Corrected Noise Reduction Rating (NRR) derating formulas.	19 SEP 2008
Chapter 13 Indoor Environmental Quality	Sections: 13 Introduction, 13.1, 13.1 Appendix A, 13.1 Appendix B, 13.1 Appendix C, 13.1 Appendix D, 13.1 Appendix E, 13.1 Appendix F, 13.1 Appendix G, 13.2, 13.2 Appendix A , 13.2 Appendix B, 13.3, 13.3 Appendix A and 13.6	Revised and updated the Indoor Environmental Quality Chapter 13 Introduction, Section 1 and Section 6. Primarily cosmetic changes made to Indoor Environmental Quality Chapter 13 Section 2 and Section 3.	11 JUN 2008 to 15 JAN 2009
Sampling Forms	NMCPHC 5100/13 NMCPHC 5100/14 NMCPHC 5100/15.1 NMCPHC 5100/15.2 NMCPHC 5100/18 NMCPHC 5100/19 NMCPHC 5100/20	Updated these forms to add a field required by Defense Occupational Environmental Health Readiness System – Industrial Hygiene (DOEHRs-IH) that was not already on the forms: Exposure Origin. (This field is Marked as optional since this field would likely only be used by DOEHRs-IH users. However, it would be required for DOEHRs-IH users.)	3 JUN 2008
Sampling Forms Definitions	NMCPHC 5100/13 NMCPHC 5100/14 NMCPHC 5100/15.1 NMCPHC 5100/15.2 NMCPHC 5100/18 NMCPHC 5100/19 NMCPHC 5100/20	Updated sampling forms definitions to add a field required by DOEHRs-IH that was not already on the forms: Exposure Origin. (This field is Marked as optional since this field would likely only be used by DOEHRs-IH users. However, it would be required for DOEHRs-IH users.)	3 JUN 2008 to 15 JAN 2009



Chapter	Paragraph	Description	File Date*
Chapter 13 Indoor Environmental Quality	Sections: 13 Introduction, 13.2, 13.2 Appendix A, 13.2 Appendix B, 13.3, 13.3 Figure 1 (MR Wheel), 13.3 Figure 2, 13.3 Appendix A, 13.4, 13.5 and 13.6	Revised and updated the Indoor Environmental Quality Chapter 13 Introduction, Section 2, Section 3, Section 4, Section 5 and Section 6.	30 APR to 8 MAY 2008
Entire IHFOM	All	Updated font from Courier to Times New Roman.	7 MAR 2008
Entire IHFOM including Appendices, Sampling Forms, Sampling Forms Definitions and webpage links	All	Changed Command name from Navy Environmental Health Center (NEHC) to Navy and Marine Corps Public Health Center (NMCPHC).	7 MAR 2008
Chapter 3 Sampling Procedures	Appendix 3-A, 4	Updated the OPCODE dictionary and the table showing what was added or changed.	8 NOV 2007
Sampling Forms Definitions	NEHC 5100/15a NEHC 5100/15b	Updated the hyperlinks to reflect the number changes to the sampling forms from NEHC 5100/15a to NEHC 5100/15.1 and NEHC 5100/15b to NEHC 5100/15.2.	28 SEP 2007
Chapter 3 Sampling Procedures	1c, 1d, 2c and 2d	Updated the hyperlinks to reflect the number changes to the sampling forms from NEHC 5100/15a to NEHC 5100/15.1 and NEHC 5100/15b to NEHC 5100/15.2.	28 SEP 2007
Chapter 3 Sampling Procedures	12b	Added a Note giving a recommendation for balance specifications for weighing IOM inhalable aerosol samplers.	28 SEP 2007
Title Page	Title Page	Added a Note discussing that continual maintenance updates since the last full revision and publication in March 1999 have been made only in electronic format and are available on the IHFOM web page.	28 SEP 2007
Sampling Forms	NEHC 5100/15a NEHC 5100/15b	Based on current naming requirements, I changed the forms' numbers from NEHC 5100/15a to NEHC 5100/15.1 and NEHC 5100/15b to NEHC 5100/15.2.	16 AUG 2007



Chapter	Paragraph	Description	File Date*
Sampling Forms	NEHC 5100/13 NEHC 5100/14 NEHC 5100/15a NEHC 5100/15b NEHC 5100/18 NEHC 5100/19 NEHC 5100/20	Updated the Privacy Act Statement at the end of the survey forms for personal sampling data. This was done to meet Privacy Act requirements. This statement is now a required field on survey forms for personal sampling data. However, signature of the sampled employee is no longer required	5 JUL 2007
Sampling Forms Definitions	NEHC 5100/13 NEHC 5100/14 NEHC 5100/15a NEHC 5100/15b NEHC 5100/18 NEHC 5100/19 NEHC 5100/20	Updated sampling forms definitions regarding the Privacy Act Statement at the end of the survey forms for personal sampling data.	5 JUL 2007
Chapter 3 Sampling Procedures	Appendix 3-A, 4	Updated the OPCODE dictionary and the table showing what was added or changed.	21 FEB 2007
Sampling Forms	All	Updated sampling forms to accommodate Navy Comprehensive Industrial Hygiene Laboratory (CIHL) reports. This removed many of the fields filled in by the laboratories. Updated the sampling forms for samples that do not go to the laboratories to standardize the look of the forms.	21 FEB 2007
Sampling Forms Definitions	All	Updated sampling forms definitions to accommodate Navy CIHL reports. This removed many of the fields filled in by the laboratories. Updated the sampling forms definitions for samples that do not go to the laboratories to standardize the look of the forms definitions.	21 FEB 2007
Sampling Forms	NEHC 5100/13 NEHC 5100/14 NEHC 5100/15a NEHC 5100/15b NEHC 5100/18 NEHC 5100/19 NEHC 5100/20	Add For Official Use Only statement for Privacy Act information.	3 AUG 2006



Chapter	Paragraph	Description	File Date*
Sampling Forms	NEHC 5100/13 NEHC 5100/14 NEHC 5100/15a NEHC 5100/15b NEHC 5100/16	Change limit of detection or LOD to limit of quantification or LOQ.	12 JUL 2006
Sampling Forms Definitions	NEHC 5100/13 NEHC 5100/14 NEHC 5100/15a NEHC 5100/15b NEHC 5100/16	Change limit of detection or LOD to limit of quantification or LOQ.  Removed the reference to the old Appendix B Navy adopted OELs.	12 JUL 2006
Chapter 3 Sampling Procedures	All	Change limit of detection or LOD to limit of quantification or LOQ.	11 JUL 2006
Chapter 4 Exposure Assessment Strategies	All	Change limit of detection or LOD to limit of quantification or LOQ.	11 JUL 2006
Chapter 7 Asbestos Monitoring Procedures	All	Change limit of detection or LOD to limit of quantification or LOQ.	11 JUL 2006
Chapter 5 Noise Surveys	3b	Added the OPNAVINST 5100.19 Series requirement for keeping noise measurement records for 50 years. Referred to the SECNAV M-5210.1 Series requirements for records retention.	7 JUL 2006
Chapter 5 Noise Surveys	12	Added the SECNAV M-5210.1 Series reference as reference 5-3. Updated the references.	7 JUL 2006
Chapter 2 Industrial Hygiene Surveys and Survey Reports	3c	Added information on records retention and records disposition.	7 JUL 2006
Chapter 2 Industrial Hygiene Surveys and Survey Reports	5	Updated reference 2-2 to the new SECNAV M-5210.1 Series.	7 JUL 2006
Chapter 9 Respiratory Protection	3a(5)	Removed the reference to the old Appendix B Navy adopted OELs.	7 JUL 2006
Chapter 8 Equipment Maintenance and Calibration	4b(1)(d)	Added to noise dosimeters that NEHC calibrates the Quest models M7B, M14, M15, M27, M28, Q100, Q220P, Q300, Q300, Q400, Q500 and Quest Noise Pro DL/DLX.	6 JUL 2006



Chapter	Paragraph	Description	File Date*
Chapter 5 Noise Surveys	3a(2)	Updated paragraphs to specify the settings necessary for noise dosimeters that require programming of an upper limit, to recommend data logging capability in noise dosimeters and to specify that any new purchases of noise dosimeters be capable of programming for a 3dB exchange rate as well as the 4dB exchange rate currently required by the Navy.	6 JUL 2006
Appendix A	Table Z-2	Deleted carbon disulfide, carbon tetrachloride, formaldehyde, hydrogen fluoride, hydrogen sulfide, mercury, methyl chloride, organo (alkyl) mercury, styrene, tetrachloroethylene, toluene, and trichloroethylene since they are covered under Table Z-1A.	5 JUL 2006
Sampling Forms	NEHC 5100/17	Updated the Industrial Hygiene Noise Survey Form NEHC 5100/17. A Measurement Location field was added to describe and document the actual location where the noise measurement was taken. Also, additional guidance on taking a Noise Hazardous Radius measurement at 84 dBA and 104 dBA, where needed, was added.	3 JUL 2006
Sampling Forms Definitions	NEHC 5100/17	Updated the Industrial Hygiene Noise Survey Form NEHC 5100/17 Explanations and Definitions. A Measurement Location field definition was added so that the actual location where the noise measurement was taken could be described and documented. Also, additional guidance on taking a Noise Hazardous Radius measurement at 84 dBA and 104 dBA, where needed, was added.	3 JUL 2006
Appendix A	Table Z-1	Updated the Table Z-1A with respect to the new Hexavalent Chromium standard 29 CFR 1910.1026.	30 JUN 2006



Chapter	Paragraph	Description	File Date*
Appendix A	Table Z-2	Updated the Table Z-2 with respect to the new Hexavalent Chromium standard 29 CFR 1910.1026.	30 JUN 2006
Chapter 8 Equipment Maintenance and Calibration	Table 8-1	Deleted annual requirement for laboratory calibration of Toxic Gas Meters. Added information to the table regarding the manufacturers' requirements taking precedence.	30 JUN 2006
Chapter 3 Sampling Procedures	16f	Added information needed to be recorded to look up sampling rates/uptake rates for passive monitors.	26 JAN 2006
Chapter 2 Industrial Hygiene Surveys and Survey Reports	References and Appendix 2-A, 3d(1)(h) and 2d(1)(g)	Added a new reference 2-3 (NEHC technical manual for reproductive hazards).	3 AUG 2005
Chapter 5 Noise Surveys	11f	Updated paragraphs to remove outdated equipment.	3 AUG 2005
Chapter 5 Noise Surveys	12	Updated references to reflect current editions.	3 AUG 2005
Chapter 13 Indoor Environmental Quality	Introduction and 13.5	Added 13.5 Risk Communication and Mold to the Indoor Environmental Quality Chapter 13.	15 DEC 2004
Exposure Monitoring Form	All	Removed the new NEHC - 5100\21 Exposure Monitoring Plan form since it will remain in the OPNAVINST 5100.23 Series as the OPNAV 5100\14 Exposure Monitoring Plan form.	31 AUG 2004
Chapter 4 Exposure Assessment Strategies	7	Removed link to new NEHC - 5100\21 Exposure Monitoring Plan form.	31 AUG 2004
Chapter 7 Asbestos Monitoring Procedures	6g	Added wording clarifying the need for formal classroom training in polarized light microscopy (PLM)/dispersion staining.	12 JUL 2004
Chapter 5 Noise Surveys	Appendix 5-B, 1	Corrected and/or updated hyperlinks.	1 JUL 2004
Exposure Monitoring Form	All	Converted the OPNAV 5100\14 Exposure Monitoring Plan form to a new NEHC Form - 5100\21 Exposure Monitoring Plan.	20 MAY 2004





Chapter	Paragraph	Description	File Date*
Chapter 4 Exposure Assessment Strategies	7	Added link to Exposure Monitoring Plan – NEHC Form 5100\21 (Formerly OPNAV 5100\14).	20 MAY 2004
Chapter 3 Sampling Procedures	12b	Added information on consulting the analytical method being used for specific requirements during gravimetric analysis.	31 MAR 2004
Chapter 3 Sampling Procedures	Appendix 3-A, 4	Updated the OPCODE dictionary and the table showing what was added or changed.	23 FEB 2004
Chapter 4 Exposure Assessment Strategies	2c, 8a(1) and 8a(2)	Added clarification regarding the use of censored data when doing population statistics on groups of STEL/Ceiling results.	13 FEB 2004
Chapter 2 Industrial Hygiene Surveys and Survey Reports	3a(4)	Added ergonomics as a physical stressor.	13 FEB 2004
Chapter 2 Industrial Hygiene Surveys and Survey Reports	Appendix 2-A, 3c and 4c	Added ergonomics as a program.	13 FEB 2004
Chapter 3 Sampling Procedures	8c	Added information on NEHC reviewing breathing zone sampling forms sent to the CIHLs for analysis for accuracy and completeness and referenced the Bureau of Medicine and Surgery (BUMED) Industrial Hygiene Data Quality letter.	13 FEB 2004
Chapter 3 Sampling Procedures	18	Added a new reference 3-9 and moved existing references.	13 FEB 2004
Chapter 5 Noise Surveys	10c	Updated the NEHC address.	28 JAN 2004
Chapter 8 Equipment Maintenance and Calibration	4b(1)	Updated information on equipment that is calibrated at the NEHC Calibration Laboratory.	28 JAN 2004
Chapter 8 Equipment Maintenance and Calibration	16, 18 and Table 8-2	Added information on equipment lifecycle service life.	28 JAN 2004
Chapter 3 Sampling Procedures	11c through 11f	Added additional information on inhalable and total aerosol sampling.	27 JAN 2004
Chapter 3 Sampling Procedures	10b/10c	Moved old 10b to 10c.	8 JAN 2004



Chapter	Paragraph	Description	File Date*
Chapter 3 Sampling Procedures	10b	Added a new discussion on estimating overall precision of a sampling and analytical method when $S_{rT}$ is not provided.	8 JAN 2004
Chapter 3 Sampling Procedures	18	Added a new reference 3-10 (3-11 when the update was posted to the NEHC website) and moved existing references.	8 JAN 2004
PPE Codes	All	Updated and added a few PPE Codes.	21 NOV 2003
Chapter 13 Indoor Environmental Quality	All	Revised and updated the Indoor Environmental Quality (formerly Indoor Air Quality) Chapter 13.	28 Oct 2003
Table of Contents	Chapter 13	Changed Chapter 13's name from Indoor Air Quality to Indoor Environmental Quality.	28 Oct 2003
Table of Contents	Appendix B	Removed Appendix B Table 1 for Navy adopted OELs from the Table of Contents. See above.	25 JUL 2003
Appendix B	Table 1	Removed Table for Navy adopted OELs – Fuels and MMVF. This was done since there now are ACGIH TLVs for these stressors. Consult the hierarchy of standards in OPNAVINST 5100.23 series Chapter 16.	25 JUL 2003
Appendix B	Cover	Removed the cover page for the Table for Navy adopted OELs – Fuels and MMVF. See above.	25 JUL 2003
Chapter 4 Exposure Assessment Strategies	5c	Removed the reference to the new Appendix B Navy adopted OELs. See above.	25 JUL 2003
Chapter 5 Noise Surveys	11	Further updated and expanded the information on the certification of audiometric booths.	9 JUL 2003
Chapter 5 Noise Surveys	Appendix 5-B, 1	Corrected and/or updated hyperlinks.	9 JUL 2003
Sampling Forms	All	Updated sampling forms to show non-required fields. This will aid the users in knowing what needs to be filled in.	28 APR 2003



Chapter	Paragraph	Description	File Date*
Sampling Forms Definitions	All	Created a separate specific sampling forms definition's sheet for each sampling form. This makes it easier for the user to look up the definitions when they are filling in samplings forms. The new sampling forms definitions sheets show and explain which fields are required and optional. This will aid the users in knowing what needs to be filled in.	24 to 28 APR 2002



<p>Chapter 9 Respiratory Protection</p>	<p>All</p>	<p>The revision includes many new internet hypertext links to sources of in depth information, including the following topics: written standard operating procedures (SOPs) including downloading of a generic respirator SOP; NIOSH/NIST/SBCCOM development of approval schedules for testing and certifying air purifying respirators as protection against chemical, biological, and radiological (CBR) warfare agents; respirator cartridge change out schedules; compressed breathing air, including methods for testing breathing air quality; NIOSH approval of self-contained breathing respirators for emergency workers in terrorist attacks; NIOSH Guide to the Selection and Use of Particulate Respirators Certified Under 42 CFR 84; respirator homepage article expounding upon the logic for exempting AABA from quarterly breathing air quality testing; NIOSH approval of Breath Responsive PAPRs; along with several more. Several topics were expounded upon, including: respirator selection for use in oxygen deficient atmospheres; calculation of effective protection factors; respirator cleaning procedures using bleach and iodine; medical evaluation of respirator users; color coding for air purifying respirator cartridges and filters; explanation of why all nine classes of particulate filtered respirators approved by NIOSH are protective against Anthrax bacilli and spores; list of filter degrading oils; methods for calculating change out schedules for particulate filtering respirators; powered air purifying respirators; and chemical cartridge sorbent materials.</p>	<p>19 DEC 2002</p>
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Chapter	Paragraph	Description	File Date*
Chapter 3 Sampling Procedures	17b(3)	Updated information on wipe sampling techniques.	17 DEC 2002
Chapter 10 Personal Protective Equipment and Chemical Protective Clothing	11b(4)	Corrected and/or updated hyperlinks.	17 DEC 2002
Chapter 7 Asbestos Monitoring Procedures	Appendix 7-A, 1	Corrected and/or updated hyperlinks.	17 DEC 2002
Chapter 4 Exposure Assessment Strategies	5a(2)	Added invitation to contact NEHC regarding dermal exposure assessment.	19 NOV 2002
Chapter 3 Sampling Procedures	1e	Corrected reference from the incorrect Chapter 8 of OPNAVINST 5100.23 Series to the correct Chapter 16 of OPNAVINST 5100.23 Series.	17 Oct 2002
Chapter 3 Sampling Procedures	Appendix 3 A, 1 through 3	Corrected and/or updated hyperlinks.	17 Oct 2002
Chapter 4 Exposure Assessment Strategies	2m	Corrected reference from the incorrect Chapter 8 of OPNAVINST 5100.23 Series to the correct Chapter 16 of OPNAVINST 5100.23 Series.	17 Oct 2002
Chapter 5 Noise Surveys	Appendix 5-A, 1	Corrected and/or updated hyperlinks.	17 Oct 2002
Chapter 4 Exposure Assessment Strategies	4a	Corrected reference from 401a to 4-1.	7 Oct 2002
Chapter 1 Introduction	4	Updated the NEHC address.	20 JUN 2002
Chapter 8 Equipment Maintenance and Calibration	4b(3)	Updated the NEHC address.	20 JUN 2002
Chapter 7 Asbestos Monitoring Procedures	1	Added a reference to the new asbestos fiber counting form and the new asbestos bulk sample analysis form.	16 MAY 2002
Chapter 7 Asbestos Monitoring Procedures	Appendix 7-A	Added Appendix 7-A with hyperlinks to the new asbestos fiber counting form and the new asbestos bulk sample analysis form.	16 MAY 2002



Chapter	Paragraph	Description	File Date*
Sampling Forms	Asbestos Fiber Counting Form and Asbestos Bulk Sample Analysis Form	Modified these Navy Consolidated Industrial Hygiene Laboratory (CIHL) forms, originally developed by San Diego CIHL, to make them generic for use by any laboratory.	16 MAY 2002
Chapter 5 Noise Surveys	3b	Corrected the requirement for how long noise measurement records must be kept by changing it from the incorrect 50 years to the correct 40 years as is referenced in OPNAVINST 5100.23 Series.	16 MAY 2002
Chapter 5 Noise Surveys	12	Corrected reference 5-1 OPNAVINST 5100.23 Series from the incorrect Chapter 18 to the correct Chapter 8, <i>Hearing Conservation and Noise Abatement</i> .	16 MAY 2002
Chapter 3 Sampling Procedures	Appendix 3-A, 1 through 3	Corrected and/or updated hyperlinks.	29 APR 2002
Chapter 5 Noise Surveys	Appendix 5-A, 1; Appendix 5-B, 1	Corrected and/or updated hyperlinks.	29 APR 2002
Chapter 9 Respiratory Protection	3 through 12	Corrected and/or updated hyperlinks.	29 APR 2002
Chapter 14 Afloat Industrial Hygiene Survey Reports	3	Corrected and/or updated hyperlinks.	29 APR 2002
Appendix B	Table 1, References	Corrected and/or updated hyperlinks.	29 APR 2002
Chapter 5 Noise Surveys	11	Further updated and expanded the information on the certification of audiometric booths.	16 APR 2002
Chapter 5 Noise Surveys	12	Updated the references.	12 APR 2002
Chapter 8 Equipment Maintenance and Calibration	10 through 13	Added information on calibration for direct reading gas monitors, direct reading dust monitors and other direct reading instruments.	12 APR 2002
Chapter 3 Sampling Procedures	15b through 15d	Added information on calibration and limitations for direct reading gas monitors, direct reading dust monitors and other direct reading instruments.	11 APR 2002
Chapter 3 Sampling Procedures	1c, 1d and 1g	Updated the definitions for ceiling, excursion limit and short-term exposure limit.	9 APR 2002



Chapter	Paragraph	Description	File Date*
Chapter 3 Sampling Procedures	All	Corrected and updated references.	9 APR 2002
Chapter 8 Equipment Maintenance and Calibration	14a and 14b	Added the statements that the anemometer should be qualitatively checked to ensure that it is in good working condition.	8 APR 2002
Chapter 5 Noise Surveys	11	Updated and expanded the information on the certification of audiometric booths.	8 APR 2002
Chapter 5 Noise Surveys	Appendix 5-B	Changed Appendix 5-B to include links to the medical surveillance audiometric booth certification form and the clinical audiometric booth certification form in the NEHC Field Guide to Audiometric Test Booth Certification.	8 APR 2002
Chapter 12 Hazardous Materials Spills/Waste Operations	4b(3)(d)	Clarified why atmosphere-supplying respirators must be worn when oxygen concentrations are below 19.5%.	8 APR 2002
Sampling Forms	All	Updated recreated sampling forms to include the fields used in the eNOED project.	5 to 17 APR 2002
Sampling Forms Definitions	All	Updated recreated sampling forms definitions to include all the fields for all of the new forms. Added explanations for the use for all of the new forms and added hyperlinks to the forms.	5 to 26 APR 2002
Chapter 13 Indoor Environmental Quality	Appendix 13-F, 4	Corrected referral to reference by changing it from 12F-4 to 13F-4.	4 APR 2002
Chapter 3 Sampling Procedures	Appendix 3-A, 4	Updated the OPCODE dictionary. Added a table showing what was added or changed.	25 MAR to 16 APR 2002
Record of Changes	File Date	Added a footnote explaining that the file date is the date the files were created or updated and that this date may not reflect the actual effective date of posting to the Navy Environmental Health Center (NEHC) website.	7 FEB 2002



Chapter	Paragraph	Description	File Date*
Appendix A	Cover	Deleted Table Z-3 from cover page again. (Previous change not posted to the web.)	5 FEB 2002
Appendix A	Table Z-1A	Made sure the footnote verbiage matched OSHA TABLE Z-1A.	28 AUG 2001
Appendix B	Cover	Added a cover page for the Table for Navy adopted OELs – Fuels and MMVF.	27 AUG 2001
Table of Contents	Appendix B	Added Appendix B Table 1 for Navy adopted OELs to the Table of Contents.	27 AUG 2001
Chapter 4 Exposure Assessment Strategies	5c	Added a reference to the new Appendix B Navy adopted OELs.	27 AUG 2001
Appendix B	Table 1	Added a Table for Navy adopted OELs – Fuels and MMVF. This table was included for guidance purposes only.	23 AUG 2001
Appendix A	Table Z-1A	Changed Tetryl PEL from 15 to 1.5 mg/m <sup>3</sup> . Properly matched up the footnotes.	23 AUG 2001
Chapter 3 Sampling Procedures	Appendix 3-B, 2f(2)	Added a note about cleaning the templates for wipe sampling.	16 AUG 2001
Chapter 3 Sampling Procedures	Appendix 3-B, 2 through 7	Fixed the numbering of the main paragraphs, beginning with Single Surface Wipe Sampling Procedure through Quality Assurance/Quality Control.	16 AUG 2001
Chapter 3 Sampling Procedures	Appendix 3-B	Added dimension examples to wipe areas or template areas. Fixed inconsistencies in capitalization in some of the headers. Fixed inconsistencies in square foot abbreviations.	16 AUG 2001
Appendix A	Table Z-1A	Corrected spelling for diisopropylamine, moved cotton dust TWA value to the proper column (to mg/m <sup>3</sup> from ppm), deleted values under STEL for ethyl formate, moved ceiling values for ethylene glycol to the proper columns, moved fluoride TWA value to the proper column (to mg/m <sup>3</sup> from ppm) and added in “–” in blank columns.	15 AUG 2001





Chapter	Paragraph	Description	File Date*
Appendix A	Table Z-2	Deleted ethylene dichloride since it is covered under Table Z-1A.	15 AUG 2001
Appendix A	Table Z-3	Deleted since these were only Transitional Limits and the Navy adopted the Final Limits of the OSHA 1989 rulemaking.	14 DEC 2000
Appendix A	Cover	Deleted Table Z-3 from cover page.	14 DEC 2000
Chapter 9 Respiratory Protection	3a(7)	Discussed the use of air-purifying respirators for isocyanates and other stressors with poor warning properties when a cartridge change out schedule is established and implemented.	15 SEP 2000
Chapter 9 Respiratory Protection	8b(4)	Added reference to cartridge change out schedules.	15 SEP 2000
Chapter 9 Respiratory Protection	12d(6)	Directed the user to one source of guidance for cartridge change out schedules.	15 SEP 2000
Chapter 9 Respiratory Protection	12e	Added absence of a cartridge change out schedule and an end-of-service-life indicator as instances requiring use of a supplied-air respirator instead of an air-purifying respirator.	15 SEP 2000
Chapter 9 Respiratory Protection	17	Updated reference 9-11 citation to reflect year of current edition.	15 SEP 2000
Chapter 3 Sampling Procedures	Appendix 3-A	Added or changed the wording of Operation Codes (OPCODEs) to be used with IHIMS.	15 SEP 2000
Chapter 4 Exposure Assessment Strategies	8g(1)	Changed the interpretation of a $UTL_{95\%,95\%}$ that exceeds the OEL.	27 JUN 2000

\* This is the date the files were created or updated. However, this date may not reflect the actual effective date of posting to the Navy and Marine Corps Public Health Center (NMCPHC) website.

