

Industrial Hygiene Baseline Hazard Assessments

MSC-PRO-17916

Revision 5

Effective Date: November 12, 2014

Topic: Worker Protection

Approved for Public Release;
Further Dissemination Unlimited

Industrial Hygiene Baseline Hazard Assessments

CHANGE SUMMARY

Rev. 5

Description of Change:

Added additional language to Section 4 to direct that Industrial Hygienists shall utilize recognized exposure assessment and testing methodologies and accredited and certified laboratories and document in SWIHD.

Rev. 4

Description of Change:

Added Section 5.3.3 for use of the SWIHD in referencing and linking IH surveys to the BHA. Completed BHA reports in SWIHD automatically become records in IDMS. Updated references as required.

Rev. 3

Description of Change:

Editorial change to Section 5.2.2 to clarify that all hazards required to be listed, fall within the scope of the procedure and allow for grouping of chemical types or categories.

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1.0 PURPOSE

This procedure provides instructions to industrial hygienists (IH) or other Safety and Health (S&H) professionals conducting Industrial Hygiene Baseline Hazards Assessments (IHBHAs) for Mission Support Contract (MSC) operations or work areas.

IHBHAs are intended to:

1. Systematically identify and evaluate recognized potential worker health risks and other hazards with adverse exposure potential as deemed necessary by the project IH.
2. Allow for objective prioritization for future evaluation, monitoring, or sampling activities in effort to make efficient use of Mission Support Alliance (MSA) resources.
3. Serve as a basis for recommending hazard control measures.
4. Assist in communicating information to line management and affected employees regarding recognized chemical, physical, and biological exposure hazards and controls.
5. Identify and characterize similar exposure groups (SEGs) in a work area.

***NOTE:** The supporting information (e.g. calculations, field observation, or similar sampling data) used to justify the determination for or against sampling as recorded in the IHBHA may also serve as documentation of the exposure evaluation.*

The implementation of this procedure provides information to enhance the planning and job hazard analysis (JHA) processes (see [MSC-PRO-079](#), *Job Hazard Analysis*) and the Employee Job Task Analysis (EJTA) process (see [MSC-PRO-11058](#), *Occupational Medical Qualification and Monitoring using EJTA*) by:

1. Providing an overview of the IH hazards for an operation or work area.
2. Defining and characterizing those IH hazards.
3. Providing a consolidated list of the IH assessment needs.

This document partially implements the ISMS Core Function #2, Identify and Analyze Hazards.

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2.0 SCOPE

This procedure applies to MSC operations or work areas where worker exposures to chemical, physical, or biological hazards warrant identification, evaluation, or control. This includes, but is not limited to, evaluation of compliance with OELs at levels of occupational significance and comparison of other occupational exposures to best practice guidelines issued by standards bodies or professional organizations.

This procedure is not intended to address:

- Radiological Control Manual; *See MSC-5173*
- Biological Hazards (Including Bloodborne Pathogens); *See MSC-PRO-45039*
- Ergonomics; *See MSC-RD-8471*
- Heat Stress Control; *See MSC-PRO-121*
- Bulk or wipe samples taken for identification or investigational purposes only;
- Indoor air quality (IAQ) investigations where there is no direct correlation to an OEL or other quantifiable risk criteria.

In addition, operations and work areas specifically included in a Job Safety Analysis (JSA) where sampling requirements, IH hazard analysis, or control measures are communicated are not required to perform or document IHBHAs.

Although this procedure establishes the basis for planning and prioritizing quantitative and qualitative exposure assessment activities, it is not intended to address the implementation of such activities.

3.0 IMPLEMENTATION

This procedure is effective on publication.

Pre-existing IHBHAs will be updated with any new procedural requirements during their next scheduled revision.

4.0 REQUIREMENTS

This procedure implements the requirements specified in 10 CFR 851, *Worker Safety and Health Program*, sections 851.21 & 10 CFR 851 Appendix-A, Section 6.

Industrial Hygienists shall utilize recognized exposure assessment and testing methodologies and accredited and certified laboratories. These specific methodologies are referenced in the sample plan and analytical laboratory requests found in Site Wide Industrial Hygiene Database (SWIHD) as described in MSC-PRO-409, *Industrial Hygiene Monitoring, Reporting and Records Management*.

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5.0 PROCESS

5.1 Initial Assessment

The steps listed below are typical components of an initial IHBHA. However, because each operation or work area is different, these steps can be rearranged as necessary.

<i>Actionee</i>	<i>Step</i>	<i>Action</i>
MSA S&H professional	1.	<p>Perform a review of available documentation. This may include:</p> <ul style="list-style-type: none"> • Past IHBHA's • Hazard Analysis • Past monitoring data • Hazard Communication (HAZCOM) plans • Material Safety Data Sheets (MSDS) • Chemical and Carcinogen Inventories • Other documentation if available
	2.	<p>Perform interviews of project management, supervision, or lead workers. This step can provide an opportunity to ask questions relating to the information that was encountered during the document reviews and may provide additional information that will provide insight into the work processes that will be encountered.</p>
	3.	<p>Perform a walkthrough inspection of the work area or the operations performed by the SEG being assessed. Identify the hazards which present a potential for occupational exposure to chemical, physical, or biological hazards.</p>

Not all operations with a potential chemical, physical, or biological hazard can or will be identified during one walkthrough. Some operations may be performed on an infrequent basis and will only be identified through employee interviews or multiple walkthroughs.

NOTE: *Prior to entering a work area you may be required to review and sign the applicable hazard analysis or be accompanied by an escort.*

4. Perform employee interviews.

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5.2 Hazard Evaluation, Exposure Assessment Prioritization, and Documentation

Actionee	Step	Action
MSA S&H professional	1.	<p>Document the IHBHA report, including the use of Field Evaluation (FEV) Table, per the following guidelines¹:</p> <ul style="list-style-type: none"> a) A completed IHBHA will consist of the following items: <ul style="list-style-type: none"> • A report or text regarding the work being performed including information about: <ul style="list-style-type: none"> ○ The tasks or area being evaluated, ○ Hazard Description including: <ul style="list-style-type: none"> ➤ Summary of the work where the hazard is encountered ➤ Current controls used ➤ Summary of past monitoring results ➤ Information related to additional assessment needs b) A Completed FEV Table c) Copies of the IH postings for the past 2 years.

NOTE: *The IHBHA is intended to assist in systematically characterizing the potential for occupational exposure and serving as the basis for recommending hazard control measures. However, the audience of the IHBHA includes the managers, supervisors, and craft employees who may not be interested in the full technical basis for the conclusions that were reached in the IHBHA.*

Be aware of the needs of intended audience when completing these documents. For ease in communicating the conclusions of the IHBHA assessment, it may be more appropriate to retain some technical documentation as a separate attachment from the main IHBHA.

¹ This exposure assessment strategy is based in part on the American Industrial Hygiene Association's (AIHA) publication titled "A Strategy for Assessing and Managing Occupational Exposures".

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<i>Actionee</i>	<i>Step</i>	<i>Action</i>												
	2.	List each hazard that is within the scope of this procedure, namely chemical groups (by type or category), physical, or biological hazards on the FEV table (see Appendix B). Suggested information to include : <table border="0"><tr><td>Location</td><td>Source Hazard</td></tr><tr><td>Description</td><td>Hazard Control</td></tr><tr><td>Work Process or Activity</td><td>Exposure Rating</td></tr><tr><td>SEG's where applicable</td><td>Qualitative Exposure Rating</td></tr><tr><td>Health Effect Rating</td><td>Priority Rating</td></tr><tr><td>Past Sample Data (Survey Numbers)</td><td></td></tr></table>	Location	Source Hazard	Description	Hazard Control	Work Process or Activity	Exposure Rating	SEG's where applicable	Qualitative Exposure Rating	Health Effect Rating	Priority Rating	Past Sample Data (Survey Numbers)	
Location	Source Hazard													
Description	Hazard Control													
Work Process or Activity	Exposure Rating													
SEG's where applicable	Qualitative Exposure Rating													
Health Effect Rating	Priority Rating													
Past Sample Data (Survey Numbers)														
	3.	Evaluate each hazard using the ratings listed in Table 1-3 and Industrial Hygiene hazard evaluation techniques and record the rating in the FEV table.												
	4.	Assign a Qualitative Exposure Assessment Rating by multiplying the numbers obtained from Table 1 and Table 2 and record the rating in the FEV table.												
	5.	Assign a Priority Rating based off the Exposure Assessment Rating using the following guidelines: <table border="0"><tr><td>11-16</td><td>High Priority</td></tr><tr><td>5-10</td><td>Medium Priority</td></tr><tr><td>1-4</td><td>Low Priority</td></tr></table> <ul style="list-style-type: none">• DOE, OSHA, or company specific monitoring requirements elevate the Priority Rating to High Priority.• Hazards without prior exposure monitoring data where respiratory protection is used for personal protective purposes should be assigned a High Priority status.• For exposure scenarios with uncertainty due to lack of information or other factors the Priority Rating should be elevated one category.• For scenarios where monitoring results indicate employee exposures are within guidance limits the Priority Rating may be reduced according to the IHs professional judgment.	11-16	High Priority	5-10	Medium Priority	1-4	Low Priority						
11-16	High Priority													
5-10	Medium Priority													
1-4	Low Priority													

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Actionee	Step	Action
		<ul style="list-style-type: none"> Frequently changing worksites As often as necessary <p>New work processes in industrial areas do not require immediate revision of the IHBHA, provided that an adequate hazard analysis is performed and documented (See MSC-PRO-079 & MSC-PRO-409). However, that analysis and documentation must be included in the next scheduled revision of the IHBHA.</p> <p>NOTE: <i>This requirement refers to establishing a date to review the accuracy of the IHBHA report/text, FEV table, and the associated controls or recommendations with the intent that new information based off of the completion of the past recommendations is added to the IHBHA. It is not intended to imply that all past monitoring must be renewed or redone. However, the need for renewed monitoring should be assessed at that time.</i></p> <p>2. Inform project management, line management, and employees of results of the IHBHA. At a minimum this should include the following content:</p> <ul style="list-style-type: none"> IHBHA Report/text <ul style="list-style-type: none"> Include the review date established in 5.3.1 FEV Table Previous 2 years monitoring results <p>NOTE: <i>A suggested exposure monitoring schedule based on the prioritization according to the "Qualitative Exposure Assessment Rating", regulatory requirements, and other appropriate judgments can be included with the IHBHA when it is issued. This schedule may be used to assist with coordinating sampling activities but it is not a required component of the IHBHA.</i></p>
MSA S&H professional	3.	<p>The method of retaining IHBHA documents is to utilize the Site Wide Industrial Hygiene Database (SWIHD) as described in MSC-PRO-409, <i>Industrial Hygiene Monitoring, Reporting and Records Management</i>. Publish the IHBHA utilizing the SWIHD interface utilizing the following:</p> <ul style="list-style-type: none"> Under the "Baseline" tab within SWIHD, obtain a unique number to identify the BHA. While in the Baseline tab, you may use the "Help" link to see a "screen shot" of step-by-step process in uploading and creating the BHA report. <p>NOTE 1: <i>OUO documents should NOT be uploaded as an attachment to</i></p>

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Actionee	Step	Action
		<p><i>the BHA report in SWIHD. However, IH survey reports containing OUO information may be linked to the BHA in SWIHD and are properly protected.</i></p> <ul style="list-style-type: none"> <i>When you complete the BHA report, it will be automatically converted to a record and placed into IDMS.</i> <i>While in the "Post BL" tab, you may use the "Help" link to see a "screen shot" of step-by-step process to attach IH survey records to the BHA report after it has been created as a record.</i> <p>NOTE 2: <i>IH surveys referenced within the record BHA are considered "historical" records once the BHA has been sent to IDMS. Additional IH surveys linked to the BHA will be incorporated into the next revision of the BHA record.</i></p>

6.0 FORMS

None

7.0 RECORD IDENTIFICATION

All records are generated, processed, and maintained in accordance with [MSC-PRO-10588](#), *Records Management Processes*.

Records Capture Table

Name of Document	Submittal Responsibility	Retention Responsibility
IHBHA including: Report Text FEV Table Technical Documentation Where Appropriate	MSA S&H professional performing the IHBHA	MSA S&H manager(s)

8.0 REFERENCES

8.1 Source Requirements

10 CFR 851, *Worker Safety and Health Program*

8.2 Working References

A Strategy for Assessing and Managing Occupational Exposures, AIHA Press, 1998

MSC-PRO-409, Industrial Hygiene Monitoring, Reporting and Records Management

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MSC-PRO-079, *Job Hazard Analysis*

MSC-PRO-10588, *Records Management Processes*

MSC-PRO-11058, *Occupational Medical Qualification and Monitoring using EJTA*

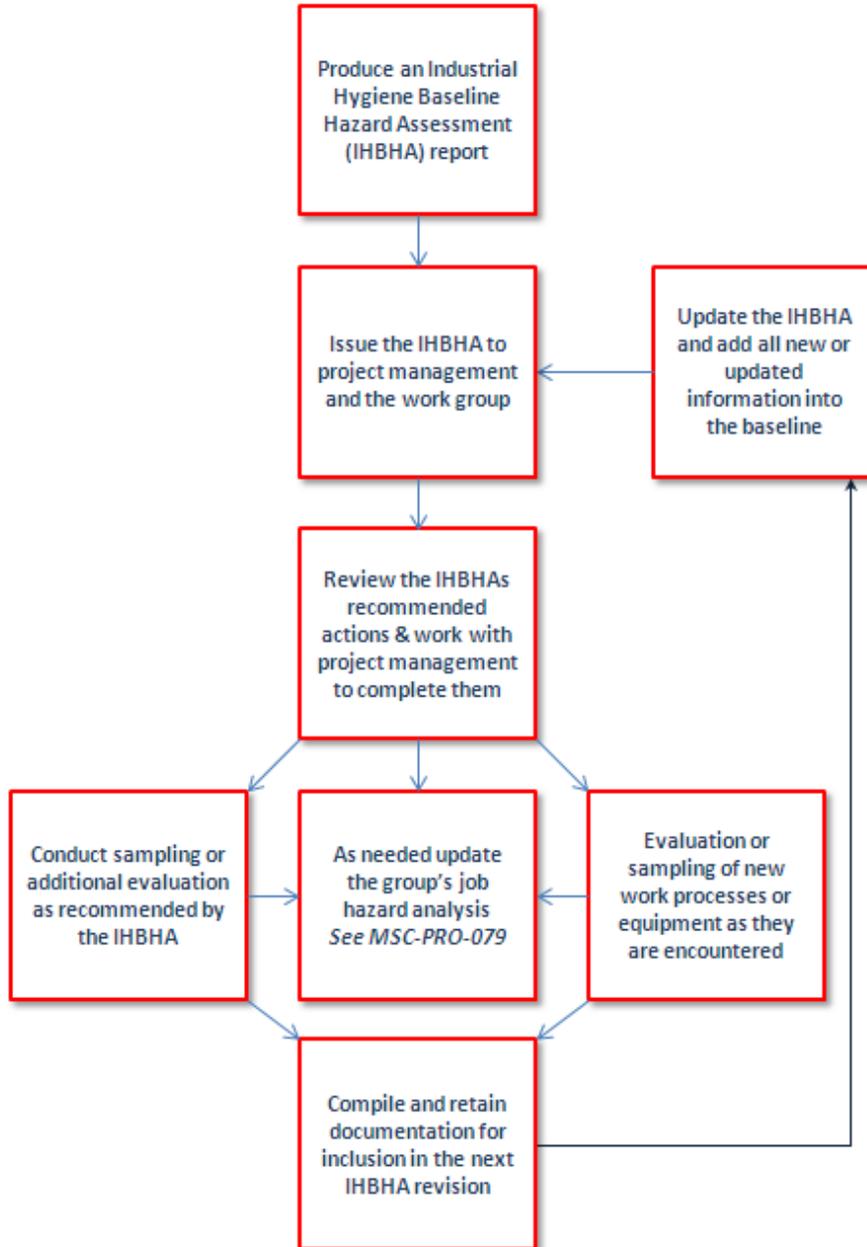
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APPENDIX A Glossary

Term	Definition
Similar exposure group (SEG)	A group of employees whose exposures to chemical substances or physical hazards have been determined to be similar enough that monitoring the exposures of randomly selected workers in the group provides data useful for predicting the exposures or exposure profiles of the remaining workers. A SEG is also defined as a group of individuals who perform the same jobs or tasks and who have similar exposures to an individual hazardous agent.
Operation	A task or group of tasks performed by an SEG that may result in personal exposures as defined in Section 2.0 <i>Scope</i> , of this document.
Work Area	A building, tent, lay down yard, or other structure where work is performed that may result in personal exposures as defined in Section 2.0 <i>Scope</i> , of this document.

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APPENDIX B IHBHA Process Flow Chart



This flow chart is an overview of the IHBHA process for informational purposes. It does not correspond to specific requirements in this document and is not intended to communicate new requirements.

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APPENDIX C

Example -- Industrial Hygiene Hazards Baseline Assessment Field Evaluation Form

	LOCATION or WORK STATION	HAZARD DESCRIPTION	ACTIVITY or WORK PROCESSES	HAZARD EVALUATION	SAMPLE RESULTS	Exposure Rating	Health Effect Rating	Qualitative Exposure Assessment	Frequency of Contact	HAZARD CONTROLS IN PLACE			Priority Rating
						0-4	0-4	0-16	Table 3	Admin	Engineering	PPE	
						Table 1	Table 2						
1	2715EC	Toluene & Other VOC Exposures	Application of lacquer products	Monitoring has been conducted for use in the 2715EC paint booth with mixed results	IHSF 06256 06257 07158	2	3	6	3	Stay upwind from paint stream when spraying	2715EC Paint Booth	Respirators Chemical Resistant Gloves	Low
	Evaluation Needs		If Lacquer based products are used for >3 hours in one shift contact IH for monitoring										
2	Sitewide	Asbestos Exposure	Removing and replacing asbestos floor tiles or mastics	Exposure resulting from work with tiles, mastics, or leveling compounds.	IHSF 06646 11-60079	2	4	8	1	Communicated in AJHA			Medium
	Evaluation Needs		If removal of asbestos containing mastics or floor tiles occurs monitoring requirements will be determined during AJHA/planning										
3	Outdoor Work Locations	Operator & Bystander Noise Exposure	Walk Behind Vibratory Roller	Spot readings indicate hearing protection is required	11-60218	2	3	6	3 Seasonal	None	None	Hearing Protection	Medium
	Assessment Needs		Conduct noise dosimetry to further characterize potential exposures										
4	All Work Areas	Noise exposure	Vacuuming	Equipment is purchased with low noise levels <85dB	HIH2 02-1346B MIHD 11-60074 11-60082 11-60088	1	2	2	4	None	purchased low noise equipment	Ear plugs available for voluntary use	Low
	Assessment Needs		None										
5	All Work Areas	Mild Skin Irritation	Miscellaneous cleaning	No hazardous components listed or No components with exposure limits	None	1	1	1	4	NA	NA	Gloves	Low
	Assessment Needs		None										