



DEPARTMENT OF THE NAVY
NAVY MEDICINE READINESS AND TRAINING COMMAND
2080 CHILD STREET
JACKSONVILLE FL 32214-5000

IN REPLY REFER TO:

6200
Ser 06IHZZ/0609
16 Aug 23

From: Commander, Navy Medicine Readiness and Training Command Jacksonville
To: Commanding Officer, Marine Corps Logistics Base Albany, GA

Subj: PERIODIC INDUSTRIAL HYGIENE SURVEY OF THE MARINE CORPS
LOGISTICS BASE ALBANY, INSTALLATION AND ENVIRONMENTAL
DIVISION

Ref: (a) OPNAVINST 5100.23H
(b) OPNAV M-5100.23

Encl: (1) Executive Summary
(2) Industrial Hygiene Survey Report (AL23007)

1. A Periodic Industrial Hygiene Survey of the Marine Corps Logistics Base (MCLB) Albany, Installation and Environmental (I&E) Division was conducted on 25 Jul 23 as required by references (a) and (b).

2. My point of contact for this matter is William (Bill) Wolfe, who may be reached via COMM: (904) 546-7033 or email: william.f.wolfe1.civ@health.mil.

A handwritten signature in black ink, appearing to be "G. A. Moeller", is written over the typed name.

G. A. MOELLER
By direction

Copy to:
MCLB Albany – Risk Management Office
Navy Medicine Readiness and Training Unit (NMRTU) Albany – Occupational Health
Department

EXECUTIVE SUMMARY

A Periodic Industrial Hygiene Survey of Marine Corps Logistics Base (MCLB) Albany, Installation and Environmental (I&E) Division was conducted on 25 July 2023 by William (Bill) Wolfe, Industrial Hygienist, Navy Medicine Readiness and Training Command Jacksonville (NMRTC JAX). The purpose of this survey was to identify health hazards present, assess actual health risk, and recommend controls where needed, as well as to assess your Occupational Health program status. No formal response to Industrial Hygiene is needed, although the MCLB Albany Risk Management Office may specify recommendations made in this report as items for mandatory corrective action. For hazard communication/education purposes, it is recommended that shop personnel be made aware of information provided in this report. Following is a summary of major findings and recommendations. Detailed findings, observations and recommendations are provided in enclosure (2) and its associated attachments.

Item: *Hazard Assessments.* Since the previous industrial hygiene (IH) survey in June 2021, there have been three (3) significant changes. The first change was the downgrading of three (3) shops to Priority 2 (ENV-Compliance, ENV-Natural Resources, and ENV-Pollution Prevention), the second, the merging of three (3) shops into one (1) shop (PW-FM High Voltage, PW-FM HVAC/Utilities, and PW-FM Maintenance), and the third was making NAVFAC/FEAD it's own shop and removing it from this survey. This survey consisted of a walk-through evaluation of the work areas, sampling as required and employee interviews, as appropriate, to assist in the Industrial Hygiene assessment.

Recommended Action: Please review the individual work center hazard assessments in Attachment (1) for more details on all identified hazards. If there are any changes in work operation from what is described in this report, or if a focused health hazard evaluation of a specific work operation or new project is needed, please contact William (Bill) Wolfe, Industrial Hygienist, NMRTC JAX, 904-546-7033.

Item: *Personal Protective Equipment (PPE).* Personal Protective Equipment (PPE) listed in the Industrial Hygiene survey is specified for the control of identified occupational health stressors. Additional PPE not specified in the survey report (e.g., safety-toed shoes/boots, fall protection, safety vests, etc.) may be required for personnel.

Recommended Action: Consult with your cognizant safety representative, PPE hazard assessment or local instruction/Standard Operating Procedure (SOP) for any additional required PPE specific to your worksite.

Item: *Noise and Hearing Conservation.* Personnel in the Division are exposed to noise levels in excess of the DoD Occupational Exposure Limit of 85 decibel-A weighted (dBA) as an 8-hour time weighted averaged (TWA) while conducting vehicle/equipment maintenance and other noise hazardous operations. Based on noise dosimetry conducted, the current hearing protection utilized by the Division are capable of attenuating noise exposures below the OEL.

Recommended Action: MCLB and I&E Division leadership should ensure that those staff identified as being over exposed to noise within the command are enrolled into the Hearing Conservation Program (HCP) and receive annual audiograms, along with directing and

Enclosure (1)

emphasizing the need for wearing appropriate hearing protection when conducting noise hazardous processes (i.e., working with noise hazardous equipment, heavy equipment, etc.). Single hearing protection is required when noise levels exceed 85 dBA or 140 dBP as a peak exposure, and double hearing protection is required when noise levels exceed 104 dBA or 165 dBP as a peak exposure.

Reference: DoD Instruction 6055.12 of 14 August 2019

**PERIODIC INDUSTRIAL HYGIENE SURVEY
MARINE CORPS LOGISTICS BASE (MCLB) ALBANY
INSTALLATION AND ENVIRONMENTAL (I&E) DIVISION
ALBANY, GA
REPORT NUMBER: AL23007**

Ref: (a) OPNAV M-5100.23 of 05 Jun 2020, *Navy Safety and Occupational Health Manual*
(b) Navy and Marine Corps Public Health Center (NMCPHC) Industrial Hygiene Field Operations Manual (IHFOM)

Att: (1) Periodic Industrial Hygiene Survey: Shop Assessments, Medical Surveillance Recommendations and Workplace Monitoring Plan
(2) Noise Survey, Hearing Protection and Personal Noise Sampling
(3) Neutral Posture for Computer Use/Computer Breaks
(4) Customer Satisfaction Survey

1. **Introduction.** Per references (a) and (b), a Periodic Industrial Hygiene Survey of the Marine Corp Logistics Base (MCLB) Albany, Installation and Environmental (I&E) Division was conducted on 25 July 2023 by William (Bill) Wolfe, Industrial Hygienist, Navy Medicine Readiness and Training Command Jacksonville (NMRTC JAX). This survey consisted of a walk-through evaluation of the work areas, a review of the operations and the hazards associated and employee interviews, as appropriate, to assist in the industrial hygiene assessment.

2. **Report Contents.** Reference (a) requires that each Navy workplace, or naval base supported DOD workplace, be thoroughly evaluated in order to accurately identify and quantify all potential health hazards. This report fulfills that requirement. The updated Periodic Industrial Hygiene Survey: Shop Assessments, medical surveillance recommendations and workplace monitoring plan for surveyed work centers are provided in attachment (1). A list of the noise hazardous areas and operations and the required level of hearing protection is provided in attachment (2) along with a summary of personal noise sampling results. Attachment (3), the Neutral Posture for Computer Use/Computer Breaks, can be used for training personnel in utilizing their computer workstations ergonomically. Attachment (4) is a Customer Satisfaction Survey, so that you may critique the services provided.

3. **Design Reviews.** Per reference (a), industrial hygienists should participate in the review of plans and specifications for local projects, standard operating procedures, purchasing transactions, and contracts which involve, or could create, exposure to potential health hazards, such as toxic materials, radiation, noise, or other health hazards. Cognizant facilities management and/or occupational health and safety personnel should ensure that the supporting industrial hygienist is made aware of such plans and specifications and that they are made available for his/her review.

4. **Re-evaluation Schedule and Changes in the Workplace.** Please retain this report on file and post a copy in a common work area for personnel to review. IH surveys had historically been accomplished with an established survey frequency based on the nature of operations at the Activity/Command in accordance with reference (a). Survey periodicity is scheduled at the

Enclosure (2)

command or shop level in accordance with reference (b). Ratings and associated survey frequency are now listed on individual work center assessment(s) within this report and reflect as High (annual), Moderate (biennial), or Low (quadrennial) hazard category. Shop periodicity will be continually re-assessed during future IH surveys.

The following table provides the shop hazard category and re-evaluation schedule for the work centers.

Work Center	Hazard Category⁽¹⁾	Current Survey Date (Mon/Yr)	Next Survey Due (Mon/Yr)
Administrative Offices	3 (Low)	JUL 23	JUL 27
Environmental (ENV) Branch	3 (Low)	JUL 23	JUL 27
EMV Branch – Compliance Section	2 (Moderate)	JUL 23	JUL 25
ENV Branch – Natural Resources Section	2 (Moderate)	JUL 23	JUL 25
ENV Branch – Pollution Prevention Section	2 (Moderate)	JUL 23	JUL 25
Housing Branch	3 (Low)	JUL 23	JUL 27
Public Works (PW) Branch	2 (Moderate)	JUL 23	JUL 25
PW – Facilities Support Contracting Team (FSC) Section	2 (Moderate)	JUL 23	JUL 25
PW – Facility Maintenance (FM) Section	2 (Moderate)	JUL 23	JUL 25
PW – FM – Boiler Section	2 (Moderate)	JUL 23	JUL 25
PW – FM – IWTP Section	2 (Moderate)	JUL 23	JUL 25
(1) Hazard categories are based on a consideration of health risk of identified chemical stressors and potential of these stressors to exceed Navy occupational exposure limits, ACGIH Threshold Limit Values, or OSHA substance-specific standards. Hazard category determination protocol is spelled out in reference (b), Chapter 2. Industrial Hygiene has discretion to conduct surveys more often than the minimum frequencies listed above.			

Any significant changes in the type of operations currently performed, current workplace setting, new equipment acquired, or change in the kinds or amounts of chemical used, as identified in the survey, will result in a need for an immediate re-evaluation of the affected area. Industrial Hygiene (904-546-7033), NMRTC JAX should be notified in the event of any significant operational changes as described above so that a prompt re-evaluation can be completed.

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INDUSTRIAL HYGIENE SURVEY
WORKCENTER SPECIFIC EVALUATIONS FOR
MARINE CORPS LOGISTICS BASE ALBANY
INSTALLATION AND ENVIRONMENT (I&E) DIVISION
ALBANY, GA
JULY 2023

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PW – Facilities Support Contracting Team (FSC) Section	45
PW – Facility Maintenance (FM) Section	50
PW – FM – Boiler Section	65
PW – FM – IWTP Section	72

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 3 - Low**Command: N67008 /****Shop: I&E Division, Administrative Offices**

Location: Building 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for the day to day operation of the Installation and Environmental (I&E) Division and to provides quality facilities and a full range of timely support and services to support the mission of MCLB Albany, tenant activities and other customers. This shop includes the Director, Deputy Director and assistant, Energy Manager, Program Analyst, Financial Analyst, Financial Technician and the Safety and Occupational Health Specialist.

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2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
General Housekeeping	8
Professional/Administrative Duties	8

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits

(PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: General Housekeeping	
Frequency: Daily	Duration: 0-15 minutes
Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.	

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m ³ 8 hr TWA OSHA		Yes	No
SEG: I&E Div, Administrative Offices Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m ³). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.					

General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
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SEG: I&E Div, Administrative Offices

Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).

Process: Professional/Administrative Duties

Frequency: Daily Duration: 6-8 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested. WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office. Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

None

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

None

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

No Medical Surveillance Recommended

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

No Workplace Monitoring Requested at this time.

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 3 - Low**Command: N67008 /****Shop: I&E Division, Environmental (ENV) Branch**

Location: Building 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel provides oversight and coordination of environmental compliance to ensure compliance with applicable pollution control and environmental laws, federal regulations, DoD and State and local government directives and laws. This branch consists of three sections: Compliance, Natural Resources and Pollution Prevention. This shop currently only consists of the Branch Head.

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2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
General Housekeeping	1
Professional/Administrative Duties	1

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs

as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: General Housekeeping
Frequency: Daily Duration: 0-15 minutes
Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No

SEG: I&E DIV, Environmental (ENV) Branch

Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.

General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA	Yes	No
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Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).

Process: Professional/Administrative Duties

Frequency: Daily Duration: 6-8 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested. WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office. Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes

Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

None

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

None

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

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Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

No Medical Surveillance Recommended

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

No Workplace Monitoring Requested at this time.

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, ENV-Compliance Section**

Location: Building 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for oversight of the MCLB environmental compliance programs. Main responsibilities include HAZWASTE disposal, title 5 permits, and training. Personnel also make up the Emergency Response Team.

4**2. Observations and Notes**

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
Emergency Response Team (ERT)	2
General Housekeeping	4
Hazardous Waste Handling	4
Noise Hazardous Operations	4
Professional/Administrative Duties	4
Site Inspections/Visits	4

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: Emergency Response Team (ERT)

Frequency: Special Occasions Duration: 6-8 hours

Description: Personnel from ENV Branch form an Emergency Response Team (ERT) in the event of environmental spills/disasters. The Fire Department is the primary responder in these events and the ENV ERT team members only respond when the site is declared safe and don PPE appropriate for the situation. This could include anything from storage tank spills to a vehicle leaking fuel. This could require personnel to work outdoors for prolonged periods of time (ultraviolet radiation and heat stress), work in potential noise hazardous work environments, and be exposed to various chemicals (i.e., oils, fuels, etc.).

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Full-Face Respirator with OV/P100 Cartridge	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Team members only respond when the site is declared safe and don PPE appropriate for the situation including up to a full face respirator with OV/P100 cartridges.			
Suitable Protective Clothing	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective clothing is recommended to be worn to minimize dermal exposure to petroleum products and other chemicals that may be encountered.			

Suitable Protective Gloves	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever responding to an event as part of the ERT to minimize dermal exposure to petroleum products and other chemicals that may be encountered.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Emergency Response Team (ERT)	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Compliance Section Rationale: The potential for heat stress occurring while conducting ERT tasks is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Emergency Response Team (ERT)	PETROLEUM DISTILLATES Inhalation	2000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Compliance Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on the episodic nature of the process and limiting access until after site has been declared safe. The use of PPE provides adequate protection from skin and eye irritation.					
Emergency Response Team (ERT)	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Compliance Section Rationale: The potential for UV radiation issues occurring while conducting ERT tasks is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

Process: General Housekeeping

Frequency: Daily Duration: 0-15 minutes
Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
<p>SEG: I&E DIV, ENV Compliance Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.</p>					
General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
<p>SEG: I&E DIV, ENV Compliance Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).</p>					

Process: Hazardous Waste Handling

Frequency: Daily Duration: 2-4 hours

Description: Personnel are responsible for processing all hazardous waste from the Base, to include the Maintenance Depot. This will include performing spot checks of the drums. Personnel might be required to lift and carry items that may be in excess of 50 pounds (physical stress - heavy lifting). Carts, and/or dollies are used to move heavy loads.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough.

Any ergonomic-related injury should be reported to the Command's Safety Office.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Carts, and/or Dollies	PHYSICAL STRESS	Recommended	Yes
Comments: The use of material handling equipment (i.e., carts and/or dollies) is recommended to minimize ergonomic hazard during hazardous waste material handling tasks that require the lifting and carrying of heavy items. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Hazardous waste collection is typically conducted in the large open bays or storage facilities, natural dilution is recommended to minimize potential exposures to the hazardous waste products.			
Proper Lifting Techniques (2-person lifts)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Eyewear	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective eyewear is recommended to be worn whenever working with or around hazardous waste to minimize ocular exposure to hazardous waste materials.			
Suitable Protective Gloves	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever working with or around hazardous waste to minimize dermal exposure from hazardous waster products.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Hazardous Waste Handling	PETROLEUM DISTILLATES Inhalation	2000 mg/m ³ 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Compliance Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on natural dilution (task conducted in a large warehouse or outdoors). The use of PPE provides adequate protection from skin contact.					
Hazardous Waste Handling	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, ENV Compliance Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring during hazardous waste handling tasks are minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					

Process: Noise Hazardous Operations

Frequency: Weekly Duration: 30-60 minutes

Description: Personnel are responsible for various tasks that may require them to work in potentially noise hazardous environments (i.e., conducting site visits, hazardous waste handling, etc.) and/or with noise hazardous equipment (i.e., impact tools, operating various types of vehicles to include forklifts, etc.).

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Noise Hazardous Operations	NOISE (Reproductive)	85 dBA 8 hr TWA DoD		Yes	Yes
SEG: I&E DIV, ENV Compliance Section Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is not anticipated based on previous sampling and the frequency and duration of the exposure; however, additional sampling needs to be conducted to adequately quantify exposures.					

Process: Professional/Administrative Duties

Frequency: Daily Duration: 6-8 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested. WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office. Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate

Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

Process: Site Inspections/Visits

Frequency: 2-3 Times/Month Duration: 1-2 hours

Description: Personnel are responsible for conducting monthly inspections of all waste collection sites on MCLB Albany, to include the industrial areas of the MDMC Albany (noise hazardous work environment). Various types of chemicals could potentially be encountered. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Site visit activities are conducted outdoors, large warehouse spaces and/or accumulation sites, natural dilution is recommended to minimize potential airborne exposures to the various chemicals that could be encountered.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting site visit activities to minimize dermal exposure to the various chemicals that could be encountered.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Site Inspections/Visits	PETROLEUM DISTILLATES Inhalation	2000 mg/m ³ 8 hr TWA OSHA		Yes	No

SEG: I&E DIV, ENV Compliance Section

Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on the frequency and duration of use and natural dilution. The use of PPE provides adequate protection from skin to the petroleum distillates.

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

ULTRAVIOLET RADIATION (IARC (1)- Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

NOISE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Emergency Response Team (ERT)	I&E DIV, ENV Compliance Section	RESPIRATOR USER CERT_PROGRAM EXAM	2

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2177671	Noise Hazardous Operations	NOISE	Noise Dosimetry	06/30/2025	One Time

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, ENV-Natural Resources Section**

Location: Building 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for the oversight and management of the Base's natural resource programs; including enforcement of State/Federal/and Base natural resource regulations, animal control, maintaining a nature center and conducting controlled burns (in conjunction with the Base Fire Dept) when needed.

2

2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
Animal Control Activities	2
Controlled Burn Activities	2
Equipment Maintenance	2
General Housekeeping	2
Herbicide/Pesticide Application	2
Noise Hazardous Operations	2
Professional/Administrative Duties	2

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: Animal Control Activities	
Frequency: Special Occasions	Duration: 30-60 minutes
<p>Description: Personnel are trained to catch and remove animals on Base, take blood samples from animals and performing any other duties dealing with live/dead animals. Tasks may require personnel to spend extended periods of time outdoors (heat stress and ultraviolet radiation) and may require personnel to lift and carry items that might be in excess of 35 pounds (physical stress - heavy lifting). PPE (suitable protective gloves) is available to be worn.</p> <p>WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough.</p> <p>Any ergonomic-related injury should be reported to the Command's Safety Office.</p> <p>Heavy lifting is a NMCPHC listed reproductive/developmental hazard.</p> <p>Heat stress is a NMCPHC listed reproductive/developmental hazard.</p>	

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Animal Control Pole	Animal Blood - non-research; Zoonotic Disease	Recommended	Yes
Comments: The use of an animal control pole is recommended whenever conducting animal control activities to minimize the need to handle dead and/or living animals.			
Carts and/or Dollies	PHYSICAL STRESS	Recommended	Yes
Comments: The use of material handling equipment (i.e., carts and/or dollies) is recommended to minimize ergonomic hazard during animal control tasks that require the lifting and carrying of heavy items. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Proper Hand Washing	Animal Blood - non-research	Recommended	Yes
Comments: Proper hand washing is recommended after conducting animal control activities to minimize dermal contact to potential animal pathogens.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			

Proper Lifting Techniques (2-person lifts)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	Animal Blood - non-research; Zoonotic Disease	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting the animal control activities to minimize dermal exposure to potential animal pathogens.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Animal Control Activities	Animal Blood - non-research Skin and/or Eye Contact			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: No significant exposure is expected based on the frequency of the process and following engineering and administrative controls. The use of PPE provides adequate protection from skin contact to potential animal pathogens.					
Animal Control Activities	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Animal Control Activities	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: he potential for physical stresses (heavy lifting) exposure occurring during animal control activities are minimized based on adhering to proper lifting techniques and the use of material handling equipment (carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
Animal Control Activities	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					
Animal Control Activities	Zoonotic Disease Skin and/or Eye Contact			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Suitable protective gloves are recommended to be worn whenever conducting the animal control activities to minimize dermal exposure to potential animal pathogens.					

Process: Controlled Burn Activities

Frequency: Special Occasions Duration: 6-8 hours

Description: Personnel conduct controlled burns on Base, in conjunction with the Base Fire Dept. This usually occurs between January and June. Personnel work outdoors a majority of the day (heat stress and ultraviolet radiation). Personnel use a combination of four gallons diesel and one gallon of mogas. This is obtained at the gas station and filled into containers. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	DIESEL FUEL; PARTICULATES NOT OTHERWISE SPECIFIED	Recommended	Yes
Comments: Controlled burns are conducted outdoors, natural dilution is recommended to minimize potential airborne exposures to the fuels used and smoke (particulates not otherwise specified). Weather and wind conditions are monitored to minimize potential airborne impact of smoke on personnel.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Eyewear	DIESEL FUEL	Recommended	Yes
Comments: Suitable protective eyewear is recommended to be worn whenever pouring, transferring, and/or applying diesel mixtures during controlled burn activities to minimize ocular exposure to the fuel.			
Suitable Protective Gloves	DIESEL FUEL	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever pouring, transferring, and/or applying diesel mixtures during controlled burn activities to minimize dermal exposure to the fuel.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Controlled Burn Activities	DIESEL FUEL Inhalation (Skin)	100 mg/m3 8 hr TWA ACGIH Inhalable		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (task occurs outdoors) and the frequency of the task. The use of PPE provides adequate protection from skin and eye contact.					
Controlled Burn Activities	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					

Controlled Burn Activities	PARTICULATES NOT OTHERWISE SPECIFIED Inhalation	5 mg/m3 8 hr TWA OSHA Respirable		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (task occurs outdoors) and the frequency of the task. An alternate OEL exists for this stressor (ACGIH TLV 3.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin and eye contact.					
Controlled Burn Activities	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

Process: Equipment Maintenance

Frequency: Quarterly Duration: 2-4 hours

Description: Personnel maintain and lubricate chain saws used when conducting controlled burns and conduct function checks. Personnel also use bleach mixed with water to clean traps, coolers, and when processing samples. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	PETROLEUM DISTILLATES; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Equipment maintenance tasks are conducted either outdoors or in the maintenance shop, natural dilution is recommended to minimize potential airborne exposures to the lubricants and cleaning products (sodium hypochlorite - bleach).			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	PETROLEUM DISTILLATES; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting equipment maintenance tasks to minimize dermal exposure to the lubricants and cleaning products (sodium hypochlorite - bleach).			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Equipment Maintenance	PETROLEUM DISTILLATES Inhalation	2000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on the frequency of use and natural dilution. The use of PPE provides adequate protection from skin to the petroleum distillates.					

Equipment Maintenance	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA	Yes	No
<p>SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited frequency of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).</p>				

Process: General Housekeeping
Frequency: Daily Duration: 0-15 minutes
<p>Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.</p>

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
<p>SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.</p>					
General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
<p>SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).</p>					

Process: Herbicide/Pesticide Application

Frequency: 2-3 Times/Year Duration: 4-6 hours

Description: Personnel are qualified to use various herbicides and pesticides across the Base. Personnel will dilute the herbicide/pesticide in either a backpack sprayer or a pump sprayer behind an ATV or tractor. While this operation significantly slows during winter months, peak application season ranges from early spring to late summer (heat stress and ultraviolet radiation). PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Fan - I&E Pesticide Storage Facility	DIQUAT DIBROMIDE; ETHANOLAMINE; GLYPHOSATE; TRIETHANOLAMINE; TRIETHYLAMINE	Required	Unknown
Comments: Currently the pesticide storage facility is under renovation. No pesticides are currently being stored in the facility and the ventilation system is non-functional.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
DoD Pest Applicators Certification	DIQUAT DIBROMIDE; ETHANOLAMINE; GLYPHOSATE; TRIETHANOLAMINE; TRIETHYLAMINE	Required	Yes
Comments: DoD personnel are required to participate in and be certified by the DoD Pest Applicators Course. Personnel are instructed on how to minimize overspray and recognize potential sources of pesticide exposure.			
Natural Dilution	DIQUAT DIBROMIDE; ETHANOLAMINE; GLYPHOSATE; TRIETHANOLAMINE; TRIETHYLAMINE	Recommended	Yes
Comments: Herbicides/pesticides mixing, and application is typically conducted outdoors, natural dilution is recommended to minimize the potential airborne exposure to the constituents of the herbicides/pesticides.			
Proper Hand Washing	DIQUAT DIBROMIDE; ETHANOLAMINE; GLYPHOSATE; TRIETHANOLAMINE; TRIETHYLAMINE	Recommended	Yes
Comments: Proper hand washing is recommended after conducting herbicide/pesticide application to minimize dermal contact to constituents of these agents.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Eyewear	DIQUAT DIBROMIDE; ETHANOLAMINE; GLYPHOSATE; TRIETHANOLAMINE; TRIETHYLAMINE	Recommended	Yes
Comments: Suitable protective eyewear is recommended to be worn whenever conducting pesticide/herbicide application tasks to minimize dermal exposure from the various pesticides/herbicides.			

Suitable Protective Gloves	DIQUAT DIBROMIDE; ETHANOLAMINE; GLYPHOSATE; TRIETHANOLAMINE; TRIETHYLAMINE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting pesticide/herbicide application tasks to minimize dermal exposure from the various pesticides/herbicides.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Herbicide/Pesticide Application	DIQUAT DIBROMIDE Inhalation (Skin)	0.5 mg/m3 8 hr TWA OSHA Total		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration, natural dilution (applied outdoors) and limited frequency of use. The use of PPE provides adequate protection from skin contact to diquat dibromide.					
Herbicide/Pesticide Application	ETHANOLAMINE Inhalation	6 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration, natural dilution (applied outdoors) and limited frequency of use. The use of PPE provides adequate protection from skin contact to ethanolamine.					
Herbicide/Pesticide Application	GLYPHOSATE Inhalation	5 mg/m3 8 hr TWA ACGIH Inhalable		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration, natural dilution (applied outdoors) and limited frequency of use. The use of PPE provides adequate protection from skin contact to glyphosate.					
Herbicide/Pesticide Application	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Herbicide/Pesticide Application	TRIETHANOLAMINE Inhalation	5 mg/m3 8 hr TWA ACGIH		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration, natural dilution (applied outdoors) and limited frequency of use. The use of PPE provides adequate protection from skin contact to triethanolamine.					
Herbicide/Pesticide Application	TRIETHYLAMINE Inhalation (Skin)	100 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on diluted concentration, natural dilution (applied outdoors), and limited frequency of use. An alternate OEL exists for this stressor (ACGIH TLV 2.1 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to triethylamine.					
Herbicide/Pesticide Application	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Natural Resources Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

Process: Noise Hazardous Operations

Frequency: Monthly Duration: 4-6 hours

Description: Personnel are responsible for various tasks that may require them to work with or around noise hazardous equipment (i.e., chainsaws, grinders, etc.), and/or the operation of various vehicles (i.e., ATVs, tractors, etc.).

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Noise Hazardous Operations	NOISE (Reproductive)	85 dBA 8 hr TWA DoD		No	Yes
SEG: I&E DIV, ENV Natural Resources Section Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is anticipated based on working with or in close proximity to noise hazardous equipment.					

Process: Professional/Administrative Duties

Frequency: Daily Duration: 2-4 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested.

WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office.

Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

ULTRAVIOLET RADIATION (IARC (1)- Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

NOISE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

DIESEL FUEL

DIQUAT DIBROMIDE

TRIETHYLAMINE

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Noise Hazardous Operations	I&E DIV, ENV Natural Resources Section	Audiometric Testing	2

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2177780	Noise Hazardous Operations	NOISE	Noise Dosimetry	06/30/2025	One Time
2177783	Noise Hazardous Operations	NOISE	Noise Sound Level/ Octave Band/ Audiometric Booth	06/30/2025	One Time

Entry ID	Vent Task Description	Location Name	Projected Due Date	Frequency
2177792	I&E Pesticide Storage Facility 2024/06/01	5501	06/30/2024	One Time

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, ENV-Pollution Prevention Section**

Location: Building 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description	# of Shop Personnel
Personnel are responsible for tracking and managing all HAZMAT on Base, the drinking water program, storage tanks, asbestos program, closed landfill, burial sites, groundwater contamination sites, superfund site, and runs the Base recycling program. Personnel are also part of the Emergency Response Team (ERT).	3

2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
Emergency Response Team (ERT)	1
Forklift Operations	2
General Housekeeping	3
Noise Hazardous Operations	3
Professional/Administrative Duties	3
Recycling	2
Site Inspecttions/Visits	1

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: Emergency Response Team (ERT)	
Frequency: Special Occasions	Duration: 30-60 minutes
<p>Description: Personnel from ENV Branch form an Emergency Response Team (ERT) in the event of environmental spills/disasters. The Fire Department is the primary responder in these events and the ENV ERT team members only respond when the site is declared safe and don PPE appropriate for the situation. This could include anything from storage tank spills to a vehicle leaking fuel. This could require personnel to work outdoors for prolonged periods of time (ultraviolet radiation and heat stress), work in potential noise hazardous work environments, and be exposed to various chemicals (i.e., oils, fuels, etc.).</p> <p>Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.</p> <p>Heat stress is a NMCPHC listed reproductive/developmental hazard.</p>	

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Full-Face Respirator with OV/P100 Cartridge	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Team members only respond when the site is declared safe and don PPE appropriate for the situation including up to a full face respirator with OV/P100 cartridges.			
Suitable Protective Clothing	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective clothing is recommended to be worn to minimize dermal exposure to petroleum products and other chemicals that may be encountered.			

Suitable Protective Gloves	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever responding to an event as part of the ERT to minimize dermal exposure to petroleum products and other chemicals that may be encountered.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Emergency Response Team (ERT)	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Emergency Response Team (ERT)	PETROLEUM DISTILLATES Inhalation	2000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on the episodic nature of the process and limiting access until after site has been declared safe. The use of PPE provides adequate protection from skin and eye irritation.					
Emergency Response Team (ERT)	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

Process: Forklift Operations

Frequency: Daily Duration: 2-4 hours

Description: Personnel at the recycling center operate gasoline and electric forklifts outdoors and sometimes inside of the warehouse. This process also involves the fueling of forklifts, which is conducted outdoors.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	CARBON MONOXIDE; GASOLINE	Recommended	Yes
Comments: Forklift operations are conducted in the warehouses and/or outside, natural dilution is recommended to minimize the potential airborne exposures to forklift exhaust constituents. Forklifts are also refueled with gasoline outdoors; natural dilution is recommended to minimize airborne exposure to gasoline.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	GASOLINE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever refueling the forklifts with gasoline to minimize dermal exposure to the fuel.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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Forklift Operations	CARBON MONOXIDE Inhalation (Reproductive) (Ototoxin)	55 mg/m3 8 hr TWA OSHA		Yes	No
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SEG: I&E DIV, ENV Pollution Prevention Section
Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (supply warehouse and/or outdoors). An alternate OEL exists for this stressor (ACGIH TLV 29.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed.

Forklift Operations	GASOLINE Inhalation (Carcinogen) (Reproductive)	890 mg/m3 8 hr TWA ACGIH		Yes	No
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SEG: I&E DIV, ENV Pollution Prevention Section
Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (fueling occurs outdoors). The use of PPE provides adequate protection from skin and eye contact.

Process: General Housekeeping

Frequency: Daily Duration: 0-15 minutes

Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn.
Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No

SEG: I&E DIV, ENV Pollution Prevention Section
Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.

General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
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SEG: I&E DIV, ENV Pollution Prevention Section

Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).

Process: Noise Hazardous Operations

Frequency: Daily Duration: 4-6 hours

Description: Personnel are responsible for various tasks that may require them to work in potentially noise hazardous environments (i.e., conducting site inspections/visits, hazardous waste handling, operating the recycling center, etc.) and/or with noise hazardous equipment (i.e., impact tools, operating various types of vehicles to include forklifts, etc.).

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Noise Hazardous Operations	NOISE (Reproductive)	85 dBA 8 hr TWA DoD	83 dBA	Yes	Yes
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is not anticipated based on previous sampling; however, additional sampling needs to be conducted to adequately quantify exposures. See Noise Sampling Attachment (Attachment 2).					

Process: Professional/Administrative Duties

Frequency: Daily Duration: 4-6 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested.
WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office.
Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

Process: Recycling

Frequency: Daily Duration: 6-8 hours

Description: Personnel are responsible for the collection of recycling from various pick-up sites on Base and bring it back to the collection point for sorting (if needed) and condense material as needed, which might require personnel to spend prolonged periods of time standing (static posture). Personnel also conduct recycling of spent brass cartridges from the MCLB Albany small arms range. Containerized spent cartridges are brought to the recycling center for processing. Unfired ammunition undergoes a de-mil process (possible lead exposure), which is conducted outdoors and infrequent. The rest of the recycling process is conducted outdoors (heat stress and ultraviolet radiation) and may require personnel to lift and carry items that potentially are in excess of 35 pounds (physical stress - heavy lifting). PPE (suitable protective gloves) is available to be worn.

WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough.

Any ergonomic-related injury should be reported to the Command's Safety Office.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Excessive standing (static posture) is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Forklifts, Carts and/or Dollies	PHYSICAL STRESS	Recommended	Yes
Comments: The use of material handling equipment (i.e., forklifts, carts and/or dollies) is recommended to minimize ergonomic hazard during tasks that require the lifting and carrying of heavy items. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			
Natural Dilution	LEAD	Recommended	Yes
Comments: De-milling of ammunition is conducted in an open-aired shed, natural dilution is recommended to minimize potential airborne exposures to lead.			
Proper Hand Washing	LEAD	Recommended	Yes
Comments: Proper hand washing is recommended after conducting the de-milling of ammunition during recycling tasks to minimize the potential of ingestion of lead.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Proper Lifting Techniques (2-person lifts)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	LEAD	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting the de-milling of ammunition during recycling tasks to minimize dermal exposure to lead.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Recycling	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Recycling	LEAD Inhalation (Carcinogen) (Reproductive) (Ototoxin)	0.05 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on limited frequency and that exposures occur in an open-aired shed (natural dilution). Workers potentially exposed to airborne lead at any level are required to be informed of the content of Appendices A and B of 29 CFR 1910.1025 (OSHA Lead standard). Hand washing is expected to provide adequate control against transfer and ingestion of the Lead.					
Recycling	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring during recycling tasks are minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
Recycling	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

Process: Site Inspections/Visits

Frequency: Monthly Duration: 1-2 hours

Description: Personnel are responsible for performing inspections/visits to the various sites under their per view, to include both above and below ground tanks. This may require personnel spending extended periods of time outdoors (heat stress and ultraviolet radiation), prolonged periods of time standing (static posture), and time in industrial areas (noise).
WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office.
Excessive standing (static posture) is a NMCPHC listed reproductive/developmental hazard.
Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Work	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Site Inspections/Visits	HEAT STRESS			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Site Inspections/Visits	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, ENV Pollution Prevention Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

GASOLINE (OSHA/NIOSH (Ca)- Carcinogen)

LEAD (IARC (2B)- Possible Human Carcinogen)

ULTRAVIOLET RADIATION (IARC (1)- Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

CARBON MONOXIDE

GASOLINE

LEAD

NOISE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

CARBON MONOXIDE

LEAD

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Emergency Response Team (ERT)	I&E DIV, ENV Pollution Prevention Section	RESPIRATOR USER CERT_PROGRAM EXAM	1

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2177672	Noise Hazardous Operations	NOISE	Noise Dosimetry	06/30/2025	One Time

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 3 - Low**Command: N67008 /****Shop: I&E Division, Housing Branch**

Location: Building 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@healthmil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel provide centralized management of all housing available at Marine Corps Logistics Base Albany. This includes primarily Family Housing. This includes move-in and move-out inspections of the housing units.

4

2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
General Housekeeping	4
Professional/Administrative Duties	4

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: General Housekeeping
Frequency: Daily Duration: 0-15 minutes
Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, Housing Branch Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.					

General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA	Yes	No
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SEG: I&E DIV, Housing Branch

Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).

Process: Professional/Administrative Duties

Frequency: Daily Duration: 6-8 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested. WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office. Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes

Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

None

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

None

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

No Medical Surveillance Recommended

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

No Workplace Monitoring Requested at this time.

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 3 - Low**Command: N67008 /****Shop: I&E Division, Public Works (PW) Branch**

Location: Building 5500

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel provide administrative oversight and coordination of planning, engineering, construction and maintenance for MCLB Albany and tenant mission essential facilities. This includes Engineering, Planning, Operations and Facility Maintenance.

13

2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
General Housekeeping	13
Professional/Administrative Duties	13
Supply	4

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits

(PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: General Housekeeping	
Frequency: Daily	Duration: 0-15 minutes
Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.	

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office and warehouse environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, Public Works (PW) Branch Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.					

General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA	Yes	No
SEG: I&E DIV, Public Works (PW) Branch Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).				

Process: Professional/Administrative Duties

Frequency: Daily Duration: 6-8 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested.
WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office.
Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

Process: Supply

Frequency: Daily Duration: 4-6 hours

Description: Personnel are responsible for maintaining all of the supplies used by the I&E Division. Government personnel are mostly responsible for purchasing, tracking and inventorying all supplies (static posture - excessive sitting). Contract personnel assist in the warehouse issuing supplies (PPE, chemicals, parts and tools).
WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough.
Any ergonomic-related injury should be reported to the Command's Safety Office.
Heavy lifting is a NMCPHC listed reproductive/developmental hazard.
Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Carts and/or Dollies	PHYSICAL STRESS	Recommended	Yes
Comments: The use of material handling equipment (i.e., forklifts, carts and/or dollies) is recommended to minimize ergonomic hazard during supply/material handling tasks that require the lifting and carrying of heavy items. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			
Proper Lifting Techniques (2-person lifts)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Supply	PHYSICAL STRESS			Yes	No

SEG: I&E DIV, Public Works (PW) Branch

Rationale: The potential for physical stresses (heavy lifting) exposure occurring during supply/material handling tasks are minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

None

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

None

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

No Medical Surveillance Recommended

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

No Workplace Monitoring Requested at this time.

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, PW-Facility Support Contracting**

Location: Building 5500

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for awarding and administering service, construction, and engineering small contracts that are not managed by NAVFAC.

4

2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
General Housekeeping	4
Professional/Administrative Tasks	4
Site Inspections/Visits	4

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs

as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: General Housekeeping
Frequency: Daily Duration: 0-15 minutes
Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No

SEG: I&E DIV, PW-Facilities Support Contracting
Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.

General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA	Yes	No
SEG: I&E DIV, PW-Facilities Support Contracting Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).				

Process: Professional/Administrative Tasks

Frequency: Daily Duration: 4-6 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested. WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office. Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

Process: Site Inspections/Visits

Frequency: Daily Duration: 2-4 hours

Description: Personnel perform various types of site visits to perform visual inspections following a prescribed checklist. This can include going onto active construction sites where hazardous noise could be present. Personnel may also be required to spend prolonged periods of time outdoors (heat stress and ultraviolet radiation) while conducting inspections/visits outdoors. Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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Site Inspections/Visits	NOISE (Reproductive)	85 dBA 8 hr TWA DoD		No	Yes
SEG: I&E DIV, PW-Facilities Support Contracting Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is anticipated based on working with or in close proximity to noise hazardous equipment.					
Site Inspections/Visits	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-Facilities Support Contracting Rationale: The potential for heat stress occurring while site inspections/visits is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Site Inspections/Visits	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, PW-Facilities Support Contracting Rationale: The potential for UV radiation issues occurring while conducting site inspections/visits is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

ULTRAVIOLET RADIATION (IARC (1)- Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

NOISE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

None

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Site Inspections/Visits	I&E DIV, PW-Facilities Support Contracting	Audiometric Testing	4

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2178305	Site Inspections/Visits	NOISE	Noise Dosimetry	06/30/2025	One Time

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, PW-Facility Maintenance (FM) Section**

Location: Building: 5501

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for the maintenance and repair of the facilities belonging to MCLB Albany. This includes the multiple shops (i.e., HVAC/Utilities, High Voltage Electricity, Roads and Grounds, a Locksmith, etc.) that maintained the infrastructure and facilities for the Base.

15**2. Observations and Notes**

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
Confined Space Entry	1
Electrical Repairs	4
General Housekeeping	15
High Voltage Electrical Work	1
HVAC Repair & Maintenance	1
Making Signs	1
Noise Hazardous Operations	15
Preventative Maintenance	7

Professional/Administrative Tasks	15
Roads and Grounds Operations	1
Water Distribution Maintenance	3

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: Confined Space Entry
Frequency: 2-3 Times/Year Duration: 2-4 hours
Description: Personnel may have to enter confined spaces to work on electrical lines still below ground. Personnel follow all safety protocols to include continuously monitoring the area for LEL/O ₂ /H ₂ S/CO content, having 2 personnel (one inside, one outside-watch).

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Confined Gas Meter	HYDROGEN SULFIDE; OXYGEN DEFICIENCY	Recommended	Yes
Comments: The use of a confined gas meter is recommended to be used to monitor the atmosphere of confined spaces to minimize the potential of entering an oxygen deficient environment and encountering other hazardous gases.			
Standard Operating Procedures (SOPs)	OXYGEN DEFICIENCY	Recommended	Yes
Comments: Adhering to the SOPs for this task is recommended to minimize the oxygen deficiency hazard of entering a confined spaces.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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Confined Space Entry	HYDROGEN SULFIDE Inhalation	1.39 mg/m3 8 hr TWA ACGIH		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential hazards associated with the atmosphere of a confined space (i.e., oxygen deficient environment, hydrogen sulfide, etc.) is not anticipated based on the duration of the task, the use of a confined space gas meter, and the adherence to established SOPs for entry into confined spaces.					
Confined Space Entry	OXYGEN DEFICIENCY Inhalation			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential hazards associated with the atmosphere of a confined space (i.e., oxygen deficient environment, hydrogen sulfide, etc.) is not anticipated based on the duration of the task, the use of a confined space gas meter, and the adherence to established SOPs for entry into confined spaces.					

Process: Electrical Repairs

Frequency: Monthly Duration: 1-2 hours

Description: Personnel respond to maintenance tickets around the Base, and perform installs, modification and troubleshooting of electrical equipment. Personnel may have to work in awkward body positions (dynamic posture) and may sometimes be required to lift and carry items that may be in excess of 35 pounds (physical stress - heavy lifting). Various types of cleaners and solvents (typically spray applied) may be used to clean connections and terminals prior to working on them. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

WMSD RISK FACTORS: No ergonomic-related injuries/ problems were reported during the survey walkthrough. Any ergonomic related injury should be reported to the Command's Safety Office.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Dynamic Work; PHYSICAL STRESS	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			
Natural Dilution	METHYL ETHYL KETONE; TOLUENE	Recommended	Yes
Comments: Electrical repair tasks are typically conducted in well-ventilated areas, natural dilution is recommended to minimize potential airborne exposures to the constituents of the cleaners and solvents used.			
Proper Lifting Technique (2-person lift)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	METHYL ETHYL KETONE; TOLUENE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting electrical repair tasks to minimize dermal exposure to the constituents of the cleaners and solvents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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Electrical Repairs	METHYL ETHYL KETONE Inhalation	590 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on natural dilution and the small quantities of product used. The use of PPE provides adequate protection from skin and eye contact.					
Electrical Repairs	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring is minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
Electrical Repairs	TOLUENE Inhalation (Reproductive) (Ototoxin)	753 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and small quantities of product used. An alternate OEL exists for this stressor (ACGIH TLV 75.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin and eye contact.					

Process: General Housekeeping

Frequency: Daily Duration: 0-15 minutes

Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.					
General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).					

Process: High Voltage Electrical Work

Frequency: Daily Duration: 4-6 hours

Description: Personnel are responsible for all high voltage electricity on base and can include installing, modifying and troubleshooting equipment as needed and performing visual inspections at the main substation.

This can include the use of Misty contact & circuit board cleaner (trans 1, 2-dichloroethylene and ethanol*) and 30876 PVC clear cement (polyvinyl chloride), which can be applied via aerosol spray. This can also include filling the SF6 (sulfur hexafluoride) gas used on the High voltage switches. This is a closed loop system. Personnel may transient hazardous noise areas to get to the work site or provide support to MDMC Albany. Personnel may also be required to spend extended periods of time outdoors (heat stress and ultraviolet radiation) and may be required to lift and carry items that may be in excess of 35 pounds (physical stress - heavy lifting). PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

WMSD RISK FACTORS: No ergonomic-related injuries/ problems were reported during the survey walkthrough. Any ergonomic related injury should be reported to the Command's Safety Office.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Closed Loop System	SULFUR HEXAFLUORIDE	Recommended	Yes
Comments: The use of a closed loop charging system is recommended to minimize potential airborne exposure to the sulfur hexafluoride during the filling of the SF6 cylinders.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ETHANOL; POLYVINYL CHLORIDE; SULFUR HEXAFLUORIDE	Recommended	Yes
Comments: High voltage electrical work is typically conducted outdoors, natural dilution is recommended to minimize potential airborne exposures to the cleaning solvents and PVC cements used, and while filling the SF6 tanks.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Proper Lifting Technique (2-person lift)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy policy, that allows for personnel to take breaks in air-conditioned spaces is adequate to minimize the potential for heat stress issues.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ETHANOL; POLYVINYL CHLORIDE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting high voltage electrical work to minimize dermal exposure to the constituents of the cleaners and PVC cements.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
High Voltage Electrical Work	ETHANOL Inhalation (Carcinogen)	1900 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. The use of PPE provides adequate protection from skin and eye contact.					
High Voltage Electrical Work	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
High Voltage Electrical Work	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring is minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
High Voltage Electrical Work	POLYVINYL CHLORIDE Inhalation	1 mg/m3 8 hr TWA ACGIH Respirable		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. The use of PPE provides adequate protection from skin and eye contact.					
High Voltage Electrical Work	SULFUR HEXAFLUORIDE Inhalation	6000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and the use of a closed loop system. An alternate OEL exists for this stressor (ACGIH TLV 5970.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin and eye contact.					
High Voltage Electrical Work	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					

Process: HVAC Repair & Maintenance

Frequency: Daily Duration: 4-6 hours

Description: Personnel respond to maintenance tickets and can include changing AC filters, cleaning AC coils (ethanol), refilling coolants in AC units or fan motor repairs (petroleum distillates). Personnel may be required to working in awkward body positions and may be required to lift and carry items that may be in excess of 35 pounds (physical stress - heavy lifting). Personnel may work outdoors (heat stress and ultraviolet radiation) for prolonged periods of time.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Closed Loop System	CHLORODIFLUOROMETHANE; DIBROMODIFLUOROMETHANE; DIFLUOROMETHANE	Required	Yes

Comments: The use of a closed loop charging system is recommended to minimize potential airborne exposure to the constituents of the coolants used to charge AC units.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Dynamic Work; PHYSICAL STRESS	Recommended	Yes

Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

Natural Dilution	CHLORODIFLUOROMETHANE; DIBROMODIFLUOROMETHANE; ETHANOL; PETROLEUM DISTILLATES	Recommended	Yes
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Comments: Most HVAC maintenance is conducted outdoors, natural dilution is recommended to minimize airborne exposures to the constituents of the coolants to charge AC units, and the cleaners and lubricants used.

Proper Hydration	HEAT STRESS	Recommended	Yes
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Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.

Proper Lifting Technique (2-person lift)	PHYSICAL STRESS	Recommended	Yes
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Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.

Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
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Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	CHLORODIFLUOROMETHANE; DIBROMODIFLUOROMETHANE; DIFLUOROMETHANE; ETHANOL; PETROLEUM DISTILLATES	Recommended	Yes

Comments: Suitable protective gloves are recommended to be worn whenever conducting HVAC repair and maintenance tasks to minimize dermal exposure to the constituents of the coolants used to charge AC units, the various cleaners and lubricants used.

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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HVAC Repair & Maintenance	CHLORODIFLUOROMETHANE Inhalation	3540 mg/m3 8 hr TWA ACGIH		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and use of a closed loop system. The use of PPE provides adequate protection from skin and eye contact.					
HVAC Repair & Maintenance	DIBROMODIFLUOROMETHANE Inhalation	860 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and use of a closed loop system. The use of PPE provides adequate protection from skin and eye contact.					
HVAC Repair & Maintenance	DIFLUOROMETHANE Inhalation	2128 mg/m3 8 hr TWA AIHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and use of a closed loop system. The use of PPE provides adequate protection from skin and eye contact.					
HVAC Repair & Maintenance	ETHANOL Inhalation (Carcinogen)	1900 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and method of application. The use of PPE provides adequate protection from skin and eye contact.					
HVAC Repair & Maintenance	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
HVAC Repair & Maintenance	PETROLEUM DISTILLATES Inhalation	2000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and method of application. The use of PPE provides adequate protection from skin and eye contact.					
HVAC Repair & Maintenance	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring is minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
HVAC Repair & Maintenance	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					

Process: Making Signs

Frequency: Daily Duration: 2-4 hours

Description: Personnel create several different types of signs and labels using a Gravograph LS 900 (enclosed Class 4 laser) and plotter. Personnel are also responsible for installing/hanging signs and labels.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
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Interlock	LASER, CLASS 4	Required	Yes
Comments: The use of an interlock system is required to minimize the potential of ocular damage from looking at the laser during us of the Gravograph LS900.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Making Signs	LASER, CLASS 4			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: An Occupational Exposure Limit (OEL) has not been established for this hazard by OSHA or Navy recognized authorities. As good practice, exposure should be minimized to the greatest degree feasible. Potential for exposure to levels of health significance is not expected based on the use of an interlocking system that prevents the laser from being activated when the cover is removed.					

Process: Noise Hazardous Operations

Frequency: Daily Duration: 2-4 hours
Description: Personnel are responsible for various tasks (i.e., PM tasks, electrical repairs, HVAC/Utility repairs, making keys, etc.) that may require them to work around noise hazardous equipment like pneumatic tools, compressors, heavy equipment, etc.

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Noise Hazardous Operations	NOISE (Reproductive)	85 dBA 8 hr TWA DoD	86 dBA	No	Yes
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is anticipated based on previous sampling; however, additional sampling needs to be conducted to adequately quantify exposures. See Noise Sampling Attachment (Attachment 2).					

Process: Preventative Maintenance

Frequency: Daily Duration: 6-8 hours
Description: Personnel performs various jobs as called for in maintenance tickets. This can include changing light bulbs, minor plumbing work, minor touch-up painting, using various lubricants/oils, etc. Personnel may be required to lift and carry items that may be in excess of 35 pounds (physical stress - heavy lifting) and may be required to work outdoors (heat stress and ultraviolet radiation) for long periods of time. Available PPE is adequate to prevent splash and skin contact. Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale. WMSD RISK FACTORS: No ergonomic-related injuries/ problems were reported during the survey walkthrough. Any ergonomic related injury should be reported to the Command's Safety Office. Heavy lifting is a NMCPHC listed reproductive/developmental hazard. Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ACETONE; PETROLEUM DISTILLATES; XYLENE	Recommended	Yes
Comments: Preventive maintenance tasks are conducted in a variety of environments (i.e., outdoors, in office spaces, etc.), natural dilution is recommended to minimize the potential airborne exposures to the constituents of the products used.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ACETONE; PETROLEUM DISTILLATES; XYLENE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting PM tasks to minimize dermal exposure to the constituents of paints, lubricants/oils, etc.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Preventative Maintenance	ACETONE Inhalation	2400 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. An alternate OEL exists for this stressor (ACGIH TLV 594.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin and eye contact.					
Preventative Maintenance	PETROLEUM DISTILLATES Inhalation	2000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. The use of PPE provides adequate protection from skin and eye contact.					
Preventative Maintenance	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring is minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
Preventative Maintenance	XYLENE Inhalation (Reproductive) (Ototoxin)	435 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. An alternate OEL exists for this stressor (ACGIH TLV 86.87 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin and eye contact.					

Process: Professional/Administrative Tasks

Frequency: Daily Duration: 4-6 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested.

WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office.

Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes

Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

Process: Roads and Grounds Operations

Frequency: Daily Duration: 4-6 hours

Description: Personnel performs various jobs as called for in maintenance tickets. This can include using a backhoe, various material handling equipment, lawn equipment, etc. and working outdoors for extended periods of time (heat stress and ultraviolet radiation). This also involved the fueling of equipment with either gas or diesel fuels. Personnel may also be required to lift and carry items in excess of 35 pounds (physical stress - heavy lifting) and may require prolonged sitting (static posture) while operating heavy equipment. Available PPE is adequate to prevent splash and skin contact.

Note: the majority of lawn maintenance on the Base is conducted by contractors.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

WMSD RISK FACTORS: No ergonomic-related injuries/ problems were reported during the survey walkthrough. Any ergonomic related injury should be reported to the Command's Safety Office.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes

Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

Natural Dilution	CARBON MONOXIDE; DIESEL EXHAUST; DIESEL FUEL; GASOLINE	Recommended	Yes
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Comments: The operation of heavy equipment and lawn equipment is conducted outdoors, natural dilution is recommended to minimize the potential airborne exposures to vehicle/equipment exhaust constituents. Fueling of vehicles/equipment is conducted outdoors, natural dilution is recommended to minimize airborne exposure to gasoline or diesel fuels.

Proper Hydration	HEAT STRESS	Recommended	Yes
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Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.

Proper Lifting Technique (2-person lift)	PHYSICAL STRESS	Recommended	Yes
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Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.

Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
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Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	DIESEL FUEL; GASOLINE; PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting roads and grounds operations to minimize dermal exposure to the constituents of the fuels, lubricants, oils, etc.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Roads and Grounds Operations	CARBON MONOXIDE Inhalation (Reproductive) (Ototoxin)	55 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (outdoors). An alternate OEL exists for this stressor (ACGIH TLV 29.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed.					
Roads and Grounds Operations	DIESEL EXHAUST Inhalation (Carcinogen)			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: An Occupational Exposure Limit (OEL) has not been established for this hazard by OSHA or Navy recognized authorities. As good practice, exposure should be minimized to the greatest degree feasible. Potential for exposure to levels of health significance is not expected based on the frequency of the task and presence of adequate dilution ventilation.					
Roads and Grounds Operations	DIESEL FUEL Inhalation (Skin)	100 mg/m3 8 hr TWA ACGIH Inhalable		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (fueling occurs outdoors). The use of PPE provides adequate protection from skin and eye contact.					
Roads and Grounds Operations	GASOLINE Inhalation (Carcinogen) (Reproductive)	890 mg/m3 8 hr TWA ACGIH		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution (fueling occurs outdoors). The use of PPE provides adequate protection from skin and eye contact.					
Roads and Grounds Operations	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					
Roads and Grounds Operations	PETROLEUM DISTILLATES Inhalation	2000 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and method of application. The use of PPE provides adequate protection from skin and eye contact.					
Roads and Grounds Operations	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring is minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					

Roads and Grounds Operations	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					

Process: Water Distribution Maintenance

Frequency: Daily Duration: 6-8 hours

Description: Personnel monitor all of the well houses on base; this includes taking readings and performing a Chlorine test daily. Personnel use liquid chlorine and fluoride in the wells. These are on a closed loop system with minimal contact unless performing maintenance on the pumps/hoses. Personnel may have to add salt to water softeners. Tasks may involve spending prolonged periods of time outdoors (heat stress and ultraviolet radiation) and may require personnel to lift and carry items that may be in excess of 35 pounds (physical stress - heavy lifting). Personnel are responsible for maintaining the base pool. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Closed Loop System	CHLORINE	Recommended	Yes
Comments: The use of a closed loop charging system is recommended to minimize potential airborne exposure to the chlorine used to treat the pools and splash pads.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	CHLORINE	Recommended	Yes
Comments: Maintenance activities are typically conducted outdoors, natural dilution is recommended to minimize potential airborne concentrations to the chlorine used to treat the wells and the pools/splash pad.			
Proper Hydration	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Proper Lifting Technique (2-person lift)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy policy, that allows for personnel to take breaks in air-conditioned spaces is adequate to minimize the potential for heat stress issues.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	CHLORINE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting water distribution maintenance tasks to minimize dermal exposure to the chlorine whenever treating the wells and/or the pools and splash pad.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data

Water Distribution Maintenance	CHLORINE Inhalation	1.5 mg/m3 8 hr TWA OSHA		Yes	No
<p>SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. An alternate OEL exists for this stressor (ACGIH TLV 0.29 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin and eye contact.</p>					
Water Distribution Maintenance	HEAT STRESS			Yes	No
<p>SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.</p>					
Water Distribution Maintenance	PHYSICAL STRESS			Yes	No
<p>SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring is minimized based on adhering to proper lifting techniques and the use of material handling equipment (forklifts/carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.</p>					
Water Distribution Maintenance	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
<p>SEG: I&E DIV, PW-Facility Maintenance (FM) Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.</p>					

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

DIESEL EXHAUST (IARC (1)- Human Carcinogen)

ETHANOL (NTP (K)- Known Human Carcinogen)

GASOLINE (OSHA/NIOSH (Ca)- Carcinogen)

ULTRAVIOLET RADIATION (IARC (1)- Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

CARBON MONOXIDE

GASOLINE

NOISE

TOLUENE

XYLENE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

DIESEL FUEL

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

CARBON MONOXIDE

TOLUENE

XYLENE

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Noise Hazardous Operations	I&E DIV, PW-Facility Maintenance (FM) Section	Audiometric Testing	15

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2179995	Noise Hazardous Operations	NOISE	Noise Dosimetry	06/30/2025	One Time
2179996	Noise Hazardous Operations	NOISE	Noise Sound Level/ Octave Band/ Audiometric Booth	06/30/2025	One Time

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, PW-FM Boiler Section**

Location: Building 2210

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for the operation of the boiler plant that provide steam and air to Marine Depot Maintenance Command (MDMC). Personnel also perform various samples to test the water conditions and adjust the water chemistry whenever needed. Personnel only operate and monitor the boilers; all major repair work is performed by contractor personnel.

5

2. Observations and Notes

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation.

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
Boiler Plant Checks	5
Checking Condensate Pit	5
General Housekeeping	5
Noise Hazardous Operations	5
Professional/Administrative tasks	5
Water Testing/Treatment	5

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: Boiler Plant Checks

Frequency: 2-3 Times/Day Duration: 15-30 minutes

Description: Personnel walk throughout the boiler rooms (noise hazardous environment) on an regular basis to check meters and grab samples. Personnel may also be exposed to heat stress conditions while conducting these checks. Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on the temperature in the boiler plat, that allows for personnel to take breaks in air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Boiler Plant Checks	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-FM Boiler Section Rationale: The potential for heat stress occurring while conducting boiler plant checks is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in shaded areas and/or in air-conditioned buildings.					

Process: Checking Condensate Pit

Frequency: Daily Duration: 15-30 minutes

Description: Personnel enter a non-permit required confined space to check the condensate pit. Personnel follow all safety protocols to include continuously monitoring the area for LEL and oxygen content via a permanently installed meter and having 2 personnel (one inside, one outside-watch).

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Standard Operating Procedures (SOPs)	OXYGEN DEFICIENCY	Recommended	Yes
Comments: The condensate pit area is considered a non-permit required confined space. Personnel adhere to the MCLB Confined Space Program requirements whenever entering the pit area. Adhering to the SOPs for this task is recommended to minimize the oxygen deficiency hazard of entering a non-permit required confined space.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Checking Condensate Pit	OXYGEN DEFICIENCY Inhalation			Yes	No

SEG: I&E DIV, PW-FM Boiler Section

Rationale: Potential hazards associated with an oxygen deficient environment is not anticipated based on the duration of the task and the adherence to established SOPs for entry into confined spaces.

Process: General Housekeeping

Frequency: Daily Duration: 0-15 minutes

Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn.
Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data

General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-FM Boiler Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.					
General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
SEG: I&E DIV, PW-FM Boiler Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).					

Process: Noise Hazardous Operations

Frequency: 2-3 Times/Day Duration: 15-30 minutes

Description: Personnel are responsible for various tasks (i.e., boiler plant checks, etc.) that may require them to work around noise hazardous equipment like pneumatic tools, compressors, boilers, heavy equipment, etc.

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Noise Hazardous Operations	NOISE (Reproductive)	85 dBA 8 hr TWA DoD	84 dBA	No	Yes
SEG: I&E DIV, PW-FM Boiler Section Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is anticipated based on working with or in close proximity to noise hazardous equipment. Additional sampling is needed to adequately quantify exposures. See Noise Sampling Attachment (Attachment 2).					

Process: Professional/Administrative tasks

Frequency: Daily Duration: 6-8 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested.
WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office.
Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
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Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPMNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

Process: Water Testing/Treatment

Frequency: 2-3 Times/Day Duration: 15-30 minutes

Description: Personnel pull a sample every 8-hours to perform various tests to include alkalinity, chloride, sulfite test, pH and conductivity. Personnel use various chemicals to include phenolphthalein indicator solution, potassium chromate indicator solution, and sulfuric acid in small amounts to perform the various tests, and if needed adjust the water chemistry by adding sodium chloride salt (TSC-809; morpholine) to the water.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	MORPHOLINE; POTASSIUM CHROMATE; SULFURIC ACID	Recommended	Yes
Comments: Water testing/treatment tasks (using small quantities of reagents) are conducted in a lab environment, natural dilution is recommended to minimize the potential airborne exposures to the reagents and treatment chemicals.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Eyewear	MORPHOLINE; POTASSIUM CHROMATE; SULFURIC ACID	Recommended	Yes
Comments: Suitable protective eyewear is recommended to be worn whenever conducting water testing/treatment tasks to minimize potential ocular exposure to the reagents and treatment chemicals.			
Suitable Protective Gloves	MORPHOLINE; POTASSIUM CHROMATE; SULFURIC ACID	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Water Testing/Treatment	MORPHOLINE Inhalation (Skin)	70 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-FM Boiler Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, small quantities used, and limited duration of use. The use of PPE provides adequate protection from skin contact to the morpholine.					
Water Testing/Treatment	POTASSIUM CHROMATE Inhalation	0.005 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-FM Boiler Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, the small quantities used, and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 0.0005 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.					

Water Testing/Treatment	SULFURIC ACID Inhalation (Carcinogen)	1 mg/m3 8 hr TWA OSHA	Yes	No
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SEG: I&E DIV, PW-FM Boiler Section

Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, the small quantities used, and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 0.2 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to sulfuric acid.

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

SULFURIC ACID (NTP (K)- Known Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

NOISE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

MORPHOLINE

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Noise Hazardous Operations	I&E DIV, PW-FM Boiler Section	Audiometric Testing	5

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2178599	Noise Hazardous Operations	NOISE	Noise Dosimetry	06/30/2025	One Time
2178603	Noise Hazardous Operations	NOISE	Noise Sound Level/ Octave Band/ Audiometric Booth	06/30/2025	One Time

Periodic Industrial Hygiene Survey: Shop Assessment

v1.3

Survey Date: 25 JUL 23**Shop Priority:** 2 - Medium**Command: N67008 /****Shop: I&E Division, PW-FM IWTP Section**

Location: Building 2600

Industrial Hygienist: Wolfe, William
william.f.wolfe1.civ@health.mil**Safety POC:** Carswell, Ryan
ryan.carswell@usmc.mil**This assessment consists of the following sections:**

1. Shop Description
2. Observations and Notes
3. List of Processes
4. Process Information, Controls, and Exposure Assessments
5. Hazards that have Special Notations
6. Medical Surveillance
7. Workplace Monitoring Plan

1. Shop Description**# of Shop Personnel**

Personnel are responsible for operating the Industrial Water Treatment Plant (IWTP) that treats all of the waste water discharged from the Marine Depot Maintenance Command (MDMC). Personnel are responsible for monitoring waste tanks, collecting samples, and performing laboratory testing.

3**2. Observations and Notes**

07/25/2023

Abbreviations: ADM – Administrative, PPE – Personal Protective Equipment, ISO – Isolation, DV – Dilution Ventilation, ENG – Engineering Controls, and LV – Local Ventilation

07/25/2023

Work-related musculoskeletal disorders (WMSD) risk factors which apply to all administration spaces: Personnel should ensure that all workstations are set up per attachment (3) of the periodic industrial hygiene survey to help prevent WMSD issues from occurring. Gel pads or wrist rests should be employed in front of the keyboards to help maintain a neutral wrist and keep the wrists off of hard edges of the desk. As chairs are replaced, consideration should be given to purchasing adjustable ergonomic chairs. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.

3. List of Processes

Process Name	# of Process Personnel
Equipment Maintenance	3
General Housekeeping	3
Jar Testing	3
Noise Hazardous Operations	3
Professional/Administrative Task	3
Wastewater Treatment	3

4. Process Information, Controls, and Exposure Assessments

Chemical and physical hazards have been assessed for the processes in this shop to determine if the exposure levels are less than Occupational Exposure Limits (OELs). OELs are established to protect workers from the potential health effects due to exposures to chemical substances or physical agents. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are the regulatory OELs to which employers must comply. When appropriate, we recommend alternate, more protective OELs as a best practice.

In the Control Use column, the controls marked as Required are the minimum deemed necessary to protect workers based solely on the IH exposure assessment. Controls marked as Recommended are considered best practice by the IH to further reduce exposures based on alternate OELs or used based on an instruction/Standard Operating Procedure (SOP). Additional PPE (e.g. safety-toed shoes/boots, fall protection, safety vests, etc.) not identified in this section may be required for personnel. Consult with your cognizant Safety representative, PPE hazard assessment or local instruction/SOP/Maintenance Requirement Card (MRC) for any additional required PPE specific to your worksite.

In the Adequate column, Yes signifies the control is in place and capable of controlling exposures during the process. If Adequate is listed as No, the control is not yet in place or incapable of controlling exposures. Additional details will be provided in the comments below the control.

In the Acceptable column, Yes indicates that it is highly unlikely that the worker is exposed to the hazard at or above the OEL without regard to PPE. If Acceptable is listed as No, additional controls are required, and the shop should investigate the feasibility of reducing/eliminating the hazard. Medical Surveillance may also be required (Section 6). If Yes is listed in the Need More Data column, see the Shop's Workplace Monitoring Plan (Section 7).

When appropriate, special hazard notations are noted in the exposure assessments below. Section 5 provides notation explanations and a summary of these hazards. Exposures to these hazards should be significantly reduced by elimination, substitution, engineering controls, or work practice controls.

Process: Equipment Maintenance

Frequency: 2-3 Times/Month Duration: 30-60 minutes

Description: Personnel are responsible for conducting preventive maintenance (PM) on bearings on the belt press and conveyor every 80 hours of use or as needed using CITGO Lithoplex® MP Grease No. 2 (with a gloved hand or spatula) to grease the bearings. Personnel can also add hydraulic oil (CITGO Clarion Food Grade A/W Hydraulic Oil 32) as needed. Maintenance is typically conducted outdoors (heat stress and ultraviolet radiation). PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Equipment maintenance is conducted outdoors, natural dilution is recommended to minimize potential airborne exposure to the constituents of the lubricants and oils used.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	PETROLEUM DISTILLATES	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting equipment maintenance tasks to minimize dermal exposure from the constituents of the lubricants and oils used.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Equipment Maintenance	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in air-conditioned buildings.					
Equipment Maintenance	PETROLEUM DISTILLATES Inhalation	2000 mg/m ³ 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and method of application. The use of PPE provides adequate protection from skin and eye contact.					
Equipment Maintenance	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

Process: General Housekeeping

Frequency: Daily Duration: 0-15 minutes

Description: Personnel use household type cleaning products (Lysol (isopropanol), bleach solutions (sodium hypochlorite), Pledge (petroleum distillates), etc.) that are sprayed and wiped with paper towels or cloth rag in personal spaces. All common areas are cleaned and maintained by various personnel within each section. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Cleaning products are used in accordance with product directions and in an office and lab environment, natural dilution is recommended to minimize potential airborne exposures to cleaning products.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Gloves	ISOPROPANOL; SODIUM HYPOCHLORITE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting general housekeeping to minimize dermal exposure from cleaning constituents.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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General Housekeeping	ISOPROPANOL Inhalation	980 mg/m3 8 hr TWA OSHA		Yes	No
<p>SEG: I&E DIV, PW-FM IWTP Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. An alternate OEL exists for this stressor (ACGIH TLV 492.0 mg/m3). Whenever possible work to reduce exposures to this level through the use of engineering and work practice controls. See Control Section for recommendations. Contact your IH program office for assistance as needed. The use of PPE provides adequate protection from skin contact to isopropanol.</p>					
General Housekeeping	SODIUM HYPOCHLORITE Inhalation	2 mg/m3 15 min STEL AIHA		Yes	No
<p>SEG: I&E DIV, PW-FM IWTP Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not expected based on method of use, diluted concentration of a household cleaner and limited duration of use. The use of PPE provides adequate protection from skin contact to the sodium hypochlorite (bleach).</p>					

Process: Jar Testing

Frequency: 2-3 Times/Day Duration: 0-15 minutes

Description: Personnel conduct jar tests to determine the optimal chemical treatment and related chemical dosages for the waste stream in the IWTP. Samples are collected from the surge tank and the secondary clarifier and pH is measured with a pH probe. Sulfuric acid is added as needed to adjust the pH to 3.0-4.0. The jar is then placed under a stirrer and allowed to stir for about 5 minutes. While the sample is being stirred approximately 8 drops of 50% sodium hydroxide and 1 mL of 3430 polymer is added. The solids are then allowed to precipitate and examined for color. As long as the water is clear no further action is needed. However, if clarity does not occur, the test is repeated with the addition of ferrous chloride to the test in drop amounts until clarity is obtained. Based on the results of the jar test, the amount of chemicals that need to be added to the waste stream can be determined. PPE (suitable protective gloves) is available to be worn.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	SODIUM HYDROXIDE	Recommended	Yes
Comments: Jar testing tasks are conducted in a lab environment and at very small quantities, natural dilution is recommended to minimize potential airborne exposures to the chemicals used during testing.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Eyewear	SODIUM HYDROXIDE	Recommended	Yes
Comments: Suitable protective eyewear is recommended to be worn whenever conducting jar testing tasks to minimize ocular exposure to the wastewater and chemicals used during testing.			
Suitable Protective Gloves	SODIUM HYDROXIDE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting jar testing tasks to minimize dermal exposure to the wastewater and the chemicals used during the testing.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
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Jar Testing	SODIUM HYDROXIDE Inhalation (Skin)	2 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution and the small quantities used (drop amount). The use of PPE provides adequate protection from skin and eye contact.					

Process: Noise Hazardous Operations

Frequency: Daily Duration: 6-8 hours

Description: Personnel are responsible for various tasks (i.e., water treatment plant tasks, equipment maintenance tasks, etc.) that may require them to work around noise hazardous equipment like pneumatic tools, compressors, and heavy equipment, etc.

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Earplugs and/or Ear Muffs	NOISE	Required	Yes
Comments: Single hearing protection is required for noise levels at or above 85 dBA or 140 dBP. Double hearing protection is required for noise levels at or above 104 dBA or 165 dBP.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Noise Hazardous Operations	NOISE (Reproductive)	85 dBA 8 hr TWA DoD		No	Yes
SEG: I&E DIV, PW-FM IWTP Section Rationale: Exposure to noise levels in excess of the DoD OEL of 85 dBA is anticipated based on working with or in close proximity to noise hazardous equipment.					

Process: Professional/Administrative Task

Frequency: Daily Duration: 2-4 hours

Description: Personnel work at desks where the keyboard and mouse are placed on top of the desks. Desks had hard edges and some keyboards were not equipped with a wrist rest or gel pads in front of them. Chairs observed being used were of good ergonomic design; having adjustable height and arm rests, and adequate lumbar support. Sit-Stand workstations can be obtained if requested. WMSD RISK FACTORS: No ergonomic-related injuries/problems directly related to work were reported during the survey walkthrough. Any ergonomic-related injury should be reported to the Command's Safety Office. Excessive sitting (static posture) is a NMCPHC listed reproductive/developmental hazard.

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Micro Breaks	Static Posture	Recommended	Yes
Comments: Micro breaks are recommended to minimize identified ergonomic hazards. OPNAV M-5100.23 stipulates an ergonomics program is a command responsibility.			

Process: Wastewater Treatment

Frequency: Daily Duration: 6-8 hours

Description: Personnel are responsible for treating the wastewater received from MDMC Albany. Wastewater comes into the IWTP and goes through a gravity separator, then through a splitter and into either surge tank 1 or 2. At both of these points the water is tested for pH and either sulfuric acid or ferrous chloride is added to increase or decrease the pH for a target range of a pH of 3-4. Water then goes to the neutralization tank where water can be treated with sodium hydroxide to maintain a pH of 11-11.5 and Chemrite 3430 is added to the water. Water then goes through a primary and secondary clarifier and then to the city plant as "clean water". The solids leftover from treatment are then pressed into solid waste cakes and properly disposed of. Personnel can also add "special waste" to the stream. This is raw material that is not disposed of downstream; however, it is collected and delivered to the plant separated. The plant has designated amounts of this waste that can be added at any given time to the waste stream and still maintain the required pH. Personnel can also use Chemrite CR-493 Scale and deposit control (1-hydroxyethane-1,1-diphosphonic acid) to clean the side of the clarifier. Personnel may have to lift/move/carry items that may be in excess of 35 pounds (physical stress - heavy lifting). Personnel perform hourly rounds to monitor waste tanks. This can include entering the pump room that is currently designated as a hazardous noise area. Personnel also spend extended periods of time outdoors walking the grounds to perform tank checks and take samples. Available PPE is adequate to prevent splash and skin contact.

Note: While administrative, PPE, and/or engineering controls, along with the exposure assessment sections below may reflect a limited subset of hazard(s) under "Hazard Name", all products with similar hazards used under this process should follow the same controls and reflects the same exposure assessment acceptability and rationale.

WMSD RISK FACTORS: No ergonomic-related injuries/ problems were reported during the survey walkthrough. Any ergonomic related injury should be reported to the Command's Safety Office.

Heavy lifting is a NMCPHC listed reproductive/developmental hazard.

Heat stress is a NMCPHC listed reproductive/developmental hazard.

Engineering

Control Description	Hazards Controlled	Control Use	Adequate
Carts, Lifts and Dollies	PHYSICAL STRESS	Recommended	Yes
Comments: the use of material handling equipment (i.e., carts and dollies) is recommended to minimize ergonomic hazard. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			

Administrative

Control Description	Hazards Controlled	Control Use	Adequate
Natural Dilution	SODIUM HYDROXIDE	Recommended	Yes
Comments: Wastewater treatment tasks are conducted outdoors, natural dilution is recommended to minimize potential airborne exposures to the chemicals used during treatment.			
Proper Hydration	HEAT STRESS	Recommended	Yes
Comments: Adhering to proper hydration recommendations are adequate to minimize the potential for heat stress.			
Proper Lifting Technique (2-person lift)	PHYSICAL STRESS	Recommended	Yes
Comments: A two-person lift is recommended for items weighing 35 pounds or more. This weight limit may be decreased based on required posture, height of lift, and other factors. The NIOSH Lifting Equation or ACGIH TLVs for Lifting Tasks should be consulted in those cases. OPNAV M-5100.23 stipulates an Ergonomics Program is the Command's responsibility.			
Work/Rest Cycle	HEAT STRESS; ULTRAVIOLET RADIATION	Recommended	Yes
Comments: Adhering to a work/rest cycle, based on WBGT Flag conditions and Navy/Marine Corps policy, that allows for personnel to take breaks in shaded and/or air-conditioned spaces is adequate to minimize the potential for heat stress issues and UV radiation exposure.			

PPE

Control Description	Hazards Controlled	Control Use	Adequate
Suitable Protective Eyewear	SODIUM HYDROXIDE	Recommended	Yes
Comments: Suitable protective eyewear is recommended to be worn whenever conducting wastewater treatment tasks to minimize ocular exposure to the chemicals used during treatment.			
Suitable Protective Gloves	SODIUM HYDROXIDE	Recommended	Yes
Comments: Suitable protective gloves are recommended to be worn whenever conducting wastewater treatment tasks to minimize dermal exposure to the wastewater and chemicals used during treatment.			

Exposure Assessment

Process Name	Hazard Name	OEL	Exposure Level	Acceptable	Need More Data
Wastewater Treatment	HEAT STRESS			Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: The potential for heat stress occurring is minimized based adhering to proper hydration standards and rest breaks that allow personnel to rest in air-conditioned buildings.					
Wastewater Treatment	PHYSICAL STRESS			Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: The potential for physical stresses (heavy lifting) exposure occurring during wastewater treatment tasks are minimized based on adhering to proper lifting techniques and the use of material handling equipment (carts/dollies). NIOSH's Lifting Equation or ACGIH's Lifting TLV table should be utilized for maximum weights to be lifted. Any ergonomic related injury should be reported to the unit safety representative.					
Wastewater Treatment	SODIUM HYDROXIDE Inhalation (Skin)	2 mg/m3 8 hr TWA OSHA		Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: Potential for airborne concentrations greater than the applicable Occupational Exposure Limit (OEL) is not anticipated based on natural dilution. The use of PPE provides adequate protection from skin and eye contact.					
Wastewater Treatment	ULTRAVIOLET RADIATION (Carcinogen)			Yes	No
SEG: I&E DIV, PW-FM IWTP Section Rationale: The potential for UV radiation issues occurring is minimized based adhering rest breaks that allow personnel to rest in air-conditioned buildings.					

5. Hazards that have Special Notations

The following is a summary of hazards found to be in use in this Shop that have one or more of the following notations: Carcinogen, Reproductive, Sensitizer, Skin, or Ototoxin. These notations are provided next to the hazard names in Section 4, Chemical and Physical Hazards Exposure Assessments. Exposure to these hazards should be significantly reduced by elimination, substitution, or through work practice and engineering controls.

Carcinogen: A Carcinogen is a hazard capable of causing cancer.

ULTRAVIOLET RADIATION (IARC (1)- Human Carcinogen)

Reproductive: Hazards identified with the Reproductive notation are those associated with occupational exposures regarding their potential to cause an adverse effect on reproductive health or fetal development. Pregnant workers and/or workers concerned about their future reproductive capacity should seek the advice of their medical provider before working in an environment that contains reproductive hazards.

NOISE

Respiratory sensitizer: Hazard that can induce hypersensitivity of the airways following inhalation of the stressor. Work exposures to these stressors may be severe

None

Dermal sensitizer: Hazard that can induce an allergic response following skin contact with the stressor. Worker exposures to these stressors may be severe.

None

Skin: This notation refers to the potential significant contribution to a worker's overall exposure by the cutaneous route, including mucous membranes and the eyes, by contact with vapors, liquids, and solids. A Skin notation is not applied to chemicals that solely cause dermal irritation.

SODIUM HYDROXIDE

Ototoxin: Ototoxic chemicals either cause hearing loss independently, or work synergistically with hazardous noise to damage the inner ear. Regardless of the mechanism, exposure to certain chemicals, either alone or in concert with noise, results in hearing loss.

None

6. Medical Surveillance

The following are exposure based medical surveillance program recommendations. Workers are included in medical surveillance programs based on several factors: 1) unacceptable exposure assessments, 2) frequency of exposure, and 3) the availability of surveillance criteria. The decision to include a worker in a program is based on potential or actual exposure at or above a regulatory action level, if OSHA has established one. The decision may also be driven by other exposure standards, policy and guidance from the DoD or Navy. The only certification exam recommended in the IH Survey is for Respirator Users.

Process Name	SEG Name	Med Surv Program	# Process Personnel
Noise Hazardous Operations	I&E DIV, PW-FM IWTP Section	Audiometric Testing	3

7. Workplace Monitoring Plan

Processes listed below require initial and/or periodic exposure monitoring to determine if levels are controlled to below the Occupational Exposure Limits. In order to fulfill this requirement, your assistance in scheduling monitoring is needed by notifying the Industrial Hygiene Department at least 48 hours in advance of the next operation.

Entry ID	Process Name	Hazard Name	Sampling Task Type	Projected Due Date	Frequency
2179492	Noise Hazardous Operations	NOISE	Noise Dosimetry	06/30/2025	One Time
2179495	Noise Hazardous Operations	NOISE	Noise Sound Level/ Octave Band/ Audiometric Booth	06/30/2025	One Time

**NOISE SURVEY WITH HEARING PROTECTION REQUIREMENTS
AND PERSONAL NOISE SAMPLING RESULTS SUMMARY
MARINE CORPS LOGISTICS BASE (MCLB) ALBANY
INSTALLATION AND ENVIRONMENTAL (I&E) DIVISION
ALBANY, GA
REPORT NUMBER: AL23007
JULY 2023**

Ref: (a) OPNAV M-5100.23 of 05 Jun 2020, *Navy Safety and Occupational Health Manual*
 (b) DoD Instruction 6055.12, *Hearing Conservation Program*, 14 August 2019
 (c) Marine Corps Hearing Conservation Program, MCO 6260.3A, 26 Sept 2016.

1. The following table identifies spaces, work tasks and equipment that require the use of hearing protection. These measurements were taken during the current Industrial Hygiene (IH) surveys. All personnel working in areas or performing tasks that are exposed to sound pressure (noise) levels at or above **85 dBA** or **140 dBP** must use single hearing protection. Personnel exposed to sound pressure (noise) levels at or above **104 dBA** or **165 dBP** require the use of double hearing protection, as indicated by the word “Double” in the “Level of Hearing Protection Required” column. The hearing protective devices used must be capable of attenuating worker noise exposure below an 8-hour TWA of 85 dBA.

IDENTIFIED NOISE HAZARD AREA, OPERATIONS AND EQUIPMENT

DATE SAMPLE #	RESPONSIBLE WORKCENTER	SPACE	WORK TASK AND/OR CONDITIONS	MEASURED SOUND PRESSURE LEVELS (dBA)	NOISE RADIUS (FT)	HEARING PROTECTION REQUIRED
NA*	ENV – Pollution Prevention Section	Recycling Center	Recycling: Use of cardboard bailer	72 Peak of 84	--	None
			Recycling: Use of aluminum can crusher	99.8	5	Single
	Hazardous waste disposal: Use of aerosol paint can crusher		75	--	None	
	Hazardous waste disposal: Use of oil filter crusher		83 Peak of 91	5	Single	
	PW-FM Boiler Section	Bldng 2210	Air compressor	92	7	Single
			Boiler tanks	87	4	Single
			Boiler room office	71-73	--	None
		Steam generator room (Bldng 2299)	Steam generator	80	--	None
			Boiler tank	82	--	None
			Exhaust fan	75	--	None
		Methane generator room (Bldng 2299)	Methane generator	114	84	Double
	Exhaust fan		75	--	None	
	Generator room (Bldng 2299)	Middle of room	64	--	None	
NA*	Electric room (Bldng 2299)	Middle of room	70	--	None	
		Outside Bldng 2299	Heat exchanger - outdoors	89	5	Single

	PW-FM IWTP Section	Pump House	Pump 1 and 2 at motor	90	6	Single
			Pump 1 and 2 at standing position	83	--	None
			Pump 3 at motor	84	--	Single
			Pump 3 at standing position	75	--	None
			Panel on first floor inside pump room	72	--	None
	PW-FM Section	Well house 3 (Bldng 1466)	Right next to the pumps	87	4	Single
			At door	84	--	Single
		Outside	Roads and Grounds Operations: Use of jackhammer crane	93	8	Single
			Road and Grounds Operations: Idle jackhammer crane	82	--	None
			STIHL BR 600 Magnum backpack blower	103	25	Single (recommend Double)

NA* - Sample numbers were not collected at the time sampling.

2. The personal sampling results listed below indicated personnel have had exposures that exceeded the DoD OEL or 85 dBA. Personnel should remain in the command's Hearing Conservation Program.

I&E Division PERSONNEL NOISE SAMPLING RESULTS					
DATE SAMPLE #	WORK CENTER	ACTIVITY	EXPOSURE LIMIT	MEASURED TWA EXPOSURE	RESULTS
23 SEP 2015 ND15078	ENV – Pollution Prevention Section	Recycling tasks	85	79	Below DoD OEL
21 SEP 2015 ND15070		Administrative work and inspections	85	58	Below DoD OEL
21 SEP 2015 ND15069		Recycling tasks (collection, use of bailer, crusher, and pick-up truck)	85	83	Below DoD OEL
12 MAY 2016 ND16116	PW-FM Boiler Section	Boiler room operations to include hourly walkthroughs of the plant	85	84	Below DoD OEL
6 APR 2016 ND15103	PW-FM Section	Utilities maintenance to include working on a new vacuum machine in bay of Bldng 5501	85	81	Below DoD OEL
6 APR 2016 ND15102		Utilities maintenance to include performing well and boiler checks	85	77	Below DoD OEL
6 APR 2016 ND15101		HVAC maintenance to include PMs on AC units inside MDMC Albany	85	90	Above DoD OEL
6 APR 2016 ND15100	PW-FM Section	HVAC maintenance to include PMs on AC units inside MDMC Albany	85	84	Below DoD OEL

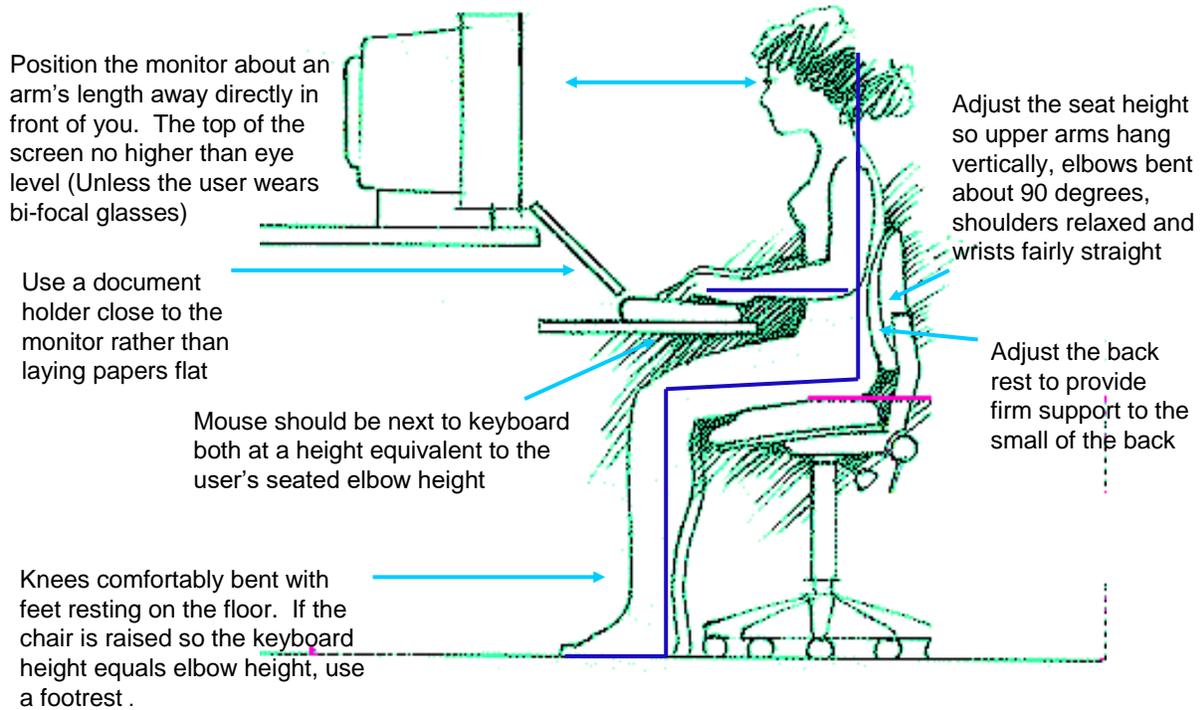
3 DEC 14 ND15010		Utilities maintenance to include performing boiler room checks	85	75	Below DoD OEL
3 DEC 14 ND15011		Utilities maintenance to include performing boiler room checks	85	78	Below DoD OEL
16 OCT 2014 ND15001		HVAC maintenance to include PMs on AC units in building on MCLB Albany	85	81	Below DoD OEL
16 OCT 2014 ND15002		HVAC maintenance to include PMs on AC units in building on MCLB Albany	85	80	Above DoD OEL
12 MAY 2016 ND16110		Road and Grounds tractor operations: personnel used a jackhammer crane to crush concrete for several hours (tractor has an enclosed cab).	85	86	Above DoD OEL
12 MAY 2016 ND16111		Road and Grounds worker: personnel used a backpack blower in the morning, then acted as a safety/watcher on ground for the tractor operator.	85	90	Above DoD OEL
21 OCT 2014 ND15003		Road and Grounds tractor operations: ground maintenance and upkeep operations via tractor.	85	85	Above DoD OEL
21 OCT 2014 ND15004		Roads and Grounds tractor operations: ground maintenance and upkeep operations via tractor.	85	85	Above DoD OEL

3. At the discretion of Industrial Hygiene, additional noise measurements (sound level surveys) may be obtained in work centers or noise dosimetry (personal monitoring on individuals) performed to resolve compliance issues such as the posting of hazardous noise areas, the adequacy of hearing protection devices already in use, or implementing administrative controls to bring the effective exposure to less than the DoD OEL.

4. The hearing protection devices currently in are capable of attenuating worker noise exposure below the OEL. It is recommended that the Command re-emphasize the need for wearing appropriate hearing protection during weapon qualification and continued enrollment in the command Hearing Conservation Program (per reference (c)) should continue. Should tasks change such that worker noise exposures are affected, notify Industrial Hygiene so that another assessment can be conducted.

5. The original sample results discussed in this attachment are on file with the Industrial Hygiene office. The workers have been notified of their sample results and the results have been recorded in their individual medical records. At this time there are no additional recommendations to be made.

Neutral Posture for Computer Use



TIME TO TAKE A COMPUTER BREAK

For every 20 minutes of computer use,
look at an object 20 feet away for
20 seconds. This reduces eyestrain.

Move your eyes side-to-side and
top to bottom. This helps moisten
your eyes and reduces eyestrain.

Cup your eyes with your hands
and close your eyes. Do not put
any direct pressure on your eyes.
This relaxes your face and
moistens your eyes.

Rotate your ankle. This promotes
blood circulation in your legs.

While seated, elongate your back
by pretending there is a cable
attached to your head that is slowly
pulling upwards. This will promote
good posture and relieve some
low back pain.

Slowly pull your arms back as far as
you can, trying to touch your shoulder
blades together. This will reduce
upper back stress.

Close your eyes and gradually
lower your head. This relaxes
your eyes and neck.

Extend your arms and fingers
and rotate. This reduces stress
on the upper extremities.

With your arms at your sides,
shake your fingers. This
relaxes your arms, hands
and fingers.

Shrug your shoulders. This eliminates
stress from the shoulders and upper back.

Tip: Taking 20 second micro-breaks throughout the day to refocus your eyes will reduce fatigue at the end of the day. 20/20 rule: for every 20 minutes of work, rest the eyes 20 seconds.

CUSTOMER SATISFACTION SURVEY

Industrial Hygiene Department
Navy Medicine Readiness and Training Command Jacksonville

Command: _____ Date: _____

Please rate this survey and report by indicating the numbers below that reflect your level of satisfaction:

	Level of Satisfaction				
	Low				High
	1	2	3	4	5
1. Coordination and/or response to request					
2. Courtesy and professionalism of IH personnel					
3. IH personnel's ability to communicate clearly and openly					
4. Clarity of Report					
5. Usefulness of Report					
6. Exposure Monitoring (if applicable)					
7. Timeliness of Report					

8. How can we improve the services we are providing?

9. What other services would you like Industrial Hygiene Services to provide?

10. Additional Comments (add a separate sheet if necessary):

Name: _____ Position: _____ Shop/Codes: _____

PLEASE RETURN THIS SURVEY TO:

Head, Industrial Hygiene Department
Navy Medicine Readiness and Training Command Jacksonville
george.a.moeller2.civ@health.mil

THANKS!!!