DEPARTMENT OF THE NAVY
NAVAL HOSPITAL, JACKSONVILLE
BRANCH CLINIC
MARINE CORPS LOGISTICS BASE
814 RADFORD BOULEVARD
ALBANY, GEORGIA 31704

In reply refer to:
6260
Ser 669
09 SEP 11

From: Officer in Charge, Naval Branch Health Clinic, Albany, GA
To: Director, Installations and Environmental Division, MCLB Albany

Subj: 2010 COMPREHENSIVE INDUSTRIAL HYGIENE SURVEY OF INSTILLATION AND ENVIRONMENTAL (I & E) DIVISION

Ref: (a) OPNAVINST 5100.23G
(b) NAVMC DIR 5100.8

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

1. A comprehensive Industrial Hygiene Survey of your division was conducted as required by references (a) and (b). Enclosures (1) and (2) are provided for your information.

2. The point of contact for this report is Mr. John Sorenson, Head, Industrial Hygiene Division, Naval Branch Health Clinic. He may be reached at 639-7846 or by E-mail at john.sorenson@med.navy.mil.

John G. Sorenson

J. G. Sorenson
By direction

Copy to:
Risk Management Office, MCLB Albany
Occupational Health, NBHC Albany

EXECUTIVE SUMMARY

A comprehensive industrial hygiene survey of MCLB Instillation and Environmental (I & E) Division was conducted during August and September 2011 by Mr. John Sorenson, Industrial Hygienist, of Naval Branch Health Clinic (NBHC) Albany. 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 the NBHC Albany Industrial Hygiene Division is needed, although recommendations made in this report may be specified as items for mandatory corrective action by the Installation and Environmental (I&E) Division Safety Office.

The assistance of your Safety Office and Hazmat Office staff, especially Mr. T.C. Mullen, greatly facilitated the completion of this survey and is much appreciated.

Attachment (1) to enclosure (2) of this report provides an overall evaluation summary. Attachment (2) provides shop/process-specific individual work center hazard assessments. These are intended to be disseminated to the work areas. If there are any changes in work operations 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 Mr. John Sorenson at 639-7846, or john.sorenson@med.navy.mil.

The following significant issues were found during this survey:

Field Findings.

- Although some shops have been changed into different departments, there were no large-scale changes in operations as compared to the prior industrial hygiene survey. Additional operations were identified and are reported, but these generally will not result in health hazardous exposures.

- Noise continues to be the major health hazard in some I&E work areas. Equipment and power tools used by I&E employees create sound levels that could prove to be hazardous under prolonged unprotected exposure.

- The Central Repair Shop (CRS) has resumed performing bullet trap cleaning in the small arms shooting range area. This has renewed their possible exposure to lead dust. This process has been sampled and determined to be unlikely to cause a health hazard to the employees due to the administrative controls (personnel rotation) and Personal Protective Equipment that are in place. It is recommended that a written schedule of rotation and log book be created to ensure that the rotation schedule is followed. One employee claimed to have performed this task more than the recommended once per quarter, while his supervisor was certain that this did not happen. A written log book would create an undisputed record.

Respiratory Protection.

The I&E Division has no seperate Respiratory program of its own. The MCLB Risk Management Office (RMO) has been appointed as the I&E Respiration Protection Coordinator. The members of I&E Division who are required to wear respirators are trained and Fit Tested through the MCLB RMO. Members of the Environmental Branch and the Emergency Response Team receive their training and Fit Testing from the MCLB Fire Department.

Medical Surveillance.

Medical surveillance recommendations are listed in attachment (4) to enclosure (2). At this time medical surveillance recommendations will not be changed from those currently being executed by Occupational Health.

Based on a review of the database kept by Occupational Health, the hazard-based medical surveillance readiness status of personnel enrolled to receive Hearing Conservation Program audiograms is 100%.

Please note that the following examinations are not listed in attachment (4):

- Medical certifications (those examinations which are required by specific Navy or Federal directive where a certain degree of physical fitness has been judged as necessary for a component of the job (i.e. respirator use) or the job itself (i.e. forklift operators or security guards)). These are specified by the command itself, not by Industrial Hygiene.

- Ionizing Radiation examinations, which are not specified by Industrial Hygiene, but rather by the Radiation Safety Officer.

- The requirement for a medical surveillance program for "sight conservation" is no longer Navy policy (see OPNAVINST 5100.23G, chapter 19). Position-specific requirements for visual acuity remain, but specification of such is outside the scope of Industrial Hygiene.

COMPREHENSIVE INDUSTRIAL HYGIENE SURVEY
I & E Division

Ref: (a) OPNAVINST 5100.23G, *Navy Occupational Safety and Health Program Manual*
(b) NAVMC DIR 5100.8, *Marine Corps Occupational Safety and Health (OSH) Program Manual*

Att: (1) Evaluation Summary
(2) Individual Hazard Assessment
(3) Exposure Monitoring Plan
(4) Medical Surveillance Summary
(5) Glossary of Terms

1. **Introduction.** As required by reference (a) and (b), a periodic industrial hygiene survey of MCLB, I & E Division was conducted during August and September 2011 by Mr. John Sorenson, Head, Industrial Hygiene Department, Naval Branch Health Clinic, Albany, GA. The survey consisted of site visits, walk-through evaluations of all work areas, a review of the policies, and employee interviews as appropriate to assist in the industrial hygiene assessment.

2. **Report Purpose and Use.** The purpose of this survey is to identify and assess chemical and physical health hazards that are present within I & E Division, evaluate controls present and recommend modified or additional controls where necessary, and identify hazard-based medical surveillance needs. To this end, this survey contains the following:

a. An evaluation summary of NAVOSH programs, control measures, and hazard evaluations, provided as attachment (1).

b. The updated Individual Hazard Assessments for each shop/code, provided in attachment (2). These describe significant operations/processes that may produce health hazardous exposures, as described by shop supervisors.

c. The Exposure Monitoring Plan (EMP), provided in attachment (3). This describes the plan that Industrial Hygiene will follow in the next year to measure exposures to chemical and physical hazards. This is provided for your information only; execution of the EMP is the responsibility of the Industrial Hygiene Division.

d. A summary of current medical surveillance recommendations, provided in attachment (4).

f. A glossary of Industrial Hygiene related terms is provided as Attachment (5).

3. **Re-evaluation Schedule and Changes in the Workplace.** Please retain this report on file. NBHC Industrial Hygiene will re-evaluate I & E Division shops/codes at the frequency specified in attachment (5). Because not all shops within the command will require an industrial hygiene survey every year, a table of shops and survey due dates is provided in this attachment. However, any significant change in the type of operations performed, workplace setting, or change in the kind or amount of chemicals used will result in a need for a re-evaluation of the affected area. NBHC Albany Industrial Hygiene should be notified of such changes.

EVALUATION SUMMARY
PERIODIC INDUSTRIAL HYGIENE SURVEY
MCLB ALBANY, I & E DIVISION

Reference Report

The most recent previous Industrial Hygiene survey for the I&E Division is NBHC ltr 6260/525 of 30 SEPT 2010

New or Significantly Modified Work Center Operations/Processes?

☒ No *significant* changes in operations/processes were identified. *

☐ The following changes were identified:

*For purposes of this survey, "*significant* changes" are defined as workplace modifications that require a change in recommended medical surveillance enrollment, personal protective equipment, or exposure control measures (ventilation, etc).

Program Findings and Recommendations

1. Medical Surveillance Program Status.

☐ No Exposure Based Medical Surveillance is Recommended.

☒ Exposure Based Medical Surveillance is Recommended.

☒ No Change in Exposure Based Medical Surveillance Recommendations.

☐ Exposure Based Medical Surveillance Recommendations have changed as follows:

Comments: Please see attachment (4).

2. Hazardous Material Control and Management (HMC&M) Program:

AUL ☒ Y ☐ N ☐ N/A Accurate ☒ Y ☐ N

MSDS Files ☒ Y ☐ N ☐ N/A Accurate ☒ Y ☐ N

HAZMAT Training Required? ☒ Y ☐ N (Note: IH does not track training completion).

Other (lead, asbestos, etc): Lead ☐ Y ☒ N (Note: IH does not track training completion)

Comments: Lead and Asbestos training is recommended, exposure levels have shown to be below surveillance program enrollment requirements.

3. Management of Reproductive Hazards:

Reproductive Hazards Present? ☒ Y ☐ N

Any changes from previous survey? ☐ Y ☒ N

Comments: There is a potential that the HAZMAT responders will be required to perform clean up of hazardous materials. These projects will be performed under the guidance of a trained Incident Commander. Noise hazards occur during power tool use.

4. Noise and Hearing Conservation Program (HCP):

Are personnel recommended for the HCP? ☒ Y ☐ N

Are personnel receiving audiograms? ☒ Y ☐ N ☐ N/A (Note: IH does not track training completion)

Is hearing protection readily available? ☒ Y ☐ N ☐ N/A

Is hearing protection used? ☒ Y ☐ N ☐ N/A ☐ Not Available for Observation

Comments:

5. Respiratory Protection:

Are respirators used to control workplace exposures? ☒ Y ☐ N

Are they effective? ☒ Y ☐ N ☐ N/A

Is the Respiratory Protection Program satisfactory? ☒ Y ☐ N ☐ N/A

Comments:

6. Ventilation:

Are ventilation systems used to control workplace exposures? ☒ Y ☐ N

Are the systems effective and operating properly? ☒ Y ☐ N ☐ N/A

Comments:

7. Ergonomics:

Ergonomic risk factors were identified pertaining to ☐ shop work ☒ office/computer work

Available equipment/furniture incorporates good ergonomic design? ☒ Y ☐ N ☐ N/A

Ergonomic training recommended? ☒ Y ☐ N (Note: IH does not track training completion)

Comments and/or Recommendations: New ergonomically correct workstations are installed in office areas to reduce Ergonomic risk in the office areas.

8. Other Applicable Programs:
- ☐ Lead Control
- ☐ Asbestos Control
- ☐ Carcinogens
- ☐ Other

Comments:

Consultative or Special Surveys/Findings Since the Previous Survey: ☒ (check if none)

Changes to Specific Workplace Evaluations and Monitoring Plan

1. Workplace Assessments:
- ☒ No significant change to workplace assessment information was identified.
- ☐ The following significant workplace assessment changes were identified:

2. Exposure Assessment:
- ☐ New exposure data were obtained since the prior evaluation and are summarized below
- ☒ No change in any exposure assessment was identified as part of the survey or from sampling data.
- ☐ The following changes in exposure assessments were identified:

Comments:

3. Findings and Recommendations:
- ☒ There were no significant findings identified during this survey that require corrective action.
- ☐ The following significant findings were identified:

4. Exposure Monitoring Plan. Attachment (3) provides the current Exposure Monitoring Plan.
- ☒ Exposure monitoring needs were identified.
- ☐ No exposure monitoring needs were identified.
- ☒ There are no changes to the previous Exposure Monitoring Plan.

Comments: Please see attachment (3).

Additional Comments:

INDIVIDUAL HAZARD ASSESSMENT	DATE: 08 August 2011
RECORDED BY: John Sorenson SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Electrical Repair and Maintenance Shop	POC: David Dauro PHONE: 229-639-7221 TOTAL PERSONNEL: 3 MALE: 3 FEMALE: 0

SHOP OPERATIONS: This shop provides electrical equipment repair and maintenance for the base. Some confined space entries are performed. There are no significant hazards to employees when good general housekeeping and hygiene are practiced.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Charging A/C systems and recovering refrigerant from system: Freon R-10 is the primary refrigerant used to recharge A/C systems.	One hour one time per Week	3	ENG: Freon is discharged through a discharge line directly into a recovery canister.	Acceptable: Use of less toxic R-10 along with engineering controls greatly reduce the health risks of this operation.
PETROLEUM BASED PRODUCTS (oil and lubricants)	Seldom, less than 30 minutes per month	3	PPE: Safety Goggles	ACCEPTABLE due to low duration and frequency of exposure
PETROLEUM DISTILLATES: Electro Clean (Organic Solvent)	Small spray bottles 1x/mth	3	PPE: Safety Goggles and rubber, nitrile, or viton gloves	ACCEPTABLE due to low duration and frequency of exposure

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 08 AUGUST 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Asbestos Team	POC: JIMMY GRIFFIN AND ROBBY METS PHONE: 229-639-8191 TOTAL PERSONNEL: 3 MALE: 3 FEMALE: 0

SHOP OPERATIONS: This group is a mixture of people from different parts of I&E Division that form a team and work together when a small asbestos Removal project is required. Larger, renovation, size projects are contracted out to contractors. They also take samples for laboratory analysis. Members of this group are trained in the hazards of Asbestos and have had training in safe handling techniques.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Asbestos	Less than 8 hrs/day. Historically they have had less than one project per month, sometimes 6-12 months between projects.	3	PPE: Full face mask with HEPA filter and Tyvex suits. Administrative: large projects are contracted out.	Acceptable due to employee training and asbestos control measures.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING CONTROL CODES:**

ADM – ADMINISTRATIVE CONTROLS

PPE - PERSONAL PROTECTIVE EQUIPMENT

ISO - ISOLATION

DV - DILUTION VENTILATION

ENG - ENGINEERING CONTROLS

LV - LOCAL VENTILATION

2. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 19 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Boiler Operations	POC: JOHNNY PRATHER PHONE: 229-639-5612/5617 TOTAL PERSONNEL: 5 MALE: 5 FEMALE: 0

SHOP OPERATIONS: This group operated the boilers that provide steam and air to LOGCOM's Maintenance Center Albany (MCA). These workers work in 3 shifts and make hourly rounds to check the status of the boilers and associated equipment. They also sample and test (titration) the boiler water. These employees operate and monitor the boilers; all major repair work is performed by contractor personnel. The supervisors also operate and monitor the propane receiving and mixing station located at building 5200.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Working in the Boiler room: NOISE	Exposure is limited to 15 minute rounds every hour	5	PPE: Ear plugs or muffs	Acceptable due to limited duration of exposure **Noise is a Navy recognized reproductive health hazard.**
Handling of greases, oils, gasoline and other petroleum products.	1 hr per week	5	PPE: Nitrile or viton Gloves	Acceptable due to low toxicity and limited duration and frequency of exposure.
Water Testing: titration with Sulfuric Acid	Once per shift	5	PPE: Chemical protective apron, face shield, and nitrile, or vitron gloves	Acceptable due to the small volume of low concentration (0.02N) of the sulfuric acid.
Operating air compressor at building 5200: Noise	Less than Once per week. Once a month during winter for 10 min per hr	2	PPE: Ear plugs or muffs	Acceptable due to limited duration of exposure **Noise is a Navy recognized reproductive health hazard.**

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 19 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Boiler Operations	POC: JOHNNY PRATHER PHONE: 229-639-5612/5617 TOTAL PERSONNEL: 5 MALE: 5 FEMALE: 0

SHOP OPERATIONS: This group operated the boilers that provide steam and air to LOGCOM's Maintenance Center Albany (MCA). These workers work in 3 shifts and make hourly rounds to check the status of the boilers and associated equipment. They also sample and test (titration) the boiler water. These employees operate and monitor the boilers; all major repair work is performed by contractor personnel. The supervisors also operate and monitor the propane receiving and mixing station located at building 5200.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 25 AUGUST 2011
RECORDED BY: John Sorenson SIGNATURE: COMMAND: I&E Division SHOP NAME: Housing	POC: Suzan Kear/Randall Kennedy Phone: 639-5927 Total Personnel: 10 Male: 3 Female: 7

SHOP OPERATIONS: Administration and supervisory work. Workers in these offices conduct meetings, write, and process paper work. They operate computers, copy machines, facsimile machines and other standard office equipment. The ink for all equipment is supplied in cartridges and is not contacted by the employees. Four of these employees perform housekeeping services such as vacuuming rugs, washing sinks and bathtubs, making beds, and other typical "household" cleaning chores. Blood-borne pathogen exposure is a possibility for this group.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS	EXPOSURE ASSESSMENT (1)
Office and desk work: Ergonomics	8 hrs per day	4	Education and training	Acceptable based upon low hazard of operations
Housekeeping services: cleaning chemicals	6 hours per day, 5 days per week	7	PPE: rubber or nitrile gloves	Acceptable due to low toxicity of "eco-clean" products and low exposure duration to chemicals. No health hazard is expected.
Housekeeping services: Blood Borne Pathogens	As incidents may occur	7	PPE: all universal precautions are used. Administrative: Fire Dept. can be called in as required.	Acceptable: due to universal controls and assistance from Fire Dept.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 25 AUGUST 2011
RECORDED BY: John Sorenson SIGNATURE: John Sorenson COMMAND: I&E Division SHOP NAME: Housing	POC: Suzan Kear/Randall Kennedy Phone: 639-5927 Total Personnel: 10 Male: 3 Female: 7

SHOP OPERATIONS: Administration and supervisory work. Workers in these offices conduct meetings, write, and process paper work. They operate computers, copy machines, facsimile machines and other standard office equipment. The ink for all equipment is supplied in cartridges and is not contacted by the employees. Four of these employees perform housekeeping services such as vacuuming rugs, washing sinks and bathtubs, making beds, and other typical "household" cleaning chores. Blood-borne pathogen exposure is a possibility for this group.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS	EXPOSURE ASSESSMENT (1)

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 29, 2011
RECORDED BY: John Sorenson SIGNATURE: John G. Sorenson COMMAND: I&E Division SHOP NAME: NAVFAC	POC: LCDR Jeff Benjamin Phone: 639-5959 Total Personnel: 8 Male: 6 Female: 2

SHOP OPERATIONS: Administration and supervisory work. Workers in these offices conduct meetings, write, and process paper work. They operate computers, copy machines, facsimile machines and other standard office equipment. The ink for all equipment is supplied in cartridges and is not contacted by the employees.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS	EXPOSURE ASSESSMENT (1)
Office and desk work: Ergonomics	8 hrs per day	8	Education and training	Acceptable based upon low hazard of operations
Site inspections of construction sites	10 hrs per week	8	Site specific requirements	Acceptable due to short and infrequent exposures

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 29, 2011
RECORDED BY: John Sorenson SIGNATURE: John G. Sorenson COMMAND: I&E Division SHOP NAME: Engineering	POC: Mike Henderson Phone: 639-8406 Total Personnel: 5 Male: 3 Female: 2

SHOP OPERATIONS: Administration and supervisory work. Workers in these offices conduct meetings, write, and process paper work. They operate computers, copy machines, facsimile machines and other standard office equipment. The ink for all equipment is supplied in cartridges and is not contacted by the employees; this includes the new AutoCAD Plotter. Some of their time (appox 20%) is spent in the field showing job sites to contractors.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS	EXPOSURE ASSESSMENT (1)
Office and desk work: Ergonomics	8 hrs per day	7	Education and training	Acceptable based upon low hazard of operations

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 29 August 2011
RECORDED BY: John Sorenson SIGNATURE: John G. Sorenson COMMAND: I&E Division SHOP NAME: Planning	POC: Mike Henderson Phone: 639-8406 Total Personnel: 31 Male: 1 Female: 2

SHOP OPERATIONS: Administration and supervisory work, planning renovation and repair projects. Workers in these offices conduct meetings, write, and process paper work. They operate computers, copy machines, facsimile machines and other standard office equipment. The ink for all equipment is supplied in cartridges and is not contacted by the employees. Employees spend about 20% of their time in the field inspection projects.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS	EXPOSURE ASSESSMENT (1)
Office and desk work: Ergonomics	8 hrs per day	1	Education and training	Acceptable based upon low hazard of operations

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 29, 2011
RECORDED BY: John Sorenson SIGNATURE: COMMAND: I&E Division SHOP NAME: Facilities Support Contracts (FSC)	POC: Harry Bailey Phone: 639-6202 Total Personnel: 6 Male: 5 Female: 1

SHOP OPERATIONS: Administration and supervisory work, planning renovation and repair projects. Workers in these offices conduct meetings, write, and process paper work. They operate computers, copy machines, facsimile machines and other standard office equipment. The ink for all equipment is supplied in cartridges and is not contacted by the employees. Approximately 60% of their time is spent out of the office inspecting various locations (construction sites) on the base.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS	EXPOSURE ASSESSMENT (1)
Office and desk work: Ergonomics	8 hrs per day	6	Education and training	Acceptable based upon low hazard of operations

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 15 AUG 2011
RECORDED BY: JOHN SORENSON SIGNATURE: COMMAND: MCLB, I&E DIVISION SHOP NAME: CRS, Routine Maintenance Services	POC: JIMMY GRIFFIN PHONE: 229-639-8191 TOTAL PERSONNEL: 31 MALE: 31 FEMALE: 0

SHOP OPERATIONS: The Central Repair Shop (CRSs) is located in the Maintenance Center in building 2204. This shop provides MCA with a variety of maintenance services including plumbing, electrical work, repairs of power tools and equipment, and other Routine Maintenance. The use of power tools can be a noise hazard. These employees clean filters and grit collectors in paint booths and abrasive blasting areas. Spent grit and dried paint contain detectable amounts of metals (lead, chromium, and cadmium) and are potential health hazards. CRS employees also perform all maintenance on MCA HVAC systems to include filter changes, Freon replacement, and coil cleaning. These employees also handle lead when cleaning out bullet traps at the Small Arms shop and the 100 Meter range. It is recommended that these employees participate in the Hearing Protection Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
NOISE: power tools	>NPEL	31	PPE: Ear plugs or muffs	Unacceptable due to noise levels of power tools exceed Navy standards of 84 dBA. **Noise is a Navy recognized reproductive hazard.**
Machinery oil changes and cleaning: PETROLEUM DISTILLATES (Naphtha, Mineral spirits, Citric acid)	2 hrs per night	31	PPE: Safety Goggles and rubber, nitrile, or viton gloves	ACCEPTABLE due to low duration and frequency of exposure
PETROLEUM BASED PRODUCTS (oil and lubricants)	<MSAL	31	PPE: Safety Goggles and rubber, nitrile, or viton gloves	ACCEPTABLE due to low duration and frequency of exposure

INDIVIDUAL HAZARD ASSESSMENT	DATE: 15 AUG 2011
RECORDED BY: JOHN SORENSON SIGNATURE: COMMAND: MCLB, I&E DIVISION SHOP NAME: CRS, Routine Maintenance Services	POC: JIMMY GRIFFIN PHONE: 229-639-8191 TOTAL PERSONNEL: 31 MALE: 31 FEMALE: 0

SHOP OPERATIONS: The Central Repair Shop (CRSs) is located in the Maintenance Center in building 2204. This shop provides MCA with a variety of maintenance services including plumbing, electrical work, repairs of power tools and equipment, and other Routine Maintenance. The use of power tools can be a noise hazard. These employees clean filters and grit collectors in paint booths and abrasive blasting areas. Spent grit and dried paint contain detectable amounts of metals (lead, chromium, and cadmium) and are potential health hazards. CRS employees also perform all maintenance on MCA HVAC systems to include filter changes, Freon replacement, and coil cleaning. These employees also handle lead when cleaning out bullet traps at the Small Arms shop and the 100 Meter range. It is recommended that these employees participate in the Hearing Protection Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Clearing clogged pipes: Sulfuric Acid	Daily for 30 seconds per day.	2	Ventilation, Respirator with acid cartridge when ventilation is inadequate. PPE: Chemical resistant gloves, splash proof goggles.	ACCEPTABLE due to low frequency and duration of exposure. It is recommended, however, that the hazards of Sulfuric Acid are specifically warned about during annual HAZMAT training.
Filter changes on Abrasive Blasting booths: NUISANCE DUST, metals, to include lead, chromium, and cadmium.	4 booths take 6 hrs per booth, every 2 months	31	PPE: Safety Goggles and half face mask respirator with PRE/FT and HEPA-P100 filter.	CARCINOGENS: Cadmium, Chromium
Charging A/C systems and recovering refrigerant from system: Freon R-4018 is the primary refrigerants used to recharge A/C systems. Can recover R-4018.	Daily for 30 minutes per day	2	ENG: Freon is discharged through a discharge line directly into a recovery canister.	Acceptable: Use of less toxic R-4018 along with engineering controls greatly reduces the health risks of this operation.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 15 AUG 2011
RECORDED BY: JOHN SORENSON SIGNATURE: COMMAND: MCLB, I&E DIVISION SHOP NAME: CRS, Routine Maintenance Services	POC: JIMMY GRIFFIN PHONE: 229-639-8191 TOTAL PERSONNEL: 31 MALE: 31 FEMALE: 0

SHOP OPERATIONS: The Central Repair Shop (CRSs) is located in the Maintenance Center in building 2204. This shop provides MCA with a variety of maintenance services including plumbing, electrical work, repairs of power tools and equipment, and other Routine Maintenance. The use of power tools can be a noise hazard. These employees clean filters and grit collectors in paint booths and abrasive blasting areas. Spent grit and dried paint contain detectable amounts of metals (lead, chromium, and cadmium) and are potential health hazards. CRS employees also perform all maintenance on MCA HVAC systems to include filter changes, Freon replacement, and coil cleaning. These employees also handle lead when cleaning out bullet traps at the Small Arms shop and the 100 Meter range. It is recommended that these employees participate in the Hearing Protection Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Welding: metal fume, UV radiation, possibly noise	12 hours per week	6	Ventilation, PPE: welder's helmet, welder's apron, welding gloves	Exposure to metal fumes resolved by ICP (metal scan) acceptable based upon 2005 sampling of MIG and TIG welding.
Torch (oxy-fuel) cutting: Metal fume	20 hours per week	6	PPE: welder's helmet, welder's apron, welding gloves	No recent local data on brazing operations, but review of Navy-wide data indicated some potential of over exposure to metal fume. Air sampling has been added to the Exposure Monitoring Plan to quantify metal fume exposures.
Cleaning our bullet traps: Lead	2 hours, twice per month, per trap. So 4 hrs, twice per month.	8	ADM: Rotation of workers to ensure no employee performs this task more than once per quarter. PPE: Respirator with P-100 or HEPA filter, gloves, and Tyvex or equivalent suit. Wash hands before eating.	Acceptable due to low concentration and frequency of exposure. Recent testing has indicated exposure to be at the TLV level, but not above it.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 15 AUG 2011
RECORDED BY: JOHN SORENSON SIGNATURE: COMMAND: MCLB, I&E DIVISION SHOP NAME: CRS, Routine Maintenance Services	POC: JIMMY GRIFFIN PHONE: 229-639-8191 TOTAL PERSONNEL: 31 MALE: 31 FEMALE: 0

SHOP OPERATIONS: The Central Repair Shop (CRSs) is located in the Maintenance Center in building 2204. This shop provides MCA with a variety of maintenance services including plumbing, electrical work, repairs of power tools and equipment, and other Routine Maintenance. The use of power tools can be a noise hazard. These employees clean filters and grit collectors in paint booths and abrasive blasting areas. Spent grit and dried paint contain detectable amounts of metals (lead, chromium, and cadmium) and are potential health hazards. CRS employees also perform all maintenance on MCA HVAC systems to include filter changes, Freon replacement, and coil cleaning. These employees also handle lead when cleaning out bullet traps at the Small Arms shop and the 100 Meter range. It is recommended that these employees participate in the Hearing Protection Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 8, 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John A. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Hazardous Spill Response Team	POC: JAMES REIMER/ROBBY METS PHONE: 229-639-8199/8934 TOTAL PERSONNEL: 6 MALE: 5 FEMALE: 1

SHOP OPERATIONS: This team consists of members from the Fire Department, Environmental Branch, and Maintenance Branch. This team responds to clean up any spill of hazardous material on base. Members of this team are respirator certified and trained up to Level A suits with SCBA respirators.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
CHEMICALS (UNKNOWN)	< 1 incident per year	6	PPE: Members of this team are trained up to Level A suits with SCBA respirators.	UNCERTAIN: Judgments will be made on a case by case basis.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING CONTROL CODES:**

ADM – ADMINISTRATIVE CONTROLS

PPE - PERSONAL PROTECTIVE EQUIPMENT

ISO - ISOLATION

DV - DILUTION VENTILATION

ENG - ENGINEERING CONTROLS

LV - LOCAL VENTILATION

2. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 15 AUG 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Compliance Office	POC: JAMES REIMER PHONE: 229-639-8199 TOTAL PERSONNEL: 3 MALE: 2 FEMALE: 1

SHOP OPERATIONS: This group works to ensure that the base complies with all applicable environmental rules and regulation. They process chemical and hazardous waste and respond to chemical spills. Members of this section participate in the Emergency Response Team (ERT). All members of this work center are medically monitored through participation in the Hearing and Respiratory Protection Programs.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
CHEMICALS (UNKNOWN, likely to encounter oils, motor fluids, and VOCs)	<1 incident per year	3	PPE: Members of the ERT team are trained up to Level A suits with SCBA respirators.	Acceptable: due to high level of training and available safety equipment.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING CONTROL CODES:**

ADM – ADMINISTRATIVE CONTROLS

PPE - PERSONAL PROTECTIVE EQUIPMENT

ISO - ISOLATION

DV - DILUTION VENTILATION

ENG - ENGINEERING CONTROLS

LV - LOCAL VENTILATION

2. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 09 SEPT 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Installation Restoration	POC: BRIAN WALLACE AND DONALD HOMMLAND PHONE: 229-639-8616 TOTAL PERSONNEL: 1 MALE: 1 FEMALE: 0

SHOP OPERATIONS: This group works to ensure that past environmental damage is mitigated. This work center performs mostly administrative tasks of overseeing contractor personnel who take samples from wells. They inspect sites and perform walk throughs. Members of this section participate in the Emergency Response Team (ERT).

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
CHEMICALS (UNKNOWN, likely to encounter trace ppm or ppb, levels of VOCs, Halogenated Hydrocarbons, PCBs and heavy metals.)	<1 incident per year	1	PPE: Members of the ERT team are trained up to Level A suits with SCBA respirators.	Acceptable: due to high level of training and available safety equipment.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 09 SEPT 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Natural resources	POC: BRIAN WALLACE PHONE: 229-639-8637 TOTAL PERSONNEL: 3 MALE: 3 FEMALE: 0

SHOP OPERATIONS: This group consists of the base Game Warden and Animal Control Officers. Employees are exposed to noise hazards when they use power tools such as chain saws and tractors.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
NOISE	2 hrs x twice per week	2	PPE: Ear plugs or muffs	Acceptable based upon limited duration, frequency and exposure.
Sun Exposure: UV radiation	Up to 4-6 hours per day, most days	2	PPE: Protective clothing and Sun Screen	Acceptable based on observation. While there have been no reported problem with UV related injury, there is a potential for more chronic skin injuries and cataracts to occur. **OSHA lists ultraviolet sunlight as a select carcinogen.** **IARC lists ultraviolet sunlight as "Probably carcinogenic to humans"**
Control Burns: Smoke inhalation	About twice per week for 4 hrs. during burning season (FEB-APR)	2	Adm.Control: Burn from down wind area and move towards wind.	Acceptable due to low frequency of occurrence and Admin.Control.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 09 SEPT 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Natural resources	POC: BRIAN WALLACE PHONE: 229-639-8637 TOTAL PERSONNEL: 3 MALE: 3 FEMALE: 0

SHOP OPERATIONS: This group consists of the base Game Warden and Animal Control Officers. Employees are exposed to noise hazards when they use power tools such as chain saws and tractors.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)

2. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 08 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Pollution Prevention and Recycling	POC: ROBERT METTS PHONE: 229-639-8934 TOTAL PERSONNEL: 6 MALE: 5 FEMALE: 1

SHOP OPERATIONS: This group works to identify and eliminate all pollution sources on the base. The can and drum crushers as well as the cardboard bailer were monitored for sound levels with only the can crusher peaking above 84 dBA. The can crusher is used less than 10 minutes per day by an operator wearing hearing protection. Members of this section participate in the Emergency Response Team (ERT). All members of this work center are medically monitored through participation in the Hearing and Respiratory Protection Programs.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Operation of crushing equipment: NOISE	<1 hr/day	6	PPE: Ear plugs or muffs	ACCEPTABLE: recent measurements indicate that most of this equipment is below the navy standard of 84 dBA. The low exposure should not present a health hazard.
CHEMICALS (UNKNOWN, likely to encounter trace ppm or ppb, levels of VOCs, Halogenated Hydrocarbons, PCBs and heavy metals.)	<1 incident per year	6	PPE: Members of the ERT team are trained up to Level A suits with SCBA respirators	UNCERTAIN: Judgments will be made on a case by case basis.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 08 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John A. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Environmental, Pollution Prevention and Recycling	POC: ROBERT METTS PHONE: 229-639-8934 TOTAL PERSONNEL: 6 MALE: 5 FEMALE: 1

SHOP OPERATIONS: This group works to identify and eliminate all pollution sources on the base. The can and drum crushers as well as the cardboard bailer were monitored for sound levels with only the can crusher peaking above 84 dBA. The can crusher is used less than 10 minutes per day by an operator wearing hearing protection. Members of this section participate in the Emergency Response Team (ERT). All members of this work center are medically monitored through participation in the Hearing and Respiratory Protection Programs.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)

2. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 16 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Public Works, Pest Control	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 0* MALE: 0 FEMALE: 0

SHOP OPERATIONS: This group handles all pest management issues on MCLB, Albany. The Pest Control Operators are all trained and licensed to safely perform pest control operations as well as to safely apply pesticides. This shop tries to reduce pesticide use through the use of various Integrated Pest Management tools. Employees also are exposed to noise hazards when they use power sprayers.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Mosquito Spraying: NOISE	2 hrs x twice per week	1	PPE: Ear plugs or muffs	Acceptable due to short duration and low frequency
Various different Pesticides	Daily	1	PPE: Rubber gloves, aprons, respirators, DV	Acceptable due to strict compliance with all pesticide labeling instructions.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

*A contract employee has been hired to perform pest control operations on base until a "regular" employee can be hired.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 16 AUG 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Welding Shop	POC: RICHARD MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 2 MALE: 2 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. Welding operations (763-2) in support of repairs, maintenance and special projects. Potential hazards for this shop include metal fumes, gases, ultraviolet (UV) radiation and noise. Welding operations in this shop average about 2 hours per day and employees are potentially exposed to metal fumes gases (shielding gases, argon, carbon dioxide and helium), noise and UV light. On an as needed basis, welding operations in confined spaces is accomplished with the requirement of blowers or fume extractors. Welding is seldom performed in confined spaces. Employees are recommended to participate in the Hearing Conservation Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Noise	< 2 hr/week	2	PPE: Ear plugs or muffs	Acceptable, due to short duration and low frequency
Metal Fumes	< 2 hr/week	2	Eng.Controls: LV,Exhaust fans PPE: Leather gloves, safety goggles AND face shield Optional PPE: half face respirator with HEPA filter	Acceptable due to low frequency and duration as well as Eng.Controls. Carcinogen
Gases	< 2 hr/week	2	See Above	Acceptable: due to Eng.Controls

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 30 August 2010
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Sign Shop	POC: RICKY MCKELLER AND BILL GRAVES PHONE: 229-639-7401 TOTAL PERSONNEL: 1 MALE: 1 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. This shop fabricates signs using metal and plastic as required. A small amount of paint (less than one 16 oz can per month) is used. It is recommended that these employees participate in the Hearing Conservation Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Vac. Pump: Noise	5 hr/wk	1	PPE: Ear plugs or muffs	Acceptable: due to limited exposure
Adhesives	5 hr/wk	1	Eng.Control: Vent System PPE Safety goggles and face shield	Acceptable; shop provides good ventilation. Carcinogens: Benzene, Formaldehyde, Methylene Chloride

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 16 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Plumbing Shop	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 1 MALE: 1 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. This shop provides general plumbing repairs and maintenance to the base. Employees are exposed to "Clobber" (sulfuric acid) and Caustic (drain cleaners).

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Acids and caustics Sulfuric acid/drain cleaners	<1 hr/wk	1	LV PPE: Nitrile gloves, Safety goggles AND face shield, Optional PPE: half face respirator with Organic Vapor cartridge	Acceptable due to low frequency and duration.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

2. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 16 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Locksmith Shop	POC: RICKY MCKELLER/BILL GRAVES PHONE: 229-639-7401 TOTAL PERSONNEL: 1 MALE: 1 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. Key making and lock work. It is recommended that employees participate in the Hearing Conservation Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Use of power tools and machinery: Noise	5 hr/wk	1	PPE: Ear plugs or muffs, Safety glasses and face shield.	Acceptable due to limited exposure found during recent dosimetry measurements.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 16 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Electrical Repair and Maintenance Shop	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 2 MALE: 2 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. This shop provides electrical equipment repair and maintenance for the base. There are no significant hazards to employees when good general housekeeping and hygiene are practiced.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Contact Cleaner and organic solvents	1 hr/wk	2	Rubber gloves and goggles	Acceptable, due to low volume of chemicals used, low frequency and short duration.
BLDG 3700 Mechanical Room: Noise	10 Minutes per day	2	PPE: Ear plugs or muffs	Acceptable due to low duration and exposure.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 16, 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Refrigeration and AC Shop	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 2 MALE: 2 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. This shop provides general repairs and maintenance on refrigeration and air conditioning equipment on base. Employees are exposed to Freon (R134), oils and cleaning solvents, which have petroleum distillates (naphtha), toluene, and xylene.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Petroleum Distillants	< 4 hr/day	2	DV or LV PPE: Butyl or Neoprene gloves. Safety goggles	Carcinogens: Toluene, Benzene
FREON	< 4 hr/day	2	See above	Uncertain, has been added to the exposure monitoring list
Charging A/C systems and recovering refrigerant from system: Freon R-10 is the primary refrigerant used to recharge A/C systems.	One hour one time per Week	2	ENG: Freon is discharged through a discharge line directly into a recovery canister.	Acceptable: Use of less toxic R-10 along with engineering controls greatly reduce the health risks of this operation.
Power tools: Noise	< 4 hr/day	2	PPE: Ear plugs or muffs	Uncertain, has been added to the exposure monitoring list
BLDG 3700 Mechanical Room: Noise	10 Minutes per day	2	PPE: Ear plugs or muffs	Acceptable due to low duration and exposure.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 16, 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Emergency Services, Refrigeration and AC Shop	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 2 MALE: 2 FEMALE: 0

SHOP OPERATIONS: The emergency services shop was formed as a merger of the old mechanical trades and electrical trades shops. This shop provides general repairs and maintenance on refrigeration and air conditioning equipment on base. Employees are exposed to Freon (R134), oils and cleaning solvents, which have petroleum distillates (naphtha), toluene, and xylene.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: August 16, 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Roads and Grounds, Machine Clean-up and Maintenance Shop	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 5 MALE: 5 FEMALE: 0

SHOP OPERATIONS: The Roads and Grounds shop was formed from of the old Structures and Grounds shop. The Machine Clean-up and Maintenance Shop this shop cleans, repairs and operates lawn equipment. Use of cleaning solvents (citric and mineral spirits), soap (Big Blue) and can spray cleaners (petroleum distillates).

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Mower Operation: NOISE	6 hrs/day	5	Engineering Control: Mower cap PPE: Ear plugs or muffs	Acceptable due to limited exposure
SOLVENTS	<1 hrs/day	5	DV or LV PPE: Safety goggles or face shield	Acceptable due to limited exposure
PETROLEUM DISTILLATES	<1 hrs/day	5	DV or LV PPE: Safety goggles or face shield	Acceptable due to low exposure, CARCINOGEN
Use of power tools and equipment: NOISE	<8 hrs/day	6	PPE: Ear plugs or muffs, safety glasses	Uncertain, has been added to the Exposure Monitoring Plan

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

INDIVIDUAL HAZARD ASSESSMENT	DATE: 16 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Roads and Grounds, Repair and Painting	POC: RICKY MCKELLER PHONE: 229-639-7401 TOTAL PERSONNEL: 6 MALE: 6 FEMALE: 0

SHOP OPERATIONS: The Roads and Grounds shop was formed from of the old Structures and Grounds shop. Roads and grounds maintenance and repair. Use assorted power tools and equipment which produce noise. Employees are exposed to paint and paint solvents such as mineral spirits. Lead based paint is no longer used. It is recommended that these employees participate in the Hearing Conservation Program.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
NOISE	<4 hrs/wk	6	PPE: Ear plugs or muffs	Acceptable; low frequency and exposure.
SOLVENTS	<4 hrs/wk	6	DV or LV PPE: Safety goggles	Acceptable; low frequency and exposure.
PETROLEUM DISTILLATES	<4 hrs/wk	6	Eng.Control: DV or LV PPE: Safety goggles	Acceptable; low frequency and exposure. CARCINOGEN

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

Most of the work of this group is contracted out.

INDIVIDUAL HAZARD ASSESSMENT	DATE: 19 August 2011
RECORDED BY: JOHN SORENSON SIGNATURE: John G. Sorenson COMMAND: MCLB, I&E DIVISION SHOP NAME: Utilities, Waste/Wastewater Operations	POC: JOHN FONDERN PHONE: 229-639-7152 TOTAL PERSONNEL: 4 MALE: 4 FEMALE: 0

SHOP OPERATIONS: Industrial waste treatment process is accomplished in and around BLDG 2600. Workers in this area make hourly rounds to monitor waste tanks, collect samples, and perform laboratory testing using electrochemical (probe) methods of analysis. This facility and procedure has been evaluated and "No Significant Exposure" is expected.

HEALTH HAZARDOUS STRESSORS AND ASSOCIATED OPERATIONS	DURATION / FREQUENCY OF EXPOSURE	NO. OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Pump Room: NOISE	5 minutes, 4 or 5 times per shift.	4	PPE: Ear plugs or Muffs	Uncertain, Noise dosimetry has been added to the exposure monitoring plan. **Noise is a Navy recognized reproductive hazard.**
CHEMICALS; (Phosphoric Acid, Sodium Hydroxide, Ferris Chloride and Sulfuric Acid)	< 1 hr/day	4	PPE: safety goggles or face shield. Neoprene or Nitrile for NaOH	Acceptable due to sampling equipment that prevents dermal contact. Tanks are filled by contractor personnel.

Note: Processes not listed herein are assumed to represent "No Significant Hazard" based upon low toxicity, limited duration and/or quantity of exposure or effective Engineering Control.

1. **USE THE FOLLOWING EXPOSURE CODES:**

ACCEPTABLE – ONE WHERE THE IH WILL NOT EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

UNCERTAIN – ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.

UNACCEPTABLE – ONE WHERE THE IH WILL EXPECT THE SEG TO BE EXPOSED ABOVE THE SELECTED OEL.

SKIN – THE MATERIAL POSES A SKIN ABSORPTION HAZARD

REPRODUCTIVE HAZARD – THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD

CARCINOGEN – THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

Exposure Monitoring Plan 2011-2012
I & E Division, Marine Corps Logistics Base, Albany, GA

Date Issued: 28 September 2010

IH: John Sorenson

COST WORK CENTER	POINT OF CONTACT (SHOP SUPERVISOR)	STRESSOR	SAMPLING INSTRUCTIONS	NUMBER OF SAMPLES NEEDED	MAN-HOURS	PRIORITY (SEE NOTE 1)	COMMENTS
Roads and Grounds	Ricky McKeller	Noise	Sample noise level inside of enclosed cab to determine the need for PPE while operating equipment.	2 samples	2	2	Employees claim that cab insulates operator from engine noise and that PPE is unnecessary. Sound level reading taken from inside of the enclosed cab will help to make that determination.
Roads and Grounds	Ricky McKeller	Noise	Full shift personal noise dosimetry on two nonconsecutive days on each of two employees on typical workdays. At least one sample should include an employee working in a Lawn Mower Tractor.	4 total (2 each on 2 employees)	32	2	Employees claim that cab insulates operator from engine noise and that PPE is unnecessary. Noise Dosimetry readings of tractor operators will help to make that determination.
CRS	Jimmy Griffin	Lead	2 air samples taken during bullet trap cleaning.	2	4	3	This was done 2 years ago and indicated Pb levels right at the TLV.
TOTAL MAN-HOURS					**38**		

NOTE 1: DEFINITION OF MONITORING PRIORITIES:
Priority 1: Mandated by instruction/law
Priority 2: Needed for forming hazard assessment or establishing PPE need (everything not fitting 1 or 3)
Priority 3: Nice to have/freshen old data/have data but want to strengthen the statistics/miscellaneous or screening sampling

SUMMARY OF EXPOSURE-BASED MEDICAL SURVEILLANCE STATUS
I & E Division, 2011-2012

The following table summarizes current *exposure-based* medical surveillance status. For some shops there are few if any data available, and so new sampling is being conducted to validate whether specified exposure based medical surveillance enrollment is appropriate. However, no shops will be added to or removed from any exposure based medical surveillance program without adequate industrial hygiene sampling data, an assessment of the data, and review of industrial hygiene recommendations by Occupational Medicine personnel. Work areas not listed in this table have no exposure-based medical surveillance recommendations.

PRODUCTION SHOP	HEARING CONS	RESPIRATORY PROTECTION	MIXED METAL FUMES
Emergency Services, Carpenter Shop	X		
Emergency Services, Welding Shop	X		X
Roads and grounds, Lawn Equipment Shop	X		
Roads and Grounds, Repair and Painting Shop	X		
Environmental Compliance Office	X		
Environmental Pollution Prevention and Recycling	X		
CRS, Routine Maintenance Services	X		
Environmental, Hazardous Spill Response Team		X	

Explanation of Exposure Based Medical Surveillance Recommendations.

1. Recommendation for inclusion in a Exposure-based medical surveillance program for employees involved in a given operation is based on the industrial hygienist's judgment, either through observation or knowledge of the process or representative sampling, that these employees will be routinely exposed to workplace concentrations at or above 50% of applicable OSHA standards or action levels established by Navy instruction or Federal regulation.

2. Medical certifications are not included in this table. Certifications are required by specific Navy or Federal directive where a certain degree of physical fitness has been judged as necessary for a component of the job (i.e. respirator use) or the job itself (i.e. forklift operators or security guards), and as such are specified by the command, not by Industrial Hygiene. Governing references regarding certifications should be followed.

3. Ionizing Radiation examinations are not specified by Industrial Hygiene, but rather by the Radiation Safety Officer, and so are not included on this table.

4. The requirement for a medical surveillance program for "sight conservation" is no longer Navy policy (see OPNAVINST 5100.23G, chapter 19), so such specifications are not included in this table. Position-specific requirements for visual acuity remain, but specification of such is outside the scope of Industrial Hygiene.

5. The exposure based medical surveillance listed above represents no change from previous exposure based medical surveillance recommendations.

GLOSSARY OF TERMS

AABA: Ambient Air Breathing Apparatus. Unlike compressors used for breathing air for atmosphere supplying respirators which must be tested quarterly to ensure that at least Grade D quality air is supplied to respirator wearers; AABAs are exempt from quarterly Grade D air quality testing.
NOTE: AABA air intakes must be located in fresh clean ambient air.

Acceptable (in the context of exposure assessment): Exposure estimate of similar exposure group is less than half (50%) of the occupational exposure limit (OEL). *See also Action Level.*

ACGIH®: American Conference of Governmental Industrial Hygienist is an independent standard setting group who develops Threshold Limit Values®, the workplace exposure limit recommended by the American Conference of Governmental Industrial Hygienists. Examples of this include annual editions of the ***TLVs® and BEIs®*** and work practice guides. *See also TLV® (Threshold Limit Value); TWA (Time-Weighted Average); STEL (Short-Term Exposure Limit); and Ceiling Limit*

Action Level: Unless otherwise specified in a NAVOSH standard, one-half the relevant PEL, TLV®, etc. *See also Occupational Exposure Limit (OEL).*

Administrative Control: Procedures and practices that limit exposure to harmful physical or chemical agents by control or manipulation of work schedule or the manner in which work is performed. Administrative controls reduce the exposure to stressors and thus reduce the cumulative dose to any one worker. If unable to alter the job or workplace to reduce the stressors, administrative controls should be used. Administrative controls are most effective when used in combination with engineering controls.

AUL: Authorized User List: A listing of chemicals whose use is authorized by for a department, shop or other entity.

BBP: Blood-Borne Pathogen: Pathogenic microorganisms transmissible by exposure to blood and other potentially infectious materials, and include Hepatitis B Virus (HBV), Hepatitis C, and Human Immune Deficiency Virus (HIV), as well as syphilis and malaria.

Carcinogen: The material contains greater than or equal to 0.1% OF AN Occupational Safety and Health Administration (OSHA), American Conference of Governmental Industrial Hygienist (ACGIH), International Agency for Research on Cancer (IARC), or National Toxicology Program (NTP)-recognized carcinogen.

Ceiling Limit- TLV®: (TLV-C): Is a concentration that should not be exceeded during any part of the workday (as recommended by the ACGIH). *See also OEL*

Concentration: The quantity of a substance per unit volume (in appropriate units). The following are examples of concentration units. *See unit examples below*

Mg/m^3	Milligrams per cubic meter	Unit of airborne concentration for gases, vapors, fumes, and/or dusts
$\mu g/m^3$	Micrograms per cubic meter	Unit of airborne concentration for gases, vapors, fumes, and/or dusts
PPM	Parts per million (air)	Unit of airborne concentration for vapors or gases
Fibers/cc or f/cc	Fibers per cubic centimeter	A unit of measure for fibrous airborne particulates such as asbestos fibers.
Mppcf	Millions of particles per cubic foot	A unit used for airborne dusts based on particle counts & which has virtually been eliminated from routine use.

CHRIMP: The **C**onsolidated **H**azardous **M**aterial **R**eutilization and **I**nventory **M**anagement **P**rogram serves as a fundamental element of the Navy's life-cycle control and management of Hazardous Materials.

Contaminant: A material or agent in concentrations higher than those normally present in the atmosphere, e.g., dust, fume, gas, mist or vapor, which can be harmful, irritating, or a nuisance.

Decibel-dB: A unit used to express sound pressure levels; specifically, 20 times the logarithm of the ratio of the measured sound pressure to a reference quantity, 20 micro-pascals (0.0002 microbars).

dBA or dBA_s: A sound level reading in decibels as measured on the A-weighted network of a sound level meter. (See A-weighted Sound Level) Sometimes referred to as dBA_s meaning A-weighted Sound level, where the sound level meter is set to "slow response." A –weighted sound pressure is designated to approximate the response of the human ear to sound.

DV: **D**ilution **V**entilation – An engineering control strategy which relies upon the dilution of potential contaminants with fresh (outside) air thus reduces the concentration of potential contaminants to acceptable levels.

EPA: United States Environmental Protection Agency is a federal agency charged with the promulgation and enforcement of environmental regulations. Their mission includes Air, Water and Waste regulation to protect the public and the environment.

Ergonomic Hazards: Workplace conditions that pose a biomechanical stress to a worker's body as a consequence of posture and force requirements, work/rest regimens, repetition rate, or other similar factors. Faulty work station layout, improper work methods, or tools may contribute to such conditions.

Ergonomics: The study of the design of work in relation to the physiological and psychological capabilities of people. The aim of the discipline is the evaluation and design of facilities, environments, jobs, training methods, and equipment to match the capabilities of users and workers, and thereby to reduce fatigue, error, or unsafe acts.

AND / OR

Ergonomics is the field of study that involves the application of knowledge about physiological, psychological and biomechanical capacities and limitations of the human body. This knowledge is applied in the planning, design, and evaluation of work environments, jobs, tools and equipment to enhance worker performance, safety and health and reducing the potential for fatigue, error, or unsafe acts.

Ergonomics is essentially fitting the workplace to the worker. The application of knowledge about physiological, psychological and biomechanical capacities and limitations of the human body to work environments, jobs, tools and equipment to enhance worker performance, safety and health and to reduce the potential for fatigue, error, or unsafe acts.

Fibers per cubic centimeter (fibers/cc): Unit of measure used to describe the concentration of asbestos or manmade fibers in air. This unit is often used to describe airborne or occupational inhalation exposure potential and in describing recommended control limits.

Hazardous Chemical: Any chemical that is a physical hazard or a health hazard per 29 CFR Section 1910.1200(c), and with some exceptions as specified in the Community Right to Know Law of 1986 (Superfund Amendments and Reauthorization Act [SARA], Title III). *See "Hazardous Material."*

Hazardous Material (HM): For the purposes of the Material Safety Data Sheet (MSDS), a hazardous material is defined as a material having one or more of the following characteristics:

(a) Has a flashpoint below 200°F (93.3°C) closed cup, or is subject to spontaneous heating or is subject to polymerization with release of large amounts of energy when handled, stored, and shipped without adequate control.
(b) Has a threshold limit value (TLV) below 1000 ppm for gases and vapors, below 500 mg/m^3 for fumes, and below 30 mppcf for dusts.
(c) A single oral dose which will cause 50 percent fatalities to test animals when administered in doses of less than 500 mg per kilogram of test animal weight.
(d) Is a strong oxidizing or reducing agent.
(e) Causes first degree burns to skin in short time exposure or is systematically toxic by skin contact.
(f) In the course of normal operations, may produce dusts, gases, fumes, vapors, mists, or smokes with one or more of the above characteristics.

(g) Produces sensitizing or irritating effects.
(h) Is radioactive.
(i) The item has special characteristics, which in the opinion of the manufacturer could cause harm to personnel if used or stored improperly.

Hazardous Substance: Any substance that, because of its quantity, concentration, or hazardous properties, may pose a substantial hazard to human health or the environment when purposely released or accidentally spilled.

HCP: **H**earing **C**onservation **P**rogram – Such programs typically include: monitoring, audiometric testing, hearing protectors, training, and recordkeeping requirements.

IHFOM: The Navy **I**ndustrial **H**ygiene **F**ield **O**perations **M**anual
http://www-nehc.med.navy.mil/ih/ihfom.htm

L_{avg}: Best described as the Average Sound Level over the period of the measurement. Usually measured A-weighted but there is no time constant applied. As it is an average, it will settle to a steady value, making it much easier to read accurately than with a simple instantaneous Sound Level. Being an average, it is also showing the total energy of the noise being measured, so it is a better indicator of potential hearing damage or the likelihood that the noise will generate complaints.

LEV: **L**ocal **E**xhaust **V**entilation – an engineering control form which relies on exhaust systems equipped with specially designed 'hoods' which capture dusts, fumes, mists, gases or vapors to prevent or reduce the inhalation contaminants.

Mandatory
1. authoritatively ordered; obligatory; compulsory: *It is mandatory that all personnel show ID badges when entering the gate.*
2. permitting no option; not to be disregarded or modified: *e.g. a mandatory requirement*

MCE Filter: **M**ixed **C**ellulose **E**ster membrane filters – a type of sampling media used to collect specific particulates as a part of Industrial Hygiene evaluation.

Micrograms per cubic meter (µg /cu.m. or µg/m^3): A unit of measure for exposures to materials based on mass per unit volume. A microgram represents one millionth of a gram of material. *See also Milligrams per cubic meter and parts per million*

Milligrams per cubic meter (mg /cu.m. or mg/m^3): A unit of measure for exposures to materials based on mass per unit volume. A milligram represents one thousandth of a gram of material. *See also Micrograms per cubic meter and parts per million.*

Monitoring, Industrial Hygiene: Measurement of the amount of contaminant or physical stress reaching the worker in the environment.

Monitoring, Medical Surveillance: The preplacement and periodic evaluation of the health status of workers exposed to toxic substances or physical agents in the workplace. Measures the effects of contaminant on a workers body functions and tissues, e.g., decreased lung function, dermatitis, and abnormal blood count.

MSAL: Medical Surveillance Action Level; The recommended threshold at which ongoing medical surveillance should be initiated as an additional assurance that clinical health effects are not occurring. Medical surveillance may be specified by standard or voluntarily adhered to by convention. *See also Action Level*

Navy Occupational Safety and Health (NAVOSH) Standards: Occupational safety and health standards published by the Navy which include, are in addition to, or are alternatives for the OSHA standards which prescribe conditions and methods necessary to provide a safe and healthful working environment.

NEHC: Navy Environmental Health Center

NIOSH: The National Institute for Occupational Safety and Health is the federal agency that tests equipment, evaluates and approves respirators, conducts studies of workplace hazards, and proposes occupational exposure standards to OSHA.

NOAA: The National Oceanic and Atmospheric Administration is a federal agency focused on the condition of the oceans and the atmosphere.

NOEL: Navy Occupational Exposure Limit

Noise: Noise is defined as unwanted sound.

Noise Exposure: Personal exposure to a combination of sound levels at various intensities and durations.

Occupation Exposure Limit (OEL): The exposure limit used by a health professional to help determine a workers' or populations' health risk form exposure to a hazard. "OEL" is a generic term used to apply to all exposure limits, to include: DoD standards from DoD 6055.1, Occupational Safety and Health Administration (OSHA), Permissible Exposure Limits (PELs), DoD Component standards, military deployment environmental health limits, American Conference of Governmental Industrial Hygienists (ACGIH®), Threshold Limit Values® (TLVs®), National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs), and other exposure limits reviewed for potential use.

Occupational Health: That multidisciplinary field of preventive medicine that is concerned with the promotion and maintenance of the highest degree of physical, mental and social well being of workers in all occupations, and the prevention and/or treatment of illness or injury induced by factors in the workplace. The major disciplines involved are: occupational medicine, occupational health nursing, epidemiology, toxicology, audiology, industrial hygiene, ergonomics, and health physics. Activities include the design, implementation and evaluation of 30 Dec 05 G-19 comprehensive health and safety programs that promote employee health and safety in the workplace.

OEL: *See Occupational Exposure Limit*

OSHA: **(a)** Occupational Safety and Health Act, or
(b) Occupational Safety and Health Administration, Department of Labor (DOL), the federal agency which adopts and enforces health and safety standards.

Peak Noise Level: The true peak value is the maximum value of the noise waveform. The impulse measurement is an integrated measurement. The true peak reading should only be used when determining compliance with OSHA's 140 dB peak sound pressure level [1910.95(b)(1) or 1926.52(e)].

Note: The user should *not* use "impulse" response when measuring true peak sound pressure levels.

PEL: Permissible Exposure Limit – The maximum permissible concentration of a toxic chemical or exposure level of a harmful physical agent (normally averaged over an 8-hour period) that an employee may be exposed. This term is applied to OSHA regulated limits.

Potentially Hazardous Noise: Exposure to greater than the Navy Occupational Exposure Limit of 84 dBA sound level or 140 dB peak sound pressure level for impulse noise. The safe exposure time (T) for periods of less than 16 hours in any 24-hour period may be determined by using the equation:

$$T = 16/2^{[(L-80)/4]}$$

Where T = time in hours
L = effective sound level in dBA

Potentially Hazardous Noise Area: Any work area where the A-weighted sound level (continuous or intermittent) is greater than 84 dBA or any work area where the peak sound pressure level exceeds 140 dB.

PPE: Personal Protective Equipment – *See Protective Clothing and Protective Equipment.*

ppb: Parts Per Billion - A measure of concentration used much like percent. One part per billion represents 0.000001% and conversely, one percent is equivalent to 10,000,000 ppb.

ppm: Parts Per Million – A measure of concentration used much like percent. One part per million represents 0.001% and conversely, one percent is equivalent to 10,000 ppm.

Protective Clothing: An article of clothing furnished to an employee at government's (as the employer's) expense and worn for personal safety and protection in the performance of work assignments in potentially hazardous conditions.

Protective Equipment: A device or item to be worn, used, or put in place for the safety or protection of an individual or the public at large, when performing work assignments in or entering hazardous areas or under hazardous conditions. Equipment includes hearing protection, respirators, electrical matting, barricades, traffic cones, lights, safety lines, life jackets, etc.

Prudent Practice: Generally accepted reasonable and prudent practice. "A prudent or good practice" involves not only accepted customary practices, but also prudent behavior in terms of the risks of violation of law or regulation, that is, the risk of adverse publicity for the institution and the risk of injury and/or damages.

PVC Filter: Poly Vinyl Chloride filters – a type of sampling media used to collect specific particulates as a part of Industrial Hygiene evaluation.

Reproductive Hazard: Any occupational stressor (biohazard, chemical, or physical) that has the potential to adversely affect the human reproductive and/or developmental process.

RPP: Respiratory Protection Program

SCBA: A type of Positive pressure respirator, **S**elf-**C**ontained **B**reathing **A**pparatus – a form of respiratory protection which relies on bottled breathing air (worn by the user) as the source of air to be breathed by the wearer. Most typically, these devices are equipped with a full face mask which also serves to protect the wearer's face and eyes from incident splash and or gas/vapor contact.

SLM: **S**ound **L**evel **M**eter – a device for measuring sound or noise levels

SPL: **S**ound **P**ressure **L**evel – a term used in discussion of sound or noise measurements.

STEL: **S**hort-**T**erm **E**xposure **L**imit – Type of Threshold Limit Value, (workplace exposure limit) recommended by the American Conference of Governmental Industrial Hygienists® (ACGIH®). A concentration to which workers can be exposed for a short periods of time (15 min.) without adverse affect. The STEL supplements the TLV® and is recommended where toxic effects have been reported for short-term exposures. *See also Threshold Limit Value (TLV®).*

TLV®: **T**hreshold **L**imit **V**alues® are established by the American Conference of Governmental Industrial Hygienists® (ACGIH®). TLVs refer to airborne concentrations of a substance and represent conditions under which it is believed that nearly all workers may be exposed day after day without adverse effect. *See also TWA, STEL and Ceiling Limits.*

TLV-C: *See Ceiling Limit - TLV*

TWA: **T**ime-**W**eighted **A**verage - Occupational exposure limit guideline - An average value weighted in terms of the actual time that it exists during a given time interval. That is, across a sampling period, an 8-hour work day, etc. *See also OEL, PEL, REL, and TLV®.*

Unacceptable (in the context of exposure assessment): Exposure estimate of similar exposure group is greater than (100%) of the occupational exposure limit (OEL). *See OEL.*

Uncertain (in the context of exposure assessment): Additional data is needed to clarify the exposure. Measurements, further fact-finding or sample collection may be necessary in order to resolve an exposure assessment.

UV: **U**ltra **V**iolet light: Ultraviolet rays have wavelengths shorter than visible rays. So short that they are not part of the visible light spectrum.

WBGT: The **w**et-**b**ulb **g**lobe **t**emperature is considered the most practical heat stress index, characterizing the effect of a heat stress environment on the individual. WBGT was developed because the dry-bulb temperature alone does not provide a realistic guide to the effects of heat, inasmuch as it does not take humidity and heat radiation into consideration. The WBGT is used in setting the weather "Flag" (white, green, yellow, red, or black) conditions used to communicate the relative risk of heat stress during outdoor work or exercise.