Morenci Safe Production Standard	Standard # 5.1.5	
	OHSAS 18001:2007	4.4.6
Hearing Conservation Program	Revision #	02
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	Document Owner	Industrial Hygiene

Review:	Approval:
Manager/Health and Safety: 9/2012	*GM/Administration: 9/2012*

1.0 PURPOSE:

1.1 To minimize the adverse effects of occupational noise exposure, this Hearing Conservation Program (HCP) has been implemented at FMI Morenci Operations. This document provides guidelines to manage hearing conservation in FMI Morenci Operations operating areas where noise levels at or above the Mine Safety Health Administration (MSHA) Action Level (AL) and Permissible Exposure Limit (PEL).

2.0 SCOPE:

2.1 This program applies to all FMI Morenci Operation employees, contractors, and visitors who are exposed to occupational noise levels equal to or in excess of an eight-hour time weighted average (TWA) of 85 dBA.

3.0 TERMS, DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

Audiometric Test is a hearing test conducted to FMI policy and applicable regulations that measures hearing for an individual employee.

Standard Threshold Shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2,000, 3,000 and 4,000 Hz in either ear.

Baseline Audiometric Test is the first or revised hearing test conducted by Freeport McMoRan Morenci Operations that will be used in comparison with annual audiometric tests.

Annual Audiometric Tests are performed an annual base used to monitor hearing loss progression over time of employment.

Reportable Hearing Loss is a case of a standard threshold shift(STS) which results in an average audiometric score in 2,000, 3,000 and 4,000 Hz which is equal to or greater than 25 dB compared to the individuals baseline audiogram in which case it is to be reported to FMI and MSHA that is caused by occupational related noise.

Dosimeter is a meter that averages sound levels for a period of time, used to determine a time weighted average for employee noise exposure.

Sound Level Meter is a real time monitor that will indicate sound levels at a given time as well as analyze sound levels in various frequencies.

MSHA PEL is the regulatory level for an occupational exposure which would constitute legal action or citation, the mine operator should work to get all employee exposures to below this limit by using Engineering and Administrative controls.

MSHA Action Level (AL) is the regulatory level for an occupational exposure in which an employer should implement engineering and administrative controls to reduce the recorded levels of exposure.

FMI Occupational Exposure Limit (OEL) is based on the American Conference and Government of Industrial Hygienist recommendation and has been adopted by Freeport McMoRan as the internal occupational exposure limit. At this level employees will be enrolled in the Hearing Conservation Program.

Similar Exposure Group (SEG) is a classification of job titles in which employees working in the same area under the same conditions with the same exposures will be grouped in order to obtain accurate information for all exposed employees.

4.0 RESPONSIBILITIES:

4.1 FMI Morenci Operations Management

- Has ultimate responsibility for FMI Morenci Hearing Conservation
- Make available adequate resources to effectively implement the Hearing Conservation Program to include but not limited to engineering controls, training, monitoring equipment, hearing protection devices, etc.

4.2 Supervisors and Managers

- Ensure accountability for the use of hearing protection devices or controls with the objective of preventing occupational noise –induced hearing loss.
- Ensure that adequate hearing protection is available in the work area to noise exposed employees
- Identify and request corrective actions for noise sources within their division.

4.3 Industrial Hygiene

- Conduct evaluations and monitoring of noise sources or areas to determine sound levels
- Provide training in the use and care of hearing protection devices, demonstrate proper fitting and correct use of all hearing protection devices
- Follow procedures for employees with a standard threshold shift(STS) (Appendix B & C)
- Maintain audiogram and exposure records for employees enrolled in the Hearing Conservation Program

4.4 Health care provider

- Perform audiograms for both new and scheduled employees
- Assist in the interpretation of the audiogram test results and determination of standard threshold shifts(STS)
- Provide professional judgment on occupational noise-induced hearing loss
- Maintain records of employees audiometric tests and hearing evaluations

4.5 Enrolled employees

- Select, use and maintain hearing protection devices in accordance with the training provided
- Observe hearing protection use in designated areas that have been determined to have noise levels at or above 85 dBA
- Notify supervisor of any hearing problems they may have or where there is a concern that noise levels may require evaluation

5.0 STANDARDS OF PERFORMANCE

5.1 Noise Hazard Assessment

A hazard assessment will be performed whenever noise levels associated with production, processes, or equipment are perceived to be loud or when conditions change (such addition of equipment, changes to existing equipment, occurrence of sound indicating wear or fatigue, etc.) that warrant additional or repeat measurement of noise levels.

Examples of equipment, processes or production areas where assessment is appropriate should include, but not limited to the following:

- Operation of mobile equipment such as haul trucks, dozers, shovels, graders etc.
- Crushing operations
- Conveying operations
- Fabrication involving hammering, cutting, air arc gouging etc.
- Milling operations
- Use of power tools such as impact, jack hammers etc.
- Machining or lathe operations
- Maintenance operations

5.2 Exposure Assessment

Noise monitoring shall be conducted where noise exposure is suspected or known to exist at or above 85 dBA.

Preliminary surveys shall be conducted during a representative work day and should include all continuous, intermittent and impulsive noise sources. Measurements shall be conducted with a noise dosimeter set to the following criteria:

MSHA PEL	MSHA AL	FMI OEL
Threshold: 90 dB	Threshold: 80 dB	Threshold: 80 dB
Criterion: 90 dB	Criterion: 85 dB	Criterion: 85 dB
Range: 90 dB-140 dB	Range: 80 dB-140 dB	Range: 80 dB-140 dB
Response: Slow	Response: Slow	Response: Slow
Exchange Rate: 5 dB	Exchange Rate: 5 dB	Exchange Rate: 3 dB
Weight: A Scale	Weight: A Scale	Weight: A Scale

Exposure sampling will include at least 10 percent of the similar exposure group population or at least 6 representative samples to include a typical work day. After the sampling is complete employees shall be notified of their results if their exposure was at or above the MSHA AL in accordance with 30 CFR 62.110(d). Area management will also be notified of the results in order to adequately assess and implement controls to reduce employee exposures to noise.

If the preliminary survey identifies exposure at or above 85 dBA, any follow-up dosimeter measurements shall be made for each similar exposure group. Monitoring for noise is to be repeated whenever a change in production, process, equipment or controls has occurred to evaluate current employee exposures.

All noise monitoring equipment and procedures shall be in accordance with the corporate Industrial Hygiene Field Guide and used within manufacturer's recommendations.

5.3 Audiometric Examination

As part of the Occupational Health Procedures and as required by the Mine Safety and Health Association (MSHA) Freeport-McMoRan Copper & Gold offers audiograms in accordance with 30 CFR Part 62. Both baseline and annual audiograms will be given to every employee enrolled in this program. The audiogram will be conducted by a company designated representative who is certified by the Council for Accreditation in Occupational Hearing Conservation (CAOHC). All personnel performing hearing tests must produce a record of certification upon demand. Test procedures will follow the requirements set in 29 CFR 1910.95 and 30 CFR 62 as dictated in Appendix A of this program.

Baseline Audiograms

Employees exposed to, or expected to be exposed to 85 dBA or greater for an eight hour time weighted average shall be given an audiometric baseline examination within six months of first exposure. The baseline will document an employee's hearing at the time of initial noise exposure in order to compare future audiograms to track hearing loss in all exposed individuals. Pre-employment audiometric tests may be used as a baseline audiogram.

Annual Audiograms

For all employees enrolled in the Hearing Conservation Program who have a time weighted average exposure equal or greater than the FMI OEL shall have annual audiograms. The annual audiogram will be compared to the employee's baseline audiogram which results in an indication of any hearing loss. A standard threshold shift of 10 dB or greater will be noted and a follow up test will be completed in less than 30 days to confirm the hearing loss.

The annual audiogram should only be done if the employee has not been exposed to excessive noise for the previous 14 hours. If conditions warrant that the employee is exposed to excessive noise above 85 dB prior to the audiogram, hearing protection devices can be used accordance to the training provided by the company. The procedure for a standard threshold shift is indicated in appendix B and C.

5.4 Noise Controls

The goal of this program is to minimize employee exposure to harmful or excessive noise. Significant reductions are also recognized as beneficial and should be implemented where feasible. The hierarchy of controls for noise includes:

Elimination

- Removal of equipment, machinery, pumps etc.

Substitution

- Different processes, materials, or equipment that will reduce noise levels
- Replacing old equipment with quieter equipment

Engineering

- Modification of noise sources;
- Enclosure of the noise source or employee;
- Altering the noise path between source and receiver;
- Installation of sound absorbing or abating materials

Administrative

- Posted Signs for hearing protection devices
- Equipment maintenance programs
- Change in employee work schedules and limiting time of exposure

Personal Protective Equipment

- Ear plugs
- Muffs

5.4 Hearing Protection Devices

Hearing protective devices should be used only when feasible engineering or administrative controls cannot be implemented to reduce noise levels to 85 dBA or below. Hearing protection will be provided at no cost to the employee.

A selection of acceptable hearing protection devices shall be identified by the Industrial Hygiene or program administrator. Products will be chosen on the basis of employee fit and the noise reduction rating of the hearing protection devices. Noise attenuation shall limit exposures to a maximum of 85 dBA. The individual will select the hearing protection from the appropriate devices made available by the company.

5.5 Hearing Loss Reporting

FMI Morenci Operations shall at a minimum follow the guidelines set for by MSHA for reporting and recording employee occupational hearing loss as defined in Appendix B. Corporate guidelines shall also be followed for reporting any occupational hearing loss that occurs on mine property. The incident, if work related will be entered into the Freeport McMoRan Incident Management System as a first aid if the STS is between 10 and 24 dB. If the STS is greater than 25 dB, the incident will become a recordable occupational illness and will be reported to MSHA in accordance with the Incident Management Procedures.

5.6 Non-Standard Conditions

In the event work is required in an area or around equipment that has not been evaluated for noise levels ,it is clear that noise levels may exceed 85 dBA, or that similar equipment or processes required the use of hearing protection devices, employees shall be issued and wear appropriate hearing protection. Where doubt exists as to the need for hearing protection, employees shall wear protection as a preventative measure. When these conditions arise management shall contact industrial hygiene Department so evaluation of the process can be done.

In emergency situations which require immediate response and conditions result in noise levels above 85 dBA, individuals will be issued and shall wear hearing protection Examples of these conditions are motor failure, release of high pressure gases, water, steam, wear, blockage or jamming, etc.

Where occupational hearing loss is confirmed, the Industrial Hygiene Department will conduct an investigation and evaluate the root cause of such evens. Corrective actions, changes or controls shall be implemented as determined by the investigation.

5.7 Calibration of Equipment

Audiometric test booths and audiometers shall be evaluated, calibrated and maintained in accordance with the manufacturer's specifications and in conformance with the requirements of 29 CFR 1910.95.

Sound level meters and dosimeters shall be calibrated and maintained in accordance with the manufacturer's specifications and the Corporate Industrial Hygiene Field Guide. These monitors shall be field calibrated before and immediately after each survey. The monitors shall also receive a certificate of calibration and maintenance at least annually from an approved source such as the manufacturer or other licensed provider.

5.8 Training

Employee training shall be conducted in new miner and annual refresher training on the following issues:

- Proper selection, fit and care of hearing protective devices;
- The effects of noise on hearing;
- The purpose of audiometric testing and an understanding of the test results;
- The components of the Hearing Conservation Program;
- The risk of non-occupational noise exposure.

In the event of a confirmed STS, the employees shall be retrained on proper selection, fit and care of hearing protection. The employees shall be fitted using a real time attenuation procedure to ensure the hearing protection used provides the greatest attenuation.

5.9 Program Auditing

An Audit of the Hearing Conservation Program shall be conducted annually to determine and evaluate effectiveness of the program and identify areas for improvement. The audit shall include hearing protection device use audit form, Appendix D, as well as the industrial hygiene department internal auditing form for hearing conservation. The forms will only be used in evaluating the program and regulatory compliance with required standards regarding occupational noise exposure.

6.0 REFERENCE DOCUMENTS

6.1 29 CFR 1910.95 OSHA Occupational Noise Exposure Regulations

6.2 30 CFR 62 MSHA Occupational Noise Exposure Regulations

6.3 Freeport McMoRan Copper & Gold Corporate Safety and Health Policy Statement

6.4 Freeport McMoRan Copper & Gold Industrial Hygiene Field Guide

7.0 RECORDS

Name of the Document	Responsible for Control	Records Retention
Audiogram Results	Gila Health Resources and Industrial Hygiene Department	Permanent
Noise Surveys and maps	Industrial Hygiene Department	Permanent
Calibration Records for Noise Monitoring Equipment	Industrial Hygiene Department	10 years
Required Training Records	Technical Training Department	**Duration of employment + 10 years**
Corrective Action Documentation (implemented controls)	Industrial Hygiene Department	**Permanent**
Hearing Loss Correspondence with ENT, Audiologist and/or qualified physician	Industrial Hygiene Department and Health Care Provider	**Permanent**
Employee Noise Exposure Notifications	Industrial Hygiene Department	**Permanent**

8.0 APPENDICES

8.1 Appendix A Audiometric Testing Procedures

8.2 Appendix B Hearing Loss and STS Follow Up Procedure

8.3 Appendix C Hearing Loss Reporting Diagram

8.4 Appendix D Hearing Protection Device Audit Form

9.0 REVIEW AND CHANGE

All changes, modifications and/or revisions must be documented on the table below:

Description of Changes to this Document
Review and Refomatted-no policy changes- on 9-07-2012 Garth Graham
Updated records table – S. Elias 06/28/2013 Rev. 02

Appendix A Audiometric Testing Procedures

Audiometric Testing Procedure

1. Annual audiograms shall be conducted for all employees enrolled in the Hearing Conservation Program who have a time weighted average exposure at or above 85 dBA. These audiograms shall be compared to the baseline audiogram for each employee to identify standard threshold shifts (STS).
2. Designate an audiometric administrator for the site. This individual shall have sufficient training to adequately manage a hearing conservation program, and shall be familiar with FMI standards and pertinent regulations.
3. Conduct noise exposure monitoring for each similar exposure group (SEG) in which a qualitative noise survey indicates that the SEG might be exposed over the AL.
4. Identify the personnel who have sufficient noise exposure to require inclusion in the program. At minimum, this shall include personnel exposed at or above the AL. However, sites are encouraged to include those exposed above 80 dBA. If a site intends to include personnel who are exposed below the AL in the program, these people should be listed separately. The benefits of including personnel with low noise exposure include wellness efforts and limiting liability from future claims - the data may be used to demonstrate a hearing loss at the time of hire. Identify a quality ENT in your area. Consult local workers' comp regulations to determine what criteria your ENT must meet (i.e. licensed in your state).
5. Conduct audiometric testing, as specified in site Hearing Conservation Program.
6. If an STS is identified, conduct an immediate follow-up test after re-explaining the testing procedure to the tested individual, and ensuring that the equipment is working properly and the individual is wearing the headphones properly. If this second test no longer indicates STS, log the second test as the official result, and disregard the first. If the first test was the result of difficulty in understanding the test instructions, note this in the individual's file. It may alert future testers that the individual may require additional attention.
7. If the immediate follow-up test confirms the STS, reschedule the individual for another follow-up test within 30 days. Perform another otoscopic exam prior to testing again, and refer to a personal physician for evaluation prior to the third test if this exam indicates a possible problem. This third test must only be given after 14 hours of minimal noise exposure - both occupational and non-occupational. If necessary, hearing protection may be used to meet this requirement. However, it is preferred that the individual be kept out of areas exceeding 80 dBA.
8. If the third test no longer indicates STS, this may be a sign of Temporary Threshold Shift, possibly resulting from excess noise exposure and/or improper use of hearing protection. Reevaluate the individual's noise exposure and use of hearing protection. Log this third test as the official result, and disregard the first two.
9. If the third test confirms the STS, more detailed follow-up is necessary, refer to Appendix B and C for company procedures for hearing loss.

Appendix B Hearing Loss Procedures

Hearing Loss Procedures

1. If the third test confirms the STS, more detailed follow-up is necessary. Collect the following information:
    a. Job history
    b. Audiometric questionnaires, including baseline and annual questionnaires
    c. Audiometric test results; it may be useful to chart the progress of hearing loss, looking at averages of both 500, 1K, 2K, and 3KHz, and 2K, 3K, 4KHz
    d. Noise exposure results (covering entire job history, if available)
2. It may be necessary to record the incident on government-required documents. Under MSHA, it is not necessary to record the incident in the Incident Management System (IMS) until the medical care provider has determined whether the incident is work-related.
3. Set up a Root Cause Analysis (RCA) as soon as possible. The RCA team should consist of the individual with hearing loss, his/her immediate supervisor, a middle or senior manager, and the individual responsible for oversight of the site's audiometric program.
4. Hearing loss RCAs are often more difficult to conduct than a typical injury, where the events are normally obvious and occur over a relatively short period of time. As a result, before the formal RCA is conducted, a pre-RCA questionnaire (attached as Appendix B) should be completed jointly by the RCA team and the individual is evaluated by a physician. The questionnaire is intended to clarify occupational and non-occupational noise exposures over the relevant time period, and other factors that may increase the risk of hearing loss. It can also be used to consolidate the numerous questionnaires (baseline and annual) into one document.
5. Follow up with the tested individual, as required by site policy and national and local regulation. This follow-up shall include the following items, at minimum:
    - Require the use of hearing protection whenever exposures might exceed the AL
    - Allow the individual to select a different style of hearing protection from the types offered at the site, and refit the individual on the selected style of hearing protection
    - Consider having the individual fitted for custom-molded ear plugs if recommended by the medical care provider
    - Retrain the individual on how to wear and care for hearing protection properly

- Re-evaluate the individual's noise exposure assessments and determine if hearing protection with higher attenuation is necessary

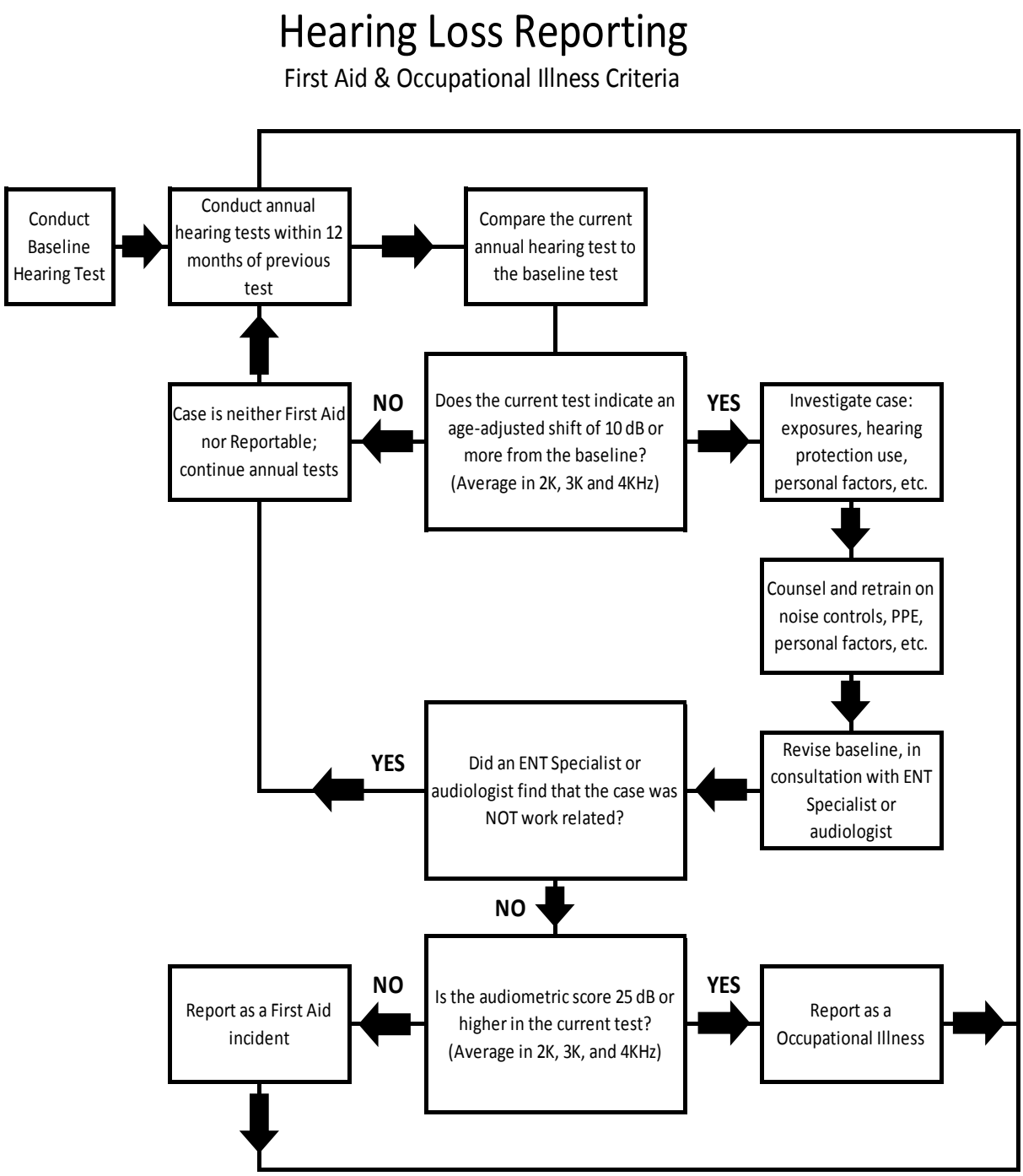
Document this training. This step can be completed when the pre-RCA questionnaire is filled out.

6. If the pre-RCA questionnaire identifies potential causes of hearing loss, such as inadequate engineering or administrative controls, these causes should be addressed as soon as possible, regardless of the outcome of the medical care provider's evaluation.
7. Schedule the individual for an examination with a medical care provider as soon as possible. Discuss the purpose of the evaluation with the medical care provider, and provide him/her with the following information:
    a. Noise exposure data
    b. Pre-RCA questionnaire
        i. Job positions and noise exposure
        ii. Non-occupational noise exposure
        iii. Brief medical history
    c. Audiometric test history
    d. Audiometric calibration data
    e. Background noise levels in the audiometric test room
8. Refer to site policy to determine if individual should be evaluated on-shift or day off, and if he/she will be paid for time and travel.
9. The medical care provider will provide the site audiometric administrator with the report. This should be used to determine whether to report/record the incident with government agencies and FMI corporate DOHS. Under OSHA and FMI internal reporting requirements, work-relatedness must be determined according to the specifications of United States 29 CFR 1904.5 of the general record-keeping rule (if an event/exposure in the workplace caused or contributed to the shift in hearing or "significantly aggravated" a previously existing hearing loss, then the STS is recordable).
10. If the medical care provider believes that the hearing loss meets the above criteria, reassemble the RCA team and complete the RCA procedure and follow-up with process and work practice improvements, as necessary.
    a. Record/report the hearing loss to FMI and relevant government agencies.
    b. Government / FMI reportability is not necessarily an indication that the incident will result in a compensable workers' comp claim. While the medical care provider's findings must be shared with the individual, he/she should be neither encouraged nor discouraged from filing a claim. If he/she inquires about a claim, refer the question to the site workers' comp contact.
11. Designate the last audiometric test as a revised baseline for the relevant ear in conjunction with physician or audiologist recommendations. File the medical care provider's report, pre-RCA questionnaire, amended RCA, and retraining record with the individual's audiometric file.

12. Determination of occupational induced hearing loss shall be communicated to both employee and FMI Morenci Operations. Notification of employees shall be made within 10 days of receiving the final report from the health care provider.

Appendix C Hearing Loss Reporting Diagram

FMI Morenci Operations shall at minimum follow the guidelines set forth by the federal Mine Safety and Health Administration (30 CFR 62) for reporting and recording employee occupational hearing loss.



Appendix D Hearing Protection Device Audit Form

Employee Name:	Date:
Employee ID:	Job Title:
Department:	Supervisor:
Auditor:	Auditor's Job Title:

Type of ear protection?		NRR:
Is hearing protection adequate for area use?		
How often do you get new ear plugs?		
When was the employee's last hearing test performed?		
Used in proper places?	Yes	No
Does the employee know how to properly insert ear plugs?	Yes	No
Employee use: Instruct the employee to insert ear plugs and evaluate technique. Comments:		
Employee questions/concerns/comments:		

Employee Signature:	Date:
Auditor's Signature:	Date:
