



Hearing Conservation:

Strategies and Issues

Test

Lucas Smith

Supervisor of Industrial Hygiene

WPX Energy Inc.

In many countries, excessive noise is the **biggest compensable occupational hazard**. Cost of NIHL to developed countries ranges from **0.2 to 2% of its GDP**. NIHL is **on the rise** globally. (Source: WHO)

Most common occupational injury in the United States. **22 million US workers** are exposed to hazardous noise at work on a daily basis. Approx. **8 million Americans suffer from NIHL.** (Source: NIOSH, 2009)

Overview

- ▶ **Hearing Conservation Program (HCP)**
- ▶ **2012 Statistics**
- ▶ **Identifying Potential Program Shortfalls**
- ▶ **New Hearing Loss Prevention Efforts**
 - ▶ EAR Size Verification Tool
 - ▶ Howard Leight VeriPro Verification System
 - ▶ In-ear Noise Dosimetry
- ▶ **2013 Planning**
- ▶ **Conclusion**

What Comprises Our HCP

- ▶ **Hazard Identification**

- ▶ Sound Level Studies
- ▶ Noise Dosimetry

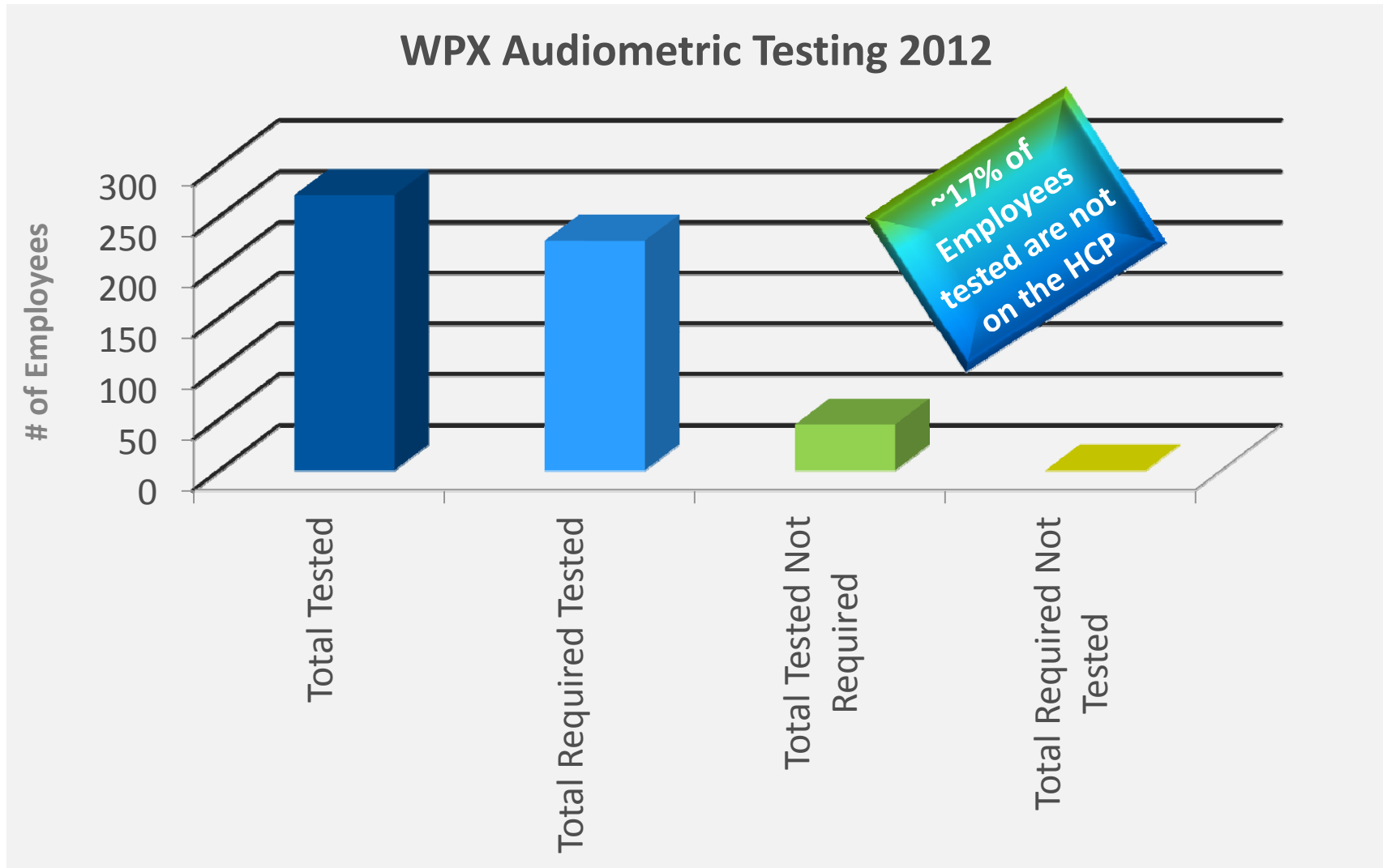
- ▶ **Hazard Control**

- ▶ Administrative Controls
- ▶ Engineering Controls
- ▶ PPE

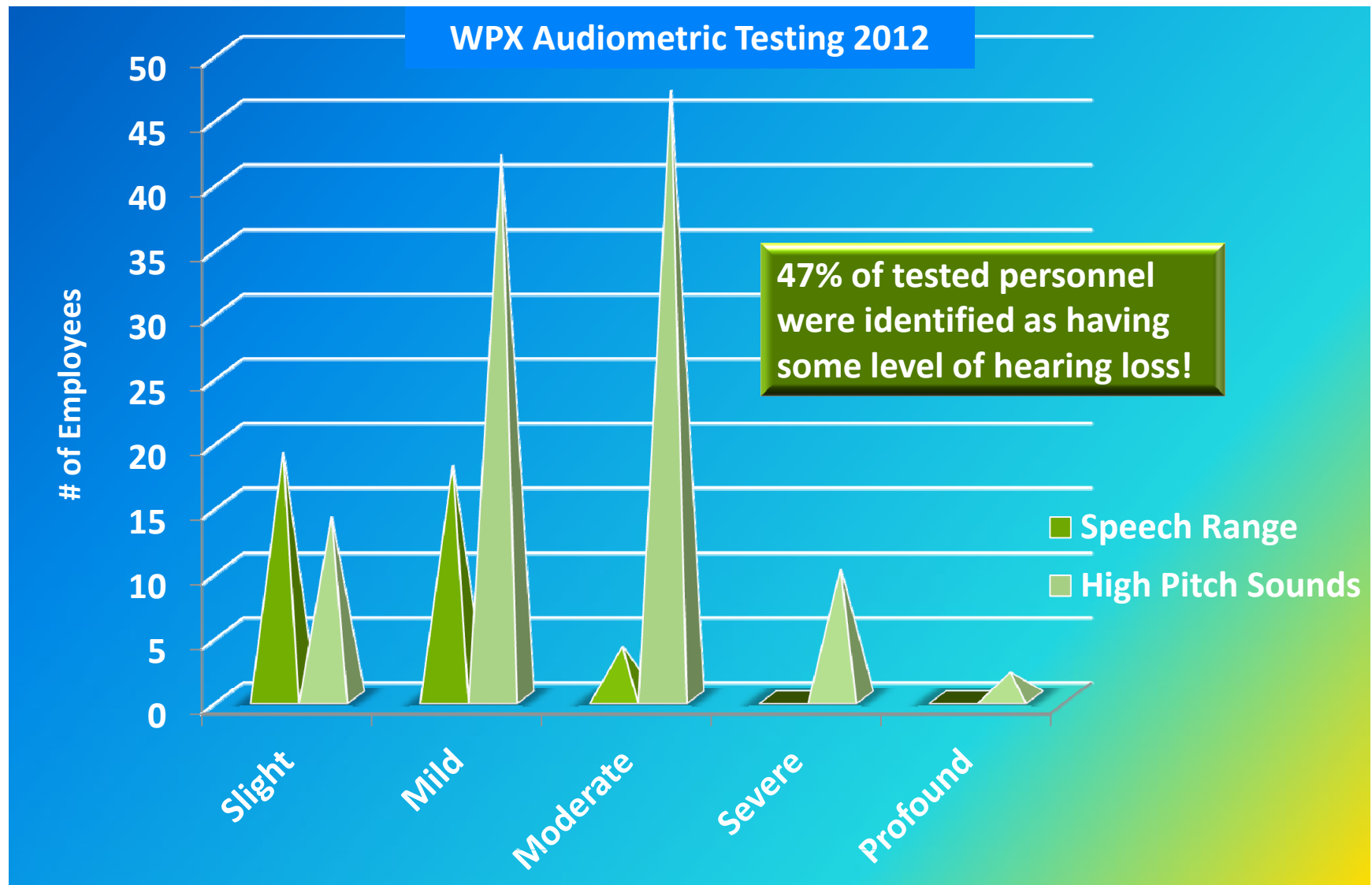
- ▶ **Audiometric Testing/
Medical Surveillance**



Hearing Conservation:



Hearing Conservation:

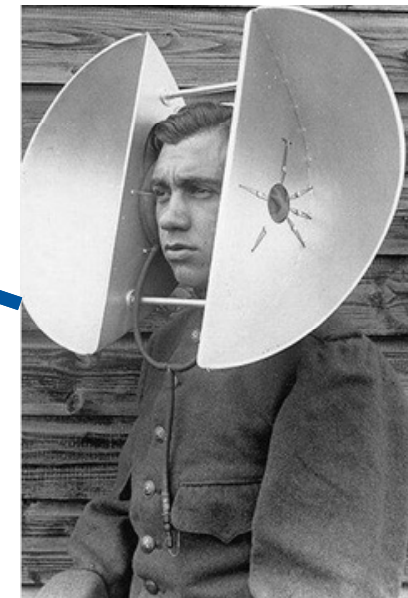


Hearing Conservation:

Degrees of Hearing Loss

Normal hearing	-10 to 15 dB
Slight hearing loss	16 to 25 dB
Mild hearing loss	26 to 40 dB
Moderate hearing loss	41 to 55 dB
Moderately severe loss	56 to 70 dB
Severe hearing loss	71 to 90 dB
Profound hearing loss	91 to 120 dB
Deaf	below 120 dB

Speech



Hearing Conservation:

▪ Past Shortfalls

- List of employees assigned to the HCP
- Annual testing completion
- Storing or locating historical information
- Proper review of results by an Audiologist or Doctor
- Follow-up requirements for threshold shifts
- Near-recordable shifts of Non-HCP personnel
- Limited amount of exposure information

Centralized management of the HCP

- Following up on personnel with near-recordable shifts
- Exploring additional preventative measures

Focus on preventative measures

Centralized Management of the HCP



List of Employees Assigned to the HCP

- Medgate- Similar Exposure Group (SEG) Identification
 - Alpha Listing for HCP
 - Based on Job Position



Annual Testing Completion

- Elected one vendor to complete annual testing for all Basins (Examinetics)
 - Allows our IH group to monitor all testing completions and results by utilizing Examinetics' XM Network System



Storing or Locating Historical Information

- Reports are stored in a central database within the XM Network.
 - Working on link to transfer data to Medgate
 - Medgate houses all medical and IH documentation

Centralized Management of the HCP (Continued)



Near-recordable shifts of non-HCP personnel

- Non-work related exposure or medical condition
- Draft referral letter to direct employees to their private physician
- Hearing screening not a requirement or company benefit

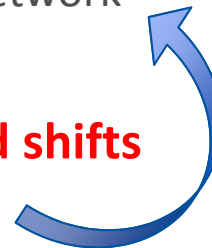


Proper review of results by an Audiologist or Doctor

- Results are reviewed and centrally managed by IH Group
 - Using report functions in XM Network



Follow-up requirements for threshold shifts

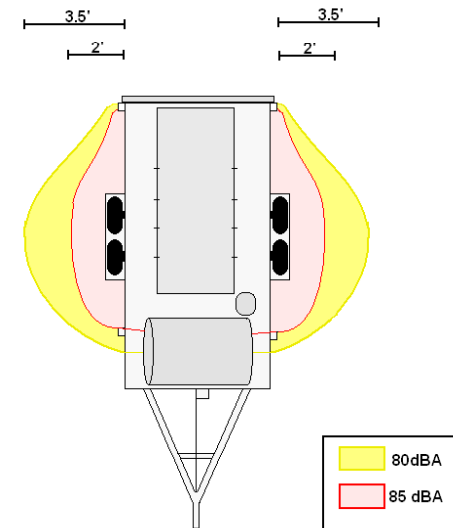


Centralized Management of the HCP (Continued)

 **Limited amount of exposure data**

- **Focused Dosimetry**
 - Field techs
 - Measurement techs
 - Automation techs
 - Environmental air specialist

- **Sound level isopleths of compressor stations and other hazardous noise producing equipment**



Focus on Preventative Measures

- Following up on personnel with near-recordable shifts
- Exploring additional preventative measures

1. Ear size verification tools
2. Personal attenuation rating (PAR)
3. In-ear noise dosimetry



Ear Size Verification Tool

- ▶ Produced by EAR
- ▶ Allows you to measure the ear canal size safely
- ▶ Allows you to properly fit the correct size of earplug to the individual



Personal Attenuation Rating

- ▶ Allows you to test the actual fit of the earplug on the individual
- ▶ Earplug fit testing equipment
 - ▶ 3M E-A-R fit Validation System
 - ▶ Howard Leight Veripro System



VeriPro vs E-A-R Fit

- **VeriPro**

- Provides PAR
- Worker must interact with testing system
- Provides document listing fit information
- Uses employee's own hearing recognition to conduct test
- Test time is approximately 3-5mins
- Can be used to fit any brand of earplugs

- **E-A-R Fit**

- Provides PAR
- Must insure the length of speaker wires are equal
- Insure distance to Speaker
- Provides document listing fit information
- Requires special glasses to hold microphone
- Test time is approximately 60 sec
- Special earplugs used for testing
- Can only be used for 3M earplugs

Hearing Conservation Program

Hearing Protector Individual Report



User: Greg Morrison
 Test Date: May 07, 2008
 Department: Maintenance
 ID #: 829234
 Exposure: 100 dBA
 Earplug: Quiet®



Personal Attenuation Rating (PAR)

The amount of protection provided by the earplug.

Left Ear	Right Ear	Published NRR
22 dBA	23 dBA	26 dB

Safe Exposure Level

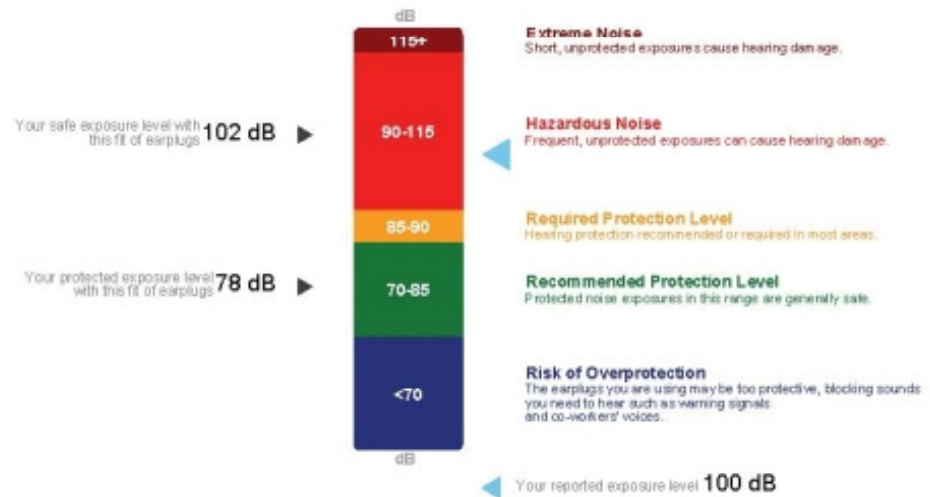
The highest level of noise to which this worker can be safely exposed.*

102 dBA

Protected Exposure Level

The estimated noise level experienced by this worker when wearing earplugs. †

78 dBA



* Calculated from the protection level of the least protected ear.

† Calculated by subtracting the lowest PAR from the exposure level in the employee's profile.



www.howardleightveripro.com

Page 1 of 1

Signature _____

Date _____

Hearing Conservation:

In-Ear Dosimetry

- ▶ Provides actual exposure information
- ▶ Dramatically more accurate than traditional dosimetry methods



Click Pic



WPX 2013 Preventative Measures

- Implement a earplug fitting program
 - Utilize E-A-R ear canal gage
 - Utilize Howard Leight VeriPro System (Personal earplug fit testing)

Implementation Plan:

- IH Group will be available during basin's annual audiometric testing
- Fittest all employees identified on the:
 - Near-recordable list from 2012
 - Near-recordable list from 2013
 - Moderate or greater hearing loss
 - All Reportable STSs

**GOAL TO FITTEST ~100 EMPLOYEES
IN 2013!!!**



2014 and Beyond

- ▶ Continue existing program
- ▶ Monitor individual statistics related to earplug fitting and fit testing
- ▶ Evaluate in-ear dosimetry potential



Hearing Conservation:



Questions???



Lucas Smith
Supervisor of Industrial Hygiene
WPX Energy Inc

Office: 918-573-0176
lucas.smith@wpxenergy.com

Links

Howard Leight VeriPro System:

- ▶ <https://www.howardleight.com/veripro>

Howard Leight QuietDose

- ▶ <https://www.howardleight.com/quietdose>

3M E-A-R Earfit

- ▶ http://solutions.3m.com/wps/portal/3M/en_US/3M-PPE-Safety-Solutions/Personal-Protective-Equipment/Products/

3M Ear Gage

- ▶ http://solutions.3m.com/wps/portal/3M/en_US/3M-PPE-Safety-Solutions/Personal-Protective-Equipment/Products/