

Job Hazard Assessment

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1.0 SCOPE AND FIELD OF APPLICATION

1.1 This procedure covers the whole of the laboratory operation.

1.2 The procedure has been prepared to ensure a consistent approach to Job Hazard Assessment (JHA), to ensure that estimations of risk and safety controls are sufficiently thorough and effective in all instances.

2.0 NORMATIVE REFERENCES AND DEFINITIONS

3.1 Laboratory Quality Manual.

3.2 **Hazard:** any situation, condition or thing that has the potential to cause an injury, illness or loss. There are four different categories of hazards: chemical, physical, biological, and ergonomic.

3.3 **Chemical hazard:** include aerosols, dust, asbestos, fumes, gases, mists and vapours, acids, bases, solvents and pesticides.

3.4 **Physical hazard:** include noise, temperature extremes, vibration, lighting, radiation, equipment, lifting and people.

3.5 **Biological hazard:** include mould, viruses, fungi, bacteria, blood and bodily fluids, and sewage.

3.6 **Ergonomic hazard:** ergonomic hazards may be psychological, physiological or psychosocial, and include workplace violence, working alone, working conditions, stress, and fatigue.

3.7 **Job:** term used to describe a specific work assignment / job position (i.e. Sample Prep Technician).

3.8 **Job Hazard Assessment (JHA):** is the identification of hazards or potential hazards at a job site and is used to determine how to safely perform a job.

3.9 **Exposure:** how often a task is performed.

3.10 **Likelihood:** the probability of risk/injury when performing a task.

3.11 **Consequence:** the most likely injury/loss to be sustained when performing a task.

3.12 **Engineering Controls:** physical controls that reduce or eliminate a risk or hazard at its source or point of contact with an employee.

3.13 **Administrative Controls:** controls that reduce the likelihood and lessen the severity of the risk or hazard at the level of the worker (i.e. training and documentation, procedures, safety meetings, job rotation, medical screening, etc...)

3.14 **Personal Protective Equipment (PPE):** equipment used as a last resort to lessen the potential exposure and

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consequence of a hazard (i.e. safety shoes, gloves, lab coats, safety glasses, hearing protection, fall arrest harnesses etc...)

3.0 HEALTH AND SAFETY

3.1 All processes, procedures and environments affected by this procedure include considerations for health and safety.

3.2 JHAs are completed for all employees.

4.0 PROCEDURE

4.1 General

4.1.1 JHAs are necessary to determine the level of risk associated with hazards for specific jobs. These are then used to determine what controls are required to reduce or eliminate the risk or hazard to workers.

4.1.2 A JHA can be used as a teaching aid when hiring or transferring staff between departments, and can be used to assist in completing incident or near miss investigations.

4.1.3 JHAs are created with a group consisting of the following persons:

- The employee named on the JHA
- The employee's direct supervisor or manager
- A member of the JHSC or other health and safety representative.

4.2 Roles and Responsibilities

4.2.1 Health and Safety Manager

- Annually review this procedure with the JHSC.

4.2.2 Joint Health & Safety Committee (JHSC)

- Lead JHAs for their facility.
- Work with supervisors and workers to complete JHAs.
- Compile facility JHAs and rank in order of most hazardous to least hazardous jobs on a summary sheet.
- Post JHAs in a conspicuous location such as the safety bulletin board or in the area where the job is performed.

4.2.3 Managers

- Ensure JHAs are conducted for each job position in their facility.
- Provide adequate resources and support for the JHSC to conduct their assessments.
- Keep the JHSC informed of any process, equipment, or job changes so the hazard assessments can be examined and modified, if necessary.
- Ensure adequate controls are in place to reduce or eliminate hazards before employees are allowed to begin work.

4.2.4 Supervisors

- Ensure all staff, in their area of responsibility, is aware of any hazards associated with their job.
- Ensure staff, in their area of responsibility, comply with all hazard controls (policies, procedures, guards, PPE etc...) as described in the JHAs.
- Assist with the completion of hazard assessments as requested by the JHSC.

4.2.5 Workers

- Assist with the completion of hazard assessments as requested by the JHSC.
- Read and understand the JHA for their position and work in accordance with all established controls.

4.3 Determining the Risk

4.3.1 Select a job position to be assessed.

- Example: Sample Prep Technician

4.3.2 Break down the job into steps/tasks, being careful to not be too broad or too specific. Try to list the steps in a logical sequence that follows the progression of the day. Most jobs can be described in less than ten tasks.

- Example: Grinding
 - Too specific might be: Grinding rock samples, Grinding farm soil samples, etc...
 - Too broad might be: Preparing samples

4.3.3 Identify potential hazards of the job for each task identified. Look at all types/categories of hazards to ensure that they are addressed. All hazards, including those with current control mechanisms in place, must be identified.

- Example: Grinding hazards and associated categories
 - Dust/particulate inhalation Chemical/Biological
 - Noise Physical
 - Stress/fatigue Ergonomic
 - Moving equipment Physical

4.3.4 Evaluate the Exposure Frequency (E) of the hazards as if no controls are present using the JHA Form based on the following ratings.

- Yearly = 1
- Monthly = 2
- Weekly = 3
- Daily = 4
- Continuously = 5

4.3.5 Evaluate the Likelihood (L) of occurrence of any incident caused by the hazards as if no controls are present using the JHA Form based on the following ratings.

- Almost Impossible = 1
- Not Likely = 2
- 50/50 = 3
- Very Possible = 4
- Expected = 5

4.3.6 Evaluate the Consequence (C) resulting from an incident caused by the hazard as if no controls are present using the JHA Form based on the following ratings.

- Near Miss = 1
- First Aid = 2
- Medical Aid = 3
- Lost Time (STD) = 4
- Disabling (LTD) = 5
- Fatality = 10

- 4.3.7 For Example: The last consideration in 4.3.3 above is about the Physical hazards of using a piece of moving equipment (grinding wheel) and it might result in the following scores (ratings).
- Exposure (E) = 4 (daily)
 - Likelihood (L) = 2 (not likely)
 - Consequence (C) = 2 (first aid)
- 4.3.8 The estimated risk value for the Physical consideration of using a piece of moving equipment can be derived from adding the three values in 4.3.7 for Exposure Frequency, Likelihood, and Consequence. In this case the numbers are $4+2+2 = 8$
- 4.3.9 From an assumed examination of the estimated risk values for the four considerations cited in 4.3.3, they might be as follows:

| Consideration | Hazard Category | Rating |
|-------------------------------|---------------------|---------------|
| • Dust/particulate inhalation | Chemical/Biological | 11 |
| • Noise | Physical | 14 |
| • Stress/fatigue | Ergonomic | 9 |
| • Moving equipment | Physical | 8 (see 4.3.8) |

- 4.3.10 The actual tasks providing the hazards are now sorted in order of risk rating (highest to lowest).
- Noise 14
 - Dust/particle inhalation 11
 - Stress/fatigue 9
 - Moving equipment 8
- 4.3.11 The rating for this specific task (using a grinder) is the average of these four results = $(14+11+9+8) / 4 = 10.5$. This score is used to express the Risk associated with this Task.

4.4 Establishing the Controls

- 4.4.1 If reasonably practical, engineering controls are given priority and should therefore be examined first. A combination of the three types of controls may be used if a greater level of worker safety is achieved. Hazard controls will be examined and implemented in the following order:
- Engineering controls (elimination is the best option followed by substitution)
 - Administrative controls
 - Personal protective equipment
- 4.4.2 A plan is developed to implement controls in order of risk rating. This may involve things such as fabricating guards, ordering personal protective equipment, or developing/modifying procedures or the working environment.
- 4.4.3 When completed each JHA must be signed and dated.
- 4.4.4 JHAs are organized in order of risk rating on a summary sheet and posted on the safety bulletin board with the completed assessments. The assessments may also be posted in the work area for each job position.
- 4.4.5 JHAs are re-evaluated annually, or with any change to the job position, work environment, or equipment.
- 4.4.6 The written job procedure is reviewed with the site quality officer to ensure that the controls outlined in the JHA are included in the job procedure.
- 4.4.7 A copy of all JHAs is sent to the Health and Safety Manager.
- 4.4.8 Field services technicians may also need to complete a field level hazard assessment each time they are on a

client's site prior to commencing work.

4.5 Publication and Dissemination

- 4.5.1 This procedure is posted on all health and safety bulletin boards.
- 4.5.2 All JHSC members are trained on this procedure.
- 4.5.3 All Health and Safety personnel are trained on this procedure.
- 4.5.4 All managers and supervisors are trained on this procedure.
- 4.5.5 All employees are trained in hazards of their job and the controls in place for their protection before beginning work. JHAs should be utilized during employee orientation training.

4.6 Inspection and Evaluation

- 4.6.1 JHSC inspections include surveys of employees and supervisors to measure comprehension of the JHA procedure and the effectiveness of the training provided.
- 4.6.2 JHSC evaluates success by reviewing:
 - Worker and Supervisor survey results.
 - Statistics/data regarding JHA reviews.
 - Industry standards/best practices
- 4.6.3 JHSC makes recommendations to the Health and Safety Manager in the form of an action plan to make appropriate changes to the procedure and its application at least once per year.

4.7 Review and Re-Assessment

- 4.7.1 All JHAs are reviewed annually and revised as required. Any revisions are done using a team similar to the one cited in 4.1.3 above.