# Skills Assessment

**Assessment event 2 of 2**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MSL943004 - Participate in laboratory or field workplace safety (1)

### Qualification/Course code, name and release number

MSL30118 - Certificate III in Laboratory Skills (1)

MSS50218 - Diploma of Environmental Monitoring and Technology (1)

\*\*Amend the qualification box before distributing to the student. The information here should only contain the qualification the student is enrolled in\*\*

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For queries, please contact:

Innovative Manufacturing, Robotics and Science SkillsPoint

Hamilton Campus

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RTO Provider Number 90003 | CRICOS Provider Code: 00591E

This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Instructions for the trainer and assessor** | This is a skill based assessment and will be assessing the student on their ability to demonstrate skills required in the unit.  This assessment is in 2 parts:   1. Demonstrations (1 to 4) 2. Observation Checklist   Demonstrations 1 and 2 should be completed in a classroom and Demonstrations 3 and 4 in the simulated laboratory.  The Assessment contains an Appendix with the two operating procedures for the two laboratory tasks (3A and 3B). All demonstrations should be completed in the same session. You will be required to liaise with laboratory staff to ensure all equipment, samples etc. are available for the student on the scheduled date and time.  There is a demonstration of communication skills to be done during the Skills task. You will be required to participate in the communication with the student using information provided in the Observation Checklist.  Completion of the JSEA for the two tasks forms the basis of the safety component of the assessment.  Model answers, sample responses or a criteria for each task or activity are provided.  Use these to support your judgement when determining a satisfactory result.  The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct. However, if a student provides information other than indicated below, and in the professional opinion of the assessor it is appropriate and meets the intent of the question, it may be considered correct.  Complete the Observation Checklist for each task and activity and the Assessment Feedback to the student. Ensure you have taken a copy of the assessment prior to it being returned to the student.  The Assessment Feedback page must be signed by both the student and the assessor so the student displays that they have received, understood and accepted the feedback.  Ensure the students name appears on the bottom of each page of the submitted assessment. |
| **About this marking guide** | The student’s response to each task or activity must contain the criteria indicated in this marking guide in order for their response to be correct.  All tasks and activities must be completed correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the skill required and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the task or activity sufficient in terms of length and depth?   + Currency – has the work been done so recently as to be current?   + Authenticity – is this work the student’s own authentic work? * Principles of Assessment   + Fairness – individual student’s needs are considered in the assessment process   + Flexibility – assessment is flexible to the individual student   + Validity – any assessment decision is justified, based on the evidence of performance of the student   + Reliability – evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment * Dimensions of competency   + Task skills   + Task Management Skills   + Contingency Planning Skills   + Job Role Environment Skills |
| **Student must provide** | Writing equipment, PPE (safety glasses, enclosed shoes, laboratory coat) |
| **Assessor must provide** | The Assessment task, PPE (own safety glasses, enclosed shoes, laboratory coat), laboratory set up for the task with all required equipment. |
| **Due date/time allowed/venue** | TBA/2 hours/ TAFE classroom and laboratory |

## Specific task instructions

**Brief**

The Assessment consists of 4 Demonstrations. All 4 Demonstrations will be based on the same 2 Tasks, identified as Tasks A and B.

Demonstrations 1 and 2 must be completed before commencing Demonstrations 3 and 4.

Demonstration 1 - involves the completion of JSEA’s for Tasks A and B. A blank JSEA is provided for each of task A and B. The SOP’s for tasks A and B can be found in the Appendix.

Demonstration 2 - requires you to ask questions of your assessor, for clarification of your WHS obligations related to Tasks A and B.

Demonstration 3 - involves physically carrying out Tasks A and B by referring to the Observation Checklist, and the SOP’s provided in the Appendix.

Demonstration 4 - involves the documentation of **any** incidents or hazards that arose during the completion of Demonstration 3.

Your assessor will provide any required templates as part of this assessment.

## Part 1: Demonstrations (1 to 4)

To complete this part of the assessment, the student is required to participate in a practical demonstration of how to complete a task or activity.

These demonstrations will be observed by you, or the student can digitally record them and submit them as evidence.

The student’s responses will be used as part of the overall evidence requirements of the unit.

You should refer to the list of criteria provided in the Observation Checklist to understand what skills the student is required to demonstrate in this assessment. This Checklist outlines the Performance Criteria, Performance Evidence and Assessment Conditions you will be marking the student on.

Once completed the student is required to submit this assessment and the tasks and activities required to be completed to you for marking.

**Demonstration 1: *Identify, control and report WHS and environmental hazards***

Part of completing any laboratory task is ensure you remain safe and that the safety of others in your area is considered. A Job Safety and Environment Analysis is one way of identifying safety issues in the laboratory and considering ways of controlling the risks. For this Demonstration you are to read the SOP’s for tasks A and B identified below (found in the Appendix) and then:

Complete a TAFE NSW JSEA for each of the following tasks:

1. Cleaning a glass 600 mL beaker
2. Setting up and using a vacuum filtration apparatus to filter a water sample.

A TAFE NSW JSEA document has been provided in the following pages. Please complete a JSEA for each task.

**Job Safety & Environment Analysis Demonstration 1A**

**Activity/ Task:** \_\_Clean gLassware\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Location:\_\_\_\_\_\_\_**TAFE Laboratory XYZ**\_\_\_\_**

**Conducted by:** STUDENTS NAME **In Consultation with:**\_\_\_\_ASSESSOR\_\_\_\_\_ D**ate Conducted:** aSSESSMENT DATE

**Reviewed by**: **Comments:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Date Reviewed:**

**Reason for this risk assessment**– *refer to the* [*Procedure for WHS Risk Management*](https://staff.tafensw.edu.au/employee-essentials/work-health-and-safety/policies-and-procedures/)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Workplace Change  Work task / activity  New building/ facility | | Procure new plant  Commission new plant  Decommission plant | | | | New chemical or storage  Maintenance activity  Lease or contract | | | Staff work travel  Remote or lone working  Public event | Student excursion  Student off-site activity  Student work placement | | Other *(specify)* - | |
| **RISK ASSESSMENT SUMMARY** | | | | | | | | | | | | | |
| **Plant / vehicles / substances involved**  DETERGENTS | | | | **licenses / permits**  Driver’s licence  High Risk Work License  Plant operators license  Work at heights  Confined space entry permit  Hot work / permit to work  Other - | | | *What are the top 5 risks for this activity / task?*  1. Cuts  **2.** Manual Handling  **3.** Hazardous chemicals  4. Slips (from wet floor)  5. Burns from hot water | | | | *What are the top 5 safety controls?*  1.TRAINING  2. Temperature controls on hot water  3. Small volumes only available  4. Cleaning equipment available to mop floor  5. PPE | | |
| **Required Protective Clothing and PPE** | | | | | | | **Other documents needed to manage the risks** | | | |  | | |
| T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Eye.jpg | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Foot.jpg | | **T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Head.jpg** | | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Hearing.jpg | | *E.g. Procedure / SOP / work instruction, safety data sheet (SDS), inspection checklists, health declarations etc.*  *Procedures for task provide. If hazardous chemicals are required for the cleaning the SDS is available in the laboratory* | | | | | | |
| T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Protective clothing.jpg | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Respiratory.jpg | | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Apron.jpg | | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Hand.jpg | | **Arrangements for First Aid and Emergencies**  Teaching staff and laboratory staff are all first aid trained.  Each Campus will have its own arrangements and the Assessor will have checked these out prior to the assessment | | | | | | |
| **Other** *(specify) -* | | | | | | |
| HAZARD CHECKLIST | | | | | | | | RISK ASSESSMENT MATRIX | | | | |
| **Environment**  Weather  Hot or cold conditions  Air quality  Noise  UV exposure  Slip/trip hazards  Drowning  **Substances**  Hazardous chemicals  Explosives  Flammable substances  Toxic substances/ pesticides  Inhalable / respirable dust  Exhaust or other fumes  **Physical**  Pressure  Stored energy – mechanical  Stored energy - electrical  Stored energy – chemical  Confined spaces  Fall from height  Manual tasks / ergonomic  **Electrical**  Overhead power lines  Underground power lines  Arc welding  Power tools / leads  Electrical work  Portable power generators  Wet environments | | | | **Psychological and Social**  Stress  Fatigue  Violence / aggression  Drugs and alcohol  Isolation  Bullying and/or harassment  Communication barriers  **Biological**  Animal or insect bite  Riding or handling  Zoonosis  Infectious agents  Needle-stick / sharps  Bodily fluids  Contaminated waste  **Mechanical**  Traffic  Driving  Forklifts, Cranes etc.  Rotating / moving parts  Crushing  Shearing, cutting, stabbing  Vibration  **Environmental**  Air emissions  Release to stormwater  Chemical spill  Soil/groundwater contamination  Asbestos  Radioactive waste  Waste disposal | | | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **CONSEQUENCE** | | | | | | ***LIKELIHOOD*** | **Negligible** | **Minor** | **Medium** | **Major** | **Severe** | | ***Almost Certain*** | **9** Medium | **15** High | **18** High | **23 Critical** | **25 Critical** | | ***Likely*** | **7** Low | **12** Medium | **17** High | **20** High | **24** **Critical** | | ***Possible*** | **4** Low | **10** Medium | **13** Medium | **19** High | **22** High | | ***Unlikely*** | **2** Very low | **5** Low | **11** Medium | **14** Medium | **21** High | | ***Rare*** | **1** Very low | **3** Very low | **6** Low | **8** Low | **16** Medium |  |  |  | | --- | --- | | Likelihood description | | | Almost certain | Expected to occur in most circumstances. | | Likely | Can be expected to occur several times in the life of the particular work practice. | | **Possible** | Might occur occasionally in the life of the particular work practice. | | **Unlikely** | Not likely to occur, but could happen at some time. | | **Rare** | May happen but only in exceptional circumstances. | | **Consequence description** | | | **Severe** | Fatality and/or severe injury resulting in amputation or life support. | | **Major** | Hospital admission, and / or long periods off work and/or permanent impairment. | | **Medium** | Injury/illness requiring minor medical treatment, short duration lost time. | | **Minor** | First Aid treatment only. No lost time. | | **Negligible** | Does not require first aid. Minor discomfort. | | | | | |
|  | | | | |

**Risk Assessment**

| Activity / Situation / Location | Hazards | Risk Score | Controls | New Score |
| --- | --- | --- | --- | --- |
| Floor becomes wet due to splashes of water when washing | Slips | Med | Floor constantly mopped if spills occur | Low |
| Cleaning glassware | Cuts from broken glass | Med | Training provided to student re continual observation of hazards | Low |
| Manual handling of glassware | Hand fatigue | Med | Training, student is only cleaning one piece of glassware | Very Low |
| Washing in hot water | Burn | Med | Hot water is temperature regulated | Very Low |
| Hazardous chemicals for washing difficult to remove ‘soil’ | Chemical burns from corrosive materials | Med | Training, PPE, a last resort for cleaning and would not be expected to be required in this exercise | Very Low |
|  |  | Choose an item. |  | Choose an item. |

## Acknowledgement by Teachers / Other Staff

I have read and understood and/or been instructed in this risk management assessment and will implement all the requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Signature | Role | Date |
| Student | jlkjhhhhhhh;j; | STUDENT | 11/11/2020 |

**Job Safety & Environment Analysis Demonstration 1B**

**Activity/ Task:** Vacuum filtration of water sample\_\_\_\_\_\_\_\_\_\_\_ **Location:\_\_\_tafe laboratory\_\_\_\_\_\_\_\_\_\_\_\_**

**Conducted by:** student **In Consultation with:**\_\_\_\_assessor\_\_\_\_\_\_\_ D**ate Conducted:** assessment date

**Reviewed by**: **Comments:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Date Reviewed:**

**Reason for this risk assessment**– *refer to the* [*Procedure for WHS Risk Management*](https://staff.tafensw.edu.au/employee-essentials/work-health-and-safety/policies-and-procedures/)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Workplace Change  Work task / activity  New building/ facility | | Procure new plant  Commission new plant  Decommission plant | | | | New chemical or storage  Maintenance activity  Lease or contract | | | Staff work travel  Remote or lone working  Public event | Student excursion  Student off-site activity  Student work placement | | Other *(specify)* - | |
| **RISK ASSESSMENT SUMMARY** | | | | | | | | | | | | | |
| **Plant / vehicles / substances involved**       Vacuum system | | | | **licenses / permits**  Driver’s licence  High Risk Work License  Plant operators license  Work at heights  Confined space entry permit  Hot work / permit to work  Other - | | | *What are the top 5 risks for this activity / task?*  1. implosion  2. working with vacuum  3. cuts from broken glass  4. contact with contaminated water  5. manual handling of equipment | | | | *What are the top 5 safety controls?*  1. training in relation to vacuum, handling glass, filtration process  2. supervision of task  3. checking vacuum equipment visually  4. Not overcrowding the area  5. PPE | | |
| **Required Protective Clothing and PPE** | | | | | | | **Other documents needed to manage the risks** | | | |  | | |
| T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Eye.jpg | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Foot.jpg | | **T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Head.jpg** | | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Hearing.jpg | | *E.g. Procedure / SOP / work instruction, safety data sheet (SDS), inspection checklists, health declarations etc.*  procedure for vacuum filtration | | | | | | |
| T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Protective clothing.jpg | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Respiratory.jpg | | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Apron.jpg | | T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Hand.jpg | | **Arrangements for First Aid and Emergencies**       Laboratory staff are first aid trained.  Each TAFE site will have its own arrangements in place and the Assessor should have checked what these are for the individual site. | | | | | | |
| **Other** *(specify) -* | | | | | | |
| HAZARD CHECKLIST | | | | | | | | RISK ASSESSMENT MATRIX | | | | |
| **Environment**  Weather  Hot or cold conditions  Air quality  Noise  UV exposure  Slip/trip hazards  Drowning  **Substances**  Hazardous chemicals  Explosives  Flammable substances  Toxic substances/ pesticides  Inhalable / respirable dust  Exhaust or other fumes  **Physical**  Pressure  Stored energy – mechanical  Stored energy - electrical  Stored energy – chemical  Confined spaces  Fall from height  Manual tasks / ergonomic  **Electrical**  Overhead power lines  Underground power lines  Arc welding  Power tools / leads  Electrical work  Portable power generators  Wet environments | | | | **Psychological and Social**  Stress  Fatigue  Violence / aggression  Drugs and alcohol  Isolation  Bullying and/or harassment  Communication barriers  **Biological**  Animal or insect bite  Riding or handling  Zoonosis  Infectious agents  Needle-stick / sharps  Bodily fluids  Contaminated waste  **Mechanical**  Traffic  Driving  Forklifts, Cranes etc.  Rotating / moving parts  Crushing  Shearing, cutting, stabbing  Vibration  **Environmental**  Air emissions  Release to stormwater  Chemical spill  Soil/groundwater contamination  Asbestos  Radioactive waste  Waste disposal | | | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **CONSEQUENCE** | | | | | | ***LIKELIHOOD*** | **Negligible** | **Minor** | **Medium** | **Major** | **Severe** | | ***Almost Certain*** | **9** Medium | **15** High | **18** High | **23 Critical** | **25 Critical** | | ***Likely*** | **7** Low | **12** Medium | **17** High | **20** High | **24** **Critical** | | ***Possible*** | **4** Low | **10** Medium | **13** Medium | **19** High | **22** High | | ***Unlikely*** | **2** Very low | **5** Low | **11** Medium | **14** Medium | **21** High | | ***Rare*** | **1** Very low | **3** Very low | **6** Low | **8** Low | **16** Medium |  |  |  | | --- | --- | | Likelihood description | | | Almost certain | Expected to occur in most circumstances. | | Likely | Can be expected to occur several times in the life of the particular work practice. | | **Possible** | Might occur occasionally in the life of the particular work practice. | | **Unlikely** | Not likely to occur, but could happen at some time. | | **Rare** | May happen but only in exceptional circumstances. | | **Consequence description** | | | **Severe** | Fatality and/or severe injury resulting in amputation or life support. | | **Major** | Hospital admission, and / or long periods off work and/or permanent impairment. | | **Medium** | Injury/illness requiring minor medical treatment, short duration lost time. | | **Minor** | First Aid treatment only. No lost time. | | **Negligible** | Does not require first aid. Minor discomfort. | | | | | |
|  | | | | |

**Risk Assessment**

| Activity / Situation / Location | Hazards | Risk Score | Controls | New Score |
| --- | --- | --- | --- | --- |
| Assembling filtration apparatus | Cuts from broken glass | Med | Training in use of glass; PPE | Very Low |
| Working under vacuum | Implosion | High | Training in use of vacuum  Observation by supervising people  Checking of all components of apparatus | Med |
| Filtering water that may be contaminated | Absorption through the skin of contamination | Med | Training in procedure  PPE if sample is thought to be contaminated | Low |
|  |  | Choose an item. |  | Choose an item. |
|  |  | Choose an item. |  | Choose an item. |
|  |  | Choose an item. |  | Choose an item. |

## Acknowledgement by Teachers / Other Staff

I have read and understood and/or been instructed in this risk management assessment and will implement all the requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Signature | Role | Date |
| Student | jlkjhhhhhhh;j; | STUDENT | 11/11/2020 |

**Demonstration 2: *Oral communication skills***

It is always important to be fully informed about any task you are asked to conduct in the laboratory or field.

1. Based on the JSEA’s that you completed for demonstration 1, prepare three questions you could ask that would provide you with clarification of your obligations as they relate to procedures and work instructions that impact on safety and legal liability.

Question 1

Question 2

Question 3

Questions could include but are not limited to:

1. Where will I find the appropriate procedures and work instructions to conduct the required task?
2. Would you explain my obligations to enter a private property to gain access to a particular sampling site?
3. What are my obligations for reporting results to the customer particularly when the result is out of specification?
4. Am I able to wear gloves as I am a bit sensitive to the detergent?
5. If I break the glass beaker do I need to fill in an incident form?
6. Do I need to wear safety glasses just to do the cleaning task?
7. Participate in a face-to-face discussion with the assessor to ask the prepared questions and respond to any answers provided by the assessor.

**Demonstration 3: *Conduct work safely***

1. Clean a glass 600 mL beaker following the Standard Operating Procedure M131 provided (see Appendix).
2. Set up and use a vacuum filtration apparatus to filter a water sample following the Standard Operating Procedure M132 provided (see Appendix).

You have already completed a TAFE NSW JSEA for Tasks A and B above, and asked questions to clarify your understanding of the impacts on safety and legal liability.

Next, you are to actually complete Tasks A and B in your laboratory. The completion of the above laboratory tasks will be observed by your Assessor. Each one of these tasks will be observed by the Assessor.

You will be required to follow the steps below, when completing each Task A and B:

1. Select, fit and use appropriate PPE for the task
2. Check for hazards before and during the task
3. Follow laboratory Standard Operating Procedure for the task
4. Maintain laboratory personal hygiene requirements
5. Maintain the work area clean and tidy
6. Return all equipment, materials and chemicals at the conclusion of the task
7. Dispose of hazardous materials by following the SOP

**Demonstration 4: *Reports WHS and environmental hazards and incidents***

Documentation is important for any incident or emergency. You should complete the table below at the completion of performing tasks A and B. The response of Not Applicable (NA) should be used where there was no issue.

1. Record and report any incident or emergency including your actions

|  |  |  |
| --- | --- | --- |
|  | Glass Cleaning  Task A | Vacuum Filtration  Task B |
| Date | 11/11/2020 | 11/11/2020 |
| Incident | Student cut finger on lip of beaker | Vacuum hose came off the Buchner flask |
| Issue | Beaker not inspected prior to commencing the clean | System was under vacuum |
| Action Taken for Issue | First Aid called through the switch  Student made comfortable  First Aid officer dressed cut with band-aid | Vacuum shutdown immediately.  Students advised to check the hoses to the filtration |
| Emergency | Person injured and blood on the benches | Risk of implosion |
| Action Taken for Emergency / equipment required and its location | Injured person made comfortable  First Aid called for  Keepout signage (located in laboratory store) in place until blood cleared. | Laboratory trainer notified  Perished hosing removed |
| Reported to:  Indicate WHO you should report an incident or emergency to | Laboratory Supervisor | Laboratory Supervisor |
| Signed: | jlkjhhhhhhh;j; | jlkjhhhhhhh;j; |

## Part 2: Observation Checklist

The Observation Checklist will be used by you to mark the students’ performance in the practical demonstrations. Use this Checklist to understand what skills the student is required to demonstrate in this section of the assessment. This Checklist outlines the Performance Criteria, Performance Evidence and Assessment Conditions you will be marking the student on. All the criteria must be met. The student’s demonstration will be used as part of the overall evidence requirements of the unit. You may ask questions while the demonstration is taking place or if appropriate directly after the task/activity has been completed.

Table 2 Observation Checklist

| Demo | Activity Performed | Task 3A | | Task 3B | | Assessor Comments (Describe the student’s ability in demonstrating the required skills and knowledge) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | S | US | S | US | *Assessors are to record their observations in sufficient detail to demonstrate their judgement of the student’s performance against the criteria required* |
| *Any breach of safety will result in the Assessment Event being stopped.*  *Bench mark responses are provided for comparison to student response.* | | | | | | |
|  | **Student:** | | | | | |
| **1** | ***Identify, control and report WHS and environmental hazards*** | | | | | |
| 1.1 | Completes and submits a JSEA for each of the required tasks |  |  |  |  | *Date of Observation:*  JSEA completed by student, as per completed sample benchmark JSEAs. |
| **2** | ***Oral communication skills*** | | | | | |
| 2.1 | Prepares 3 questions to clarify obligations, procedures and work instructions to get an understanding of how these impact on safety and legal liability |  |  |  |  | Student records the questions that they wish to discuss with the assessor in Demonstration 2. Assessor is to ensure that these questions aim to clarify the following:   * Obligations * Procedures * Work instruction   that impact on safety and legal liability |
| 2.2 | Participate in a face-to-face discussion with the assessor to ask the prepared questions and respond to any answers provided by the assessor |  |  |  |  | The assessor is to write the responses provided to the student for the 3 questions, in the spaces below:  1.  2.  3.  Did the student communicate clearly and concisely?  Did the student listen to the response from the assessor?  Did the student reply to the response provided by the assessor by acknowledging the assessor response? |
| **3** | ***Conduct work safely*** | | | | | |
| 3.1 | Selects, fits and uses ,the correct PPE for the task |  |  |  |  | Student selects and wears correctly the PPE identified in the task method. |
| 3.2 | Checks for and addresses any hazards and incidents prior to commencing and during the task |  |  |  |  | Student is seen to be checking work area for changing conditions, such as a wet flor, untidy work area, overcrowding  Student actions any hazards that may arise for example obtains wet floor sign.  Assessor to record the actual actions taken: |
| 3.3 | Follows the laboratory SOPs for the task |  |  |  |  | Student completes the two tasks following the SOP provided. |
| 3.4 | Maintains laboratory standards of personal hygiene requirements throughout the task |  |  |  |  | Student maintains the personal hygiene requirements of the particular laboratory. This could include:  wearing of hair-nets, having jewellery removed, sanitising hands between tasks |
| 3.5 | Keeps the work area clean and free of obstacles throughout the task |  |  |  |  | The work area remains clean and tidy throughout.  Student cleans up as they progress through the tasks  Area is kept free of clutter such as unnecessary glassware for the filtration  Surface areas are wiped down during both tasks to remove excess water/spills |
| 3.6 | Returns all equipment, materials and chemicals to appropriate storage area at the conclusion of the task |  |  |  |  | Work area in the laboratory is left clean and tidy  Equipment, materials and reagents are returned to appropriate storage area  Storage areas are dependent on local conditions for example  Glassware would be returned to glass cupboards when dry  Vacuum filtration equipment would be returned to labelled cupboard for the individual pieces  Rubber tubing stored in drawer |
| 3.7 | Disposes of any hazardous materials according to the SOP |  |  |  |  | Disposal of hazardous materials could include:  If beaker broken glass should be carefully picked up with tongs and brush and shovel and placed in broken glass facility.  If the water sample was deemed hazardous this should be disposed of ensuring adequate additional PPE is worn.  Assessor to record the actual actions taken by the student:  Could include but not limited to:  Obtained additional PPE for the task  Obtained labelled storage vessel/containers to take the waste  Completes any paperwork required for the disposal  Ensures the area is left clean and tidy |
| **4** | **Reports WHS and environmental hazards and incidents** | | | | | |
| 4.1 | Reports and records any additional hazard or incident that arises during the task |  |  |  |  | Student completes the work report for each task. Ideally no issues arise and NA will be sufficient.  Where there may be an issue, such as slippery floor, student would note they stopped work, had signage placed around the area and arranged for floor to be dried before continuing.  If breakage of glass this may require documentation. |

***Appendices***

1. Standard Operating Procedure

M131: General Glass Cleaning

**Hard Copy No: \_\_\_\_\_**

**CONTROLLED DOCUMENT**

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# **INTRODUCTION**

A working laboratory generally creates large quantities of glassware that must be cleaned before the next use. Cleaning is easier if the wash process is completed before any contaminants have a chance to stick to the glass.

Cleaning methods can include any of the following and sometimes a combination of the following methods:

* Solvents
* Strong acids
* Abrasives
* Sanitising agents

The ’bead’ test is a way of determining if the glass is clean. If water beads on the glass surface it is not clean. Water will sheet on clean glass walls.

# **PURPOSE**

The purpose of this procedure is to ensure consistency in cleaning operations associated with glassware used for laboratory analysis.

# **SCOPE**

This standard operating procedure applies to glassware that does not have to be free of micro-organisms i.e. sterile.

# **RESPONSIBILITIES**

The Laboratory Manager or their delegate has overall responsibility for this standard operating procedure. They are to review any problems experienced (non-conforming product/service) and take appropriate action. The problem and any actions taken are then to be recorded.

Laboratory staff, if appropriately trained, may undertake responsibility for all tasks in this standard operating procedure.

# **RELATED DOCUMENTS**

This procedure should be read in conjunction with the following related documents:

* Laboratory Manual
* Quality Control Manual
* WHS Manual

1. **WHS**
   1. **Clothing**

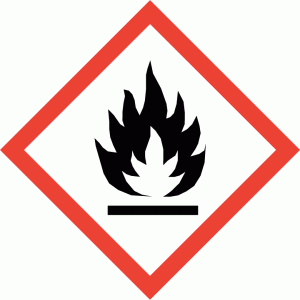
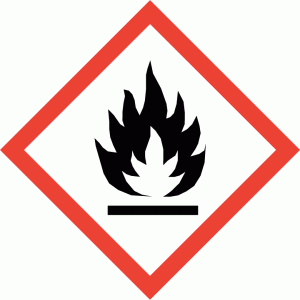
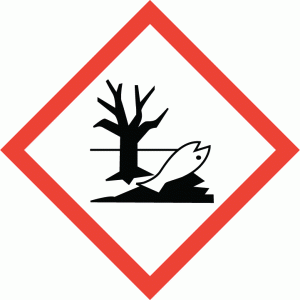
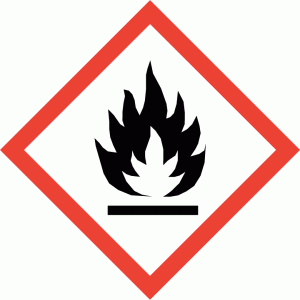
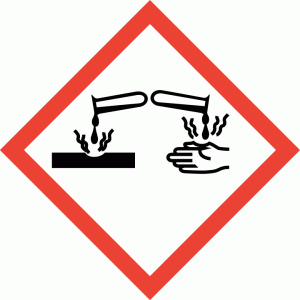
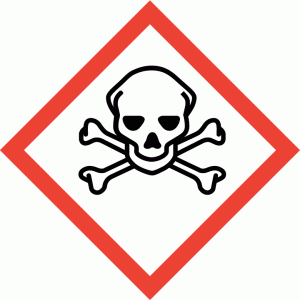
Wear the following PPE when conducting this standard operating procedure:

* Closed footwear
* Laboratory coat
* Safety glasses
* Gloves
  1. **Housekeeping**

Wash hands and ensure the workstation is clean and tidy before commencing this standard operating procedure. When the task is complete, wash hands, clean the workstation and dispose of any waste materials according to workplace procedures

* 1. **General safety**
     1. Sharp edges on damaged glassware
     2. Corrosive nature of some cleaners
     3. Manual handling of wet glassware

# **PROCEDURE**

* 1. **Materials, reagents and equipment**
     1. Materials
* Dirty glassware
  + 1. Reagents (the actual cleaning agent will depend on the nature of the ‘dirt’)
* Soap/detergent
* Water
* Specialised cleaning powders/solutions
* Organic solvents such as
* Ethanol  
* hexane    
* propanone  
* Concentrated acids or bases such as:
* Sulfuric acid   
  + 1. Equipment
* Tissues/wipes
* Non-scouring pads (green kitchen type)
* Brushes of various sizes (test tube/beaker/burette)
* Ultrasonic baths (useful for small objects such as micro test tubes.
* Containers large enough for soaking
  1. **Method**

**PRE-TREATMENT**

* + 1. Check the item for cracks, chips, sharp edges. Discard the item (in the appropriate waste container) if any of these are found.
    2. Using a tissue/wipe carefully remove any dirt that can be wiped off (such as stopcock grease).

**METHOD** (the general procedure can be repeated for various cleaning agents)

* + 1. Rinse the item under running water
    2. Use a non-scouring pad to gently remove any adhered dirt.
    3. If the item requires further cleaning obtain the laboratory detergent and a cleaning brush.
    4. Take care as the item may become slippery when being handled.
    5. Place a small amount of the cleaning agent on the glass item and gently scrub with a brush or soft cloth.
    6. Rinse with running water.
    7. If clean rinse in distilled water and leave to dry.
    8. If not clean, repeat the process using a different cleaning product or prepare a bath in an appropriate container and leave the item to soak.
    9. If an ultrasonic bath is to be used place the item in the tank with the cleaning solution
    10. Turn on the ultrasonic cleaner and leave on for several minutes.
    11. Check to see if the item is clean. If not repeat the process.
    12. When clean repeat 7.2.8 and 7.2.9
    13. Clean up the area and place all materials/reagents/equipment in the appropriate place
    14. Dispose of all wastes according to laboratory protocols

Notes:

* The procedure above is provided in detail for the use of soap/detergent and water.
* If the nature of the ‘dirt’ residue is known the appropriate cleaning agent may be chose directly.
* If the glass has not cleaned it may require soaking for a period of time in a different solution. The appropriate method should be followed for this
* Care should be taken with the disposal of any chemical wastes.

1. Standard Operating Procedure

M132: Vacuum Filtration of water sample

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# **INTRODUCTION**

Filtration is a process that is suitable for separating an insoluble solid from a liquid. Vacuum filtration provides a fast way of filtering large volumes of material.

A simple arrangement that is often used for the determination of total suspended solids (TSS) and total dissolved solids (TDS) is shown below.



Fig 1 vacuum filtration apparatus © TAFE NSW 2019

# **PURPOSE**

To assemble a vacuum filtration apparatus and filter a water sample.

# **SCOPE**

This standard operating procedure applies to all procedures where filtration under vacuum is required.

# **RESPONSIBILITIES**

The Laboratory Manager or their delegate has overall responsibility for this standard operating procedure. They are to review any problems experienced (non-conforming product/service) and take appropriate action. The problem and any actions taken are then to be recorded.

Laboratory staff, if appropriately trained, may undertake responsibility for all tasks in this standard operating procedure.

# **RELATED DOCUMENTS**

This procedure should be read in conjunction with the following related documents:

* Laboratory Manual
* Quality Control Manual
* WHS Manual

1. **WHS**
   1. **Safety**

6.1.1 Risk of implosion

6.1.2 System operates under vacuum. Check all glassware for faults and do not use

any glassware that is chipped, cracked etc.

6.1.3 Vacuum hosing must be checked to ensure it has not started to deteriorate.

6.1.4 Eye protection must be worn

* 1. **Clothing**

Wear the following PPE when conducting this standard operating procedure:

* Closed footwear
* Laboratory coat
* Safety glasses
* Gloves – (for contaminated samples)
  1. **Housekeeping**

Wash hands and ensure the workstation is clean and tidy before commencing this standard operating procedure. When the task is complete, wash hands, clean the workstation and dispose of any waste materials according to workplace procedures

# **PROCEDURE**

* 1. **Materials, reagents and equipment**
     1. Materials
* Water samples
  + 1. Reagents
* Distilled water
  + 1. Equipment
* Membrane filtration apparatus (see Fig 2)
* Filter paper (pre-dried and weighed if for TSS)
* Vacuum tubing
* Tweezers



Fig 2 Membrane filtration equipment © TAFE NSW 2019

* 1. **METHOD**

**Assembly**

* + 1. Obtain all the equipment required for the filtration.
    2. Check the hosing and all equipment is in good order.
    3. If the total suspended solids is to be determined the filter paper must be weighed.
    4. Assemble the apparatus ensuring there is a good seal between the plug and the flask and the correct filter paper has been selected.
    5. Attach the vacuum hose ensuring the hose is not pushed too far onto the arm of the flask.
    6. Ensure the clamp is secure.

**Filtration**

* + 1. Switch (turn) on the vacuum pump slowly. **Note**: the system does not require high vacuum to work efficiently.
    2. Carefully pour the water sample through the top of the apparatus. **Note:** the actual volume will be dependent on the type of sample and the actual test being conducted. The volume should be recorded if directed in the SOP.
    3. Allow the sample to completely pass through the filter paper.
    4. If the filtrate (bottom layer) is not required, rinse the sides of the top and the filter paper three times.
    5. Break the seal of the system by carefully removing the vacuum hosing. If the vacuum is turned off before the system is open liquid may suck back into the pump.
    6. Carefully remove the clamp and the funnel.
    7. Use the tweezers to remove the filter paper
    8. Either dispose of the filter paper or place the filter paper on watchglass and dry if required for TSS determination.
    9. Pour the filtrate into the appropriate container depending on the use required.
    10. Carefully wash, dry and return all equipment to storage.