TASK TITLE: Investigating A Waste Sample: Analysis, Treatment and Disposal

INSTITUTION: University of Wollongong

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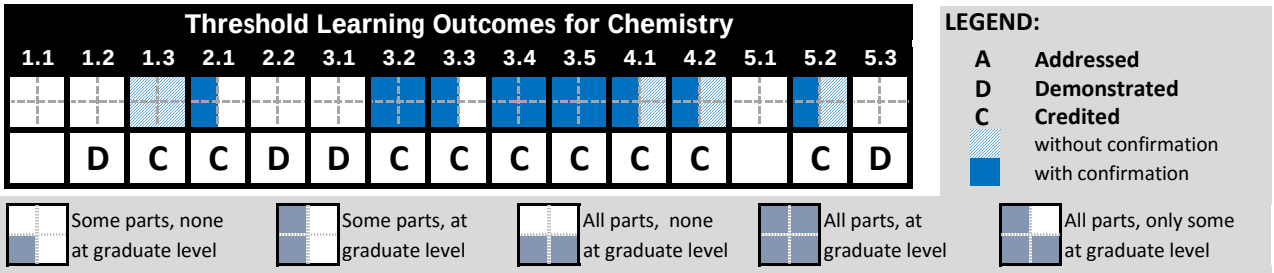
Chemistry Threshold Learning Outcome coverage for a student awarded a "pass" for this task:



TLO 1	*Understand ways of scientific thinking by:*	
1.1	Recognising the creative endeavour involved in acquiring knowledge, and the testable and contestable nature of the principles of chemistry	*Very strong potential for demonstrating the place of chemistry in the local and global communities, but not explicitly required to pass this task.*
1.2	Recognising that chemistry plays an essential role in society and underpins many industrial, technological and medical advances	
1.3	Understanding and being able to articulate aspects of the place and importance of chemistry in the local and global community	
TLO 2	*Exhibit depth and breadth of chemistry knowledge by:*	
2.1	Demonstrating a knowledge of, and applying the principles and concepts of chemistry	*Very clear demonstration of the principles and concepts of chemistry in a narrow domain.*
2.2	Recognising that chemistry is a broad discipline that impacts on, and is influenced by, other scientific fields	
TLO 3	*Investigate and solve qualitative and quantitative problems in the chemical sciences by:*	
3.1	Synthesising and evaluating information from a range of sources, including traditional and emerging information technologies and methods	*TLO 3 is most strongly represented by the "doing" aspects of this task, especially the integration of teamwork into its heart. There are clear opportunities to meet these outcomes, which is required to pass the task.*
3.2	Formulating hypotheses, proposals and predictions and designing and undertaking experiments	
3.3	Applying recognised methods and appropriate practical techniques and tools, and being able to adapt these techniques when necessary	
3.4	Collecting, recording and interpreting data and incorporating qualitative and quantitative evidence into scientifically defensible arguments	
3.5	Demonstrating the cooperativity and effectiveness of working in a team environment	
TLO 4	*Communicate chemical knowledge by:*	
4.1	Presenting information, articulating arguments and conclusions, in a variety of modes, to diverse audiences, and for a range of purposes	*Other than TLO3, communication is the next strongest aspect of this task, with a requirement to effectively communicate this task, with potential for a diverse audiences and modes, though without clear need to do so from the assessment.*
4.2	Appropriately documenting the essential details of procedures undertaken, key observations, results and conclusions	
TLO 5	*Take personal, professional and social responsibility by:*	
5.1	Demonstrating a capacity for self-directed learning	*[enter comments]*
5.2	Demonstrating a capacity for working responsibly and safely	

5.3 Recognising the relevant and required ethical conduct and behaviour with which chemistry is practised	

This document summarises the extent to which the evaluated assessment item allows for the confirmation of student attainment of the Threshold Learning Outcomes for chemistry. Results of this evaluation may serve as evidence of compliance with requirements stipulated in the Australian Higher Education Standards Framework.

The Higher Education Standards Framework requires that on completion of a course of study, students have attained the learning outcomes specified. Additionally, methods of **assessment** are required to be capable of **confirming** that all specified learning outcomes are achieved.

Further information can be found within the following resources:

Development of this evaluation tool:

Schmid, S.; Schultz, M.; Priest, S.J.; O'Brien, G.; Pyke, S.M.; Bridgeman, A.; Lim, K.F.; Southam, D.C.; Bedford, S.B.; Jamie, I.M.. "Assessing the Assessments: Development of a tool to evaluate assessment items in chemistry according to learning outcome." *Technology and Assessment Strategies for Improving Student Learning in Chemistry*, American Chemical Society, 2016

Requirements within the Higher Education Standards Framework:

Higher Education Standards Framework (Threshold Standards) paragraph 1.4. Australian Government: Canberra, 2015. F2015L01639 Made under subsection 58(1) of the Tertiary Education Quality and Standards Agency Act 2011. *https://www.legislation.gov.au/Details/F2015L01639/Download*

The Threshold Learning Outcomes for chemistry:

Pyke, S.M.; O'Brien, G.; Yates, B.; Buntine, M.. "Chemistry Academic Standards Statement", 2014 available online at: *http://www.chemnet.edu.au/sites/default/files/u39/CHEMISTRY_Academic_Standards_Accreditation_Trial.pdf*

Chemistry assessment tasks may be submitted to this project at:
https://sites.google.com/site/thresholdlearningoutcomes/