



Australian Government

Department of Education, Employment and Workplace Relations

SISOCVE519A Apply sinkhole diving skills

Release: 2

SISOCVE519A Apply sinkhole diving skills

Modification History

Not Applicable

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to sinkhole dive in flooded caverns to a depth of 20-40 metres. This unit is conducted at safe partial pressures of the individual gases within the breathing gas mixture consumed.

Application of the Unit

This unit applies to those working as specialist sinkhole divers, sinkhole diving adventure guides, instructors or program managers who are required to sinkhole dive to a depth of 20-40 metres.

This unit may also apply to leaders working for outdoor education or adventure providers; volunteer groups; not-for-profit organisations or government agencies.

Licensing/Regulatory Information

No licensing, regulatory or certification requirements apply to this unit at the time of endorsement

Pre-Requisites

SISOCVE518A Apply cave diving skills
SISOCVE416A Apply cavern diving skills
SISOSCB302A Complete night dives

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the Evidence Guide.

- | | |
|---|--|
| 1. Plan a deep sinkhole dive. | 1.1. Access information on the site and formulate a <i>dive plan</i> according to <i>relevant legislation</i> and <i>organisational policies and procedures</i> .
1.2. Identify and plan for potential <i>hazards</i> and <i>risks</i> associated with the sinkhole dive.
1.3. Identify possible <i>sources of stress</i> associated with sinkhole diving.
1.4. Convey the dive plan to the rest of the dive team.
1.5. Establish a <i>communication system</i> to use with buddy and other participants while diving. |
| 2. Select, fit and use sinkhole diving equipment. | 2.1. Select and fit <i>personal equipment</i> , so that it is streamlined to avoid snagging points.
2.2. Check personal equipment for safety and serviceability prior to the dive according to organisational policies and procedures and manufacturer's specifications.
2.3. Identify, fit and use <i>group equipment</i> according to manufacturer's specifications.
2.4. Use <i>underwater breathing systems</i> appropriately. |
| 3. Perform sinkhole dives. | 3.1. Apply <i>sinkhole diving techniques</i> , demonstrating correct posture.
3.2. Demonstrate effective <i>buoyancy control</i> and <i>anti-silting techniques</i> .
3.3. Apply <i>minimal impact techniques</i> to minimise damage to the environment while sinkhole diving.
3.4. Use a range of sinkhole diving techniques to negotiate <i>features</i> of a water-filled sinkhole.
3.5. Negotiate hazards and apply <i>strategies to reduce risk</i> while sinkhole diving.
3.6. Apply <i>buddy diving procedures</i> and communication techniques throughout sinkhole dive. |

ELEMENT	PERFORMANCE CRITERIA
	3.7. Apply <i>techniques to deal with stress</i> where required.
4. Use sinkhole diving specific navigation skills.	4.1. Apply sinkhole diving <i>navigation aids</i> to navigate through the sinkhole. 4.2. Demonstrate line placement and <i>use of a cave reel</i> .
5. Evaluate sinkhole diving activity.	5.1. Evaluate <i>relevant aspects</i> of the sinkhole diving activity. 5.2. Identify improvements for future sinkhole diving experiences.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- problem-solving skills to:
 - check equipment serviceability prior to use
 - identify and negotiate potential hazards, risks and stressful situations
 - apply sinkhole diving specific navigation and anti-silting techniques
 - maintain buoyancy control
- planning and organising skills to:
 - access information on sinkhole diving site
 - prepare a dive plan
 - select and fit equipment
 - apply minimal impact techniques
- communication skills to:
 - convey information regarding dive to other participants
 - inform progress and interact with buddy through established communication systems
- teamwork skills to safely monitor and assist buddy throughout sinkhole dive
- first aid and emergency response skills appropriate to the site to enable initial response to emergencies and personal health care.

Required knowledge

- legislation and organisational policies and procedures to enable safe conduct of all sinkhole diving activities
- types and characteristics of equipment to enable its safe and efficient selection, use and maintenance
- features of a water-filled sinkhole and safe negotiation methods
- factors affecting buoyancy to control sinking and floating
- hazards, risks and sources of stress commonly associated with sinkhole diving
- communication systems and buddy diving procedures suitable for sinkhole diving
- sinkhole diving specific navigation techniques, including line placement and use of a cave reel, to avoid getting lost under water
- emergency, first aid and rescue procedures appropriate to the location to ensure risk minimisation to self and group.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- applies processes to devise a suitable dive plan and select, maintain and fit dive equipment for the specific sinkhole dive
- negotiates hazards, risks and features of a water-filled sinkhole, at depths of 20-40 metres, using various techniques, causing minimal environmental impact
- applies sinkhole diving navigation techniques to move through the water-filled sinkhole efficiently, and communicates with and monitors buddy's progress
- evaluates and reflects on own sinkhole diving performance to identify strengths, weaknesses and areas that need improvement.

Context of and specific resources for assessment

Assessment must ensure participation in sinkhole diving activities in sinkholes that reflect local conditions and are of sufficient breadth and duration to demonstrate competency and consistency of performance.

Assessment must also ensure access to:

- information on the sinkhole dive site to plan a sinkhole dive and select appropriate equipment
- suitable locations, including fresh water, for the conduct of sinkhole diving activities
- a suitable buddy to participate in dive process
- diving, safety and rescue, communication and navigation equipment.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- oral or written questioning to assess knowledge of sinkhole diving techniques, hazards and risks, and techniques to minimise environmental impact
- observation of safe participation and communication with buddy throughout diving process
- copy of dive plans
- third-party reports from a supervisor detailing

performance.

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Dive plan may include:

- objectives
- maximum time and depth
- gas consumption and rules
- planned turn around
- roles and sequence of divers within the group
- communication signals
- decompression requirements
- contingency management.

Relevant legislation may include:

- occupational health and safety
- sinkhole access and permit requirements
- environmental regulations.

Organisational policies and procedures may include:

- occupational health and safety:
 - medically fit to dive in sinkholes
- risk management and emergency procedures
- communication protocols
- manufacturer's design specifications and recommendations for equipment use
- Australian Speleological Federation Codes and Guidelines:
 - Cave Safety Guidelines
 - Code of Ethics and Conservation
 - Minimal Impact Caving Code
 - Cave Diving Code of Practice.

Hazards may include:

- rock piles
- fauna and flora
- unstable roof
- changed surface weather conditions
- phobias
- water depth
- decompression
- entanglement
- current.

Risks may include:

- near drowning
- hypothermia

- Sources of stress** may include:
- injury
 - separation from group or buddy
 - cramps
 - exhaustion
 - Decompression Illness (DCI).
 - light failure
 - lost buddy
 - out of air situation
 - silt out
 - lost line
 - cold water
 - narcosis
 - dislodged mask.
- Communication techniques** may include:
- hand signals
 - light signals
 - line signals
 - torch signals
 - written notes.
- Personal equipment** may include:
- diving equipment
 - safety and rescue equipment
 - communication equipment
 - navigation equipment.
- Group equipment** may include, but not be limited to:
- shot-lines
 - decompression or safety tanks
 - emergency first aid equipment.
- Underwater breathing systems** may include:
- redundant side mounted SCUBA
 - redundant back mounted SCUBA
 - manifolded SCUBA systems.
- Sinkhole diving skills** may include:
- anti-silting
 - buoyancy control
 - propulsion
 - navigation.
- Buoyancy control** may include:
- correct weighting
 - hovering
 - controlled descent and ascent
 - level swimming.
- Anti-silting techniques** may include:
- buoyancy control
 - propulsion techniques
 - gear management
 - body trim.
- Minimal impact techniques** may
- avoiding sensitive areas

include:

- keeping to marked routes.

Features may include:

- rock-piles
- thermoclines
- haloclines
- flora and fauna in the sinkhole
- silty floors
- loose roofs
- speleothems
- bones
- fossils
- fixed lines
- survey stations
- current.

Strategies to reduce risk may include:

- pre-dive checks
- low silting propulsion
- continuous guidelines to the surface
- redundant breathing gas and regulator supplies
- backup lights
- shot lines.

Buddy diving procedures may include:

- monitoring buddy
- providing emergency gas to buddy where required.

Techniques to deal with stress may include:

- use of backup light or breathing supply
- buddy or octopus breathing with buddy
- controlled exit from the dive
- emergency ascent
- relaxation or breathing techniques.

Navigation aids may include:

- sinkhole map
- survey markers
- compass
- water flow
- trogged paths
- fixed guidelines and markers.

Use of cave reel may include:

- deploying and retrieving the line
- maintaining tension
- locking or unlocking the reel.

Relevant aspects may include:

- planning processes
- communication systems
- sinkhole diving skills and minimal impact techniques
- buoyancy control and anti-silting techniques.

Unit Sector(s)

Outdoor Recreation

Competency Field

Caving