TETRA TECH COFFEY

## Mirvac Real Estate Pty Ltd

# Confined Spaces Assessment

### 36 Gow Street, Padstow, NSW

2 September 2024

Project Ref: 754-SYDEN364426-36 Gow St Confined Space Report Aug 2024

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# CONFINED SPACES ASSESSMENT

Prepared for
Mirvac Real Estate Pty Ltd

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## Quality information

### Revision history

| Revision | Description | Date | Originator | Reviewer | Approver |
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| R01 | Final | 2/09/2024 | Ben McCann | Aaron Holmes | Aaron Holmes |

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# CONTENTS



## Appendices

# EXECUTIVE SUMMARY

Tetra Tech Coffey Pty Ltd (Tetra Tech) was commissioned by Mirvac Real Estate Pty Ltd (the client) to conduct a confined spaces assessment at 36 Gow Street, Padstow NSW 2567 (the site). Ben McCann of Tetra Tech carried out the assessment on 15th August 2024. For the purpose of this assessment, the principal definition of a confined space is that described in the *Work Health and Safety Regulation 2017 (NSW)*.

Identified confined spaces were not entered by personnel at the time of the assessment, therefore the risk assessments contained in this report are limited to general observations made. A more detailed task specific risk assessment is required prior to entering any confined spaces identified in this report.

## Assessment Findings

The following findings are based on the site inspection, discussions with site personnel, and review of relevant documentation:

- A total of 38 confined spaces were identified at the site.
- 8 of the confined spaces were appropriately signposted. The remaining 30 spaces were either not signposted or the signpost was faded and no longer clearly visible. Refer to the confined space register for specific details.
- All of the inspected confined spaces appeared to be appropriately secured from unauthorised access or within secure areas at the time of the assessment.
- The Mirvac Confined Space Entry Permit was made available for review. This included a requirement for the isolation of plant and services associated with confined spaces prior to any entry occurring.

Note: Refer to **Appendix A** for the confined space register and **Appendix C** for photographs.

## Recommended Actions

The following actions are recommended, based on the above findings:

- Ensure a task specific risk assessment is conducted within each confined space prior to commencing any works.
- Install appropriate confined space signage on all 30 confined spaces identified in the confined space register as having faded signage or not having any signage at all. Ensure the signage complies with *AS 2865:2009 Confined Spaces*, Section 3.2.2. Refer to **Appendix D** for examples of confined space safety signage.
- Ensure all staff and contractors working within areas containing confined spaces at the site are provided with appropriate information, instruction, and training to ensure they are able to work safely in these areas. It is recommended that this be managed within the site induction.
- Although it was not possible to access the spaces at the time of the inspection, they have been deemed to be a confined space (in order to take a precautionary approach) and should continue to be treated as such until confirmed as otherwise.
- Avoid entering the confined spaces if possible e.g. conduct cleaning/maintenance activities from outside etc.
- Ensure that the person responsible for the confined space work issues an entry permit prior to any persons entering the confined space.
- Ensure task specific emergency rescue procedures and equipment are available and readily accessible during any confined space work.
- All works and access in relation to confined spaces must be undertaken in accordance with the *Work Health and Safety Regulation 2017 (NSW),* the *Code of Practice: Confined Spaces (SafeWork NSW, 2019)* and A*S 2865:2009 Confined Spaces*.
- Tetra Tech is able to assist the client to implement the above recommended actions.

# 1. INTRODUCTION

Tetra Tech Coffey Pty Ltd (Tetra Tech) was commissioned by Mirvac Real Estate Pty Ltd (the client) to conduct a confined spaces assessment at 36 Gow Street, Padstow NSW 2567 (the site). Ben McCann of Tetra Tech carried out the assessment on 15th August 2024. For the purpose of this assessment, the principal definition of a confined space is that described in the *Work Health and Safety Regulation 2017 (NSW)*.

Identified confined spaces were not entered by personnel at the time of the assessment, therefore the risk assessments contained in this report are limited to general observations made. A more detailed task specific risk assessment is required prior to entering any confined spaces identified in this report.

## 1.1 Site Description

The site consisted of a large warehouse building and associated 2 storey office area (approximate area of 45,000m$^2$). The office was occupied at the time of the assessment.

# 2. SCOPE

The objective of the Confined Spaces Assessment was to identify and assess confined spaces at the site, and manage the associated risks to the health and safety of site occupants (including workers, students, visitors and contractors). The assessment included a physical inspection of accessible areas of the site, as well as discussions with relevant site personnel, and a review of relevant systems/documentation.

## 2.1 Inaccessible Areas

The following areas were not accessible during the inspection:

- Within confined spaces, voids and ceiling spaces.
- Within plant and machinery.
- Lift shafts and pits.
- Below parked cars and trucks, and stored items concealing sections of the floor.
- South, east and north sides of Block B.
- Areas outside the fence boundary for the buildings.
- Areas that were unsafe to walk to due to vehicle/plant activity.
- Occupied rooms and tenanted areas.
- Roof areas.

# 3. WHAT IS A CONFINED SPACE?

The *Work Health & Safety Regulation 2017 (NSW)* defines a confined space as an enclosed or partially enclosed space that:

a) is not designed or intended primarily to be occupied by a person; and
b) is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space, and
c) is or is likely to be a risk to health and safety from:
    i. an atmosphere that does not have a safe oxygen level; or

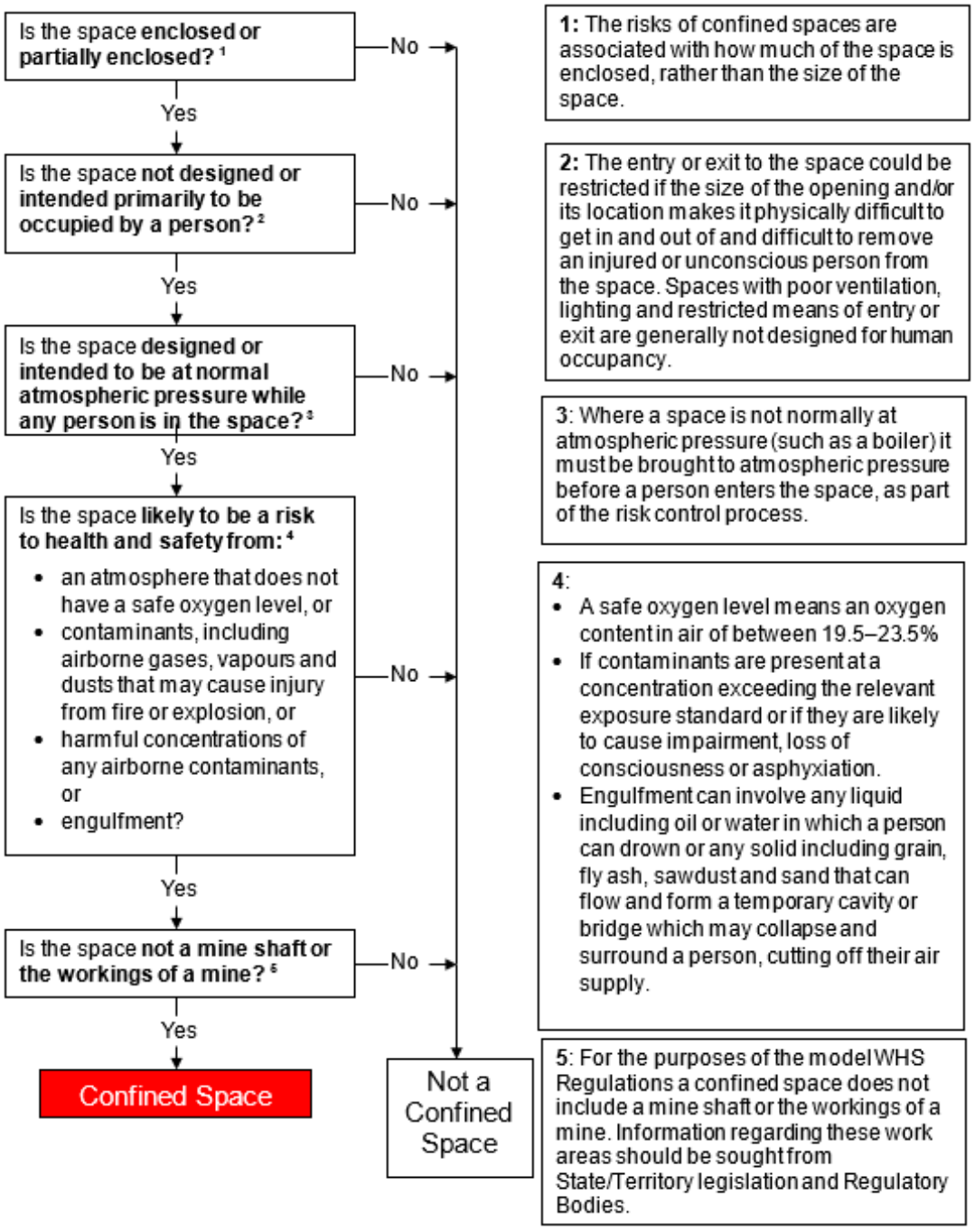
ii. contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion, or
iii. harmful concentrations of any airborne contaminants, or
iv. engulfment.

Note: The above definition does not include a mine shaft or the workings of a mine.

Section 66 (1) of the *Work Health and Safety Regulations 2017 (NSW)* states that 'a PCBU must manage risks to health and safety associated with a confined space at a workplace including risks associated with entering, working in, on or in the vicinity of the confined space (including a risk of a person inadvertently entering the confined space'.

Section 62 (2) of the Regulations also state that the requirements relating to confined spaces within the Regulations refer to confined spaces that are under the PCBUs management or control. For this reason, confined spaces that are identified on site but that fall under the management or control of another PCBU have not been included in this report. Examples of such confined spaces include storm water drains and sewer pits (managed by the local water authority), and underground electrical substations (managed by the local power authority).

Further explanation of a confined space definition is explained in the figure on the next page.




**Source: Compliance Code: Confined Spaces 2019**

## 4. RISK ASSESSMENT

Risk assessments have been conducted for each confined space identified on site. The risk assessments considered the nature of the confined space, including its location, frequency of entry, work performed, the nature of the potential hazards present and the controls currently in place. Each identified potential hazard was risk assessed, based on the likelihood of an event occurring, and the consequence or outcome of that event in general terms. An overall risk rating of Low, Medium, High, Very High or Extreme was then assigned to each hazard using the provided risk assessment matrix (refer to Risk Matrix below).

The assessment of the risk is a subjective assessment and is to be used for guidance purposes in relation to selecting and implementing corrective actions.

| Risk Matrix | | | | | |
|---|---|---|---|---|---|
| **LIKELIHOOD** | **CONSEQUENCE** | | | | |
| | **Insignificant** (No injuries) | **Minor** (First aid only) | **Moderate** (Medical treatment) | **Major** (Extensive injuries, loss of production) | **Catastrophic** (Fatality / permanent disability) |
| **Almost Certain** (Expected in most circumstances) | Medium | High | Very High | Extreme | Extreme |
| **Likely** (Will probably occur in most circumstances) | Medium | High | Very High | Extreme | Extreme |
| **Possible** (Might occur at some time) | Low | Medium | High | Very High | Extreme |
| **Unlikely** (Not likely to occur) | Low | Low | Medium | High | Very High |
| **Rare** (May occur only in exceptional circumstances) | Low | Low | Medium | High | High |

Where the hazards associated with work in particular confined spaces are similar in nature, a group risk assessment has been prepared. Separate space specific risk assessments will be prepared for any confined spaces identified as having unique hazards or risks that are different to the group risk assessment.

Refer to **Appendix B** for confined space risk assessments.

## 5. FINDINGS

The following findings are based on the site inspection, discussions with site personnel, and review of relevant documentation:

- A total of 38 confined spaces were identified at the site.

- 8 of the confined spaces were appropriately signposted. The remaining 30 spaces were either not signposted or the signpost was faded and no longer clearly visible. Refer to the confined space register for specific details.
- All of the inspected confined spaces appeared to be appropriately secured from unauthorised access or within secure areas at the time of the assessment.
- The Mirvac Confined Space Entry Permit was made available for review. This included a requirement for the isolation of plant and services associated with confined spaces prior to any entry occurring.

Note: Refer to **Appendix A** for the confined space register and **Appendix C** for photographs.

# 6. RECOMMENDED ACTIONS

The following actions are recommended, based on the above findings:

- Ensure a task specific risk assessment is conducted within each confined space prior to commencing any works.
- Install appropriate confined space signage on all 30 confined spaces identified in the confined space register as having faded signage or not having any signage at all. Ensure the signage complies with *AS 2865:2009 Confined Spaces*, Section 3.2.2. Refer to **Appendix D** for examples of confined space safety signage.
- Ensure all staff and contractors working within areas containing confined spaces at the site are provided with appropriate information, instruction, and training to ensure they are able to work safely in these areas. It is recommended that this be managed within the site induction.
- Although it was not possible to access the spaces at the time of the inspection, they have been deemed to be a confined space (in order to take a precautionary approach) and should continue to be treated as such until confirmed as otherwise.
- Avoid entering the confined spaces if possible e.g. conduct cleaning/maintenance activities from outside etc.
- Ensure that the person responsible for the confined space work issues an entry permit prior to any persons entering the confined space.
- Ensure task specific emergency rescue procedures and equipment are available and readily accessible during any confined space work.
- All works and access in relation to confined spaces must be undertaken in accordance with the *Work Health and Safety Regulation 2017 (NSW),* the *Code of Practice: Confined Spaces (SafeWork NSW, 2019)* and A*S 2865:2009 Confined Spaces*.
- Tetra Tech is able to assist the client to implement the above recommended actions.

# 7. REFERENCES


- *Work Health and Safety Act 2011 (NSW).*
- *Work Health and Safety Regulation 2017 (NSW).*
- *Code of Practice: Confined Spaces (SafeWork NSW, 2019).*
- *Australian Standard 2865:2009 Confined Spaces.*

# 8. LIMITATIONS

This report and the associated services performed by Tetra Tech are in accordance with the scope of services set out in the contract between Tetra Tech and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

Tetra Tech derived the data in this report primarily from visual inspections, examination of available records, and interviews with individuals with relevant information about the site. In preparing this report, Tetra Tech has relied upon, and presumed accurate, certain information (or absence thereof) provided by government authorities, the Client and others identified herein. Except as otherwise stated in the report, Tetra Tech has not attempted to verify the accuracy or completeness of any such information.

No warranty, undertaking, or guarantee, whether expressed or implied, is made with respect to the data reported or to the findings, observations, and recommendations expressed in this report. Furthermore, such data, findings, observations, and recommendations are based solely upon existence at the time of the assessment. The passage of time, manifestation of latent conditions or impacts of future events (e.g. changes in legislation, scientific knowledge, land uses, etc.) may require further investigation at the site with subsequent data analysis and re-evaluation of the findings, observations, and recommendations expressed in this report.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between Tetra Tech and the Client. Tetra Tech accepts no liability or responsibility whatsoever and expressly disclaims any responsibility for or in respect of any use of or reliance upon this report by any third party or parties. It is the responsibility of the Client to accept if the Client so chooses any recommendations contained within and implement them in an appropriate, suitable and timely manner.

# APPENDIX A: CONFINED SPACES REGISTER

| Confined Spaces Register | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Space ID | Type | Level | Location / Comments | Secure | Signage | Dimensions | Risk Assessment | Photo |
| 001-004 | Storm Water Pits x 4 | G | Southeast carpark, west area | Yes | **No** | $2m^3$ | A | 1 |
| 005-006 | Unknown Pit x 2 | G | Southeast carpark, west area | Yes | Yes | Unknown | B | 2 |
| 007-010 | Storm Water Pit x 4 | G | Southeast carpark, east area | Yes | **No** | $2m^3$ | A | 3 |
| 011 | Storm Water Pit | G | Southeast carpark, north area | Yes | **No** | $2m^3$ | A | 4 |
| 012 | Unknown Pit | G | Southeast carpark, west grassed area adjacent to smoko area | Yes | **No** | Unknown | B | 5 |
| 013 | Storm Water Pit | G | Southeast carpark, central grassed area | Yes | **No** | $2m^3$ | A | 6 |
| 014-018 | Storm Water Pit x 5 | G | Eastern driveway | Yes | **No** | $3m^3$ | A | 7 |
| 019 | Storm Water Pit | G | Northeast corner of site, adjacent road | Yes | **No** | $10m^3$ | A | 8 |
| 020-023 | Storm Water Pit x 4 | G | Northern driveway | Yes | **No** | $3m^3$ | A | 9 |
| 024 | Unknown Pit | G | Northern driveway, central, adjacent roller shutter | Yes | Yes | Unknown | B | 10 |
| 025 | Sewer Pit | G | Northern driveway, central | Yes | Yes | Unknown | C | 11 |
| 026-027 | Unknown Pit x 2 | G | Northern driveway, west area | Yes | Yes | Unknown | B | 12 |

| Confined Spaces Register | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Space ID | Type | Level | Location / Comments | Secure | Signage | Dimensions | Risk Assessment | Photo |
| 028-029 | Unknown Pit x 2 | G | Northern driveway, west area, grassed area | Yes | **No** | Unknown | B | 13 |
| 030-031 | Sewer Pit x 2 | G | Northern driveway, west corner | Yes | **No** | Unknown | C | 14 |
| 032-033 | Sewer Pit x 2 | G | Western driveway, north corner | Yes | Yes | Unknown | C | 15 |
| 034 | Sewer Pit | G | Western driveway, south side | Yes | **Faded** | Unknown | C | 16 |
| 035-036 | Unknown Pit x 2 | G | Southern truck loading area, adjacent bay 536 | Yes | **No** | Unknown | B | 17 |
| 037-038 | Unknown Pit x 2 | G | Southern truck loading area, adjacent bay 546 | Yes | **No** | Unknown | B | 18 |

# APPENDIX B: CONFINED SPACE RISK ASSESSMENTS

| Risk Assessment A: Storm Water Pit | |
|---|---|
| **Does the space meet the requirements of a Confined Space?**<br>(If the answer to A, B and at least one part of C is yes, then the space is a confined space and requires a risk assessment). | **YES** |
| A. Is the space designed or intended primarily not to be occupied by a person? | YES |
| B. Is the space designed or intended to be, at normal atmospheric pressure while any person is in the space? | YES |
| C. Is the space likely to be a risk to health and safety from: | |
| • an atmosphere that does not have a safe oxygen level? | YES |
| • contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion? | YES |
| • harmful concentrations of any airborne contaminants? | YES |
| • engulfment? | YES |

| | |
|---|---|
| **Works to be completed:** | Maintenance and inspection activities. |
| **Comments:** | Access to space is restricted. No access gained during assessment. |

| Hazard Types | Risk Rating | Recommended Actions |
|---|---|---|
| Restricted entry and egress in an emergency | VH | Wear a safety harness and remain connected to a lifeline at all times.<br>Ensure the standby person remains in constant contact with person(s) entering the space. |
| Oxygen deficiency whilst work in progress | VH | Monitor the atmosphere within the space prior to entering.<br>Only enter the space if oxygen levels are within the safe range (19.5% to 23.5%).<br>Ventilate the space if required.<br>Continually monitor the atmosphere within the space during entry. |
| Build-up or excess of vapours such as hydrogen sulphide ($H_2S$) or carbon monoxide (CO) to concentrations above the workplace exposure standards (WES) | VH | Monitor the atmosphere within the space prior to entering.<br>Purge and ventilate the space if required.<br>Continually monitor the atmosphere within the space during entry. |
| Build-up of organic vapours to within explosive limits | VH | Monitor the atmosphere within the space prior to entering.<br>Purge and ventilate the space if required.<br>Only enter the space if the concentration of any flammable vapours is less than 5% of its lower explosive limit.<br>Continually monitor the atmosphere within the space during entry.<br>Ensure no ignition sources are located within or introduced into the space. |
| Airborne dust concentrations above the WES | L | No action required. |
| Radiation (non-ionising and ionising) | L | No action required. |
| Noise generated at levels above 85 dB(A) | L | No action required. |

| Hazard Types | Risk Rating | Recommended Actions |
|---|---|---|
| Uncontrolled introduction of substances (e.g. steam, water, gases etc.) | E | Isolate all services within the space.<br>Ensure no vehicles operate in the vicinity of the entry.<br>Ensure the standby person is monitoring external weather conditions and any other factors that could impact the confined space. |
| Engulfment | E | Isolate all inflow pipes into the space.<br>Wear a safety harness and remain connected to a lifeline at all times. |
| Manual handling of covers, lowering equipment into pits | M | Ensure a two-person lift or lifting device is used when lifting or removing covers.<br>Use a winch to lower equipment into the space. |
| Mechanical hazards (e.g. entanglement, crushing, cutting, etc.) | L | No action required. |
| Skin contact with hazardous substances and surface contaminants | H | Wear appropriate PPE (e.g. gloves, long sleeve shirt and pants, boots and eye wear). |
| Slips and trips | H | Wear slip resistant boots. |
| Falls from height | VH | Wear a safety harness and remain connected to a lifeline at all times. |
| Electrical hazards | M | Portable electrical equipment should be protected through an RCD, located outside of the space. |
| Biological hazards (e.g. E-coli) | H | Wear appropriate PPE (e.g. gloves, long sleeve shirt and pants, boots and eye wear).<br>Wash hands and face after exiting the space. |
| Lack of lighting | H | Use appropriate and safe temporary lighting and/or torch within the space. |
| Heat and cold stress | L | No action required. |

**General Recommendations**

- Avoid entering the confined space if possible e.g. conduct cleaning activities from outside etc.
- Ensure access to the confined space remains secure at all times.
- Only authorised personnel are to access the confined space.
- All works and access in relation to confined spaces must be undertaken in accordance with AS 2865-2009.
- Ensure that the person responsible for the confined space work issues an entry permit prior to any persons entering the confined space.
- Ensure contractors are appropriately trained to undertake confined space entry and standby duties.
- Ensure site specific emergency rescue procedures and equipment are available and readily accessible during any confined space work.
- Ensure contractor safe work method statement (SWMS) addresses traffic management and working at heights issues.
- Ensure suitable PPE is available and appropriately maintained.
- Ensure a task specific risk assessment is conducted within the space prior to commencing any works.
- Although it was not possible to access the space at the time of the assessment, it has been deemed to be a confined space (in order to take a precautionary approach) and should continue to be treated as such until confirmed as otherwise.

| Risk Assessment B: Unknown Pit | | |
|---|---|---|
| **Does the space meet the requirements of a Confined Space?**<br>(If the answer to A, B and at least one part of C is yes, then the space is a confined space and requires a risk assessment). | | **YES** |
| A. Is the space designed or intended primarily not to be occupied by a person? | | YES |
| B. Is the space designed or intended to be, at normal atmospheric pressure while any person is in the space? | | YES |
| C. Is the space likely to be a risk to health and safety from:<br>• an atmosphere that does not have a safe oxygen level?<br>• contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion?<br>• harmful concentrations of any airborne contaminants?<br>• engulfment? | | <br>YES<br>YES<br>YES<br>YES |
| **Works to be completed:** | Maintenance and inspection activities. | |
| **Comments:** | Access to space is restricted. No access gained during assessment. | |
| **Hazard Types** | **Risk Rating** | **Recommended Actions** |
| Restricted entry and egress in an emergency | E | Wear a safety harness and remain connected to a lifeline at all times.<br>Ensure the standby person remains in constant contact with person(s) entering the space. |
| Oxygen deficiency whilst work in progress | E | Monitor the atmosphere within the space prior to entering.<br>Only enter the space if oxygen levels are within the safe range (19.5% to 23.5%).<br>Ventilate the space if required.<br>Continually monitor the atmosphere within the space during entry. |
| Build-up or excess of vapours such as hydrogen sulphide ($H_2S$) or carbon monoxide (CO) to concentrations above the workplace exposure standards (WES) | E | Monitor the atmosphere within the space prior to entering.<br>Purge and ventilate the space if required.<br>Continually monitor the atmosphere within the space during entry. |
| Build-up of organic vapours to within explosive limits | E | Monitor the atmosphere within the space prior to entering.<br>Purge and ventilate the space if required.<br>Only enter the space if the concentration of any flammable vapours is less than 5% of its lower explosive limit.<br>Continually monitor the atmosphere within the space during entry.<br>Ensure no ignition sources are located within or introduced into the space. |
| Airborne dust concentrations above the WES | L | No action required. |
| Radiation (non-ionising and ionising) | L | No action required. |
| Noise generated at levels above 85 dB(A) | L | No action required. |
| Uncontrolled introduction of substances (e.g. steam, water, gases etc.) | E | Isolate all services within the space.<br>Ensure no vehicles operate in the vicinity of the entry.<br>Ensure the standby person is monitoring external weather conditions and any other factors that could impact the confined space. |

| Hazard Types | Risk Rating | Recommended Actions |
|---|---|---|
| Engulfment | E | Isolate all inflow pipes into the space.<br>Wear a safety harness and remain connected to a lifeline at all times. |
| Manual handling of covers, lowering equipment into pits | M | Ensure a two-person lift or lifting device is used when lifting or removing covers.<br>Use a winch to lower equipment into the space. |
| Mechanical hazards (e.g. entanglement, crushing, cutting, etc.) | M | Isolate all plant within the space. |
| Skin contact with hazardous substances and surface contaminants | H | Wear appropriate PPE (e.g. gloves, long sleeve shirt and pants, boots and eye wear). |
| Slips and trips | H | Wear slip resistant boots. |
| Falls from height | VH | Wear a safety harness and remain connected to a lifeline at all times. |
| Electrical hazards | M | Portable electrical equipment should be protected through an RCD, located outside of the space. |
| Biological hazards (e.g. E-coli) | H | Wear appropriate PPE (e.g. gloves, long sleeve shirt and pants, boots and eye wear).<br>Wash hands and face after exiting the space. |
| Lack of lighting | H | Use appropriate and safe temporary lighting and/or torch within the space. |
| Heat and cold stress | L | No action required. |

**General Recommendations**

- Avoid entering the confined space if possible e.g. conduct cleaning activities from outside etc.
- Ensure access to the confined space remains secure at all times.
- Only authorised personnel are to access the confined space.
- All works and access in relation to confined spaces must be undertaken in accordance with AS 2865-2009.
- Ensure that the person responsible for the confined space work issues an entry permit prior to any persons entering the confined space.
- Ensure contractors are appropriately trained to undertake confined space entry and standby duties.
- Ensure site specific emergency rescue procedures and equipment are available and readily accessible during any confined space work.
- Ensure contractor safe work method statement (SWMS) addresses traffic management and working at heights issues.
- Ensure suitable PPE is available and appropriately maintained.
- Ensure a task specific risk assessment is conducted within the space prior to commencing any works.
- Although it was not possible to access the space at the time of the assessment, it has been deemed to be a confined space (in order to take a precautionary approach) and should continue to be treated as such until confirmed as otherwise.

| Risk Assessment C: Sewer Pit | |
|---|---|
| **Does the space meet the requirements of a Confined Space?**<br>(If the answer to A, B and at least one part of C is yes, then the space is a confined space and requires a risk assessment). | **YES** |
| A. Is the space designed or intended primarily not to be occupied by a person? | YES |
| B. Is the space designed or intended to be, at normal atmospheric pressure while any person is in the space? | YES |
| C. Is the space likely to be a risk to health and safety from: | |
| • an atmosphere that does not have a safe oxygen level? | YES |
| • contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion? | YES |
| • harmful concentrations of any airborne contaminants? | YES |
| • engulfment? | YES |

| | |
|---|---|
| **Works to be completed:** | Maintenance and inspection activities. |
| **Comments:** | Access to space is restricted. No access gained during assessment. |

| Hazard Types | Risk Rating | Recommended Actions |
|---|---|---|
| Restricted entry and egress in an emergency | E | Wear a safety harness and remain connected to a lifeline at all times.<br>Ensure the standby person remains in constant contact with person(s) entering the space. |
| Oxygen deficiency whilst work in progress | E | Monitor the atmosphere within the space prior to entering.<br>Only enter the space if oxygen levels are within the safe range (19.5% to 23.5%).<br>Ventilate the space if required.<br>Continually monitor the atmosphere within the space during entry. |
| Build-up or excess of vapours such as hydrogen sulphide ($H_2S$) or carbon monoxide (CO) to concentrations above the workplace exposure standards (WES) | E | Monitor the atmosphere within the space prior to entering.<br>Purge and ventilate the space if required.<br>Continually monitor the atmosphere within the space during entry. |
| Build-up of organic vapours to within explosive limits | VH | Monitor the atmosphere within the space prior to entering.<br>Purge and ventilate the space if required.<br>Only enter the space if the concentration of any flammable vapours is less than 5% of its lower explosive limit.<br>Continually monitor the atmosphere within the space during entry.<br>Ensure no ignition sources are located within or introduced into the space. |
| Airborne dust concentrations above the WES | L | No action required. |
| Radiation (non-ionising and ionising) | L | No action required. |
| Noise generated at levels above 85 dB(A) | L | No action required. |
| Uncontrolled introduction of substances (e.g. steam, water, gases etc.) | E | Isolate all services within the space.<br>Ensure no vehicles operate in the vicinity of the entry.<br>Ensure the standby person is monitoring external weather conditions and any other factors that could impact the confined space. |

| Hazard Types | Risk Rating | Recommended Actions |
|---|---|---|
| Engulfment | E | Isolate all inflow pipes into the space.<br>Wear a safety harness and remain connected to a lifeline at all times. |
| Manual handling of covers, lowering equipment into pits | M | Ensure a two-person lift or lifting device is used when lifting or removing covers.<br>Use a winch to lower equipment into the space. |
| Mechanical hazards (e.g. entanglement, crushing, cutting, etc.) | L | No action required. |
| Skin contact with hazardous substances and surface contaminants | H | Wear appropriate PPE (e.g. gloves, long sleeve shirt and pants, boots and eye wear). |
| Slips and trips | H | Wear slip resistant boots. |
| Falls from height | VH | Wear a safety harness and remain connected to a lifeline at all times. |
| Electrical hazards | M | Portable electrical equipment should be protected through an RCD, located outside of the space. |
| Biological hazards (e.g. E-coli) | H | Wear appropriate PPE (e.g. gloves, long sleeve shirt and pants, boots and eye wear).<br>Wash hands and face after exiting the space. |
| Lack of lighting | H | Use appropriate and safe temporary lighting and/or torch within the space. |
| Heat and cold stress | L | No action required. |

**General Recommendations**

- Avoid entering the confined space if possible e.g. conduct cleaning activities from outside etc.
- Ensure access to the confined space remains secure at all times.
- Only authorised personnel are to access the confined space.
- All works and access in relation to confined spaces must be undertaken in accordance with AS 2865-2009.
- Ensure that the person responsible for the confined space work issues an entry permit prior to any persons entering the confined space.
- Ensure contractors are appropriately trained to undertake confined space entry and standby duties.
- Ensure site specific emergency rescue procedures and equipment are available and readily accessible during any confined space work.
- Ensure contractor safe work method statement (SWMS) addresses traffic management and working at heights issues.
- Ensure suitable PPE is available and appropriately maintained.
- Ensure a task specific risk assessment is conducted within the space prior to commencing any works.
- Although it was not possible to access the space at the time of the assessment, it has been deemed to be a confined space (in order to take a precautionary approach) and should continue to be treated as such until confirmed as otherwise.

# APPENDIX C: PHOTOGRAPHS

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| **Photo 01.** Southeast carpark, west area – storm water pits. | **Photo 02.** Southeast carpark, west area – unknown pits. |
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| **Photo 03.** Southeast carpark, east area – storm water pits. | **Photo 04.** Southeast carpark, north area – storm water pit. |
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| **Photo 05.** Southeast carpark, west grassed area adjacent to smoko area – unknown pit. | **Photo 06.** Southeast carpark, central grassed area – storm water pit. |

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| **Photo 07.** Eastern driveway – storm water pits. | **Photo 08.** Northeast corner of site, adjacent road – storm water pit. |
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| **Photo 09.** Northern driveway – storm water pits. | **Photo 10.** Northern driveway, central, adjacent roller shutter – unknown pit. |
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| **Photo 11.** North driveway, central – sewer pit. | **Photo 12.** North driveway, west area – unknown pit. |

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| **Photo 13.** Northern driveway, west area, grassed area – unknown pits. | **Photo 14.** Northern driveway, west corner – sewer pits. |
|  |  |
| **Photo 15.** Western driveway, north corner – sewer pits. | **Photo 16.** Western driveway, south side – sewer pit. |
|  |  |
| **Photo 17.** Southern truck loading area, adjacent bay 536 – unknown pits. | **Photo 18.** Southern truck loading area, adjacent bay 546 – unknown pits. |

# APPENDIX D: CONFINED SPACE SIGNAGE

**Example A:** Fixed confined space warning sign that can be established in a prominent position adjacent the confined space or on the access hatch.


**Example B:** Mobile confined space warning sign that can be established in a prominent position adjacent the confined space while works are in progress.