

Document Owner: Manager Customer Planning

## Blocked Gravity Main – Mechanised Clearance Procedure

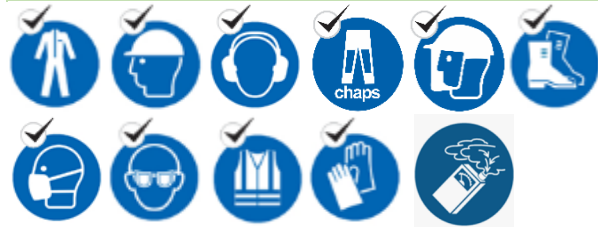
Procedures for clearing blocked stormwater and wastewater gravity mains.

### Health & Safety and Operational Information

#### Hazard Indicators



#### Personal Protection



#### Health and Safety Information

- Health and Safety documentation.
- Generic Traffic Management Plans or site-specific Traffic Management plan.
- Hazardous Waste
- Confined Space Entry
- Gas detection

#### Operation’s & Maintenance Documentation

- Corridor Access Requests (CAR) and WIP Permits (site specific or generic/global)
- Service plans (B4uDig)
- Design drawings
- Site plans
- Notification Calling Cards

#### Customer Information (Confidential)

- Blow Back at risk customers (WWL)
- Vulnerable customers (DHB supplied list)
- Priority customers (WWL)

#### Priority Customer Categories

- Schools and Childcare
- Commercial premises
- Hospitals
- Aged Care Facilities
- Correction Facilities
- Military Installations
- Oil and Gas Refineries

#### Emergency Procedure / Escalation

##### Emergency

- In event of service strike to utility/energy source (e.g. fuel, Gas, Power, Water etc.) report immediately to team leader
- Make “Site Safe” and isolate risks to people or property with resources at hand

##### Escalate if extra resources required or problems occur!

- Escalate to Team Leader and inform of the issues faced and/or expected resources required if necessary.

#### Additional Documentation

- Confined Space Access SOP

### Required Skills, Competencies (Qualifications and/or Certifications)

Competent persons only

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### Standard Operating Procedure

#### Required Equipment

Equipment and Information	Details
<b>Fully Equipped Vehicle</b>	Ensure vehicle, plant, equipment and materials appropriate to the day's work schedule is available
<b>Customer Information (Confidential)</b>	Blow back at risk customers list. Vulnerable and priority Customers Lists.
<b>Permit to work</b>	Do not enter manhole as it is a confined space and a permit to work is required prior to any entry
<b>Specialist Equipment</b>	Sucker Truck and jetting units. CCTV assessment equipment Tripod and safety harness Gas detector

#### Prepare to do the work

Action	Action Details
<b>Pre Start Process</b>	Complete the Daily Pre Start - Planning Reactive Maintenance.
<b>Site Induction</b>	If called as support crew, please complete site induction process. Also induct all other staff on the safety and protocols associated with the utilisation of sucker trucks and jetting equipment.
<b>Compliance</b>	<b>Traffic Management Plan</b> - Where required, TMP to be in place prior to work starting. TMP to be accessible on site.
<b>Wastewater overflow initial site assessment</b>	Assess the situation and determine if an overflow has occurred and the potential cause of the issue. If there has been an overflow caused by the blockage or by a network surcharge implement the Wastewater Overflow SOP. If issue is from a blockage undertake the tasks as detailed below. <b>If the situation meets the criteria for a wastewater overflow immediately inform your Supervisor and then commence repair and service restoration operations.</b>
<b>Identify blocked network section to be cleared</b>	Identify access manholes to be utilised to unblock network. Utilise the iPad embedded GIS to locate all network manholes. Trace flow restrictions / blockages downstream to open free flowing network and upstream to determine location of blockage.
<b>Identify overflow locations.</b>	Review catchment on GIS to ensure the understanding of the flow direction and for stormwater outlets locations.
<b>Identify if additional issues due to blockage</b>	If properties are flooded, have the potential to flood or suffer from wastewater overflow raise separate work order to deal with property damage mitigation and use emergency / escalation process.
<b>Estimate Service Off period</b>	Based on event scale and issue encountered, provide an estimated timeframe for closure of network. Update the work order, work log with this information and save work log. Synchronise iPad.
<b>Customer Notification</b>	Inform affected properties of the blockage via door knock and / or letter drop.
<b>Blow Back List - Pre-flushing notification</b>	Check affected network service area against current Blow Back list. If possible, notify of closure and intent to flush system and expected timeframe for non-utilisation, provide at risk properties with Blow back prevention instructions sheet.
<b>Alternate supply and Vulnerable and Priority Customers</b>	Dependant on nature of event and customer needs arrange alternate service provision for Vulnerable and Priority Customers. See Alternate Wastewater Service Process Raise a child work order for provision of this service. Synchronise iPad.

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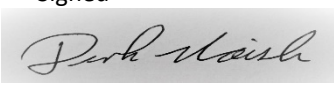

**Perform the work**

Action	Trade	Action Details
Maintenance		Undertake all tasks required in the Pre-Start - Planning for Reactive Maintenance.
Maintenance		Locate first clear downstream manhole.
Health & Safety Record		If required undertake Gas safety check using appropriate meter. Record gas detector readings
Health & Safety		If required ventilate manholes until gas readings are within permitted limits. If manhole entry is required, undertake procedure in accordance with <b>Confined Space Access SOP. A permit to work is required prior to accessing any manhole.</b>
Maintenance		Check flow at upstream & downstream openings and compare. Install a debris trap at the downstream manhole. Complete unblock using the penetrator head and best practice unblock procedure. If fat or roots, clean the pipe with appropriate cleaning head and methodology (including using vacuum to ensure no solids travel downstream) until 90% pipe bore is achieved. Flush the mains pipes until adequate downstream flow is observed and all debris (Silt, Fats and other residues etc.) is removed. Select service restored status on the work order
Record		Record volume of debris removed during cleaning (m3) in the work order on the iPad
Record		Record Jetting pressure level required to flush network (kPa) in the work order on the iPad
Health & Safety		On completion of clearance operations <b>replace all manhole covers and secure appropriately.</b>
Assess need for further investigation		Investigate the materials removed to determine the root cause of the blockage. If structural damage, siltation and / or root penetration is believed to have caused the blockage request a CCTV assessment of the pipeline to enable accurate pipe failure assessment. Generate new work order for the task as per child work order process.
Record		Provide a count of customers who have lost service due to the issue : Residential Customers Commercial Customers Public Service Customers Create a new work log <b>on the iPad and record</b> the numbers of affected customers.
Health and Safety		Dispose of all contaminated liquids, effluent and sludge at the closest Wastewater Treatment Plant.
Health and Safety		Decontaminate/disinfect the affected area with Jeyes fluid, liquid chlorine and hydrated lime (as most suitable) for odour.
Inspection		A visual inspection of the site must be carried out to ensure NO wastewater or sludge remains and blockage is removed.
CCTV inspection		Preferable from the upstream manhole, camera survey the pipe to ascertain the cause of the blockage. Record this survey on the CCTV assessment form completing all required information. Record Damage, Cause and Remedy Failure codes as appropriate to the issue discovered from review of the CCTV footage on the work order.
Escalation and child work orders		If structural damage/issues are discovered, assess if immediate excavation and repair or root pruning is required to prevent further blockages and overflows from occurring. Escalate issue to supervisor for decision on next actions. SSupply the recorded survey footage to supervisor, this will be utilised to inform Client Representative.

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Action	Trade	Action Details
		Where appropriate equipment is available on site and approval to continue the repair is agreed complete operations as required.
<b>Create additional works order</b>		If required generate new work order for the additional assistance tasks as per child work order process
<b>Final site check</b>		<b>Ensure all manhole covers have been refitted and secure appropriately.</b>
<b>Closure</b>		Carry out work order closure procedures as per Reactive Maintenance - Generic Maintenance Procedures.

Approved to Issue for Testing: Planner Name Dirk Naish .....	Tested by: Serviceperson Name .....	SOP Finalised Team Leader Name Blair Dynan .....
Signed  .....	Signed .....	Signed  .....
Date 21/03/2022 .....	Date .....	Date 10/5/22

