

Reference Number: 2024/1166

15 January 2025

██████████  
██

Tēnā koe ██████████

Thank you for your email dated 20 November 2024 requesting under the Local Government Official Information and Meetings Act 1987 (LGOIMA), information relating to fluoride in water. Please see outlined below a response to each part of your request.

***Implementation plan (commissioning plan)***

Please see attached, noting some information has been withheld under Section 7(2)(a) protect the privacy of natural persons.

***Test plan (where water test samples are collected), when and who they are sent to for testing (independent test lab)***

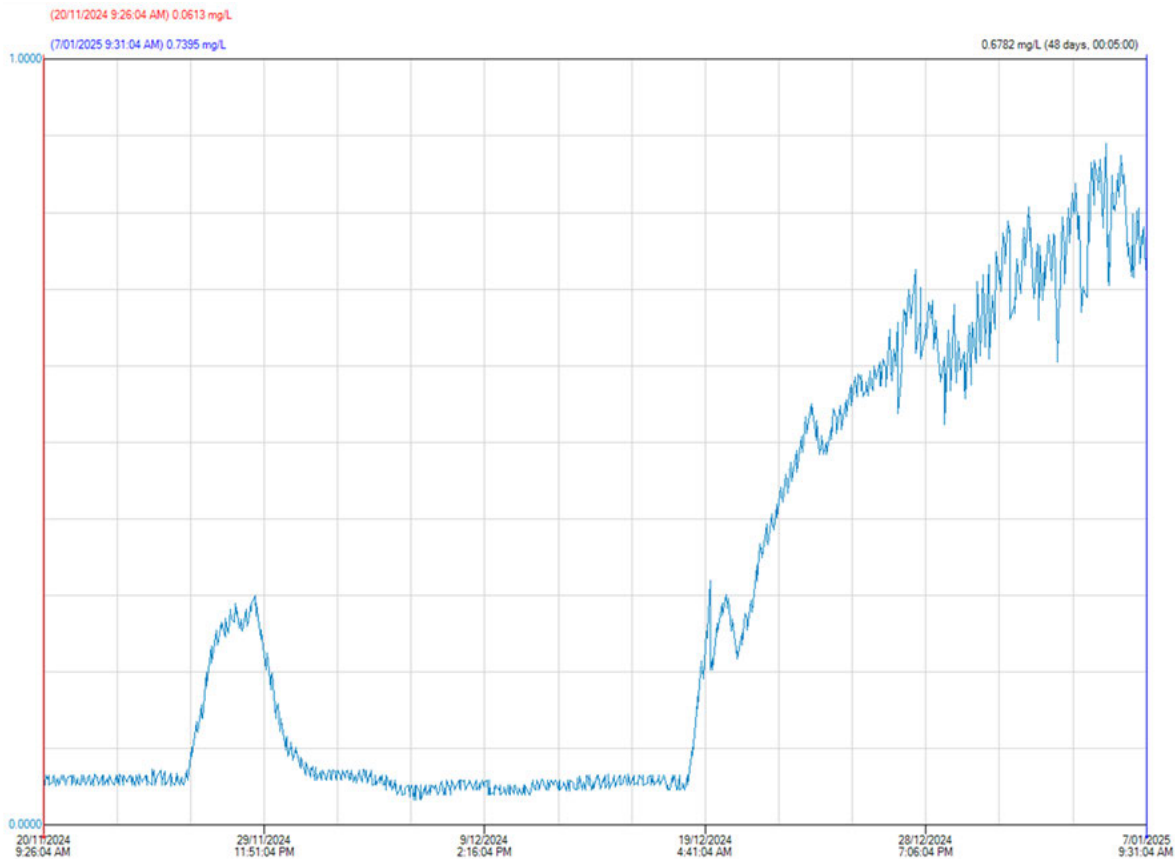
We continuously monitor fluoride levels at several locations in the water treatment plant in accordance with Taumata Arowai drinking water quality assurance rules.

There are two accredited Labs we use being;

- Central Environmental Labs, Palmerston North
- Eurofins Wellington

***Copies of the testing results- ideally these will be placed on your website.***

The graph below shows the fluoride content in the treated water supplied to Levin town in parts per million (ppm) between 20 November 2024 and 07 January 2025.



The Ōhau River water already contains natural fluoride between a value of 0.06-0.08 ppm, which is why the value in the graph is above zero during periods when fluoride was not being added to the water supply.

***Additionally, can you please supply me a copy of your emergency plan, i.e. what you will do, who will be informed and when / if the testing finds the water is now toxic by your definition of over 1.0 ppm.***

Please see attached emergency plan, noting some information has been withheld under Section 7(2)(d) avoid prejudice to measures protecting the health or safety of members of the public.

***Additionally, how will you safely remediate the issue?***

Please see attached emergency plan, noting some information has been withheld under Section 7(2)(d) avoid prejudice to measures protecting the health or safety of members of the public.

***How will communicate this - your current communication is sadly poor.***

We have communicated regularly with residents since the Ministry first issued its fluoride mandate in 2022. Communications have included website updates, media releases, and social media posts.

There is extensive information to be found on the website, including when fluoridation began and at what dosage, as well as a question and answer section which addresses, among other issues, safety concerns around fluoride.

Please visit our [website](#) and type 'fluoride' into the search engine to view our communications.

In the event of any emergency we have well-established communications protocols. Channels available include those mentioned above, as well as radio broadcasts, press conferences, and Emergency Mobile Alerts sent directly to mobile phones.

You may also find the following information helpful:

In 2022 Horowhenua District Council was one of 14 local authorities that received a directive from the Director-General of Health under The Health (Fluoridation of Drinking Water) Amendment Act 2021 to start fluoridating its drinking water supply.

The commissioning work for the fluoride project at the Levin Water treatment plant started in early November 2024. Continuous chemical dosing into the treated water began on 17 December.

From 17 December to 31 December the concentration of fluoride, in the form of the chemical hydrofluorosilicic acid, was gradually increased from 0.2-0.3 parts per million (ppm) to 0.7-1.0 ppm, as mandated by the Ministry of Health.

Please note that we have a dedicated tap supplying water to which no fluoride or chlorine has been added at the Water Treatment Plant on Gladstone Road – there is no charge for this service.

You are entitled to seek an investigation and review by the Office of the Ombudsman. Information about how to make a complaint is available at [www.ombudsman.parliament.nz](http://www.ombudsman.parliament.nz) or freephone 0800 802 602.

Horowhenua District Council publishes responses to Local Government Official Information and Meetings Act 1987 (LGOIMA) requests that we consider to be of wider public interest, or which relate to a subject that has been widely requested. To protect your privacy, we will not generally publish personal information about you, or information that identifies you. We will publish the LGOIMA response along with a summary of the request on our website. Requests and responses may be paraphrased.

If you would like to discuss this decision or any of the information provided as part of this request, please contact Daniel Haig (Group Manager Community Infrastructure) on [danielh@horowhenua.govt.nz](mailto:danielh@horowhenua.govt.nz), or [LGOIMAOfficer@Horowhenua.govt.nz](mailto:LGOIMAOfficer@Horowhenua.govt.nz).

Ngā mihi



Ashley Huria  
**Executive Sponsor**

# Levin HFA Install

## Commissioning Plan: Fluoride Dosing

**Main Contractor: Filtec**  
**Client: Horowhenua DC**

**By FILTEC Ltd,**  
**Mt Wellington, New Zealand**

Reference: 11397_Levin_Fluoride Plant_Commissioning_Plan					
Ref.	Date	Description	By	Checked	Approved
0	07/10/24	Commissioning Plan	██████		

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## 1. INTRODUCTION

The purpose of this working document is to guide the reader through the chemical dosing commissioning process for the Levin HFA install.

Relevant design documents that should be read in conjunction with this commissioning plan include, but are not limited to, the Piping and Instrumentation Diagram (P&ID), and Functional Description.

The HFA plant consists of the following areas:

- HFA loading area
- HFA bulk tank
- HFA day tank
- Dose pump
- Dose point
- Fluoride analysers
- Flushing water

## 2. COMMUNICATION

On site communications will be as per Table 1 below.

Project Manager	██████████ (Filtec Ltd.)	██████████
Project Engineer	██████████ (Filtec Ltd.)	██████████
Project Engineer	██████████ (Filtec Ltd.)	██████████
Electrical	██████████ (BEC Ltd)	██████████
Automation	██████████ (CR Automation)	██████████
Process	██████████ (Filtec Ltd.)	██████████
Project Engineer	██████████ (Filtec Ltd.)	██████████

*Table 1 – Communications Matrix*

All on-site communications will be via mobile phone and radio comms where required.

### 3. RESOURCES AND RESPONSIBILITIES

Filtec will be leading/overseeing the commissioning activities; this commissioning plant will form part of the overall commissioning plan.

<b>Company</b>	<b>Role</b>	<b>Description of Responsibilities</b>
Filtec	Commissioning lead	Overall Commissioning planning and oversight. Scheduling of commissioning activities and client communication.
Filtec	Process and Design	Process and Design Commissioning including defining flow rates, range and settings of instruments, defining alarms and set points. Optimising and tuning of plant. Managing Functional Description and updating as required. Oversite and sign off of FAT and SAT
Filtec	Mechanical	Mechanical commissioning of dose pumps and dosing system, carry water and flushing. Including pressure testing, set up of instruments, setting of PRV and PSVs.
BEC Ltd & CR Automation	Electrical and Automation	Electrical and Automation commissioning: including IO, Point to point testing, Development of Software and SCADA. Lead of SAT and FAT.
Plant Operations	HDC & Downer	Ensure existing plant remains operational.



## 4. COMMISSIONING HEALTH AND SAFETY PLAN

Commissioning activities are part of the construction contract and are covered by the Health and Safety Management Plan.

All personnel are to understand the requirements of this Commissioning Plan as well as the Project Health and Safety Management Plan.

Commissioning activities shall be planned using Job Safety and Environmental Analysis. All personnel involved in commissioning shall review, be briefed and sign onto the JSEA.

### 4.1. Emergency Response Plan

Filtec First Aiders: TBD

Emergency Services: 111

Nearest Hospital: Horowhenua Health Centre, 62 Liverpool Street, Levin 5510

### 4.2. Evacuation Plan

Responsibility for emergency coordination is your Site Manager. Specific site emergency information will be available in the site specific plan.

A **long air horn blast or vehicle horn blast** will sound if an emergency evacuation of the project is required as a result of:

**FIRE, EARTHQUAKE, SERIOUS ACCIDENT, STRUCTURAL COLLAPSE, TSUNAMI, EXPLOSION, AVIATION INCIDENT, HAZARDOUS SPILL OR PRACTICE EVACUATION**

If this warning sounds:

- Shutdown all plant and equipment
- Notify workers in your area.
- All personnel are to proceed **immediately** to the safest identifiable route to the safe assembly point.
- Check that all employees are present by taking a roll call off the site register. If anyone is missing, notify emergency services.

### 4.3. Assembly Area

As per HDC Emergency Plan – Outside main entrance gate to WTP.

#### 4.4. Hazard Identification and Management

The Filtec Ltd. JSEA and Project Health and Safety Management Plan will be used onsite for all commissioning works. The JSEA will detail hazards and their management.

SDS's are available for chemicals. See **Error! Reference source not found.**

#### 4.5. List of High-Risk Activities

Task	Hazard	Controls	Classification of control (E = eliminate, M = minimise)
Livening of electrical systems	Electrical shock	Qualified personnel, Isolation tags, PPE	M
Livening of system	Water Leaks	Limited Access, Isolation tags, PPE	M
Hot Commissioning	Chemicals	Chemical Handlers Limited Access PPE	M

*Table 2 – High-Risk Activities*

#### 4.6. Isolation Procedures

Isolation Permits will be managed by Filtec as required.

##### **Isolation request:**

All Isolations on the WTP are to be managed by Filtec. Isolations on the tie-in to the existing infrastructure are managed by Filtec and HDC.

##### **Isolation:**

Isolations on the WTP are to be performed by HDC for Mechanical.

##### **Receipt of Isolation:**

The person performing the isolation shall prove the isolation by showing the receiver the isolation points. The receiver shall place a padlock on the isolation point, or a lockout bar for multiple isolations.

##### **Cancellation:**

The receiver shall remove the lock once the work is complete and notify the nominated person to remove the isolation.

The Isolation Permit shall be signed off as complete once the isolations have been removed.

##### **Equipment**

Isolation locks and/or chains are to be used whenever possible. All isolations are to be tagged with the isolation details on a "DANGER" tag.

In the instance where a lockout point has not been designed into the system, such as on an electrical isolation where a permanent master key is the only lockout point, a tag is to be

mounted on this location, and the cables disconnected. The risks involved in the isolation are to be assessed on a case-by-case basis.

#### **4.7. Hours of Work**

Filtec will work between 8.00 am and 5.30 pm Monday to Friday. Unless specific permission has been given to work outside of these hours.

#### **4.8. Working Alone**

Filtec's project policy is that none of our staff will conduct physical High-Risk Work alone.

## 5. PHASING OF COMMISSIONING

The chemical commissioning of the HFA system will commence after the installation work has been completed.

Phasing of commissioning shall be as per commissioning check sheets detailed below.

1. Pre-Commissioning
2. Commissioning
  - a. Wet
  - b. Hot

### 5.1. PRE-COMMISSIONING

Before start-up and commissioning, it is essential to establish certain conditions and ensure a minimum safety level to achieve smooth operation. These are covered in the following points and upon inspection, problems shall be eliminated prior to start up.

#### 5.1.1. Pre-Commissioning

Pre-commissioning activities that will be completed offsite will include:

1. Automation - FAT Completed (CR Automation)

Pre-livening activities on site Electrical, Automations.

1. Complete a visual inspection of the entire installation and mark-up the PID with any changes to create As-Built doc.
2. Check that all valves are in the correct position and orientation.
3. Electrical connections and pre-commissioning

HSNO certification to be arranged by Horowhenua DC. Once approved, HDC to arrange delivery of HFA to site to coincide with Hot Commissioning.

## 5.2. WET COMMISSIONING

Wet commissioning activities are activities checking that the plant is functioning correctly in a state with where chemicals have **not** been introduced yet (water only). These activities include:

1. Pressure tests and flushing (use handheld pressure test pump etc)
2. Liveness instruments and equipment – Filtec, CR Automation & BEC Ltd.
3. Set up all instruments where possible
  - a. Dosing pumps
  - b. Transfer pumps
  - c. Fluoride analyser
  - d. Level transmitters and radar transmitters
  - e. Dosing cabinet ventilation fan
4. Set PRVs and PSVs – Filtec
  - a. PRV on fluoride analyser sample line
  - b. PSV on dosing line
5. System tests/procedures with introduction of water- Filtec, CR Automation & BEC Ltd
  - a. Transfer pump to bulk tank
  - b. Actuated valve for bulk tank transfer pump
  - c. Transfer pump to day tank
  - d. Dosing pump from day tank
  - e. Calibration of dose pump using calibration tube
  - f. Level switches:
    - i. Bulk tank high
    - ii. Bulk tank low
    - iii. Day tank high
    - iv. Day tank low and very low (rigid suction lance)
    - v. Day tank bund
    - vi. Bulk tank bund
  - g. Radar sensors:
    - i. Bulk tank (sensor and display)
    - ii. Day tank
  - h. Air relief valves
  - i. Drains
6. Scaling instruments - Filtec, CR Automation & BEC Ltd
  - a. Level switches and radar transmitters
  - b. Fluoride analysers ( ProMinent -TBC)
7. Controls simulation and functional checks (SAT) – CR Automation (Filtec available for mechanical issues)
  - a. Monitoring and alarm tests – Filtec & CR Automation (see FD doc for alarm checklist)
  - b. Sequence testing - Filtec & CR Automation
  - c. Check safety checks are functional (calculations, alarms, for day tank volume used vs daily treated water volume, and for fluoride analyser readings vs daily treated water volume)
  - d. Update FD with any changes to alarm setpoints, sequences, etc during this process.

Wet commissioning will be complete with the pipework filled with water. No chemicals will be introduced yet. Dose pumps will be run with service water. Drain dose line after wet commissioning and blow out with compressed air to dry before filling with HFA.

Noe: At conclusion of Wet commissioning all pipelines and tanks need to be drained of all excess water.

### **5.2.1. Equipment Settings**

The settings for all equipment are to be documented on the relevant Item Check Sheet.

## **5.3. HOT COMMISSIONING**

Hot commissioning activities are activities carried out with the system live and with Chemicals.

- Chemical Delivery by Ixom overseen by HDC Operations team.
- Prime Dosing lines – Manually run dose pump
- Run Dose system at 25% of target setpoint until consistent dose is observed in the system.
- Run Fluoride analysers.
- Check fluoride post-tank with a handheld.
- Run system overnight to ensure independent checks are both working correctly.
- After confirming the above, increase fluoride setpoint until target is reached consistently.
- Check fluoride analyser calibration, post-tank fluoride handheld, and independent checks again the next day.

## **6. CHANGE CONTROL**



Upon completion of Commissioning, the commissioning folders will be updated with the completed commissioning check sheets. The Commissioning documentation will be submitted to the Engineer for QA records.

**Additional Comments**




**Levin  
Water Treatment Plant**

**Emergency  
Preparedness Plan  
and  
Hazardous Chemicals**

**LEVIN WATER TREATMENT PLANT**

Review date November 2024  
Next review August 2025

## **EMERGENCY PREPAREDNESS PLAN**

### **ACTION IN EVENT OF AN EMERGENCY**

#### **EMERGENCY PROCEDURES CO-ORDINATOR**

#### **EMERGENCY EVACUATION PROCEDURES**

#### **Fire Warden/Duty Operator**

When the alarm (continued sound of horn) has sounded proceed to EMERGENCY ASSEMBLY POINT as detailed below,

**DO NOT PANIC.**

The Fire Warden/Duty Operator for the area will count staff numbers to ensure everyone in the area is present.

#### **EMERGENCY ASSEMBLY POINT**

There will be one EMERGENCY ASSEMBLY POINT located at the **MAIN EXIT GATE OPPOSITE NORTH CONCRETE RESERVOIR.** Assess if safe due to wind direction (i.e. gas or chemical leak), if not safe head Across and Upwind.

#### **CENTRAL CONTROL AREA**

The central control area will be the Emergency Assembly point. On arrival of the Emergency Service the Fire Warden/Duty Operator will pass on all relevant information to the emergency service.

#### **ALL CLEAR / RE-ENTRY**

If an emergency service is called it will be their responsibility to give all clear and allow re-entry into the buildings. If no services have been called it will be the Fire Warden/Duty Operator's responsibility to give the all clear.

# LEVIN WATER TREATMENT PLANT EMERGENCY PREPAREDNESS PLAN

## ACTION IN EVENT OF AN EMERGENCY

### **FIRE**

#### **CALL 111**

Only in **SAFE** circumstances should any attempt be made to extinguish the fire, if there is any doubt ring the Fire Service, then follow the Emergency Procedures.

The Fire Warden/Duty Operator will isolate the area and determine an appropriate Hazardous Zone or No Go Zone.

It will be the Fire Service's responsibility to give all clear & allow re-entry into the buildings.

If clients or visitors are within your work area it is your responsibility to assist them to the nearest safe exit and the emergency assembly point.

#### **IMPORTANT POINTS TO REMEMBER**

**Know the location of all exits.**

**Know where the fire extinguishers and reels are located.**

**Follow Fire Warden/Duty Operators instructions.**

**If caught in a building that is on fire and smoke is present, crawl low at floor level, this is where the clear air will be.**

#### **DON'T PANIC**

### **EARTHQUAKE**

If an Earthquake hits, **IMMEDIATELY Drop, Cover and Hold** until the shaking stops, then follow the Emergency Evacuation Procedures. In safe circumstances, help others who may be trapped or injured. If people are trapped and cannot be freed, then evacuate and inform the Fire Warden/Duty Operator, so they can send the emergency services or a team in to assist the person.

# LEVIN WATER TREATMENT PLANT EMERGENCY PREPAREDNESS PLAN

## ACTION IN EVENT OF AN EMERGENCY

### **Tsunami**

#### What to do when a tsunami is imminent

- Signs include:
- You've felt a large earthquake.
- The sea draws back – like an unusually low tide – or you hear a strange noise from it.
- Warnings may come in the form of:
- Official warnings from Civil Defence. These may be via the emergency services, TV or radio, loudhailer, or a siren.
- Word of mouth. If friends or neighbours tell you they've heard a tsunami warning, don't wait around to confirm this – get to higher ground first.
- What to do:
- 1. If you're near the coast, leave for higher ground immediately.
- 2. If you can't get higher, go at least 1.5 kilometres inland.

Walk or bike if possible. If you travel by car, you may get caught in a traffic jam. If you do need to drive, keep going until you're well out of the evacuation zone, to make room for others behind you. If you decide to leave your car and walk, park it off the road.

- 3. If you can't get to higher ground, go to an upper storey or climb onto a roof or tree.

## **BOMB THREAT**

### **CALL THE POLICE ON 111**

Follow Emergency Evacuation Procedures **IMMEDIATELY**,  
**DO NOT ENTER ANY BUILDINGS**

The Fire Warden/Duty Operator may decide to move further away from buildings or even off site.

The Police will be responsible to give all clear & re-entry into buildings.

## **MEDIA CONTROL**

In the event of an emergency there is likelihood that the media might get involved. To prevent rumours and exaggerations all media must be directed to the Local Waters Business and Operations Manager. If they are not available, then the media must be directed to the Commercial & Operations Manager.

## **FIRST AIDERS**

All Treatment staff are first aid trained. First Aid training is refreshed every two years to maintain certification status.

## **SHUT DOWN PROCEDURES**

After assessing the danger, if it is safe to do so you should shut down electrical equipment, turn off computers, switch off valves and check rooms shutting doors behind you.

**At no time should you endanger yourself, if you are in any doubt go to the Emergency Assembly Point.**

**LEVIN WATER TREATMENT PLANT  
EMERGENCY PREPAREDNESS PLAN****ACTION IN EVENT OF AN EMERGENCY  
EMERGENCY NUMBERS**

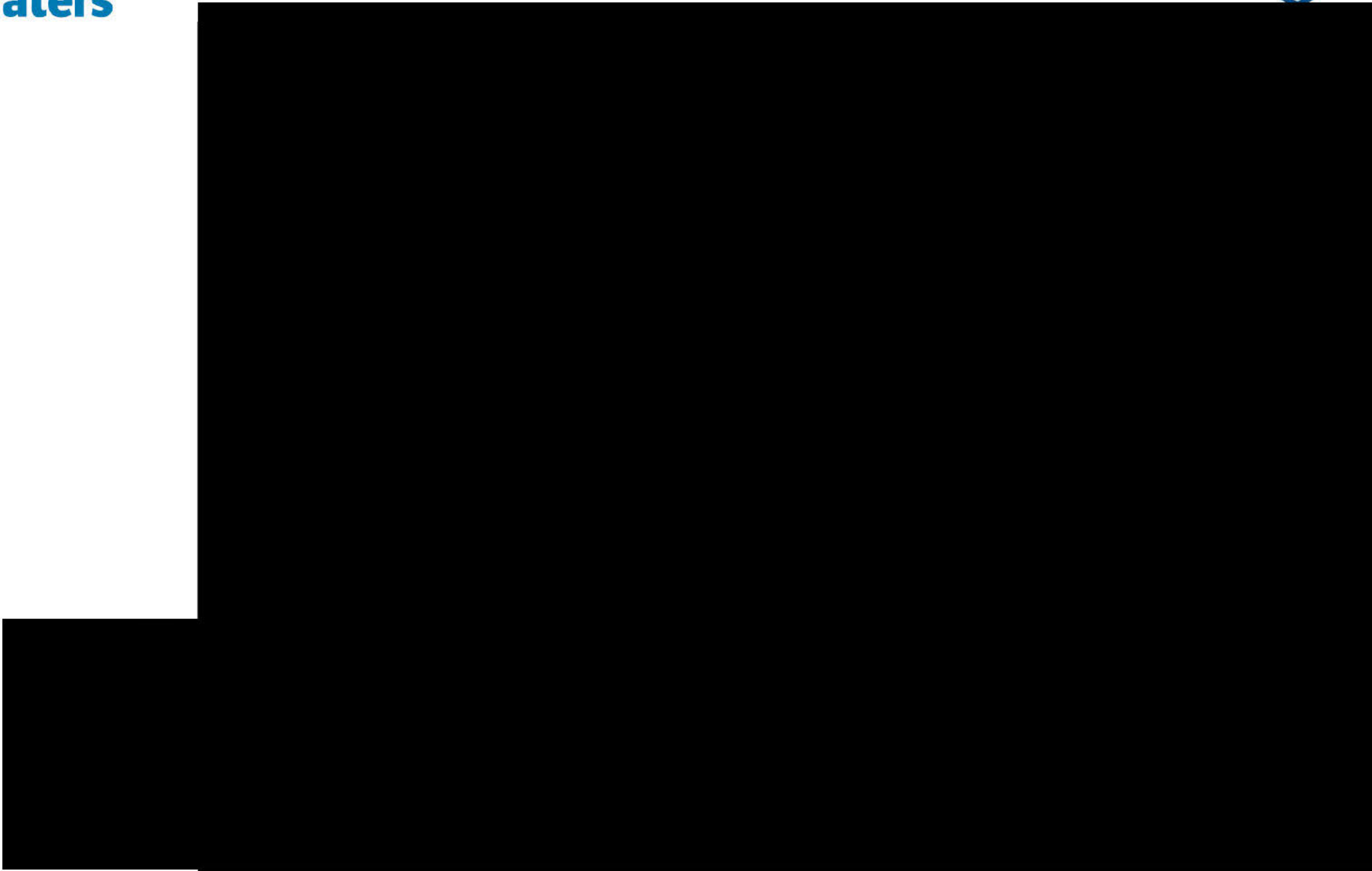
<b>FIRE SERVICE</b>	111 Emergencies
<b>POLICE DEPARTMENT</b>	111 Emergencies
<b>AMBULANCE</b>	111 Emergencies
<b>CIVIL DEFENCE</b>	366 0999
<b>POWER COMPANY</b>	Powerco 0800 272 727 (Power lines) Electra 0800 567 876 (Faults)
<b>GAS COMPANY</b>	First gas 0800 802 332
<b>HORIZONS</b>	0508 800 800
<b>NATIONAL POISONS CENTRE</b>	0800 764 766
<b>WORKSAFE</b>	0800 030 040
<b>IXOM ERS</b>	0800 734 607

**Bulk Chemical Storage**

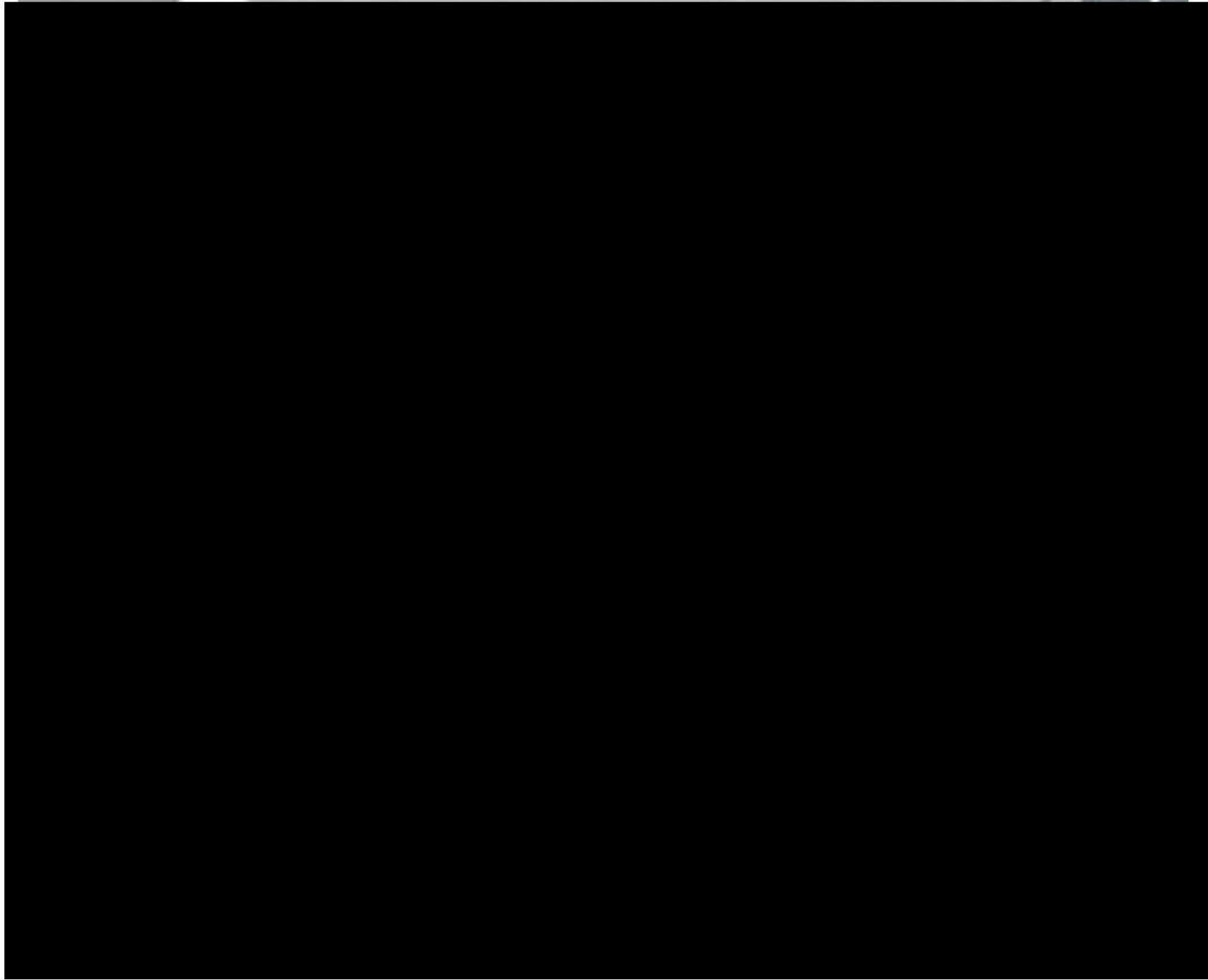
**Handling**

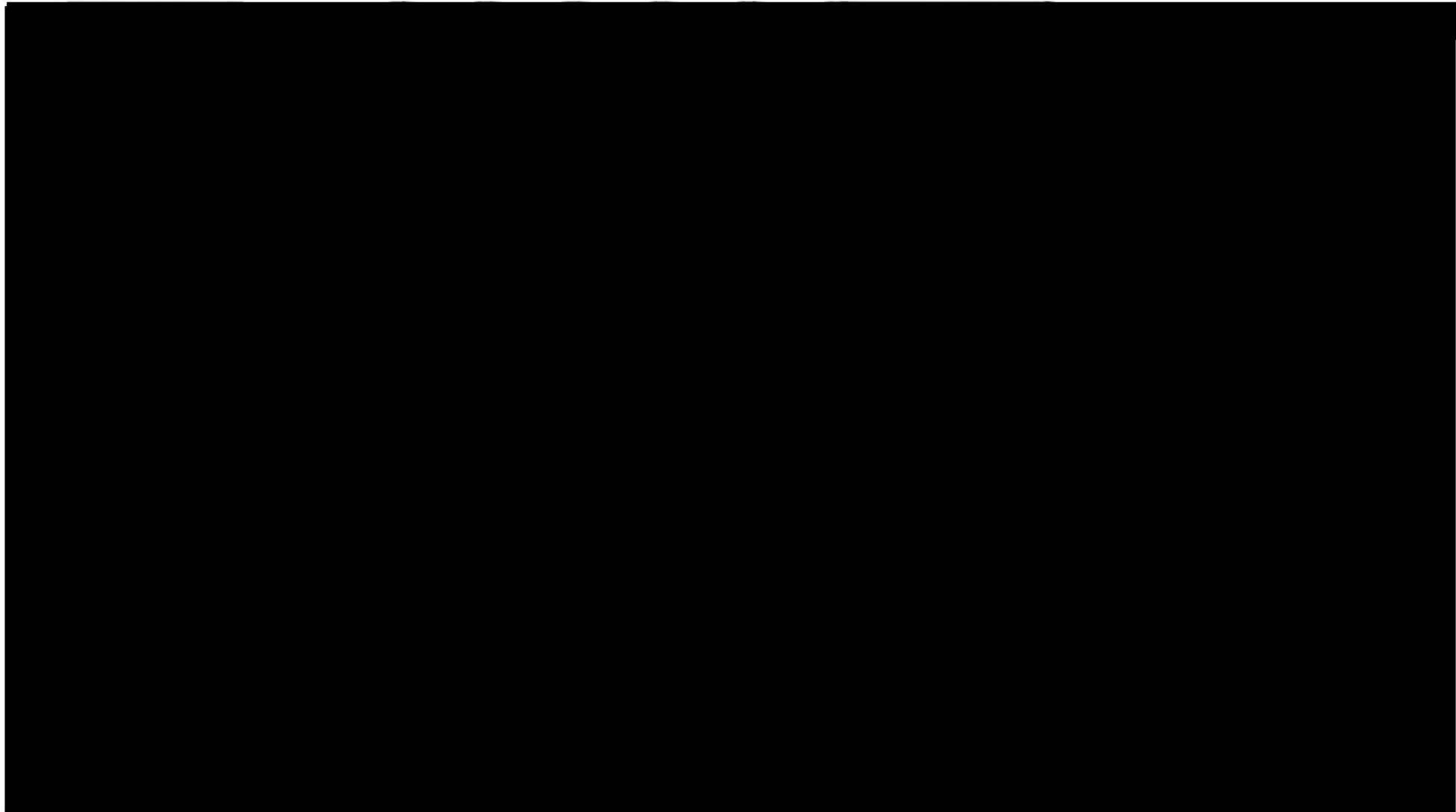
**&**

**Emergency response**









[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

## Roles, Responsibilities and general instructions for delivery of all bulk chemicals

- Treatment Operator or suitably trained personnel (Person accepting the delivery - The Authorised Person or Charge Operator) will be in charge of the area and remain in control at all times
- **Delivery Driver** (person authorised to deliver chemical) will follow their own procedures for delivery and unloading but following all site policies and instructions as advised by the Authorised Person/ Charge Operator
- In the event of emergency, the **Authorised Person/ Charge Operator** will evacuate all personnel to the Assembly/ muster point and call the emergency services and coordinate the response
- Receiving of bulk liquid chemicals by road tanker truck or truck, shall be co-ordinated by the Treatment department's designated person/s responsible and authorised for receiving such goods. Only those persons trained and authorised shall make the required chemical identification and perform or supervise the unloading of hazardous chemicals.
- Prior to unloading, the authorised person shall inspect the accompanying papers, check the load and ascertain its identity.
- The Authorised Person shall direct the driver to the proper unloading area and will check the use of the required PPE, defined by the minimum standards in addition to the requirements according and appropriate to the chemical being discharged
- At the receiving area where chemicals are unloaded the Operator (Authorised Person) and delivery driver must:
  - Use SDS's to identify those chemicals that are dangerous. The SDS should tell you if the potential hazard requires proximity of an emergency shower and/or eye wash unit.

# Local Waters

- The unloading delivery driver should verify the location of all fittings before unloading
  - All the filling lines are clearly identifiable
  - Connection hoses must be in sound working order (e.g. no splits, damage, missing seals)
  - Appropriate (PPE) must be worn during the discharging time as defined in the SDS and risk assessment
  - A safety shower and eyewash station is located on the same level as the unloading area, must have unobstructed access and clearly marked. Charge operator to identify the position of such showers before start of the unloading
  - The storage tank and the (un)loading points must be properly identified by a label explaining the hazards of chemicals and its name and / or the chemical abbreviation
  - No combustible materials should be stored close to the chemical storage or unloading area.
- The Authorised Person shall be responsible for control of keys or combination to locking devices
  - The delivery driver must set the handbrake and perform stability checks of the delivery vehicle before starting the unloading
  - Tanker trucks should be unloaded, in daylight, if possible. Adequate lighting to be fully operational if these operations must be carried out when dark
  - Before unloading, personnel should confirm the storage tank is properly vented, the vent line is clear and open, and that the storage tank(s) will hold the entire contents to be unloaded
  - Before the unloading always test (activate) the safety shower and/or eye wash unit to flush the lines and in order to verify operation
  - Tanker and delivery trucks should be unloaded in the designed spillage containment area
    - The delivery driver may make connection to the tanker truck, an authorised person will be present to identify, check and supervise the connection and unloading. In receiving areas where more than one (1) chemical is stored
    - Upon completion of unloading, the receiving device or the enclosure shall be locked and the key returned to its designated security location or other equivalent action be taken to secure the chemical storage area
    - Where multiple deliveries, more than two (2) types of chemicals are to be delivered; the process should commence from the start with cross checks undertaken prior to delivery/ discharge commencing

# Local Waters

- Emergency personal protective equipment for the body, eyes, face, etc., and / or appropriate respiratory gear shall be immediately available in case of emergency.
- Check storage and labelling is clearly displayed each time a delivery takes place to minimise the hazards associated with accidentally mixing incompatible chemicals

## Chlorine gas

Refer to attached Safety Data Sheet (SDS) for detailed information and actions in an emergency (below is a summary of key information and actions in the event of an emergency – the SDS should be consulted for detailed information relating to the specific chemical information)



OVERALLS, CHEMICAL GOGGLES, SAFETY SHOES, FACE SHIELD OR AIR MASK, GLOVES (Long) \* Not required if wearing air supplied mask



Wear overalls, chemical goggles, full-face shield, elbow-length impervious gloves. Use with adequate ventilation. If determined by a risk assessment an inhalation risk exists, wear an air-supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use

### Fire Fighting Measures      Hazchem or Emergency Action Code: 2XE

Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

#### **Specific hazards arising from the substance or mixture:**

Non-combustible, but will support combustion of other materials. Oxidizing substance.

#### **Special protective equipment and precautions for fire-fighters:**

Not combustible, however will support the combustion of other materials.

Keep containers cool with water spray. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding.

If safe to do so, remove containers from the path of fire. Only move cool cylinders. Do not approach cylinders suspected to be hot.

Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure. If unable to keep cylinders cool, evacuate area.

### Accidental Release Measures

# Local Waters

**Emergency procedures/Environmental precautions:** Clear area of all unprotected personnel. Evacuate personnel from downwind areas. Wear protective equipment to prevent skin and eye contact and inhalation of vapours/dusts. Avoid breathing in vapours. Work up wind or increase ventilation. Wear self-contained breathing apparatus. Shut off leak, if possible, without risk. Work up wind. Use water spray to disperse vapour. **DO NOT** spray water directly on the leak, liquid chlorine or chlorine container. If safe to do so, rotate container so that gas and not liquid escapes. **SMALL SPILLS:** Allow liquid to evaporate. Seek specialist advice. For **large spills** notify the Emergency Services.

**Chlorine gas only becomes visible at high concentrations.**

**Personal precautions/ Protective equipment/ Methods and materials for containment and cleaning up:** clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Avoid breathing in vapours. Work up wind or increase ventilation. Air-supplied masks are recommended to avoid inhalation of toxic material. For gas leak, **DO NOT** spray water directly on the leak or chlorine container. Use fire hoses equipped with fog nozzles to disperse gas downwind. For liquid: Contain - prevent run off into drains and waterways. Use fog nozzles as before. **Do NOT** allow any water to fall onto a pool of liquid chlorine as this will increase gas cloud. If safe to do so, cover with large plastic sheet. Where possible vapour knock down water should be contained.

## Chlorine Delivery Procedure

Once delivery timeframe is confirmed, the following tasks shall be carried out **ONLY** by an approved handler:

- The chlorine storage room shall be prepared for delivery
- The cylinder that is to be replaced shall be disconnected using the chlorine cylinder change-over procedure. The valve protection cap shall be installed, and the cylinder shall be placed on the concrete pad outside the chlorine storage room
- Upon arrival at the site, the delivery driver should contact the approved handler. The approved handler shall inform the driver of the delivery procedure
- Appropriate PPE should be donned prior to inspection and delivery
- Prior to unloading, an approved handler shall check the cylinder(s) is in good condition and defect free
- The cylinder(s) shall not be moved if the valve protection cap is not in place
- Only the truck driver or approved operator shall, when required, fit the approved lifting beam and operate the HIAB
- The cylinder shall be stored using first in, first used method
- Valve protection caps shall be left on until the cylinder is to be connected
- All 920kg cylinders are to be secured on the designated trolley in the chlorine storage room only
- Once delivery is complete, an approved handler shall update the Chlorine Tracking Sheet

**DO NOT**

# Local Waters

- Handle chlorine gas cylinder/s if you are not trained and don't have a current approved handler certificate
- Ignore minor gas leaks
- Lay bottles on their sides
- Have bottles without valve protection caps not connected to the dosing system
- Smoke around chlorine bottles



## Hydrogen Peroxide

Refer to attached Safety Data Sheet (SDS) for detailed information and actions in an emergency (below is a summary of key information and actions in the event of an emergency – the SDS should be consulted for detailed information relating to the specific chemical information)



### Individual protection measures, such as Personal Protective Equipment (PPE)

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS



Wear overalls, chemical goggles, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots.

Always wash hands before smoking, eating, drinking or using the toilet.

Wash contaminated clothing and other protective equipment before storage or re-use. If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

### Fire Fighting Measures Hazchem or Emergency Action Code: 2P

#### **Suitable Extinguishing Media:**

Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder)

#### **Specific hazards arising from the substance or mixture:**

Oxidizing substance. Non-combustible, but will support combustion of other materials.

#### **Special protective equipment and precautions for fire-fighters:**

Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

### Accidental Release Measures

## **Emergency procedures/Environmental precautions:**

Isolate spill or leak area immediately. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

## **Personal precautions/ Protective equipment/ Methods and materials for containment and cleaning up:**

If enough water is available dilute to <3%, flood area with water and drain to an approved chemical sewer or wastewater treatment system, including municipal sewers if approved. If only limited water is available (not enough to dilute spill to 3% concentration), use water for potential firefighting of combustible materials. Contain spill until decomposition is completed naturally

## **Hydrogen Peroxide delivery procedure**

Once delivery timeframe is confirmed, the following tasks shall be carried out only by an approved handler:

- The Hydrogen Peroxide storage area shall be checked and prepared for delivery ensuring no contamination and bunding is empty the safety shower should be checked as operational
- Upon arrival at the site, the delivery driver should contact the approved handler. The approved handler shall inform the driver of the delivery procedure
- The safety shower should be checked as operational and no obstructions
- Appropriate PPE should be donned prior to inspection and delivery
- Prior to unloading, an approved handler shall check the IBC containers(s) are in good condition and defect free
- Prior to unloading the interceptor valve should be placed into the closed position to contain accidental spillages
- The IBC container(s) shall not be moved if the valve seal/ cap is not in place
- Only the truck driver or approved operator shall, when required, load and operate the HIAB
- Valve protection caps shall be left on until the IBC container is ready for use
- Covers must always be securely in place to prevent contaminants entering the container
- Once delivery is complete, an approved handler shall update the Hydrogen Peroxide delivery and storage register
- Once delivery is complete and confirmed no spillages have taken place, the interceptor valve should be re-opened

## **DO NOT**

- Under any circumstances mix with other chemicals
- Expose to organic matter
- Transfer to any other container(s)
- Handle Hydrogen Peroxide containers if you are not trained and don't have a current approved handler certificate
- Ignore minor leaks
- Smoke around containers



## Caustic Soda (Sodium hydroxide) 30% liquid

Refer to attached Safety Data Sheet (SDS) for detailed information and actions in an emergency (below is a summary of key information and actions in the event of an emergency – the SDS should be consulted for detailed information relating to the specific chemical information)



### Individual protection measures, such as Personal Protective Equipment (PPE)

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.

Wear overalls, chemical goggles, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots. Always wash hands before smoking, eating, drinking or using the toilet.

Wash contaminated clothing and other protective equipment before storage or re-use.

If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716



### FIRE FIGHTING MEASURES Hazchem or Emergency Action Code: 2R

#### **Suitable Extinguishing Media:**

Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

#### **Specific hazards arising from the substance or mixture:**

Non-combustible material.

#### **Special protective equipment and precautions for fire-fighters:**

Not combustible, however following evaporation of aqueous component residual material can decompose if involved in a fire, emitting toxic fumes.

Contact with metals may liberate hydrogen gas which is extremely flammable.

Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

## **ACCIDENTAL RELEASE MEASURES**

### **Emergency procedures/ Environmental precautions:**

Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

### **Personal precautions/ Protective equipment/Methods and materials for containment and cleaning up:**

Slippery when spilt. Avoid accidents, clean up immediately.

Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material).

Collect and seal in properly labelled containers or drums for disposal. Caution - heat may be evolved on contact with water.

## **Caustic Soda (Sodium Hydroxide) delivery procedure**

Once delivery timeframe is confirmed, the following tasks shall be carried out only by suitably trained and qualified personnel:

- The Caustic Soda storage area shall be checked and prepared for delivery ensuring no contamination and bunding is empty
- The safety shower should be checked as operational and no obstructions
- Upon arrival at the site, the delivery driver should contact the operator. The operator informs the driver of the delivery procedure
- Prior to unloading the interceptor valve should be placed into the closed position to contain accidental spillages
- Prior to delivery and connecting to the discharge point, the discharge point should be confirmed to be the correct discharge point and matches the chemical being delivered
- The operator confirms with the delivery driver there is sufficient storage space for the volume to be discharged
- Only the delivery driver or approved operator shall, when required, commence the discharge of chemical
- Once delivery is complete and confirmed no spillages have taken place, the interceptor valve should be re-opened

## **DO NOT**

- Under any circumstances mix with other chemicals
- Transfer to any other container(s)
- Ignore minor leaks

## LIQUIPAC (PACL - Poly-Aluminium Chloride)

Refer to attached Safety Data Sheet (SDS) for detailed information and actions in an emergency (below is a summary of key information and actions in the event of an emergency – the SDS should be consulted for detailed information relating to the specific chemical information)



### **Individual protection measures, such as Personal Protective Equipment (PPE)**

Wear overalls, chemical goggles and impervious gloves. Always wash hands before smoking, eating, drinking or using the toilet.

Wash contaminated clothing and other protective equipment before storage or re-use.

Wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716



### **FIRE FIGHTING MEASURES**

#### **Suitable Extinguishing Media:**

Not combustible, however, if material is involved in a fire use: Extinguishing media appropriate to surrounding fire conditions.

#### **Specific hazards arising from the chemical:**

Non-combustible material.

#### **Special protective equipment and precautions for fire-fighters:**

Decomposes on heating emitting toxic fumes, including those of hydrogen chloride. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition

## **ACCIDENTAL RELEASE MEASURES**

### **Emergency procedures/ Environmental precautions:**

Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

### **Personal precautions/ Protective equipment/Methods and materials for containment and cleaning up:**

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact.

Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material).

Collect and seal in properly labelled containers or drums for disposal.

## **LIQUIPAC (PACL – Poly-Aluminium Chloride) delivery procedure**

Once delivery timeframe is confirmed, the following tasks shall be carried out only by suitably trained and qualified personnel:

- The LIQUIPAC storage area shall be checked and prepared for delivery ensuring no contamination and bunding is empty,
- The safety shower should be checked as operational and no obstructions
- Upon arrival at the site, the delivery driver should contact the operator. The operator informs the driver of the delivery procedure
- Prior to unloading the interceptor valve should be placed into the closed position to contain accidental spillages
- Prior to delivery and connecting to the discharge point, the discharge point should be confirmed to be the correct discharge point and matches the chemical being delivered
- The operator confirms with the delivery driver there is sufficient storage space for the volume to be discharged
- Only the delivery driver or approved operator shall, when required, commence the discharge of chemical
- Once delivery is complete and confirmed no spillages have taken place, the interceptor valve should be re-opened

## **DO NOT**

- Under any circumstances mix with other chemicals
- Transfer to any other container(s)
- Ignore minor leaks

## Hydrofluorosilicic Acid

Refer to attached Safety Data Sheet (SDS) for detailed information and actions in an emergency (below is a summary of key information and actions in the event of an emergency – the SDS should be consulted for detailed information relating to the specific chemical information)



### Individual protection measures, such as Personal Protective Equipment (PPE)

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS



Wear overalls, chemical goggles, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots.

Always wash hands before smoking, eating, drinking or using the toilet.

Wash contaminated clothing and other protective equipment before storage or re-use.

If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

### Fire Fighting Measures Hazchem or Emergency Action Code: 2P

#### **Suitable Extinguishing Media:**

Not combustible, however, if material is involved in a fire use: Dry chemical, CO<sub>2</sub>, water spray or regular foam.

#### **Specific hazards arising from the substance or mixture:**

Corrosive hazard. Wear protective gloves/clothing and eye/face protection. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

#### **Special protective equipment and precautions for fire-fighters:**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout.

### Accidental Release Measures

#### **Emergency procedures/ Environmental precautions:**



# Local Waters

Isolate spill or leak area immediately. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

## **Personal precautions/ Protective equipment/ Methods and materials for containment and cleaning up:**

Attention! Corrosive material. Avoid contact with skin and eyes. Do not breathe vapor or mist. Ensure adequate ventilation. Evacuate personnel to safe areas. Do not touch or walk through spilled material.

Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing and eye/face protection. Wash thoroughly after handling.

Stop leak if you can do so without risk. Do not touch or walk through spilled material. Dike far ahead of spill to collect runoff water. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Keep out of drains, sewers, ditches and waterways.

Soak up with inert absorbent material. Use personal protective equipment as required. Pickup and transfer to properly labelled containers.

## **Hydrofluorosilicic Acid delivery procedure**

Once delivery timeframe is confirmed, the following tasks shall be carried out only by an approved handler:

- The Hydrofluorosilicic Acid storage area shall be checked and prepared for delivery ensuring no contamination and bunding is empty the safety shower should be checked as operational and no obstructions
- Upon arrival at the site, the delivery driver should contact the operator.
- Appropriate PPE should be donned prior to inspection and delivery
- Prior to unloading the interceptor valve should be placed into the closed position to contain accidental spillages
- Prior to delivery and connecting to the discharge point, the discharge point should be confirmed to be the correct discharge point and matches the chemical being delivered
- The operator confirms with the delivery driver there is sufficient storage space for the volume to be discharged
- Only the delivery driver shall, when required, commence the discharge of chemical
- Once delivery is complete and confirmed no spillages have taken place, the interceptor valve should be re-opened

## **DO NOT**

- Under any circumstances mix with other chemicals
- Expose to organic matter
- Transfer to any other container(s)
- Handle Hydrofluorosilicic Acid containers if you are not trained and don't have a current approved handler certificate
- Ignore minor leaks

# Local Waters

- Smoke around containers