045
Emergency Response Environmental Spill (PIRMP)

1. AIM

The aim of this work instruction is to identify potential accidents and emergency situations for response, and for the prevention and mitigation of environmental impacts that may be associated with them.

2. REFERENCES

ISO14001
EPA Pollution incident response management plans (PIRMP)
ISO Form 6.4.4-1 JSA

3. DEFINITIONS

Normal Business Hours - Office and Cumberland site – 8am to 5pm
Factory operations - between 6.00am and 11.45 pm
After Hours – factory operations between 6am to 8am and 5.00pm to 11.45pm –
Office and Store closed – site is unattended at other times.
EPA Licence – Agreement between the Department of Environment & Climate Change NSW and Nowra Chemical Manufacturers Pty Ltd.
Muster Point: Business Hours – Administration Building car park
Outside of Business Hours – Carpark in front of the Flinders Rd gates
Cumberland – Carpark near front gate

Notifiable Pollution Incident is when: https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management/duty-to-notify-pollution-incidents Pollution incidents causing or threatening material harm to the environment must be notified. Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance leaving our bunded site or into storm water drains.

Environmental Spill - is a sudden threat to the public health or the well-being of the environment, arising from the release of oil, or hazardous chemicals into the air, land, or water. Examples of environmental emergencies include:

- oil and chemical spills,
- radiological and biological discharges, and
- accidents causing releases of pollutants

4. PROCEDURE

Nowra Chemicals shall endeavour to ensure the health and safety of all employees, contractors and visitors to the site, and to the surrounding environment by:

- Following this procedure and other references in the safety training handbook and quality assurance procedures.
- Complying to the EPA Licence No 1290 – which recognises that there are no assessable pollutants on site, and no pollutants should be uncontrolled when they leave the site.
- The Department Manager has control of the area and will delegate tasks associated with clean up, PPE requirements as per SDS (or see section 4.8 for major chemical we hold in Production) and completing a JSA (ISO Form 6.4.4-1) immediately prior to any spill response. If a better qualified person is on site the department manager may agree to delegate but must remain with their team at all times. If the spill is after hours the person responsible for the Production department (in their absence the Managing Director) shall be contacted to discuss the issue with

the leading hand and these two people will make an assessment if the manager will attend. Typically, this would involve a large spill that could not be isolated in the waste plant or if someone is injured during the event.

In response to any spill, it is vital to ensure safety to people first then the environment and then equipment. For staff who identify a leak/ spill should first call the manager, put on PPE before approaching the area, and then contain. Once contained, the manager must complete a JSA before proceeding directing staff on clean up. Safety to people must be first point of call then the environment and then equipment.

4.1 BUNDED SITE

All operational areas across the site are bunded to ensure chemicals spills can be contained, neutralised and or disposed of without potential threat to the environment or waterways. The pumps that control the bunded system should always be turned off.

In case of an event, 200L drums of sand have also been strategically placed at all operational storm water entry points to ensure spills are captured and contained. Additionally, there are valves in the drain at the Flinders Road gate which can be closed if there is a spill to close off access to the street. The process will be:

- Put the sand down
- Lift the grate
- Close all 3 valves to stop water entering the street
- As the sump fills the liquid would overflow onto the grass

4.2 EMERGENCY RESPONSE

Nowra Chemicals has in place an emergency response plan which encompasses emergency response to injuries, incidents and spills on and off-site. Nowra Chemicals shall review yearly and revise, where necessary, its emergency response procedures.

Nowra Chemicals shall also periodically test emergency response procedures (ENV-WI-040) for effectiveness, where practicable, with all personnel on-site.

Other companies who share boundary with Nowra Chemical's buildings will be provided with a shortened version of the Emergency Evacuation procedure, for reference purposes.

The following protocol is to be followed in the case of an environmental spill where site bunding has **not** been able to contain the spill:

- The Managing Director of the business is to call EPA, Fire and Rescue NSW, NSW Health, Safework NSW, local council or any other regulatory authority in the event of a notifiable incident. If the Managing Director is unavailable the decision will fall to the next manager in charge of that area.

For each relevant authority, the appropriate point of 24 hour contact is:

- EPA – Environment Line on 131 555
- Fire and Rescue NSW – 000
- NSW Health – via the local Public Health Unit - In NSW calling 1300 066 055 will direct you to your local Public Health Unit (or see: hptt://www.health.nsw.gov.au/publichealth/infectious/phus.asp)
- SafeWork NSW on 13 10 50
- Local Council – Shoalhaven City Council - (02) 4429 3111

Leading Hand / Supervisor or Manager to call 000 if the incident presents an immediate threat to human health, property, or the environment. Fire and Rescue NSW, the NSW Police and the NSW ambulance Service are the first responders, responsible for controlling and containing incidents once they are on site.

Where an environmental spill occurs outside of business hours and where the spill has the potential to enter waterways or presents an immediate threat to the environment, the Leading Hand is to call the Department Manager. The Department Manager will discuss and advise of immediate action and attend the site if required.

Where a regulatory authority has been called to attend the site (SafeWork or EPA), Leading Hands, Supervisors and Managers are required to preserve the immediate area to ensure appropriate investigations can be made.

Any owners and occupiers of bordering premises are to be contacted in person by the Managing Director, or their delegate, for early warning and regular updates of any environmental/pollution incidents that may have an impact on their health or business operations.

4.3 PRODUCTION AREA SPILL CONTROL

For spills below 1,000L in the production area (factory/ loading bay/ wash area) drains are linked to the waste water system. Prior to hosing the spill into the waste pit, ensure the pump is turned off. For all detergent, acid solution and sodium hypochlorite spills, hose with at least 10x the spill volume of water into the nearest waste pit. See section 4.3.1 spills into bunds on clean up method per product.

Kleen Sweep is also kept in the production area and is only to be used on oily products such as Evoral, petrol, oil and diesel spills. This is because oily products can cause issues in the waste plant.

4.3.1 SPILLS INTO BUNDS

For any spill that occurs in the production bunded area, employees engaged in the clean-up must wear a red chemical protective suit. This bunded area is specifically designed to capture large spills from alum, liquid caustic, sodium hypochlorite and sulphuric acid or in general Dangerous Goods. At no time are employees to enter the bunded area unless permission has been sought by the Manager.

***Note at least 20x washed DG IBCs will be kept on site either in top car park or back slab for spill response.**

Sulphric Acid 98% Spill – Do not enter the bund

- Call the manager of the area to complete a JSA
- Two people must wear full PPE to commence spill recovery
- Pump as much concentrated acid as possible into IBC's for future disposal
- Hose the bunded area with excess water, noting the acid water mix will give off heat so large volumes of water to cool the mixture needs to be applied. Usually 5x volume of spill
- Once the water/acid mixture has enough water to be below 50°C, pump the mixture into IBCs for reblending into the alum.
- When the pH of the mixture is above 2, further pumping can go into the waste plant for pH correction in these tanks.

Caustic 50% – Do not enter the bund

- Call the manager of the area to complete a JSA
- Two people must wear full PPE to commence spill recovery (Red suit)
- Pump as much concentrated caustic as possible into IBC's for future disposal
- Hose the bunded area with excess water, noting the caustic water mix will give off heat so excessive water to cool the mixture needs to be applied, usually 5x volume of the spill.
- Once the water/alkali mixture has enough water to be below 50°C, pump the mixture into IBCs for reblending into the waste treatment plant as a pH increaser.
- When the pH of the mixture is below 10, further pumping can go into the waste plant for pH correction.

Sodium Hypochlorite

- Call the manager of the area to complete a JSA
- Two people must wear full PPE to commence spill recovery
- The solution will run via the factory drainage system to the waste plant
- Turn off the pumps to the waste plant in the pits and ensure the pH of the waste plant is greater than 6.
- If not add caustic to both tanks until pH 6 or more and then allow the hypo to be collected into the waste plant.
- Pump the first 5000L into IBC for future disposal
- When the waste plant is full, decant IBCs of liquid to allow for more space.
- Once spill recovery is completed a Manager will assess if a waste truck should be called to take away the excess liquid (>10,000L)

Alum – Do not enter the bund

- Call the manager of the area to complete a JSA
- Two people must wear full PPE to commence spill recovery
- Pump into IBC from the bunds
- Hose water and pump into IBC to be re-blended into alum
- Avoid waste plant if possible. If spill is large use pumps and waste plant to store alum and then decant into IBC's for either disposal or re-blending, depending on contamination.
- Although Alum is not a DG and will not generate heat, it is slippery so staff re-covering the spill should still not enter the bunded area until clean.

4.4 DISPOSAL OF THE SPILL – WASTE TREATMENT PLANT

Once the diluted spill has been sent to the waste pit and the waste plant has been pH tested by a suitably qualified employee then the spill can be pumped into the waste plant for treatment. Authorisation must first be obtained by the person responsible for the Technical or Production department to ensure correct dosing occurs and PPE requirements have been outlined.

If the chemical is unsuitable for waste system disposal (ie. Oily products, Evoral), kleen sweep should be placed around the spill to stop it spreading. The immediate area should be cordoned off with witch's hats and danger tape around the spill site to prevent people from entering the area.

Items not suitable for disposal in the waste system are:

- Products containing high solids, such as waxes
- Grease and oils; Class 3
- Drums marked as marine pollutants or class 6 poisons;
- Herbicides or pesticides;
- Class 5 and Class 6 chemicals (exceptions are Hydrogen Peroxide or oxygen type products).
- Large volume spills of individual chemicals as per 4.5
- Sodium Chlorite

The person responsible for the Technical Department or Managing Director should be consulted to assess if the spill can be safely neutralised, or the most efficient method of absorption for later disposal. In all cases, no concentrated chemical should go to Sewer via the manual valve until cleared by Shoalhaven City Council. This is to ensure there is no negative impact on the sewage treatment system of the city.

4.5 IF THE SPILL IS LARGE (i.e. greater than 20,000L)

If the spill is too big for the waste system to cope with (i.e. greater than 20,000L), and there is any risk of water entering the rear storm water channel, the 200L drums of sand at the rear of the site should be emptied into the drain to ensure that no chemical can enter the storm water system. Once absorbed, use the wet/dry vacuum to remove from the drain area. Note wet/dry vac not to be used on any flammables.

Pumps in the bunded area should be activated and pumped into an alternative bund (or clean IBC / tank) for disposal at another time. The waste plant can be used to store up to 20,000L until the emergency can be dealt with by the Management team. Note all bunds have valves, that can be opened to increase the storage capacity of the bunding system into another bund.

In all cases, no concentrated chemical should ever be released to sewer via the manual valve until cleared by Shoalhaven City Council. This is to ensure there is no negative impact on the sewage treatment system of the city.

If chemical/s have entered the storm water system to the East then the 200L drums of sand shall be used to block access of the chemical west of the site, notify the Managing Director immediately. The Managing Director will notify the Department of Environmental Climate Change and Water (DECCW), if the product goes down the storm water drain.

If a spill occurs in production car park area, the spill MUST be contained as area drains / flows to off-site storm water drains. NO spills in car parking areas should be washed into the drains. 2 x 200L drums of sand, as placed near the gate, should be spread and the valves to the drains closed and then

physically blocked if possible. The red line outside the Laboratory door shows the limit of the bunding. Chemicals should not cross this line unless being placed in the refrigerated container.

4.6 WAREHOUSE (Albatross and Cumberland) / DUPONT / CONTRACTS SPILL CONTROL

These areas have Hazchem spill kits and all spills can be cleaned up using the content of this kit– when a spill occurs firstly call your manager, put on the correct PPE as per the product SDS and contain spill.

- STOP – When a spill occurs STOP spill at source
- CONTAIN – Use brooms to CONTAIN the spill, cordon off area with safety cones and chains to stop access.
- ASSESS – Complete JSA with Manager and assess and address any risks
- ABSORB – Use Sukerup pads or mineral sponge absorbent to ABSORB the spill
- DISPOSE – Dispose of used absorbent in waste bag – ATD to be raised
- REPORT – REPORT the incident (fill out incident form)
- RESTOCK – RESTOCK the kit after use – report what was used on the incident form and state replacements required.

Chemical compatibility table for Hazchem Kit.

Chemical Suitability		
	Pads	Mineral Sponge
Sulphuric Acid 98%	Fair	Good
Sodium Hypochlorite	Good	No Data
Nitric acid 60%	Good	good
Hydrochloric acid 32%	Fair	good
Caustic soda 50%	Good	Good
Fair : Some swelling or weakening of material may occur		
Good: Minor effect, slight corrosion or discolouration		

MAINTENANCE

The has its own 200L Red Spill Control Bin. This bin contains:

- 4 x 10kg bags Kleen Sweep can only be used on Non DG products
- Disposable gloves
- Face mask
- Shovel

The 200L bin is also to be used to hold the contaminated waste in until an authority to dispose form has been completed.

Non DG, petrol, oil and diesel spills can be cleaned up by covering the spill with Kleen Sweep. Report to a manager, wear personal protective equipment (refer to SDS).

Once absorbed, shovel the contaminated product into the 200L Red Spill Control bin, inform the department manager so an incident form can be completed and an authority to dispose form can be raised so further disposal can occur.

4.7 BUNDED SMS SYSTEM

All bunds and the waste tank are monitored via sensors to an SMS system that indicates liquid in the bunds at 2 levels.

Level 1 - is precautionary – liquid is in the bund from either rain or minor spill.
Level 2 - high level indicating the bund is filling and the product pump is in danger of going under water. If not raining this clearly means the tank is leaking.

At level 2 it is indicating the pumps in the bund are off or the spill is increasing quickly. At this stage a manager shall attend the site to check that the rest of the system can be activated to control the spill or excess rain event. If a substantial spill call in additional staff to assist with response. Phone numbers for additional staff can be found in the emergency box.

4.8 SPILL CONTROL –DECISION CHART FOR COMMON DG CHEMICALS ON SITE

Chemical Name	Class	Spills	Precaution	PPE
ACID SOLUTIONS Sulphuric Nitric Phosphoric Hydrochloric	8	Dilute with high volumes of water Dilute with high volumes of water (10x spill volume)	Will react with water – causing heat. Ensure acids are diluted with 10x amount of water. Will react violently with alkalis – causing heat No don't use kleen sweep as will react	
ALKALI Sodium Hydroxide Caustic Potassium Hydroxide	8	Can be diluted and sent to waste water if alkaline pH>8	Will react violently with acids No don't use kleen sweep as will react	
HYPO Sodium Hypochlorite Bleach	8	Can be diluted and sent to waste water if alkaline pH>8	Will produce chlorine gas if mixed with acid No don't use kleen sweep as will react	
FLAMMABLE Petrol Kerosene Methylated Spirits	3	Always use kleen sweep (large and small spills)	Nil	
Hydrogen Peroxide	5	Use water only and dilute	**DO NOT USE KLEEN SWEEP** Use of kleen sweep could cause ignition.	
Alum	NA	Use water only and dilute	**Nil**	

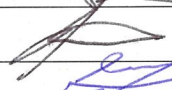
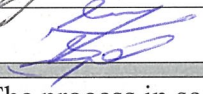
4.9 PIRMP REVIEW

To ensure our emergency response work instructions (PIRMP) are adequate and up to date, if there is an incident, form 9.0/6 will be completed to record and review the incident. If there has been no incidents for a 3 year period a mock incident will be selected to review the effectiveness of our PIRMP.

5.0 DOCUMENTATION

Attachment 1 Extended Storm Water Map – surrounding of Nowchem
Attachment 1 to ENV-WI-040 - Contact details – Contains staff and Neighbours contact details

APPROVALS

PREPARED BY:		DATE:	7/6/22
AUTHORISED BY:		DATE:	7/6/22
REVIEWED & CONTROLLED BY:		DATE:	07.06.22
REASON FOR REVISION:	The process in section 4.1 updated - four items added.		