

JO GRAHAM
25 OCTOBER 2024

Ku-ring-gai Chase National Park
Credit: Destination NSW



Audit Team Update



Annual Returns 2023 -2024

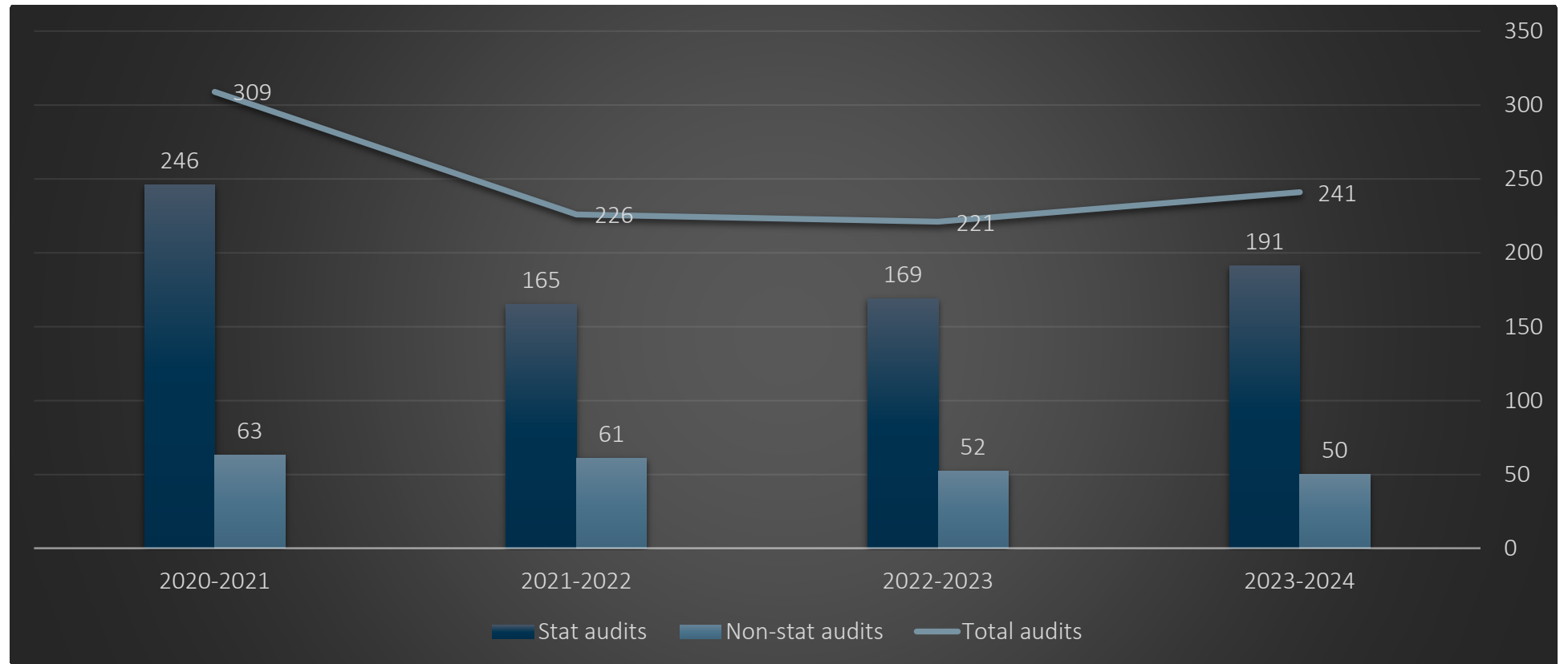


- 243 audits completed (2022/23 – 221)
- 81 audits terminated (2022/23 – 44)
- 798 audits ongoing (2022/23 – 806)
- 205 stat audits commenced (2022/23 – 231)

Of the audits completed:

- 35 auditors < 5 audits (35-2022/23; 28 – 2021/22; 27 – 2020/21)
- 6 auditors 5-10 audits (5-2022/23; 6 – 2021/22; 6 – 2020/21)
- 9 auditors 10-20 audits (9-2022/23; 9 – 2021/22; 8 – 2020/21)
- 1 auditor >20 audits (1-2022/23; 1 – 2021/22; 5 – 2020/21)

Audits completed 2020-24



Statutory A2 Audits completed

	2020-21 FY	2021-22 FY	2022-23 FY	2023 -24 FY
Statutory SASs with EMPs i.e. A2 SASs	79	75	53	45 <small>(2023 - 31/5/24)</small>
Statutory Audits completed	246	165	169	191

Feedback from survey

Do you consider there is enough audit work in NSW?

- Yes 64% No 36% (2019: Yes 57% No 43%)

Are you actively seeking audit work in NSW?

- Yes 76% No 24% (2019: Yes 83% No 17%)

Reasons for being unsuccessful in gaining audit work:

- Price (under-pricing / under-scoping / cheaper auditors / low-cost assistants/ shopping around)
- Travel costs / networks (regionally/interstate auditors)
- Commercial factors / unreasonable contract terms
- Existing relationships with existing auditors
- Too many auditors' not enough work

Feedback continued...

Reasons for not actively seeking/turning down audit work:

- Cost / small fee / clients with poor credit history
- Nearing retirement
- Unfavourable terms /conditions / time pressures
- Competition (too many auditors bidding)
- Too busy / balancing workload
- Poor quality consultants / problematic clients
- Commercial reasons





Proposed National harmonisation of the site auditor accreditation process

- Working group (jurisdictions with a statutory contaminated land site auditor scheme) – senior members from NSW, QLD, VIC, SA and WA
- Developing procedures for a proposed national site auditor accreditation process
- Aiming to seek endorsement from the Heads of EPA (HEPA) to run national site auditor accreditation rounds in future
- Each of the five jurisdictions will take it in turns to host
- National Accreditation Panel formed to assess technical capabilities
- Applicants will apply to the jurisdiction in which they seek primary accreditation

Site Audit Reports



EPA Expectations:

- Auditor's opinions are that of the auditor (not an auditor's team)
- Authored by auditors' vs reviewed
- Justification for omissions of guideline requirements
- Copies of all interim advices issued for the audit included
- Relevant notifications to EPA / client / council attached (e.g. waste, duty to report, evidence of discussions with EPA/Council)
- Standalone reports (reports reviewed not attached)
- Proof-checked for typos / errors / missing tables

Office Visits / CPD

- Office visits to change – more focus on audit trail /auditor’s input
- Continuous Professional Development logs (ref. section 2.4 and appendix C of the Guidelines for the NSW Site Auditor Scheme (3rd edition)) – will be requested from time to time – to be kept up to date

Updates/Reminders/Admin

- Reminder to copy in the auditor mailbox when sending a SAS to other teams within the EPA (e.g. for sites being regulated under the CLM Act)
- Reminder to terminate audits where there is no involvement/activity for some time – termination notice to be sent to the EPA / consent authority
- Reminder for your PI insurance certificates – to include the auditor's name and activities as an auditor under Part 4 of the *Contaminated Land Management Act 1997*



Images: Sara Arthur



IChEMS Implementation in NSW

What is an industrial chemical?²

The *Industrial Chemicals Act 2019* (C'th):

(1) For the purposes of this Act, **industrial chemical** means any of the following:

- (a) a chemical element that has an **industrial use;**
- (b) a compound or complex of a chemical element that has an **industrial use;**
- (c) a UVCB (unknown variable composition or biological substance) that has an **industrial use;**
- (d) a chemical released from an article where the article has an **industrial use;**
- (e) a naturally-occurring chemical that has an **industrial use;**
- (f) any other chemical or substance prescribed by the rules for the purposes of this paragraph that has an **industrial use.**

(2) Despite subsection (1), **industrial chemical** does not include a chemical or substance prescribed by the rules for the purposes of this subsection.

(3) To avoid doubt, this Act only applies in relation to an **industrial chemical** to the extent that the industrial chemical is used, or proposed to be used, for an industrial

“Industrial Chemical” definition
was brought into the
POEO Act with the
2024 amendments.



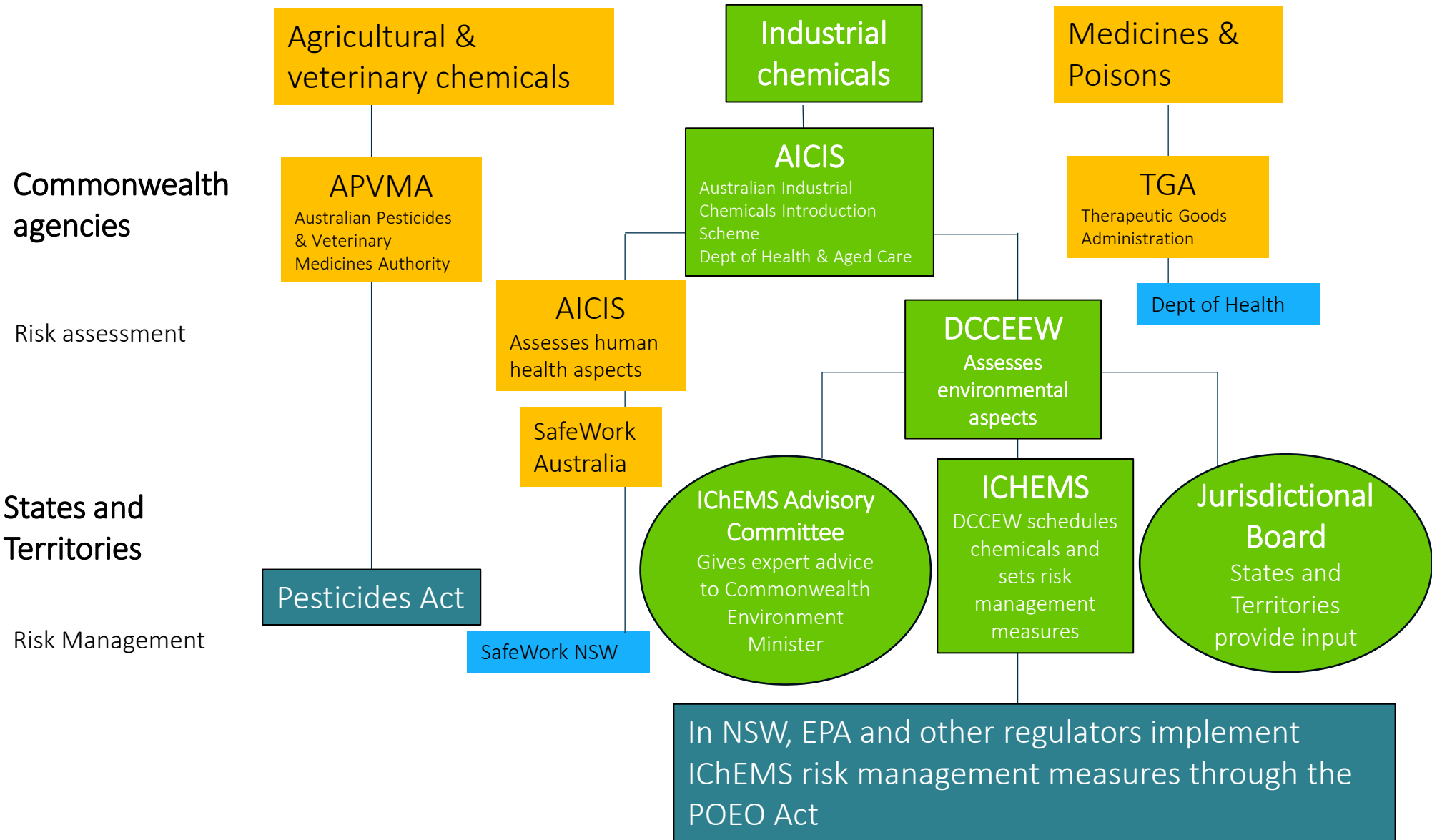
Image: [How Do Volumetric Liquid Filling Machines Work? \[assetpackaging.com.au\]](https://assetpackaging.com.au)



Image credit: S Arthur



Risks associated with the import, export or production of chemicals are assessed by Commonwealth agencies



Australian Industrial Chemicals⁴ Introduction Scheme

- Assesses the risks of importing or manufacturing industrial chemicals. Ingredients of products used in printing, plastics, mining, construction, paints, adhesives, consumer goods, cosmetics and more.
- Currently **~40,000** Industrial Chemicals registered in Australia.



DCCEEW - Risk Assessment for IChEMS ⁵

Defined criteria to assess harm to the environment:

- Persistence
- Bioaccumulation
- Toxicity.



Risk Assessment for IChEMS

Item	Hazard characteristic	Environmental medium (or compartment or trophic level)	Indicators and numerical thresholds for positive hazard categorisation and considering environmental relevance
1	Persistence	Air	Half-life ($T_{1/2}$) \geq 2 days
		Water	Half-life ($T_{1/2}$) \geq 60 days
		Soil	Half-life ($T_{1/2}$) \geq 6 months
		Sediment	Half-life ($T_{1/2}$) \geq 6 months
2	Bioaccumulation	Aquatic	BAF \geq 2000 or BCF \geq 2000 or $\log K_{ow} \geq 4.2$ (if BAF and BCF are not available)
		Terrestrial	$\log K_{oa} > 6$ and $\log K_{ow} \geq 2$
		Food-chain bioaccumulation potential	BMF > 1
3	Toxicity	Aquatic – Acute	
		Fish	96 h LC50 \leq 1 mg/L and/or
		Invertebrates	48 h EC50 \leq 1 mg/L and/or
		Algae or other aquatic plants	72 or 96 h ErC50 \leq 1 mg/L
		Aquatic – Chronic	
		Fish	Chronic NOEC or ECx \leq 0.1 mg/L and/or
		Invertebrates	Chronic NOEC or ECx \leq 0.1 mg/L and/or
		Algae or other aquatic plants	Chronic NOEC or ECx \leq 0.1 mg/L



Industrial Chemicals Environmental Management Scheme, (IChEMS) 7

Schedule 7: Likely to cause serious or irreversible harm **and there are no essential uses.**

Schedule 6: Likely to cause serious or irreversible harm **but with an essential use.**

Schedule 5: Likely to cause harm.

Schedules 4 – 2: may, potential, unlikely

Schedule 1: not suitable for scheduling in 7 – 2.

For each chemical that is scheduled, there are **RISK MANAGEMENT MEASURES** posted on the IChEMS register website.

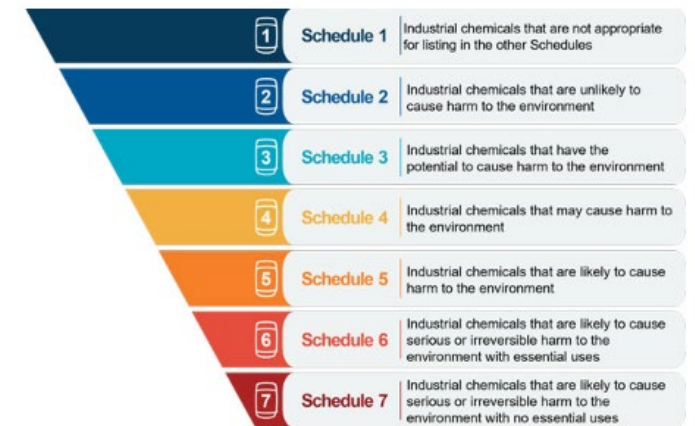


Figure 1: IChEMS scheduling



IChEMS in NSW – 25 March 2024 ⁸



- The proper environmental management of chemicals throughout their whole lifecycle is now regulated under the *Protection of the Environment Operations Act 1997* (POEO Act) in NSW.
- The changes brought the IChEMS register into NSW law, where it is known as the NSW IChEMS register.
- Repealed the *Environmentally Hazardous Chemicals Act 1985* and rolled the existing six Chemical Control Orders into the POEO Act.
- NSW EPA will be able to issue “Chemical Use Notices” whereby any holders/users of a chemical must provide NSW EPA with information about that chemical.
- [Changes to the regulation of industrial chemicals \(nsw.gov.au\)](https://www.nsw.gov.au/changes-to-the-regulation-of-industrial-chemicals)

IChEMS in NSW – cont'd



- There is a new scheduled activity* under the POEO Act called *Environmentally Hazardous Chemical*
- If:
 - You are using a Schedule 6 or 7 chemical, **AND**
 - You are undertaking a scheduled activity, **AND**
 - The use of the chemical is subject to a restriction or a risk management measure in the IChEMS register, **THEN**you will require an Environment Protection Licence (EPL) for the activity conducted with the chemical.
- POEO Act requires all NSW users and manufacturers of an industrial chemical listed on the IChEMS register to comply with the **risk management measures (RMM)** specified for that chemical.
- Failure to comply with a RMM constitutes a ‘pollution incident’ under the POEO Act .This means that failure to comply with an obligation in a risk management measure can be enforced by the appropriate regulatory authority through existing notices and other instruments.
- The POEO Act also establishes new offences for failing to comply with IChEMS requirements (Section 296).

**Scheduled activities are defined in the POEO Act and require an EPL*

IChEMS in NSW – Powers

- **Chemical use notices** – can apply to any chemical that EPA believes has the potential to present a risk of harm to human health or the environment
- **Chemical control orders** – can be made in respect of certain activities undertaken with a specified chemical
- **Assessment of technology** – can be made in relation to a chemical that is subject to a CCO or to an industrial chemical
- **Forfeiture of chemicals** – applies to seizure of chemicals e.g. as evidence



What does the IChEMS register¹¹ look like?

[IChEMS Online Register – DCCEEW](#)

[IChEMS Online Register - DCCEEW](#)

[Perfluorooctanoic acid \(PFOA\) and related substances - DCCEEW](#)

[2-Propenoic acid, 2-methyl-, butyl ester, polymers with alkyl methacrylate, substituted-methylethyl-terminated hydrogenated polyalkene methacrylate, Me methacrylate and styrene - DCCEEW](#)



OUR MISSION

Protect Tomorrow Together



NSW Solid Waste Landfill Guidelines Review



Key Objectives

- Improve the quality of construction quality assurance plans and reports as well as streamline the assessment and approvals process.
- Update superseded technical standards, test methods and legislation referred to in the guidelines.
- Clarify any uncertainties in the interpretation of the guidelines.
- Ensure consistency with other NSW and National policies released since 2016.
- Address emerging environmental issues.
- Provide additional guidance on problematic issues.
- Improve the presentation of the guidelines.

A decorative graphic on the right side of the page consisting of a pattern of blue and white hexagons arranged in a grid-like structure, with some hexagons missing or faded, creating a modern, geometric design.

Environmental Guidelines Solid waste landfills

Second edition, 2016

What was proposed (previous update)

- Applications to the EPA to construct major landfill works must include an auditor review.
- The auditor review must confirm that the design and construction proposals in the licence application address the requirements of the NSW Landfill Guidelines.
- A satisfactory auditor review will be a condition precedent to the EPA approving the works.
- Also, at the completion of construction of approved works, an auditor review must confirm that the Construction Quality Assurance report for the works is satisfactory. The CQA report is a condition precedent to the EPA approving commencement of use of the constructed works.
- 'Major landfill works' are new landfill cells, water and gas management systems, and final capping and rehabilitation of the site.



Current Draft Proposal

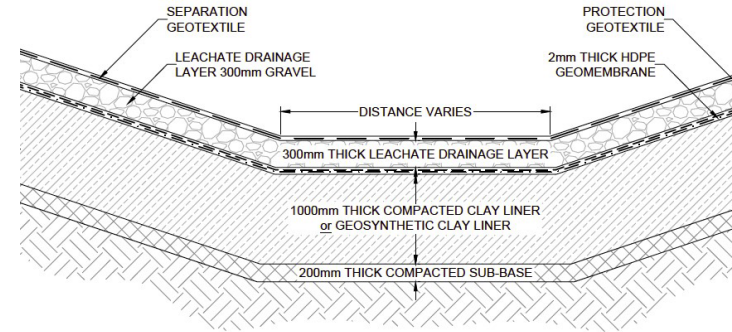
- Design and Construction Quality Assurance reports must include a summary statement and certification in a prescribed form by an independent and appropriately qualified engineer.
- Clarification of the procedure for submitting alternatives to the minimum standard designs in the guidelines.
- All necessary updates to technical standards, test methods and legislation that have changed since 2016.
- Clarification of applicability of the guidelines to:
 - unlicensed landfills
 - contaminated site containment cells
 - ground gases assessment under the EPA's Hazardous Ground Gases guidelines.



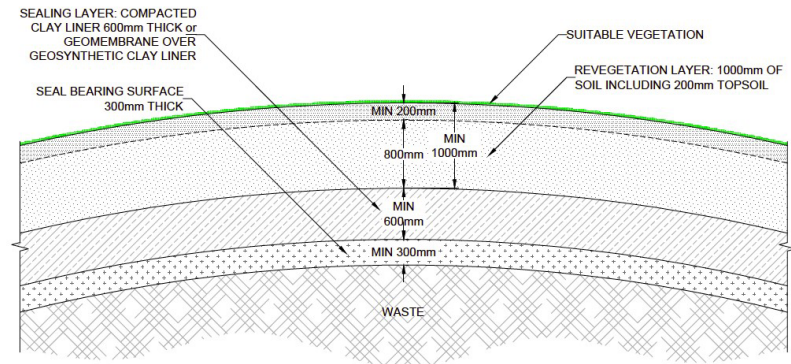
Additional Updates

- Additional guidance on addressing problematic issues:
 - Climate change
 - Leachate dam sizing
 - Development adjacent to landfills
 - Odour control and odour incident response
 - Exhumation of waste
 - Alternative daily cover specifications
 - Landfill fires prevention, investigation and management
 - Groundwater assessment parameters expanded.

- Improvement of appearance of guidelines by adding diagrams and photos of key concepts.



- NOTES:
1. ON CELL WALLS, A GEONET MAY BE USED FOR LEACHATE DRAINAGE INSTEAD OF GRAVEL.
 2. AT SMALL LANDFILLS (<20,000 TPA), A SINGLE LINER MAY BE USED INSTEAD OF THE COMPOSITE LINER SHO SINGLE LINER MUST BE 1000mm OF COMPACTED CLAY (NOT A SINGLE FACTORY MANUFACTURED LINER).
 3. THIS DETAIL IS ONLY FOR THE PURPOSE OF ILLUSTRATING THE MAIN CONCEPTS. PROPOSALS TO BUILD LA CELLS MUST CONTAIN FULL CONSTRUCTION DETAILS.



- NOTES:
1. FOR CERTAIN LANDFILLS, THE CAP SEALING LAYER SHOULD ALSO INCLUDE A GEOMEMBRANE OVER THE COMPACTED CLAY - RESTRICTED SOLID WASTE AND GENERAL SOLID WASTE (PUTRESCIBLE) > 20,000 TPA LANDFILLS.
 2. THE CAP SHOULD INCLUDE GAS AND INFILTRATION DRAINAGE LAYERS WHERE REQUIRED.
 3. THIS FIGURE IS ONLY FOR THE PURPOSE OF ILLUSTRATING THE MAIN CONCEPTS. PROPOSALS TO CAP LANDFILLS MUST CONTAIN FULL CONSTRUCTION DETAILS.

Landfill fires prevention, investigation and management

- Additional guidance on addressing landfill fires:
 - Thermal imaging cameras (AI heat source recognition)
 - Thermocouples
 - Monitoring/training for batteries
 - Balancing of gas extraction across wells
 - Preventing and managing subsurface oxidation events



Site Auditor Aspects

- Development adjacent to landfills
 - Assessment of hazardous ground gas migration and suitability for the proposed land use.
 - Appropriate controls/mitigation measures for landfill gases (active and passive).
 - Surface water and groundwater contamination impacts from landfill leachate.





Addendum to the Waste Classification Guidelines

Forthcoming changes

- To regulate landfill disposal more effectively and to increase protection of human health and the environment
- For consistency with Basel Convention (50 mg/kg), harmonise with most jurisdictions in Australia and current NEMP 2.0
- The total (SCC) and leachable concentration thresholds for GSW and RSW
- Leachable concentration by ASLP not TCLP



Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste

October 2016

Amendment to Table 2 to include toxicity characteristics leaching procedure (TCLP) and specific contaminant concentration (SCC) values for perfluorooctane sulfonate (PFOS), perfluorohexane sulfonate (PFHxS) and perfluorooctanoic acid (PFOA) chemicals.

Table 2: TCLP and SCC values for classifying waste by chemical assessment

Contaminant ¹	Maximum values for leachable concentration and specific contaminant concentration when used together			
	General solid waste ²		Restricted solid waste	
	Leachable concentration	Specific contaminant concentration	Leachable concentration	Specific contaminant concentration
	TCLP1 (mg/L)	SCC1 (mg/kg)	TCLP2 (mg/L)	SCC2 (mg/kg)
PFOS + PFHxS	0.05	1.8	0.2	7.2
PFOA	0.50	18.0	2.0	72.0

1. PFOS and PFHxS are to be summed for comparison against the TCLP and SCC values.
2. Values are the same for general solid waste (putrescible) and general solid waste (non-putrescible).

© 2016 State of NSW and Environment Protection Authority

Report pollution and environmental incidents

Environment Line: 131 555 (NSW only) or info@environment.nsw.gov.au

See also www.epa.nsw.gov.au

ISBN 978 1 76039 494 3

EPA 2016/0559

October 2016

Addendum to the Waste Classification Guidelines

Contaminant	Maximum values for leachable concentration and specific contaminant concentration when used together			
	General solid waste		Restricted solid waste	
	Leachable concentration	Total concentration	Leachable concentration	Total concentration
	TCLP1	SCC1	TCLP2	SCC2
Current thresholds in the PFAS Addendum				
PFOS+PFHxS	50 µg/L	1.8 mg/kg	200 µg/L	7.2 mg/kg
PFOA	500 µg/L	18.0 mg/kg	2,000 µg/L	72.0 mg/kg
New thresholds to be updated in Addendum				
	ASLP1	SCC1	ASLP2	SCC2
PFOS+PFHxS	0.7 µg/L	50 mg/kg	7 µg/L	50 mg/kg
PFOA	5.6 µg/L	50 mg/kg	56 µg/L	50 mg/kg

MELISSA BELL
25/10/2024



Regulating Contaminated Land

A collaborative
planning approach

Acknowledgement of Country



The NSW Environment Protection Authority acknowledges the Traditional Custodians of the land on which we live and work, honours the ancestors and the Elders both past and present and extends that respect to all Aboriginal people.

We recognise Aboriginal peoples' spiritual and cultural connection and inherent right to protect the land, waters, skies and natural resources of NSW. This connection goes deep and has since the Dreaming.

We also acknowledge our Aboriginal and Torres Strait Islander employees who are an integral part of our diverse workforce, and recognise the knowledge and wisdom embedded forever in Aboriginal and Torres Strait Islander custodianship of Country and culture.

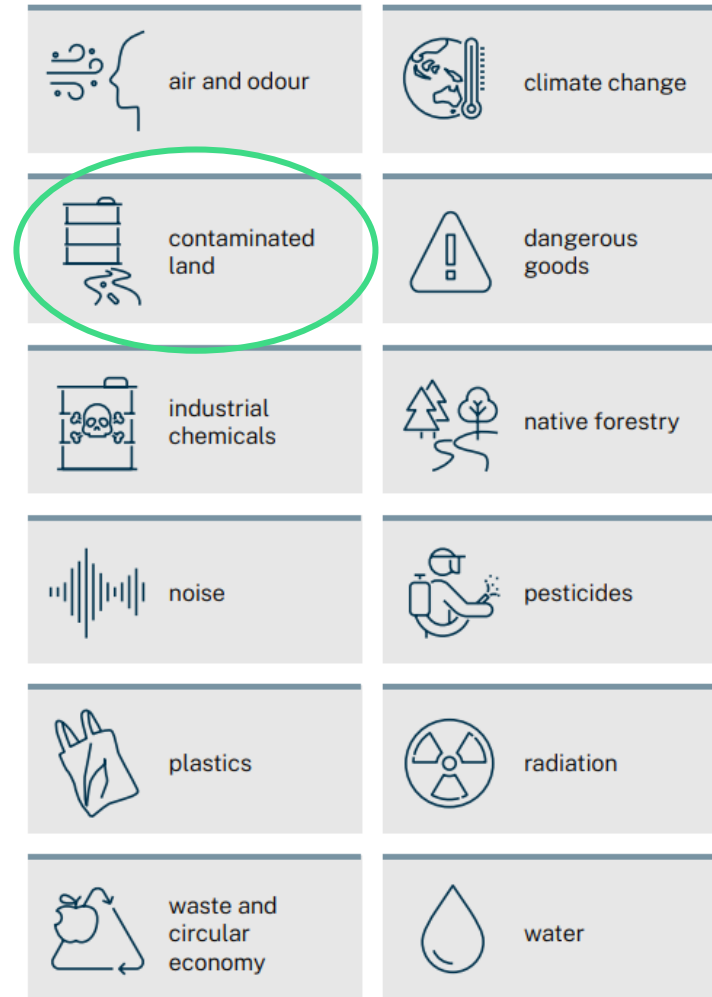


Collaborative planning at the EPA



What is it?

- We are using a collaborative planning approach to identify risks, map actions and develop outcomes for 12 broad themes that we regulate.
- For each key thematic area, we are producing a roadmap, informed by stakeholder views, a program logic and risk assessment.
- This will allow us to identify and address gaps and prioritise our efforts across our different areas of work.



Collaborative planning at the EPA



How does it fit in with other corporate and strategic planning?

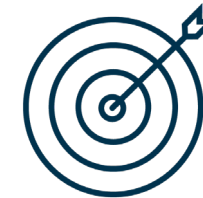


Strategic Plan:

1. **Care for Country (Land, Air, Water & Community)**
2. Drive Climate Action
3. Enable a Safe Circular Economy

Environmental stewardship

Delivery Plan



Targeted Compliance Program

Asbestos: asbestos waste generation and transport

Compliance campaign to ensure asbestos waste generators and transporters are registered and using Integrated Waste Tracking Solution (IWTS)

Chemicals: Improving Per- and polyfluoroalkyl substances (PFAS) management

Maintaining investigation partnerships with the Rural Fire Service and Fire & Rescue NSW and assisting the broader community living with PFAS adjustments

Program logic for contaminated land



Ultimate outcomes



People and the environment are protected from contaminated land

The EPA is a trusted leader and regulator of significantly contaminated land in NSW

The EPA is viewed as an effective, responsive, and supportive contaminated land management expert and partner

Land contamination is managed by responsible person(s) in a timely and safe manner, land is suitable for use and any future contamination of concern is prevented

Contaminated land actions



Using our regulatory framework elements

Figure 1: The eight elements of our Regulatory Framework



- Review of the UPSS Regulation
- Position Statement - Management of asbestos contaminated sites
- Improving PFAS management
- Impact of PFAS on Aboriginal peoples and communities
- Investigating legacy landfills
- Licensed premises with UPSS comply with requirements
- Investigating ways to increase compliance with EMPs
- Legacy lead contaminated sites and programs
- Galvanising-associated contamination
- Building capacity of LG
- Engagement with LG on former gasworks
- Building certifier training

Contaminated land regulatory risks



Some of the key issues



Management of contamination of land used for residential development

Effective regulation and policy settings



Clean-up costs to government

Legacy sites (mining activities)



New and emerging contaminants



Climate change impacts

Next steps

- Continue road testing program logic with external stakeholders
- Finalise work developing potential future actions
- Governance responsibilities – monitoring and reporting; 12-monthly reviews and refresh; evaluating effectiveness
- Engaging with the community



Any questions?



Email the Regulatory Practice Section



regulatory.practice@epa.nsw.gov.au

LESLEY CORKILL, MANAGER POLICY
25 OCTOBER 2024

Callistemon purpurascens
Credit: Andrew Orme, DCCEEW



Contaminated land
policy update



Key work



Review of the Protection of the Environment (UPSS) Regulation 2019

Office of the NSW Chief Scientist and Engineer – asbestos management review

Updated website information for management of asbestos-contaminated sites

EMP transparency and accountability

Contaminated Land Planning Guidelines review

Questions?