GOLDER

Contaminated Land Management in NSW

WEBINAR #3 – UPSS VIRTUAL SITE INSPECTION FOR RAMJO & REROC

27, 28, 29 October 2020

RAMJO
Riverina & Murray Joint Organisation

REROC
RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Introduction

NSW EPA Regional Capacity Building (CRCB) program on contaminated land – 2nd grant funding round.

CRCB grant project – a RAMJO and REROC collaboration (2020 – 2022).

9 other CRCB grant projects - network and resource sharing is statewide; all seeking same outcomes.

Introduction

Project objectives:

1. Lift **capability** of councils in managing contaminated land
2. Enhance technical **capacity** of council staff on managing contaminated land in council business processes
3. Develop a **regionally consistent approach** to managing contaminated land in RAMJO and REROC

Introduction

Project structure:

1. Contaminated land management
2. UPSS readiness
3. Data and information management (deferred)

Consultations, workshops and training to be delivered under each

Introduction

Project outcomes:

1. Policy and standard operating procedures that embed contaminated land management in council services and business processes
2. Integrated systems approach to data and information management
3. Regionally consistent approach for risk-based decision-making on contaminated land management

Progress thus far

CLM and UPSS preparatory webinars

- Outlined the ‘what’ and ‘why’ on regulatory requirements
- Requirements related to council business processes
- Theory on the ‘how’ was provided (theory on ‘good practice’ including processes, templates and forms)

We now need to demonstrate the theory!

Introduction

Golder Associates – *Environmental Advisory Services*

Matthew James
BSc(Hons), MEnvMgt, MPH (in progress)

Principal Environmental Scientist
Government Advisory Services Lead - NSW

MJames@golder.com.au

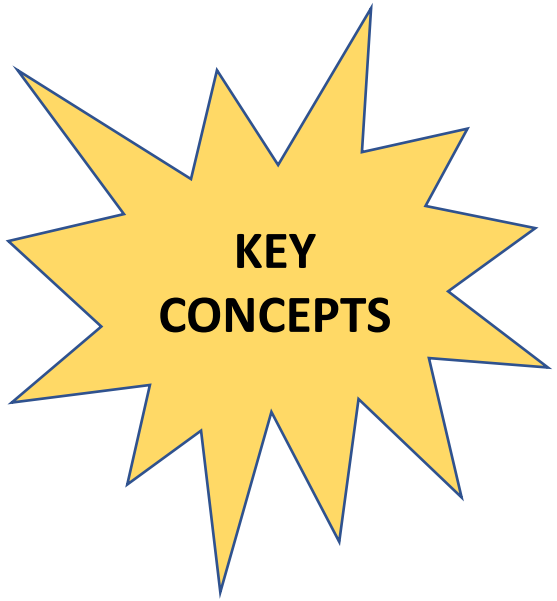
profile

Introduction

Virtual UPSS Inspection Webinar #3 Objectives:

1. Enhance council understanding and capacity to deliver on their ARA responsibilities under the *UPSS Regulation, 2019*
2. Providing an intermediate step between the initial CLM Basics UPSS regulation theoretical webinar and the delivery of onsite UPSS training
3. Providing an ‘on the ground’ perspective of conducting a UPSS site inspection related to council services and business processes.
4. Relate the UPSS inspection responsibilities to specific council services and business processes, and contributing to the next steps of:
    1. developing standard operating procedures
    2. developing a ‘risk-based decision-making’ matrix.

Agenda



Introduction - Why Inspect?

a. UPSS Refresher

b. ARA Responsibilities of Council

1. Desktop Review – Pre inspection

a. Pre-Inspection Desktop Audit (Video 1)

2. On the Ground - The Inspection

a. On-site inspection (Video 2)

3. On the Ground – The Checklist

a. Using the Inspection Checklist (Video 3)

b. Groundwater monitoring

4. Inspection Wrap Up

a. Inspection Completion and Compliance Ranking of the site (Video 4)

5. Discussion

INTRODUCTION

Why Inspect?

UPSS Refresher

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Underground **STEEL** tanks may, (will eventually) leak…

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Key CLM Concept – Risk and Harm

COUNCIL'S MANAGEMENT OF UPSS IN NSW

KEY CLM CONCEPT

Risk: Source > Receptor > Pathway : **Harm**

Source

Leak / Spill of petroleum from an Underground Storage System

Pathways

Petroleum:

- Contaminates the **soil** on site.
- Migrates off site via **surface water** and enters local stormwater system > creeks etc.
- Migrates off site via **groundwater** and enters local aquifer

Receptor (Ecological)

Example: Toxic petroleum hydrocarbons enter river water and impact aquatic biota

Receptor (Human)

Example: Toxic petroleum hydrocarbons present in groundwater bores or surface water that is drawn for drinking water supply

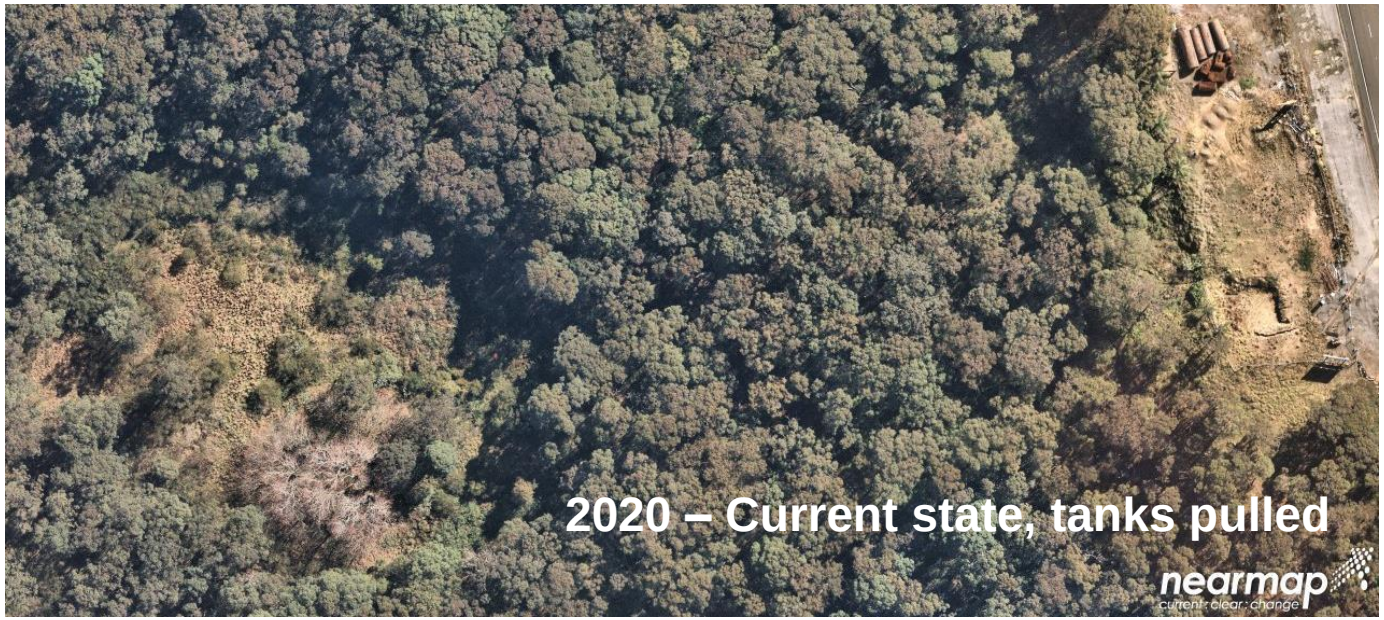
Receptor (Human)

Example: Toxic petroleum hydrocarbons migrate in groundwater. **Vapour** from the plume intrudes into the natural and built environment

UPSS leaks and impact?

2003 - Declaration of contamination by the EPA

- "*evidence of hydrocarbon impacted shallow groundwater seeping from a rock outcrop on Crown land immediately down hydraulic gradient of the site and strong hydrocarbon odours are evident in this area.*
- *"In use for 40 years" (est. 1963)*
- *"There is the potential for this contamination to impact on a number of sensitive receptors adjacent to site."*



RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS leaks and impact?

COUNCIL'S MANAGEMENT OF UPSS IN NSW

2013 – Bushfire – operations cease

Sept 2018 – Clean up begins

Dec 2018 – Tanks pulled

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Why? UPSS scale

COUNCIL'S MANAGEMENT OF UPSS IN NSW

RAMJO UPSS What do we know.....

Over **90+** current petrol stations

An estimated **1 - 2,000,000L** of UPSS capacity across the RAMJO region

An estimated **400+** pieces of current UPSS Infrastructure across the RAMJO region

There are over **450** former/ historical petrol station or petroleum related trade data records within the RAMJO region

There are over **40** petroleum related NSW EPA contaminated sites within the RAMJO region

The UPSS Sensitivity Zone covers more than **821,500ha** of the RAMJO region

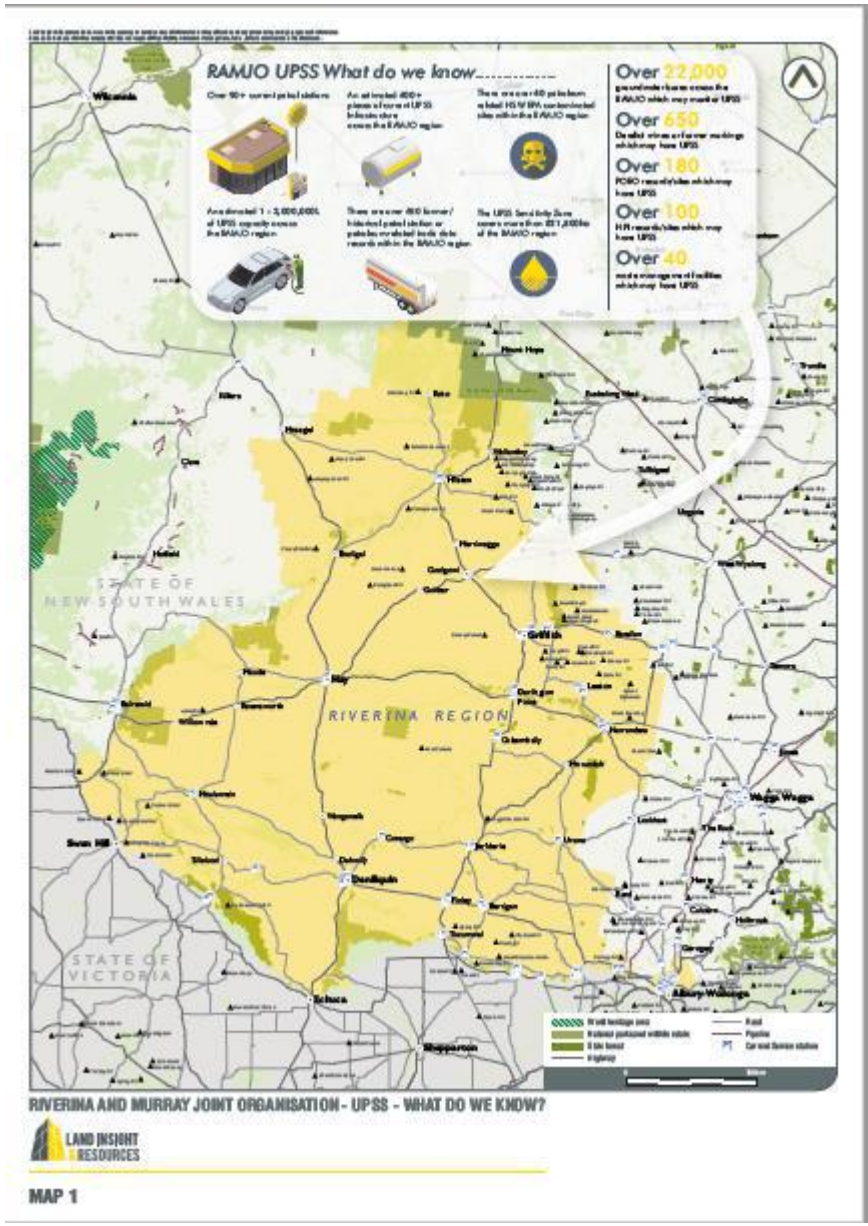
Over 22,000
groundwater bores across the RAMJO which may monitor UPSS

Over 650
Derelict mines or former workings which may have UPSS

Over 180
POEO records/sites which may have UPSS

Over 100
NPI records/sites which may have UPSS

Over 40
waste management facilities which may have UPSS



RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC Riverina Eastern Regional Organisation of Councils

Why? Protection of Environmental Assets

COUNCIL'S MANAGEMENT OF UPSS IN NSW

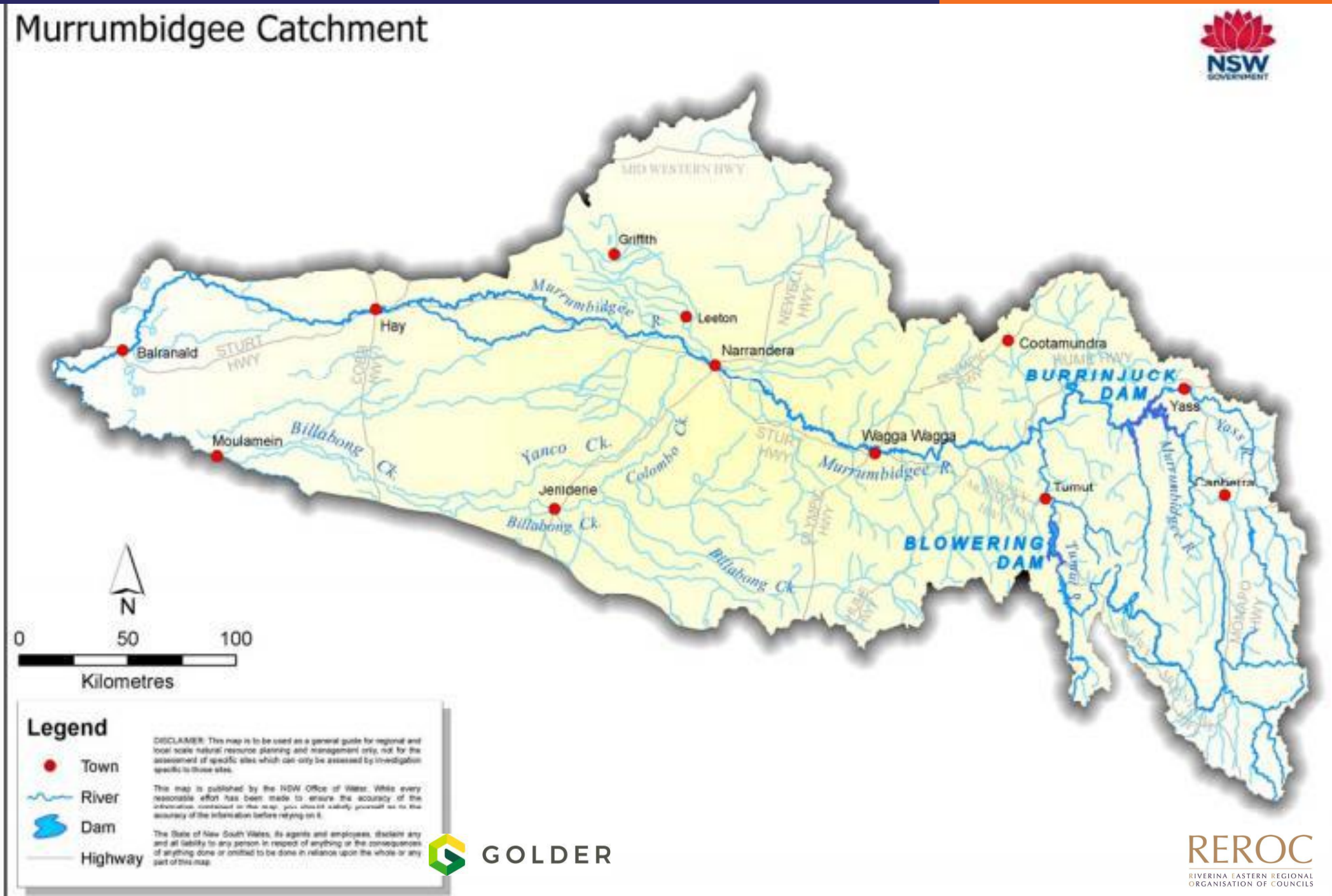
UPSS sites in Southern NSW (RAMJO & REROC) – Example – Hay, NSW

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Background Information Gathering - UPSS sites in Hay, NSW



RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Why? Protection of Environmental Assets

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Murrumbidgee River, Hay, NSW

Soil profile - sand

Why? Protection of Environmental Assets

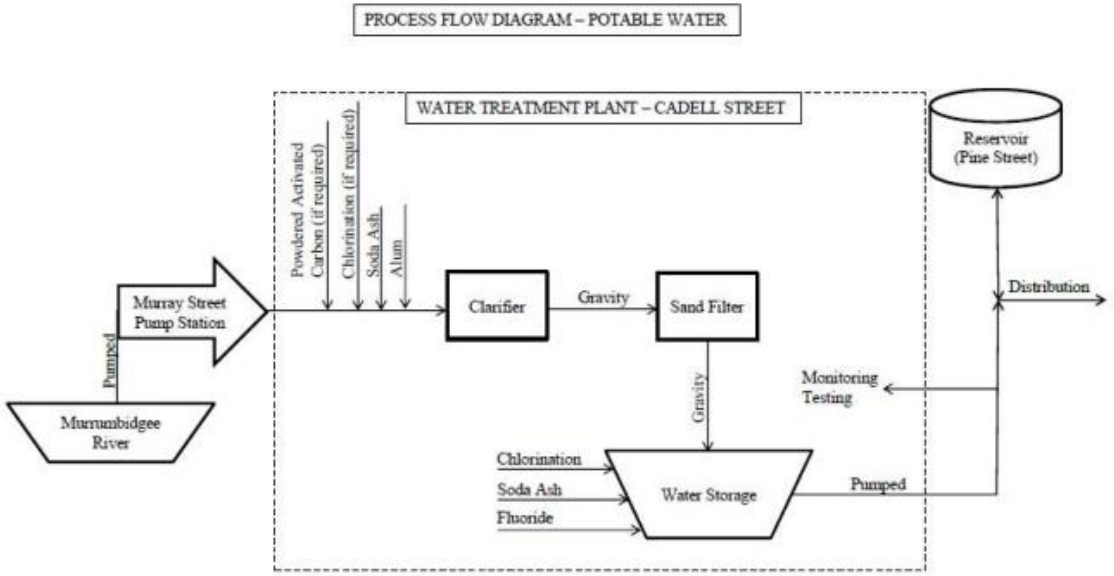
COUNCIL'S MANAGEMENT OF UPSS IN NSW

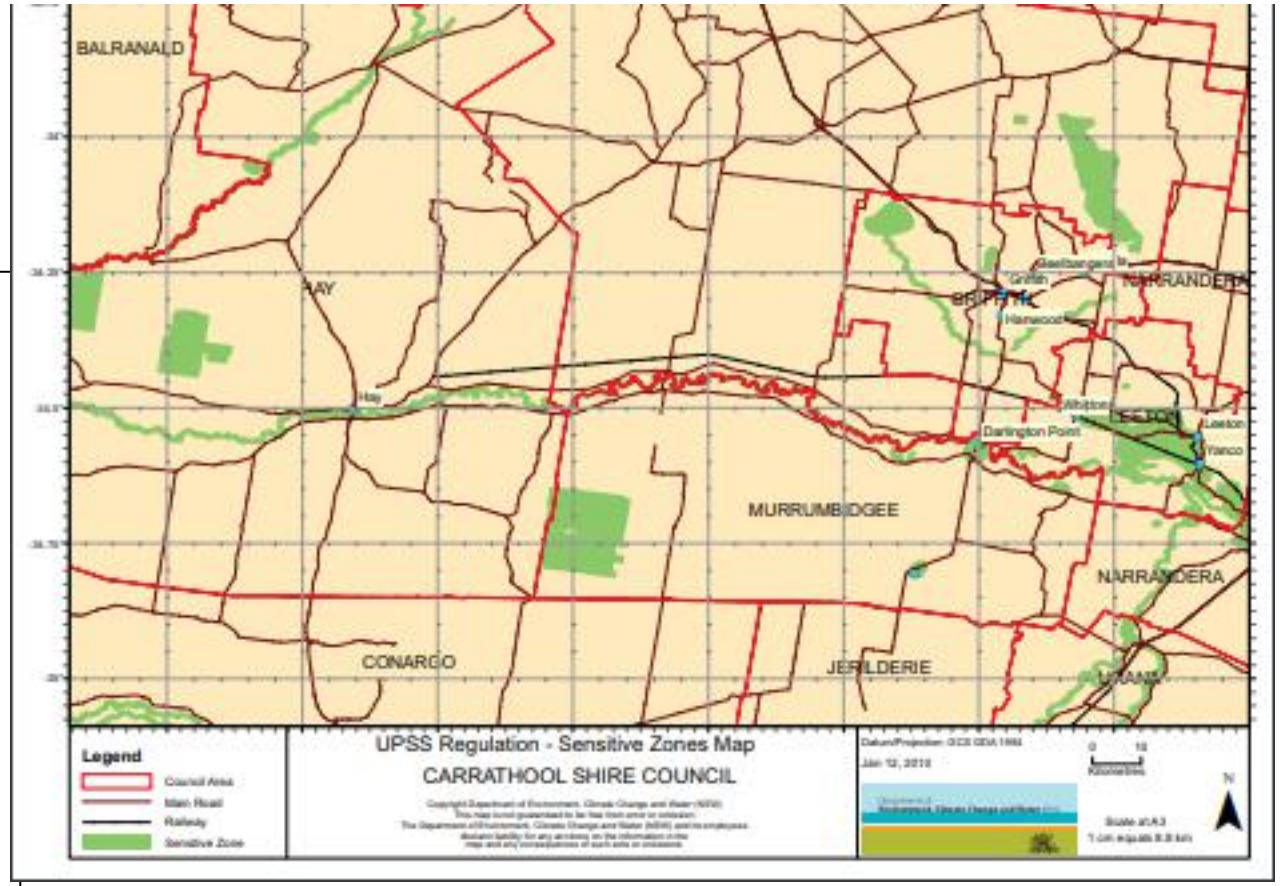
UPSS Sensitive Zone - Hay

Surface Water

- UPSS sensitive zones

Potable water - drawn from the Murrumbidgee River





Hay Council website - PRIMP

RAMJO Riverina & Murray Joint Organisation

GOLDER

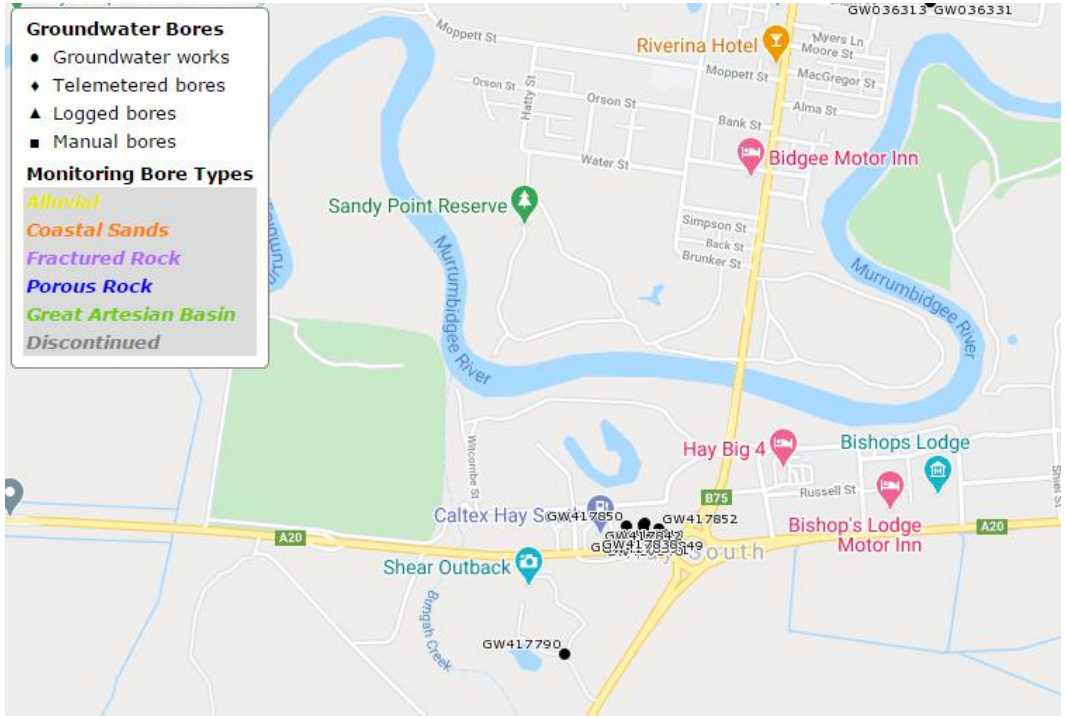
REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

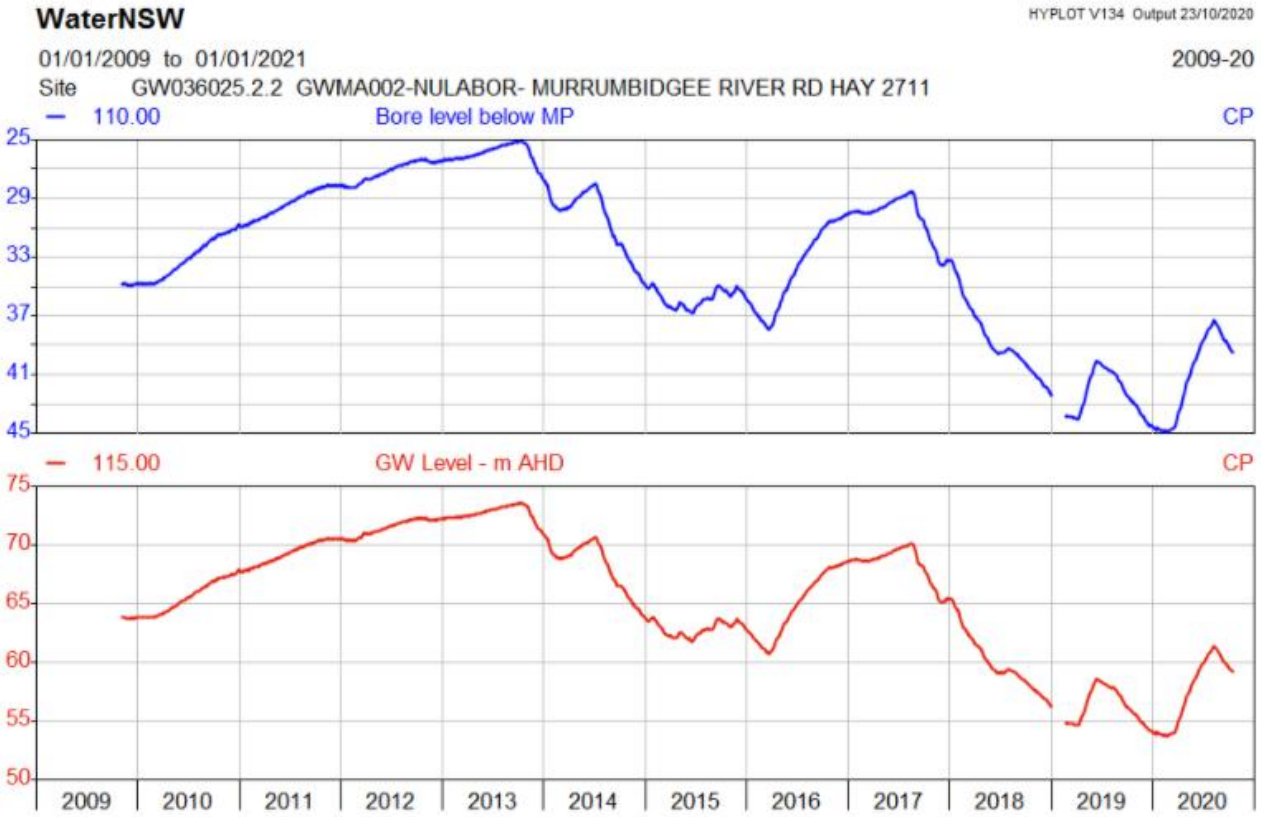
Why? Protection of Environmental Assets

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Groundwater – Hay

Water NSW data



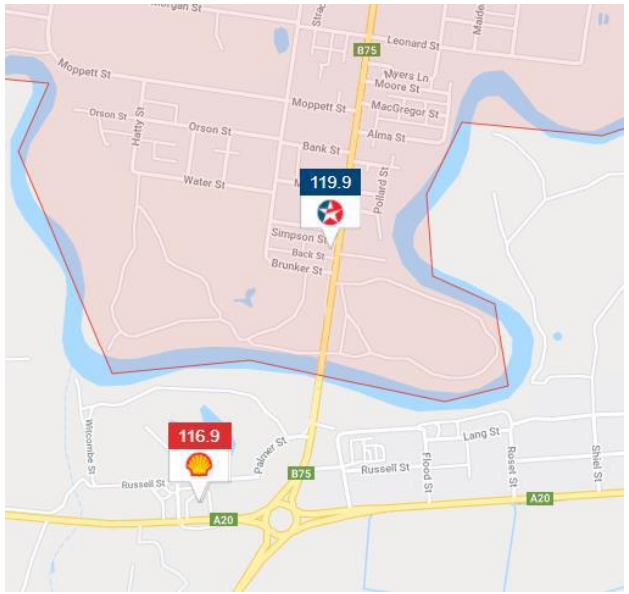


Why? Protection of Environmental Assets

COUNCIL'S MANAGEMENT OF UPSS IN NSW

UPSS sites in Hay (town)

Pathway	Vulnerability / Consequence	Likelihood	Risk	Rank
Surface Water	YES – River is used for potable water - UPSS sensitive zone related to the Murrumbidgee River (exemptions are not applicable)	TO BE DEWTERMINED (TBD) How is stormwater managed locally? Where is the river water intake? What is the treatment process? What alternative water is there?	TBD	TBD
Groundwater	YES – Groundwater is used locally	TBD What is GW used for? Irrigation, potable, industry	TBD	TBD
Vapour	YES – always locally. • Neighbours (basements) • In-ground services	TBD Depends on site setting and conditions	TBD	TBD
Soil	Local only – however understanding soil type and local geological profile is important for potential for vapour intrusion and groundwater flows			



Fuel check website

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Why? Appropriate Regulatory Authority

COUNCIL'S MANAGEMENT OF UPSS IN NSW

ARA definitions:

Scheduled Activities, *POEO Act (s5)*

- Local Council is the appropriate regulatory authority (ARA) for non-scheduled activities under the *Protection of the Environment Operations Act, 1997 (POEO Act).*
- Except where Council is undertaking activities – EPA is the ARA.
- Primarily concerned with small business, domestic premises and urban planning – and UPSS.

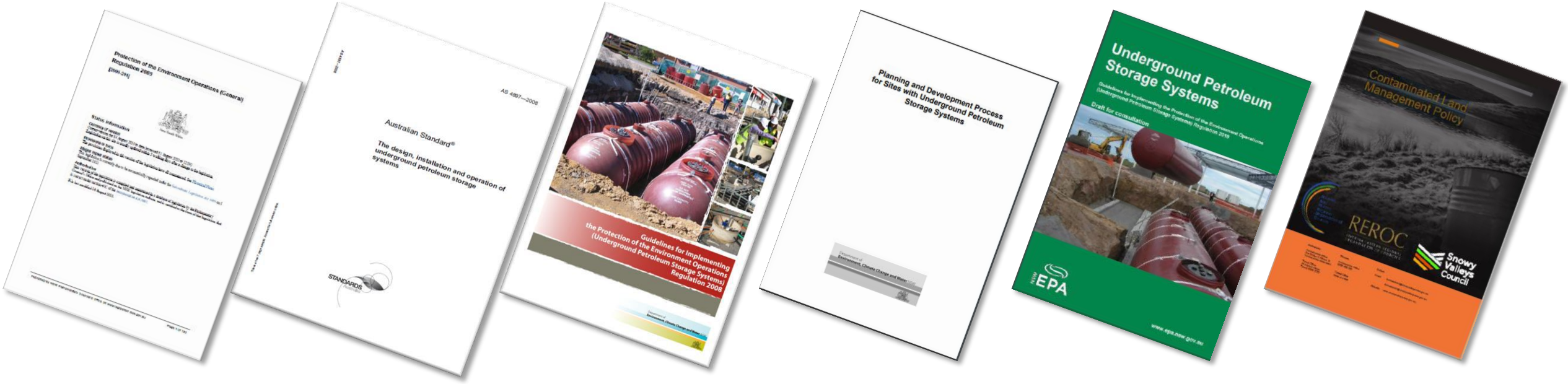
UPSS - Appropriate regulatory authority (ARA)

- Council is ARA for UPSS (except where EPA is ARA)
- EPA is ARA for UPSS on scheduled premises (Polluting Industry) and for Council operations (Depots)

Why? Appropriate Regulatory Authority

COUNCIL'S MANAGEMENT OF UPSS IN NSW

UPSS Regulation, Guidelines, Technical Notes and Council Policy



Regulation | Australian Standard | UPSS Guideline (2008) | UPSS Planning Process Guide | **DRAFT** UPSS Guideline (2020) | REROC Policy

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

INTRODUCTION

Why Inspect?

Questions, Observations
– Break out Activity (5 min)

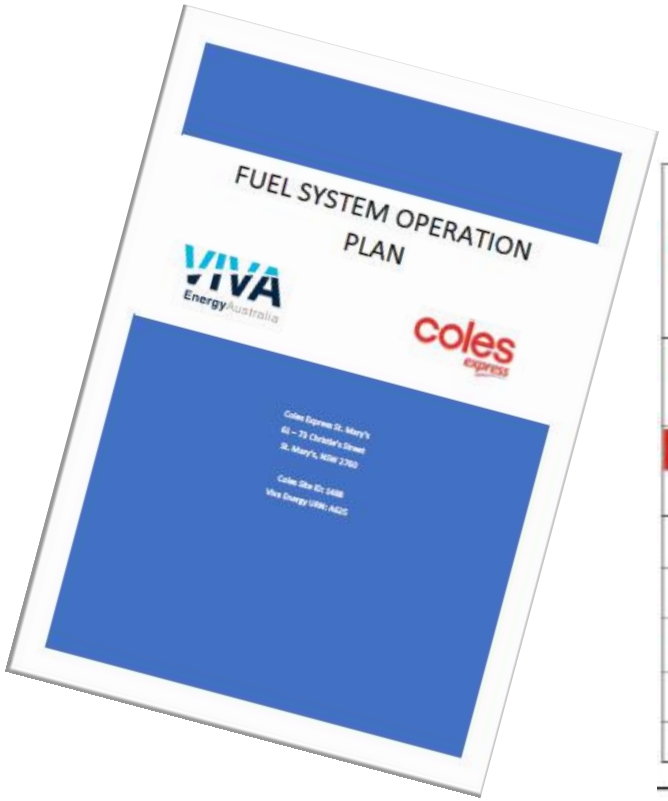
- What is unique about the environment in your LGA?

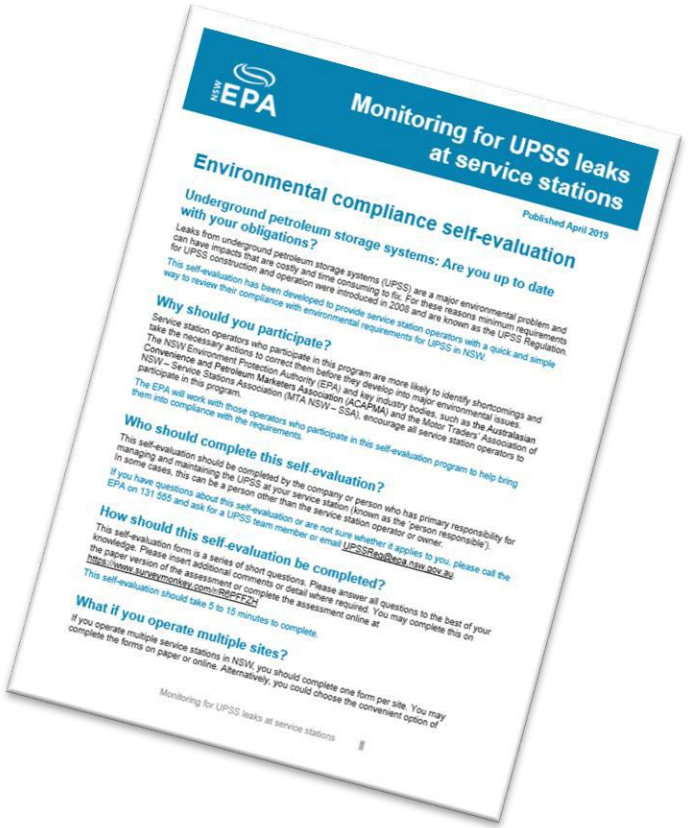
- Housing stock – potential for basements, crawl spaces verses slab on grade in your LGA?

- What potential and specific risks do the UPSS sites in your LGA pose?
  Has there ever been a tanker spill in your LGA…
  Are there existing UPSS contaminated sites…
  What risk do these issues represent to your community?

PART 1

Desktop Review, Pre – Site Inspection





RAMJO Riverina & Murray Joint Organisation

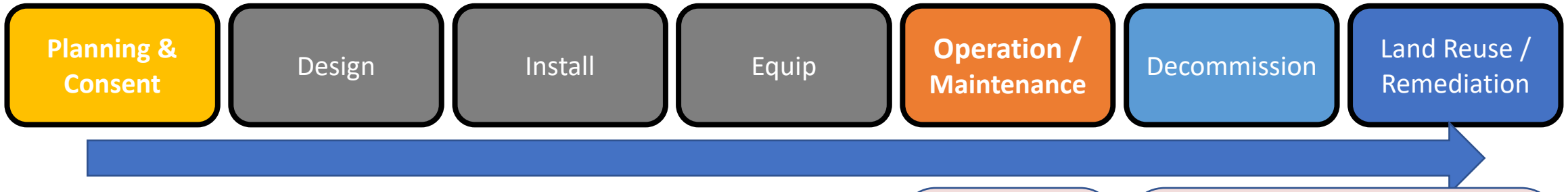
GOLDER

REROC Riverina Eastern Regional Organisation of Councils

UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Life Cycle of a UPSS



- Inspection focus
  - **UPSS Operation and Maintenance**
  - Planning & Consent (new sites)
  - (Decomissioning, Land Reuse / Remediation)
- Regulatory focus – if a leak or spill occurred…
  - Environment Protection, **off-site** receptors
  - Human Health Protection, public users, **off-site** receptors

Australian STANDARD
4897-2008
The design, installation and operation of UPSS

Australian STANDARD
4976-2008
The removal and disposal of underground petroleum storage tanks

RAMJO Riverina & Murray Joint Organisation

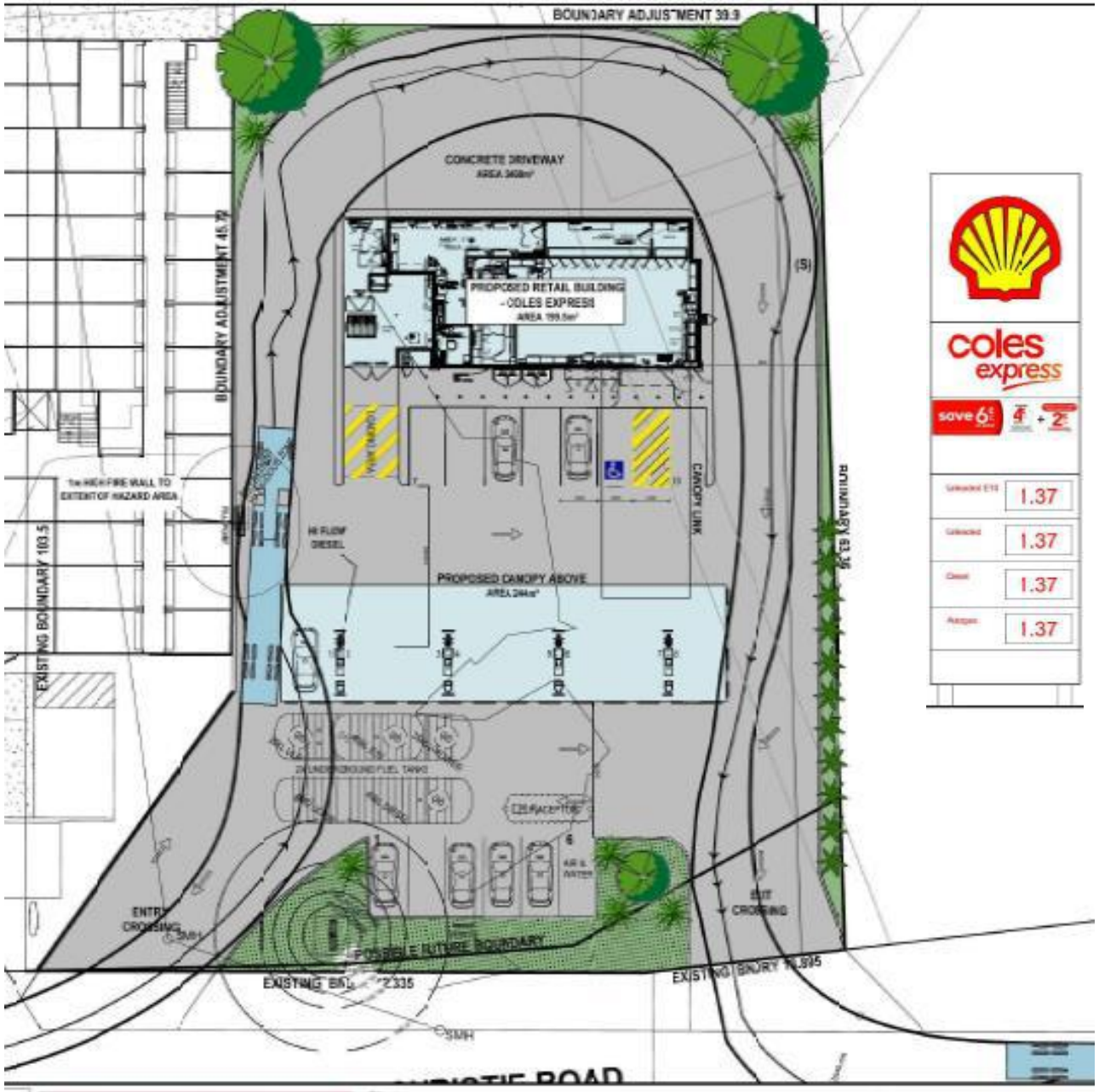
GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

PART 1

Desktop Review
Pre – Site Inspection

Video 1



RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC Riverina Eastern Regional Organisation of Councils

UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

On site

- Coles Express / Viva Energy Sites
- Site access requirements – WHS Minimum PPE requirements
- When conducting an inspection - Ask before touch the fuel infrastructure

Minimum PPE Requirement Matrix

The table below highlights the minimum requirements for PPE under common scenarios. The minimum PPE requirement has been determined on the risk associated with the common task being performed at a Retail site. If the site visit is outside of the common scenario presented in the table, a complete risk assessment of specific tasks is required to determine additional PPE required. See Section 4 Additional PPE.

Common Scenario / Personal Protective Equipment (PPE)	Meeting a WPCG Contractor Onsite	Other
Safety Footwear (Shoes/Boots)	M	TS
Hi Vis Clothing/Vest[1]	M	M
Long Sleeves[2]	M	TS
Long Pants[3]	M	M
Closed shoes[4]		M
Sleeved Top[5]		M
Gloves [6]	TS	TS
Hard Hat	TS	TS
Eye Protection	TS	TS
Hearing Protection	TS	TS
Additional PPE required for the task [7]	TS	TS

M = Mandatory

TS = Task Specific

RAMJO Riverina & Murray Joint Organisation

GOLDER

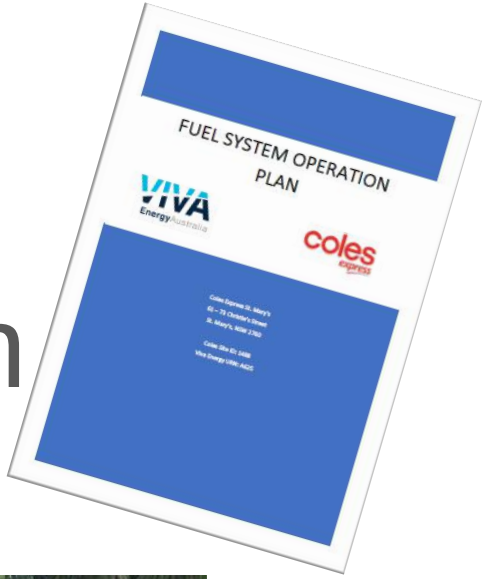
REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

PART 1

Desktop Review
Pre – Site Inspection

Observations,
Questions?

PART 1



Desktop review, Pre – Site Inspection

Questions:

– What are some common issues / questions you may come across when you first contact a ‘Person Responsible’ for the UPSS about an inspection of a regional **non-Oil Major site**?

- How should a Council Compliance officer respond?

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

PART 1

Pre – Site Inspection, Desktop review

People respond to 'Authority' in very different ways.

Some answers and ideas. Responding to Initial common issues:

- Ask them to completed the **self-evaluation form** – as a starting point
- Develop an **inspection campaign** and project materials to support it.
  - E.g. a **script** about the inspection of all sites in LGA
- Reference any **previous inspections** by the EPA or otherwise
- Talk to the changes in the UPSS regulation and that the inspection is a chance for you (Council) to talk to Service Station operators about what those changes mean for their site. (**Education**)
- Frame the inspection from the start as part of an ongoing Council process and establish rapport to facilitate UPSS site improvements.

PART 2

On the Ground – The Inspection

– Introduction to the Coles Express St Marys site

UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

UPSS Infrastructure

Underground

ATG – Automatic Tank Gauging

RAMJO Riverina & Murray Joint Organisation

GOLDER

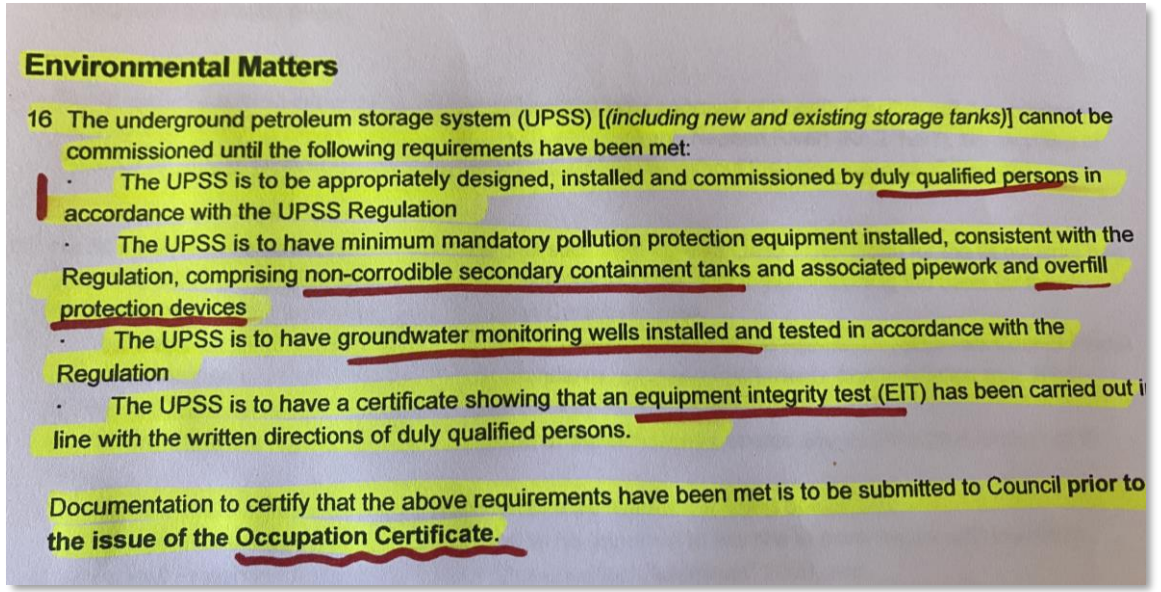
REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Coles Express – St Marys

- New Site opened in July 2020
- Represents "*Best Practice Infrastructure*"
- Penrith City Council: Conditions of consent considers the *UPSS Regulation, 2019*



Environmental Matters

16 The underground petroleum storage system (UPSS) [*(including new and existing storage tanks)*] cannot be commissioned until the following requirements have been met:

- The UPSS is to be appropriately designed, installed and commissioned by duly qualified persons in accordance with the UPSS Regulation
- The UPSS is to have minimum mandatory pollution protection equipment installed, consistent with the Regulation, comprising non-corrodible secondary containment tanks and associated pipework and overfill protection devices
- The UPSS is to have groundwater monitoring wells installed and tested in accordance with the Regulation
- The UPSS is to have a certificate showing that an equipment integrity test (EIT) has been carried out i line with the written directions of duly qualified persons.

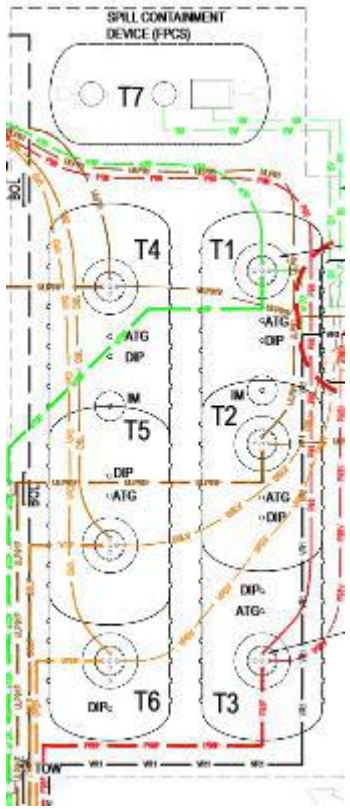
Documentation to certify that the above requirements have been met is to be submitted to Council **prior to the issue of the Occupation Certificate.**

UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Coles Express – St Marys

- Six UST (2 large compartmented tanks split into 3 tanks each)
- Tanks are double walled fibreglass
- Total fuel storage capacity is 182KL
- 1 underground tank for site spill containment (Spel)



Inventory stock levels	
BRAND	↑ TANK
E10	T1
ULP91	T2
V-Power	T3
ULP91	T4
Diesel	T5
VP DIESEL	T6

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

PART 2

VIDEO 2

On the ground:

– Introduction to the Coles Express St Marys site

PART 2

On the ground

– Introduction to the Coles Express St Marys site

Initial observations, questions?

PART 3

On the ground
– The UPSS Site Inspection Checklist

UPSS Compliance Inspections - Checklist

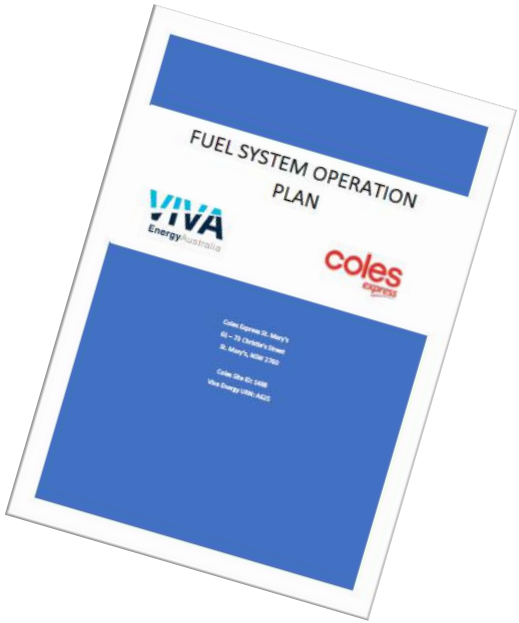
COUNCIL'S MANAGEMENT OF UPSS IN NSW

Protection of the Environment Operations
(Underground Petroleum Storage Systems) Regulation 2019

UPSS SITE INSPECTION CHECKLIST

Conducted on (date/time): **Inspecting Officer:**
Inspection Report No: **File No:**

Site Details	
Site Business name:	Site owner name:
Site address:	Person responsible name:
Lot: DP:	Email (person responsible/owner):
Nature of lease/responsibility for site & UPSS:	
Exemption applies?	Total annual fuel sales (litres):
Vapour recovery (Y/N) VR1 VR2	Tank information available? (Y/N):
If yes, record (if tank contains multiple compartments, record each compartment as a separate tank): Year tank was commissioned : Volume:	Construction material(s): Products contained: Operational status:



RAMJO Riverina & Murray Joint Organisation

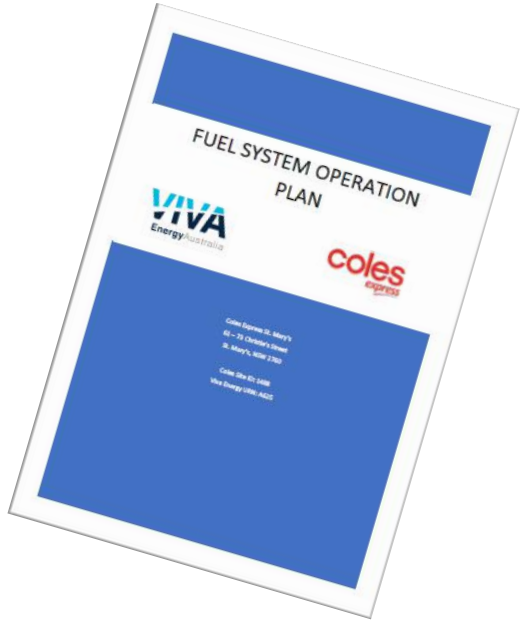
GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section A – Fuel System Operation Plan or equivalent (Yes/No) or (✓ ✗) – record details as applicable				
❑ Present	❑ Separate Document	❑ Accessible (on-site)	❑ Located offsite	❑ Format: electronic/paper
Fuel System Operation Plan – Contents				
❑ Site details ***(FSOP Section A)***	❑ Site security & access info ***(FSOP Section A)***	❑ Person responsible contacts ***(FSOP Section A)***	❑ Details of loss monitoring system ***(FSOP Section B)***	❑ Incident management procedure ***(FSOP Section C)***
❑ Maintenance schedule ***(FSOP Section D)***	❑ Plans / as built drawings ***(FSOP Section E & F)***	❑ Design standards/industry specs (***FSOP Section G & H***)	❑ Indicates location of records (***FSOP Section G & H***)	❑ Employee induction and incident mgmt. training ***(FSOP Section I)***



Integrity Test Certificates

Loss Monitoring System Records

Leak Detection System Results & Reports

Fuel System Operation Plan

RAMJO Riverina & Murray Joint Organisation

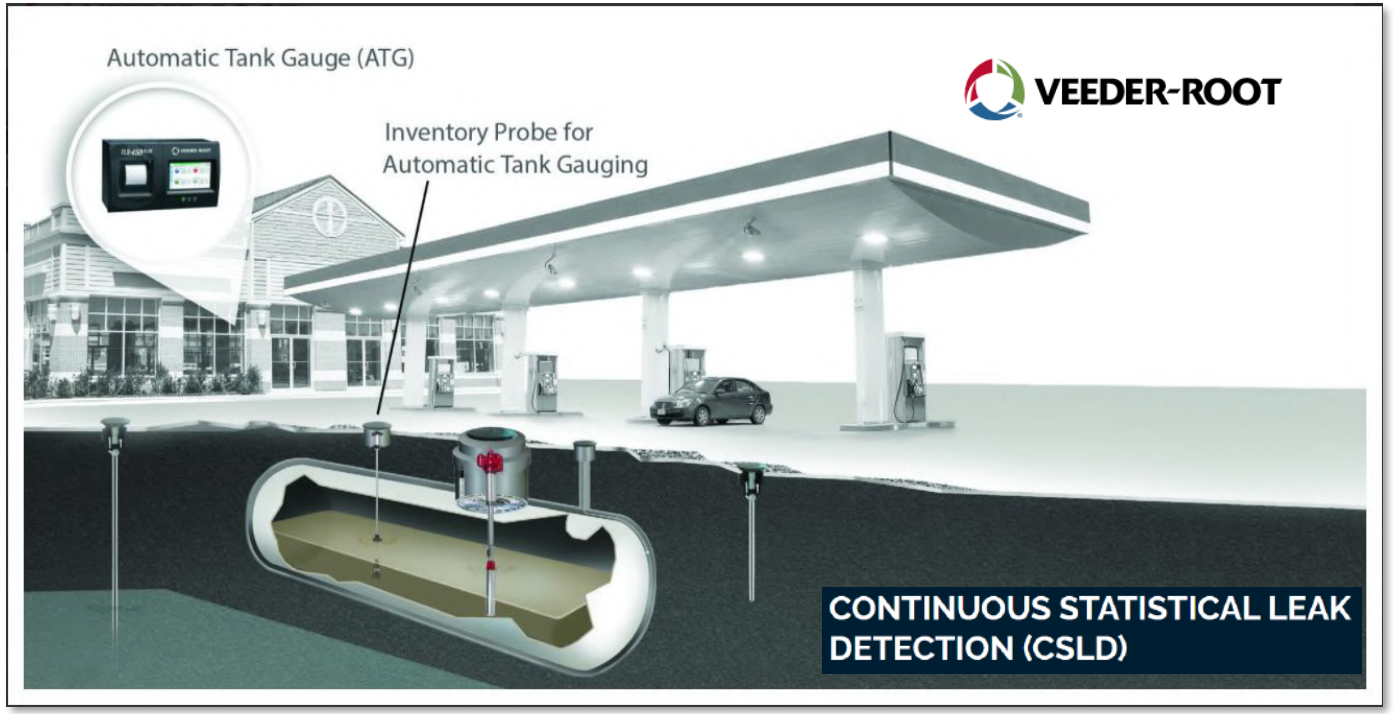
GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section B – Loss monitoring system (description)					
❑None	❑SIRA	❑ ATG	❑ Interstitial	❑ Manual Dipping	❑ Other:
Frequency of loss monitoring reports		❑ Daily	❑ Weekly	❑ Monthly	❑ Other:
Certified to meet 0.76L/hr criteria?				Loss monitoring for all tanks?	
LM reports included in FSOP?				Are discrepancies investigated?	



Loss Monitoring System

AIM: detect losses of petroleum

Measure discrepancies between

a) The amount of petroleum that <u>should</u> be present in the system

b) The amount of petroleum that is <u>actually</u> present in the system

Greenscan®

St Marys Cexp
SIR Site Summary

EMS Driving Fuel IQ

TEL: 1300 367 783
FAX: 1300 367 785
sirhelp@drivingfueliq.com

Site ID	A625		
Site Name	St Marys Cexp	**Site Region**	R10
Address	61-63 Christie Street, St Marys 2760, NSW, Australia	**Analysis Period**	8/09/2020
Owner	Viva Energy		
Telephone			

Tank	Product	Avg Daily Sales	SIR Variance %	No. of days data	Variance Rate (ltr/day)	Result	Comments
1	E10	361	-1.67	50	7	Pass	
2	ULP91	422	-3.77	50	17	Pass	
3	VP	718	-0.25	50	3	Pass	
4	ULP91	356	0.32	50	0	Pass	
5	DSL	903	0.05	50	0	Pass	
6	VPDSL	577	0.68	50	-4	Pass	

(1) Greenscan is an independently certified Statistical Inventory Reconciliation software program. Please refer to the NWGLDE website for more information. The information provided is set against the parameters of the US EPA certification protocol for SIR Leak Detection

Thursday, 24 September 2020

RAMJO Riverina & Murray Joint Organisation

GOLDER

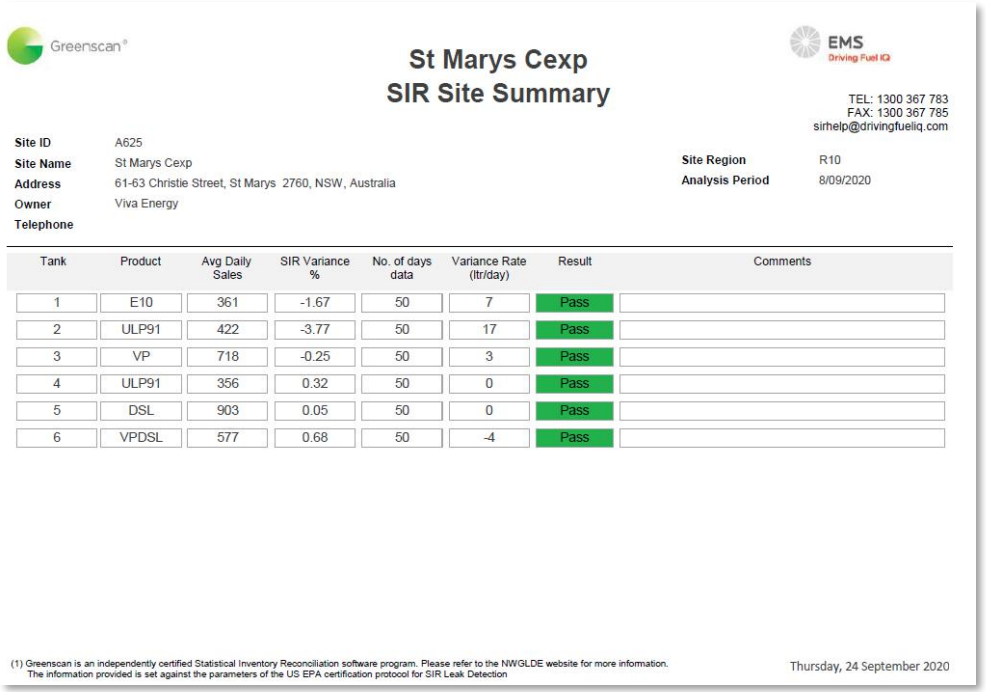
REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section B – Loss monitoring system (description)					
❑None	❑SIRA	❑ ATG	❑ Interstitial	❑ Manual Dipping	❑ Other:
Frequency of loss monitoring reports		❑ Daily	❑ Weekly	❑ Monthly	❑ Other:
Certified to meet 0.76L/hr criteria?				Loss monitoring for all tanks?	
LM reports included in FSOP?				Are discrepancies investigated?	

- Tank interstitial fluid is monitored for pressure changes via the ATG
- Automatic Tank Gauges (ATG) installed in each tank capable of detecting volume changes ~10L



Greenscan®

St Marys Cexp
SIR Site Summary

EMS
Driving Fuel IQ

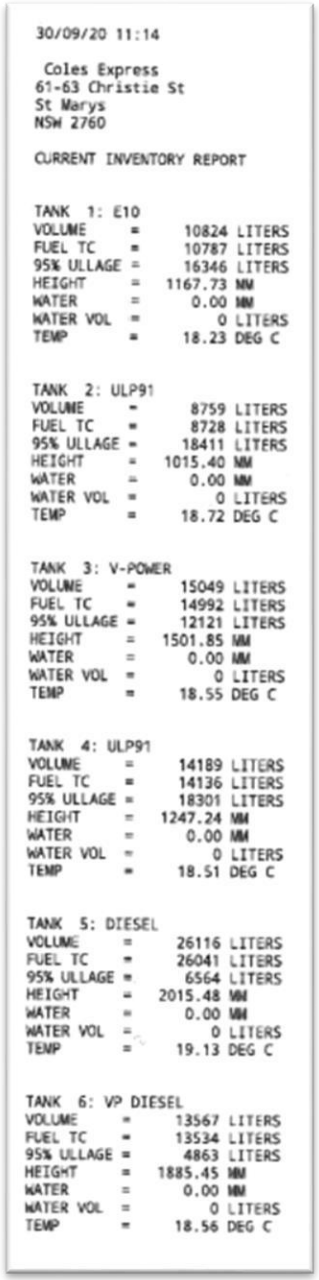
TEL: 1300 367 783
FAX: 1300 367 785
sirhelp@drivingfueliq.com

Site ID	A625
Site Name	St Marys Cexp
Address	61-63 Christie Street, St Marys 2760, NSW, Australia
Owner	Viva Energy
Telephone	
Site Region	R10
Analysis Period	8/09/2020

Tank	Product	Avg Daily Sales	SIR Variance %	No. of days data	Variance Rate (ltr/day)	Result	Comments
1	E10	361	-1.67	50	7	Pass	
2	ULP91	422	-3.77	50	17	Pass	
3	VP	718	-0.25	50	3	Pass	
4	ULP91	356	0.32	50	0	Pass	
5	DSL	903	0.05	50	0	Pass	
6	VPDSL	577	0.68	50	-4	Pass	

(1) Greenscan is an independently certified Statistical Inventory Reconciliation software program. Please refer to the NWGLDE website for more information. The information provided is set against the parameters of the US EPA certification protocol for SIR Leak Detection

Thursday, 24 September 2020



30/09/20 11:14

Coles Express
61-63 Christie St
St Marys
NSW 2760

CURRENT INVENTORY REPORT

TANK 1: E10
VOLUME = 10824 LITERS
FUEL TC = 10787 LITERS
95% ULLAGE = 16346 LITERS
HEIGHT = 1167.73 MM
WATER = 0.00 MM
WATER VOL = 0 LITERS
TEMP = 18.23 DEG C

TANK 2: ULP91
VOLUME = 8759 LITERS
FUEL TC = 8728 LITERS
95% ULLAGE = 18411 LITERS
HEIGHT = 1015.40 MM
WATER = 0.00 MM
WATER VOL = 0 LITERS
TEMP = 18.72 DEG C

TANK 3: V-POWER
VOLUME = 15049 LITERS
FUEL TC = 14992 LITERS
95% ULLAGE = 12121 LITERS
HEIGHT = 1501.85 MM
WATER = 0.00 MM
WATER VOL = 0 LITERS
TEMP = 18.55 DEG C

TANK 4: ULP91
VOLUME = 14189 LITERS
FUEL TC = 14136 LITERS
95% ULLAGE = 18301 LITERS
HEIGHT = 1247.24 MM
WATER = 0.00 MM
WATER VOL = 0 LITERS
TEMP = 18.51 DEG C

TANK 5: DIESEL
VOLUME = 26116 LITERS
FUEL TC = 26041 LITERS
95% ULLAGE = 6564 LITERS
HEIGHT = 2015.48 MM
WATER = 0.00 MM
WATER VOL = 0 LITERS
TEMP = 19.13 DEG C

TANK 6: VP DIESEL
VOLUME = 13567 LITERS
FUEL TC = 13534 LITERS
95% ULLAGE = 4863 LITERS
HEIGHT = 1885.45 MM
WATER = 0.00 MM
WATER VOL = 0 LITERS
TEMP = 18.56 DEG C

RAMJO Riverina & Murray Joint Organisation

GOLDER

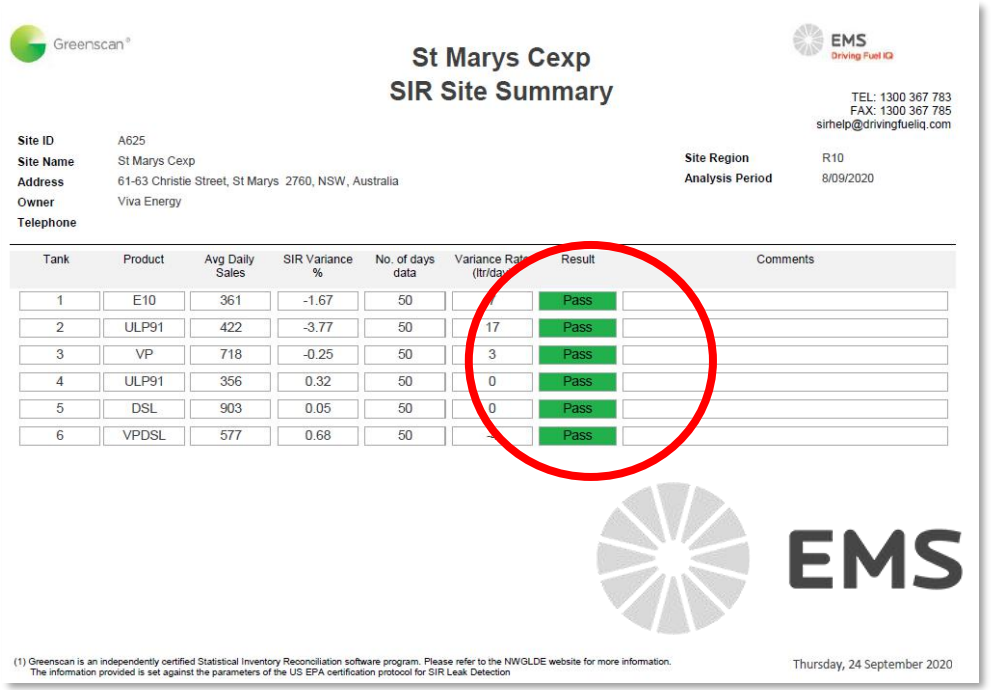
REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section B – Loss monitoring system (description)					
❑None	❑SIRA	❑ ATG	❑ Interstitial	❑ Manual Dipping	❑ Other:
Frequency of loss monitoring reports		❑ Daily	❑ Weekly	❑ Monthly	❑ Other:
Certified to meet 0.76L/hr criteria?				Loss monitoring for all tanks?	
LM reports included in FSOP?				Are discrepancies investigated?	

- SIR is conducted remotely with inputs from various sources of data including the ATG.
- SIR is conducted on a **weekly basis** as it is a review of tank trends.
- Sales data received from Coles is compared to the pump data on site (accessed remotely).
- Delivery data received from Viva Energy Australia and compared to the ATG data (accessed remotely)
- Viva Energy Australia use EMS (Environmental Monitoring Solutions) for our SIR management.



Greenscan®

EMS Driving Fuel IQ

St Marys Cexp
SIR Site Summary

TEL: 1300 367 783
FAX: 1300 367 785
sirhelp@drivingfueliq.com

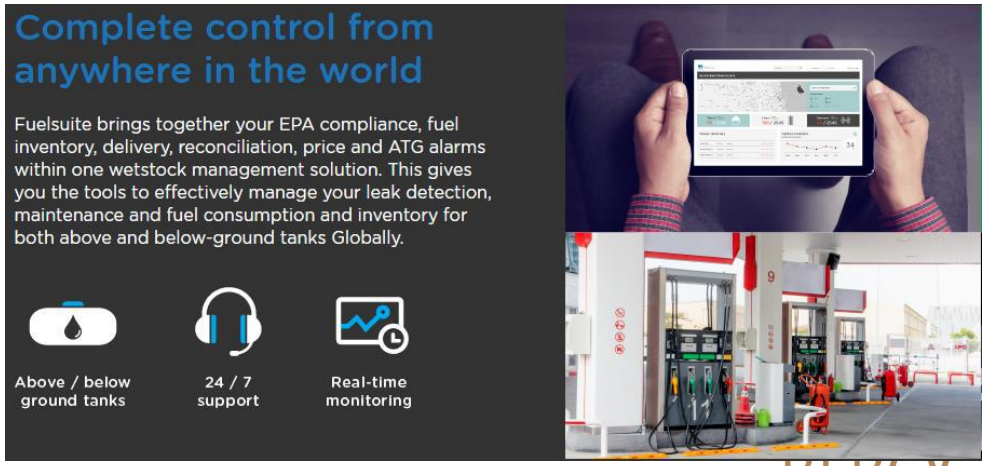
Site ID	A625		
Site Name	St Marys Cexp	**Site Region**	R10
Address	61-63 Christie Street, St Marys 2760, NSW, Australia	**Analysis Period**	8/09/2020
Owner	Viva Energy		
Telephone			

Tank	Product	Avg Daily Sales	SIR Variance %	No. of days data	Variance Rate (ltr/day)	Result	Comments
1	E10	361	-1.67	50		Pass	
2	ULP91	422	-3.77	50	17	Pass	
3	VP	718	-0.25	50	3	Pass	
4	ULP91	356	0.32	50	0	Pass	
5	DSL	903	0.05	50	0	Pass	
6	VPDSL	577	0.68	50		Pass	

EMS

(1) Greenscan is an independently certified Statistical Inventory Reconciliation software program. Please refer to the NWGLDE website for more information. The information provided is set against the parameters of the US EPA certification protocol for SIR Leak Detection

Thursday, 24 September 2020



RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section C – Incident management procedure		
❑ Procedure in place?	❑ Incident log kept in FSOP?	❑ Steps to mitigate spill/leak?

No product to ground

The principle of 'no product to ground' describes one of our environmental commitments to Goal Zero. We are committed to investing in processes and equipment that are safer, more reliable and more efficient, and using monitoring and control systems to rapidly detect problems – especially leaks.

https://www.youtube.com/watch?v=5m-VgWwfh0c

- Live monitoring of ATG alarms with automated emails of high-risk alarms to select individuals for immediate action. E.g. water alarm in a tank indicating water ingress which could result in issues with customer vehicles

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section C – Incident management procedure		
❑ Procedure in place?	❑ Incident log kept in FSOP?	❑ Steps to mitigate spill/leak?

UPSS Regulation leak notification form

Note: This form may be downloaded from www.environment.nsw.gov.au/upss.htm

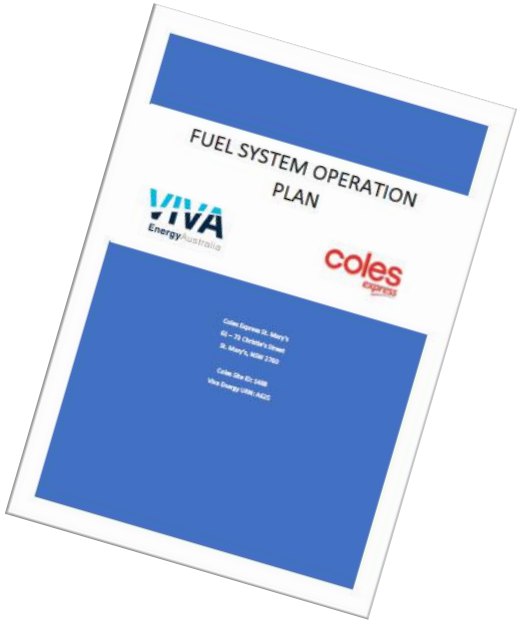
UPSS Regulation Leak Notification

Notification under Part 5.7 of the *Protection of the Environment Operations Act 1997*

This form provides specific guidance for reporting pollution incidents where a leak from an underground petroleum storage system (UPSS) is identified. This form should be completed where one or more of the following scenarios applies to the UPSS site (tick where appropriate):

- ☐ **A leak from the UPSS is verified in accordance with Section 4.3 Loss Detection and Investigation or Section 4.4 Incident Management Procedures outlined in the UPSS Guidelines**
- ☐ **There is evidence on the site of free-phase hydrocarbons in surface water and/or groundwater**
- ☐ **There is evidence that offsite migration of hydrocarbons could occur, is occurring, or has occurred.**

Note: *This form should be sent to the appropriate regulatory authority within 30 days of a pollution incident being detected by the person responsible for the UPSS.*

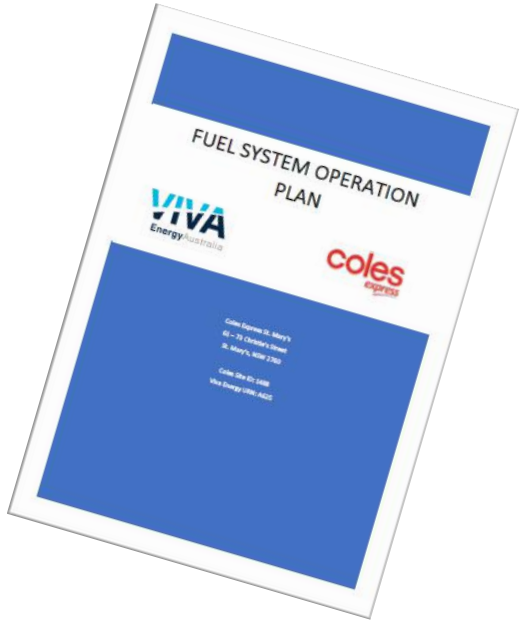


Does the FSOP procedure reference the Leak Notification form?

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section D – Maintenance schedule	
Schedule in place showing general systems maintenance and maintenance of all gauges, indicators, probes, sensors and any other measuring instruments (Y/N):	
❑ Indicates maintenance actions	❑ Indicates maintenance frequency
❑ Indicates where maintenance records kept	



Forecourt Maintenance

Ask before touching any UPSS infrastructure on Site

- Daily alarm tracking sent to fuel maintenance technicians for action including PLLD (Pressure line leak detection) alarms, CSLD (continuous static leak detection) alarms, Stuck float alarms and many more

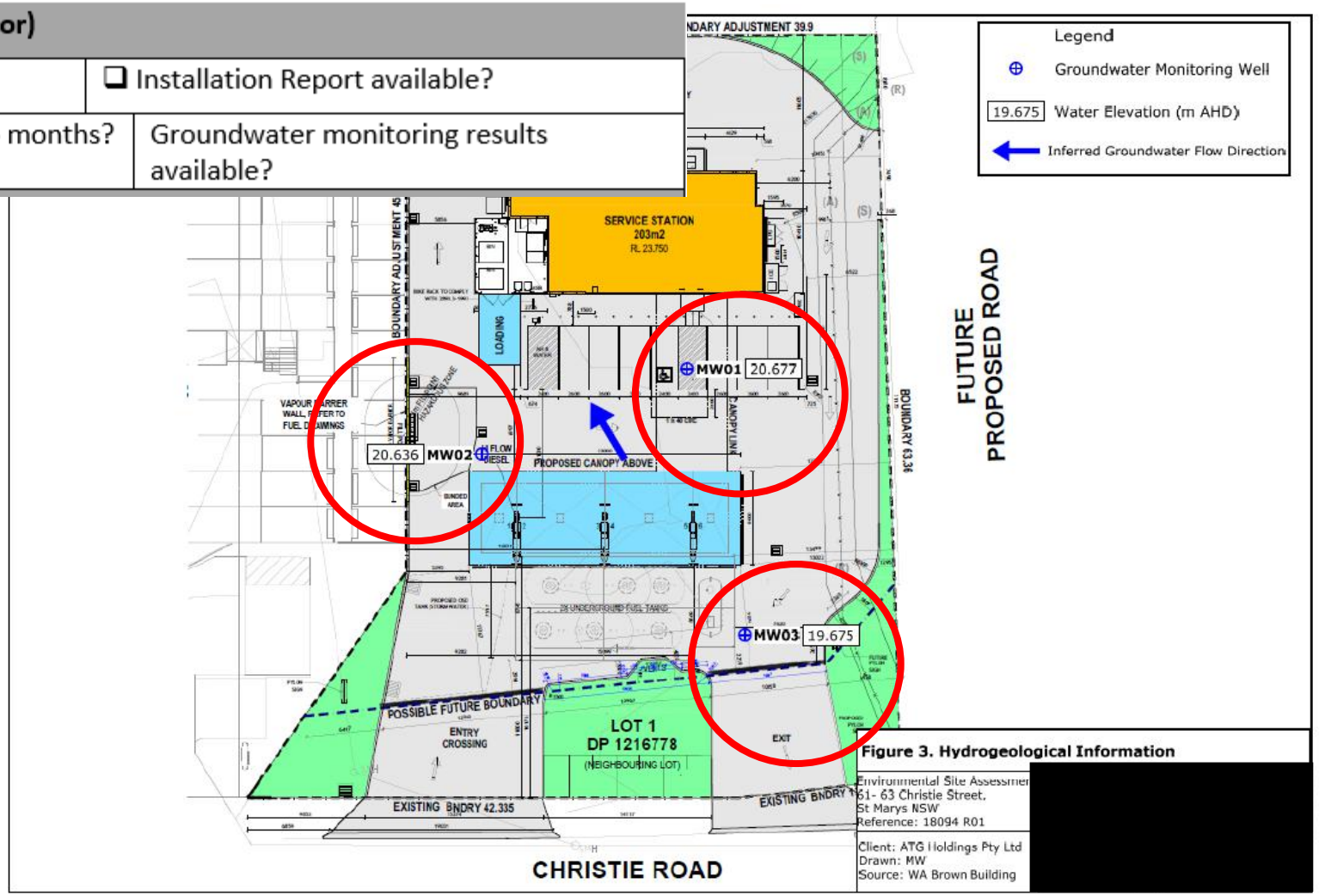
UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section D(i) – Leak detection system, groundwater wells (or)		
❑Groundwater wells installed?	Number of wells:	❑ Installation Report available?
❑ Testing procedure available?	❑ Wells tested every 6 months?	Groundwater monitoring results available?

- Groundwater monitoring wells – minimum of 3 per site some sites have more.
- Gauging is completed 6 monthly as per the UPSS regulation. Testing is only completed as required.

- Tank pit monitoring wells – 2 installed at every site as standard at the edge of the tank farm.
- These are installed in the event they need to be used but not monitored on a scheduled frequency.



RAMJO Riverina & Murray Joint Organisation

GOLDER

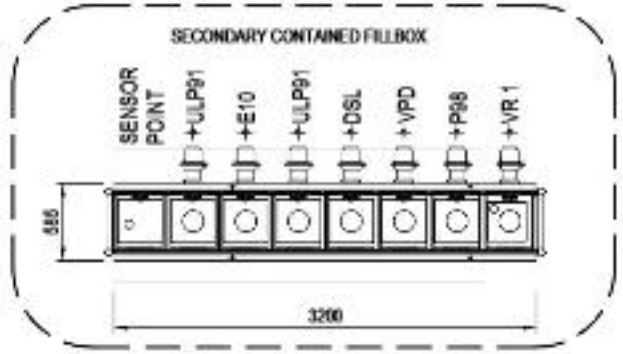
REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section F – Forecourt design operation and maintenance (Yes/No/NA) or (✓ × -)			
Stormwater drains free of pollution		Stormwater drains protected from spills	
Forecourt area sealed and free from cracks		Oil water separator (or alternative)	
Forecourt area has canopy with overhang		Oil/water separator appropriately maintained	
Trade waste agreement/permit		Wastewater discharged to sewer	
Forecourt area bunded for collecting surface runoff		Wastewater treated prior to discharge	
Licensed waste contractors used (planned to be used) to dispose of spill and leak waste		Wastes stored in a manner to prevent pollution incident	

Complete on Site



Additional measures to prevent spills / losses

- Secondary contained fill box with Vapour Recovery stage 1 connection to all motor spirit tanks
- Overfill protection valves installed in all fill line drop tubes set at 95% tank capacity (Safe Fill level) (drop tubes is where the fuel goes into the tanks)

UPSS Compliance Inspections - Checklist

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Section G – Spill response and chemical storage			
Spill kit present, accessible, adequate		Spill kit regularly checked and refilled	
Sweep/vacuum/absorbent materials used to clean small spills and surface areas		Relevant Material Safety Data Sheets at site	
Up to date register of chemicals at site		Staff trained in spill clean-up procedures	
Employees aware of who to contact in event of spill			

Complete on Site

Consider asking the Service Station operator during the sign in

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

PART 3

VIDEO 3

On the ground - The UPSS Site Inspection Checklist

PART 3

On the ground – The UPSS Site Inspection Checklist

Questions – Observations?

Groundwater Monitoring – Tutorial?

Groundwater basics tutorial

Gauging – measuring the depth of the groundwater table

Relative depth – Australian Height Datum (AHD)

Fuel floats on water (water table)
LNAPL – Light Non-Aqueous Phase Liquid

Determining groundwater flow direction and gradient

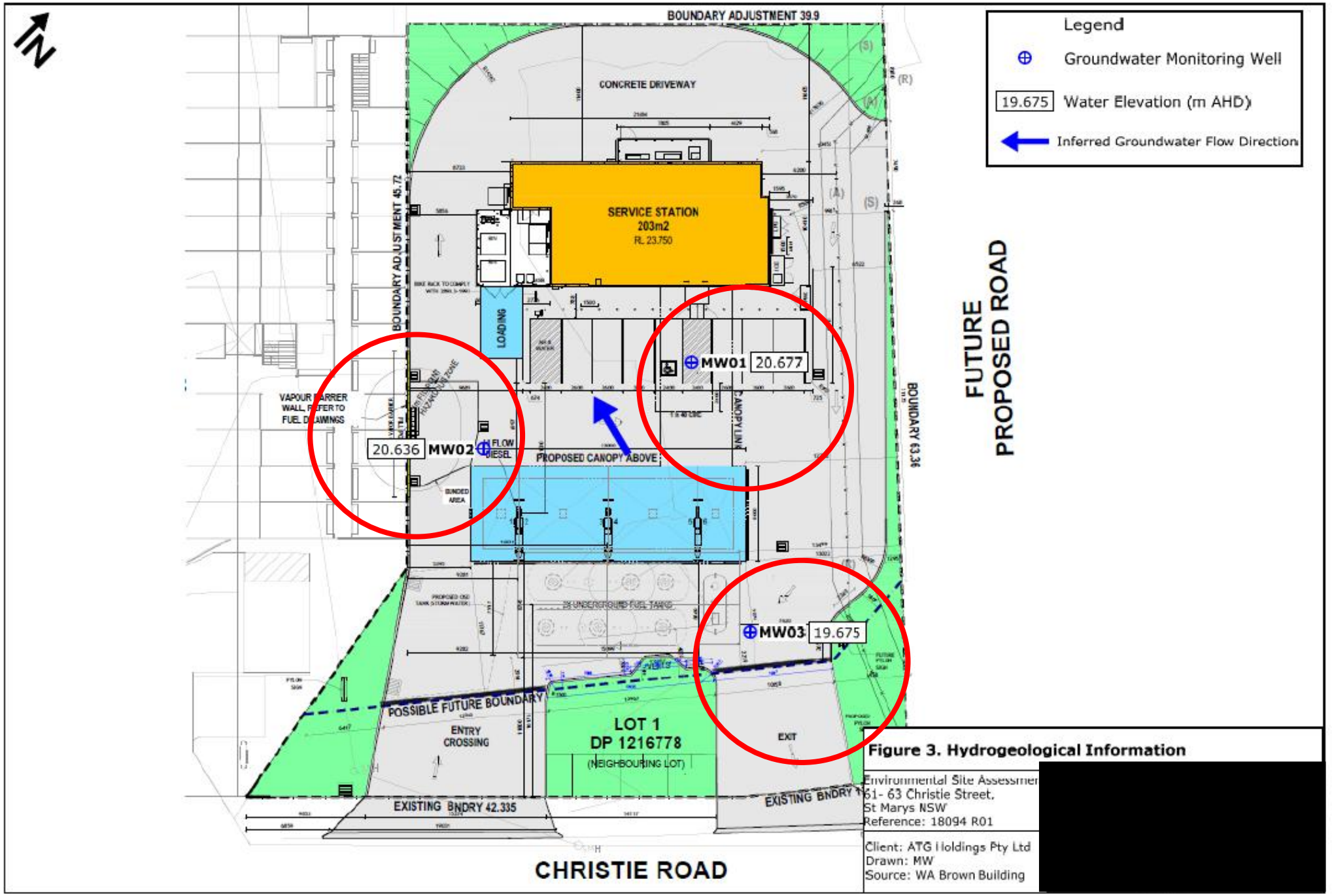


Figure 3. Hydrogeological Information

Environmental Site Assessmer
61- 63 Christie Street,
St Marys NSW
Reference: 18094 R01

Client: ATG Holdings Pty Ltd
Drawn: MW
Source: WA Brown Building

[redacted]

Table 6: Groundwater Monitoring Well Construction Details

Well ID	Date of Installation	Top of Well Casing Elevation (m AHD)	Bottom of Well Depth (m)	Top of Well Screen (m)	Bottom of Well Screen (m)	Location (MGA)		Initial Water Strike	Initial GME Groundwater level	Lithology of screened selection
						Easting	Northing			
MW01	15/08/2019	23.500	7.5	4.5	7.5	293191.713	6263612.805	6.0	2.823	Clay
MW02	15/08/2019	23.334	7.5	4.5	7.5	293181.243	6263598.754	5.7	2.698	Clay
MW03	15/08/2019	23.387	7.5	4.5	7.5	293209.242	6263595.307	5.8	3.712	Clay

m AHD: metres Australian Height Datum
MGA: Map Grid of Australia

Table 7: Groundwater Gauging Data

Well ID	Gauging Date	TOC Elevation (mAHD)	Ground Surface Elevation (mAHD)	Depth of Well (mbTOC)	Depth to NAPL (mbTOC)	Depth to Water (mbTOC)	NAPL Thickness (m)	Corrected Depth to Water (m bgl)	Water Elevation (mAHD)
MW01	15/08/2019	23.500	-	7.560	-	2.823	-	-	20.677
MW02	15/08/2019	23.334	-	7.550	-	2.698	-	-	20.636
MW03	15/08/2019	23.387	-	7.448	-	3.712	-	-	19.675

m AHD: metres Australian Height Datum
mbTOC: metres below top of casing
NAPL: non-aqueous phase liquid

Table 6: Groundwater Monitoring Well Construction Details

Well ID	Date of Installation	Top of Well Casing Elevation (m AHD)	Bottom of Well Depth (m)	Top of Well Screen (m)	Bottom of Well Screen (m)	Location (MGA)		Initial Water Strike	Initial GME Groundwater level	Lithology of screened selection
						Easting	Northing			
MW01	15/08/2019	23.500	7.5	4.5	7.5	293191.713	6263612.805	6.0	2.823	Clay
MW02	15/08/2019	23.334	7.5	4.5	7.5	293181.243	6263598.754	5.7	2.698	Clay
MW03	15/08/2019	23.387	7.5	4.5	7.5	293209.242	6263595.307	5.8	3.712	Clay

m AHD: metres Australian Height Datum
MGA: Map Grid of Australia

2. Check wells are surveyed (mAHD)

1. Check wells are installed to screen the same aquifer

3. Compared water table depth (mAHD)

Table 7: Groundwater Gauging Data

Well ID	Gauging Date	TOC Elevation (mAHD)	Ground Surface Elevation (mAHD)	Depth of Well (mbTOC)	Depth to NAPL (mbTOC)	Depth to Water (mbTOC)	NAPL Thickness (m)	Corrected Depth to Water (m bgl)	Water Elevation (mAHD)
MW01	15/08/2019	23.500	-	7.560	-	2.823	-	-	20.677
MW02	15/08/2019	23.334	-	7.550	-	2.698	-	-	20.636
MW03	15/08/2019	23.387	-	7.448	-	3.712	-	-	19.675

m AHD: metres Australian Height Datum
mbTOC: metres below top of casing
NAPL: non-aqueous phase liquid

PART 4

Post Inspection Activities

Compliance Inspections

COUNCIL'S MANAGEMENT OF UPSS IN NSW

UPSS Site Compliance Inspection and Monitoring of UPSS Operations

- Inspection checklist finalisation
- Compliance and enforcement options
- (Exemptions)

Fuel System Operation Plan
Lists all procedures

Leak Detection System Results & Reports

Loss Monitoring System Records

Integrity Test Certificates

PART 4

VIDEO 4

Post Inspection

UPSS Regulatory Requirements and Penalties

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Part	Penalties (Sections)	ARA (Council)
Part 2: Commissioning of storage system • Installation • Modification • Repair	 s6, s7, s8, s9 s10, s11, s12, s13 s14	Planning compliance
Part 3: Leak detection • Leak Detection System (Groundwater Monitoring)	 s15, s16, s17	Environmental compliance
Part 4: Use of storage systems • Fuel System Operation Plan (Loss Monitoring) • Measurement instruments • Leak detection, procedures	 s18 s19 s20, s21	Environmental compliance
Part 5: Records and reports of events	s22, s23, s24, s25	Environmental compliance
Part 6: Keeping of Records	s26, s27, s28	Environmental compliance Planning compliance

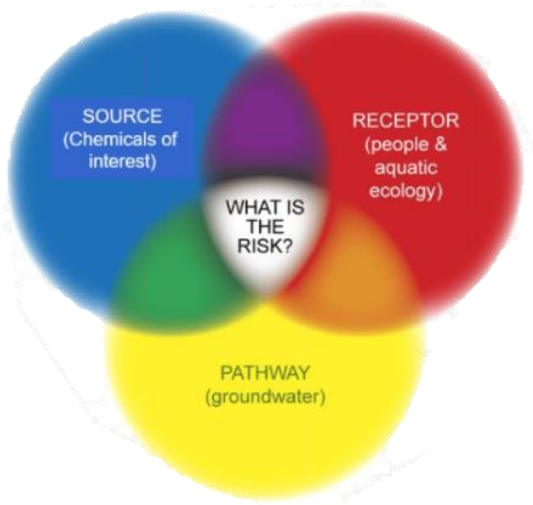
Post UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

During all considerations, council's key concerns are:

- to prevent or minimise harm to health, welfare, safety, property or the environment
- to influence behaviour change for the common good and on behalf of the community.

Reference: Model Compliance and Enforcement Model Policy December 2015, NSW Ombudsman (for NSW council policy development)



KEY UPSS CONCEPT

Key UPSS CONCEPTS

1. ***Preventative Program***
   - *Early warning system*
2. ***Best Industry Practice***
   - *Good Infrastructure*
3. ***Monitoring & Reporting***
   - *Good Systems and Backup*

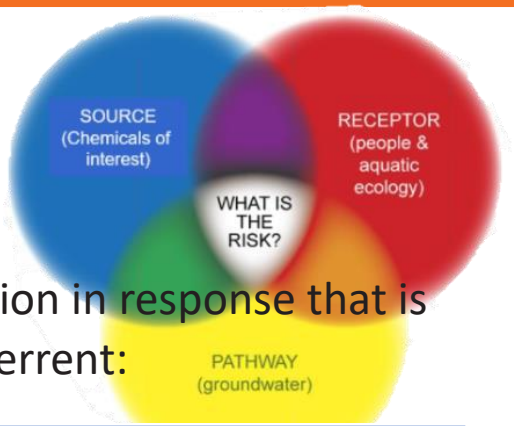
RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Post UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW



The following enforcement options to be considered by council are ordered to reflect an escalation in response that is proportionate to the level of risk, the seriousness of the confirmed breach or the need for a deterrent:

Level of Risk	Enforcement options *Reference: Model Compliance and Enforcement Model Policy December 2015, NSW Ombudsman*
Very low	• Take **no action** on the basis of a lack of evidence or some other appropriate reason • **Provision of information/advice on how to be compliant**
Low	• Negotiating with the person to obtain **voluntary undertakings** or an agreement to address the issues of concern • issuing a **warning** or a **formal caution**
Medium	• issuing a **letter requiring work to be done** or **activity to cease** in lieu of more formal action • issuing a **notice of intention to serve an order or notice** under *UPSS Regulation, 2019* legislation, and then serving an order or notice (Clean Up, Prevention) if appropriate
High	• Issuing a **penalty notice** • Carrying out the works specified in an order at the cost of the person served with the order
Very High	• **seeking an injunction** through the courts to prevent future or continuing unlawful activity • commence legal proceedings for an offence against the relevant Act or Regulation

Key UPSS Concept – Duly Qualified Person

COUNCIL'S MANAGEMENT OF UPSS IN NSW

KEY UPSS CONCEPT

DEFINITION

Duly Qualified Person,

in relation to any activity, means a person who has competence and experience in relation to that activity that is –

a) recognised by a peak body in the relevant industry as appropriate for that activity, or

b) recognised generally in the relevant industry as appropriate for that activity.

Designed and Installed (DQP)	**Architect and Construction Company**
Leak Detection System in place and managed (DQP)	***Environmental Consultant (Certified Environmental Practitioner)***
Certified pass of an ***Integrity Test*** (DQP)	***Contractor***
Loss Monitoring System (DQP)	***Contractor***

INDUSTRY PEAK BODIES?

Defined in 2020 EPA UPSS Guideline update?

ACAPMA Australasian Convenience and Petroleum Marketers Association

CERTIFIED ENVIRONMENTAL PRACTITIONER SCHEME

MOTOR TRADERS' ASSOCIATION OF NSW

Australian Institute of Petroleum

AIDGC Australasian Institute of Dangerous Goods Consultants

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

WRAP UP

On with the Inspections

Questions, Observations
– Break out Activity (5 min)

- How do you feel about conducting a UPSS inspection?

- Are there any UPSS sites that come to mind that you see as ‘high risk’.

- What stage do you think your council is up to?
Prior planning / site prioritisation, campaign development, inspections underway.

UPSS Site Inspection

COUNCIL'S MANAGEMENT OF UPSS IN NSW

Thank you – See you out on site

UST lifted by buoyant force

RAMJO Riverina & Murray Joint Organisation

GOLDER

REROC
RIVERINA EASTERN REGIONAL ORGANISATION OF COUNCILS

Next Steps

Next 6 months:

1. ‘Themed’ webinars/workshops to develop SoPs (November)
2. Council to contact all UPSS owners on IMP and its implementation
3. Onsite UPSS training (tentatively scheduled for February 2021)
4. Data and information management (first half of 2021)

Next Steps – Themed Workshops

- A range of themes/topics identified for further workshopping
- To be delivered in November and early December 2020
- Intent is to:
  - enhance council capacities under these topics
  - develop SoPs, flow charts etc for specific council business processes
  - develop a risk based approach to managing contaminated land in council business processes (DA's, Category 2 works, UPSS IMP, etc)

Next Steps – Themed Workshops

Requested topics are

- Interpretation and use of consultant reports (NEPM ASC, DA's, Category 2 works, UPSS monitoring reports, etc)
- IMP (inspections, monitoring, decommissioning, category 2 works, etc)
- Compliance and enforcement (investigation, assessment, enforcement pathways)

Next Steps – Themed Workshops

Requested topics are

- Waste management (waste classification, soil classification, licensing, consultant reports, ENM/VENM, asbestos, remediation, PFAS)
- Data and information management (Site Registers, historical land use data, mapping, EDMS, planning certificates, planning proposals)

Next Steps – Onsite Training

- Deferred to February 2021 due to public policy constraints
- Reinforcement of (and refresher on) learnings from virtual training
- Identify ‘friendly’ service stations in 3 or 4 LGA’s to host the training – please let me know if your LGA could be a host
- Will invite service station owners / person responsible to participate in the training

Next Steps – Data and Information

- On the critical path – key to ‘good faith’ provisions and minimising harm to human health and the environment
- Council survey November/December
- CRCB projects involved in 3 parallel DIM initiatives:
  - NSW Spatial Services – Namoi Unlimited to pilot
  - CRJO directly dealing with a consultant
  - NSW DPIE on using e-Planning portal for mapped historical data

Thank you

Golder Associates – *Environmental Advisory Services*

Matthew James
BSc(Hons), MEnvMgt, MPH (in progress)

Principal Environmental Scientist
Government Advisory Services Lead - NSW

MJames@golder.com.au

profile