

Good Practices Guide for Odour Management

<INSERT PRESENTATION DATE>





ABOUT CASA

Multi-stakeholder, consensus-based group dedicated to advancing air quality management in Alberta



CASA and Odour Issues

CASA's vision for Alberta's air:

The air will have no adverse odour, taste or visual impact and have no measurable short- or long-term adverse effects on people, animals or the environment.

CASA has moved towards its vision by addressing:

- Emissions from electricity generation
- Particulate matter and ozone management
- Flaring and venting of solution gas in the oil and gas sector

CASA's Odour Project

7 Areas of Focus

- Health
- Complaints
- Assessment
- Prevention & Mitigation
- Enforcement & Regulation
- Education, Communication & Awareness
- Continuous Improvement

Task Groups

Five groups reporting to Odour Management Team

- Complaints Task Group
- Enforcement and Role of Regulation Task Group
- Health Task Group
- Odour Assessment Task Group
- Prevention and Mitigation Task Group

Work Product from Experts

Consultant reports and task group final reports

- Report to the Clean Air Strategic Alliance Odour Management Team Enforcement/Role of Regulation Task Group – RWDI AIR Inc.
- Review of Odour Assessment Tools and Practices for Alberta – Millennium EMS Solutions Ltd., and Environmental Odour Consulting
- Review of Odour Prevention and Mitigation Tools for Alberta – Pinchin Ltd.
- Odour Complaints in Your Area: A Guide for Developing an Odour Complaint Process – Developed by the Task Group
- Odour and Health Backgrounder (with Symptom Tracking Tool) – Developed by the Task Group



GOOD PRACTICES GUIDE

Goal: To create a good practices guide for assessing and managing odour in Alberta



Principles for the guide

Although focused on Alberta, the guide is considered applicable to anyone involved in odour management

- Assess and recommend national and international best practices applicable in the Alberta context
- Capture the products and recommendations of the individual task groups
- Offer practical tools and approaches
- Be clear, concise and user friendly
- Provide keys/roadmaps to guide tool selection and use

Structure of the guide

Key sections

- Understanding Odour
- Odour Complaints
- Odour Assessments
- Odour Prevention & Mitigation
- Odour Management



UNDERSTANDING ODOUR

Summary of elements that are essential to the understanding and characterization of odours and odour events



Odour and Health

The link is not well understood

- Health concerns and/or actual health effects and the effects of odour are challenging to understand
- Odour-related health issues vary
- Until the impact of odour on health is better understood, it is recommended that traditional chemical exposure – health effects assessments be used when responding to odour complaints

Symptom and Odour Tracking Tool

SYMPTOM DETAILS

Date

Time

Location (*e.g., home, work*)

Intensity (*0-5*)

Did the symptoms come and go during the day?

SYMPTOM DESCRIPTION AND OTHER RELEVANT INFORMATION

(e.g., I smelled manure and rotten eggs in the same day, had a headache followed by trouble sleeping)

ODOUR DETAILS

Date

Time

Location (*e.g., home, work*)

Intensity (*0-5*)

Did the odour come and go during the day?

ODOUR DESCRIPTION AND OTHER RELEVANT INFORMATION



ODOUR COMPLAINTS

Guidance and advice about odour complaint management, from taking the complaint to preparing for an investigation



Odour Complaint Form

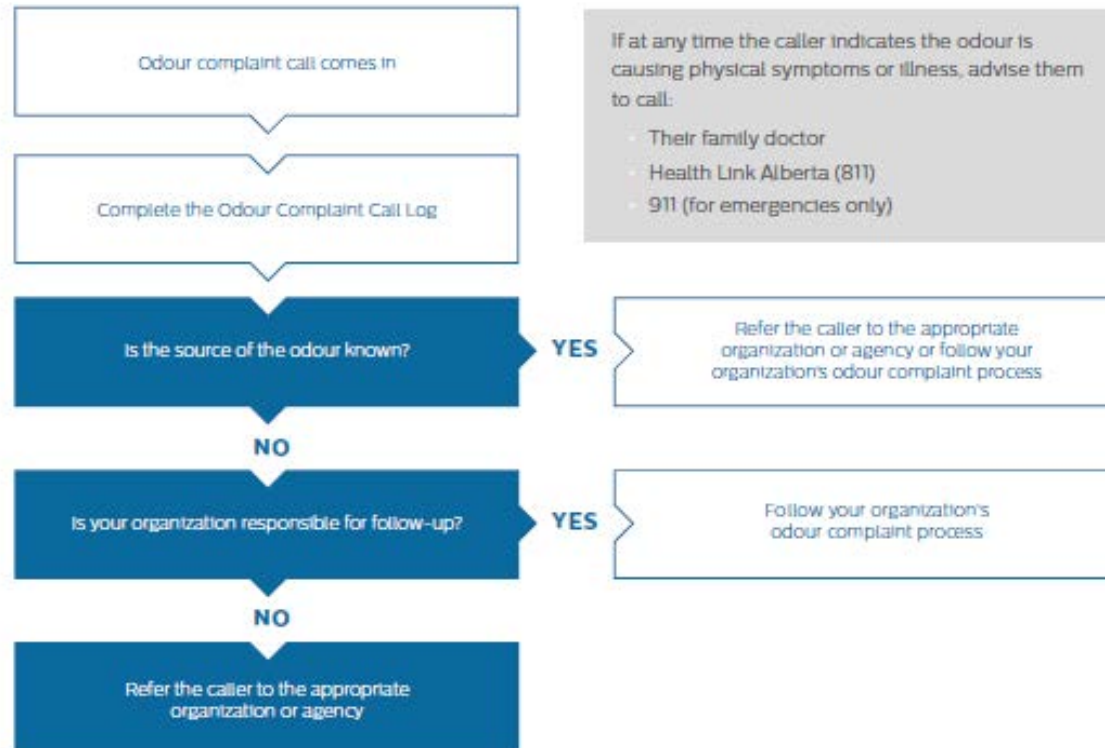
CALL DATE:		CALL TIME:		REFERENCE NUMBER:	
CALLER NAME: (MAY REMAIN ANONYMOUS)		CALL RECEIVED BY:		PHONE NUMBER:	
LOCATION WHERE YOU EXPERIENCED THE ODOUR:					
ODOUR DESCRIPTION (CHECK ALL DESCRIBED BY CALLER)					
CHEMICAL	EARTHY	FRUITY	OFFENSIVE	FLORAL	
<input type="checkbox"/> Acidic <input type="checkbox"/> Bleach <input type="checkbox"/> Glue <input type="checkbox"/> Mothballs <input type="checkbox"/> Nail polish <input type="checkbox"/> Paint-like <input type="checkbox"/> Petroleum/gasoline <input type="checkbox"/> Plastic <input type="checkbox"/> Rubbery <input type="checkbox"/> Solvent <input type="checkbox"/> Tar <input type="checkbox"/> Turpentine <input type="checkbox"/> Vinegar <input type="checkbox"/> Varnish	<input type="checkbox"/> Grassy <input type="checkbox"/> Hay <input type="checkbox"/> Musty <input type="checkbox"/> Mouldy <input type="checkbox"/> Mushroom <input type="checkbox"/> Peat-like <input type="checkbox"/> Pine <input type="checkbox"/> Swampy <input type="checkbox"/> Woody <input type="checkbox"/> Yeast	<input type="checkbox"/> Citrus <input type="checkbox"/> Fermented <input type="checkbox"/> Fruity <input type="checkbox"/> Over ripened fruit	<input type="checkbox"/> Garbage <input type="checkbox"/> Garlic/onion <input type="checkbox"/> Rancid <input type="checkbox"/> Sour milk <input type="checkbox"/> Sweet & sour <input type="checkbox"/> Rotten eggs <input type="checkbox"/> Rotting meat <input type="checkbox"/> Rotting vegetables <input type="checkbox"/> Skunk <input type="checkbox"/> Urine <input type="checkbox"/> Vinegar <input type="checkbox"/> Vomit <input type="checkbox"/> Yeast	<input type="checkbox"/> Flowers <input type="checkbox"/> Fragrant <input type="checkbox"/> Herbal <input type="checkbox"/> Perfume <input type="checkbox"/> Spicy	
SMOKY	MEDICINAL	FECAL	PUTRID	FISHY	
<input type="checkbox"/> Burnt plastic/rubber <input type="checkbox"/> Coffee-like <input type="checkbox"/> Exhaust <input type="checkbox"/> Grass smoke <input type="checkbox"/> Wood smoke <input type="checkbox"/> Other (describe)	<input type="checkbox"/> Alcohol <input type="checkbox"/> Ammonia <input type="checkbox"/> Menthol <input type="checkbox"/> Urine <input type="checkbox"/> Vinegar	<input type="checkbox"/> Manure <input type="checkbox"/> Septic <input type="checkbox"/> Sewer	<input type="checkbox"/> Burning carcasses <input type="checkbox"/> Dead animal <input type="checkbox"/> Decay <input type="checkbox"/> Rotting	<input type="checkbox"/> Dead fish <input type="checkbox"/> Perm solution	
FREQUENCY AND DURATION					
WHEN DID YOU FIRST NOTICE THE ODOUR?					
Date:	Time:		Don't know/No answer		
HOW OFTEN HAVE YOU NOTICED THE ODOUR? HOW LONG DOES IT LAST?					
<input type="checkbox"/> One time <input type="checkbox"/> Daily	Start time: Date:	End time: Time:	<input type="checkbox"/> Continuous since <input type="checkbox"/> More than once a week <input type="checkbox"/> Other		
INTENSITY (HOW STRONG IS THE ODOUR?)					
<input type="checkbox"/> Faint: Odour is barely detectable, need to stand still and inhale while facing into the wind to notice it. <input type="checkbox"/> Moderate: Odour is easily detected while walking and breathing normally but it is not overpowering. <input type="checkbox"/> Strong: Odour is penetrating, you can't get away from it and it can easily be detected at all times. <input type="checkbox"/> No answer.					

WEATHER CONDITIONS (WHEN YOU NOTICED THE ODOUR)				
GENERAL CONDITIONS	CLOUD COVER	WIND SPEED	WIND DIRECTION	Don't know/No answer
<input type="checkbox"/> Dry <input type="checkbox"/> Rainy <input type="checkbox"/> Foggy <input type="checkbox"/> Snowy	<input type="checkbox"/> Clear <input type="checkbox"/> Light clouds <input type="checkbox"/> Scattered clouds <input type="checkbox"/> Overcast	<input type="checkbox"/> None/light <input type="checkbox"/> Steady <input type="checkbox"/> Strong <input type="checkbox"/> Gusting	Which direction is the wind coming from?	
ALLEGED SOURCE OF THE ODOUR (IF KNOWN)				
HAVE YOU REPORTED THIS ODOUR BEFORE?				
<input type="checkbox"/> No		<input type="checkbox"/> Yes, if yes, who and when:		
ADDITIONAL COMMENTS OR INFORMATION:				
The odour investigators may have additional questions. May I give your contact information to our investigators or those of another agency?			<input type="checkbox"/> No	<input type="checkbox"/> Yes (ensure contact information is complete)
Would you like a follow up call?			<input type="checkbox"/> No	<input type="checkbox"/> Yes (ensure contact information is complete)
If yes, date follow up call was made:				
ACTION TAKEN:				
<input type="checkbox"/> Referred caller to:				
<input type="checkbox"/> Sent complaint for investigation to:				
<input type="checkbox"/> Other:				
NOTES FROM FOLLOW UP CALL:				

The collection, use and disclosure of personal information on this form is in accordance with Alberta's privacy legislation. Odour Complaint Form adapted from the Natural Resources Conservation Board Odour Report Form

Odour Complaint Referral Process

Odour Complaint Decision Tree



CHEMICAL/ PETROLEUM ODOURS	MANURE/SEWER ODOURS	ROTTEN ODOURS	ODOUR
Possible sources: - Manufacturing - Refineries - Oil & gas operations	Possible sources: - Agriculture	Possible sources: - Sour oil and gas operations - Pulp mill	Possible sources:
Contact: Local Organization AER/AEP	Contact: Local Organization Municipality NRCB	Contact: Local Organization AER/AEP	Contact:

Customize the boxes as appropriate for your local industries and activities.

- Alberta Energy Regulator (AER)
1-800-222-6514
- Alberta Environment and Parks (AEP)
1-800-222-6514
- Natural Resources Conservation Board (NRCB)
1-866-383-6722
- 311 Calgary or 311 Edmonton



ODOUR ASSESSMENT

Outline of the different odour assessment tools and approaches that can be used and when and how to use them



Tool Use Guide

PURPOSE OF ODOUR ASSESSMENT	SUGGESTED STEPS
To verify and investigate odour complaints	<ol style="list-style-type: none"> 1. Non-analytical assessment 2. Ambient sampling and measurement 3. Source sampling and measurement
To comply with conditions outlined in operating/industrial permits	<ol style="list-style-type: none"> 1. Source sampling and measurement 2. Ambient sampling and measurement
To determine compliance with odour legislation	<ol style="list-style-type: none"> 1. Source sampling and measurement 2. Ambient sampling and measurement
To assess long-term odour exposure levels in an area	<ol style="list-style-type: none"> 1. Non-analytical assessment 2. Ambient sampling and measurement
To rank potential odour sources for mitigation purposes	<ol style="list-style-type: none"> 1. Source sampling and measurement (OU or individual compounds)
To determine background odour concentrations before building a new facility	<ol style="list-style-type: none"> 1. Ambient sampling and measurement
To determine the off-site odour impact from existing operations	<ol style="list-style-type: none"> 1. Non-analytical assessment 2. Ambient sampling and measurement
To determine the expected changes in off-site odours resulting from new facilities, expansions of existing facilities or other operational changes	<ol style="list-style-type: none"> 1. Source sampling and measurement 2. Ambient sampling and measurement 3. Dispersion modelling

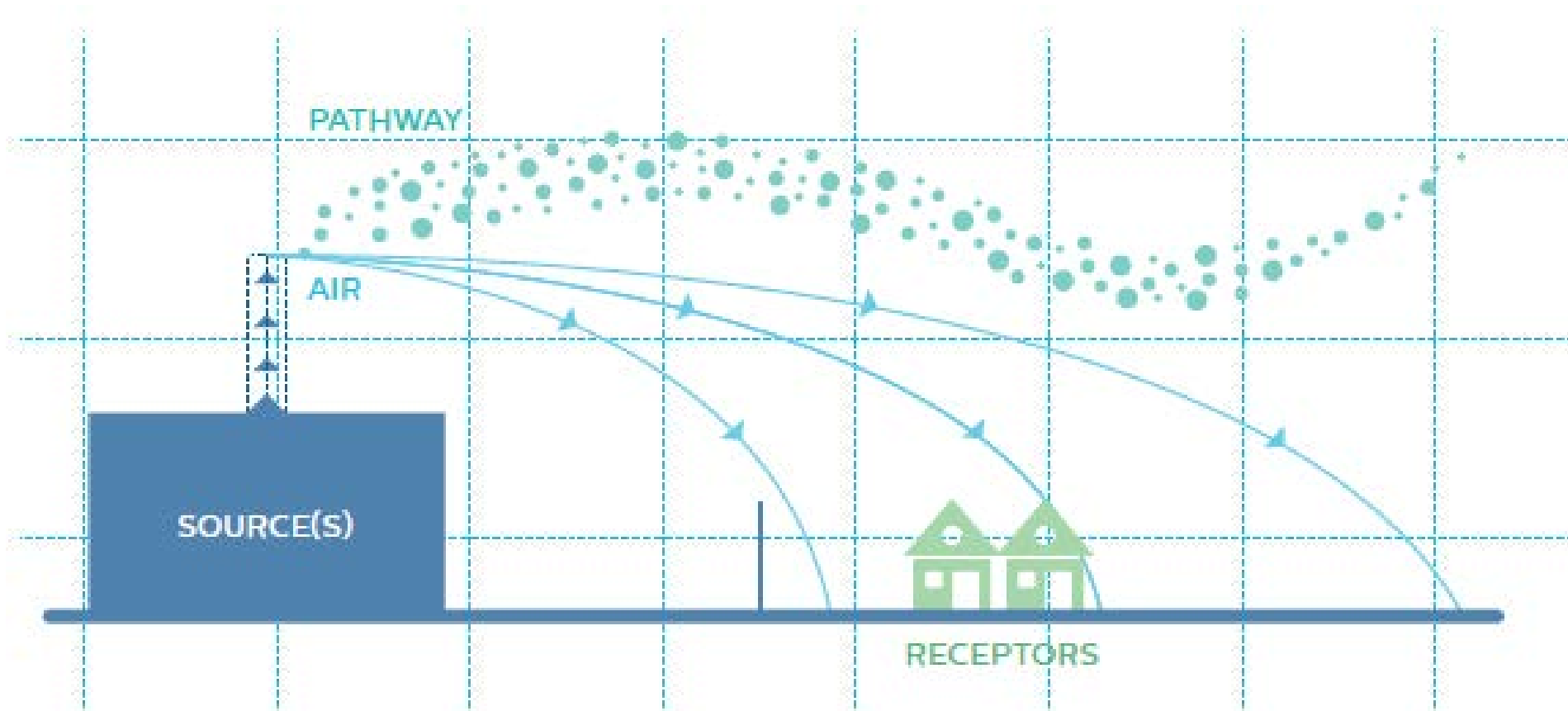


ODOUR PREVENTION

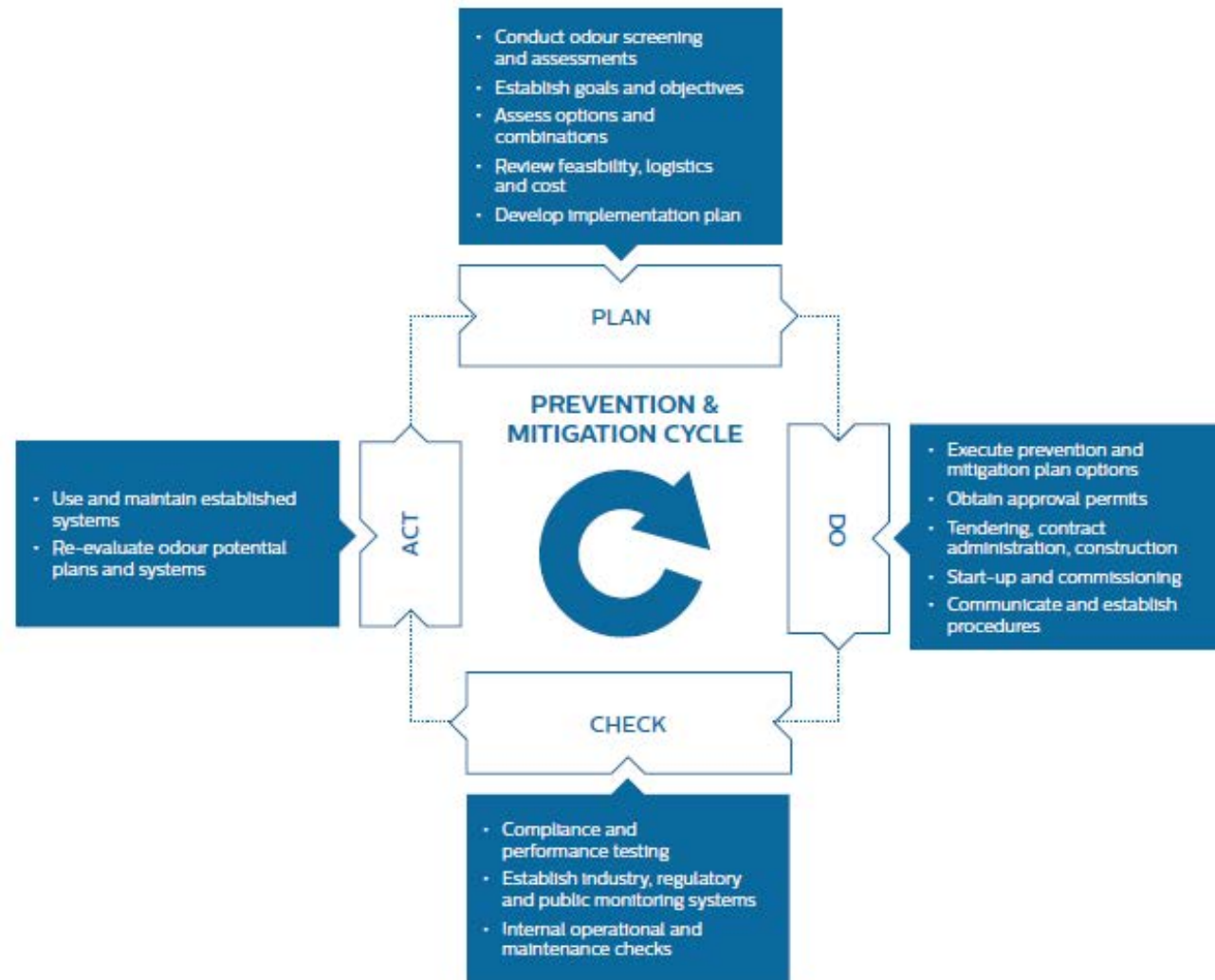
Outlines actions and tools to prevent or mitigate odorant releases and/or nuisance odour events



Source-Pathway-Receptor Model



Plan, Do, Check and Act Model



Tools – Benefits and Considerations

Raw Materials, Formulation, Process and Operational Modifications

BENEFITS

Prevention techniques can drastically reduce or eliminate the potential for odour

Operational/maintenance modifications can be simple and easy to implement

CONSIDERATIONS

Material substitutions can require expensive and time consuming trials

Process changes may affect the quality of products



ODOUR MANAGEMENT

**Regulatory options identified
as potential approaches for
managing odours**



Regulatory Approaches

General considerations

- Guide provides general considerations for any potential regulatory-based odour management framework
- Identifies strengths, weaknesses and considerations of 8 ambient-based and 2 emission-based regulatory systems



FUTURE PLANS

Continuous improvement and education, awareness and communication strategies



Sharing the Guide

Release in Fall 2015

- Hard copies of the guide: contact CASA at casa@casahome.org
- Download the guide: CASA website (casahome.org)
- Also available on the website:
 - Tools, forms and templates
 - Full reports on which the guide is based
 - Task group final reports

Questions?

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