



Offshore Chemical Selection Guideline

Issue Date: October 28, 2024

For more information, contact:

C-NLOPB
240 Waterford Bridge Road, Suite 7100
The Tower Corporate Campus – West Campus Hall
St. John's NL A1E 1E2
Tel: (709) 778-1400
Fax: (709) 778-1473

CNSOPB
201 Brownlow Avenue, Suite 27
Dartmouth NS B3B 1W2
Tel: (902) 422-5588
Fax: (902) 422-1799

ISBN #: 978-1-77865-017-8

| Summary of Changes | | |
|---------------------|-----------------------------|--|
| Date Revised | Sections (if applicable) | Description of Change |
| October 28, 2024 | | Placed into new format for Guidelines; updated to include the latest regulatory references and changes in terminology as used in other guidelines and updated to remove any duplication with other guidelines. |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Foreword

The Canada-Nova Scotia Offshore Petroleum Board and Canada-Newfoundland and Labrador Offshore Petroleum Board (the *Regulators*) have issued this Guideline to assist operators in the development of procedures for the selection, evaluation and use of chemical substances to meet the requirement of paragraph 10(2)(d) of the *Canada-Newfoundland and Labrador* and the *Canada-Nova Scotia Offshore Area Petroleum Operations Framework Regulations*. This Guideline applies to any production projects or drilling programs conducted in the *Offshore Area*.

Guidelines are developed to provide assistance to those with statutory responsibilities (including operators, employers, employees, supervisors, providers of services, suppliers, etc.) under the *Accord Acts* and regulations. Guidelines provide an understanding of how legislative requirements can be met. In certain cases, the goals, objectives and requirements of the legislation are such that no guidance is necessary. In other instances, guidelines will identify a way in which regulatory compliance can be achieved.

The authority to issue Guidelines and Interpretation Notes with respect to legislation is specified by sections 151.1 and 205.067 of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act, S.C. 1987, c.3 (C-NLAAIA)*, sections 147 and 201.64 of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act, RSNL 1990 c. C-2*, subsection 156(1) and section 210.068 of the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act, S.C. 1988, c.28 (CNSOPRAIA)* and section 148 and subsection 202BQ(1) of the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act*. The *Accord Acts* also state that Guidelines and Interpretation Notes are not deemed to be statutory instruments.

For the purposes of this Guideline, these Acts are referred to collectively as the *Accord Acts*. Any references to the C-NLAAIA, the CNSOPRAIA or to the regulations in this Guideline are to the federal versions of the *Accord Acts* and the associated regulations.

TABLE OF CONTENTS

| | | |
|------------|--|-----------|
| 1.0 | ACRONYMS AND ABBREVIATIONS | 5 |
| 2.0 | DEFINITIONS | 6 |
| 3.0 | PURPOSE AND SCOPE | 6 |
| 4.0 | REQUIREMENTS | 7 |
| 5.0 | TECHNICAL CONSIDERATIONS | 8 |
| 5.1 | Chemical Transformation | 8 |
| 5.2 | Material Balance | 8 |
| 6.0 | SELECTION CRITERIA | 8 |
| 6.1 | Information Requirements for All Chemicals | 8 |
| 6.2 | Pest Control Product (Biocide) | 10 |
| 6.3 | Canadian Domestic Substances List (DSL) | 10 |
| 6.4 | CEPA Toxic Substances | 11 |
| 6.5 | Discharge to the Marine Environment | 12 |
| 6.6 | OSPAR PLONOR List | 12 |
| 6.7 | PARCOM OCNS Hazard Ranking | 12 |
| 6.8 | Microtox EC50(15) > 75% | 13 |
| 6.9 | Hazard Assessment | 14 |
| 6.10 | Risk Justification | 14 |
| 7.0 | RECORDS AND REPORTING | 15 |
| 8.0 | BIBLIOGRAPHY | 16 |

1.0 Acronyms and Abbreviations

| | |
|------------------------------|--|
| CEFAS | Centre for Environment, Fisheries and Aquaculture Science |
| CEPA | Canadian Environmental Protection Act |
| C-NLAAIA¹ | <i>Canada-Newfoundland and Labrador Atlantic Accord Implementation Act</i> |
| C-NLOPB | Canada-Newfoundland and Labrador Offshore Petroleum Board |
| CNSOPB | Canada-Nova Scotia Offshore Petroleum Board |
| CNSOPRAIA² | <i>Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act</i> |
| DSL | Domestic Substances List |
| ECCC | Environment and Climate Change Canada |
| EC50 | Median Effective Concentration required to induce a 50% effect |
| EEM | Environmental Effects Monitoring |
| EPP | Environmental Protection Plan |
| NDSL | Non-Domestic Substances List |
| NL | Newfoundland and Labrador |
| NS | Nova Scotia |
| NSNR | New Substances Notification Regulations |
| OCNS | Offshore Chemical Notification Scheme |
| OSPAR | Oslo and Paris Commission |
| PARCOM | Paris Commission (one of the two forerunners of OSPAR) |
| PCPA | <i>Pest Control Products Act</i> |

¹ References to the C-NLAAIA in this Guideline are to the federal version of the *Accord Act*

² References to the CNSOPRAIA in this Guideline are to the federal version of the *Accord Act*

| | |
|--------------------|--|
| PLONOR List | OSPAR Pose Little or No Risk to the Environment List |
| SNAc | Significant New Activity |
| UK | United Kingdom |

2.0 Definitions

In this Guideline, the terms such as “authorization”, “operator”, “supplier” and “waste”, referenced herein have the same meaning as in the *Accord Acts*.

In this Guideline, the terms such as “drilling program”, “installation” and “production project” as referenced herein have the same meaning as in the *Framework Regulations*.

For the purposes of this Guideline, the following terms have been capitalized and italicized when used throughout. The following definitions apply:

| | |
|-------------------------------------|--|
| <i>Accord Acts</i> | means the <i>Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act</i> , the <i>Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act</i> , the <i>Canada-Newfoundland Atlantic Accord Implementation Act</i> and the <i>Canada-Newfoundland and Labrador Atlantic Accord Implementation (Newfoundland and Labrador) Act</i> |
| <i>Framework Regulations</i> | means the <i>Canada-Newfoundland and Labrador Offshore Area Petroleum Operations Framework Regulations, SOR/2024-25</i> and the <i>Canada-Nova Scotia Offshore Area Petroleum Operations Framework Regulations, SOR/2024-26</i> |
| <i>Offshore Area</i> | means an offshore area as defined by the <i>Accord Acts</i> |
| <i>Regulator</i> | means the Canada-Newfoundland and Labrador Offshore Petroleum Board or the Canada-Nova Scotia Offshore Petroleum Board, as the case may be |

3.0 Purpose and Scope

The objective of this Guideline is to assist operators in developing procedures for the selection, evaluation and use of chemical³ substances to meet the requirement of paragraph 10(2)(d) of the *Framework Regulations*. This Guideline provides a framework for chemical selection which minimizes the potential for environmental impacts (i.e., promotes the selection of lower toxicity chemicals) from the discharge of chemicals used in offshore production projects and drilling programs. This Guideline does not address the following:

³ Chemical means a single, pure chemical or a product or formulation containing a number of different chemicals

- The approval for discharge or disposal of wastes or emissions as described in the *Offshore Waste Treatment Guideline* as referred to in paragraph 10(2)(e) of the *Framework Regulations*.
- Requirements of Part 31 of the *OHS Regulations*⁴ for the selection, use and handling of hazardous substances (including chemicals).
- Requirements relating to the storage, transportation or onshore disposal of chemicals as discussed in the guidance provided for sections 44 and 45 of the *Framework Regulations*.
- The selection of chemicals used on an installation that are not directly associated with drilling and production activities, such as those used for the cleaning and maintenance of accommodations, laundry services (e.g., laundry detergent), catering, cleaning and maintenance of catering equipment (e.g., cooking oil, dish detergent, floor cleaner), facility maintenance (e.g., paint) and those used in laboratory activities.
- The selection of chemicals that are used on accommodations installations, diving or construction vessels and associated support craft.

This Guideline will be reviewed periodically and updated as required when there are changes to legislation, changes to referenced industry best practice, advancements in scientific and technical knowledge or if the results of EEM programs or research studies indicate a higher than anticipated risk to the environment from chemicals which were selected in accordance with this Guideline.

In areas where increased risk to the environment has been identified, variations to the selection process described in this Guideline may be required.

4.0 Requirements

Pursuant to paragraphs 8(d) and 10(2)(d) of the *Framework Regulations*, the EPP must include the procedures associated with the selection, evaluation and use of chemical substances, including process chemicals and drilling fluid ingredients, as applicable. Refer to the guidance provided in section 8 of the *Framework Guideline* and the *Environmental Protection Plan Guideline*.

Procedures, records and reports should also take into consideration any environment-related commitments or conditions of the following:

- Development Plans and any conditions of associated Decision Reports (for activities associated with production projects).
- Associated Environmental Assessments and Impact Assessments.

⁴ The OHS Regulations means the *Canada-Newfoundland and Labrador Offshore Area Occupational Health and Safety Regulations, SOR/2021-247* or the *Canada-Nova Scotia Offshore Area Occupational Health and Safety Regulations, SOR/2021-248*

5.0 Technical Considerations

5.1 Chemical Transformation

The selection criteria in this Guideline are intended to apply to the original chemical and transformation products where they are known.

5.2 Material Balance

Once a chemical has been chosen, the quantity used and its ultimate fate should be tracked. Its “ultimate fate” could include such aspects as storage, discharge overboard, waste brought to shore, injected downhole or being left in the well, or it could be consumed in a chemical reaction. This “material balance” will be calculated, where reasonably practical, using conservative assumptions if precise information is not readily available (i.e., assume any material otherwise not accounted for is discharged).

6.0 Selection Criteria

Pursuant to paragraph 10(2)(d) of the *Framework Regulations*, the operator is required to have a procedure for the selection, evaluation and use of chemical substances, including process chemicals and drilling fluid ingredients for drilling programs or production projects. Sections 6.1 to 6.10 of this Guideline outline the expectations of the *Regulators*. This process is summarized in Figure 6.1.

6.1 Information Requirements for All Chemicals

Explanation

To support the procedure which was submitted to meet the requirements of paragraph 10(2)(d) of the *Framework Regulations*, an operator must collect sufficient information on the candidate chemical to conduct the selection procedure.

Decision Criteria

- If information is available, continue to the section 6.2 of this Guideline.
- If information is not available, seek alternatives.

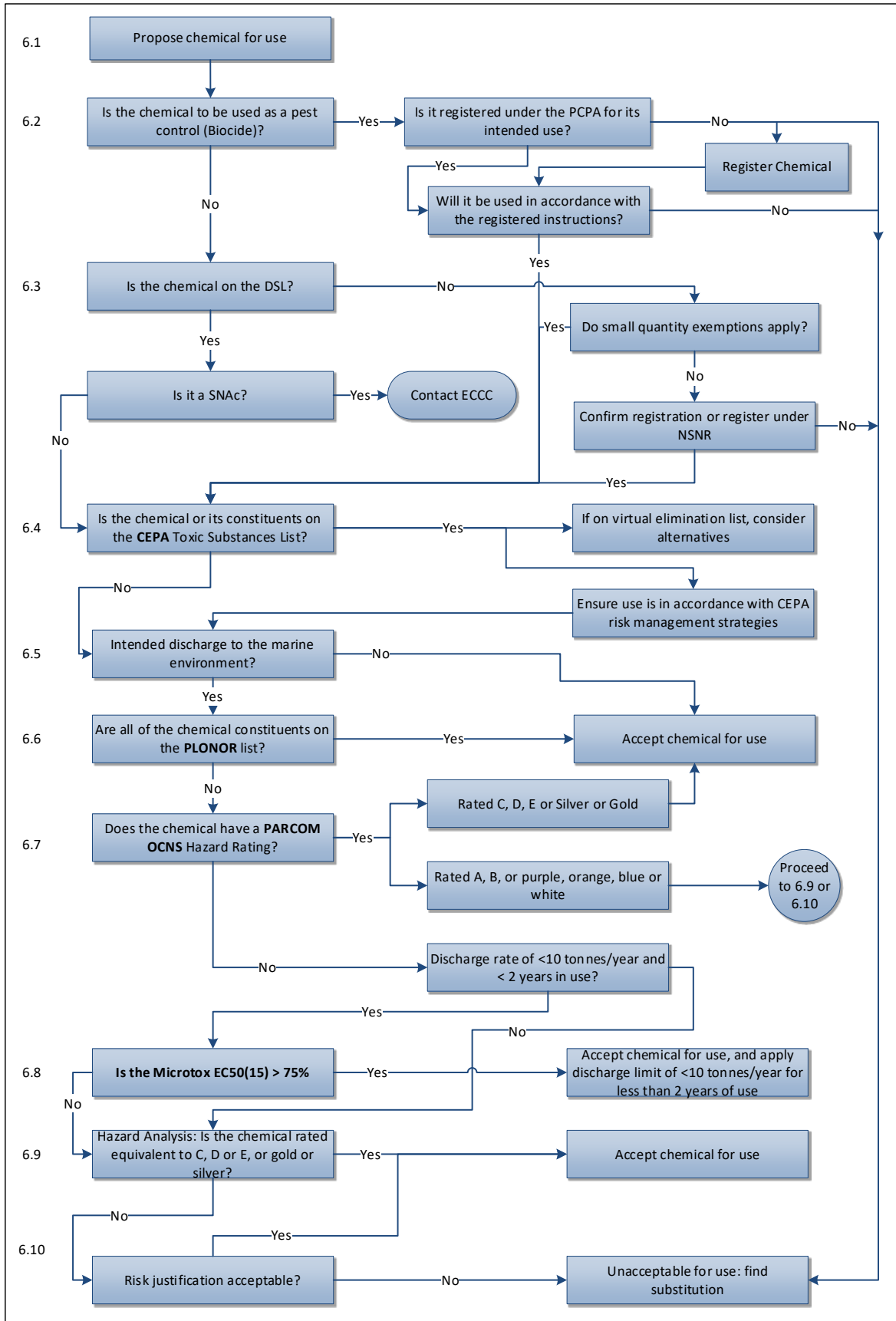


Figure 6.1 – Chemical Selection Flowchart

6.2 Pest Control Product (Biocide)

Explanation

The *Pest Control Products Act* (PCPA) governs the importation, sale and use of pest control products, including products used as biocides in the offshore. All products to be used as a pest control product must be registered in accordance with the PCPA and used in accordance with label instructions.

For clarification, some products may contain chemicals that are known to have pesticide-like properties or may be the same chemicals as in registered pest control products; however, they do not necessarily require registration under the PCPA. Only those chemicals which are intended to be used as pesticides (biocides) require PCPA registration. In cases of uncertainty, the local Pest Management Regulatory Agency offices should be contacted.

Decision Criteria

- If the chemical is not to be used as a pest control product, proceed to section 6.3 of this Guideline.
- If the chemical is a pest control product, is intended to be used as a pest control product, is registered under the PCPA for its intended use, and is used in accordance with instructions governing the registered use of the chemical, continue to section 6.4 of this Guideline.
- If the chemical is intended to be used as a pest control product but is not registered under the PCPA find a substitute or register the chemical.

6.3 Canadian Domestic Substances List (DSL)

Explanation

CEPA provides a framework for the control of certain manufactured and imported substances – chemical substances, living organisms and inanimate products of biotechnology – in Canada. The DSL is a list of substances approved for use in Canada.

Any chemical substance, or any living organisms or inanimate products of biotechnology that are not on the DSL should go through the new substances notification process as outlined below. A new substance is assessed, and may have restrictions, controls or prohibitions imposed.

Decision Criteria

- If the chemical is on the DSL, and it has not been subjected to a SNAC notice, continue to section 6.4 of this Guideline. A chemical on the DSL is identified as a SNAC by an S or S'.
- If the chemical is identified as a SNAC, contact ECCC to verify how the chemical can be used. If the chemical can be used within the ECCC use limitations, proceed to section 6.4 of this Guideline. If it cannot be so used, seek an alternative chemical.
- If not on the DSL and the small quantity exemptions listed below apply, continue to section 6.4 of this Guideline.
 - Less than 1000 kg/year for NDSL listed chemicals.
 - Less than 100 kg/year for all other chemicals.
- If not on the DSL and the small quantity exemptions listed above will be exceeded, confirm registration or register the chemical under the NSNR, or seek an alternative chemical. For contact information, see Appendix A.

6.4 CEPA Toxic Substances

Explanation

Schedule 1 of CEPA is a list of substances that are considered toxic. Substances determined to be toxic may have risk management strategies or may be proposed for virtual elimination under CEPA.

For chemicals already in use, verification of whether they have been added to the CEPA List of Toxic Substances should be conducted regularly.

Decision Criteria

- If the chemical or its constituents are not on the CEPA List of Toxic Substances, continue to section 6.5 of this Guideline.
- If the chemical and/or any constituents of the proposed substance are listed on CEPA List of Toxic Substances, ensure use of the chemical is in accordance with CEPA risk management strategies for the substance and continue to section 6.5 of this Guideline.
- If the chemical or its constituents are on the Virtual Elimination List, consider alternatives.

6.5 Discharge to the Marine Environment

Explanation

Determine whether a discharge of the chemical is intended. If there is a discharge, the subsequent steps apply to chemicals which are discharged to the marine environment.

Decision Criteria

- If no discharge is intended, accept the chemical for use.
- If discharge is intended, continue to section 6.6 of this Guideline.

6.6 OSPAR PLONOR List

Explanation

The PLONOR List, generally agreed upon by OSPAR countries, contains a list of substances that will pose little or no risk to the environment.

Decision Criteria

- If all the constituents of a chemical are on the PLONOR List, accept product/chemical for use.
- If one or more of the constituents of a chemical are not on the PLONOR List, continue to section 6.7 of this Guideline.

6.7 PARCOM OCNS Hazard Ranking

Explanation

The CEFAS, on behalf of the UK government, assigns product hazard rankings for substances used by the UK petroleum industry based on the OCNS. These ratings are based on the physical, chemical and ecotoxicological properties of products. CEFAS describes the methodology for completing these rankings and publishes a list of ranked products and their rankings on their [website](#). The assigned hazard groups vary from categories A (most hazardous) through E (least hazardous), and hazard quotient colour bands vary from purple (most hazardous), through orange, blue, white, and silver, and finally to gold (least hazardous).

Decision Criteria

- If there is no OCNS rating, continue to:
 - Section 6.8 of this Guideline, if quantities of less than 10 tonnes per year per installation will be discharged.

- Section 6.9 of this Guideline, if more than 10 tonnes per year per installation will be discharged.
- If rated C through E, or colour banded silver or gold, accept chemical.
- If rated A or B, or colour banded purple, orange, blue or white, seek an alternative chemical, proceed to section 6.9 of this Guideline to consider further hazard assessment, or proceed to section 6.10 of this Guideline to consider risk justification for use of that chemical.

6.8 Microtox EC50(15) > 75%

Explanation

Although there are several toxicity tests available, the Microtox test has been selected as an initial screening test for this Guideline. The Microtox test is one of the most widely accepted toxicity tests and provides a rapid and cost effective method to evaluate the potential toxicity of production and drilling chemicals. Hydrocarbons are relatively toxic to the Microtox bioassay but could have little effect on other bioassays such as rainbow trout. *Biological Test Method: Toxicity Test Using Luminescent Bacteria (Photobacterium phosphoreum)*, Report EPS 1/RM/24 has been selected as the preferred screening protocol for this Guideline. In the test mixture, the concentration of the chemical must be the same as the intended discharge concentration.

The following Microtox values should be used to determine the toxicity of a chemical formulation:

| EC-50(15) | Toxicity |
|-----------|-------------------------|
| ≤ 75% | Toxic (fails test) |
| > 75% | Non-toxic (passes test) |

Although the chemical passes the Microtox test, a discharge and time limit as defined below should be imposed to reduce any potential adverse environmental effects which would not be predicted because the test is not universally applied. A chemical which passes this test should not be discharged in quantities greater than 10 tonnes per year per installation and for periods greater than two years without conducting a hazard assessment as described in section 6.9 of this Guideline and achieving an outcome that would be acceptable under the criteria described in Section 6.7 of this guideline.

Decision Criteria

- If the chemical passes the test, then accept chemical and apply discharge limit of less than 10 tonnes per year, per installation for a maximum of two years.

- If the candidate chemical fails the test or the quantity discharged exceeds 10 tonnes per year per installation, or the use period exceeds two years, then proceed to section 6.9 of this Guideline.

6.9 Hazard Assessment

Explanation

If the preceding steps do not enable the operator to determine the acceptability of a given chemical, the operator may conduct a chemical-specific hazard assessment of the candidate chemical to determine its suitability for use.

The hazard assessment process should be documented and conducted in accordance with the [hazard assessment process](#) described on the CEFAS [website](#). If the OCNS models are not used, an equivalent methodology and criteria should be used to demonstrate to the *Regulator* that the regulatory objectives of this Guideline have been met.

The OCNS (or equivalent) rating may be re-assessed with the application of site-specific information before applying the decision criteria.

Decision Criteria

- If rated equivalent to C through E, or colour banded, silver or gold, accept chemical.
- If rated equivalent to A or B, or colour banded purple, orange, blue or white, proceed to section 6.10 of this Guideline.

6.10 Risk Justification

Explanation

When an operator has proposed a chemical for use in a drilling program or production project and it has been rated A or B, or it has been colour banded purple, orange, blue or white following the OCNS rating methodology, and the operator has sought an alternative chemical, but has determined that the proposed chemical poses the lowest environmental hazard and is necessary, the operator may develop and provide a written justification that demonstrates to the *Regulator* how the discharge of the chemical will meet regulatory objectives.

Decision Criteria

- If justification is acceptable to the *Regulator*, accept the chemical for use.
- If justification is not acceptable to the *Regulator*, reject the chemical.

7.0 Records and Reporting

Records

Operators should keep records of the steps used to evaluate prospective chemicals. These records may be subject to compliance verification by the *Regulator*.

Reporting

Refer to the requirements and associated guidance for submission of environmental reports under sections 200 and 201 of the *Framework Regulations*. If there is a conflict or an inconsistency between the details or frequency that has been prescribed as part of the *Framework Regulations* or as part of the Impact Assessment process, the more stringent requirement applies.

8.0 Bibliography

1. CEPA - [Canadian Environmental Protection Act Registry - Canada.ca](http://www.ccepa.ca) (contains the "Substance Lists" for regulated substances in Canada, including the Domestic Substances List)
2. CEFAS (<https://www.cefas.co.uk>)
3. Environment Canada. *Biological Test Method. Toxicity Test Using Luminescent Bacteria (Report EPS 1/RM/24)*, ISBN 0-662-20379-8, 1992
4. OSPAR (<http://www.ospar.org/eng/html/welcome.html>)
5. Pest Management Regulatory Agency (<http://www.pmr-arla.gc.ca>)