



GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Municipal Affairs and Environment

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: *June 01, 2019*

Approval No. AA19-075656

Expiration: *June 01, 2024*

File No. 742.323.4

Proponent: **Solvay Canada Incorporated**
9061 Garner Road
Niagara Falls, ON
L2H 0Y2

Attention: Mr. Bernard King, Site Manager

Re: **Hazardous Waste Management System**

Approval is hereby given for: the maintenance and monitoring of a hazardous waste management system, including the Insitu capping of phosphorus contaminated material and a hazardous waste landfill at the site of Solvay Canada Incorporated's former phosphorus plant on the south eastern shore of Long Harbour, NL near Route 202.

This Certificate of Approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this Certificate of Approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this Certificate of Approval and a regulation, the requirement in the regulation shall take precedence. Approval from the Department of Municipal Affairs and Environment shall be obtained prior to any significant change in the design, construction, installation, or operation of the hazardous waste management system, including any future expansion of the system. This Certificate of Approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This Certificate of Approval is subject to the terms and conditions as contained therein, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this Certificate of Approval null and void, may require the proponent to cease all activities associated with this Certificate of Approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the Certificate of Approval or to address significant environmental or health concerns.

For 
MINISTER



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MINISTER

TERMS AND CONDITIONS FOR APPROVAL No. AA19-075656

June 01, 2019

General

1. This Certificate of Approval is for: the maintenance and monitoring of a hazardous waste management system, including the insitu capping of phosphorus contaminated material at both the No. 1 Pond and the mud hole, and a hazardous waste landfill at the southwest corner of No. 1 Pond, as per the plans and specifications contained in the following documents:
 - **Albright & Wilson Canada Limited – Design of Insitu Containment of Phosphorous Contaminated Materials, Long Harbour Newfoundland** (Newfoundland Geosciences Limited, November 1996); and
 - **Albright & Wilson Canada Limited – Hazardous Waste Landfill Design Report, Long Harbour Newfoundland** (Porter Dillon Limited, October 1996).
2. Any inquiries concerning this Approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2556; or facsimile: (709) 729-6969).
3. In this Certificate of Approval:
 - **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;
 - **Department** means the Department of Municipal Affairs and Environment and its successors;
 - **Director** means the Director of the Pollution Prevention Division of the Department;
 - **discharge criteria** means the maximum allowable levels for the parameters listed in Table 2;
 - **DOC** means dissolved organic carbon;
 - **EDMS** means Environmental Data Management System;
 - **hazardous waste** means a product, substance or organism that is intended for disposal or recycling, including storage prior to disposal or recycling, and that:
 - (a) is listed in Schedule III of the *Export and Import of Hazardous Waste Regulations under the Canadian Environmental Protection Act, 1999*;
 - (b) is included in any of Classes 2 to 6, and 8 and 9 of the *Transportation of Dangerous Goods Regulations* under the *Transportation of Dangerous Goods Act, 1992*; or

(c) exhibits a hazard classification of a gas, a flammable liquid, an oxidizer, or a substance that is dangerously reactive, toxic, infectious, corrosive or environmentally hazardous;

- **insitu cap** means an impervious cap that is placed over the phosphorus contaminated material at No. 1 Pond, the mud hole and the hazardous waste landfill;
- **Landfill Operations Manual** means Appendix 2 of **Albright & Wilson Canada Limited – Hazardous Waste Landfill Design Report, Long Harbour Newfoundland** (Porter Dillon Limited, October 1996);
- **licensed** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **liquid waste** is defined by the *Slump Test* (Canadian Standards Association test method A23.2-5C for determining the slump of concrete). The liquid waste slump test involves placing the waste in a 30 cm open inverted cone. The cone is removed and the immediate decrease (slump) in height of the waste material is measured. If the material slumps such that the original height is reduced by 15 cm or more, the waste is considered liquid;
- **malfunction** means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, wastewater treatment equipment, process equipment, or a process to operate in a normal or usual manner. Failures, caused in part by poor maintenance or careless operation, are not malfunctions;
- **Minister** means the Minister of the Department;
- **mud hole** means the small specific in-ground area where dust contaminated phosphorus was stored during operation of the phosphorus plant, as indicated on the site plan;
- **No. 1 Pond** means a containment pond used during the operation of the phosphorus plant as indicated on the site plan;
- **Plan** means the specific plan as identified in the section of this Approval within which it is used. For example, in the *Contingency Plan* section it refers to the Contingency Plan;
- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or measurements;
- **QA/QC** means Quality Assurance/Quality Control;
- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003*;
- **SCI** means Solvay Canada Incorporated;

- **site plan** means Drawing No. 11272-S-1 contained in Appendix 5 of **Albright & Wilson Canada Limited – Design of Insitu Containment of Phosphorous Contaminated Materials, Long Harbour Newfoundland** (Newfoundland Geosciences Limited, November 1996);
 - **spill or spillage** means a loss of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or an uncontrolled release of any volume of a regulated substance onto or into soil or a body of water;
 - **TDS** means total dissolved solids; and
 - **TPH** means total petroleum hydrocarbons, as measured by the Atlantic PIRI method;
4. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidance documents, including the following, or their successors:
- *Environmental Protection Act;*
 - *Water Resources Act;*
 - *Air Pollution Control Regulations, 2004;*
 - *Environmental Control Water and Sewage Regulations, 2003;*
 - *Storage and Handling of Gasoline and Associated Products Regulations, 2003;*
 - *Sampling of Water and Wastewater - Industrial Effluent Applications Guidance Document;*
 - *Accredited Laboratory Policy.*
- This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, policy and guidance document. If it appears that any of the pertinent requirements of these acts, regulations, policy and guidance document are not being met, then a further review of the works shall be conducted, and suitable pollution control measures may be required by the Minister.
5. All reasonable efforts shall be taken to minimize the impact of the operation on the environment. Such efforts include:
- minimizing the area disturbed by the operation,
 - minimizing air or water pollution,
 - finding alternative uses, acceptable to the Director, for waste or rejected materials,
 - removing equipment or structures when they no longer have further use, and
 - considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the facility property.
6. SCI shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.
7. SCI shall keep all records or other documents required by this Approval at the Pond Side Road, Chapel Arm, NL location for a period of not less than three (3) years, beginning the day they were made. These records shall be made available for review by officials of the Department or Service NL when requested.

8. Should SCI wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Minister. SCI shall comply with the most current terms and conditions until the Minister has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made at least 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department

Waste Management

9. The management of waste generated at the facility is subject to compliance with the *Environmental Protection Act*. All non-industrial waste shall be stored in a manner acceptable to the Department and, on at least a weekly basis, be disposed of:
- at an authorized waste disposal site, with the permission of the owner/operator of the site; or
 - by some other means acceptable to the Department.

If required, industrial waste shall be disposed of by a licensed operator.

Contingency Plan

10. SCI shall continue to implement the Contingency Plan (**Emergency Procedure Plan submitted November 2004**), including all revisions. This Plan describes the actions to be taken in the event of a spill of a toxic or hazardous material. SCI shall ensure that all employees are aware of the Plan and understand the procedures and the reporting protocol to be followed in the event of an emergency. Every year, as a minimum, the Plan shall be reviewed and revised as necessary. Any proposed significant revisions shall be submitted to the Director for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not affect implementation of the Plan.
11. Every time SCI implements the Contingency Plan, information shall be recorded for future reference. This will assist in reviewing and updating the Plan. The record is to consist of all incidents with environmental implications, and include such details as:
- date;
 - time of day;
 - type of incident (i.e. liquid spill, gas leak, granular chemical spill, equipment malfunction, etc.);
 - actions taken;
 - problems encountered; and
 - other relevant information that would aid in later review of the Plan performance.

Each incident report shall be submitted to the Department as per the *Reporting* section.

Security Fence and Sign

12. SCI shall maintain a security fence around the Insitu Cap, with a sign affixed to the fence identifying the site as a hazardous waste containment system. This sign shall identify the owner of the site and a contact phone number. The sign and its placement shall be acceptable to the Department.
13. No activities are to occur within the fenced area of the Insitu Cap, other than for the extraction of leachate from the Hazardous Waste Landfill or other maintenance requirements of the Insitu Cap or the landfill.
14. SCI shall give prior notification to the Department of any vehicle or piece of equipment weighing more than 500 kilograms gross weight, which is intended to traverse the Insitu Cap.

Hazardous Waste Landfill Operations

15. The hazardous waste landfill shall be maintained in the manner described in the **Landfill Operations Manual**. Any proposed revisions to the **Landfill Operations Manual** shall be submitted to the Director for review and approval prior to such revisions being made.
16. An annual inspection program shall be performed as per the **Landfill Operations Manual**.
17. Leachate accumulated in each of the hazardous waste landfill collection systems shall be removed as required, so that leachate does not overflow the collection system.

Hazardous Waste Landfill Monitoring

18. SCI shall perform an Environmental Monitoring Program as per sections 5.0 (General Operations and Maintenance) and 6.0 (Post-Closure Care) of the **Landfill Operations Manual**. This shall include monitoring of:
 - groundwater quality;
 - leachate leakage;
 - liner integrity; and
 - physical movement of the landfill.
19. SCI shall perform a Leachate Monitoring Program as per Table 1. All results shall be submitted to the Director as per the **Reporting** section.

Table 1 - Leachate Monitoring Program					
Location	EDMS Location Code	Parameters			Frequency
Primary Leachate Collection Sump	00533	General Parameters – Must include the following:			Annually or prior to each discharge, whichever is more frequent
Secondary Leachate Collection Sump	00534	Ammonia	Magnesium	Orthophosphate	
		Nitrate	Alkalinity	Phosphorus	Gross beta radionuclides
		Nitrite	Sulphate	(total)	Bicarbonate (CaCO ₃)
		Nitrate + Nitrite	Chloride	Phosphorus	Carbonate (CaCO ₃)
		pH	Turbidity	(elemental)	Hardness (CaCO ₃)
		Colour	Sulphide	Phenolics	Fluoride
		Sodium	Cyanide	DOC	TPH
		Potassium	Conductance	TDS (calculated)	Calcium
		Metals Scan – Must include the following:			
		Aluminum	Cadmium	Mercury	Tin
		Antimony	Chromium	Molybdenum	Titanium
		Arsenic	Cobalt	Nickel	Uranium
		Barium	Copper	Selenium	Vanadium
		Beryllium	Iron	Silver	Zinc
		Bismuth	Lead	Strontium	Radium (Ra-226)
		Boron	Manganese	Thallium	

20. Refer to Table 2 for the Leachate Discharge Criteria.

Table 2 - Leachate Discharge Criteria			
Parameter	Allowable Limits*	Parameter	Allowable Limits*
Arsenic	0.5	Nickel	0.5
Barium	5.0	Phosphates (total as P ₂ O ₅)	1.0
Boron	5.0	Phosphorus (elemental)	0.0005
Cadmium	0.05	Selenium	0.01
Chromium (total)	1.0	Silver	0.05
Copper	0.3	Sulphides	0.5
Cyanide	0.025	Zinc	0.5
Iron	10	TPH	15
Lead	0.2	pH	5.5 – 9.0 pH units
Mercury	0.005		
*units are in mg/L unless otherwise indicated			

21. If the leachate analysis shows that no parameters are greater than the discharge criteria, leachate may be discharged to the environment without treatment. Otherwise, within 60 days of the leachate analysis, SCI shall submit to the Director a plan for alternative disposal or treatment of the leachate.

22. The date and volume of leachate extracted from each of the primary and secondary leachate collection systems shall be accurately measured and recorded. This record and all results from the Environmental Monitoring and Leachate Monitoring Programs shall be submitted to the Director as per the **Reporting** section.

Groundwater Monitoring

23. SCI shall perform a Groundwater Monitoring Program as per Table 3. All results shall be submitted to the Director as per the **Reporting** section.

Table 3 – Groundwater Monitoring Program			
Location	EDMS Location Code	Parameters	Frequency
MW 10	00535	Phosphorus (elemental)	Annually (every spring)
MW 14A	00536		
MW 14B	00537		
MW 16	00538		
MW 17A	00539		
MW 17B	00540		
MW 22	00541		
MW 29A	00542	Fluoride	Annually (every spring)
MW 29B	00543		
MW 91-30	00544		
MW 91-31	00545	Free Cyanide	Annually (every spring)
MW 91-32	00546		
MW 91-33	00547		
MW 92-42	00548		
MW 92-43A	00549		
MW 92-43B	00550		
MW 92-46A	00551		
MW 92-46B	00552		
MW 92-48	00553		
MW 96-55	00554		

Analysis and QA/QC

24. Unless otherwise stated herein, all solids and liquids analysis performed pursuant to this Approval shall be done by either a contracted commercial laboratory or an in-house laboratory. Contracted commercial laboratories shall have a recognized form of accreditation. In-house laboratories have the option of either obtaining accreditation or submitting to an annual inspection by a representative of the Department, for which SCI shall be billed for each laboratory inspection in accordance with Schedule 1 of the ***Accredited Laboratory Policy (PD:PP2001-01.02)***. Recommendations of the Director stemming from the annual inspections shall be addressed within 6 months, otherwise further analytical results shall not be accepted by the Director.

25. If SCI wishes to perform in-house laboratory testing and submit to an annual inspection by the Department then a recognized form of proficiency testing recognition shall be obtained for compliance parameters for which this recognition exists. The compliance parameters are listed in the ***Hazardous Waste Landfill Monitoring*** section and the ***Groundwater Monitoring*** section. If using a commercial laboratory, SCI shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.
26. The exact location of each sampling point shall remain consistent over the life of the monitoring programs, unless otherwise approved by the Director. Using a GPS or similar device, the northing and easting of each sampling location shall be recorded and submitted by ***December 31, 2019*** to the Department.
27. SCI shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under conditions of this Approval.

Monitoring Alteration

28. The Director has the authority to alter monitoring programs or require additional testing at any time when:
 - pollutants might be released to the surrounding environment without being detected;
 - an adverse environmental effect may occur; or
 - it is no longer necessary to maintain the current frequency of sampling and/or the monitoring of parameters.
29. SCI may, at any time, request that monitoring programs or requirements of this Approval be altered by:
 - requesting the change in writing to the Director; and
 - providing sufficient justification, as determined by the Director.

The requirements of this Approval shall remain in effect until altered, in writing, by the Director.

Reporting

30. Reports containing the environmental compliance monitoring and sampling information required in Table 1 of the ***Hazardous Waste Landfill Monitoring*** section, and Table 3 of the ***Groundwater Monitoring*** section shall be received by the Director in digital format within 30 calendar days of the reporting month. All related laboratory reports shall be submitted with the monthly report in XML format and Adobe Portable Document Format (PDF). Digital report submissions shall be uploaded through the EDMS web portal. The Pollution Prevention Division shall provide details of the portal web address and submission requirements.

31. Each report shall include a summary of all environmental monitoring components and shall include an explanation for the omission of any requisite data. The summary reports shall be in Microsoft Word or Adobe PDF and shall be uploaded through the EDMS web portal with the data submissions.

32. All incidents of:

- *Contingency Plan* implementation; or
- non-conformance of any condition within this Approval; or
- excess leachate (as defined in the Landfill Operations Manual) in the secondary leachate collection system of the Hazardous Waste Landfill; or
- discharge criteria being, or suspected of being, exceeded; or
- verbal or written complaints of an environmental nature received from the public by SCI and related to the hazardous waste management system, including complaints submitted anonymously;

shall be immediately reported, within one working day, to the Department.

A written report including a detailed description of the incident, summary of contributing factors, and an Action Plan to prevent future incidents of a similar nature, shall be submitted to the Department. The Action Plan shall include a description of actions already taken and future actions to be implemented, and shall be submitted within thirty days of the date of the initial incident.

33. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Expiration

34. This Certificate of Approval expires ***June 01, 2024***.

35. Should SCI wish to continue to operate beyond this expiry date, a written request shall be submitted to the Director for the renewal of this Approval. Such request shall be made prior to ***December 01, 2023***.

cc: Mr. Neil Codner
Environment and Climate Change Canada
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Service NL
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