



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

## Record of Proceedings, Including Reasons for Decision

In the Matter of

Order  
issued to

Viterra Inc., formerly Western Cooperative  
Fertilizers Limited (Westco)

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Subject

Redetermination of the Commission Order  
issued on November 27, 2009

Hearing Date

August 11, 2011

**RECORD OF PROCEEDINGS**

Licensee/Person named in or subject to order: Viterra Inc.

Address/Location: 11111 Barlow Trail SE, Calgary, Alberta, T2C 4M5

Purpose: Redetermination of the Commission Order issued on November 27, 2009

Order Issued: November 27, 2009

Date of hearing: August 11, 2011

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: M. Binder, Chair            R. J. Barriault  
M. J. McDill

Secretary: M.A. Leblanc

Recording Secretary: D. Major

Senior General Counsel: J. Lavoie

<b>Licensee/Person Named in or Subject to Order Represented By</b>	<b>Document Number</b>
<ul style="list-style-type: none"><li>• M. Edmonds, Senior Project Manager, Environmental Affairs</li><li>• E. Becker, Senior Radiation Specialist, Golder and Associates</li><li>• C. Cuthill, General Manager, Normcan, a CSS Company</li><li>• T. Roy, Manager Risk and Regulatory Reporting, Viterra Inc.</li></ul>	CMD 11-H6.1 CMD 11-H6.1A
<b>CNSC staff</b>	<b>Document Number</b>
<ul style="list-style-type: none"><li>• P. Elder</li><li>• R. Ravishankar</li><li>• J. Thelen</li><li>• D. Howard</li></ul>	CMD 11-H6

**Order:** Replaced

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## **Introduction**

1. Viterra Inc. (Viterra), formerly Western Cooperative Fertilizers Limited (Westco), has applied to the Canadian Nuclear Safety Commission<sup>1</sup> (CNSC) for a redetermination of the Order issued by the Commission on November 27, 2009. Viterra has requested that the Commission extend the completion date for the clean-up of the site located at 3077 Shepard Place S.E., Calgary, Alberta by two years, from December 1, 2011 to December 1, 2013.
2. On September 9, 2007, Westco took possession of the site on which was located the former ESI Resources Limited (ESI), a lessee of the property. ESI held a licence issued by the CNSC for the part of the facility dedicated to the recovery of uranium from phosphoric acid. At the time Westco took possession, the former ESI site included nuclear substances inside a uranium concentrate dryer room and two evaporation ponds.
3. On November 19, 2007, a CNSC Designated Officer (DO) issued an order to Westco to take specific actions and measures to protect the environment and the health and safety of persons with respect to the former ESI site, pursuant to paragraph 37(2)(f) of the *Nuclear Safety and Control Act*<sup>2</sup> (NSCA). Pursuant to subsection 37(6) of the NSCA, the DO referred the Order to the Commission for review and the Commission issued an Order to Westco on April 21, 2008, which included a final clean-up date of December 1, 2009. At a public hearing held on November 6, 2009, the Commission considered a request from Viterra to extend the final clean-up date. On November 27, 2009, the Commission issued an Order to Viterra extending this final clean-up date by two years to December 1, 2011.
4. Viterra is now requesting another extension of the deadline for completion of clean-up activities at the former ESI site from December 1, 2011 to December 1, 2013. This *Record of Proceedings* describes the Commission's consideration of Viterra's submission regarding the Order, the review of the Order and the reasons for the decision.

## Issue

5. In its review of the Order, the Commission was requested to amend, revoke or replace the Order, pursuant to paragraph 43(2)(e) of the NSCA.

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<sup>1</sup> The *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.

<sup>2</sup> Statutes of Canada (S.C.) 1997, chapter (c.) 9.

### Public Hearing

6. The Commission, in making its decision, considered information presented for a public hearing held on August 11, 2011 in Ottawa, Ontario. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*<sup>3</sup>. During the public hearing, the Commission considered written submissions and heard oral presentations from CNSC staff (CMD 11-H6) and Viterra (CMD 11-H6.1). The Public was invited to comment on Viterra's request. No submissions from the public were received regarding this matter.

### **Decision**

7. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*,

the Commission, pursuant to paragraph 43(2)(e) of the *Nuclear Safety and Control Act*, replaces the Order issued to Viterra Inc. on November 27, 2009 for its site located at 3077 Shepard Place S. E., Calgary, Alberta.

8. With its decision, the Commission agrees that the date by which the site located at 3077 Shepard Place S. E., Calgary, Alberta must be cleaned-up be extended from December 1, 2011 to December 1, 2013. The Commission includes in the Order items as recommended by CNSC staff and set out in the draft Order attached to CMD 11-H6, with the following modifications:
  - Item 1 is changed to reflect the correct date of issuance of the previous order, as follows: "The Order issued to Viterra Inc. on November 27, 2009 is revoked."
  - Item 8. is changed to reflect the correct reference, as follows: "... the results of the report described in 4.4 above ..."
  - Item 6 is added to the list in the Order as an action for Viterra to report to the Commission in June 2012 if clean-up activities are not completed during the winter of 2012 or, if the clean-up activities are completed, to file a report with the Commission stating that all actions of the Order have been completed.

### **Issues and Commission Findings**

9. In making its decision, the Commission considered a number of issues related to Viterra's response to the previous Order and the adequacy of the proposed clean-up measures for protecting the environment and the health and safety of persons.

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<sup>3</sup> Statutory Orders and Regulations (SOR)/2000-211.

*Deadline for cleanup activities*

10. The Commission enquired about when CNSC staff became aware that Viterra would not meet the deadline for the cleanup of the site, as stated in the Order. CNSC staff responded that they have been receiving progress reports that gave early notification that the deadline could be missed and were approached by Viterra in February 2011 when it became apparent they would not be able to remove the material during the winter of 2011. CNSC staff added that Viterra was unable to meet the deadline due to unforeseen work required around the remediation of the uranium dryer room.
11. CNSC staff reported they believe cleanup activities can be completed in one winter season, but that Viterra has requested an extension of two years due to the following identified uncertainties: weather, subsurface soil conditions under the pond liners, and ground water monitoring requirements. CNSC staff agreed that it is reasonable to extend the Order for two years but that Viterra is expected to make every effort to complete the work during the winter of 2012. CNSC staff recommended that Viterra report to the Commission in June 2012 on their progress.

*Progress on cleanup activities*

12. Representatives from Viterra and CNSC staff presented the history of the site and informed the Commission on the progress made since the issuance of the Commission Order to Viterra in 2009. Representatives from Viterra reported that the remediation of the uranium dryer room is complete and that the final closure report was submitted to the CNSC in March 2011, which included a public dose assessment. CNSC staff reported having reviewed this final closure report, confirming that Viterra has adequately addressed the cleanup of the uranium dryer room, and that the uranium contaminated building materials and underlying soils from the uranium dryer room met CNSC's unconditional clearance level of one Becquerel per gram of Uranium-238. CNSC staff added that they are satisfied of Viterra's progress to date.
13. Representatives from Viterra discussed other non-radiological safety hazards that both were, and have yet to be, removed from the property. CNSC staff reported that they have confirmed with Alberta Environment that Viterra has been addressing all of Alberta Environment's investigations and remediation needs properly for the Viterra property in question.

*Remediation of Evaporation Ponds*

14. With regards to the remediation of the evaporation ponds, representatives from Viterra explained the plan they have developed to complete the work and noted that the plan submitted to the CNSC includes methods, schedules, and health and safety protective measures. Representatives from Viterra reported on the public and ecological radiation doses anticipated during the cleanup of the evaporation ponds, and explained that performing remediation work during the winter would limit doses to workers. Representatives from Viterra also provided the Commission with alternate schedules and plans that would be executed in the event that current ones cannot be met.

15. CNSC staff reported having reviewed Viterra's evaporation ponds remediation plan. CNSC staff confirmed that it contains details of the excavation and the handling and transport of excavated materials, and that it addresses environmental monitoring and reporting requirements to the CNSC. CNSC staff explained Viterra's proposed waste management options and stated that they are currently under CNSC staff's review. CNSC staff reported that they also agree with conducting remediation activities during the winter to limit radiation exposures during excavation and transportation activities, and that they are currently reviewing a detailed analysis of the impacts of conducting the activities during the winter versus the summer. CNSC staff stated that they consider that Viterra's current plans, when carried out, will adequately address the clean-up of the evaporation ponds.
16. The Commission enquired about the level of frost required to perform remediation activities during the winter. Representatives from Viterra responded that two and a half to three feet of frost would be required, as the sediments being excavated are shallow. Representatives from Viterra added that that level of frost is usually obtained in the months of December and January, which would allow them to have frozen sediments in February, when the excavation is scheduled to occur.
17. The Commission enquired about the variation in the results of the evaporation ponds sampling conducted. CNSC staff replied that the variation seen in the sampling results shows that the contamination levels in the pond is not entirely uniform and indicates that further sampling will be required before each load is transported offsite to ensure regulatory limits are not exceeded. Representatives from Viterra agreed with CNSC staff's analysis of the sampling results and added that the sampling result variations between 2007 and 2010 is also likely due to sampling location variation and weather variations (rainfall and evaporation).
18. The Commission enquired about the process for displacing the waste from the evaporation ponds to the transportation containers. Representatives from Viterra explained that free liquids will be removed from the pond prior to the freeze-up. Representatives from Viterra stated that the liquids removed will be analyzed and properly disposed. Representatives from Viterra added that, once the free liquid is removed, the slurry would be displaced to the transportation containers. The Commission expressed its concerns with this process, asking if removing free liquids prior to the freeze-up of the pond contents would create a greater hazard on workers. Representatives from Viterra explained that this process is less labour intensive than if the contents of the evaporation ponds were removed during the summer, and that removing the free liquids could be achieved in a period of one day.
19. The Commission enquired about the type of transportation container used to transport the waste from the evaporation ponds to the waste disposal facility. Representatives from Viterra explained that their contractor recommended polyethylene lined transportation containers, which they typically use for this type of application, and are not concerned with possible breaks in the polyethylene liner.

20. The Commission sought more information regarding the transportation of the waste from the evaporation ponds. CNSC staff responded that Viterra will have to comply with CNSC regulations and Transport Canada regulations and that a licence to transport may not be required, depending on the radiation level of the waste. CNSC staff added that local inspectors will continue to monitor the site throughout remediation activities to ensure compliance. Representatives from Viterra stated that they have submitted a transportation plan to the CNSC, which includes an emergency plan and checks of the trucks and loads before they leave the site. Representatives from Viterra explained that the number of driving hours involved with moving the waste from the evaporation ponds to the waste disposal facility is a reflection of the distance.
21. The Commission enquired about the requirement for environmental monitoring following the completion of remediation activities. CNSC staff reported that Viterra has committed, in their proposed plan of work, to assess and report to the CNSC the results of groundwater quality under the evaporation ponds. CNSC staff also stated that, following the closure of the Order, they expect that the Province will continue to monitor the site for other environmental contaminants throughout the whole site.
22. CNSC staff stated that the potential for contaminant migration into adjacent soil and groundwater is not a concern over the proposed timeframe since environmental monitoring done to date indicate that the pond contaminants are confined and stable.
23. The Commission asked if the clean-up criterion established by the CNSC is sufficient to render the land acceptable for commercial use by the province. CNSC staff responded that the province is responsible to determine if the land is acceptable for commercial use and that the CNSC criterion is to be used to comply with the Order. CNSC staff added that the CNSC clean-up criterion for uranium is more stringent than the provincial NORM Guidelines.

#### *Cost Estimate*

24. CNSC staff reported that the cost estimate for the site remediation work is \$10 million, and that Viterra has committed to providing additional funds, if required. The Commission asked if the funds were placed in a trust to guarantee their availability. CNSC staff responded that Viterra is actively spending the money and so they would not benefit from a trust. CNSC staff also stated that they expect that the work can be completed in one year, and that Viterra will have to return to the Commission if the work is not done by June 2012.

#### *Site Security*

25. In terms of site security, CNSC staff reported that the approval of the extension will not affect site security, which is required to be maintained by the Order. CNSC staff stated that they have observed that site security is being maintained in August 2011.



**For this Order the Appendices are not included  
They are the same as in the current Order.**

**ORDER BY THE CANADIAN NUCLEAR SAFETY  
COMMISSION**

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<b>FILE</b>			
CNSC Licence No. (if applicable)			
Date of Order	Y	M	D

Company/Licensee (If applicable) and address Viterra Inc. 3077 Shepard Place S.E. Calgary, AB	Name (and title or position) of person(s) receiving the Order Michael Edmonds Projects Manager, Environmental Affairs Viterra Inc.
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**WHEREAS** Western Co-operative fertilizers Limited (Westco) was the owner of lands previously leased to ESIRL (the “ESI Site”), upon which a uranium contaminated dryer room and evaporation ponds are located (Ref.: Figures in Appendix A).

**WHEREAS** on June 26, 2006, a CNSC inspection was conducted at the ESI site in Calgary and samples taken and analyzed revealed contamination inside the dryer room and evaporation ponds. (Ref.: Documents # 1, 2 and 3 in Appendix B).

**WHEREAS** on September 7, 2007, Westco took possession of the ESI Site pursuant to a Court Order obtained by Westco and had voluntarily implemented improved security measures to ensure the health and safety of persons and the environment.

**WHEREAS** Westco indicated that it did not wish to become a licensee under section 24 of the *Nuclear Safety and Control Act* (NSCA) and ESIRL’s licence expired on July 31, 2006.

**WHEREAS** on October 29, 2007, CNSC staff notified Westco of their obligations under the NSCA (Ref.: Document # 4 in Appendix B).

**WHEREAS** an Order was issued to Westco on April 21, 2008 that required Westco to submit to the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC, a proposed plan of work including a schedule to perform all work required in order to ensure that all unreasonable risk to the health and safety of persons and the environment is prevented and to submit the plan by June 30, 2008.

**WHEREAS** the Order issued April 21, 2008 did not authorize Westco to implement the clean-up work until Westco received written acceptance of the plan from the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC.

**WHEREAS** the plan to clean-up the dryer room has been accepted in writing by the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC.

**WHEREAS** the Order issued April 21, 2008 included that the proposed plan of work must include the proposed clean-up criteria, in regards to nuclear substances, based on the end use of the land, and a rationale for such criteria.

**WHEREAS** an inspection at the site on August 25, 2009 revealed that the clean-up of the evaporation ponds and the dryer rooms has not yet been carried out.

**WHEREAS** CNSC staff has assessed that an extension of the clean-up date to be December 1, 2013, should not increase the risk to persons or the environment.

**WHEREAS** on November 3, 2008 Viterra Inc. amalgamated its wholly owned subsidiary, Western Co-operative fertilizers Limited (Westco).

**WHEREAS** Viterra Inc. has decontaminated the uranium concentrate dryer room and equipment inside the dryer room at the facility located at 3077 Shepard Place S.E., Calgary, Alberta, in accordance with the plan accepted by the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC.

**WHEREAS** Viterra Inc. performed a final radiological survey of the dryer room to verify it met the requirements in the plan accepted by the Director General, Directorate of Nuclear Cycle and Facilities Regulation.

**WHEREAS** Viterra Inc. has completed demolition of the uranium concentrate dryer room at 3077 Shepard Place S.E., Calgary, Alberta, and placed construction materials and also equipment contaminated with nuclear substances, in a temporary on-site storage container for eventual disposal.

**WHEREAS** on May 6, 2011, Viterra Inc. submitted a proposed plan of work to clean up the two evaporation ponds yet to be accepted by the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC, that contains clean-up criteria for nuclear substances and a schedule to perform all work required in order to ensure that all unreasonable risk to the health and safety of persons and the environment is prevented.

**THEREFORE it is hereby ordered :**

1. The Order issued to Viterra Inc. on November 27, 2009 is revoked.
2. Viterra Inc. shall maintain the required physical security arrangements as described in Westco's letter to the CNSC, dated October 5, 2007 (Ref.: Document No. 5 in Appendix B) for the former evaporation ponds located at 3077 Shepard Place S.E., Calgary, Alberta, and in accordance with the *Nuclear Safety and Control Act* and its associated Regulations until all requirements of this Order are completed and accepted by the Canadian Nuclear Safety Commission (CNSC) or a person authorized by the Commission.
3. Viterra Inc. shall follow and implement a proposed plan of work to clean-up the two evaporations ponds only after written acceptance of this plan by the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC. This plan may be the May 6, 2011 proposal or, alternatively, some subsequent proposal required as a result of CNSC review.
4. By December 1, 2013, Viterra Inc. shall complete the following clean-up:
  - 4.1 Dispose of nuclear substances that originated from the dryer room and the building housing the dryer room in accordance with the plan accepted by the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC.
  - 4.2 Remove the contents, in regards to nuclear substances, of the two evaporation ponds at the facility located at 3077 Shepard Place S.E., Calgary, Alberta, in accordance with the accepted plan;
  - 4.3 After completing the work stipulated in 4.1 to 4.2 above, perform a final radiological survey verifying that the two evaporation ponds meet the requirements as stipulated in the plan accepted by the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC plan;

- 4.4 Submit a report to the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC providing the results of the final radiological survey conducted at the two evaporation ponds in accordance with the accepted plan. This shall include, at a minimum: all measurement results used to demonstrate compliance with the requirements set out in the accepted plan; associated computed values for direct comparison to these requirements, the areas, volumes or masses of material associated with these measurements or computed values, and all instrumentation calibration and quality control measurements taken during the course of the work. In addition the report shall include information on the disposal of all wastes containing nuclear substances from the site and the results of groundwater monitoring.
5. In addition, Viterra Inc. shall submit to CNSC staff a monthly report on the compliance activities it has taken under the Order. In the event of Viterra Inc. becoming aware of any of the situations listed in section 29 of the *General Nuclear Safety and Control Regulations*, Viterra Inc. shall submit a written report to the Commission of the location and circumstances of the situation and of any action that Viterra Inc. has taken or proposes to take with respect to it.
6. Viterra Inc. shall report to the Commission in June 2012 if work stipulated in 4.2 above has not been completed during the winter of 2012. If Viterra Inc. has completed the work stipulated in 4.2 above during the winter of 2012, Viterra Inc. shall submit a written status update to the Commission in June 2012.

**This order is closed when all items listed above have been fulfilled; and**

7. the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC has accepted in writing Viterra's plan to clean-up the evaporation ponds;
8. the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC has accepted in writing the results of the report described in 4.4 above; and
9. the Director General, Directorate of Nuclear Cycle and Facilities Regulation of the CNSC notifies Viterra Inc. in writing that the Order has been completed and is now closed.

Information on which Order is based

(See recitals).

Date of the Order : SEP 19 2011



Michael Binder, President,  
on behalf of the Canadian Nuclear Safety Commission

Method of transmitting the Order:

Personal delivery  Mail  Fax  Other  (Courier)