
MADE at the City of Edmonton, in the
Province of Alberta, on

November 08, 2016

ALBERTA ENERGY REGULATOR

Under section 113 of the *Environmental Protection and Enhancement Act*

Colin Hennel, Manager, Environment
Bonavista Energy Corporation (A5RX)
1500, 525 – 8th Avenue SW
Calgary, AB, T2P 1G1
("Bonavista")

WHEREAS Bonavista is the holder of gas plant facility licence No. 12454 for the South Rosevear Gas Unit No. 1 sour gas plant located at 10-11-054-15 W5M ("Gas Plant"), and has owned and operated the Gas Plant since July 2010;

WHEREAS documentation filed with the AER and its predecessors in respect of the Gas Plant approvals and licences indicates that the substance sulfolane has been used at the Gas Plant since the operation of the Gas Plant began;

WHEREAS Bonavista discontinued the use of sulfolane in its sour gas processing in 2014, as described in the 2015 Renewal Application for the Gas Plant submitted by Bonavista Energy Corporation in February 25, 2015;

WHEREAS sulfolane is a component of sulfinol and is used in the sour gas sweetening process;

WHEREAS sulfolane is a substance known to be harmful to human health and the environment and must be transported, handled, used, stored and disposed so as to prevent a release into the environment;

WHEREAS a sulfolane concentration of 0.42 mg/L was detected in the groundwater sample reported in the 2008 Annual Groundwater Monitoring Program Report for the Gas Plant;

WHEREAS sulfolane has been detected on-site in soils and groundwater at the Gas Plant, as detailed within the 2015 Annual Groundwater Monitoring Report, prepared by Terex Environmental Solutions on April 30 2016;

WHEREAS in March 2014 sulfolane was detected in off-site domestic water wells S27 and S28 located at 13-13-054-15 W5M, and S29 located approximately 2 kilometers from the Gas Plant Site at 14-13-054-15 W5M, detailed within the 2015 Regional Groundwater Monitoring Program submitted by Bonavista Energy Corporation (prepared by Terex Environmental Group) in April 2016 in concentrations exceeding the 2016 Alberta Tier 1 Soil and Groundwater Remediation Guidelines potable water guideline;

WHEREAS the groundwater Sulfolane Plume is delineated in the 2015 Regional Groundwater Monitoring Program submitted by Bonavista Energy Corporation (prepared by Terex Environmental Group) in April 2016 as originating at the site of the Gas Plant and extending North-East off-lease to 13-13-054-15 W5M (“Sulfolane Plume”);

WHEREAS Shaunna Cartwright, Director, Closure and Liability (Director), has been authorized to issue orders under the *Environmental Protection and Enhancement Act* (“EPEA”);

WHEREAS the Director is of the opinion that a release of sulfolane, a substance, into the environment has occurred, is occurring, or may occur and that the release of substances has caused, is causing, or may cause an adverse effect;

WHEREAS the Director is of the opinion that sulfolane has caused, is causing and may cause further adverse effect to the environment;

WHEREAS Bonavista became the owner of the Gas Plant and therefore the owner of the substance in 2010, and therefore the Director is of the opinion that Bonavista is a “Person Responsible” as defined in section 1 of EPEA;

And WHEREAS the Director is of the opinion that remediation is necessary to restore the area affected by the release;

THEREFORE, I, Shaunna Cartwright, Director, Closure and Liability, pursuant to sections 113 of EPEA, DO HEREBY ORDER that Bonavista shall do the following:

Soil Remediation

1. Complete remediation of all soil affected by sulfolane in the accessible areas described within the 2015 Risk Management Plan submitted by Bonavista Energy Corporation (prepared by Terex Environmental Group on September 30, 2015), by **December 31, 2019**, to the standards outlined in the 2016 Tier 1 Soil and Groundwater Guidelines (as amended). The accessible areas described within the 2015 Risk Management Plan are:
 - a. Former Flare Pit Area,
 - b. Abandoned Landfill 1 Area,
 - c. Boneyard Area, and
 - d. Former Salt Pile Storage Area.
2. Implement the soil remediation program in accordance with the 2015 Risk Management Plan as accepted and authorized by the AER on March 30, 2016, and as amended from time to time and as approved by the AER.

Groundwater Remediation Plan

3. Submit a remediation plan for the Sulfolane Plume by April 30, 2017, to the satisfaction of the Director, which ensures the completion of off-site and on-site groundwater remediation by September 1, 2031.
4. Implement the Groundwater Remediation Plan in accordance with the Director’s written

authorization.

Reporting

5. Submit a Remediation Summary Report by April 30th of each year, commencing in the year 2017. The Remediation Summary Report shall include, at a minimum, the following:
 - a. A summary of the actions taken concerning the remediation of soils and groundwater referred to in sections 1 through 4 of this Order, during the previous year; and,
 - b. Progress of remediation including data illustrating the effectiveness of the remedial activities implemented.

General

6. Where a deadline or reporting frequency has been specified in this order, the Director may authorize in writing a different deadline or reporting frequency as applicable.
7. No variation from the remediation timelines or required monitoring may be made unless authorized in writing by the Director.

Dated at the City of Edmonton in the Province of Alberta, the 8th day of November, 2016.

<original signed by>

Don Weleschuk
Acting Director, Closure and Liability
Alberta Energy Regulator

Notwithstanding the above requirements, the Parties shall obtain all necessary approvals in complying with this Order.

Take notice that this Order in no way precludes any enforcement proceedings being taken regarding this matter under the ***Environmental Protection and Enhancement Act*** or any other provincial or federal legislation, or by any other regulator having jurisdiction.

Under the *Responsible Energy Development Act*, an eligible person may file a request for a regulatory appeal on an appealable decision. Eligible persons and appealable decisions are defined in section 36 of the *Responsible Energy Development Act* and section 3.1 of the *Responsible Energy Development Act General Regulation*. If you wish to file a request for regulatory appeal, you must submit your request in the form and manner and within the timeframe required by the AER. You can find filing requirements and forms on the AER website, www.aer.ca, under Applications & Notices: Appeals.