



Hydrostatic Testing

Document Number: ENP0014A	Procedure – Administrative	
Revision Date: 2017/05/17 Revision: 1 Review Cycle: 3	Document Owner (Title): Manager, EH&S Environment &	

Summary of Changes

Rev No.	Section Changed	Revisions Made
0		Initial Draft
1		Proposed changes accepted, comments addressed and deleted such as updating the name of the regulator to “AER”, making the Procedure specific to the Oilsands Base Plant only, deleting references to Transalta, pointing out the need for prior regulatory approval for discharges, under the Provincial Code of Practice

Purpose

This standard sets the minimum environmental requirements to ensure that hydrostatic testing of tanks, pipelines and vessels is properly handled with due consideration for all applicable environmental legislation, including Suncor’s Operating Approval 94-02 and Alberta Environment’s *Code of Practice for Discharge of Hydrostatic Test Water*

Compliance

This document applies to work performed at Suncor Energy Oil Sands Base Plant only.

Roles and Responsibilities

The following individuals and groups have the following roles and responsibilities:

Document Owner

- Ensures this document is reviewed according to the required revision cycle.
- Ensures the document is updated to accommodate changes to Suncor, provincial, and federal regulation.
- Ensures the document is updated to mitigate risks found as the result of an incident.

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Approved By: Andrew Cummins, Manager, EH&S Environment & Regulatory

Referenced Documents

- [Code of Practice for the Release of Hydrostatic Test Water from Hydrostatic Testing of Petroleum Liquid and Gas Pipelines, Alberta Environment](#)
- [Guideline for Secondary Containment of Above Ground Storage Tanks, Alberta Environment](#)
- [ENP0009A](#) – Special Liquid Storage in the Tailings Ponds.
- [ECS0103A](#) – Industrial Sewer, Wastewater Treatment, and Cooling Water Systems
- [Water Act: Code of Practice for the Temporary Diversion of Water for Hydrostatic Testing of Pipelines](#)

Terms, Definitions and Acronyms

The following terms, definitions and acronyms are used in this procedure:

Operating Definitions

Additives	Means biocides, corrosion inhibitors, detergents, antifreeze, oxygen scavengers, and leak detection tracers
Hydrostatic Test Coordinator	Means the Suncor employee responsible for coordinating the hydrostatic test, or their designate
Hydrostatic Testing	Means the use of water for pressure testing a pipeline to determine its integrity;
Representative Grab Sample	Means an individual sample collected from between 0.2 and 0.3 metres below the water surface
Source Water	Means water that is diverted for use in hydrostatic testing

Operating Requirements**1. Discharge Options**

Responsibility	Step	Action
	1.1	Discharge of Hydrostatic Test Water to the Tailings Ponds <ul style="list-style-type: none"> • Refer to Environmental Procedure ENP0009A – Special Liquid Storage in the Tailings Ponds
	1.2	Discharge of Hydrostatic Test Water Directly to the Environment <ul style="list-style-type: none"> • Hydrostatic test water released directly to the environment from the plant without passing through the industrial wastewater treatment system must meet the requirements of Code of Practice for the Release of Hydrostatic Test Water from Hydrostatic Testing of Petroleum Liquid and Gas Pipelines, Alberta Environment. This Code is very rigorous and regulatory approval is required. Consult Environmental Affairs as soon as the need for a direct discharge to the environment becomes apparent

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Step	Action
1.3	<p>Indirect Discharge to the Environment through the Industrial Wastewater Treatment System</p> <ul style="list-style-type: none"> • If possible, hydrostatic test water should be released to the environment only through the industrial wastewater treatment system that discharges to the Athabasca River through Pond C. The Pond C outfall limits, as specified in Environmental Procedure ECS0103A, must be met during the discharge • Other discharge requirements may be imposed by Environmental Affairs
1.4	<p>Indirect Discharge to the Environment through the Industrial Runoff System</p> <ul style="list-style-type: none"> • Suncor may discharge hydrostatic test water through its approved industrial runoff release points if circumstances allow. Consult Environmental Affairs as soon as the need for an indirect discharge through the Industrial Runoff System becomes apparent. • Hydrostatic test water needs to meet industrial runoff requirements • Other discharge requirements may be imposed by Environmental Affairs

2. Third-Party Hydrostatic Tests

Step	Action
2.1	Suncor does not provide facilities or a water source for third-party users for hydrostatic testing. (Since hydrotesting of vessels and equipment have regulatory and legal implications, it is the responsibility of the third-party to plan and hydrotest equipment.)
2.2	In cases where there are no alternatives and there is a need for Suncor to provide facilities or a water source, please contact Environmental Affairs with a work plan and approval documents from either Alberta Environment and Parks or the Alberta Energy Regulator that indicates the test is approved.
2.3	Testing requirements are required to meet Suncor's procedures outlined in ECS0103A and / or the Code of Practice, and other requirements stated by Environmental Affairs.

3. Hydrostatic Testing

Responsibility	Step	Action
Hydrostatic Test Coordinator (Suncor or Third-party)	3.1	<u>Regulatory</u> : Check with Environmental Affairs regarding regulatory.
Environmental Affairs	3.2	<u>Regulatory</u> : Check with Alberta Environment and Parks or the Alberta Energy Regulator regarding specific regulatory approval requirements.

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Responsibility	Step	Action	
Hydrostatic Test	3.3	<u>Tank Filling</u> : The tanks should be cleaned out prior to filling them with water. Oil, diesel, dirt and debris must be removed. Only clean firewater or river water should be used for hydrostatic testing. Pond effluent water (PEW) shall not be used for hydrostatic testing. The tanks must be watched continuously during filling and provisions made to stop filling immediately in case of a significant leak.	
	3.4	<u>Use of Additives</u> : Corrosion inhibitors, oxygen scavengers, glycol and other additives should only be used in consultation with Environmental Affairs. The use of additives may lead to additional sampling and analytical tests such as toxicity and dissolved oxygen testing. Recycling of glycol may be required. Chromium based additives are prohibited.	
	3.5	<u>Containment</u> : Alberta Environment's <i>Guideline for Secondary Containment of Above Ground Storage Tanks</i> (i.e. 110% of the tank in the dyke or 100% of the largest tank and 10% of all the other tanks) does not need to be met for hydrostatic testing with clean water. Nevertheless, as much containment as possible should be provided during the testing, in case of a tank rupture. Prior to testing, careful consideration should be given to the flow path taken by released water in the event of a rupture.	
	3.6	<u>Sampling</u> : The Laboratory Supervisor (or Third-party lab) shall be advised of the analyses to be conducted at least 24 hours prior to receiving the samples and shall be allowed a further 24 hours after receiving the samples, to conduct the required analyses. At a minimum, at least two representative 1-litre grab samples of contained hydrostatic test water shall be obtained. This will be dependent on the sampling requirements. The samples shall be taken at least one meter below the surface of the water in the tank and well above the bottom of the tank, to avoid sampling non-representative oil sheens and sediment layers, respectively. The sample shall be delivered immediately to the Lab Supervisor for analysis. At least one sample shall be obtained per shift during discharge and delivered to the lab. These additional samples will be analyzed at the discretion of the Area Manager of Operations Offplots and /or Mine Drainage Manager.	
	3.7	Before water is released from the hydrotest vessel or equipment, a sample MUST be taken and lab results sent to Environmental Affairs, Area Manager of Operations Offplots and Mine Drainage Manager.	
	3.8	Approval must be obtained from at least an operations manager and Environmental Affairs before water can be released into the industrial wastewater or industrial runoff system.	
	Lab Supervisor	3.9	<u>Analysis</u> : The Laboratory shall analyze the samples for Chemical Oxygen Demand (COD), Oil and Grease (O&G), Total Suspended Solids (TSS) and any other parameters recommended by Environmental Affairs and / or the Area Manager of Operations Offplots and /or Mine Drainage Supervisor. The Lab Supervisor shall advise Environmental Affairs (780-743-7780) and the Area Manager of Operations Offplots and / or Mine Drainage Supervisor of the results of the analyses as soon as the results are available.

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Responsibility	Step	Action
Third-Party Labs	3.10	Third-party labs may be used for testing hydrostatic test water. The Lab Supervisor's role will then be fulfilled by the hydrotest coordinator, in order to ensure that the hydrotest water meets the requirements for hydrostatic testing and release.
Area Manager of Operations Offplots	3.11	<p><u>Treatment and Release</u>: The Offplots Manager shall calculate the rate at which the hydrostatic test water may be released to the Wastewater pond system without exceeding the Pond C outfall criteria, or the hydraulic capacity of the wastewater system.</p> <p>The Area Manager of Operations Offplots shall ensure that the maximum release rate is communicated to the operating staff responsible for releasing the hydrostatic test water at the time he authorizes the discharge to the treatment system.</p> <p>The hydrostatic test water should be directed to the furthest upstream' portion of the wastewater treatment system possible, in order to maximize treatment. The retention ponds and API separators should be considered.</p>
Mine Drainage Manager	3.12	<u>Treatment and Release</u> : The Mine Drainage Manager shall ensure the industrial runoff system is able to accommodate the volume and quality of the hydrostatic test water in order for Suncor to meet its regulatory requirements.
Hydrostatic Test	3.13	<u>Drainage Lines and Road Crossings</u> : Drain lines must not impede traffic, in particular the movement of emergency vehicles. Drain lines that cross Roadways must only be placed following Suncor procedures for excavation and road closure
	3.14	<u>Follow-up</u> : The start time, end time, measured flow rate, and the results must be reported to Environmental Affairs within 15 days of the end of the month during which the release took place. This information will be used by Environmental Affairs in their reports to Alberta Energy Regulator.

End of Procedure

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Approved By: Andrew Cummins, Manager, EH&S Environment & Regulatory

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Sign: _____

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The following individuals have approved and signed this document.

UserName: Andrew Cummins (acummins)

Title: Mgr EH&S Enviro & Reg

Date: Wednesday, 17 May 2017, 04:05 PM Mountain Time

Meaning: Approver 1 Signed

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