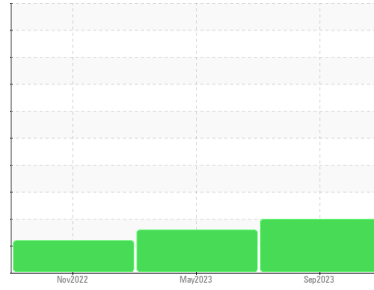


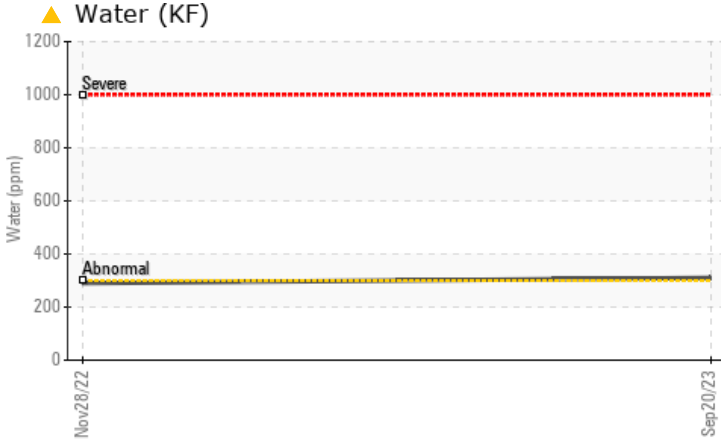
# PROBLEM SUMMARY

Area  
**STEAM AND POWER**  
 Machine Id  
**420.0015 RECOVERY ID FAN**  
 Component  
**Steam Turbine**  
 Fluid  
**SHELL TURBO T ISO 68 (--- GAL)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

## PROBLEMATIC TEST RESULTS

Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL
Water	%	ASTM D6304	>0.03	▲ <b>0.031</b>	---	0.029
ppm Water	ppm	ASTM D6304	>300	▲ <b>310</b>	---	290
Debris	scalar	*Visual	NONE	▲ <b>MODER</b>	▲ MODER	LIGHT

Customer Id: PORPORWA  
 Sample No.: PE0001418  
 Lab Number: 05968801  
 Test Package: PLANT



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Don Baldrige +1  
[don.b505@comcast.net](mailto:don.b505@comcast.net)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Alert	---	---	?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

## HISTORICAL DIAGNOSIS

### 02 May 2023 Diag: Jonathan Hester

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid.

view report



### 28 Nov 2022 Diag: Jonathan Hester

ISO

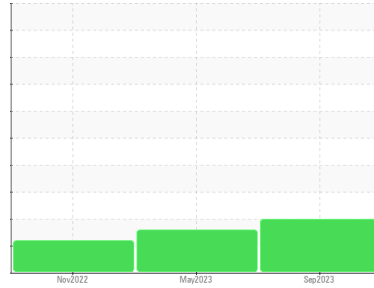


We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



Area  
**STEAM AND POWER**  
 Machine Id  
**420.0015 RECOVERY ID FAN**  
 Component  
**Steam Turbine**  
 Fluid  
**SHELL TURBO T ISO 68 (--- GAL)**



**DIAGNOSIS**

**Recommendation**

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

**Wear**

All component wear rates are normal.

**Contamination**

There is a light concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.

**Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

**SAMPLE INFORMATION**

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PE0001418</b>	PE0000994	PE0000069
Sample Date	Client Info	<b>20 Sep 2023</b>	02 May 2023	28 Nov 2022
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

**WEAR METALS**

method	limit/base	current	history1	history2
PQ	ASTM D8184	<b>9</b>	7	7
Iron	ppm	ASTM D5185m >15	<b>7</b>	7
Chromium	ppm	ASTM D5185m >4	<b>0</b>	0
Nickel	ppm	ASTM D5185m >2	<b>0</b>	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0
Silver	ppm	ASTM D5185m	<b>0</b>	0
Aluminum	ppm	ASTM D5185m >10	<b>2</b>	0
Lead	ppm	ASTM D5185m	<b>0</b>	<1
Copper	ppm	ASTM D5185m >5	<b>&lt;1</b>	<1
Tin	ppm	ASTM D5185m >5	<b>0</b>	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0

**ADDITIVES**

method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	0
Barium	ppm	ASTM D5185m	<b>0</b>	2
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0
Manganese	ppm	ASTM D5185m	<b>0</b>	0
Magnesium	ppm	ASTM D5185m	<b>&lt;1</b>	0
Calcium	ppm	ASTM D5185m	<b>&lt;1</b>	0
Phosphorus	ppm	ASTM D5185m	<b>7</b>	8
Zinc	ppm	ASTM D5185m	<b>10</b>	4
Sulfur	ppm	ASTM D5185m	<b>57</b>	166

**CONTAMINANTS**

method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	0
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	1
Water	%	ASTM D6304 >0.03	<b>▲ 0.031</b>	---
ppm Water	ppm	ASTM D6304 >300	<b>▲ 310</b>	---

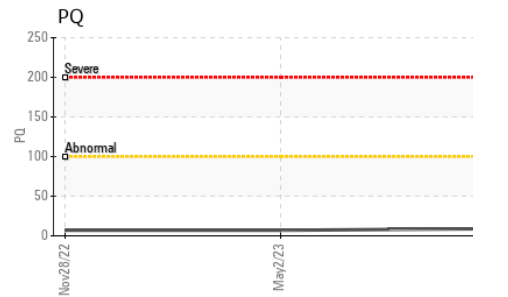
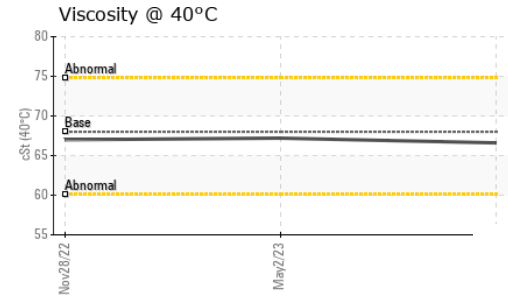
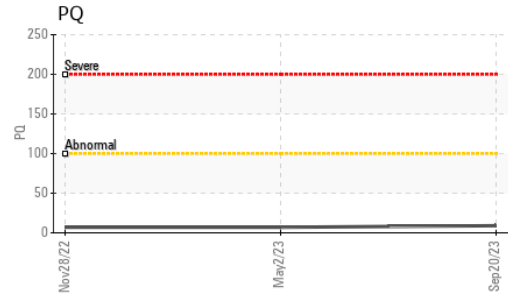
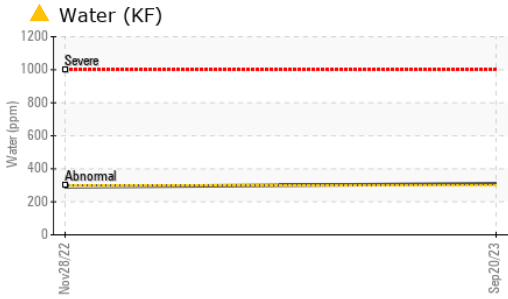
**FLUID CLEANLINESS**

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >2500	---	<b>▲ 15864</b>	<b>▲ 15053</b>
Particles >6µm	ASTM D7647 >640	---	<b>▲ 2637</b>	<b>▲ 2699</b>
Particles >14µm	ASTM D7647 >160	---	88	112
Particles >21µm	ASTM D7647 >40	---	25	21
Particles >38µm	ASTM D7647 >10	---	1	2
Particles >71µm	ASTM D7647 >3	---	0	0
Oil Cleanliness	ISO 4406 (c) >18/16/14	---	<b>▲ 21/19/14</b>	<b>▲ 21/19/14</b>

**FLUID DEGRADATION**

method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 .05	<b>0.07</b>	0.215

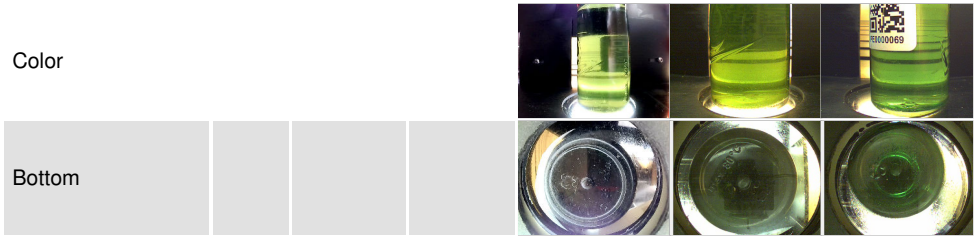
# OIL ANALYSIS REPORT



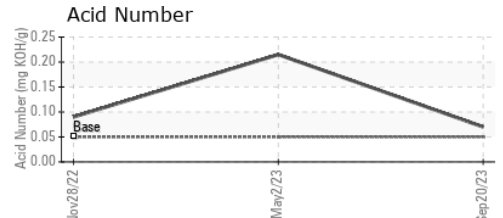
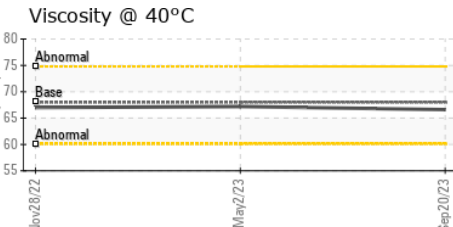
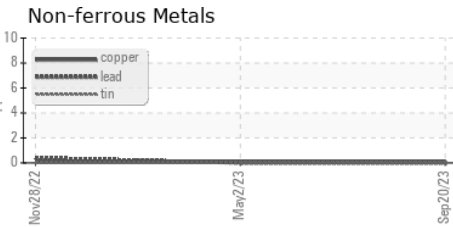
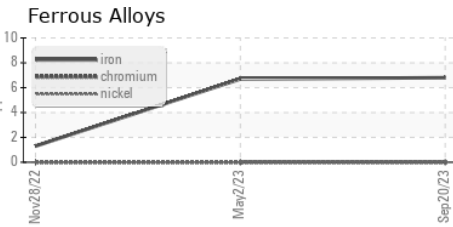
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ MODER	▲ MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.03	0.2%	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 68	66.6	67.2	67.0

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0001418      **Received** : 04 Oct 2023  
**Lab Number** : 05968801      **Diagnosed** : 06 Oct 2023  
**Unique Number** : 10675352      **Diagnostician** : Don Baldrige  
**Test Package** : PLANT ( Additional Tests: ICP, KF, KV40, PQ, PrtCount, SCREEN )

**Port Townsend Paper Corporation**  
 100 Mill Rd  
 Port Townsend, WA  
 US 98368  
 Contact: LONNIE LOREE  
 lonnie.loree@ptpc.com  
 T: (907)738-6506  
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)