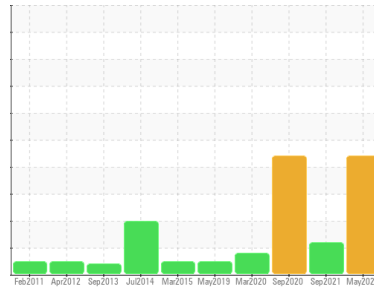


# PROBLEM SUMMARY

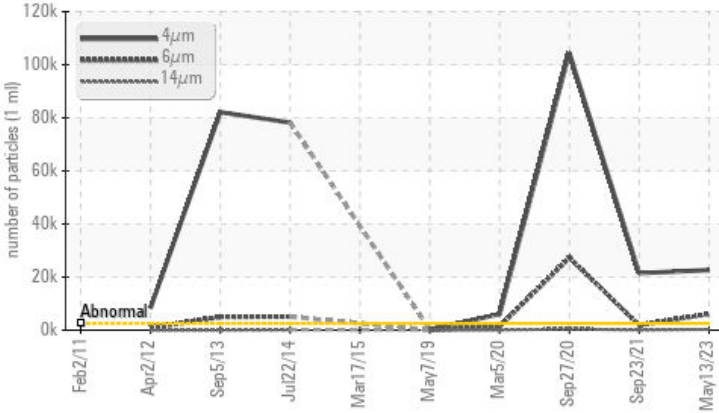
Area  
**Fwd Machinery Space**  
Machine Id  
**Generator - PKSG Turbocharger A- Intake Side (S/N Sample Tag CD-86101 - S4)**  
Component  
**Port Turbine**  
Fluid  
**BP Enersyn TC-S 68 (--- GAL)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	SEVERE
Particles >4µm	ASTM D7647	>2500	▲ 22650	▲ 21470	▲ 104456
Particles >6µm	ASTM D7647	>640	▲ 6107	▲ 1843	▲ 27310
Particles >14µm	ASTM D7647	>80	▲ 277	45	▲ 418
Particles >21µm	ASTM D7647	>20	▲ 54	9	▲ 40
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 22/20/15	▲ 22/18/13	▲ 24/22/16

Customer Id: TERHAM  
Sample No.: PC0031523  
Lab Number: 02562602  
Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Kevin Marson +1 (289)291-4644 x4644  
[Kevin.Marson@wearcheck.com](mailto:Kevin.Marson@wearcheck.com)

To change component or sample information:  
Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check Breathers	---	---	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

## HISTORICAL DIAGNOSIS

ISO



### 23 Sep 2021 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. Particles >4µm are severely high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



ISO



### 27 Sep 2020 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Iron ppm levels are noted. All other component wear rates are normal. Particles >6µm are severely high. Particles >4µm are severely high. Particles >14µm are abnormally high. Particles >21µm are notably high. The water content is negligible. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



ISO



### 05 Mar 2020 Diag: Bill Quesnel

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. The water content is negligible. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



Area

**Fwd Machinery Space**

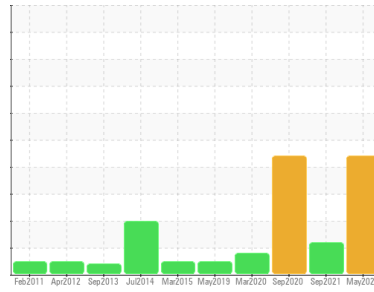
Machine Id  
**Generator - PKSG Turbocharger A- Intake Side (S/N Sample Tag CD-86101 - S4)**

Component

**Port Turbine**

Fluid

**BP Enersyn TC-S 68 (--- GAL)**



**DIAGNOSIS**

**Recommendation**

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

**Wear**

All component wear rates are normal.

**Contamination**

There is a high amount of particulates (2 to 100 microns in size) present in the oil.

**Fluid Condition**

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

**SAMPLE INFORMATION**

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PC0031523</b>	PC0040408	PC0035659
Sample Date	Client Info	<b>13 May 2023</b>	23 Sep 2021	27 Sep 2020
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>SEVERE</b>	SEVERE	SEVERE

**CONTAMINATION**

method	limit/base	current	history1	history2
Water	WC Method >0.03	<b>NEG</b>	NEG	NEG

**WEAR METALS**

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >15	<b>&lt;1</b>	1	6
Chromium	ppm ASTM D5185(m) >4	<b>0</b>	0	0
Nickel	ppm ASTM D5185(m) >2	<b>&lt;1</b>	<1	0
Titanium	ppm ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm ASTM D5185(m)	<b>0</b>	<1	0
Aluminum	ppm ASTM D5185(m) >10	<b>&lt;1</b>	0	<1
Lead	ppm ASTM D5185(m)	<b>0</b>	0	0
Copper	ppm ASTM D5185(m) >5	<b>0</b>	<1	<1
Tin	ppm ASTM D5185(m) >5	<b>0</b>	0	0
Antimony	ppm ASTM D5185(m)	<b>&lt;1</b>	0	<1
Vanadium	ppm ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm ASTM D5185(m)	<b>0</b>	0	0

**ADDITIVES**

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1
Barium	ppm ASTM D5185(m)	<b>0</b>	0	<1
Molybdenum	ppm ASTM D5185(m)	<b>0</b>	0	0
Manganese	ppm ASTM D5185(m)	<b>0</b>	<1	<1
Magnesium	ppm ASTM D5185(m)	<b>&lt;1</b>	0	<1
Calcium	ppm ASTM D5185(m)	<b>4</b>	<1	<1
Phosphorus	ppm ASTM D5185(m)	<b>801</b>	815	892
Zinc	ppm ASTM D5185(m)	<b>3</b>	1	1
Sulfur	ppm ASTM D5185(m)	<b>454</b>	487	526
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1

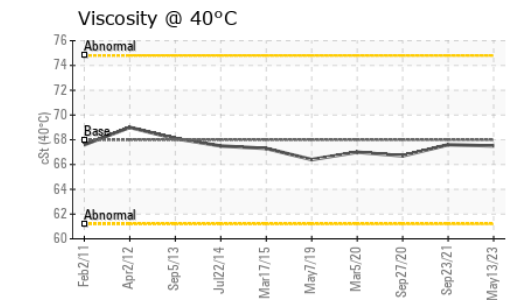
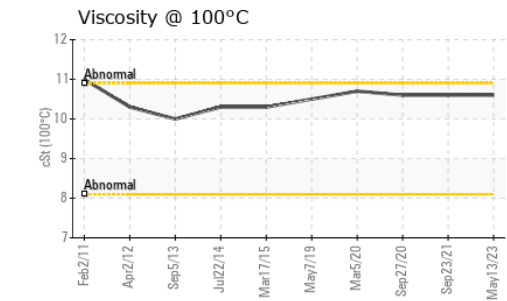
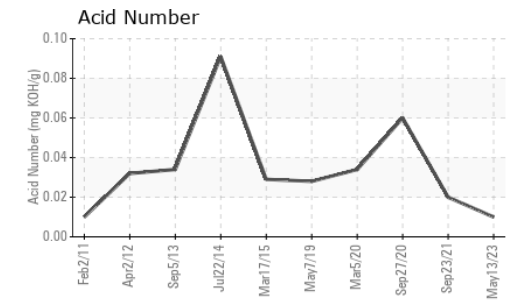
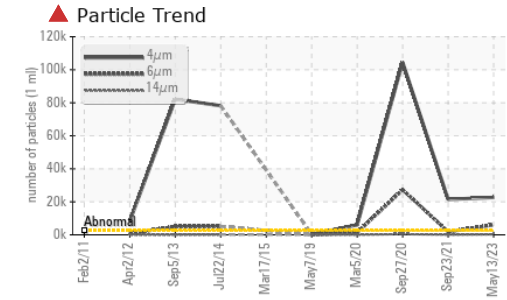
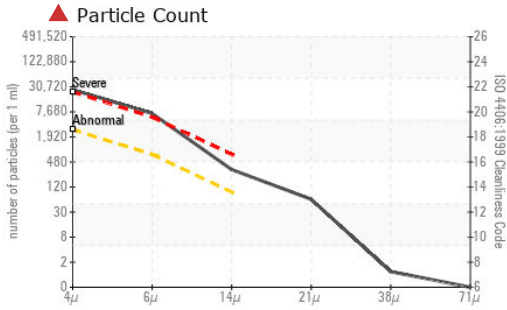
**CONTAMINANTS**

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >15	<b>2</b>	<1	2
Sodium	ppm ASTM D5185(m)	<b>0</b>	0	0
Potassium	ppm ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1

**FLUID CLEANLINESS**

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >2500	<b>▲ 22650</b>	▲ 21470	▲ 104456
Particles >6µm	ASTM D7647 >640	<b>▲ 6107</b>	▲ 1843	▲ 27310
Particles >14µm	ASTM D7647 >80	<b>▲ 277</b>	45	▲ 418
Particles >21µm	ASTM D7647 >20	<b>▲ 54</b>	9	● 40
Particles >38µm	ASTM D7647 >4	<b>1</b>	0	0
Particles >71µm	ASTM D7647 >3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >18/16/13	<b>▲ 22/20/15</b>	▲ 22/18/13	▲ 24/22/16

# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0031523  
**Lab Number** : 02562602  
**Unique Number** : 5591643  
**Test Package** : MAR 2 ( Additional Tests: KV100, PrtCount, VI )

**Received** : 07 Jun 2023  
**Tested** : 08 Jun 2023  
**Diagnosed** : 08 Jun 2023 - Kevin Marson

**Suncor - Terra Nova Projects**  
 Scotia Centre, 235 Water Street  
 St. John's, NL  
 CA A1C 1B6

Contact: Josh Hynes  
 joshynes@suncor.com  
 T: (709)778-3575  
 F: (709)724-2835

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.01	0.02	0.06

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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68	67.5	67.6	66.7
Visc @ 100°C	cSt	ASTM D7279(m)		10.6	10.6	10.6
Viscosity Index (VI)	Scale	ASTM D2270*		145	145	147

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						