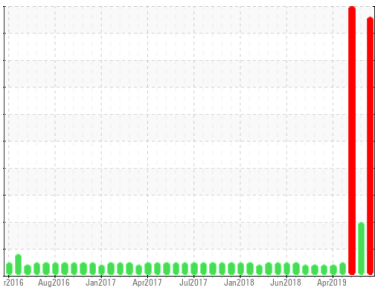
PROBLEM SUMMARY

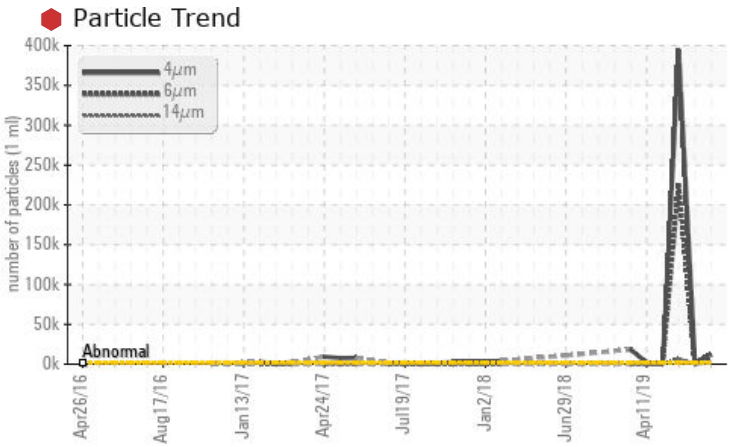
Sample Rating Trend



ISO

Area
Turret [450242720]
Machine Id
Circulation Tank Heat Transfer Fluid (WH-167891) (S/N Sample Tag: TB-16603 WH-167891)
Component
Heat Transfer Fluid
Fluid
PETRO CANADA TURBOFLO EP 46 (800 LTR)

COMPONENT CONDITION SUMMARY



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. LUBE360 Oil Diagnostics recommends using HTTFL sample kits for heat transfer fluids. Please contact us at 1-800-268-2131 and provide a purchase order for $245 + HST in order to conduct additional testing (boiling points @ 10%, 50%, and 90%, percent boiling < 335°C, and solids) to determine the suitability for continued use. Please contact your representative for information regarding the proper sampling kits for your service.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	SEVERE
Particles >4µm		ASTM D7647	>1300	**12053**	1391	394642
Particles >6µm		ASTM D7647	>320	**5853**	582	226201
Particles >14µm		ASTM D7647	>40	**1334**	91	6757
Particles >21µm		ASTM D7647	>10	**364**	24	621
Particles >38µm		ASTM D7647	>3	**24**	2	3
Oil Cleanliness		ISO 4406 (c)	>17/15/12	**21/20/18**	18/16/14	26/25/20

Customer Id: TERHAM
Sample No.: PC
Lab Number: 02611109
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

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
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.
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	LUBE360 Oil Diagnostics recommends using HTTFL sample kits for heat transfer fluids. Please contact us at 1-800-268-2131 and provide a purchase order for $245 + HST in order to conduct additional testing (boiling points @ 10%, 50%, and 90%, percent boiling < 335°C, and solids) to determine the suitability for continued use.
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

09 Oct 2023 Diag: Kevin Marson

ISO

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate amount of particulates (2 to 100 microns in size) present in the fluid. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The fluid is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

18 Dec 2019 Diag: Kevin Marson

WATER

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. We advise that you follow the water drain-off procedure for this component, 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.All component wear rates are normal. Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high. Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. There is a high concentration of water present in the fluid. The high sodium (Na) level indicates the possible presence of salt water. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid.

view report

05 Jul 2019 Diag: Kevin Marson

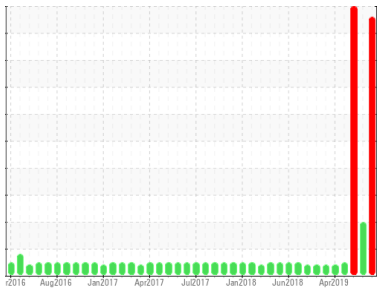
NORMAL

Resample at the next service interval to monitor. Lubritest recommends using HTTFL sample kits for heat transfer fluids. Please contact us at 1-800-268-2131 and provide a purchase order for $245 + HST in order to conduct additional testing (boiling points @ 10%, 50%, and 90%, percent boiling < 335°C, and solids) to determine the suitability for continued use. Please contact your representative for information regarding the proper sampling kits for your service.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Turret [450242720]
Machine Id
Circulation Tank Heat Transfer Fluid (WH-167891) (S/N Sample Tag: TB-16603 WH-167891)
Component
Heat Transfer Fluid
Fluid
PETRO CANADA TURBOFLO EP 46 (800 LTR)

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. LUBE360 Oil Diagnostics recommends using HTTFL sample kits for heat transfer fluids. Please contact us at 1-800-268-2131 and provide a purchase order for $245 + HST in order to conduct additional testing (boiling points @ 10%, 50%, and 90%, percent boiling < 335°C, and solids) to determine the suitability for continued use. Please contact your representative for information regarding the proper sampling kits for your service.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the fluid. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the fluid is acceptable for the time in service (unconfirmed).

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC**	PC0076371	PC
Sample Date		Client Info		**07 Jan 2024**	09 Oct 2023	18 Dec 2019
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	SEVERE

CONTAMINATION	method	limit/base	current	history1	history2
Water	WC Method	>0.0601	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	**0**	0	<1
Chromium	ppm	ASTM D5185(m)	>21	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>21	**<1**	0	0
Titanium	ppm	ASTM D5185(m)	>21	**0**	0	0
Silver	ppm	ASTM D5185(m)	>21	**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>21	**<1**	0	0
Lead	ppm	ASTM D5185(m)	>21	**0**	0	0
Copper	ppm	ASTM D5185(m)	>21	**<1**	<1	2
Tin	ppm	ASTM D5185(m)	>21	**0**	0	0
Antimony	ppm	ASTM D5185(m)	>21	**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

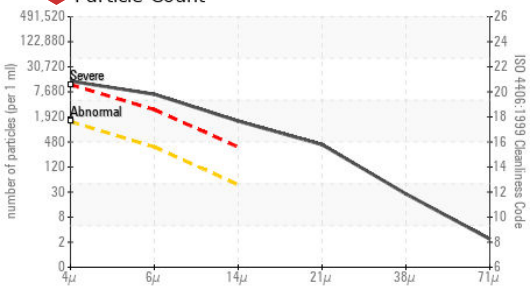
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**0**	<1	1
Barium	ppm	ASTM D5185(m)		**0**	0	<1
Molybdenum	ppm	ASTM D5185(m)		**0**	0	2
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**<1**	0	2
Calcium	ppm	ASTM D5185(m)		**<1**	<1	2
Phosphorus	ppm	ASTM D5185(m)	280	**277**	275	173
Zinc	ppm	ASTM D5185(m)	0.0	**<1**	2	5
Sulfur	ppm	ASTM D5185(m)		**754**	699	348
Lithium	ppm	ASTM D5185(m)		**<1**	<1	1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**0**	0	<1
Sodium	ppm	ASTM D5185(m)	>21	**<1**	1	▲ 15
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1

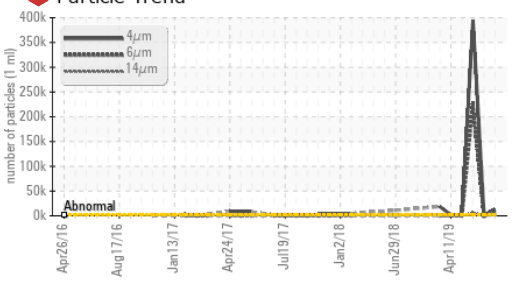
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>1300	⬢ **12053**	▲ 1391	⬢ 394642
Particles >6µm	ASTM D7647	>320	⬢ **5853**	▲ 582	⬢ 226201
Particles >14µm	ASTM D7647	>40	⬢ **1334**	▲ 91	⬢ 6757
Particles >21µm	ASTM D7647	>10	⬢ **364**	▲ 24	⬢ 621
Particles >38µm	ASTM D7647	>3	⬢ **24**	2	3
Particles >71µm	ASTM D7647	>3	**2**	1	0
Oil Cleanliness	ISO 4406 (c)	>17/15/12	⬢ **21/20/18**	▲ 18/16/14	⬢ 26/25/20

OIL ANALYSIS REPORT

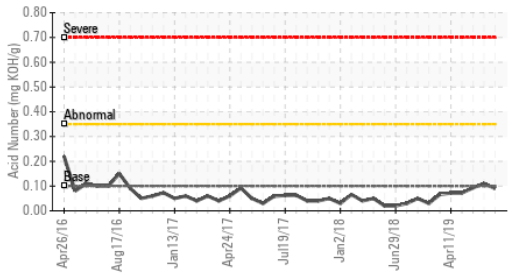
Particle Count



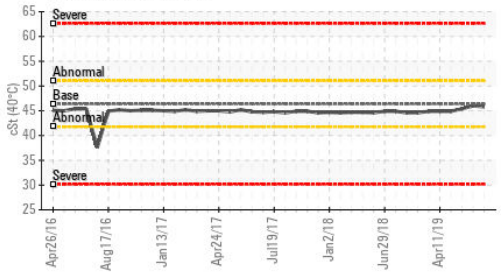
Particle Trend



Acid Number



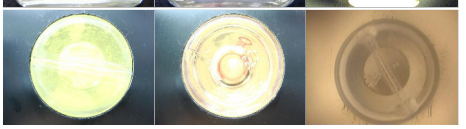
Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	.10	**0.09**	0.11	0.093

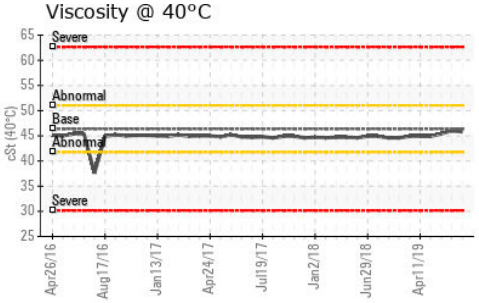
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	LIGHT
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	▲ HAZY
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.0601	**NEG**	NEG	⬢ .2%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46.37	**45.8**	46.0	45.4

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

Viscosity @ 40°C



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC **Recieved** : 25 Jan 2024
Lab Number : 02611109 **Diagnosed** : 26 Jan 2024
Unique Number : 5720204 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: PrtCount, TAN Man)

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.

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