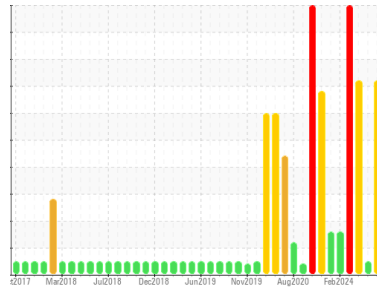


PROBLEM SUMMARY

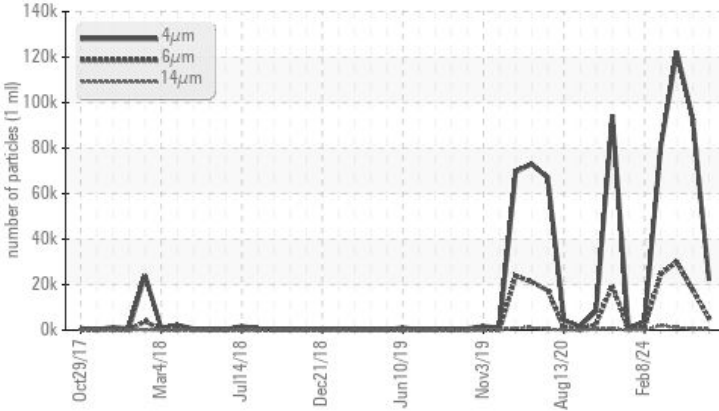
Area
Gas Compression [450305175]
 Machine Id
Compressor (HP2) - Lubrication System (S/N Sample Tag XX-23004-S1)
 Component
Lube System
 Fluid
PETRO CANADA TURBOFLO XL32 (10350 LTR)

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.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	---	SEVERE
Particles >6µm	ASTM D7647	>320	▲ 17551	▲ 5126	▲ 30044
Particles >14µm	ASTM D7647	>40	▲ 511	▲ 352	▲ 1148
Particles >21µm	ASTM D7647	>10	▲ 114	▲ 89	▲ 278
Particles >38µm	ASTM D7647	>3	▲ 9	▲ 7	▲ 11
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ 24/21/16	▲ 22/20/16	▲ 24/22/17

Customer Id: TERHAM
 Sample No.: PC0078295
 Lab Number: 02631970
 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.
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

02 Apr 2024 Diag:

UNKNOWN



view report



29 Mar 2024 Diag: Kevin Marson

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. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. Component wear rates appear to be normal (unconfirmed). There is a high amount of particulates (2 to 100 microns in size) present in the oil. 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. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

ISO



view report



01 Mar 2024 Diag: Bill Quesnel

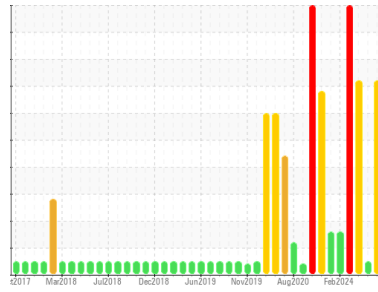
We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. No other corrective action is recommended at this time. Diagnostician's Note: The debris on the bottom of the sample combined with the ferrous red & black oxides present in the ferrogram indicate this was an improperly taken sample (dead pipe line, or low on the bottom of the reservoir). There was a very light amount of insoluble material present. Suggest taking a resample from a suitable sampling port to validate the results before taking any serious maintenance actions. Wear particle analysis indicates that the ferrous black oxides and ferrous red oxides particles are marginal. All other component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. MPC (Membrane Patch Colorimetry) test indicates a light concentration of varnish present. The water content is negligible. 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. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

ISO



view report





Area
Gas Compression [450305175]
Machine Id
Component
Compressor (HP2) - Lubrication System (S/N Sample Tag XX-23004-S1)
Fluid
Compressor (HP2) - Lubrication System (S/N Sample Tag XX-23004-S1)
Fluid
PETRO CANADA TURBOFLO XL32 (10350 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.

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. 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 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		PC0078295	PC0078288	PC0081649
Sample Date	Client Info		02 Apr 2024	02 Apr 2024	29 Mar 2024
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	---	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	<1	0	<1
Chromium	ppm	ASTM D5185(m) >10	0	0	0
Nickel	ppm	ASTM D5185(m) >10	0	0	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >10	0	0	0
Lead	ppm	ASTM D5185(m) >20	0	0	0
Copper	ppm	ASTM D5185(m) >20	0	<1	0
Tin	ppm	ASTM D5185(m) >10	0	0	0
Antimony	ppm	ASTM D5185(m)	0	0	0
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	0	0	0
Barium	ppm	ASTM D5185(m) 0	0	0	0
Molybdenum	ppm	ASTM D5185(m) 0	0	0	0
Manganese	ppm	ASTM D5185(m) 0	0	0	0
Magnesium	ppm	ASTM D5185(m) 0	<1	<1	0
Calcium	ppm	ASTM D5185(m) 0	0	<1	0
Phosphorus	ppm	ASTM D5185(m) 5	2	82	3
Zinc	ppm	ASTM D5185(m) 0	<1	2	2
Sulfur	ppm	ASTM D5185(m) 750	631	256	607
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

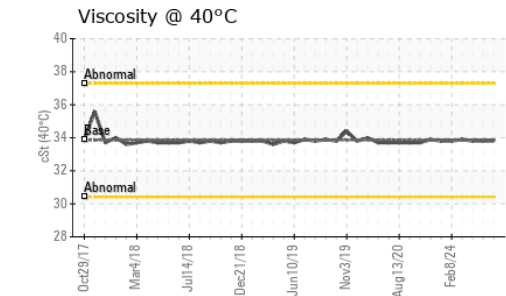
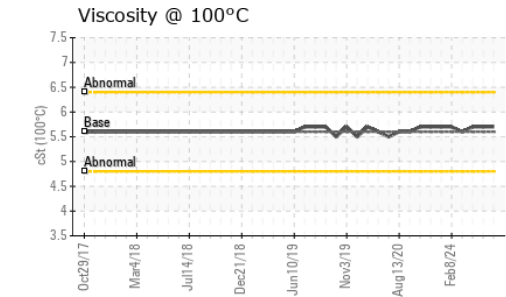
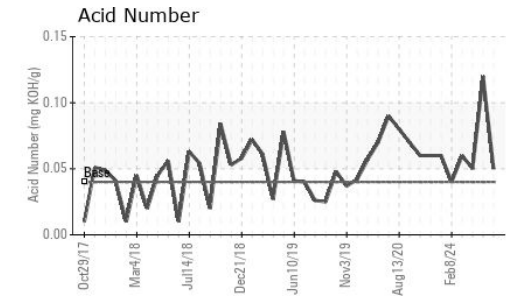
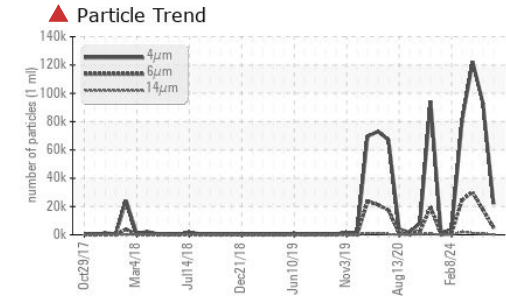
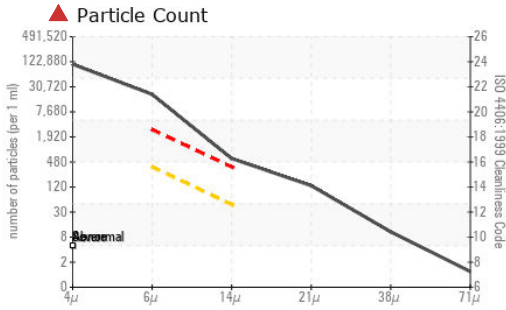
CONTAMINANTS

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

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		92595	21967	122408
Particles >6µm	ASTM D7647	>320	▲ 17551	▲ 5126	▲ 30044
Particles >14µm	ASTM D7647	>40	▲ 511	▲ 352	▲ 1148
Particles >21µm	ASTM D7647	>10	▲ 114	▲ 89	▲ 278
Particles >38µm	ASTM D7647	>3	▲ 9	▲ 7	▲ 11
Particles >71µm	ASTM D7647	>3	1	1	1
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ 24/21/16	▲ 22/20/16	▲ 24/22/17

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0078295
Lab Number : 02631970
Unique Number : 5773123
Test Package : MAR 2 (Additional Tests: KV100, TAN Man, VI)
Received : 29 Apr 2024
Tested : 30 Apr 2024
Diagnosed : 30 Apr 2024 - 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*	0.04	0.05	0.12	0.05

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	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	VLITE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	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)	33.86	33.8	33.8	33.8
Visc @ 100°C	cSt	ASTM D7279(m)	5.60	5.7	5.7	5.7
Viscosity Index (VI)	Scale	ASTM D2270*	101	108	108	108

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						
MPC						