



PROBLEM SUMMARY

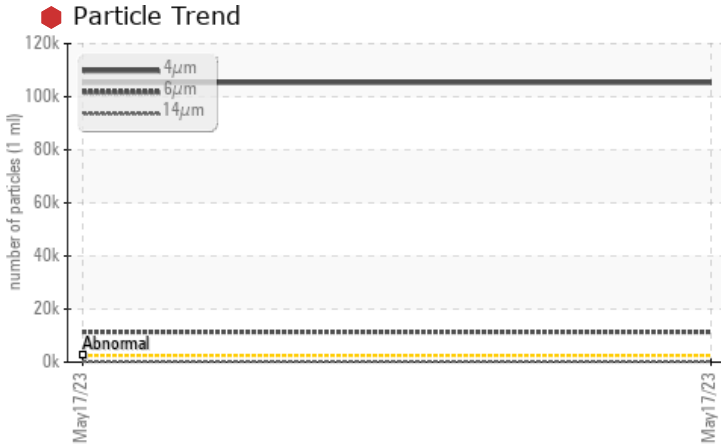
Sample Rating Trend

ISO

Area
CAMPBELLFORD PLANT 2
 Machine Id
G1 TURBINE OIL LUBE
 Component
Turbine
 Fluid
PETRO CANADA HARMONY AW 32 (--- LTR)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of water entry. 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 advise that you follow the water drain-off procedure for this component. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. The fluid was specified as PETRO CANADA HARMONY AW 32, however, a fluid match indicates that this fluid is ISO 32 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Calcium	ppm	ASTM D5185(m)	60	▲ 0	---	---
Phosphorus	ppm	ASTM D5185(m)	330	▲ 8	---	---
Zinc	ppm	ASTM D5185(m)	390	▲ 6	---	---
Sulfur	ppm	ASTM D5185(m)	660	▲ 87	---	---
Particles >4µm		ASTM D7647	>2500	● 105331	---	---
Particles >6µm		ASTM D7647	>640	● 11386	---	---
Particles >14µm		ASTM D7647	>80	▲ 246	---	---
Particles >21µm		ASTM D7647	>20	▲ 39	---	---
Oil Cleanliness		ISO 4406 (c)	>18/16/13	● 24/21/15	---	---
Appearance	scalar	Visual*	NORML	▲ LAYRD	---	---
Free Water	scalar	Visual*		▲ >10%	---	---

Customer Id: PET412PET
 Sample No.: WC0736381
 Lab Number: 02560430
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
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RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Water Drain-off	---	---	?	We advise that you follow the water drain-off procedure for this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Alert	---	---	?	The fluid was specified as PETRO CANADA HARMONY AW 32, however, a fluid match indicates that this fluid is ISO 32 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample.
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 Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
Check Water Access	---	---	?	We advise that you check for the source of water entry.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil.

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area
CAMPBELLFORD PLANT 2
 Machine Id
G1 TURBINE OIL LUBE
 Component
Turbine
 Fluid
PETRO CANADA HARMONY AW 32 (--- LTR)



DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. 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 advise that you follow the water drain-off procedure for this component. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. The fluid was specified as PETRO CANADA HARMONY AW 32, however, a fluid match indicates that this fluid is ISO 32 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample. 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 silt (particulates < 14 microns in size) present in the oil. Excessive free water present.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. 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		WC0736381	---	---
Sample Date	Client Info		17 May 2023	---	---
Machine Age	yrs	Client Info	25	---	---
Oil Age	yrs	Client Info	2	---	---
Oil Changed	Client Info		Not Chngd	---	---
Sample Status			SEVERE	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >15	1	---	---
Chromium	ppm	ASTM D5185(m) >4	0	---	---
Nickel	ppm	ASTM D5185(m) >2	0	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m)	0	---	---
Aluminum	ppm	ASTM D5185(m) >10	<1	---	---
Lead	ppm	ASTM D5185(m)	3	---	---
Copper	ppm	ASTM D5185(m) >5	2	---	---
Tin	ppm	ASTM D5185(m) >5	0	---	---
Antimony	ppm	ASTM D5185(m)	0	---	---
Vanadium	ppm	ASTM D5185(m)	0	---	---
Beryllium	ppm	ASTM D5185(m)	0	---	---
Cadmium	ppm	ASTM D5185(m)	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	---	---
Barium	ppm	ASTM D5185(m)	0	---	---
Molybdenum	ppm	ASTM D5185(m)	0	---	---
Manganese	ppm	ASTM D5185(m)	0	---	---
Magnesium	ppm	ASTM D5185(m) 110	<1	---	---
Calcium	ppm	ASTM D5185(m) 60	▲ 0	---	---
Phosphorus	ppm	ASTM D5185(m) 330	▲ 8	---	---
Zinc	ppm	ASTM D5185(m) 390	▲ 6	---	---
Sulfur	ppm	ASTM D5185(m) 660	▲ 87	---	---
Lithium	ppm	ASTM D5185(m)	<1	---	---

CONTAMINANTS

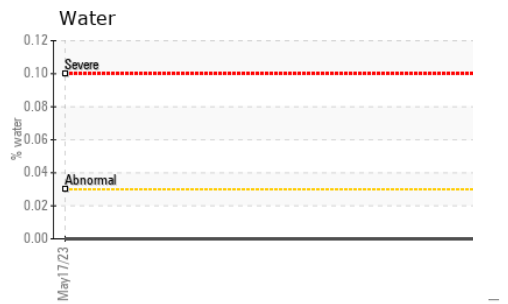
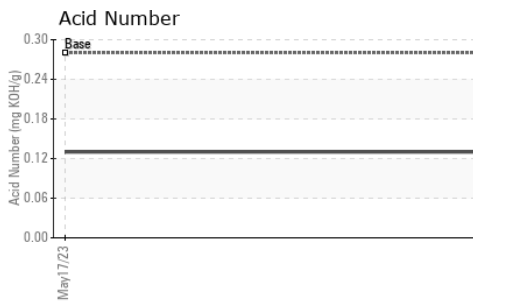
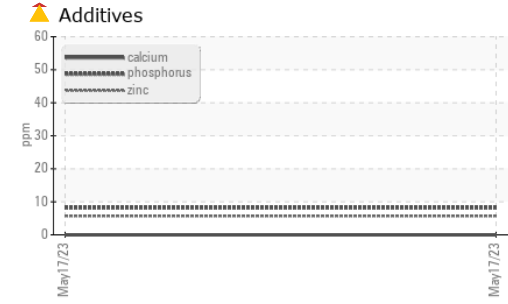
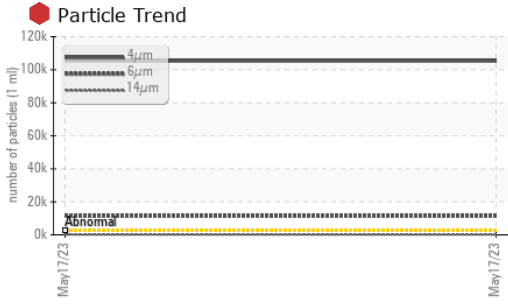
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	1	---	---
Sodium	ppm	ASTM D5185(m)	2	---	---
Potassium	ppm	ASTM D5185(m) >20	<1	---	---
Water	%	ASTM D6304* >0.03	0.00	---	---
ppm Water	ppm	ASTM D6304* >300	0.00	---	---

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	● 105331	---	---
Particles >6µm	ASTM D7647	>640	● 11386	---	---
Particles >14µm	ASTM D7647	>80	▲ 246	---	---
Particles >21µm	ASTM D7647	>20	▲ 39	---	---
Particles >38µm	ASTM D7647	>4	2	---	---
Particles >71µm	ASTM D7647	>3	1	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	● 24/21/15	---	---



OIL ANALYSIS REPORT



FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.28	0.13	---	---

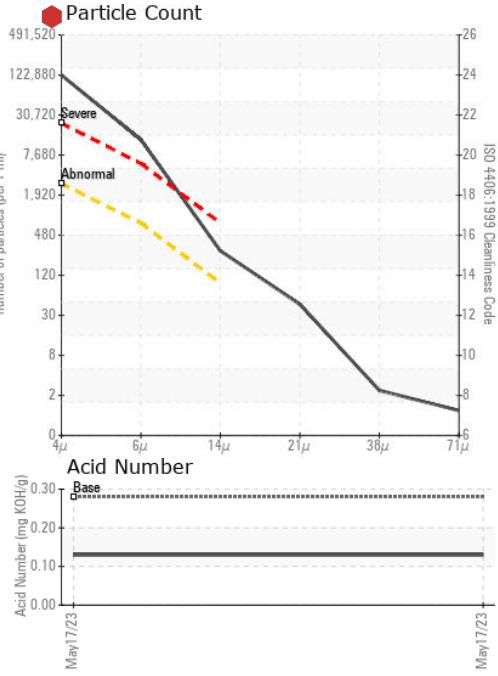
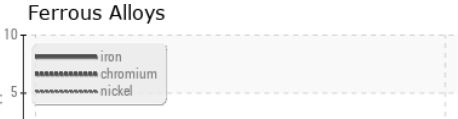
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	LAYRD	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.03	1%	---	---
Free Water	scalar	Visual*		>10%	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	31.61	32.5	---	---

SAMPLE IMAGES

method	limit/base	current	history1	history2
Color			no image	no image
Bottom			no image	no image

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0736381
Lab Number : **02560430**
Unique Number : 5581470
Test Package : IND 2

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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.