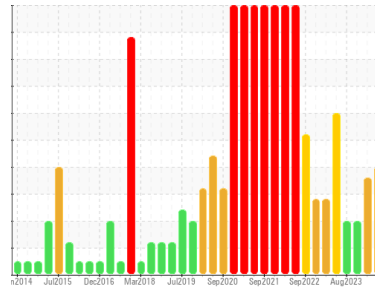




OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Machine Id
CHALLENGE SMIMID MASSAGER 5 (S/N S148586)

Component
Gearbox

Fluid
PETRO CANADA PURITY FG EP GEAR OIL 220 (--- GAL)

DIAGNOSIS

▲ Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

Appearance is hazy. There is a high amount of particulates present in the oil. There is a light concentration of water present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		USP0011873	USP0007557	USP0003809
Sample Date	Client Info		11 May 2024	28 Feb 2024	26 Nov 2023
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			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	35	47	43
Chromium	ppm	ASTM D5185m >15	<1	<1	<1
Nickel	ppm	ASTM D5185m >15	<1	<1	1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	<1	0	0
Aluminum	ppm	ASTM D5185m >25	2	1	<1
Lead	ppm	ASTM D5185m >100	<1	0	0
Copper	ppm	ASTM D5185m >200	<1	<1	0
Tin	ppm	ASTM D5185m >25	<1	<1	<1
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	5	6
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	<1	<1	0
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1	1	1
Calcium	ppm	ASTM D5185m	7	<1	8
Phosphorus	ppm	ASTM D5185m	174	172	144
Zinc	ppm	ASTM D5185m	2	3	0
Sulfur	ppm	ASTM D5185m	709	740	741

CONTAMINANTS

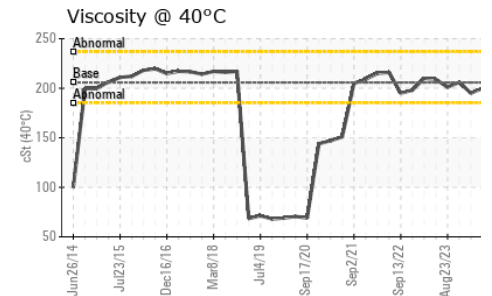
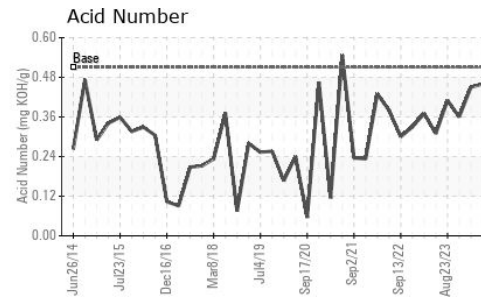
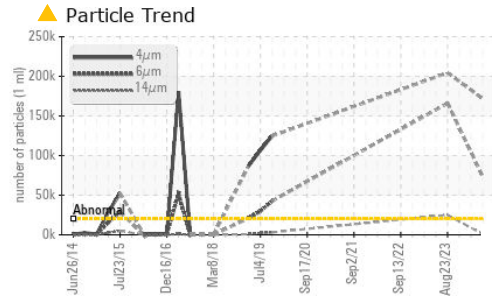
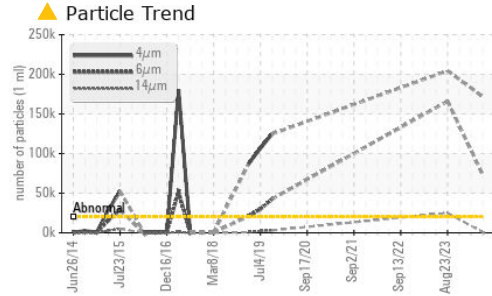
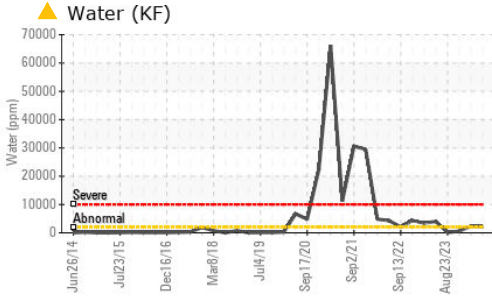
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	9	9	5
Sodium	ppm	ASTM D5185m	<1	<1	<1
Potassium	ppm	ASTM D5185m >20	1	<1	1
Water	%	ASTM D6304 >0.2	▲ 0.218	▲ 0.239	0.059
ppm Water	ppm	ASTM D6304 >2000	▲ 2180	▲ 2390	591

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 172015	---	---
Particles >6µm	ASTM D7647	>5000	▲ 73743	---	---
Particles >14µm	ASTM D7647	>640	▲ 907	---	---
Particles >21µm	ASTM D7647	>160	119	---	---
Particles >38µm	ASTM D7647	>40	0	---	---
Particles >71µm	ASTM D7647	>10	0	---	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 25/23/17	---	---

FLUID DEGRADATION

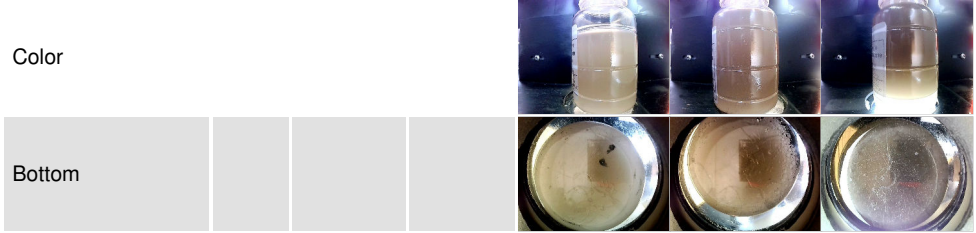
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.51	0.46	0.45	0.36



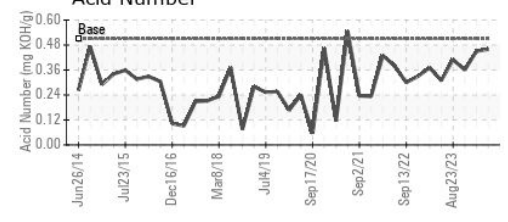
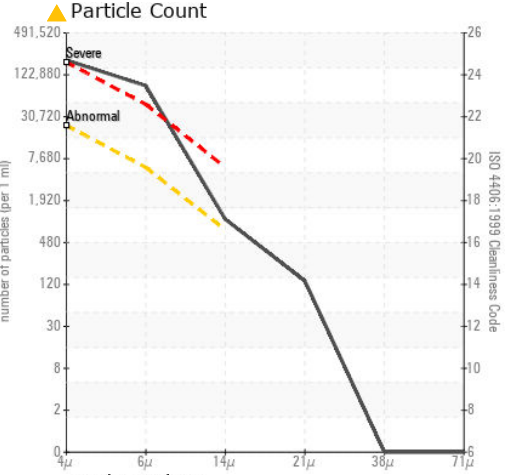
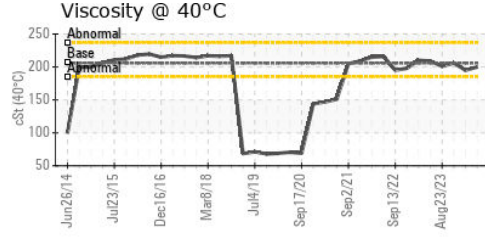
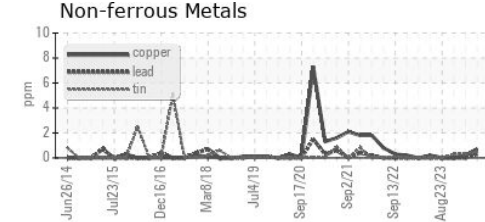
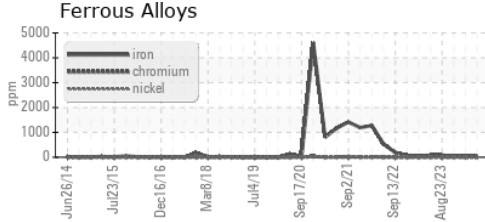
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ MODER	▲ MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	205.8	200	195

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : USP0011873
Lab Number : 06180185
Unique Number : 11031511
Test Package : IND 2
Received : 15 May 2024
Tested : 23 May 2024
Diagnosed : 23 May 2024 - Jonathan Hester

SMITHFIELD FOODS-MIDDLESBORO
 MIDDLESBORO, KY
 US
 Contact: SERVICE MANAGER

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)