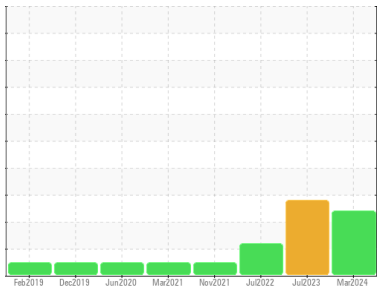
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
METRO
Machine Id
METRO 20005
Component
Rear Differential
Fluid
{not provided} (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 6 microns in size) present in the oil. Elemental level of silicon (Si) above normal.

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		**WC0934474**	WC0843182	WC0728427
Sample Date		Client Info		**15 Mar 2024**	13 Jul 2023	06 Jul 2022
Machine Age	mls	Client Info		**508207**	444251	338372
Oil Age	mls	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	>500	**295**	240	184
Chromium	ppm	ASTM D5185m	>10	**2**	2	1
Nickel	ppm	ASTM D5185m	>10	**2**	1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m		**0**	<1	0
Aluminum	ppm	ASTM D5185m	>25	**4**	3	2
Lead	ppm	ASTM D5185m	>25	**0**	0	0
Copper	ppm	ASTM D5185m	>100	**2**	2	1
Tin	ppm	ASTM D5185m	>10	**<1**	0	0
Antimony	ppm	ASTM D5185m	>5	**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**61**	70	47
Barium	ppm	ASTM D5185m		**1**	1	0
Molybdenum	ppm	ASTM D5185m		**0**	<1	0
Manganese	ppm	ASTM D5185m		**4**	3	2
Magnesium	ppm	ASTM D5185m		**149**	139	153
Calcium	ppm	ASTM D5185m		**7**	6	2
Phosphorus	ppm	ASTM D5185m		**1715**	1571	1551
Zinc	ppm	ASTM D5185m		**6**	8	2
Sulfur	ppm	ASTM D5185m		**27918**	24947	25056

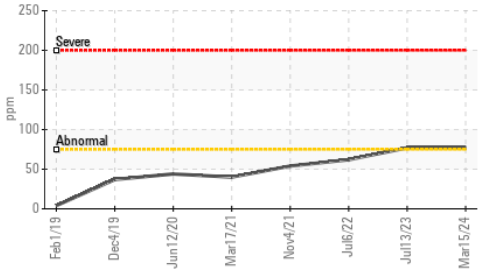
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>75	▲ **77**	▲ 77	62
Sodium	ppm	ASTM D5185m		**9**	6	6
Potassium	ppm	ASTM D5185m	>20	**3**	3	<1
Water	%	ASTM D6304	>.2	**0.039**	0.038	0.048
ppm Water	ppm	ASTM D6304	>2000	**392**	380.4	481.0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	● **31808**	▲ 142910	▲ 97518
Particles >6µm		ASTM D7647	>5000	**1146**	▲ 22300	● 7997
Particles >14µm		ASTM D7647	>640	**11**	127	154
Particles >21µm		ASTM D7647	>160	**2**	13	40
Particles >38µm		ASTM D7647	>40	**0**	0	4
Particles >71µm		ASTM D7647	>10	**0**	0	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	● **22/17/11**	▲ 24/22/14	▲ 24/20/14

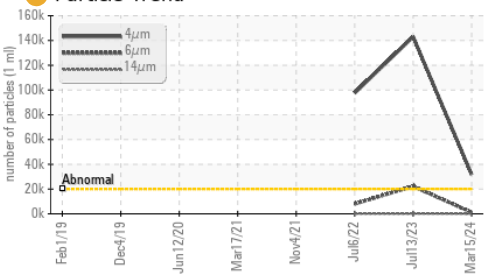
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.93**	0.83	0.68

OIL ANALYSIS REPORT

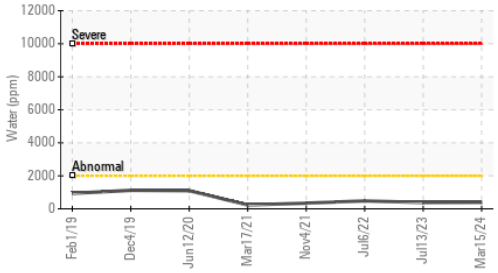
Silicon (ppm)



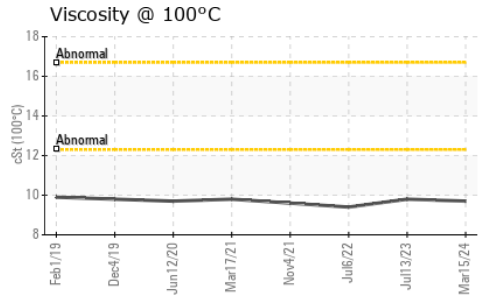
Particle Trend



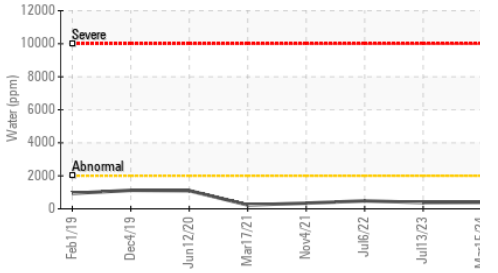
Water (KF)



Viscosity @ 100°C

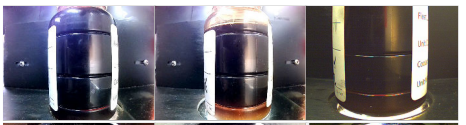


Water (KF)



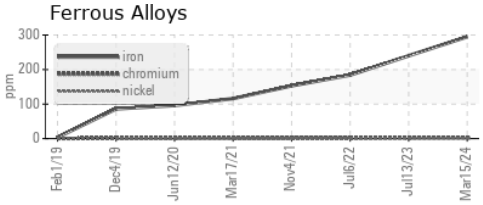
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		**53.3**	53.8	50.5
Visc @ 100°C	cSt	ASTM D445		**9.7**	9.8	9.4
Viscosity Index (VI)	Scale	ASTM D2270		**169**	170	172

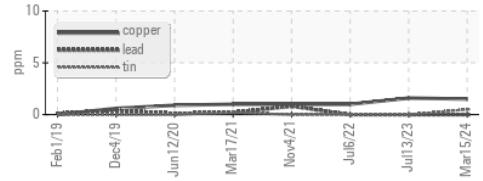
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

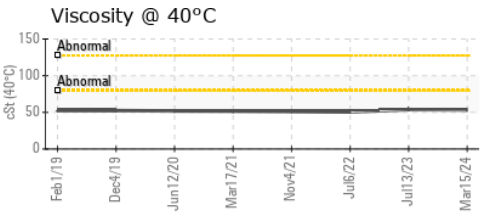
Ferrous Alloys



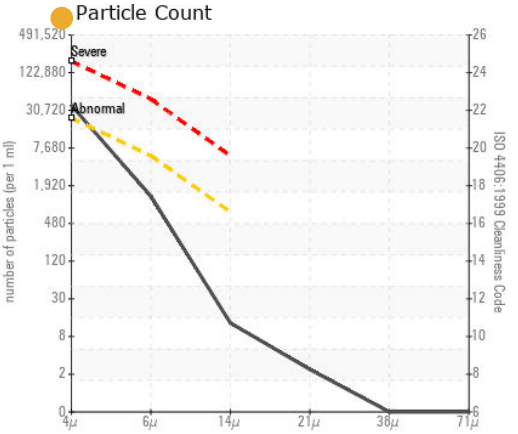
Non-ferrous Metals



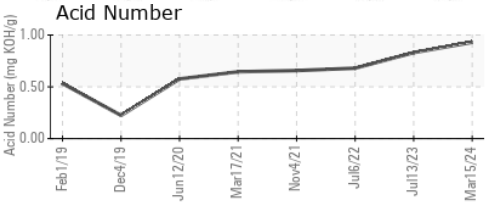
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0934474 **Received** : 14 May 2024
Lab Number : 06179406 **Tested** : 20 May 2024
Unique Number : 11030732 **Diagnosed** : 21 May 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, KV100, PrtCount, VI)

Certificate L2367

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)

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