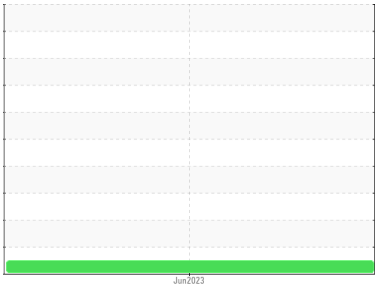
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
2PM WET STACK
Component
Circulating System
Fluid
MOBIL DTE PM 220 (6000 GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Analytical Ferrography: Results suggest this system is operating normally, with typical ferrous rubbing wear and contamination. Copper showing in the metals analysis is not present as a wear metal, suggesting this copper not a wear metal and is from passivation and is only present at a molecular level in the lubricant.

Wear
All component wear rates are normal. The analytical ferrographic results are normal indicating no abnormal wear in the system.

Contaminants
There is no indication of any contamination in the oil.

Oil 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		**WC0824310**	---	---
Sample Date		Client Info		**08 Jun 2023**	---	---
Machine Age	yrs	Client Info		**1**	---	---
Oil Age	yrs	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**NORMAL**	---	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**10**	---	---
Iron	ppm	ASTM D5185m		**<1**	---	---
Chromium	ppm	ASTM D5185m		**0**	---	---
Nickel	ppm	ASTM D5185m		**0**	---	---
Titanium	ppm	ASTM D5185m		**<1**	---	---
Silver	ppm	ASTM D5185m		**0**	---	---
Aluminum	ppm	ASTM D5185m		**<1**	---	---
Lead	ppm	ASTM D5185m		**0**	---	---
Copper	ppm	ASTM D5185m		**27**	---	---
Tin	ppm	ASTM D5185m		**0**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

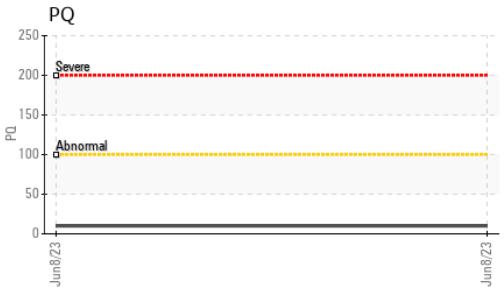
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	---	---
Barium	ppm	ASTM D5185m		**0**	---	---
Molybdenum	ppm	ASTM D5185m		**<1**	---	---
Manganese	ppm	ASTM D5185m		**0**	---	---
Magnesium	ppm	ASTM D5185m		**0**	---	---
Calcium	ppm	ASTM D5185m		**134**	---	---
Phosphorus	ppm	ASTM D5185m		**744**	---	---
Zinc	ppm	ASTM D5185m		**987**	---	---
Sulfur	ppm	ASTM D5185m		**5884**	---	---

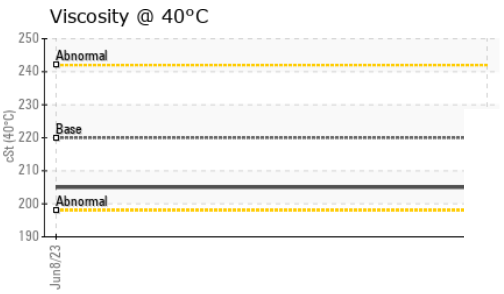
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m		**2**	---	---
Sodium	ppm	ASTM D5185m		**1**	---	---
Potassium	ppm	ASTM D5185m	>20	**0**	---	---

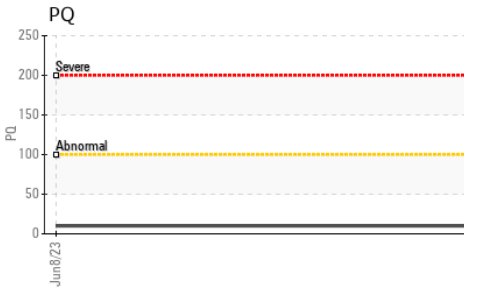
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.28**	---	---

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	**NORML**	---	---
Odor	scalar	*Visual	NORML	**NORML**	---	---
Emulsified Water	scalar	*Visual		**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

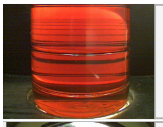
OIL ANALYSIS REPORT



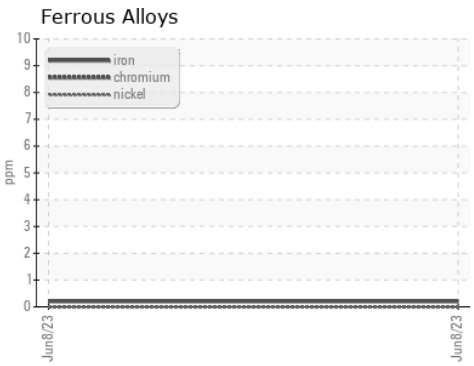


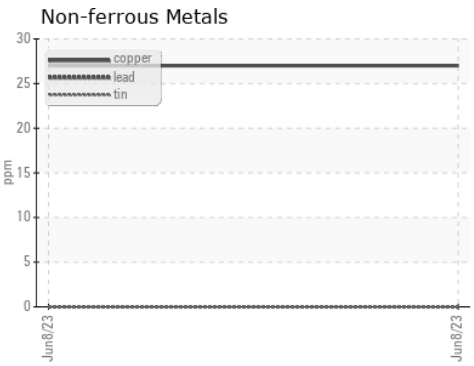


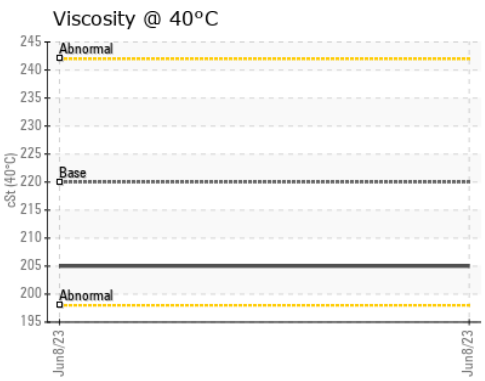
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	**205**	---	---

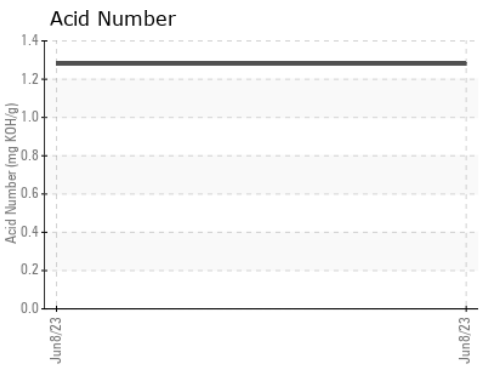
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0824310 **Received** : 09 Jun 2023
Lab Number : 05869556 **Diagnosed** : 16 Jun 2023
Unique Number : 10509340 **Diagnostician** : Aaron Black
Test Package : PLANT (Additional Tests: A-FERR)

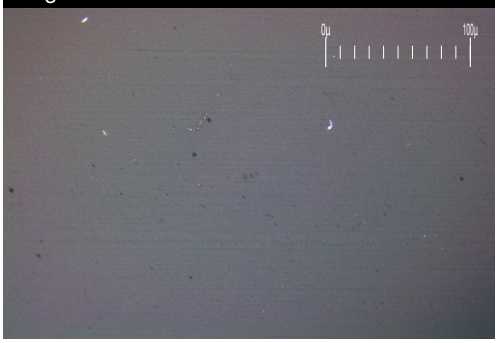
To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

GRAPHIC PACKAGING INTERNATIONAL
100 GRAPHIC PACKAGING INTERNATIONAL
MACON, GA
US 31206
Contact: DARYL SPRINGER
daryl.springer@graphicpkg.com
T: (478)784-3677
F:

FERROGRAPHY REPORT

Machine Id
2PM WET STACK
Component
Circulating System
Fluid
MOBIL DTE PM 220 (6000 GAL)

Magn: 500x Illum: RW



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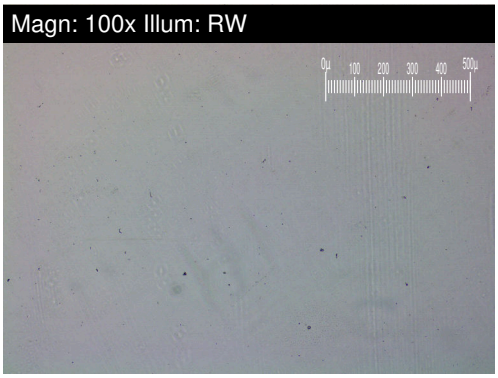
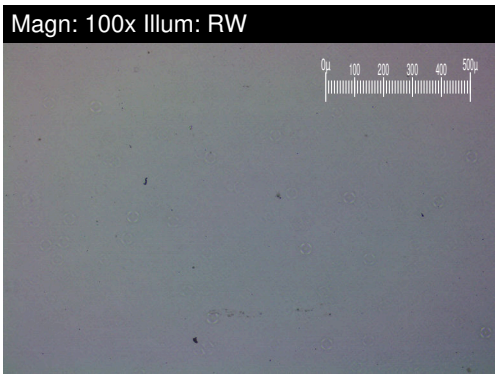


Magn: 100x Illum: RW



FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	*ASTM D7684		1		
Ferrous Sliding	Scale 0-10	*ASTM D7684				
Ferrous Cutting	Scale 0-10	*ASTM D7684				
Ferrous Rolling	Scale 0-10	*ASTM D7684				
Ferrous Break-in	Scale 0-10	*ASTM D7684				
Ferrous Spheres	Scale 0-10	*ASTM D7684				
Ferrous Black Oxides	Scale 0-10	*ASTM D7684				
Ferrous Red Oxides	Scale 0-10	*ASTM D7684				
Ferrous Corrosive	Scale 0-10	*ASTM D7684				
Ferrous Other	Scale 0-10	*ASTM D7684				
Nonferrous Rubbing	Scale 0-10	*ASTM D7684				
Nonferrous Sliding	Scale 0-10	*ASTM D7684				
Nonferrous Cutting	Scale 0-10	*ASTM D7684				
Nonferrous Rolling	Scale 0-10	*ASTM D7684				
Nonferrous Other	Scale 0-10	*ASTM D7684				
Carbonaceous Material	Scale 0-10	*ASTM D7684				
Lubricant Degradation	Scale 0-10	*ASTM D7684				
Sand/Dirt	Scale 0-10	ASTM D7684				
Fibres	Scale 0-10	*ASTM D7684				
Spheres	Scale 0-10	*ASTM D7684				
Other	Scale 0-10	*ASTM D7684		1		

WEAR

All component wear rates are normal. The analytical ferrographic results are normal indicating no abnormal wear in the system.

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