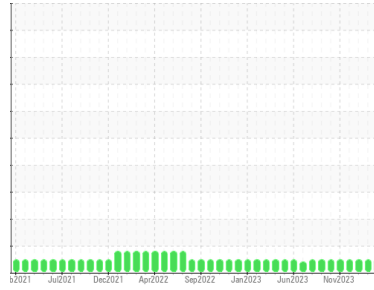




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Findlay
 Machine Id
[Findlay] Oil - Starboard Genset
 Component
Starboard Genset
 Fluid
MOBIL 15W40 (8 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: C.Kemper)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0859878	WC0859885	WC0846049
Sample Date	Client Info		23 Feb 2024	24 Jan 2024	29 Dec 2023
Machine Age	hrs	Client Info	9589	9385	8977
Oil Age	hrs	Client Info	2765	2561	2153
Oil Changed	Client Info		Not Chngd	Filtered	Not Chngd
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>50	11	9	10
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	0	<1	1
Lead	ppm	ASTM D5185m	>17	0	<1	<1
Copper	ppm	ASTM D5185m	>70	3	<1	3
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		22	21	24
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		48	53	49
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		1319	1357	1195
Calcium	ppm	ASTM D5185m		1433	1304	1283
Phosphorus	ppm	ASTM D5185m		964	1045	1010
Zinc	ppm	ASTM D5185m		1254	1303	1205
Sulfur	ppm	ASTM D5185m		3553	3261	3454

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	2	3	3
Sodium	ppm	ASTM D5185m	>118	3	4	3
Potassium	ppm	ASTM D5185m	>20	0	0	3
Water	%	ASTM D6304	>0.1	NEG	NEG	NEG

INFRA-RED

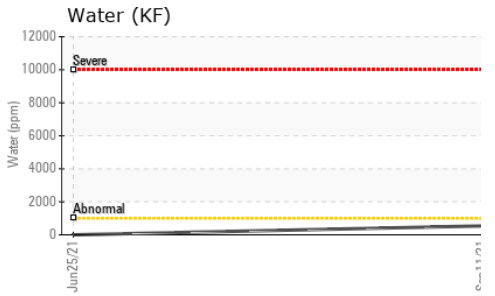
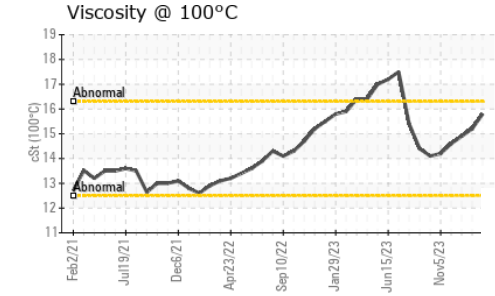
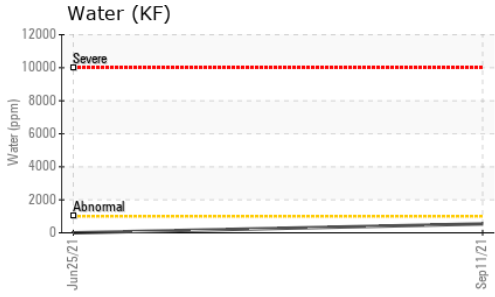
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0.3	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	14.5	13.4	13.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.3	24.1	24.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	30.4	27.5	27.3
Base Number (BN)	mg KOH/g	ASTM D2896		9.34	9.98	10.04



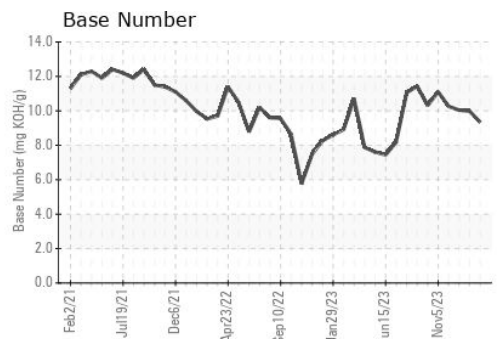
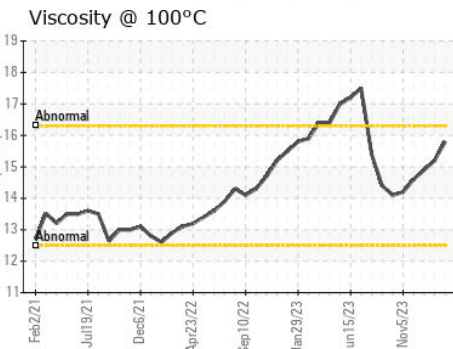
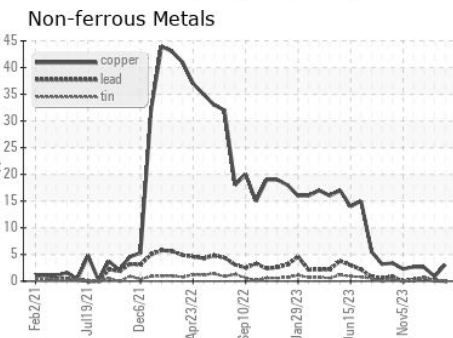
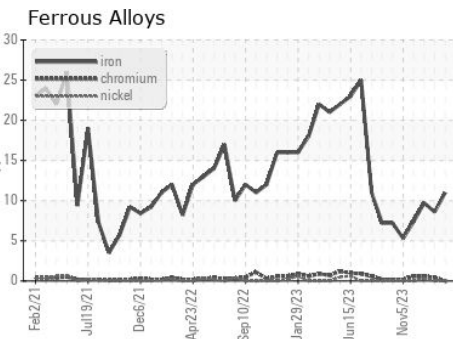
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
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	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.8	15.2	14.9

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0859878
Lab Number : 06122612
Unique Number : 10936763
Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: SHAWN MCCLASKEY
 stmccclaskey@marathonpetroleum.com
 T: (606)739-2416
 F: x:

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)