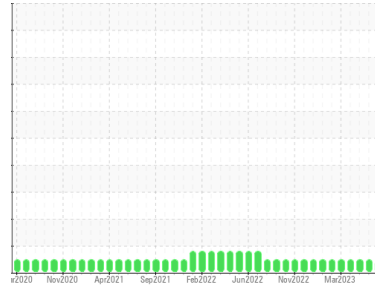




# PROBLEM SUMMARY

Sample Rating Trend



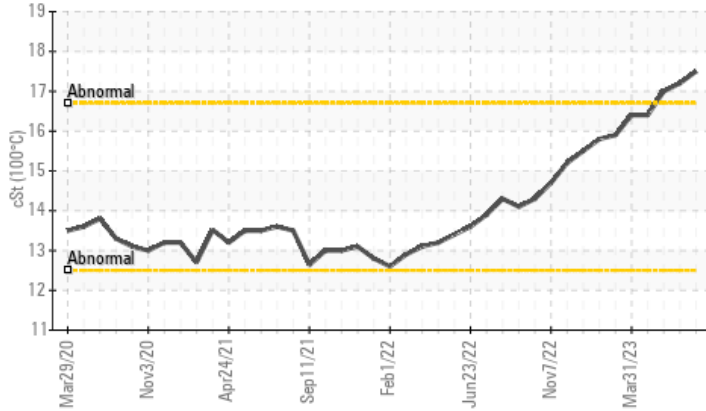
## VISCOSITY



Area  
**Findlay**  
 Machine Id  
**[Findlay] Oil - Starboard Genset**  
 Component  
**Starboard Genset**  
 Fluid  
**Marathon 15W40 (35 GAL)**

### COMPONENT CONDITION SUMMARY

#### ▲ Viscosity @ 100°C



### RECOMMENDATION

Resample at the next service interval to monitor. ( Customer Sample Comment: Top Up Amount: 1 GAL. C.Kemper )

### PROBLEMATIC TEST RESULTS

Sample Status			ATTENTION	NORMAL	NORMAL
Visc @ 100°C	cSt	ASTM D445	▲ 17.5	17.2	17.0

Customer Id: MARCAT  
 Sample No.: WC0769466  
 Lab Number: 05903426  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Doug Bogart +1 (800)237-1369 x4016  
[dougb@wearcheckusa.com](mailto:dougb@wearcheckusa.com)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

### 15 Jun 2023 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



### 23 May 2023 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



### 21 Apr 2023 Diag: Jonathan Hester

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

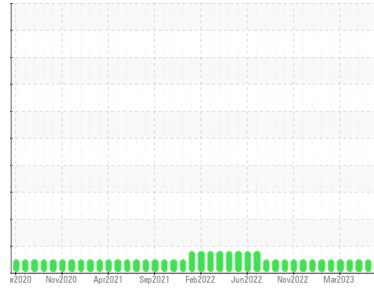
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



## VISCOSITY



Area  
**Findlay**  
 Machine Id  
**[Findlay] Oil - Starboard Genset**  
 Component  
**Starboard Genset**  
 Fluid  
**Marathon 15W40 (35 GAL)**

### DIAGNOSIS

#### ▲ Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: Top Up Amount: 1 GAL. C.Kemper )

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### ▲ Fluid Condition

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0769466</b>	WC0769464	WC0769530
Sample Date	Client Info		<b>15 Jul 2023</b>	15 Jun 2023	23 May 2023
Machine Age	hrs	Client Info	<b>6586</b>	6340	5822
Oil Age	hrs	Client Info	<b>2964</b>	2718	2346
Oil Changed	Client Info		<b>Oil Added</b>	Filtered	Oil Added
Sample Status			<b>ATTENTION</b>	NORMAL	NORMAL

### CONTAMINATION

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

### WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >25	<b>25</b>	23	22
Chromium	ppm	ASTM D5185m >5	<b>&lt;1</b>	1	1
Nickel	ppm	ASTM D5185m >5	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m >5	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m >10	<b>0</b>	<1	2
Lead	ppm	ASTM D5185m >10	<b>2</b>	3	4
Copper	ppm	ASTM D5185m >20	<b>15</b>	14	17
Tin	ppm	ASTM D5185m >5	<b>&lt;1</b>	<1	1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

### ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>54</b>	54	52
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>51</b>	48	47
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>982</b>	954	903
Calcium	ppm	ASTM D5185m	<b>1855</b>	1791	1726
Phosphorus	ppm	ASTM D5185m	<b>1062</b>	1075	980
Zinc	ppm	ASTM D5185m	<b>1320</b>	1389	1230
Sulfur	ppm	ASTM D5185m	<b>3770</b>	4033	3294

### CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>5</b>	7	6
Sodium	ppm	ASTM D5185m	<b>9</b>	8	8
Potassium	ppm	ASTM D5185m >20	<b>4</b>	7	5

### INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.3</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624 >20	<b>16.9</b>	16.3	16.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>29.3</b>	29.7	29.6

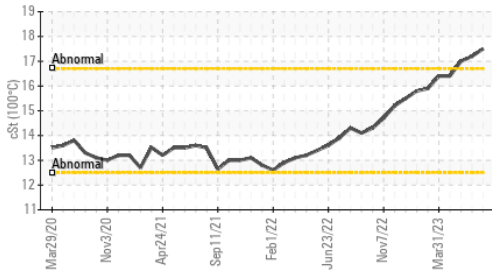
### FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>37.1</b>	37.9	36.6
Base Number (BN)	mg KOH/g	ASTM D2896	<b>8.18</b>	7.44	7.61

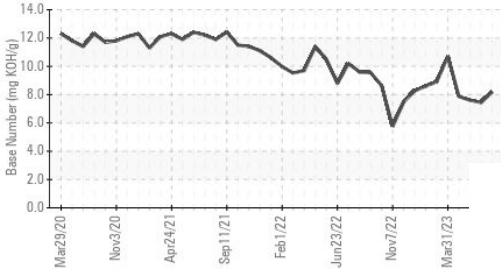


# OIL ANALYSIS REPORT

▲ Viscosity @ 100°C



Base Number

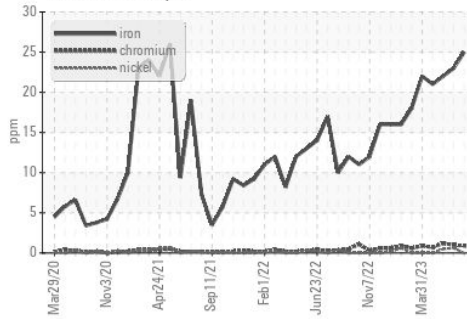


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

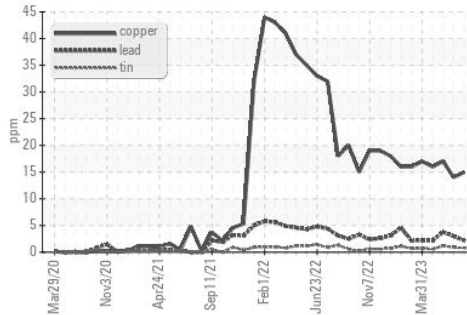
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 17.5	17.2	17.0

## GRAPHS

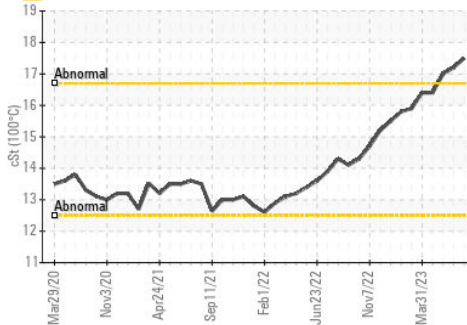
Ferrous Alloys



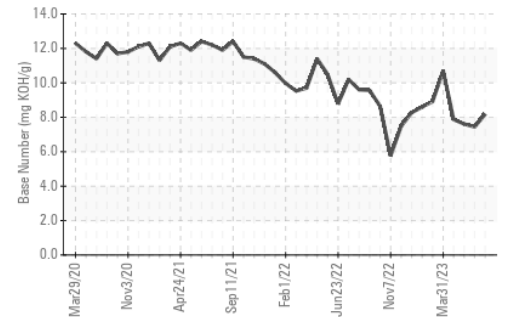
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0769466 Received : 20 Jul 2023  
 Lab Number : 05903426 Diagnosed : 25 Jul 2023  
 Unique Number : 10564782 Diagnostician : Doug Bogart  
 Test Package : IND 2

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 US 41169

Contact: SHAWN MCCLASKEY  
 stmcclasskey@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)