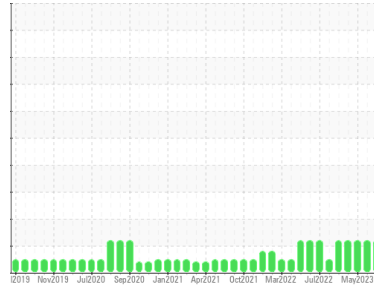




PROBLEM SUMMARY

Sample Rating Trend



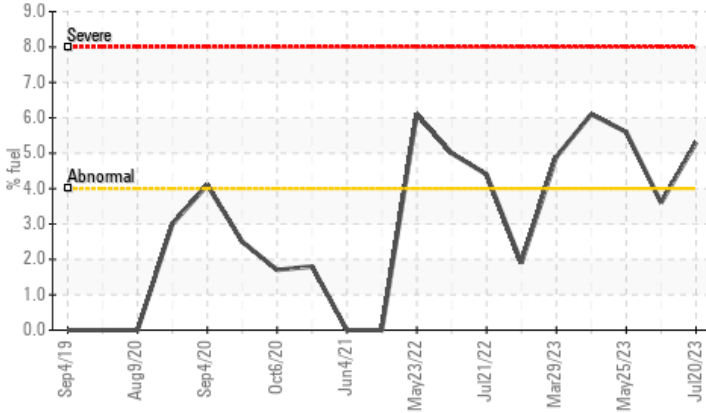
FUEL



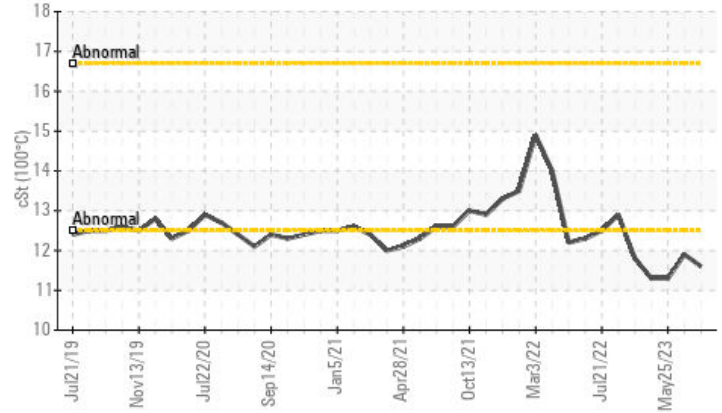
Area
Canton
Machine Id
[Canton] Oil - Starboard Genset
Component
Starboard Genset
Fluid
MARATHON 15W40 (35 GAL)

COMPONENT CONDITION SUMMARY

▲ Fuel Dilution



▲ Viscosity @ 100°C



RECOMMENDATION

We advise that you check the fuel injection system.
Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status

			ABNORMAL	ABNORMAL	ABNORMAL	
Fuel	%	ASTM D3524	>4.0	▲ 5.3	▲ 3.6	▲ 5.6
Visc @ 100°C	cSt	ASTM D445		▲ 11.6	▲ 11.9	▲ 11.3

Customer Id: MARCAT
Sample No.: WC0769240
Lab Number: 05966522
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldrige +1
don.b505@comcast.net

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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

22 Jun 2023 Diag: Angela Borella

FUEL



We advise that you check the fuel injection system. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

[view report](#)



25 May 2023 Diag: Jonathan Hester

FUEL



We advise that you check the fuel injection system. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

[view report](#)



27 Apr 2023 Diag: Doug Bogart

FUEL



We advise that you check the fuel injection system. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

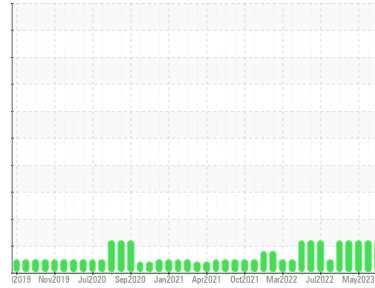
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
Canton
 Machine Id
[Canton] Oil - Starboard Genset
 Component
Starboard Genset
 Fluid
MARATHON 15W40 (35 GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. 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		WC0769240	WC0735806	WC0735778
Sample Date	Client Info		20 Jul 2023	22 Jun 2023	25 May 2023
Machine Age	hrs	Client Info	14755	14333	14029
Oil Age	hrs	Client Info	3607	3171	14029
Oil Changed	Client Info		Filtered	Oil Added	Filtered
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	22	13	14
Chromium	ppm	ASTM D5185m >4	<1	<1	0
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m >5	0	0	0
Aluminum	ppm	ASTM D5185m >12	<1	<1	5
Lead	ppm	ASTM D5185m >17	<1	0	0
Copper	ppm	ASTM D5185m >70	<1	<1	0
Tin	ppm	ASTM D5185m >15	<1	0	0
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	154	247	202
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	122	113	116
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	804	739	760
Calcium	ppm	ASTM D5185m	1525	1428	1501
Phosphorus	ppm	ASTM D5185m	708	686	735
Zinc	ppm	ASTM D5185m	914	836	882
Sulfur	ppm	ASTM D5185m	2619	2698	2868

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	6	5	4
Sodium	ppm	ASTM D5185m	48	10	10
Potassium	ppm	ASTM D5185m >20	26	0	<1
Fuel	%	ASTM D3524 >4.0	▲ 5.3	▲ 3.6	▲ 5.6

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624 >20	13.6	10.7	11.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	23.5	23.0	23.1

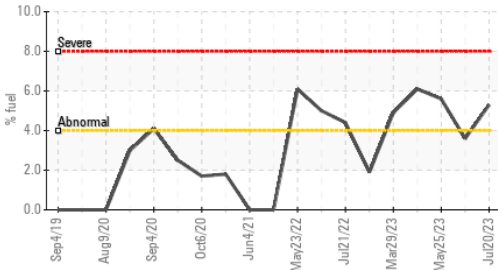
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	21.8	20.2	21.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.20	9.98	9.55

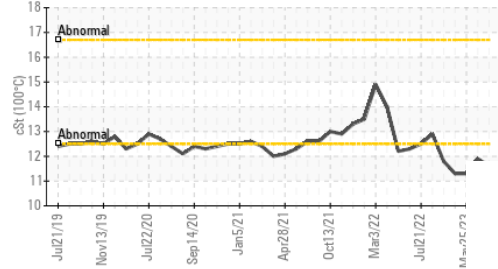


OIL ANALYSIS REPORT

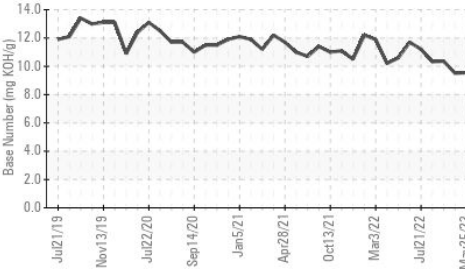
▲ Fuel Dilution



▲ Viscosity @ 100°C



Base Number

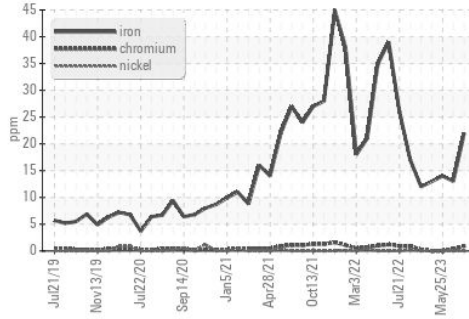


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

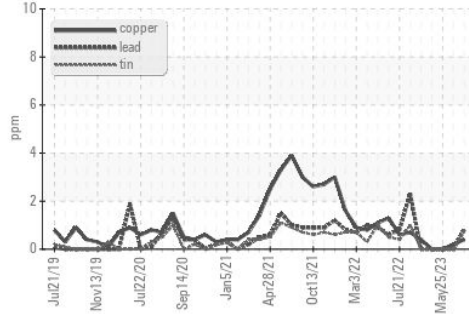
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 11.6	▲ 11.9	▲ 11.3

GRAPHS

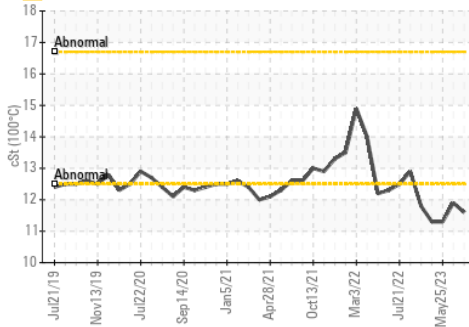
Ferrous Alloys



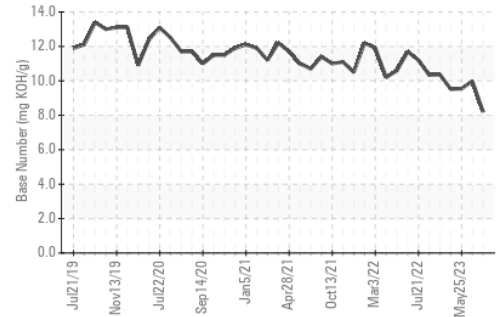
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0769240
 Lab Number : 05966522
 Unique Number : 10673073
 Test Package : IND 2 (Additional Tests: PercentFuel)

Received : 02 Oct 2023
 Diagnosed : 04 Oct 2023
 Diagnostician : Don Baldrige

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: M/V CANTON
 mvcanton@marathonpetroleum.com

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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F: