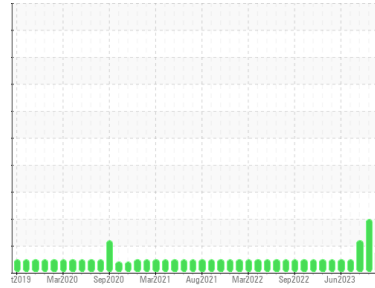




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area  
**Galveston Bay**  
 Machine Id  
**[Galveston Bay] Oil - Starboard Genset**  
 Component  
**Starboard Genset**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (8 GAL)**

## DIAGNOSIS

### Recommendation

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

### Wear

The copper level has decreased, but is still abnormal.

### Contamination

Fuel content negligible. 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		<b>WC0769367</b>	WC0769370	WC0735306
Sample Date	Client Info		<b>28 Feb 2024</b>	06 Dec 2023	08 Nov 2023
Machine Age	hrs	Client Info	<b>0</b>	0	351
Oil Age	hrs	Client Info	<b>0</b>	0	351
Oil Changed	Client Info		<b>N/A</b>	N/A	Oil Added
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>50	<b>17</b>	22	15
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>12	<b>2</b>	1	1
Lead	ppm	ASTM D5185m	>17	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>70	<b>73</b>	162	23
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	250	<b>31</b>	47	60
Barium	ppm	ASTM D5185m	10	<b>0</b>	1	<1
Molybdenum	ppm	ASTM D5185m	100	<b>42</b>	33	31
Manganese	ppm	ASTM D5185m		<b>2</b>	5	5
Magnesium	ppm	ASTM D5185m	450	<b>1077</b>	912	899
Calcium	ppm	ASTM D5185m	3000	<b>1226</b>	1382	1312
Phosphorus	ppm	ASTM D5185m	1150	<b>905</b>	869	790
Zinc	ppm	ASTM D5185m	1350	<b>1107</b>	1082	1015
Sulfur	ppm	ASTM D5185m	4250	<b>2913</b>	2829	2926

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>11</b>	20	19
Sodium	ppm	ASTM D5185m	>158	<b>7</b>	8	3
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	3	1
Fuel	%	ASTM D3524	>4.0	<b>1.6</b>	3.7	2.4

## INFRA-RED

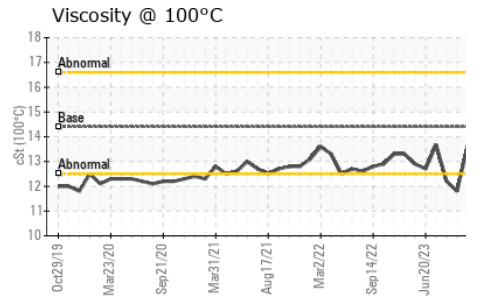
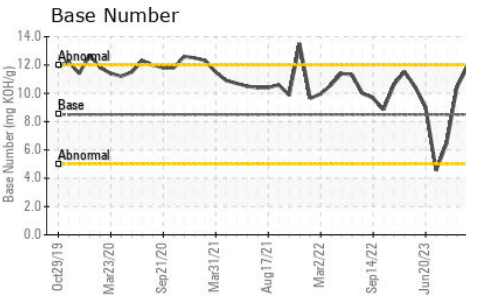
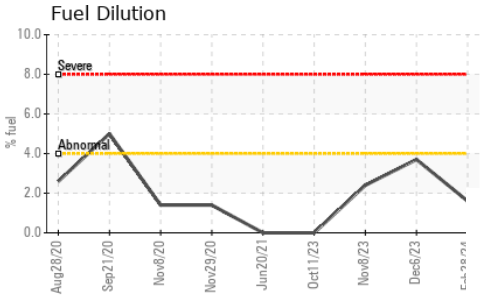
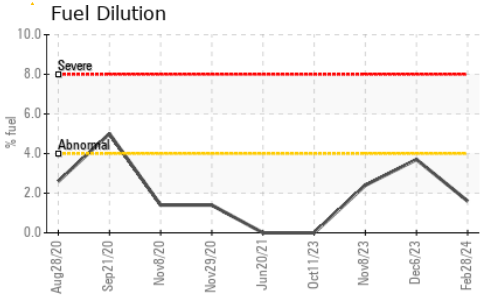
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.4</b>	10.4	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.2</b>	20.5	19.4

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.3</b>	19.4	15.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>11.88</b>	10.47	6.46



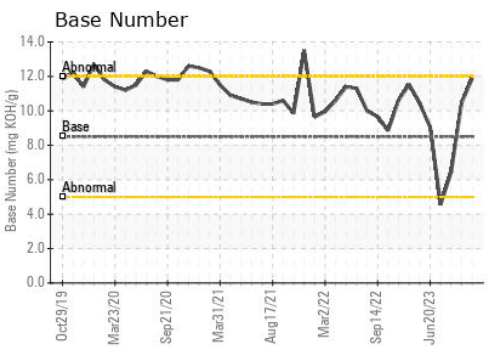
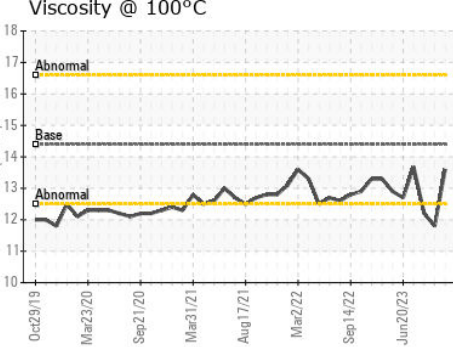
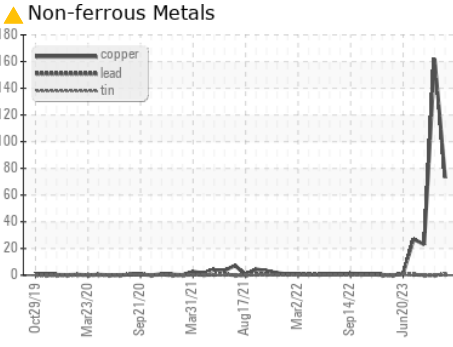
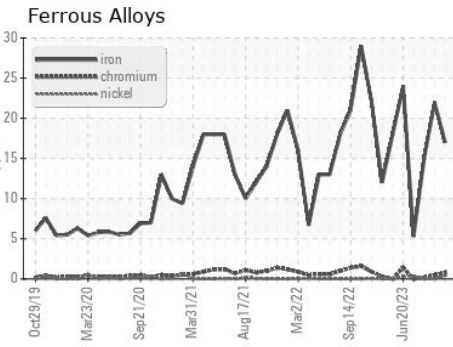
# OIL ANALYSIS REPORT



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	14.4	13.6	▲ 11.8 ▲ 12.2

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0769367 **Received** : 27 Mar 2024  
**Lab Number** : **06130826** **Tested** : 01 Apr 2024  
**Unique Number** : 10950291 **Diagnosed** : 01 Apr 2024 - Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: PercentFuel )

**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)