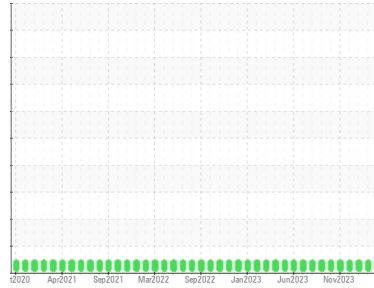




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



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

## DIAGNOSIS

### Recommendation

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

### 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			<b>WC0846055</b>	WC0845948	WC0845944
Sample Date	Client Info			<b>16 Mar 2024</b>	16 Feb 2024	22 Jan 2024
Machine Age	hrs	Client Info		<b>19243</b>	18856	18456
Oil Age	hrs	Client Info		<b>386</b>	451	65
Oil Changed	Client Info			<b>N/A</b>	Not Changd	N/A
Sample Status				<b>NORMAL</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	>50	<b>10</b>	6	4
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	0
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>	0	0
Aluminum	ppm	ASTM D5185m	>12	<b>2</b>	1	<1
Lead	ppm	ASTM D5185m	>17	<b>1</b>	0	0
Copper	ppm	ASTM D5185m	>70	<b>2</b>	1	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	0
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>57</b>	66	69
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>30</b>	27	26
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>951</b>	917	885
Calcium	ppm	ASTM D5185m	3000	<b>1624</b>	1619	1471
Phosphorus	ppm	ASTM D5185m	1150	<b>909</b>	763	794
Zinc	ppm	ASTM D5185m	1350	<b>1035</b>	941	932
Sulfur	ppm	ASTM D5185m	4250	<b>3648</b>	3211	3287

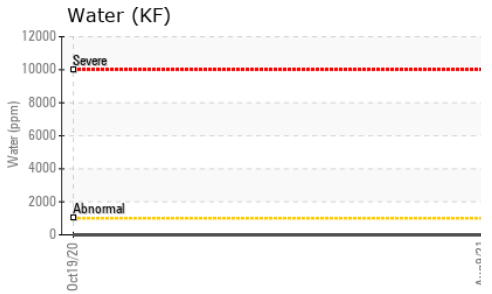
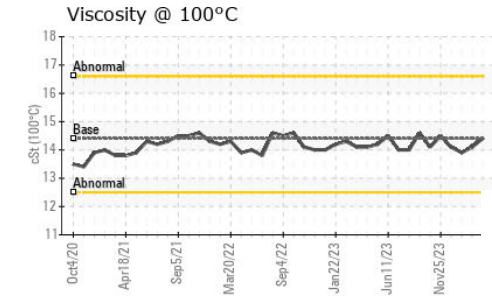
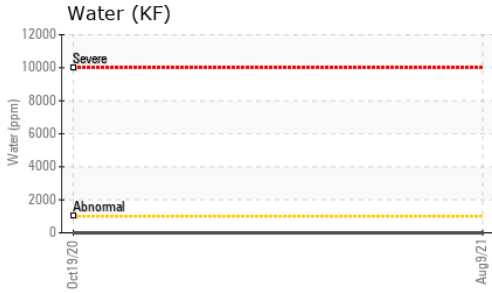
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>4</b>	3	3
Sodium	ppm	ASTM D5185m	>158	<b>2</b>	2	2
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	<1	<1
Water	%	ASTM D6304	>0.1	<b>NEG</b>	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		<b>0.3</b>	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.8</b>	9.8	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.8</b>	20.7	19.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.0</b>	17.6	14.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>10.26</b>	10.17	10.94



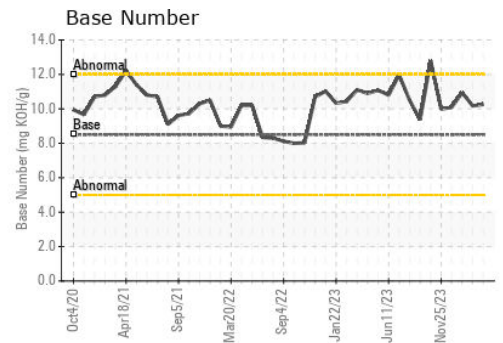
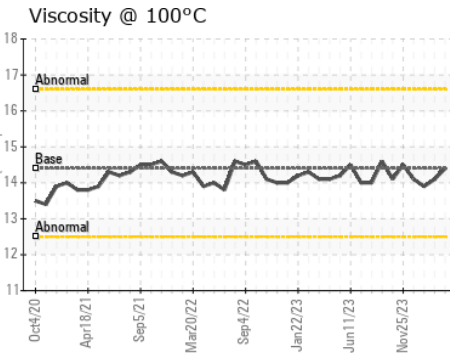
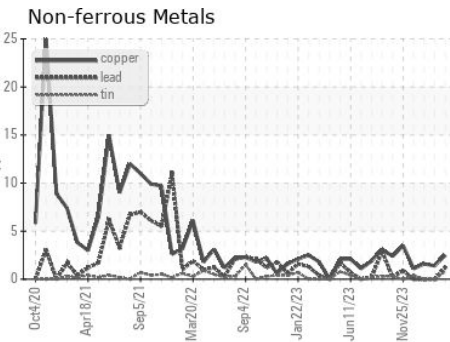
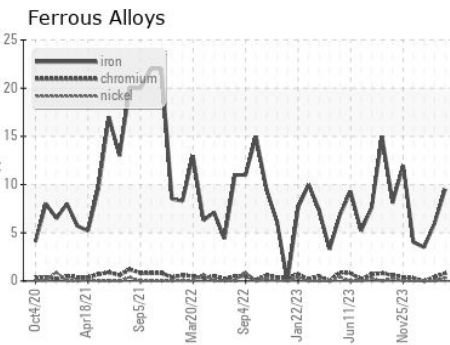
# OIL ANALYSIS REPORT



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	14.1	13.9

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0846055 **Received** : 27 Mar 2024  
**Lab Number** : 06130851 **Tested** : 01 Apr 2024  
**Unique Number** : 10950316 **Diagnosed** : 01 Apr 2024 - Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: KF )

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 US 41169  
 Contact: CORY GUMBERT  
 cagumbert@marathonpetroleum.com  
 T: (606)585-3950  
 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)