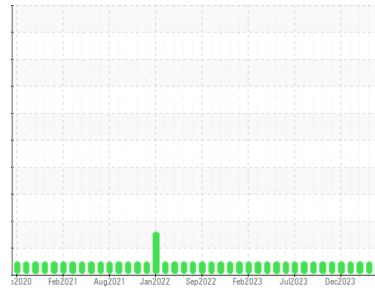




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Kentucky**  
 Machine Id  
**[Kentucky] Oil - Port Main Engine**  
 Component  
**Port Main Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (216 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### 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>WC0845806</b>	WC0874827	WC0859784
Sample Date	Client Info		<b>25 Apr 2024</b>	16 Mar 2024	16 Feb 2024
Machine Age	hrs	Client Info	<b>14450</b>	13560	12942
Oil Age	hrs	Client Info	<b>406</b>	1453	1171
Oil Changed	Client Info		<b>N/A</b>	Oil Added	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 >75	<b>1</b>	8	5
Chromium	ppm	ASTM D5185m >8	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m >3	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m >15	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m >18	<b>&lt;1</b>	3	2
Copper	ppm	ASTM D5185m >80	<b>2</b>	5	2
Tin	ppm	ASTM D5185m >14	<b>&lt;1</b>	1	0
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	<b>10</b>	19	21
Barium	ppm	ASTM D5185m 10	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m 100	<b>58</b>	59	54
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 450	<b>1328</b>	1117	1104
Calcium	ppm	ASTM D5185m 3000	<b>1186</b>	1345	1383
Phosphorus	ppm	ASTM D5185m 1150	<b>1043</b>	1096	988
Zinc	ppm	ASTM D5185m 1350	<b>1234</b>	1299	1278
Sulfur	ppm	ASTM D5185m 4250	<b>3333</b>	3230	3213

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	<b>4</b>	4	2
Sodium	ppm	ASTM D5185m >158	<b>2</b>	4	3
Potassium	ppm	ASTM D5185m >20	<b>2</b>	2	0
Water	%	ASTM D6304 >0.1	<b>NEG</b>	NEG	NEG

## INFRA-RED

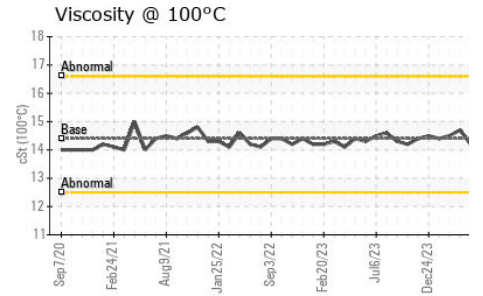
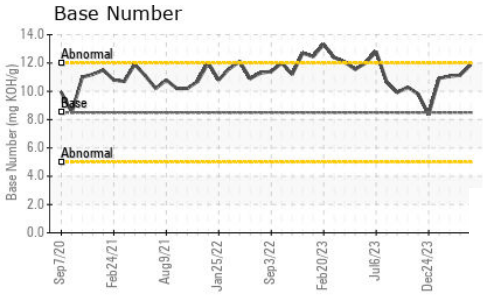
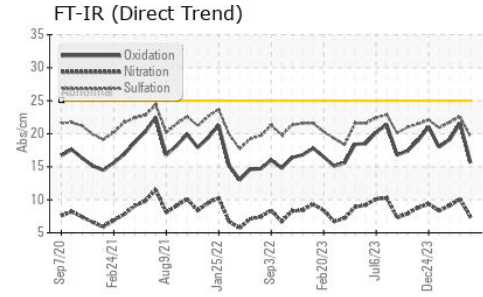
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.1</b>	0.2	0.1
Nitration	Abs/cm	*ASTM D7624 >20	<b>7.4</b>	10.1	9.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.5</b>	22.6	21.7

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>15.6</b>	21.6	19.1
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	<b>11.87</b>	11.14	11.06



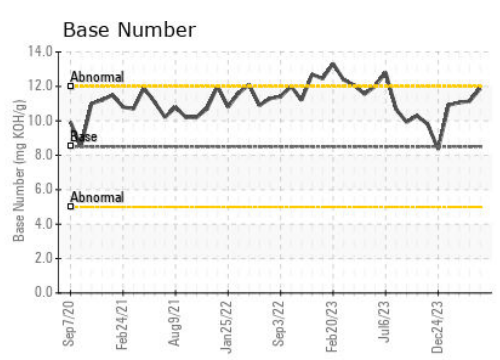
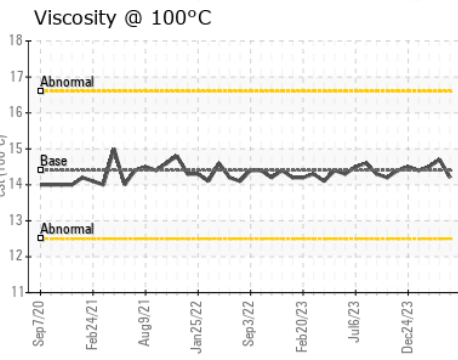
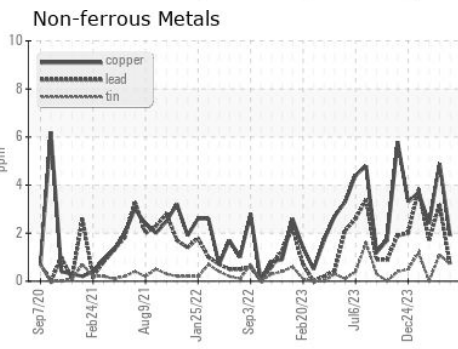
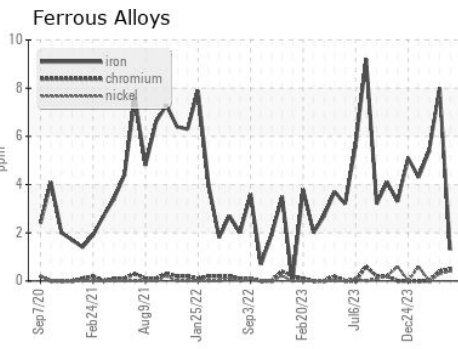
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	MODER	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	<b>14.2</b>	14.7	14.5

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0845806      **Received** : 16 May 2024  
**Lab Number** : **06181571**      **Tested** : 20 May 2024  
**Unique Number** : 11032897      **Diagnosed** : 20 May 2024 - Sean Felton  
**Test Package** : IND 2 ( Additional Tests: KF )

**MARATHON PETROLEUM CO.**  
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 US 41169  
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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)