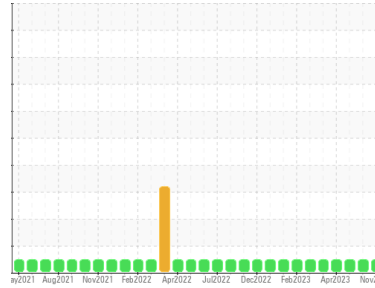




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Cincinnati
 Machine Id
[Cincinnati] Oil - Starboard Reduction Gear
 Component
Starboard Reduction Gear
 Fluid
NOT GIVEN (23 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

The water content is negligible. There is no indication of any contamination in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0805539	WC0769210	WC0769253
Sample Date	Client Info		08 Nov 2023	15 Aug 2023	18 May 2023
Machine Age	hrs	Client Info	34881	34881	1166
Oil Age	hrs	Client Info	34881	60	1166
Oil Changed	Client Info		Changed	Changed	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	9	9	8
Chromium	ppm	ASTM D5185m >10	0	0	<1
Nickel	ppm	ASTM D5185m >10	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	<1
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >25	1	1	2
Lead	ppm	ASTM D5185m >100	0	2	3
Copper	ppm	ASTM D5185m >50	28	31	23
Tin	ppm	ASTM D5185m >10	<1	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	3	<1	3
Barium	ppm	ASTM D5185m	0	2	0
Molybdenum	ppm	ASTM D5185m	38	45	42
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	626	621	658
Calcium	ppm	ASTM D5185m	702	843	775
Phosphorus	ppm	ASTM D5185m	716	776	720
Zinc	ppm	ASTM D5185m	813	908	837
Sulfur	ppm	ASTM D5185m	2099	2553	2317

CONTAMINANTS

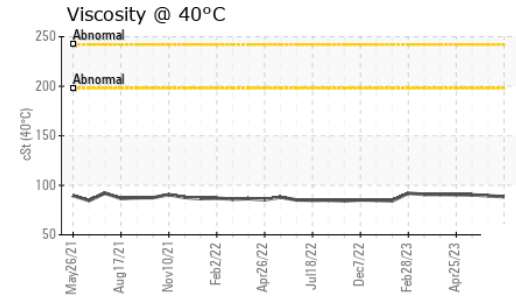
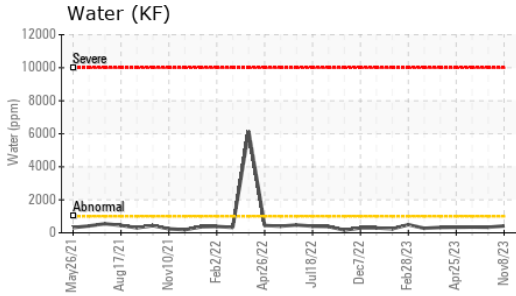
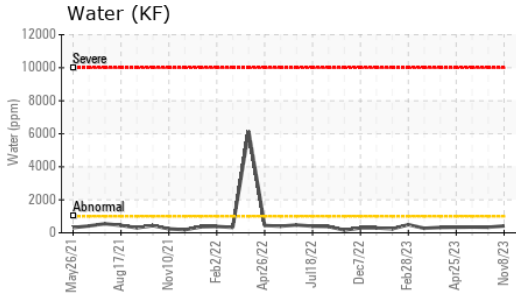
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	2	2	3
Sodium	ppm	ASTM D5185m	3	0	4
Potassium	ppm	ASTM D5185m >20	0	2	<1
Water	%	ASTM D6304 >0.1	0.041	0.033	0.034
ppm Water	ppm	ASTM D6304 >1000	416.2	338.4	349.6

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.86	0.98	---



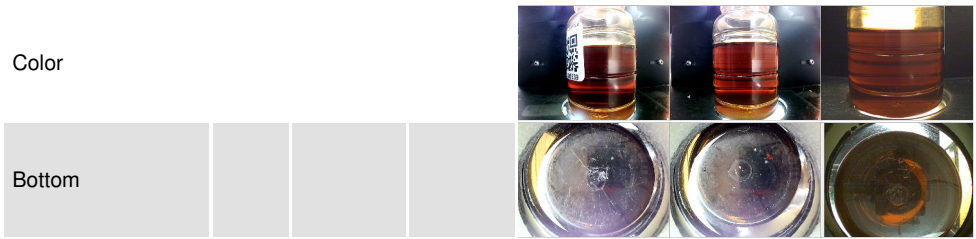
OIL ANALYSIS REPORT



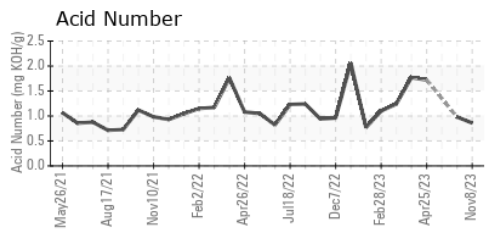
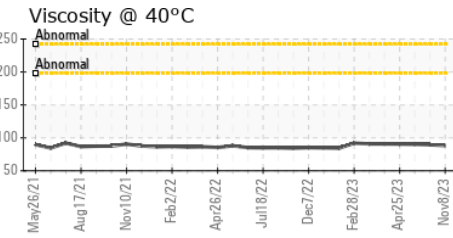
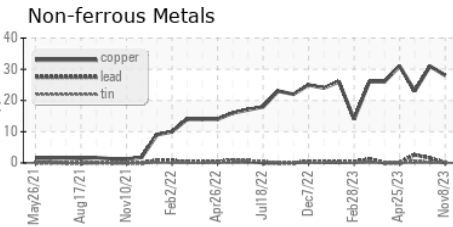
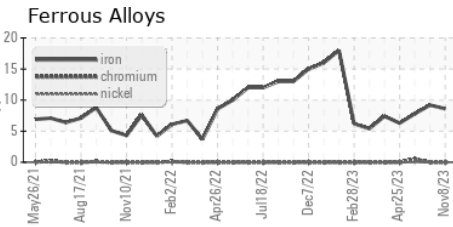
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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 @ 40°C	cSt	ASTM D445	88.4	89.4	90.3

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0805539 **Received** : 15 Nov 2023
Lab Number : 06008429 **Diagnosed** : 16 Nov 2023
Unique Number : 10742191 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: M/V CINCINNATI
 mvcincinnati@marathonpetroleum.com
 T:
 F:

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)