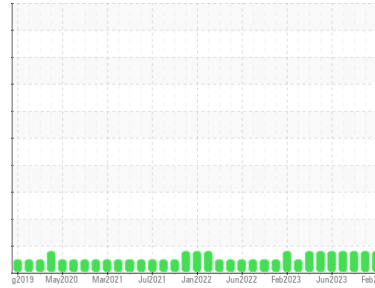




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
Galveston Bay
 Machine Id
[Galveston Bay] Oil - Starboard Reduction Gear
 Component
Starboard Reduction Gear
 Fluid
SAE 40W (35 GAL)

DIAGNOSIS

▲ Recommendation

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

▲ Wear

The copper level is abnormal. All other component wear rates are normal.

Contamination

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		WC0769368	WC0735576	WC0735563
Sample Date	Client Info		28 Feb 2024	06 Dec 2023	08 Nov 2023
Machine Age	hrs	Client Info	22925	7009	21261
Oil Age	hrs	Client Info	12203	5376	10539
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	14	14	13
Chromium	ppm	ASTM D5185m >10	0	0	0
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	0	0	<1
Lead	ppm	ASTM D5185m >100	2	1	0
Copper	ppm	ASTM D5185m >50	▲ 390	▲ 252	▲ 224
Tin	ppm	ASTM D5185m >10	0	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	17	18	19
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	43	46	43
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m	648	642	638
Calcium	ppm	ASTM D5185m	1096	1088	1043
Phosphorus	ppm	ASTM D5185m	817	778	787
Zinc	ppm	ASTM D5185m	873	911	903
Sulfur	ppm	ASTM D5185m	2831	2668	2458

CONTAMINANTS

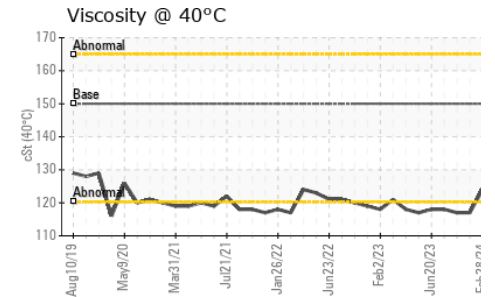
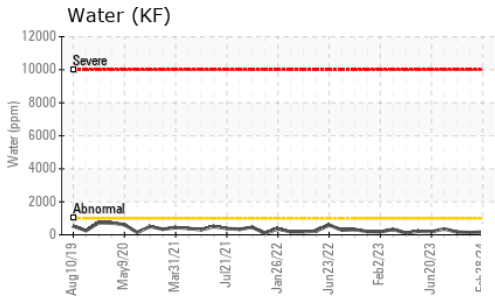
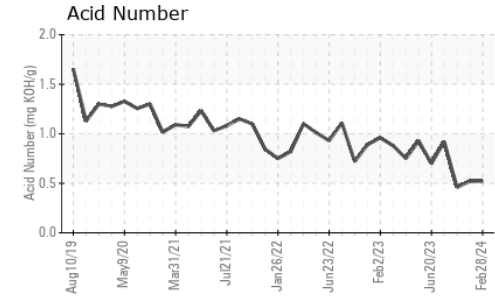
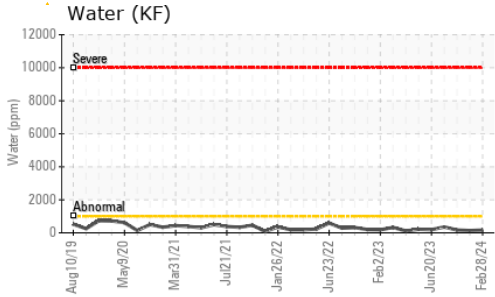
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	1	2	2
Sodium	ppm	ASTM D5185m	5	4	5
Potassium	ppm	ASTM D5185m >20	0	0	0
Water	%	ASTM D6304 >0.1	0.016	0.013	0.016
ppm Water	ppm	ASTM D6304 >1000	165	137	169.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.52	0.52	0.46



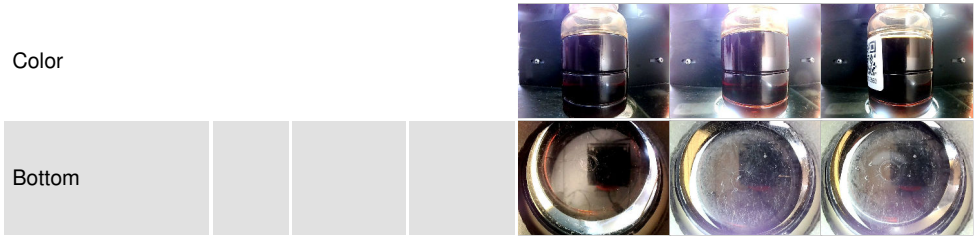
OIL ANALYSIS REPORT



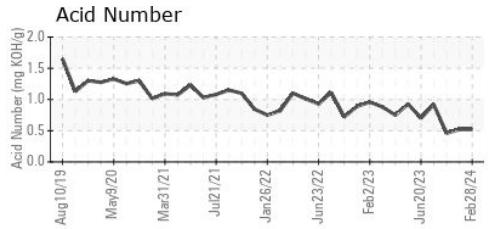
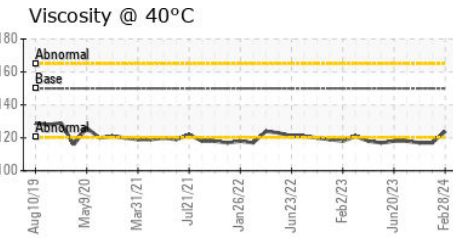
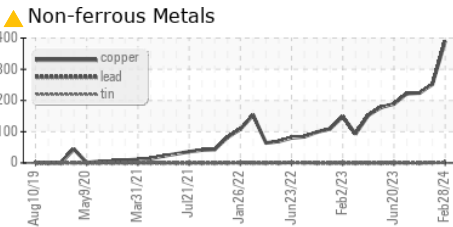
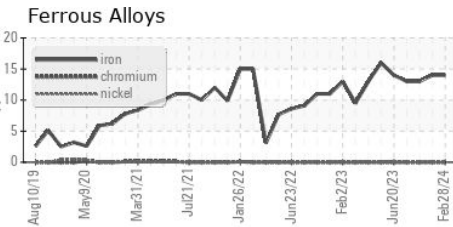
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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 @ 40°C	cSt	ASTM D445	150	124	117

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769368 **Received** : 19 Mar 2024
Lab Number : **06122461** **Tested** : 20 Mar 2024
Unique Number : 10936612 **Diagnosed** : 21 Mar 2024 - Don Baldrige
Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: CORY GUMBERT
 cagumbert@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)

T: (606)585-3950

F: x: