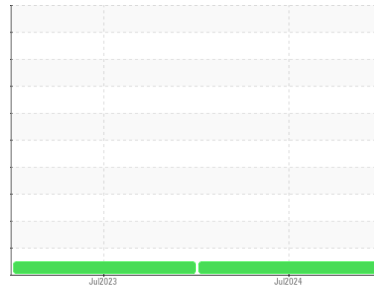




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

Huntington

Machine Id

[Huntington] Hydraulic - Flanking

Component

Hydraulic System

Fluid

AW HYDRAULIC OIL ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

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			WC0898320	WC0769298	---
Sample Date	Client Info			02 Jul 2024	05 Jul 2023	---
Machine Age	hrs	Client Info		0	0	---
Oil Age	hrs	Client Info		0	0	---
Oil Changed	Client Info			Not Changed	N/A	---
Sample Status				NORMAL	NORMAL	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	1	<1	---
Chromium	ppm	ASTM D5185m	>20	<1	0	---
Nickel	ppm	ASTM D5185m	>20	<1	0	---
Titanium	ppm	ASTM D5185m		<1	0	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m	>20	2	0	---
Lead	ppm	ASTM D5185m	>20	<1	0	---
Copper	ppm	ASTM D5185m	>20	1	<1	---
Tin	ppm	ASTM D5185m	>20	<1	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		<1	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	0	0	---
Barium	ppm	ASTM D5185m	5	0	0	---
Molybdenum	ppm	ASTM D5185m	5	<1	<1	---
Manganese	ppm	ASTM D5185m		0	0	---
Magnesium	ppm	ASTM D5185m	25	4	0	---
Calcium	ppm	ASTM D5185m	200	92	40	---
Phosphorus	ppm	ASTM D5185m	300	286	301	---
Zinc	ppm	ASTM D5185m	370	362	376	---
Sulfur	ppm	ASTM D5185m	2500	780	992	---

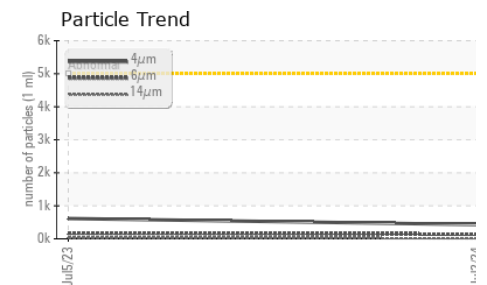
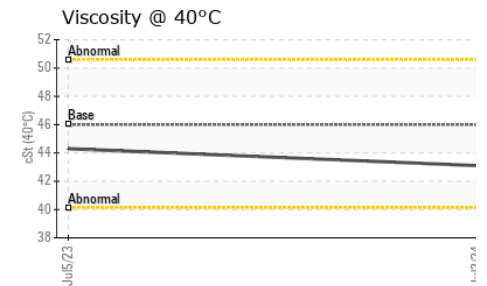
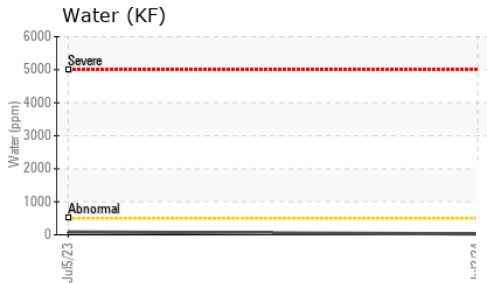
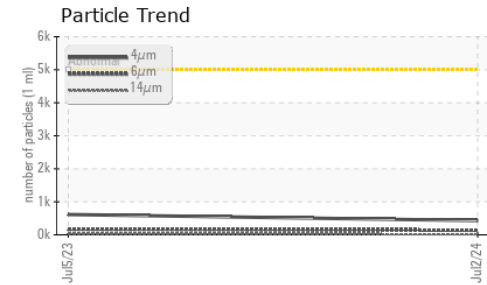
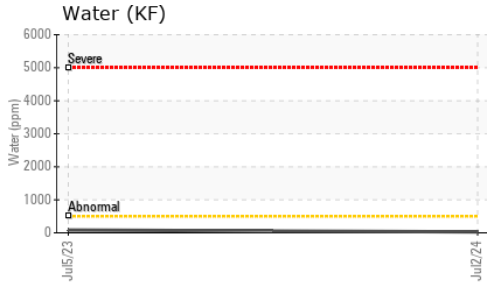
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	<1	0	---
Sodium	ppm	ASTM D5185m		0	<1	---
Potassium	ppm	ASTM D5185m	>20	<1	0	---
Water	%	ASTM D6304	>0.05	0.003	0.008	---
ppm Water	ppm	ASTM D6304	>500	28	85.1	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	430	616	---
Particles >6µm		ASTM D7647	>1300	137	166	---
Particles >14µm		ASTM D7647	>160	16	23	---
Particles >21µm		ASTM D7647	>40	4	6	---
Particles >38µm		ASTM D7647	>10	0	0	---
Particles >71µm		ASTM D7647	>3	0	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	16/14/11	16/15/12	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	0.41	0.41	---



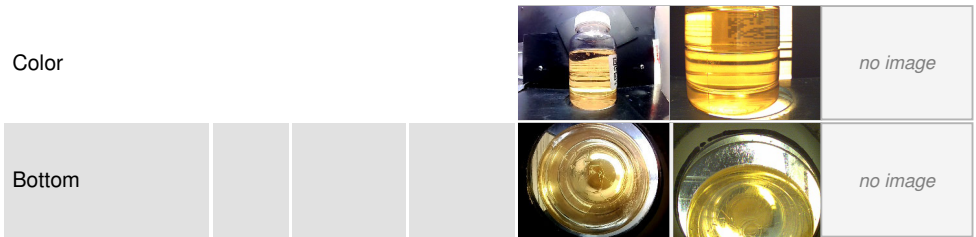
OIL ANALYSIS REPORT



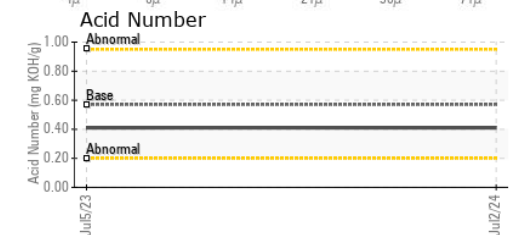
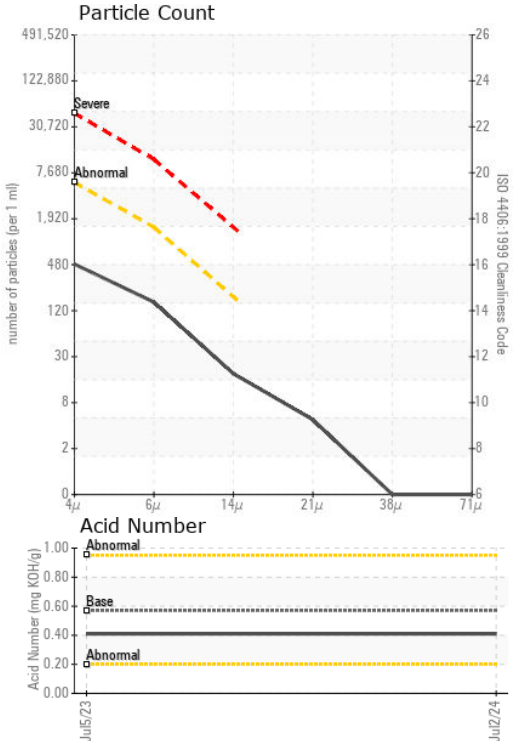
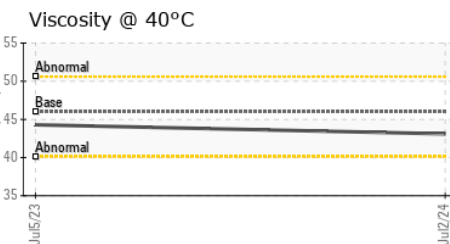
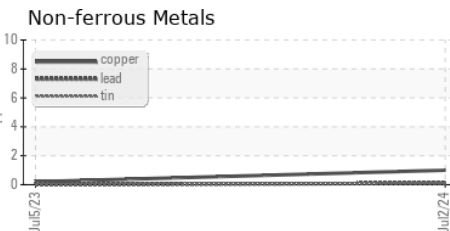
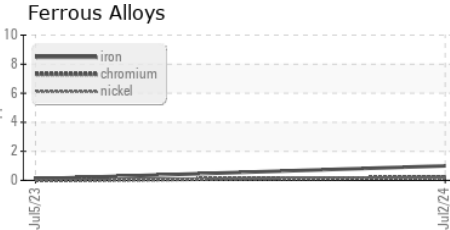
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.05	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	43.1	44.3

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. : WC0898320
Lab Number : 06235925
Unique Number : 11124759
Test Package : IND 2 (Additional Tests: KF)

Received : 15 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - Wes Davis

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169

Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com
 T: (606)585-3950

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)

F: x: