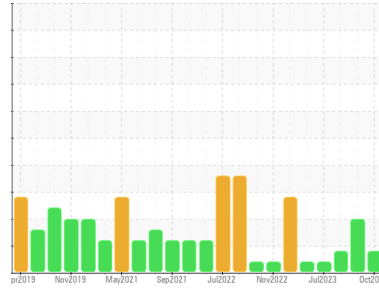




PROBLEM SUMMARY

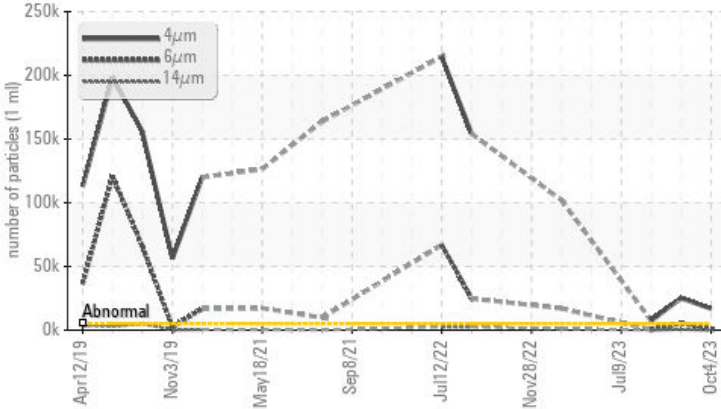
Sample Rating Trend



Area
Paul G. Blazer
 Machine Id
[Paul G. Blazer] Hydraulic - Steering
 Component
Hydraulic System
 Fluid
AW HYDRAULIC OIL ISO 46 (150 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status		ABNORMAL	ABNORMAL	ATTENTION
Particles >4µm	ASTM D7647 >5000	▲ 16890	▲ 25118	▲ 7485
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 21/17/12	▲ 22/20/16	▲ 20/16/10

Customer Id: MARCAT
 Sample No.: WC0719548
 Lab Number: 05978235
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

31 Aug 2023 Diag: Jonathan Hester

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



07 Aug 2023 Diag: Don Baldrige

ISO



No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



09 Jul 2023 Diag: Don Baldrige

VIS DEBRIS



We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

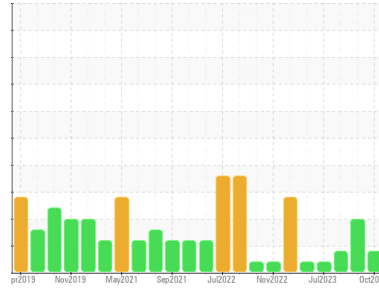
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
Paul G. Blazer
 Machine Id
[Paul G. Blazer] Hydraulic - Steering
 Component
Hydraulic System
 Fluid
AW HYDRAULIC OIL ISO 46 (150 GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 6 microns in size) present 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		WC0719548	WC0621768	WC0719295
Sample Date	Client Info		04 Oct 2023	31 Aug 2023	07 Aug 2023
Machine Age	hrs	Client Info	2147	1438	940
Oil Age	hrs	Client Info	2147	1438	940
Oil Changed	Client Info		N/A	Not Changd	N/A
Sample Status			ABNORMAL	ABNORMAL	ATTENTION

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	7	7	5
Chromium	ppm	ASTM D5185m >20	0	<1	<1
Nickel	ppm	ASTM D5185m >20	0	0	<1
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >20	0	0	0
Lead	ppm	ASTM D5185m >20	0	0	2
Copper	ppm	ASTM D5185m >20	1	0	5
Tin	ppm	ASTM D5185m >20	0	0	<1
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 5	<1	0	0
Barium	ppm	ASTM D5185m 5	1	0	0
Molybdenum	ppm	ASTM D5185m 5	0	0	1
Manganese	ppm	ASTM D5185m	0	0	2
Magnesium	ppm	ASTM D5185m 25	2	<1	0
Calcium	ppm	ASTM D5185m 200	57	4	0
Phosphorus	ppm	ASTM D5185m 300	31	15	12
Zinc	ppm	ASTM D5185m 370	27	20	0
Sulfur	ppm	ASTM D5185m 2500	290	259	244

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	0	0	1
Sodium	ppm	ASTM D5185m	<1	0	5
Potassium	ppm	ASTM D5185m >20	0	1	3
Water	%	ASTM D6304 >0.05	0.006	0.00	0.002
ppm Water	ppm	ASTM D6304 >500	65.1	0.00	24.5

FLUID CLEANLINESS

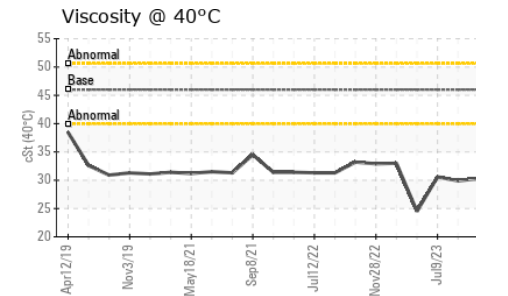
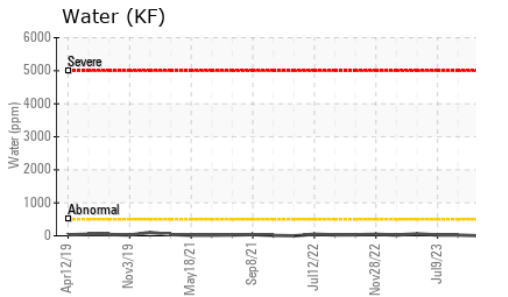
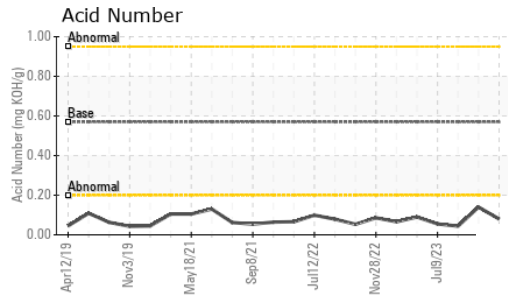
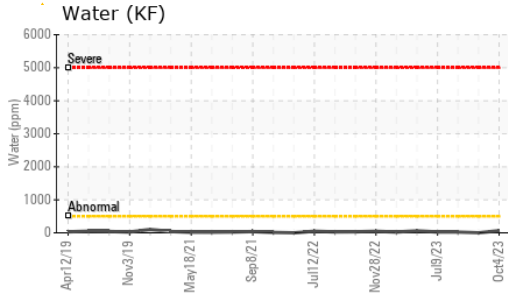
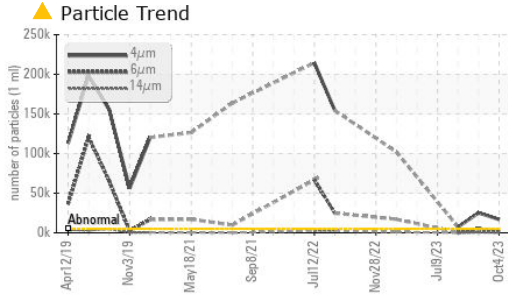
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 16890	▲ 25118	▲ 7485
Particles >6µm	ASTM D7647	>1300	1079	▲ 5208	401
Particles >14µm	ASTM D7647	>160	33	▲ 635	7
Particles >21µm	ASTM D7647	>40	8	▲ 210	1
Particles >38µm	ASTM D7647	>10	0	6	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 21/17/12	▲ 22/20/16	▲ 20/16/10

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.57	0.08	0.14	0.044



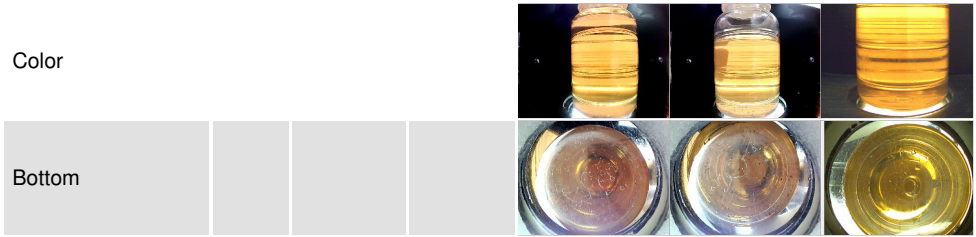
OIL ANALYSIS REPORT



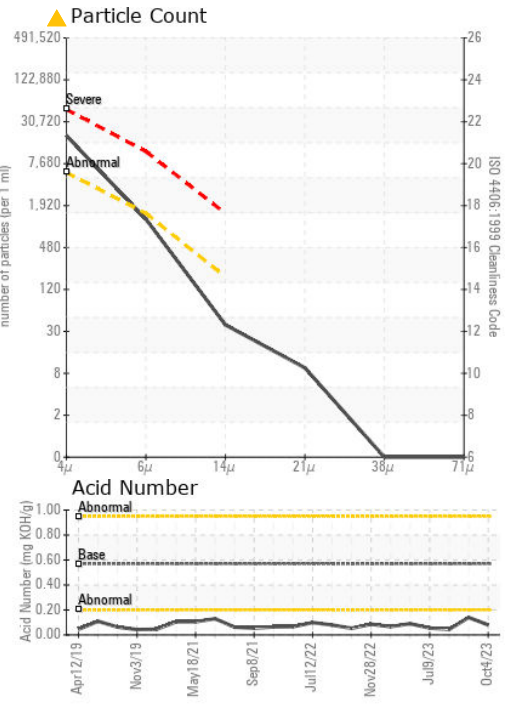
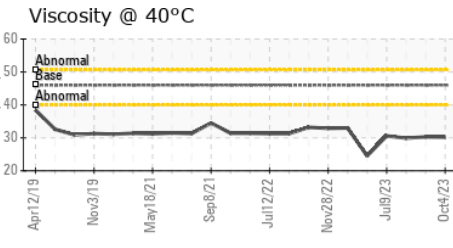
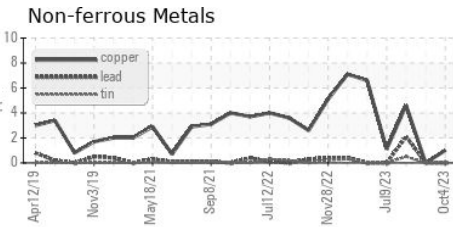
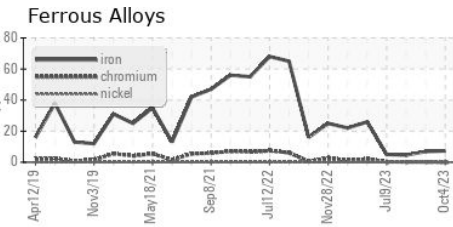
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	30.2	30.3

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0719548 **Received** : 13 Oct 2023
Lab Number : 05978235 **Diagnosed** : 17 Oct 2023
Unique Number : 10695530 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF)

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 CATLETTSBURG, KY
 US 41169
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 cagumbert@marathonpetroleum.com
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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)