

OIL ANALYSIS REPORT

Sample Rating Trend

w10021 Aug/0221 Feb/022 Aug/0222 Jan/022 Meg/023 Oc/0223 Meg/024

NORMAL



Detroit [Detroit] Oil - Port Reduction Gear

Port Reduction Gear Fluid SAE 30W (35 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

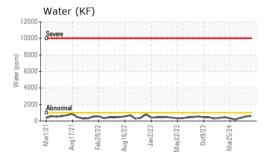
Fluid Condition

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

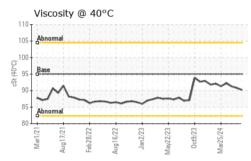
SAMPLE INFORM	/ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0859863	WC0804742	WC0804789
Sample Date		Client Info		03 Jun 2024	20 May 2024	22 Apr 2024
Machine Age	hrs	Client Info		31360	31133	30531
Oil Age	hrs	Client Info		5227	4999	4398
Oil Changed	1110	Client Info		Not Changd	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	12	12	12
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	<1	<1
Lead	ppm	ASTM D5185m	>100	0	<1	<1
Copper	ppm	ASTM D5185m	>50	6	6	6
Tin	ppm	ASTM D5185m	>10	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
	le le	7.01		•	0	•
ADDITIVES	le le	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 31	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	limit/base	current 31 0	history1 31 0	history2 30 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 31 0 15 <1 251	history1 31 0 15 <1 229	history2 30 0 15 <1 221
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 31 0 15 <1 251 3287	history1 31 0 15 <1	history2 30 0 15 <1 221 3032
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 31 0 15 <1 251 3287 1027	history1 31 0 15 <1 229 2959 949	history2 30 0 15 <1 221 3032 954
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 31 0 15 <1 251 3287 1027 1124	history1 31 0 15 <1 229 2959 949 1015	history2 30 0 15 <1 221 3032 954 1043
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 31 0 15 <1 251 3287 1027	history1 31 0 15 <1 229 2959 949	history2 30 0 15 <1 221 3032 954
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 31 0 15 <1 251 3287 1027 1124	history1 31 0 15 <1 229 2959 949 1015	history2 30 0 15 <1 221 3032 954 1043
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m		current 31 0 15 <1 251 3287 1027 1124 8538	history1 31 0 15 <1 229 2959 949 1015 7536	history2 30 0 15 <1 221 3032 954 1043 7756
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 31 0 15 <1 251 3287 1027 1124 8538 current	history1 31 0 15 <1 229 2959 949 1015 7536 history1	history2 30 0 15 <1 221 3032 954 1043 7756 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 31 0 15 <1 251 3287 1027 1124 8538 current 4	history1 31 0 15 <1 229 2959 949 1015 7536 history1	history2 30 0 15 <1 221 3032 954 1043 7756 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >50	current 31 0 15 <1 251 3287 1027 1124 8538 current 4	history1 31 0 15 <1 229 2959 949 1015 7536 history1 4	history2 30 0 15 <1 221 3032 954 1043 7756 history2 4 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >50 >20	current 31 0 15 <1 251 3287 1027 1124 8538 current 4 4 <1	history1 31 0 15 <1 229 2959 949 1015 7536 history1 4 2 0	history2 30 0 15 <1 221 3032 954 1043 7756 history2 4 2 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >50 >20 >0.1	current 31 0 15 <1 251 3287 1027 1124 8538 current 4 <1 0.061	history1 31 0 15 <1 229 2959 949 1015 7536 history1 4 2 0 0.054	history2 30 0 15 <1 221 3032 954 1043 7756 history2 4 2 0 0.036



OIL ANALYSIS REPORT



12	2000 T	Wat	er (K	F)						
		Severe								
E E	8000									
Water (ppm)	6000									
Way	4000 -									
2	2000	Abnon	mal							
	οL	-	^	2 -	2 :	<u></u>	3		—	_
		Mar1/2	Aug17/2	Feb28/22	Aug16/22	Jan2/23	May22/23	0ct9/23	Mar25/24	



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPER	THES	method			riistory i	nistoryz	
Visc @ 40°C	cSt	ASTM D445	95.0	90.2	90.8	91.3	

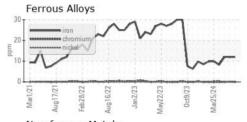
SAMPLE IMAGES

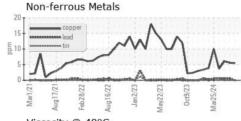
Color

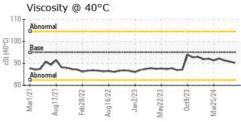


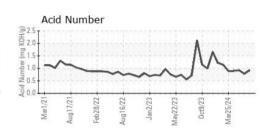


GRAPHS













Certificate 12367

Laboratory Sample No.

Lab Number : 06219789 Unique Number : 11097986

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0859863

Test Package : IND 2 (Additional Tests: KF)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received **Tested**

: 25 Jun 2024 Diagnosed

: 26 Jun 2024 : 27 Jun 2024 - Don Baldridge CATLETTSBURG, KY

US 41169 Contact: SHAWN MCCLASKEY stmcclaskey@marathonpetroleum.com

* - 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)

Submitted By: M/V DETROIT

MARATHON PETROLEUM CO.

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101 12TH ST