

OIL ANALYSIS REPORT

Area Tri State [Tri State] Oil - Port Reduction Gear

Port Reduction Gear

Fluid DIESEL ENGINE OIL SAE 40 (8 GAL)

Recommendation

Resample at the next service interval to monitor.

Wear

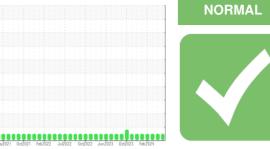
All component wear rates are normal.

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.

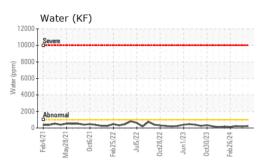


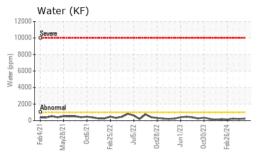
Sample Rating Trend

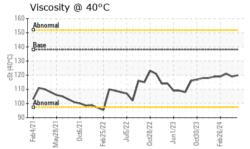
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0874540	WC0874788	WC0874808
Sample Date		Client Info		24 May 2024	23 Apr 2024	20 Mar 2024
Machine Age	hrs	Client Info		23692	23077	22382
Oil Age	hrs	Client Info		590	1111	416
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	2	2	2
Chromium	ppm	ASTM D5185m	>10	<1	0	0
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	0	1
Lead	ppm	ASTM D5185m	>100	0	0	0
Copper	ppm	ASTM D5185m	>50	3	<1	1
Tin	ppm	ASTM D5185m	>10	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 0	history1 <1	history2 <1
	ppm ppm					
Boron		ASTM D5185m	250	0	<1	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	0 <1	<1 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	0 <1 40	<1 0 40	<1 0 41
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	0 <1 40 0	<1 0 40 0	<1 0 41 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	0 <1 40 0 627	<1 0 40 0 623	<1 0 41 0 655
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	0 <1 40 0 627 693	<1 0 40 0 623 711	<1 0 41 0 655 739
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	0 <1 40 0 627 693 759	<1 0 40 0 623 711 821	<1 0 41 0 655 739 826
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	0 <1 40 0 627 693 759 913	<1 0 40 0 623 711 821 900	<1 0 41 0 655 739 826 945
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	0 <1 40 0 627 693 759 913 2364	<1 0 40 0 623 711 821 900 2721 history1 1	<1 0 41 0 655 739 826 945 2447
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	0 <1 40 0 627 693 759 913 2364 current	<1 0 40 0 623 711 821 900 2721 history1	<1 0 41 0 655 739 826 945 2447 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >50	0 <1 40 0 627 693 759 913 2364 current 2	<1 0 40 0 623 711 821 900 2721 history1 1	<1 0 41 0 655 739 826 945 2447 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >50 >216	0 <1 40 0 627 693 759 913 2364 2364 <u>current</u> 2 0	<1 0 40 0 623 711 821 900 2721 history1 1 2	<1 0 41 0 655 739 826 945 2447 history2 2 2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >50 >216 >20	0 <1 40 0 627 693 759 913 2364 2364 <u>current</u> 2 0 2	<1 0 40 0 623 711 821 900 2721 history1 1 2 2 1	<1 0 41 0 655 739 826 945 2447 history2 2 <1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >50 >216 >20 >0.1	0 <1 40 0 627 693 759 913 2364 <u>current</u> 2 0 2 0 2 0 0 2	<1 0 40 0 623 711 821 900 2721 history1 1 2 1 2 1 0.019	<1 0 41 0 655 739 826 945 2447 <u>history2</u> 2 2 <1 2 2 (1 2 0.022



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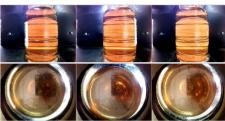






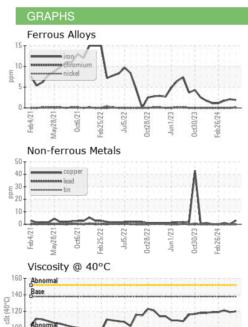
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Debrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGFree Waterscalar*Visual>0.1NEGNEGNEGFLUID PROPERTIESmethodlimit/basecurrenthistory1history2Visc @ 40°CcStASTM D445138120119121SAMPLE IMAGESmethodlimit/basecurrenthistory1history2	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.1 NEG NEG NEG Free Water scalar *Visual >0.1 NEG NEG NEG Free Water scalar *Visual >0.1 NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 40°C cSt ASTM D445 138 120 119 121 SAMPLE IMAGES method limit/base current history1 history2	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
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Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.1 NEG NEG NEG Free Water scalar *Visual >0.1 NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 40°C cSt ASTM D445 138 120 119 121 SAMPLE IMAGES method limit/base current history1 history2	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >0.1 NEG NEG NEG Free Water scalar *Visual 'U NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 40°C cSt ASTM D445 138 120 119 121 SAMPLE IMAGES method limit/base current history1 history2	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 40°C cSt ASTM D445 138 120 119 121 SAMPLE IMAGES method limit/base current history1 history2	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
FLUID PROPERTIES method limit/base current history1 history2 Visc @ 40°C cSt ASTM D445 138 120 119 121 SAMPLE IMAGES method limit/base current history1 history2	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Visc @ 40°C cSt ASTM D445 138 120 119 121 SAMPLE IMAGES method limit/base current history1 history2	Free Water	scalar	*Visual		NEG	NEG	NEG
SAMPLE IMAGES method limit/base current history1 history2	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D445	138	120	119	121
	SAMPLE IMAGES	3	method	limit/base	current	history1	history2
	Color						

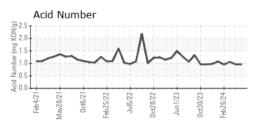
Color



Bottom

Feb4/21





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 MARATHON PETROLEUM CO. Sample No. : WC0874540 Received : 06 Jun 2024 101 12TH ST Lab Number : 06201558 Tested : 10 Jun 2024 CATLETTSBURG, KY Unique Number : 11063681 Diagnosed : 10 Jun 2024 - Angela Borella US 41169 Test Package : IND 2 (Additional Tests: KF, PQ) Contact: CORY GUMBERT Certificate 12367 cagumbert@marathonpetroleum.com To discuss this sample report, contact Customer Service at 1-800-237-1369. T: (606)585-3950 * - 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:

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Report Id: MARCAT [WUSCAR] 06201558 (Generated: 06/10/2024 13:27:10) Rev: 1

Submitted By: M/V MAP RUNNER

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