

OIL ANALYSIS REPORT

Area Nashville [Nashville] Oil - Port Reduction Gear

Port Reduction Gear

Fluid GEAR OIL SAE 85W140 (180 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Dparnell) $\label{eq:comment}$

Wear

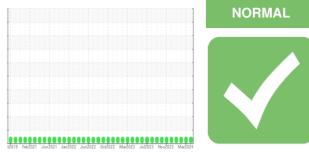
All component wear rates are normal.

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.



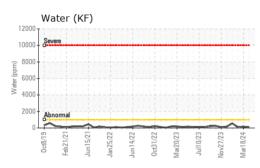
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0874896	WC0874905	WC0846026
Sample Date		Client Info		15 Apr 2024	18 Mar 2024	20 Feb 2024
Machine Age	hrs	Client Info		2268	1961	1502
Oil Age	hrs	Client Info		2268	19611961	1502
Oil Changed		Client Info		Filtered	Not Changd	Filtered
Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	12	14	16
Chromium	ppm	ASTM D5185m	>10	<1	0	0
Nickel	ppm	ASTM D5185m	>10	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	2	<1
Lead	ppm	ASTM D5185m	>100	0	<1	0
Copper	ppm	ASTM D5185m	>50	0	<1	1
Tin	ppm	ASTM D5185m	>10	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
_						
Boron	ppm	ASTM D5185m	400	290	256	251
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	400 200	290 0	256 0	251 0
Barium	ppm	ASTM D5185m	200	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	200	0 0	0	0
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	200 12	0 0 <1	0 0 <1	0 0 0 0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12	0 0 <1 5	0 0 <1 0	0 0 0 <1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 12 150	0 0 <1 5 17	0 0 <1 0 15	0 0 0 <1 16
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 12 150 1650	0 0 <1 5 17 1109	0 0 <1 0 15 1052	0 0 0 <1 16 965
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	200 12 12 12 150 1650 125	0 0 <1 5 17 1109 6	0 0 <1 0 15 1052 0	0 0 <1 16 965 0
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	200 12 12 150 1650 125 22500	0 0 <1 5 17 1109 6 21734	0 0 <1 0 15 1052 0 21803	0 0 <1 16 965 0 17477
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	200 12 12 150 1650 125 22500 limit/base	0 0 <1 5 17 1109 6 21734 current	0 0 <1 0 15 1052 0 21803 history1	0 0 () () () () () () () () () () () () ()
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	200 12 12 150 1650 125 22500 limit/base	0 0 <1 5 17 1109 6 21734 current 3	0 0 <1 0 15 1052 0 21803 history1 <1	0 0 (0 <1 16 965 0 17477 history2 2
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 method ASTM D5185m	200 12 12 150 1650 125 22500 limit/base >50	0 0 <1 5 17 1109 6 21734 current 3 1	0 0 <1 0 15 1052 0 21803 history1 <1 2	0 0 0 <1 16 965 0 17477 history2 2 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm 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 ASTM D5185m	200 12 12 150 1650 125 22500 125 22500 1000 550 >20	0 0 <1 5 17 1109 6 21734 21734 2 urrent 3 1 2	0 0 <1 0 15 1052 0 21803 history1 <1 2 1	0 0 0 <1 16 965 0 17477 history2 2 2 2 0
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	200 12 12 150 1650 125 22500 <i>limit/base</i> >50 >20 >0.1	0 0 <1 5 17 1109 6 21734 <i>current</i> 3 1 2 0.010	0 0 <1 0 15 1052 0 21803 history1 <1 2 1 1 0.015	0 0 0 <1 16 965 0 17477 history2 2 2 2 2 0 0 0.008

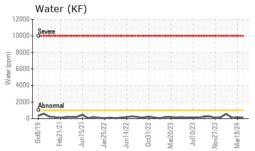
Report Id: MARCAT [WUSCAR] 06157766 (Generated: 04/25/2024 15:26:39) Rev: 1

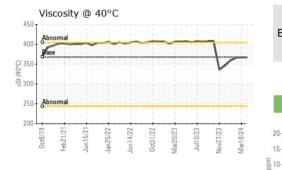
Sample Rating Trend



OIL ANALYSIS REPORT







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 PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	368	367	367	366
SAMPLE IMAGES	3	method	limit/base	current	history1	history2
Color						

Bottom

20

15

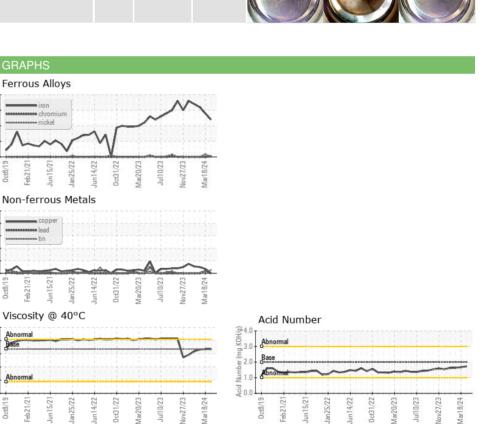
10

450

400

250

200



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 MARATHON PETROLEUM CO. : WC0874896 Sample No. Received : 23 Apr 2024 101 12TH ST ñ Lab Number : 06157766 Tested : 24 Apr 2024 CATLETTSBURG, KY Unique Number : 10993189 Diagnosed : 25 Apr 2024 - Don Baldridge US 41169 Test Package : IND 2 (Additional Tests: KF) 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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Submitted By: M/V NASHVILLE

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