

# **OIL ANALYSIS REPORT**

# Mt. Vernon Mt. Vernon] Oil - Starboard Reduction Gear

**Starboard Reduction Gear** 

**DIESEL ENGINE OIL SAE 15W40 (53 GAL)** 

# ...........

Sample Rating Trend



# DIAGNOSIS

# Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

All component wear rates are normal.

# Contamination

The water content is negligible. There is no indication of any contamination in the oil.

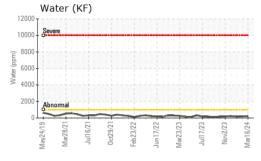
# **Fluid Condition**

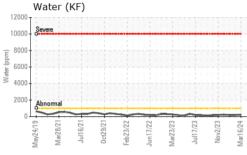
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

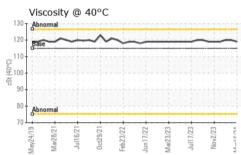
				YECH'S MIRCULT JURQUET MIRCULE MIRCULE MIRCULE MIRCULES M					
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		WC0845781	WC0845788	WC0735755			
Sample Date		Client Info		16 Mar 2024	15 Feb 2024	30 Dec 2023			
Machine Age	hrs	Client Info		11383	10665	9796			
Oil Age	hrs	Client Info		11383	10665	9796			
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd			
Sample Status				NORMAL	NORMAL	NORMAL			
WEAR METALS		method	limit/base	current	history1	history2			
Iron	ppm	ASTM D5185m	>150	81	83	74			
Chromium	ppm	ASTM D5185m	>10	1	1	<1			
Nickel	ppm	ASTM D5185m	>10	0	0	0			
Titanium	ppm	ASTM D5185m		0	0	0			
Silver	ppm	ASTM D5185m		0	0	0			
Aluminum	ppm	ASTM D5185m	>25	1	<1	0			
Lead	ppm	ASTM D5185m	>100	<1	<1	2			
Copper	ppm	ASTM D5185m	>50	64	65	58			
Tin	ppm	ASTM D5185m	>10	0	0	0			
Vanadium	ppm	ASTM D5185m		0	0	0			
Cadmium	nnm	ASTM D5185m		0	0	0			
Gadillialli	ppm	ASTIVI DSTOSIII		U	U	O			
ADDITIVES	ррш	method	limit/base	current	history1	history2			
	ppm		limit/base						
ADDITIVES		method		current	history1	history2			
ADDITIVES Boron	ppm	method ASTM D5185m	250	current 5	history1	history2			
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	250 10	current 5 <1	history1 5 0	history2 4 0			
ADDITIVES Boron Barium Molybdenum	ppm ppm	method  ASTM D5185m  ASTM D5185m  ASTM D5185m	250 10	current 5 <1 68	history1 5 0 64	history2 4 0 61			
ADDITIVES  Boron  Barium  Molybdenum  Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	current 5 <1 68 0	history1  5  0  64  <1	history2 4 0 61			
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	current  5  <1  68  0  152	history1  5  0 64  <1 152	history2  4  0 61  0 145			
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	current  5  <1 68 0 152 2459	history1  5  0 64 <1 152 2481 672 736	history2  4  0 61  0 145  2244 615 758			
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150	current  5  <1  68  0  152  2459  705	history1  5  0 64  <1 152 2481 672	history2  4  0 61  0 145 2244 615			
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150	current  5 <1 68 0 152 2459 705 765	history1  5  0 64 <1 152 2481 672 736	history2  4  0 61  0 145  2244 615  758			
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250	current  5 <1 68 0 152 2459 705 765 5845	history1  5  0 64  <1 152 2481 672 736 5222	history2  4  0 61  0 145 2244 615 758 5103			
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	current  5 <1 68 0 152 2459 705 765 5845  current	history1  5  0 64  <1 152 2481 672 736 5222 history1	history2  4  0 61  0 145 2244 615 758 5103 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	250 10 100 450 3000 1150 1350 4250 limit/base >50	current  5 <1 68 0 152 2459 705 765 5845  current 5	history1  5  0 64  <1 152 2481 672 736 5222 history1 4	history2  4  0 61  0 145 2244 615 758 5103 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	250 10 100 450 3000 1150 1350 4250 limit/base >50 >158 >20	current  5 <1 68 0 152 2459 705 765 5845 current  5	history1  5  0  64  <1  152  2481  672  736  5222  history1  4  3	history2  4  0 61  0 145 2244 615 758 5103 history2 3 3			
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	250 10 100 450 3000 1150 1350 4250 limit/base >50 >158 >20	current  5 <1 68 0 152 2459 705 765 5845  current  5 2 4	history1  5  0 64  <1 152 2481 672 736 5222 history1  4 3 <1	history2  4  0 61  0 145 2244 615 758 5103 history2  3 2			
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	250 10 100 450 3000 1150 1350 4250 limit/base >50 >158 >20 >0.1	current  5     <1     68     0     152     2459     705     765     5845     current  5     2     4     0.022	history1  5  0 64  <1 152 2481 672 736 5222 history1  4 3 <1 0.019	history2  4  0 61  0 145 2244 615 758 5103 history2  3 2 0.017			



# **OIL ANALYSIS REPORT**







VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT	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
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

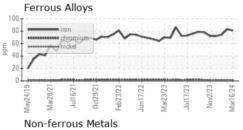
FLUID PROPER	HES	method	ilmit/base		nistory i	nistory
Visc @ 40°C	cSt	ASTM D445	115	119	120	120

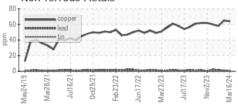
SAMPLE IMAGES	method			
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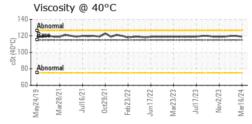
Color

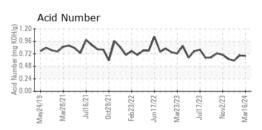
















Certificate L2367

Laboratory Sample No.

Lab Number : 06130697 Unique Number : 10950162

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0845781

Received **Tested** Diagnosed Test Package : IND 2 (Additional Tests: KF)

: 27 Mar 2024 : 28 Mar 2024

: 28 Mar 2024 - Wes Davis

MARATHON PETROLEUM CO. 101 12TH ST

CATLETTSBURG, KY US 41169

Contact: CORY GUMBERT cagumbert@marathonpetroleum.com

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)

T: (606)585-3950 F: x:

Report Id: MARCAT [WUSCAR] 06130697 (Generated: 03/28/2024 17:57:22) Rev: 1

Submitted By: M/V MT VERNON