

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area [CAN 130 RECD 3/11/24] ASTM ISD0 2403

Diesel Engine Fluid {not provided} (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. 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		WC06161668	WC06148874	
Sample Date		Client Info		26 Apr 2024	15 Apr 2024	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	٧	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	13	14	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	0	0	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	3	2	
Lead	ppm	ASTM D5185m	>40	<1	<1	
Copper	ppm	ASTM D5185m	>330	<1	<1	
Tin	ppm	ASTM D5185m	>15	0	0	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
		memou	innin base	Guirchi	motory	Thoras 2
Boron	ppm	ASTM D5185m	mmbase	196	191	
	ppm ppm					
Boron		ASTM D5185m		196	191	
Boron Barium	ppm	ASTM D5185m ASTM D5185m		196 0	191 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		196 0 72	191 0 71	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		196 0 72 <1	191 0 71 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		196 0 72 <1 487	191 0 71 <1 459	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		196 0 72 <1 487 1234	191 0 71 <1 459 1217	
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		196 0 72 <1 487 1234 924	191 0 71 <1 459 1217 879	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	196 0 72 <1 487 1234 924 1115	191 0 71 <1 459 1217 879 1044	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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		196 0 72 <1 487 1234 924 1115 3302	191 0 71 <1 459 1217 879 1044 3825	
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	limit/base	196 0 72 <1 487 1234 924 1115 3302 current	191 0 71 <1 459 1217 879 1044 3825 history1	
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	limit/base	196 0 72 <1 487 1234 924 1115 3302 current 7	191 0 71 <1 459 1217 879 1044 3825 history1 7	 history2
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 ASTM D5185m	limit/base >25	196 0 72 <1 487 1234 924 1115 3302 current 7 2	191 0 71 <1 459 1217 879 1044 3825 history1 7 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	196 0 72 <1 487 1234 924 1115 3302 <u>current</u> 7 2 3	191 0 71 <1 459 1217 879 1044 3825 history1 7 2 3	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5	196 0 72 <1 487 1234 924 1115 3302 current 7 2 3 3 0.3	191 0 71 <1 459 1217 879 1044 3825 history1 7 2 3 0.5	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 >0.2	196 0 72 <1 487 1234 924 1115 3302 <i>current</i> 7 2 3 0.3 0.3 0.046	191 0 71 <1 459 1217 879 1044 3825 history1 7 2 3 0.5 0.020	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel Water ppm Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 >0.2 >2000	196 0 72 <1 487 1234 924 1115 3302 <u>current</u> 7 2 3 0.3 0.3 0.046 466	191 0 71 <1 459 1217 879 1044 3825 history1 7 2 3 0.5 0.020 208	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel Vater ppm Water INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 ASTM D3524 ASTM D3524	limit/base >25 >20 >5 >0.2 >0.2 >2000 imit/base >3	196 0 72 <1 487 1234 924 1115 3302 <i>current</i> 7 2 3 0.3 0.046 466 <i>current</i>	191 0 71 <1 459 1217 879 1044 3825 history1 7 2 3 0.5 0.020 208 history1	 history2 -
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel Vater ppm Water INFRA-RED	ppm - % - % - % - % -	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 >0.2 >0.2 >2000 imit/base >3	196 0 72 <1 487 1234 924 1115 3302 <i>current</i> 7 2 3 0.3 0.3 0.046 466 <i>current</i> 0.3	191 0 71 <1 459 1217 879 1044 3825 history1 7 2 3 0.5 0.020 208 history1 0.3	 history2 -



10.0 8.0 Sev

9.0 % fine

2.0 0.0 Apr15/24

35

30

3.5

Acid Number (mg KOH/g) 0.1 2.5 1.5 1.5 1.0 1.0

0.5 0.0 Apr15/24

12000 10000 Severe

800 Water (ppm) 6000 4000

> 2000 0 Apr15/24

> > 140 Abnormal

130 120 CSt (40°C) CSt (40°C) 100 90 80 Abnormal 70 Apr15/24

醉

Ľ

OIL ANALYSIS REPORT

el Dilution	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
ere	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.3	17.6	
	Acid Number (AN)	mg KOH/g	ASTM D8045		2.952	3.243	
iormal	Base Number (BN)		ASTM D2896		6.82	7.87	
	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
5/24 -	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Apr26/24	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
R (Direct Trend)	Debris	scalar	*Visual	NONE	NONE	NONE	
Oxidation	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
mater Sulfation	Appearance	scalar	*Visual	NORML	NORML	NORML	
	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
Apr26/24	Visc @ 40°C	cSt	ASTM D445		93.7	93.9	
A	Visc @ 100°C		ASTM D445		13.5	13.4	
l Number	Viscosity Index (VI)		ASTM D2270		144	142	
	GRAPHS						
	Iron (ppm)				Lead (ppm)		
	³⁰⁰ T			100	Severe		
	= 200 Severe			E			*****
	200			Ed 50	Abnormal		
	0			- 0			
	Apr15/24			Apr26/24	5/24		
Apr26/24	Apri			Apri	Apri		
	Aluminum (ppm)				Chromium (pp	om)	
ter (KF)	60			60	Smore		
310	40 - Severe			특 ⁴⁰ 문 ₂₀	Severe		
	20 - Abnormal			- 20	Abnormal		
	0				4		
	Apr15/24			Apr26/24	r15/24		
				Ap	Ap		
omal	Copper (ppm)				Silicon (ppm)		
	300			60			
Apr26/24	톱 200 -			틆 40	Abnormal		
ά.	100-			20	Abnormal		
cosity @ 40°C omai	124 10			0	/24		
	Apr15/24			Apr26/24	Apr15		
	Viscosity @ 100°C				Base Number		
	18 Abnormal			(B/H03) B 6.0 B (L)			
	© 16 -			B 6.0			
	은 14			a 4.0			
amal	10			₩ 0.0			
	15/24				15/24		
pr26/	Apr			Apr	Apr		
normal	: WearCheck USA - 501 : WC06161668 : 06161668 : 10997091 : MOB 2 (Additional Te	Receiv Tested Diagno sts: Fuell	ved : 26 I : 03 Dised : 03 Dilution, KF,	NC 27513 Apr 2024 May 2024 Jay 2024 Jonath KV40, Perce	nan Hester		RVICES PT ACC 1 Madison Cary, US 27 ct: Doug Bo

Contact/Location: Doug Bogart - WEACARPT