

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **45002** Component **Diesel Engine** Fluid **KENDALL 15W40 (--- QTS)**

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

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 condition of the oil is suitable for further service.

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		WC0867773			
Sample Date		Client Info		12 Apr 2024			
Machine Age	hrs	Client Info		4003			
Oil Age	hrs	Client Info		430			
Oil Changed		Client Info		Changed			
Sample Status				NORMAL			
CONTAMINATION	١	method	limit/base	current	history1	history2	
Fuel		WC Method	>5	<1.0			
Water		WC Method	>0.2	NEG			
Glycol		WC Method		NEG			
WEAR METALS		method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	8			
Chromium	ppm	ASTM D5185m	>20	1			
Nickel	ppm	ASTM D5185m	>4	1			
Titanium	ppm	ASTM D5185m		87			
Silver	ppm	ASTM D5185m	>3	0			
Aluminum	ppm	ASTM D5185m	>20	2			
Lead	ppm	ASTM D5185m	>40	2			
Copper	ppm	ASTM D5185m	>330	3			
Tin	ppm	ASTM D5185m	>15	2			
Vanadium	ppm	ASTM D5185m		1			
O a alvasiu una		LOTUDEVAL					
Cadmium	ppm	ASTM D5185m		1			
ADDITIVES	ppm	ASTM D5185m method	limit/base	1 current	 history1	history2	
	ppm ppm		limit/base 6.3				
ADDITIVES		method		current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	6.3	current 182	history1	history2	
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	6.3 0.6	current 182 0	history1 	history2 	
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6	current 182 0 8	history1 	history2 	
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4	current 182 0 8 1	history1 	history2 	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277	current 182 0 8 1 408	history1	history2 	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514	current 182 0 8 1 408 1752	history1	history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634	Current 182 0 8 1 408 1752 1116	history1	history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634 743	current 182 0 8 1 408 1752 1116 1201	history1	history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592	Current 182 0 8 1 408 1752 1116 1201 4724	history1	history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 2777 1514 634 743 2592 limit/base	current 182 0 8 1 408 1752 1116 1201 4724 current	history1 history1	history2 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 2777 1514 634 743 2592 limit/base	current 182 0 8 1 408 1752 1116 1201 4724 current 8	history1 history1	history2 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	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25	current 182 0 8 1 408 1752 1116 1201 4724 current 8 4	history1	history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	6.3 0.6 0.4 2777 1514 634 743 2592 limit/base >25 >20	current 182 0 8 1 408 1752 1116 1201 4724 current 8 4	history1	history2 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20	current 182 0 8 1 408 1752 1116 1201 4724 current 8 4 4 current	history1	history2 history2 history2 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20 limit/base >20	current 182 0 8 1 408 1752 1116 1201 4724 current 8 4 2 0urrent 0 0.2	history1 history1 history1 history1	history2 history2 history2 history2 history2 history2 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current 182 0 8 1 408 1752 1116 1201 4724 current 8 4 current 0.2 5.9	history1 history1 history1 history1 history1	history2 history2 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 Imit/base >25 20 Imit/base >20 Imit/base >3 >20	current 182 0 8 1 408 1752 1116 1201 4724 current 8 4 0.2 5.9 19.3	history1 history1 history1 history1	history2 history2 history2	



OIL ANALYSIS REPORT

FT-IR (Direct Trend)		VISUAL		method	limit/base	current	history1	history2
30 - Oxidation		White Metal	scalar	*Visual	NONE	NONE		
25 - Sulfation		Yellow Metal	scalar	*Visual	NONE	NONE		
B ₂₀ -		Precipitate	scalar	*Visual	NONE	NONE		
82 15		Silt	scalar	*Visual	NONE	NONE		
		Debris	scalar	*Visual	NONE	NONE		
10+		Sand/Dirt	scalar	*Visual	NONE	NONE		
74	/24	Appearance	scalar	*Visual	NORML	NORML		
April 2/24	Apr12/24	Odor	scalar	*Visual	NORML	NORML		
		Emulsified Water	scalar	*Visual	>0.2	NEG		
Base Number		Free Water	scalar	*Visual	20.2	NEG		
		FLUID PROPER		method	limit/base	current	history1	history2
(0 8.0 HOX Bu 6.0		Visc @ 100°C	cSt	ASTM D445		14.0		
) and 4.0 -		GRAPHS						
2.0-								
		Ferrous Alloys						
0.0 42	10	iron						
Apr12/24	C Land	8 - nickel						
		6 -						
Viscosity @ 100°C								
17 Abaamad		4						
_16		2						
G 15 G 14		0						
					2/24			
13 Abnormal		Apr12/24			Apr12/24			
11		Non-ferrous Meta	ls					
Apr12/24	V Cr C E	10 copper						
Apri	V	8 -						
		ensesses tin						
	E	6						
	ad	4						
		2 -						
		0						
		12/24			pr12/24			
		Apr			Apr			
		Viscosity @ 100°C			Base Number			
					10.0	T		
		Abnormal			- 8.0			
	_	16			(6, 8, 0 (6, 0) (6, 0) (6, 0) (6, 0) (6, 0) (6, 0) (6, 0) (7, 0)			
	cSt (100°C)	15-			E 6.0			
	1	314-			4.0			
		13 - Abnormal			3ase N			
		12-			² 2.0			
		11			0.0			
		Apr12/24			Apr12/24	Apr12/24		Apr12/24
		Ap			Ap	Ap		Ap
Unique N Certificate L2367 Test Pac To discuss this sample i	No. : mber : umber : kage : report, c	ontact Customer Serv	Recei Teste Diagr	ived : 17 ed : 18 nosed : 18 800-237-1368	7 Apr 2024 3 Apr 2024 3 Apr 2024 - W 9.	860 WES es Davis		DHNSON HWY ENEVILLE, TN US 37745 Contact: SHOP
* - Denotes test method							.0010)	T:
Statements of conformit	y to spe	cifications are based o	on the sin	nple accepta	nce decision	rule (JCGM 106	:2012)	F:

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Contact/Location: SHOP ? - GREGRETN

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