

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

KENWORTH 332

Component Diesel Engine

Fluid SERVICE PRO 15W40 SYN BLEND (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

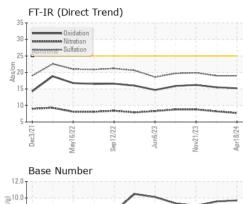
Fluid Condition

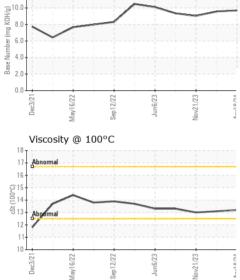
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RW0005402	RW0004770	RW0004765
Sample Date		Client Info		18 Apr 2024	05 Feb 2024	21 Nov 2023
Machine Age	mls	Client Info		574706	562868	551173
Oil Age	mls	Client Info		11842	11691	12753
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	23	37
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	9
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	<1	6	15
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Oddinidini	ppin	ASTIVI DSTOSIII		0	0	0
ADDITIVES	ppin	method	limit/base	current	0 history1	history2
	ppm		limit/base	-	-	-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 5	history1 3	history2 6
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 5 0	history1 3 0	history2 6 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 5 0 60	history1 3 0 58	history2 6 0 62
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 5 0 60 <1	history1 3 0 58 <1	history2 6 0 62 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 5 0 60 <1 922	history1 3 0 58 <1 896	history2 6 0 62 <1 940
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	limit/base	Current 5 0 60 <1 922 1065	history1 3 0 58 <1 896 1113	history2 6 0 62 <1 940 1185
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	limit/base	Current 5 0 60 <1 922 1065 1023	history1 3 0 58 <1 896 1113 976	history2 6 0 62 <1 940 1185 1032
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	limit/base	Current 5 0 60 <1 922 1065 1023 1227	history1 3 0 58 <1 896 1113 976 1205	history2 6 0 62 <1 940 1185 1032 1293
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	limit/base	Current 5 0 60 <1 922 1065 1023 1227 3432	history1 3 0 58 <1 896 1113 976 1205 2862	history2 6 0 62 <1 940 1185 1032 1293 2879
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	limit/base	Current 5 0 60 <1 922 1065 1023 1227 3432 Current	history1 3 0 58 <1 896 1113 976 1205 2862 history1	history2 6 0 62 <1 940 1185 1032 1293 2879 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium 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 method	limit/base >25	current 5 0 60 <1 922 1065 1023 1227 3432 current 5	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm of pp	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25	current 5 0 60 <1 922 1065 1023 1227 3432 current 5 2	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7 <1	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm of pp	method ASTM D5185m	limit/base >25 >20	current 5 0 60 <1 922 1065 1023 1227 3432 current 5 2 1	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7 <1 1	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18 0 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >25 >20 limit/base	current 5 0 60 <1 922 1065 1023 1227 3432 current 5 2 1 2 1 current	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7 <1 <1 +istory1 istory1	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18 0 1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	limit/base >25 >20 limit/base >3	current 5 0 60 <1 922 1065 1023 1227 3432 current 5 2 1 current 0.2	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7 <1 <1 history1 0.2	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18 0 1 history2 0 1 0.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium 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	limit/base >25 >20 limit/base >3 >20	current 5 0 60 <1 922 1065 1023 1227 3432 current 5 2 1 current 0.2 7.7	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7 <1 0 0 0 1 0.2 8.2	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18 0 1 history2 18 0 1 history2 18 0 1 bistory2 18 0 1 bistory2 0.3 8.8
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	Imit/base >25 >20 Imit/base >3 >20 >30	current 5 0 60 <1 922 1065 1023 1227 3432 current 5 2 1 current 0.2 7.7 19.0	history1 3 0 58 <1 896 1113 976 1205 2862 history1 7 <1 0.2 8.2 19.0	history2 6 0 62 <1 940 1185 1032 1293 2879 history2 18 0 1 history2 0 1 history2 0.3 8.8 19.9



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	histo	ry1	histor	ry2			
	White Metal		*Visual	NONE	NONE	NONE		NONE				
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		NONE			
	Precipitate	scalar	*Visual	NONE	NONE	NONE NO		NONE				
	Silt	scalar	*Visual	NONE	NONE	NONE		NONE				
	Debris	scalar	*Visual	NONE NONE		NONE		NONE	NONE			
	Sand/Dirt	scalar	*Visual			NONE		NONE	NONE			
Nov21/23 Apr18/24	Appearance	scalar	*Visual	NORML	NORML	NORM	NORML NO		L			
Nov	Odor	scalar	*Visual	NORML NORML		NORM	IL	NORM	L			
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG		NEG				
	Free Water	scalar	*Visual		NEG	NEG		NEG				
	FLUID PROPER		method	limit/base	current	histo	ry1	histor	ry2			
	Visc @ 100°C	cSt	ASTM D445		13.2	13.1		13.0				
	GRAPHS											
	Iron (ppm) ²⁵⁰ T			10	Lead (ppm)							
1/23 -	200 - Severe			8	0 - Severe							
Nov21/23	Abnormal			mdd								
	Barrier and Abnormal			d 4	0 - Abnormal							
	50-			2	0 -							
	821 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	23	/23 -	/24	23 12 12 10	/22	/23	/23	24			
	Dec3/21 May16/22	Jun6/23	Nov21/23	Apr18/24	Dec3/21 May16/22	Sep 12/22	Jun6/23	Nov21/23	Apr18/24			
	≥ ∞ Aluminum (ppm)	-	Z		≥ Chromium (2	4			
	50 T			5	¹⁰ T ; ; ; T ⁰	· · · /						
	40 - Severe								-			
23	and the second s			ud 2	Abnormal							
Nov21/23	20 + o			1								
			\checkmark									
	Dec3/21	Jun6/23 -	Nov21/23 -	Apr18/24		Sep12/22 -	Jun6/23 -	Nov21/23 -	Apr18/24			
	Del May1	Jun	Nov2	Apr1	Dec3/21 May16/22	Sep 1	ղո	Nov2	Apr1			
	Copper (ppm)			Silicon (ppm	Silicon (ppm)							
	Aphiomal				0 Severe							
	300 -			6								
	툡 200 -			4 d	Abnormal							
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	N 05	,	Nov	Ap			'n	No:	Ap			
	Viscosity @ 100°C			12.	Base Numbe	er						
	Abnormal			(B/H0)	.0 -	1	-					
	00-01			у Вш)								
	(0.0014 K3			(D)HOX Bull HOX BULL	0							
	12			N T. sp 2.	.0 -							
	10 12 21 22	m	<u>en</u>			5			4			
	Dec3/21 May16/22	Jun6/23	Nov21/23	Apr18/24	Dec3/21 May16/22	Sep 12/22	Jun6/23	Nov21/23	Apr18/24			
	Me	ت _ا	Nc	A	Ma	š	-	Nc	A			
Laboratory	: WearCheck USA - 50	: WearCheck USA - 501 Madison Ave., Cary, NC 27513							MICHIGAN WOOD CARRIERS			
Sample No.	: RW0005402		P.O. BOX 337									
	: 06157106	Teste	e d : 23	2 Apr 2024 3 Apr 2024			VA	NDERBIL				
	: 10992529 : MOR 2	Diagr	nosed : 23	8 Apr 2024 - V	Ves Davis	US 49795						
Test Package	: MOB 2 contact Customer Serv		Contact: STEVE WOLFE									

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)

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Certificate L2367

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