

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

FREIGHTLINER 1156

Component Diesel Engine Fluid CHEVRON DELO 400 XLE 10W30 (40 LTR)

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.

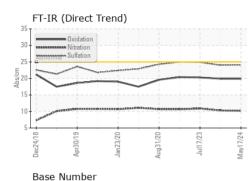
Fluid Condition

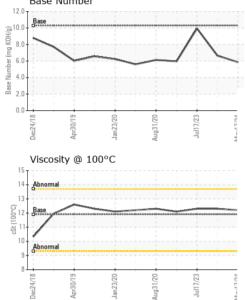
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0851777	WC0733151	WC0733101
Sample Date		Client Info		17 May 2024	27 Nov 2023	17 Jul 2023
Machine Age	kms	Client Info		592048	531006	473824
Oil Age	kms	Client Info		65000	65000	65000
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>65	23	20	27
Chromium	ppm	ASTM D5185m	>5	2	<1	2
Nickel	ppm	ASTM D5185m	>3	<1	0	<1
Titanium	ppm	ASTM D5185m	>5	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>35	8	6	11
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>180	6	6	6
Tin	ppm	ASTM D5185m	>8	1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 24	history1 21	history2 18
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	24	21	18
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	24 2	21 6	18 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	24 2 2	21 6 <1	18 0 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		24 2 2 <1	21 6 <1 0	18 0 0 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		24 2 2 <1 828	21 6 <1 0 760	18 0 0 <1 858
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900	24 2 2 <1 828 1493	21 6 <1 0 760 1349	18 0 0 <1 858 1580
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	2900 1100	24 2 2 <1 828 1493 905	21 6 <1 0 760 1349 810	18 0 0 <1 858 1580 819
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	2900 1100 1200	24 2 2 <1 828 1493 905 959	21 6 <1 0 760 1349 810 882	18 0 <1 858 1580 819 971
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 ASTM D5185m	2900 1100 1200 4000 limit/base	24 2 2 <1 828 1493 905 959 3570	21 6 <1 0 760 1349 810 882 3086 history1 5	18 0 0 <1 858 1580 819 971 3854 history2 5
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	2900 1100 1200 4000 limit/base	24 2 2 <1 828 1493 905 959 3570 current	21 6 <1 0 760 1349 810 882 3086 history1 5 2	18 0 0 <1 858 1580 819 971 3854 history2
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 ASTM D5185m	2900 1100 1200 4000 limit/base >15	24 2 2 <1 828 1493 905 959 3570 current 7	21 6 <1 0 760 1349 810 882 3086 history1 5	18 0 0 <1 858 1580 819 971 3854 history2 5
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 method ASTM D5185m	2900 1100 1200 4000 limit/base >15	24 2 2 <1 828 1493 905 959 3570 current 7 5	21 6 <1 0 760 1349 810 882 3086 history1 5 2	18 0 0 <1 858 1580 819 971 3854 history2 5 1
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	2900 1100 1200 4000 limit/base >15 >20	24 2 2 <1 828 1493 905 959 3570 current 7 5 11	21 6 <1 0 760 1349 810 882 3086 history1 5 2 10	18 0 0 <1 858 1580 819 971 3854 history2 5 1 1 17
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base >15 >20 limit/base >3	24 2 2 <1 828 1493 905 959 3570 current 7 5 11 2 5 11	21 6 <1 0 760 1349 810 882 3086 history1 5 2 10 history1	18 0 0 <1 858 1580 819 971 3854 history2 5 1 17 history2
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	ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base >15 >20 limit/base >3	24 2 2 <1 828 1493 905 959 3570 <i>current</i> 7 5 11 <i>current</i> 0.7	21 6 <1 0 760 1349 810 882 3086 history1 5 2 10 10 history1 0.7	18 0 0 <1 858 1580 819 971 3854 history2 5 1 1 17 history2 0.7
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	ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base >15 >20 limit/base >3 >20	24 2 2 <1 828 1493 905 959 3570 <i>current</i> 7 5 11 <i>current</i> 0.7 10.2	21 6 <1 0 760 1349 810 882 3086 history1 5 2 10 5 2 10 history1 0.7 10.3	18 0 0 <1 858 1580 819 971 3854 history2 5 1 1 17 history2 0.7 10.9
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	ASTM D5185m ASTM D5185m	2900 1100 1200 4000 Imit/base >15 >20 Imit/base >3 >20 >30	24 2 2 <1 828 1493 905 959 3570 current 7 5 11 current 0.7 10.2 24.1	21 6 <1 0 760 1349 810 882 3086 history1 5 2 10 5 2 10 0.7 10.3 24.0	18 0 0 <1 858 1580 819 971 3854 history2 5 1 17 history2 0.7 10.9 24.9



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nd)			VISUAL		method				history2
			White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
			Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
			Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
\sim			Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	********		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
			Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Jan 23/20	Aug31/20	Jul17/23 May17/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Jan	Aug	Jul	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
			Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
			Free Water	scalar	*Visual		NEG	NEG	NEG
		\wedge	FLUID PROPER	TIES	method	limit/base	current	history1	history2
_		$/ \setminus$	Visc @ 100°C	cSt	ASTM D445	5 11.9	12.2	12.3	12.3
			GRAPHS						
			Iron (ppm)				Lead (ppm)		
17	20	23	S				25 - Severe		
N7/67UPC	Aug31/20	17/23 Juli ۸۰۰۰۰ ۸	30				20		
	4	2	abnormal			dd	15 10 Abnormal		
			50-		\sim		5		
					(¹)	4	0	0	с, 4
			Dec24/18 Apr30/19	Aug31/20	Jul17/23	May17/24	Dec24/18 Apr30/19	Jan 23/20 Aug 31/20	Jul17/23
		inn an a		Au	- F	Ma		, 4	n N
			Aluminum (ppm)				Chromium (pp	лп) 	
	1		60 Severe				10 - Severe		
						Ed dd	8 6 Abnormal		
	Aug31/20	م <i>م ۲۰</i> .۰۰۰				d	6 Abnormal		
0	Bng	Jul w	20		\sim		2		
					2	54		20	23
			Dec24/18 Apr30/19	Aug31/20	Jul17/23	May17/24	Dec24/18 Apr30/19	Jan 23/20 Aug 31/20	Jul17/23 -
				Au Au	7	Mi		J _i Au	r M
			Copper (ppm)				Silicon (ppm)		
			500				Severe 30 -		
			400 - Severe						
			200 Abnormal	1		ud d	0		
			100				10		~
				02	23	24	0	20 20 20	23
			Dec24/18 Apr30/19	Aug 31/20	Jul17/23	May17/24	Dec24/18 Apr30/19	Jan 23/20 Aug 31/20	Jul17/23 Mav17/24
			viscosity @ 100°C		7	W	ă	J. A.	· 2
			¹⁶			12	2.0 -		
			14 Abnormal				0.0 - Base		\wedge
			(3-001) 12 - Base			B (mg	3.0		
			10			əquni	1.0 -		
			10 - Abnormal			as 2 B	2.0		
			19 18	20	23		0.0	20	23
			Dec24/18 Apr30/19	Aug31/20	Jul17/23	May17/24	Dec24/18 Apr30/19	Jan 23/20 Aug 31/20	Jul17/23
	ate L2367	Unique Number Test Package	: WearCheck USA - 50 : WC0851777 r : 06196872 r : 11058995	1 Madiso Rece Teste Diagr	Madison Ave., Cary, NC 27513LYNDENReceived: 31 May 202427340 ACHETested: 03 Jun 2024Diagnosed: 03 Jun 2024 - Sean Felton			TRANSPORT - SPRUCE GROV ESON RD, ACHESON INDUSTRIAL PAR ACHESON, AI CA T7X 6B Contact: Mathieu Carb mcarby@lynden.cor	
' - De	notes te	st methods tha	t are outside of the ISO 1	7025 scc	ope of accre	editation.			Т
tater	ments of	t contormity to s	specifications are based o	on the sin	nple accept	ance decisior	n rule (JCGM 106	2012)	F

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