

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

FREIGHTLINER 384145

Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- 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

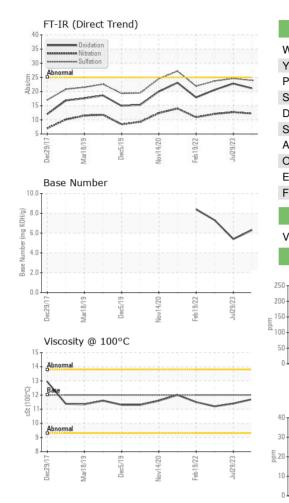
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		PCA0121716	PCA0098940	PCA0078963		
Sample Date		Client Info		22 Apr 2024	29 Jul 2023	15 Oct 2022		
Machine Age	mls	Client Info		196306	181291	163190		
Oil Age	mls	Client Info		15015	18101	16385		
Oil Changed		Client Info		Changed	Changed	Changed		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINAT	ON	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 METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>130	66	82	75		
Chromium	ppm	ASTM D5185m	>10	<1	2	6		
Nickel	ppm	ASTM D5185m	>4	0	0	0		
Titanium	ppm	ASTM D5185m	>2	0	<1	0		
Silver	ppm	ASTM D5185m	>2	0	0	<1		
Aluminum	ppm	ASTM D5185m	>20	8	5	6		
Lead	ppm	ASTM D5185m	>20	0	0	0		
Copper	ppm	ASTM D5185m	>125	1	2	2		
Tin	ppm	ASTM D5185m	>4	<1	<1	<1		
Antimony	ppm	ASTM D5185m						
Vanadium	ppm	ASTM D5185m		0	<1	<1		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	2	14	8	0		
Barium	ppm	ASTM D5185m	0	0	0	0		
Molybdenum	ppm	ASTM D5185m	50	66	67	65		
Manganese	ppm	ASTM D5185m		<1	<1	1		
Magnesium	ppm	ASTM D5185m	950	923	976	979		
Calcium	ppm	ASTM D5185m	1050	1322	1244	1134		
Phosphorus	ppm	ASTM D5185m	995	1072	1009	1000		
Zinc	ppm	ASTM D5185m	1180	1329	1285	1310		
Sulfur	ppm	ASTM D5185m	2600	3565	3416	3260		
CONTAMINAN	TS	method				history?		
	10	mothod	iiiiii/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>25	5	6	6		
Sodium		ASTM D5185m ASTM D5185m	>25	5 3	6 4	6 3		
	ppm	ASTM D5185m	>25	5	6	6		
Sodium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	>25	5 3 2 current	6 4 2 history1	6 3 2 history2		
Sodium Potassium INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	>25 >20 limit/base >6	5 3 2 current 1.1	6 4 2 history1 0.7	6 3 2 history2 0.8		
Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624	>25 >20 limit/base >6	5 3 2 current 1.1 12.2	6 4 2 history1 0.7 12.7	6 3 2 history2 0.8 12.1		
Sodium Potassium INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	>25 >20 limit/base >6	5 3 2 current 1.1	6 4 2 history1 0.7	6 3 2 history2 0.8		
Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	>25 >20 limit/base >6 >20	5 3 2 current 1.1 12.2	6 4 2 history1 0.7 12.7	6 3 2 history2 0.8 12.1		
Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	>25 >20 limit/base >6 >20 >30	5 3 2 current 1.1 12.2 23.9	6 4 2 history1 0.7 12.7 24.6	6 3 2 history2 0.8 12.1 23.7		
Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm % Abs/cm Abs/1mm OATION	ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7615 method *ASTM D7414	>25 >20 limit/base >6 >20 >30 limit/base	5 3 2 current 1.1 12.2 23.9 current	6 4 2 history1 0.7 12.7 24.6 history1	6 3 2 history2 0.8 12.1 23.7 history2		

Contact/Location: MIKE BOYER - MILPEN



OIL ANALYSIS REPORT



d)				VISU	JAL			method	limit/l	base	cu	rrent	h	istory1	ł	nistory2
				White I	Vletal		scalar	*Visual	NONE		NOM	IE	NC	DNE	N	ONE
				Yellow	Metal		scalar	*Visual	NONE		NOM	١E	NC	DNE	N	ONE
and the second se	\sim	-		Precipi			scalar	*Visual	NONE		NON	١E	NC	DNE	N	ONE
1		~		Silt			scalar	*Visual	NONE	Ē	NOM		NC	DNE	N	ONE
and the second	and the state of t		Anden Colone	Debris			scalar	*Visual	NONE		NON	١E	NC	DNE	N	ONE
ALCONO.				Sand/E	Dirt		scalar	*Visual	NONE	-	NOM	١E	NC	DNE	N	ONE
	Nov14/20	Feb19/22	Jul29/23	Appea	rance		scalar	*Visual	NORM	ΛL	NOF	RML	NC	DRML	N	ORML
	Nov1	Feb1	Jul2	Odor			scalar	*Visual	NORM	ΛL	NOF	RML	NC	DRML	N	ORML
			Emulsi	fied Wat	ter	scalar	*Visual	>0.2		NEG	à	NE	G	N	EG	
			Free W	later		scalar	*Visual			NEG	ì	NE	G	N	EG	
	1		FLU		OPE	RTIES	method	limit/l	base	cu	rrent	h	istory1	ł	nistory2	
			\searrow	Visc @	100°C		cSt	ASTM D44	15 12.00		11.7		11	.4	11	.2
				GRA	APHS											
					(ppm)					5.0	Lead	(ppm))			
-	-	2		250 200						50 40	Severe	1				
	Nov14/20	Feb19/22	Jul29/23								1					
	ž	æ	~	E 150 - Abnom	lai			· · · · · · · · · · · · · · · · · · ·		³⁰ ط 20	Abnorma	al				
				50						10						
			1	0		\geq		Ť		0		-				
1				Dec29/17	Mar18/19	Dec5/19	Nov14/20	Feb19/22	Jul29/23		Dec29/17	Mar18/19	Dec5/19	Nov14/20	Feb 19/22	Jul29/23
				Dec	Mar	De	Nov	Feb	վոլ		Dec	Mar	De	Nov	Feb	Jul
					inum (p	opm)				25		nium	(ppm)			
	1			40						25 20	Severe					
				30 - Severe												
	H/20 -	9/22	1/23 -	톱 20 - Abnom	ial				-	¹⁵ ط 10	Abnorma	al				
	Nov14/20	Feb19/22	Jul29/23	10			· · · · /	\sim		5						~
				0		\sim	~			0		-			-/	-
				Dec29/17	Mar18/19	Dec5/19	Nov14/20	Feb19/22	Jul29/23		Dec29/17	Mar18/19	Dec5/19	Nov14/20	Feb19/22	Jul29/23
				Dec	Mar	De	Nov	Feb	Jul		Dec	Mar	De	Nov	Feb	Jul
					er (ppn	n)					Silicor	n (ppr	n)			
			250 Severe						60 50	Courses						
				200 -						40	ļ					
				Abnom	al					Ed 30	Anorma	al				
			100						20							
				50				T		10		\frown	<u> </u>			
				Dec29/17	Mar18/19	Dec5/19 .	Nov14/20	Feb 19/22	Jul29/23		Dec29/17	Mar18/19 -	Dec5/19 .	Nov14/20	Feb 19/22 -	Jul29/23 -
				Decá	Mar1	Dec	Nov1	Feb 1	Jul2		Dec2	Mar1	Dec	Nov1	Feb1	Jul2
					sity @ 1	100°C					Base	Numb	er			
				16						10.0 \$	T					
				O ¹⁴ Abnom	ıal	madaa				Base Number (mg KOH/g) 6.0 7.0 8 8 8 9 7 9						
				12 - C(100-C)						6.0						\sim
										4.0 quint						
				Abnom	ruel					ase 2.0						
				1/1/6	9/19	Dec5/19 -	\$/20 -	9/22	9/23	0.0	6/17	9/19	Dec5/19	4/20	9/22	Jul29/23 -
				Dec29/17	Mar18/19	Dect	Nov14/20	Feb 19/22	Jul29/23		Dec29/17	Mar18/19	Dect	Nov14/20	Feb19/22	Jul29
		San Lab		: WearCh : PCA012 : <mark>0616123</mark> : 1099665	4 - 50 ⁻	l Madiso Recei Teste Diagr	d : 26	26 Apr 20 26 Apr 20	, NC 27513 6 Apr 2024 6 Apr 2024 Apr 2024 - Wes Davis			MILLER TRUCK LEASING #11 1504 MAINLINE DI CINNAMINSON, N US 0807				
tificat	te L2367	Test	Package	: MOB 1 (t, contact C	Additio		sts: TBN	I)							ct: MIKI	E BOYE

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: MILPEN [WUSCAR] 06161230 (Generated: 04/26/2024 16:40:42) Rev: 1

Contact/Location: MIKE BOYER - MILPEN

F: (856)663-4898