

OIL ANALYSIS REPORT

NORMAL

Machine Id

WESTERN STAR 26

Diesel Engine

Fluid FLEETLINE SUPERFLEET XHD 15W40 (10 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.

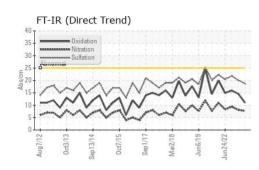
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110128	LP0000679	WC0661591
Sample Date		Client Info		20 Mar 2024	23 Oct 2023	01 Jul 2022
Machine Age	mls	Client Info		339586	331776	7752
Oil Age	mls	Client Info		11187	10961	500
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	13	14	33
Chromium	ppm	ASTM D5185m	>20	1	<1	7
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	5	5	5
Lead	ppm	ASTM D5185m	>40	<1	0	3
Copper	ppm	ASTM D5185m	>330	2	2	6
Tin	ppm	ASTM D5185m	>15	1	0	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
	1. 1				0	0
ADDITIVES	le le	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		-	-
			limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 9	history1 12	history2 16
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	limit/base	current 9 0	history1 12 0	history2 16 2
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21	history1 12 0 62	history2 16 2 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21 <1	history1 12 0 62 <1	history2 16 2 66 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21 <1 119	history1 12 0 62 <1 813	history2 16 2 66 <1 984
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21 <1 119 2136	history1 12 0 62 <1 813 1181	history2 16 2 66 <1 984 1182
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21 <1 119 2136 967	history1 12 0 62 <1 813 1181 1070	history2 16 2 66 <1 984 1182 1057
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21 <1 119 2136 967 1099	history1 12 0 62 <1 813 1181 1070 1187	history2 16 2 66 <1 984 1182 1057 1302
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		ourrent 9 0 21 <1 119 2136 967 1099 3988	history1 12 0 62 <1 813 1181 1070 1187 2994	history2 16 2 66 <1 984 1182 1057 1302 3549
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 9 0 21 <1 119 2136 967 1099 3988 current	history1 12 0 62 <1 813 1181 1070 1187 2994 history1	history2 16 2 66 <1 984 1182 1057 1302 3549 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm 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	current 9 0 21 <1 119 2136 967 1099 3988 current 4	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm 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 ASTM D5185m	limit/base	current 9 0 21 <1 119 2136 967 1099 3988 current 4 3	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5 12	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	current 9 0 21 <1 119 2136 967 1099 3988 current 4 3 8	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5 12 16	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8 1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	9 0 21 <1 119 2136 967 1099 3988 current 4 3 8 current	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5 12 16 history1	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8 1 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	9 0 21 <1 119 2136 967 1099 3988 current 4 3 8 current 0.7	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5 12 16 history1 0.9	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8 1 history2 1 13 13 13 13 13 13 13 13 13 13 13 13 13 13 13 13 13 14 15 13
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	current 9 0 21 <1 119 2136 967 1099 3988 current 4 3 8 current 0.7 7.7	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5 12 16 history1 0.9 8.1	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8 1 1 history2 1.3 9.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >3 >20 >30	9 0 21 <1 119 2136 967 1099 3988 current 4 3 8 current 0.7 7.7 18.7	history1 12 0 62 <1 813 1181 1070 1187 2994 history1 5 12 16 history1 0.9 8.1 20.1	history2 16 2 66 <1 984 1182 1057 1302 3549 history2 8 1 history2 1.3 9.4 21.8

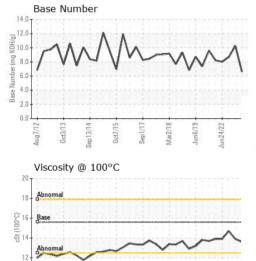


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Aug7/12.

OIL ANALYSIS REPORT





0ct7/15 Sep 1/17. Mar2/18 -

ep13/14

0ct3/13

Jun24/22

un6/19

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual	20.2	NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	13.6	13.9	14.7
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
250 Severe		1001100	100	Severe		
200 - 8	1.0	111111	- 80	+ 0		
150 - Abnormal			60 E 40	Abnormal		
THE REPORT OF THE DARWERS		A	ŦŪ	+ 0	101 - 101 A - 7 - 101	
50	~	1 VVV	~ 20		A .	
Aug7/12 0ct3/13 + + + + + + + + + + + + + + + + + + +	Sep 1/17	Mar2/18 - Jun6/19 -	0	Aug7/12 Aug7/12 Cot3/13 Aug7/14 Aug7/14 Aug7/13 Aug7/14 Aug7/1	0ct7/15	Jun6/19
00	Se	Jun Jun		\$		ul Jun
Aluminum (ppm)			50	Chromium (p	pm)	
40 - Severe				Severe		
			20			
20-			E 20	Abnormal		
20	1			- 0		
10		m	10			~~~^
Aug7/12 0ct3/13 ep 13/15 0ct3/15 0ct3/15	- 11	/18 /19	0	/12	/15- /17-	/19
Aug7/12 0ct3/13 Sep13/14 0ct7/15	Sep1/17	Mar2/18 Jun6/19		Aug7/12 0ct3/13 Sep13/14	0ct7/15	Jun6/19 Jun24/22
Copper (ppm)			80	Silicon (ppm)		
300 -			60			
200			튭 40	Abnormal		
100			20			
0	\sim		0			$\sim \sim \sim$
Aug7/12 0ct3/13 Sep13/14 0ct7/15	Sep1/17	Mar2/18 Jun6/19		Aug7/12 0ct3/13 Sep13/14	Oct7/15 Sep1/17	Jun6/19 Jun24/22
√ Viscosity @ 100°C			2	Base Number		
20	17777	HERRICE	15.0 P	-	a marente	naon no maa
18 - Abnormal	17171		0.01 Inter (mg KOH/0)	100	۸۸.	
16 Base			ser (m	1 000	Vn	m
	~	~~	Tung 5.0			
12-9			Base	[전신 전간 전 1		
10 13 13 13	11+	18-	0.0	* • · · · • • · · · • • · ·	15 + 17 +	119
Aug7/12 0ct3/13 Sep13/14	Sep1/17.	Mar2/18 Jun6/19	1	Aug7/12 0ct3/13 Sep13/14	0ct7/15 Sep1/17	Jun6/19 Jun24/22
WearCheck USA - 501 Madison Ave., Cary, NC 27513						
PCA0110128 06135743	Recei Teste		Apr 2024		22	1 NORFOLK ST.
10955208	Diagr		Apr 2024 Apr 2024 - Sea	an Felton		WALPOLE, MA US 02081
MOB 2	Diagi	1 03cu . 04	Api 2024 - 380		Contact: P	AUL BECKMAN

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)

Report Id: SMLWALNC [WUSCAR] 06135743 (Generated: 04/05/2024 00:13:19) Rev: 1

Certificate L2367

Laboratory Sample No. Lab Number **Unique Number Test Package**

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