

Machine Id **INTERNATIONAL 103559** Componer **Diesel Engine**

SHELL ROTELLA T 10W30 (--- QTS)

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		IL0033012	IL0032761	IL0027575
	Sample Date		Client Info		19 Apr 2024	24 Oct 2023	10 Apr 2023
	Machine Age	mls	Client Info		226156	212622	198044
	Oil Age	mls	Client Info		13534	14578	12691
	Filter Age	mls	Client Info		13534	14578	12691
	Oil Changed		Client Info		Changed	Changed	Changed
	Filter Changed		Client Info		Changed	Changed	Changed
	Sample Status				NORMAL	NORMAL	ABNORMAL
WEAR	Iron	ppm	ASTM D5185m	>130	27	33	43
	Chromium	ppm	ASTM D5185m	>10	1	1	2
All component wear rates are normal.	Nickel	ppm	ASTM D5185m		0	<1	<1
	Titanium	ppm	ASTM D5185m		0	<1	0
	Silver	ppm	ASTM D5185m		0	0	0
	Aluminum	ppm	ASTM D5185m		19	14	▲ 25
	Lead	ppm	ASTM D5185m		0	0	0
	Copper	ppm	ASTM D5185m	>125	<1	1	2
	Tin	ppm	ASTM D5185m	>4	0	<1	0
	Vanadium	ppm	ASTM D5185m		0	0	0
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	10	7	11
	Potassium	ppm	ASTM D5185m		7	7	6
There is no indication of any contamination in the oil.	Fuel	pp	WC Method		<1.0	<1.0	<1.0
	Water		WC Method		NEG	NEG	NEG
	Glycol		WC Method		NEG	NEG	NEG
	Soot %	%	*ASTM D7844	>6	1.3	1.6	1.3
	Nitration	Abs/cm	*ASTM D7624	>20	9.1	10.3	10.2
	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8	22.9	18.9
	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
FLUID CONDITION	Sodium	ppm	ASTM D5185m		2	6	4
	Boron	ppm	ASTM D5185m	269	99	57	39
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m		0	20	0
	Molybdenum	ppm	ASTM D5185m	0	22	45	86
	Manganese	ppm	ASTM D5185m		0	<1	<1
	Magnesium	ppm	ASTM D5185m	20	159	199	47
	Calcium	ppm	ASTM D5185m		2212	1786	2082
	Phosphorus	ppm	ASTM D5185m		1025	931	992
	Zinc	ppm	ASTM D5185m	893	1266	1111	1185
	Sulfur	ppm	ASTM D5185m		4062	4023	3404
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.4	16.3	13.7
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.2	6.9	5.6
	V/	01		44.0		10.1	10.0

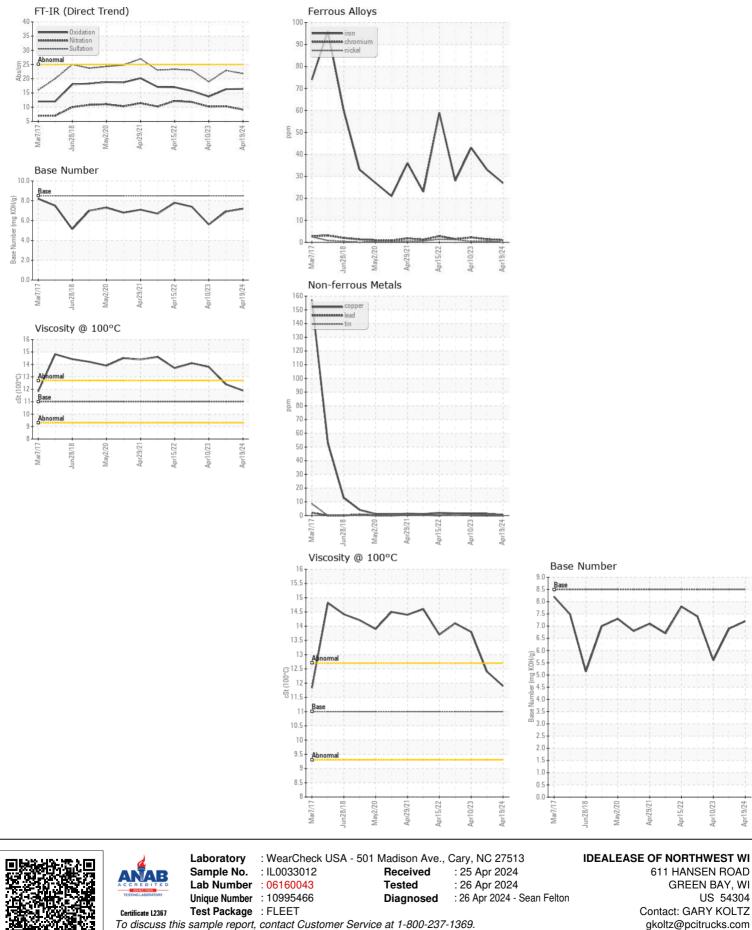
ASTM D445 11.0

Visc @ 100°C cSt

11.9

12.4

13.8



* - 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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