



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
RAYCO C87D 9X3 (S/N C87D 00191004)

Component
Diesel Engine

Fluid
SHELL ROTELLA T 15W40 (11 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0191256	JR0149506	JR0111809
Sample Date		Client Info		20 Dec 2023	18 Nov 2022	22 Nov 2021
Machine Age	hrs	Client Info		177	556	555
Oil Age	hrs	Client Info		24	542	56
Filter Age	hrs	Client Info		24	542	56
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Filter Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	4	3	3
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	<1	2
Lead	ppm	ASTM D5185m	>40	20	29	24
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	0	0	1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

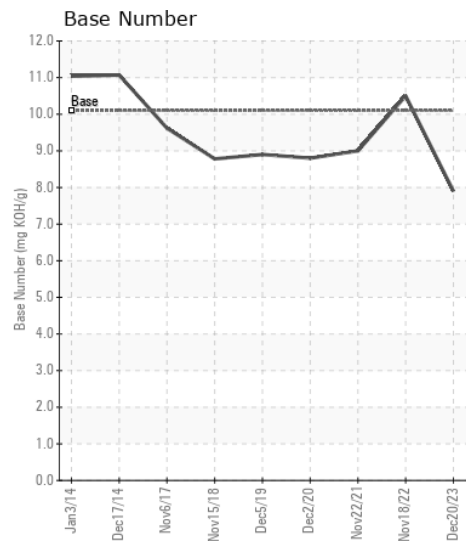
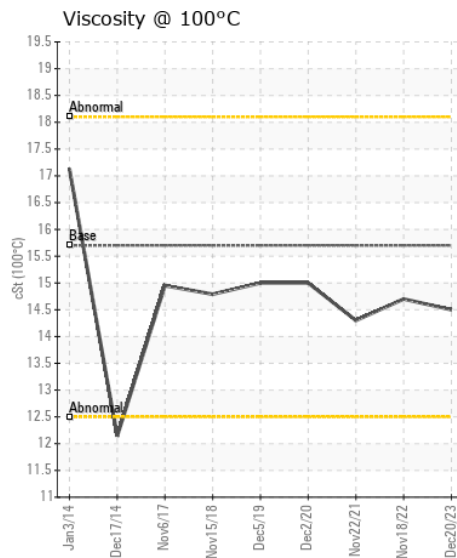
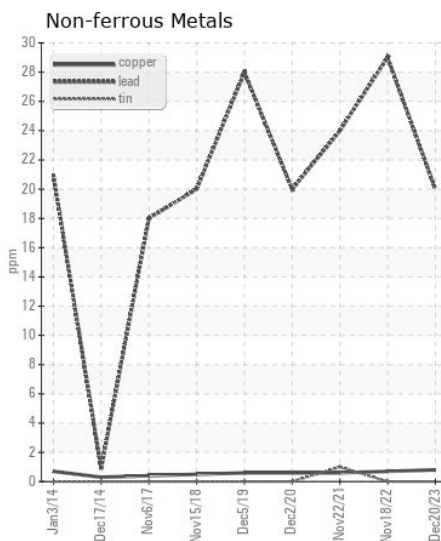
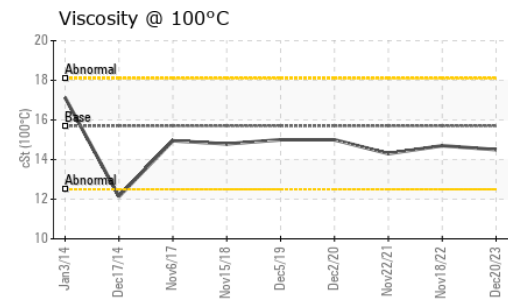
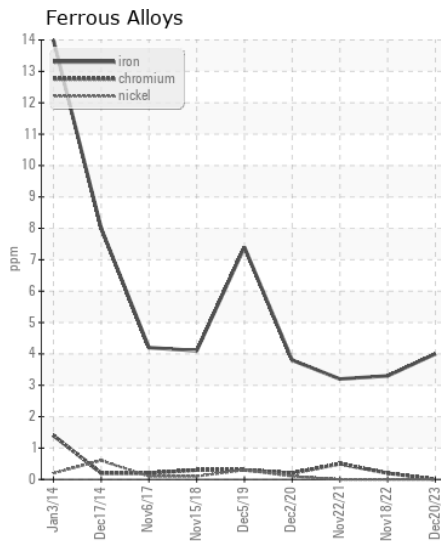
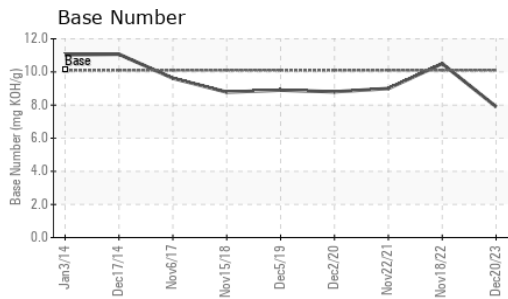
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	6	6	5
Potassium	ppm	ASTM D5185m	>20	<1	1	<1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.7	6.8	5.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.8	16.0	15.5
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

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

Sodium	ppm	ASTM D5185m		<1	2	2
Boron	ppm	ASTM D5185m	316	76	6	6
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	33	27	28
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	24	244	500	579
Calcium	ppm	ASTM D5185m	2292	1940	1521	1541
Phosphorus	ppm	ASTM D5185m	1064	990	964	1068
Zinc	ppm	ASTM D5185m	1160	1256	1153	1206
Sulfur	ppm	ASTM D5185m	4996	3700	4001	3226
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.8	12.3	12.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.9	10.5	9
Visc @ 100°C	cSt	ASTM D445	15.7	14.5	14.7	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0191256 **Received** : 17 Jan 2024
Lab Number : 06062474 **Diagnosed** : 18 Jan 2024
Unique Number : 10833856 **Diagnostician** : Wes Davis
Test Package : CONST (Additional Tests: TBN)

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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)