



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 2123
Component
Diesel Engine
Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0719903	WC0537340	WC0537735
Sample Date		Client Info		03 Dec 2023	20 Aug 2022	19 Feb 2022
Machine Age	mls	Client Info		423789	233343	230675
Oil Age	mls	Client Info		50000	50000	100000
Filter Age	mls	Client Info		5000	50000	50000
Oil Changed		Client Info		Not Chngd	Not Chngd	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	75	33	66
Chromium	ppm	ASTM D5185m	>5	3	2	5
Nickel	ppm	ASTM D5185m	>2	1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>30	8	6	18
Lead	ppm	ASTM D5185m	>30	<1	0	2
Copper	ppm	ASTM D5185m	>150	17	17	51
Tin	ppm	ASTM D5185m	>5	2	1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

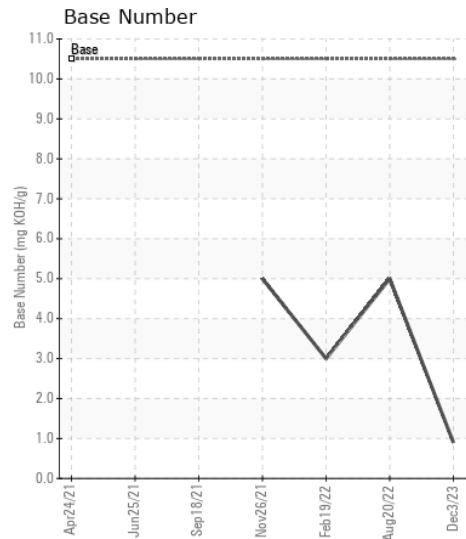
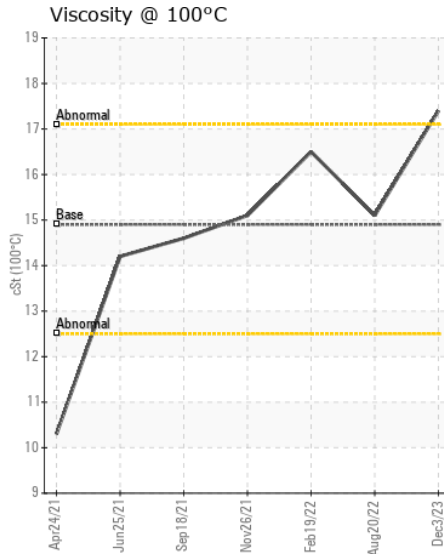
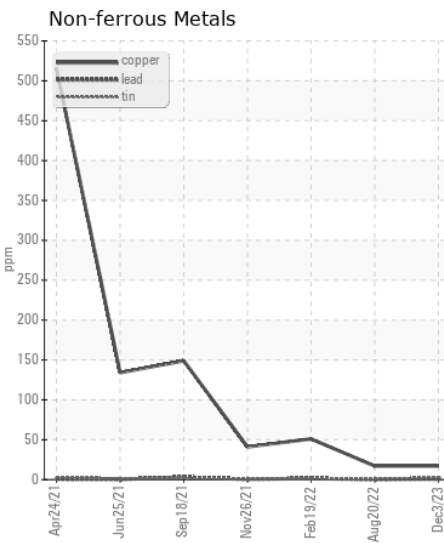
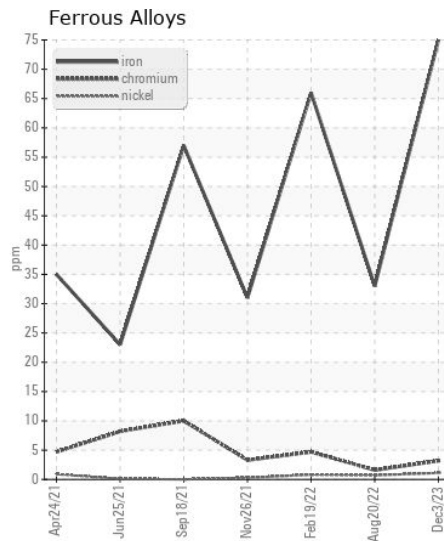
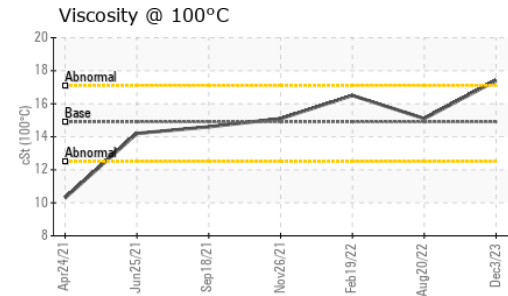
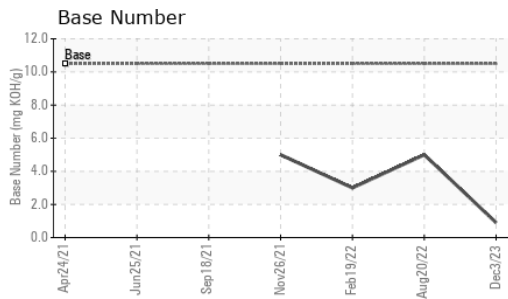
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	9	6	7
Potassium	ppm	ASTM D5185m	>20	5	4	32
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	1.7	1	1.7
Nitration	Abs/cm	*ASTM D7624	>20	20.9	12.0	18.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	36.6	28.2	34.2
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 level is low. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		3	0	<1
Boron	ppm	ASTM D5185m	0	0	2	<1
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	100	45	2	2
Manganese	ppm	ASTM D5185m		1	<1	1
Magnesium	ppm	ASTM D5185m	60	668	18	32
Calcium	ppm	ASTM D5185m	3050	1733	2499	2626
Phosphorus	ppm	ASTM D5185m	1050	1028	883	914
Zinc	ppm	ASTM D5185m	1200	1324	1191	1129
Sulfur	ppm	ASTM D5185m	12500	2669	3104	2525
Oxidation	Abs/.1mm	*ASTM D7414	>25	47.4	21.5	34.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	0.9	5.0	▲ 3.0
Visc @ 100°C	cSt	ASTM D445	14.9	17.4	15.1	16.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0719903 **Received** : 16 Jan 2024
Lab Number : 06061852 **Diagnosed** : 18 Jan 2024
Unique Number : 10833234 **Diagnostician** : Don Baldrige
Test Package : FLEET

DILLON TRANSPORTATION
 4445 NORTH INTERSTATE WAY
 KINGMAN, AZ
 US 86401
 Contact: T LAMOREAUX
 t.lamoreaux@dillontransportation.com

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)

T:
F: