



WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
2136
Component
Diesel Engine
Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0719900	WC0719909	WC0537331
Sample Date		Client Info		13 Dec 2023	02 Aug 2023	01 Apr 2023
Machine Age	mls	Client Info		321495	270287	223082
Oil Age	mls	Client Info		100000	50000	100000
Filter Age	mls	Client Info		50000	50000	50000
Oil Changed		Client Info		Changed	Not Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	71	43	95
Chromium	ppm	ASTM D5185m	>20	3	2	6
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	5	25
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	17	15	43
Tin	ppm	ASTM D5185m	>15	2	1	2
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.

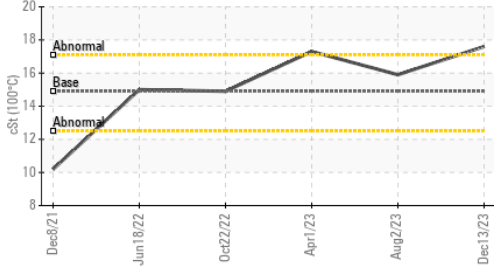
Silicon	ppm	ASTM D5185m	>25	7	6	9
Potassium	ppm	ASTM D5185m	>20	17	14	55
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.1	0.7	1.1
Nitration	Abs/cm	*ASTM D7624	>20	20.3	14.4	20.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	37.2	29.1	36.5
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

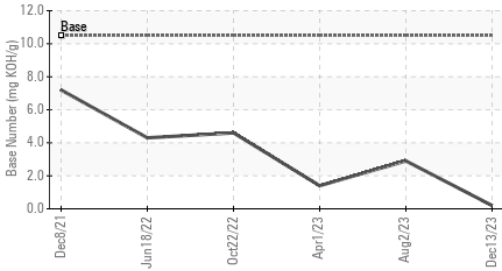
The oil viscosity is higher than normal. The BN level is low.

Sodium	ppm	ASTM D5185m		3	1	3
Boron	ppm	ASTM D5185m	0	0	0	<1
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	100	3	2	1
Manganese	ppm	ASTM D5185m		1	<1	2
Magnesium	ppm	ASTM D5185m	60	53	44	36
Calcium	ppm	ASTM D5185m	3050	2568	2590	2675
Phosphorus	ppm	ASTM D5185m	1050	932	959	937
Zinc	ppm	ASTM D5185m	1200	1211	1279	1233
Sulfur	ppm	ASTM D5185m	12500	3112	3579	3598
Oxidation	Abs/.1mm	*ASTM D7414	>25	45.0	26.9	42.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	0.2	2.9	▲ 1.4
Visc @ 100°C	cSt	ASTM D445	14.9	▲ 17.6	15.9	17.3

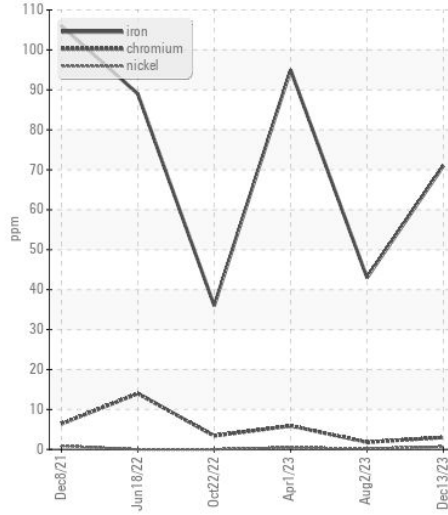
▲ Viscosity @ 100°C



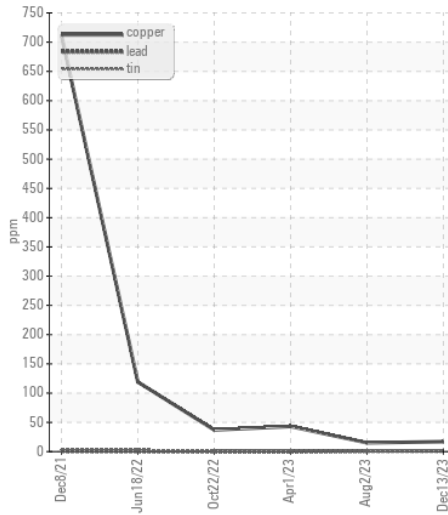
Base Number



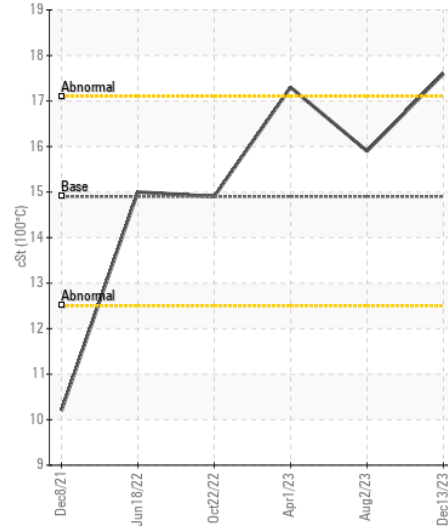
Ferrous Alloys



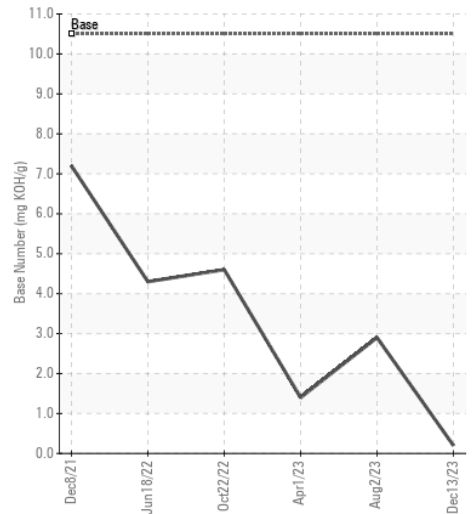
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0719900 **Received** : 16 Jan 2024
Lab Number : 06061854 **Diagnosed** : 18 Jan 2024
Unique Number : 10833236 **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)

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F: