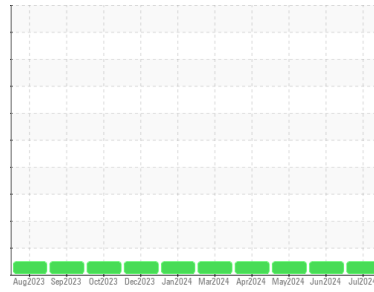




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
ARIZONA
 Machine Id
2015 KENWORTH 5831
 Component
Diesel Engine
 Fluid
NAPA Motor Oil 15W40 (--- QTS)

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 INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0910166	WC0935453	WC0935449
Sample Date	Client Info			02 Jul 2024	19 Jun 2024	04 May 2024
Machine Age	hrs	Client Info		16916	0	16751
Oil Age	hrs	Client Info		289	0	124
Oil Changed	Client Info			Not Chngd	N/A	Not Chngd
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		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 METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	40	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	7	2
Lead	ppm	ASTM D5185m	>40	7	7	5
Copper	ppm	ASTM D5185m	>330	2	2	6
Tin	ppm	ASTM D5185m	>15	<1	1	2
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		41	46	52
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		37	38	47
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m		560	567	527
Calcium	ppm	ASTM D5185m		1725	1609	1633
Phosphorus	ppm	ASTM D5185m		985	1037	1113
Zinc	ppm	ASTM D5185m		1178	1245	1288
Sulfur	ppm	ASTM D5185m		3368	4062	3352

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	4	23	5
Sodium	ppm	ASTM D5185m		5	6	5
Potassium	ppm	ASTM D5185m	>20	1	6	3

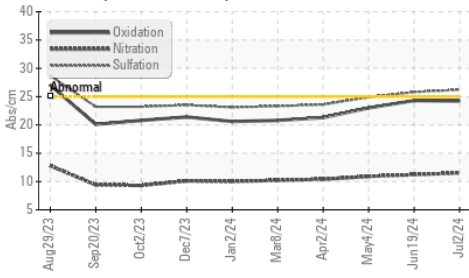
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1	1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	11.5	11.2	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.2	25.8	24.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	24.2	24.3	23.0
Base Number (BN)	mg KOH/g	ASTM D2896		6.9	6.5	7.6

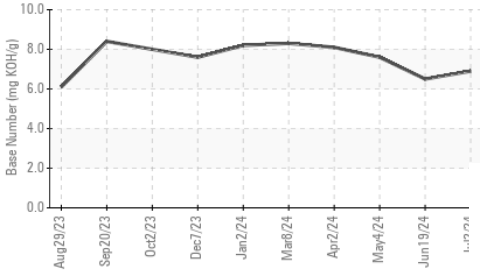


OIL ANALYSIS REPORT

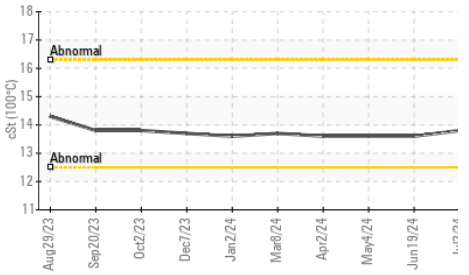
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

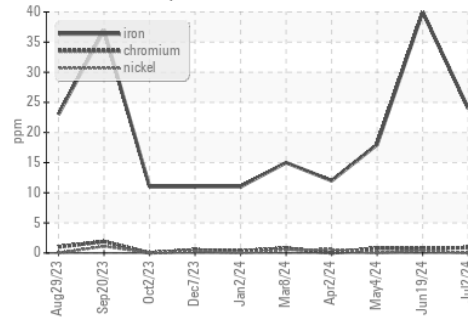


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

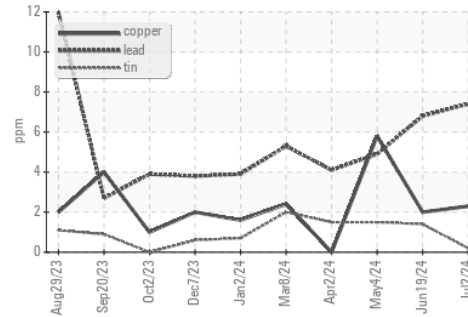
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.8	13.6	13.6

GRAPHS

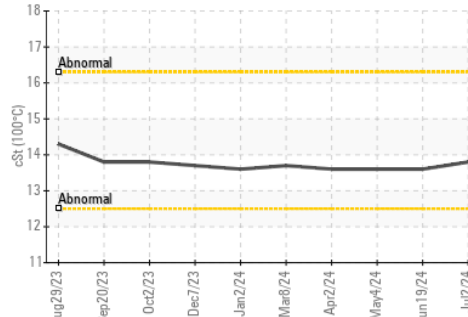
Ferrous Alloys



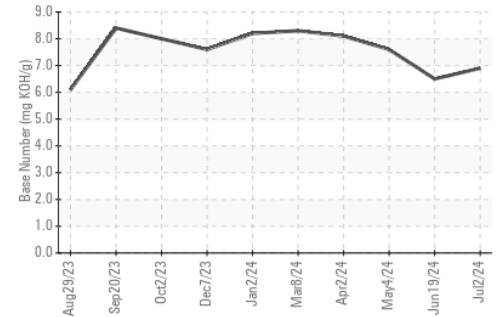
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0910166

Lab Number : 06234294

Unique Number : 11123128

Test Package : FLEET

Received : 11 Jul 2024

Tested : 12 Jul 2024

Diagnosed : 12 Jul 2024 - Wes Davis

LIBERTY DISPOSAL

6401 S EASTERN AVE

OKLAHOMA CITY, OK

US 73149

Contact: M Rutherford

M.Rutherford@ldi89.com

T:

F:

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)