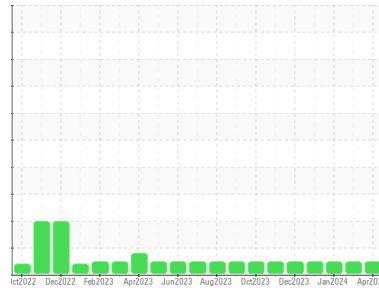




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
ARIZONA
Machine Id
VOLVO 4874
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		WC0899591	WC0899580	WC0892128
Sample Date	Client Info		10 Apr 2024	02 Mar 2024	05 Jan 2024
Machine Age	hrs	Client Info	3115	2896	2725
Oil Age	hrs	Client Info	2395	2176	2005
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>6.0	<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	71	59	65
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	6	4	5
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >2	<1	<1	<1
Aluminum	ppm	ASTM D5185m >25	6	4	5
Lead	ppm	ASTM D5185m >40	4	2	3
Copper	ppm	ASTM D5185m >330	126	124	146
Tin	ppm	ASTM D5185m >15	4	3	4
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	19	20	20
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	37	37	45
Manganese	ppm	ASTM D5185m	2	2	2
Magnesium	ppm	ASTM D5185m	619	575	555
Calcium	ppm	ASTM D5185m	1597	1520	1578
Phosphorus	ppm	ASTM D5185m	900	852	905
Zinc	ppm	ASTM D5185m	1087	1014	1112
Sulfur	ppm	ASTM D5185m	3082	2359	2523

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	11	9	12
Sodium	ppm	ASTM D5185m	4	0	4
Potassium	ppm	ASTM D5185m >20	16	10	13

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.8	0.7	0.8
Nitration	Abs/cm	*ASTM D7624 >20	10.9	10.6	10.5
Sulfation	Abs/.1mm	*ASTM D7415 >30	23.2	22.7	23.1

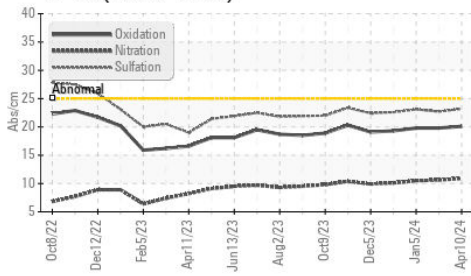
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	20.1	19.8	19.8
Base Number (BN)	mg KOH/g	ASTM D2896	5.5	5.7	5.5

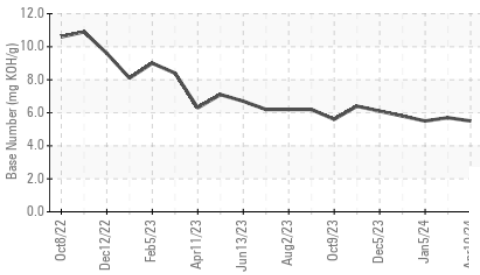


OIL ANALYSIS REPORT

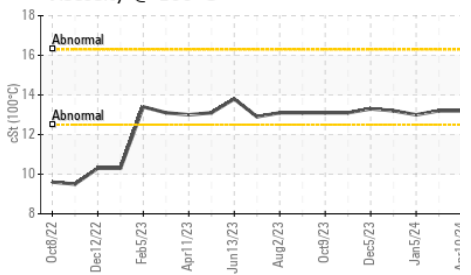
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

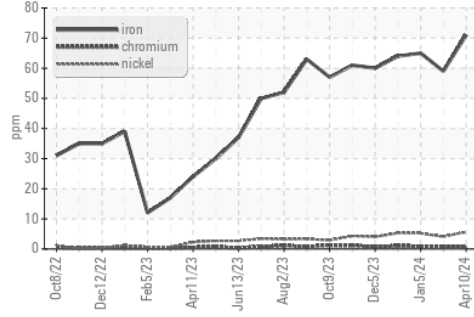


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

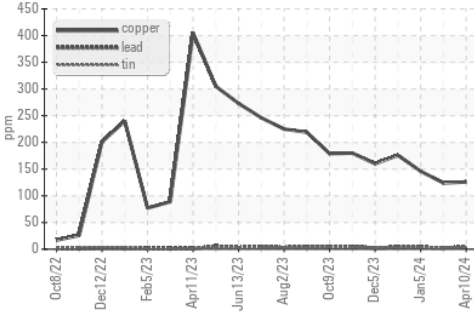
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.2	13.2	13.0

GRAPHS

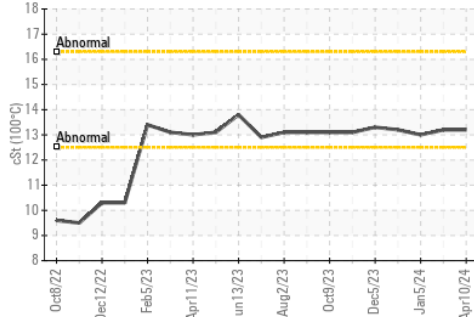
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0899591 **Received** : 11 Apr 2024
Lab Number : 06146392 **Tested** : 12 Apr 2024
Unique Number : 10976470 **Diagnosed** : 15 Apr 2024 - Don Baldrige
Test Package : FLEET

LIBERTY DISPOSAL
 6401 S EASTERN AVE
 OKLAHOMA CITY, OK
 US 73149
 Contact: CATHY ROSA
 c.rosa@ldi89.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)