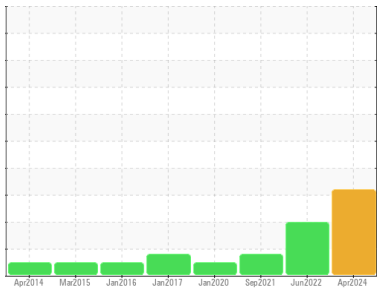
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
JLG8042 F9681 (S/N 0160049681)
Component
Diesel Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (8 QTS)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. (Customer Sample Comment: CUSTOMER REQUESTS ID CHANGE TO. F 9681)

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The amount and size of particulates present in the system are acceptable.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0857794**	WC0705474	WC0610201
Sample Date		Client Info		**19 Apr 2024**	25 Jun 2022	13 Sep 2021
Machine Age	hrs	Client Info		**0**	4139	3692
Oil Age	hrs	Client Info		**0**	1249	802
Oil Changed		Client Info		**Changed**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

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	▲ **234**	▲ 154	▲ 106
Chromium	ppm	ASTM D5185m	>20	**13**	6	4
Nickel	ppm	ASTM D5185m	>4	**2**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	● **6**	3	3
Lead	ppm	ASTM D5185m	>40	**23**	14	10
Copper	ppm	ASTM D5185m	>330	**38**	25	15
Tin	ppm	ASTM D5185m	>15	**2**	2	1
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	151	**16**	22	17
Barium	ppm	ASTM D5185m	0.4	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	250	**7**	2	2
Manganese	ppm	ASTM D5185m		**3**	2	1
Magnesium	ppm	ASTM D5185m	0	**101**	19	17
Calcium	ppm	ASTM D5185m	2046	**2038**	2134	2235
Phosphorus	ppm	ASTM D5185m	1043	**1035**	908	989
Zinc	ppm	ASTM D5185m	943	**1174**	1156	1184
Sulfur	ppm	ASTM D5185m	5012	**4561**	4899	3694

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **25**	10	6
Sodium	ppm	ASTM D5185m		**6**	5	3
Potassium	ppm	ASTM D5185m	>20	**6**	4	3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.1**	1.1	0.9
Nitration	Abs/cm	*ASTM D7624	>20	**13.7**	14.8	13.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**31.9**	33.9	29.7

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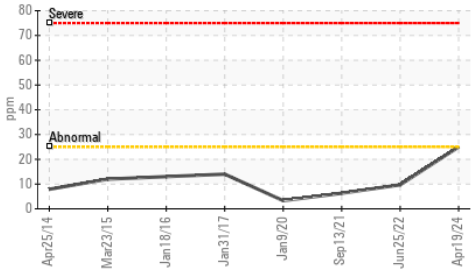
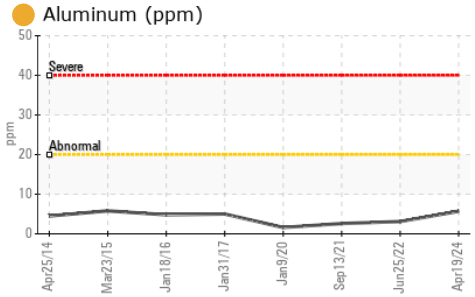
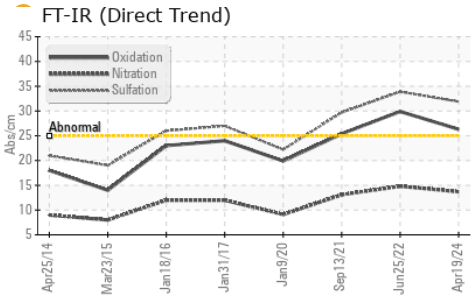
Silicon (ppm)



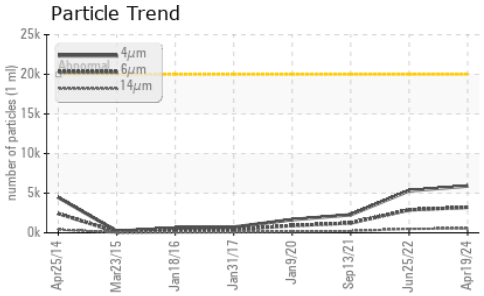
Aluminum (ppm)



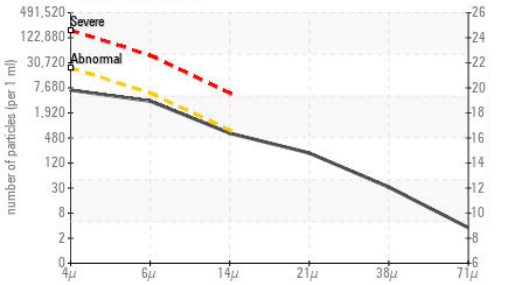
FT-IR (Direct Trend)



Particle Trend



Particle Count



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**5907**	5311	2275
Particles >6µm		ASTM D7647	>5000	**3218**	2893	1239
Particles >14µm		ASTM D7647	>640	**548**	492	211
Particles >21µm		ASTM D7647	>160	**184**	166	71
Particles >38µm		ASTM D7647	>40	**28**	26	11
Particles >71µm		ASTM D7647	>10	**3**	3	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**20/19/16**	20/19/16	18/17/15

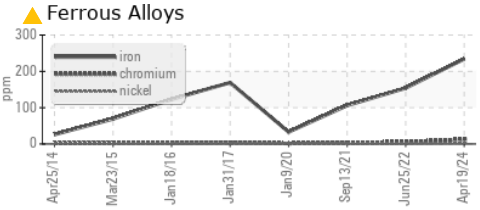
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**26.3**	29.9	25.4
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	**4.57**	▲ 3.25	4.37

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

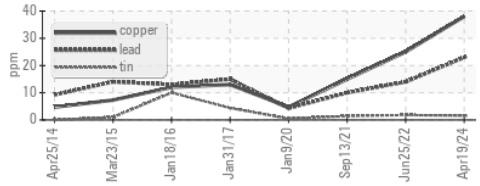
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.7**	14.6	14.4

GRAPHS

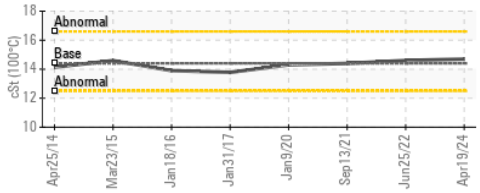
Ferrous Alloys



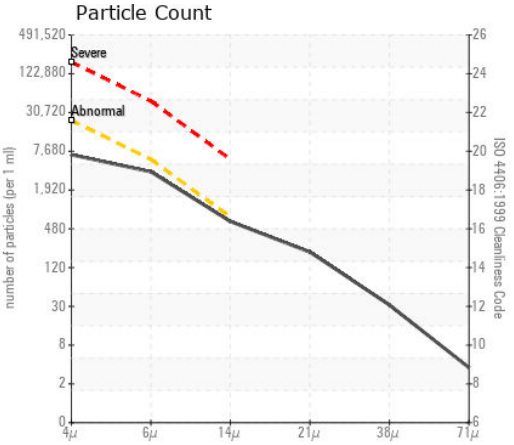
Non-ferrous Metals



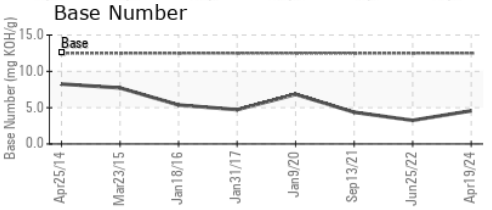
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0857794
Lab Number : 06158483
Unique Number : 10993906
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 23 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Jonathan Hester

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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Report Id: MCMCUE [WUSCAR] 06158483 (Generated: 04/25/2024 17:53:40) Rev: 1

Submitted By: Chip Stelpflug