



ASCENDUM

OIL ANALYSIS REPORT



Area

Ascendum Machinery/250 Hour CSA

Machine Id

CATERPILLAR 12H 416 (S/N 61M12409)

Component

Diesel Engine

Fluid

VOLVO VDS-4.5 Premium Motor Oil 15W40 (--- GAL)

WEAR

NORMAL

CONTAMINATION

SEVERE

FLUID CONDITION

ABNORMAL

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		ASC0009689	ASC0001020	VCP0004771
Sample Date		Client Info		12 Jul 2024	21 Aug 2023	29 Sep 2022
Machine Age	hrs	Client Info		13493	13493	13345
Oil Age	hrs	Client Info		13493	148	0
Filter Age	hrs	Client Info		0	148	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	16	9	11
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	1	0	<1
Aluminum	ppm	ASTM D5185m	>25	1	0	2
Lead	ppm	ASTM D5185m	>40	1	2	2
Copper	ppm	ASTM D5185m	>330	76	40	21
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

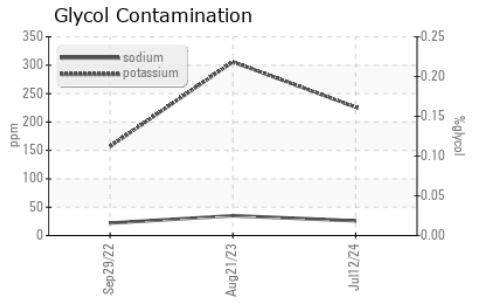
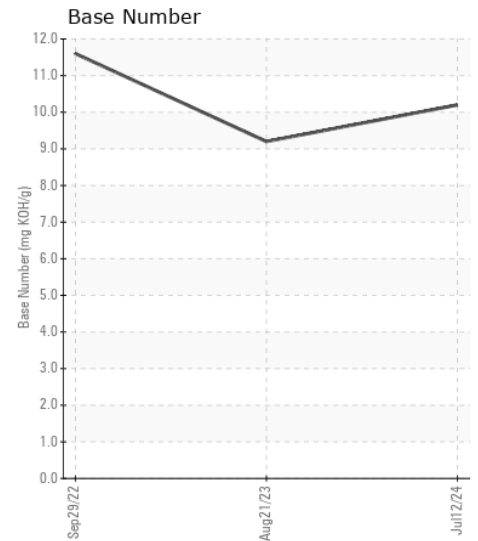
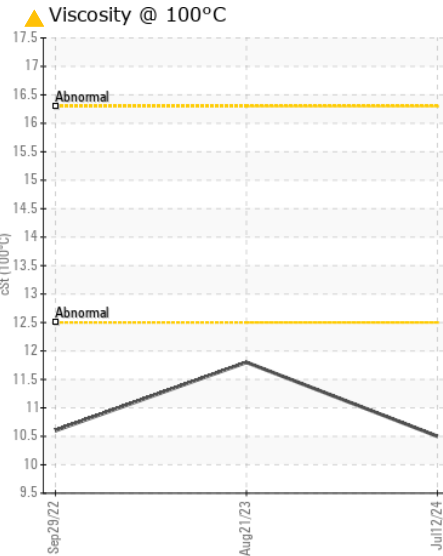
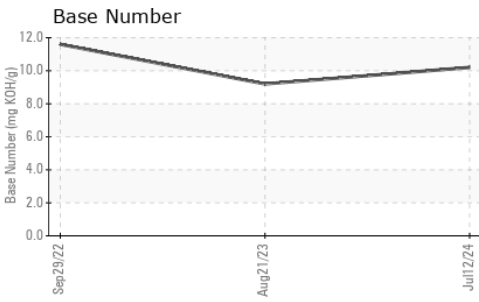
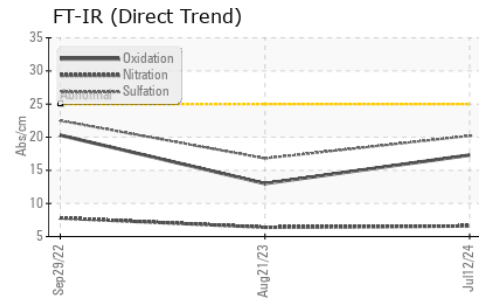
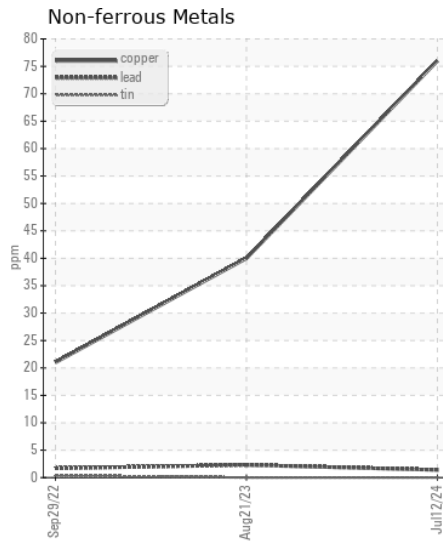
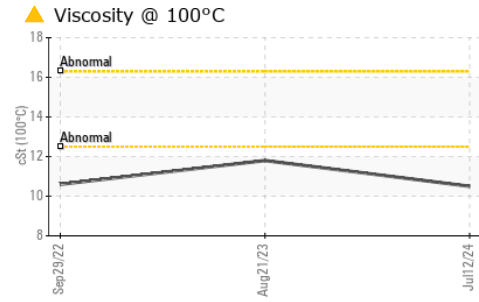
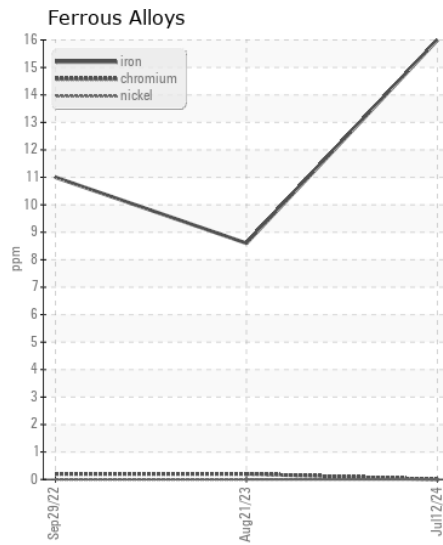
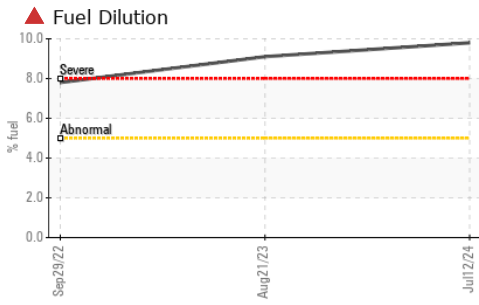
Sodium and/or potassium levels are high. There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	8	3	4
Potassium	ppm	ASTM D5185m	>20	▲ 226	▲ 306	● 157
Fuel	%	ASTM D3524	>5	▲ 9.8	▲ 9.1	▲ 7.8
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.6	6.4	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.2	16.8	22.5
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

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		▲ 26	▲ 35	22
Boron	ppm	ASTM D5185m		27	<1	32
Barium	ppm	ASTM D5185m		0	2	0
Molybdenum	ppm	ASTM D5185m		41	57	38
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		554	858	483
Calcium	ppm	ASTM D5185m		1457	1084	1572
Phosphorus	ppm	ASTM D5185m		903	987	830
Zinc	ppm	ASTM D5185m		1043	1164	977
Sulfur	ppm	ASTM D5185m		3092	3004	3315
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.3	13.0	20.3
Base Number (BN)	mg KOH/g	ASTM D2896		10.2	9.2	11.6
Visc @ 100°C	cSt	ASTM D445		▲ 10.5	▲ 11.8	10.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ASC0009689 **Received** : 15 Jul 2024
Lab Number : 06235462 **Tested** : 17 Jul 2024
Unique Number : 11124296 **Diagnosed** : 17 Jul 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, PercentFuel, TBN)

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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)