

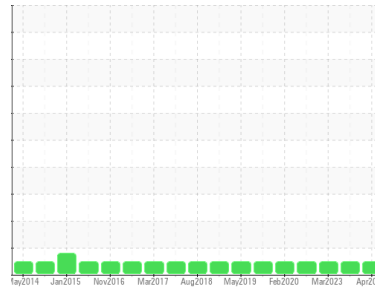


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR 287C 128 (S/N MA501655)
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (3 GAL)

Sample Rating Trend



NORMAL



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			RW0004989	RW0005002	RW0004443
Sample Date	Client Info			11 Apr 2024	13 Dec 2023	23 Mar 2023
Machine Age	hrs	Client Info		6497	6486	6350
Oil Age	hrs	Client Info		11	136	355
Oil Changed	Client Info			Changed	Changed	Changed
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	4	5	7
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	2	2
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	<1	2	0
Tin	ppm	ASTM D5185m	>15	0	<1	0
Antimony	ppm	ASTM D5185m		---	---	---
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	19	11	13
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	67	65	66
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m	450	1095	962	876
Calcium	ppm	ASTM D5185m	3000	1490	1171	1285
Phosphorus	ppm	ASTM D5185m	1150	1305	1087	1033
Zinc	ppm	ASTM D5185m	1350	1567	1323	1322
Sulfur	ppm	ASTM D5185m	4250	4997	3182	3520

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	5	4	5
Sodium	ppm	ASTM D5185m	>158	<1	2	<1
Potassium	ppm	ASTM D5185m	>20	1	<1	0

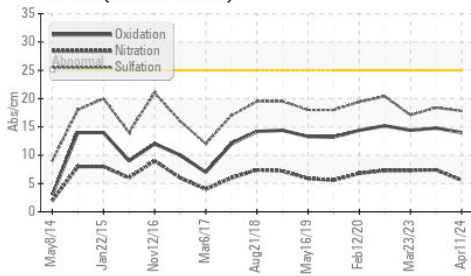
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.1	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	5.6	7.4	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.8	18.4	17.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.0	14.8	14.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	11.35	11.09	11.33

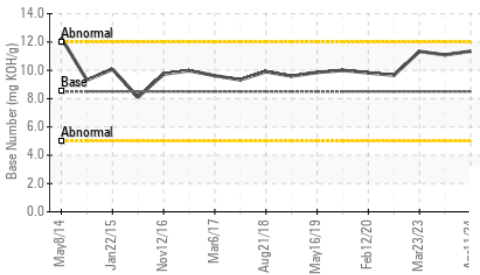


OIL ANALYSIS REPORT

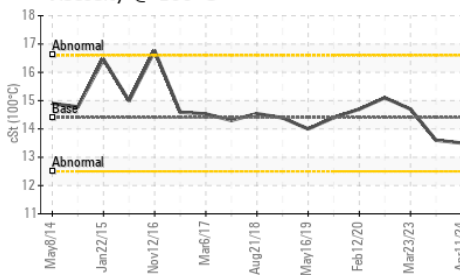
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

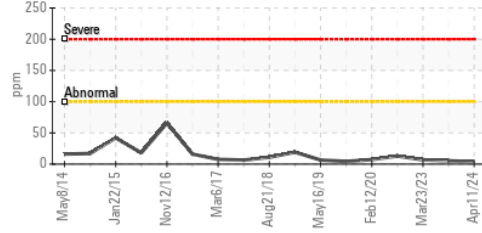


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

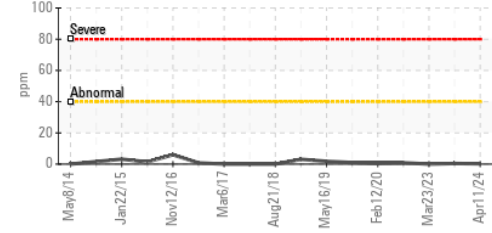
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	13.5	13.6	14.7

GRAPHS

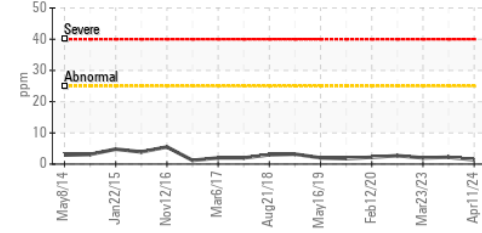
Iron (ppm)



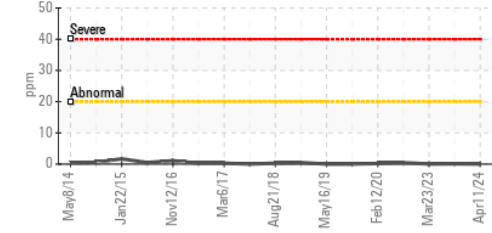
Lead (ppm)



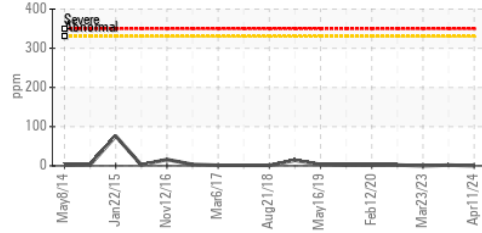
Aluminum (ppm)



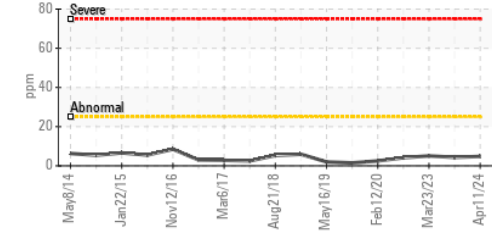
Chromium (ppm)



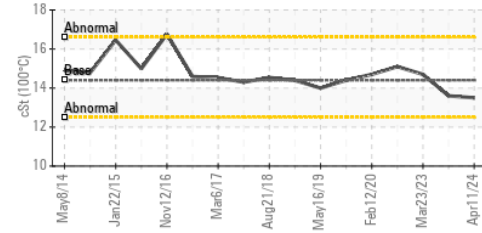
Copper (ppm)



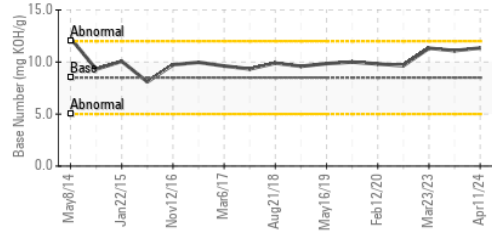
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RW0004989
Lab Number : 06161024
Unique Number : 10996447
Test Package : MOB 2

HALLACK CONTRACTING, INC.
 4223 W POLK
 HART, MI
 US 49420

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Contact: DAN HALLACK KARL BUTCHER
 shop@hallackcontracting.com

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

T: (231)873-5081

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (231)873-2889