



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 420D 4004 (S/N BLN05932)
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (2 GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		CL0005587	CL0004953	CL0004362
Sample Date		Client Info		27 Jun 2024	27 Nov 2023	03 Jun 2023
Machine Age	hrs	Client Info		10715	10515	10225
Oil Age	hrs	Client Info		200	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	5	4	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>25	4	1	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	0	1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

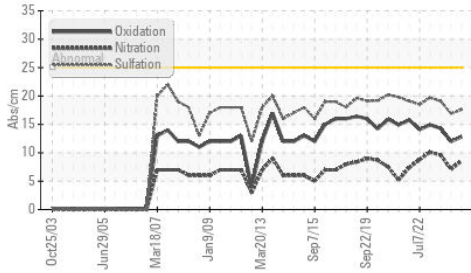
Silicon	ppm	ASTM D5185m	>25	5	3	4
Potassium	ppm	ASTM D5185m	>20	3	2	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.6	7.1	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.6	16.9	19.1
Silt	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

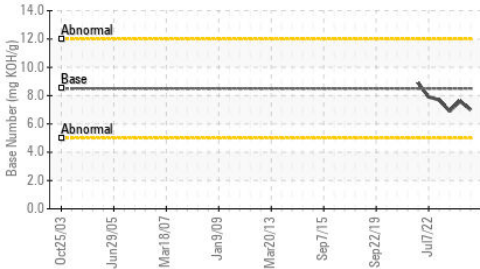
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	3	<1	2
Boron	ppm	ASTM D5185m	250	60	25	71
Barium	ppm	ASTM D5185m	10	0	2	0
Molybdenum	ppm	ASTM D5185m	100	82	52	93
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	450	62	299	26
Calcium	ppm	ASTM D5185m	3000	2323	1744	2278
Phosphorus	ppm	ASTM D5185m	1150	1095	886	1052
Zinc	ppm	ASTM D5185m	1350	1318	1069	1285
Sulfur	ppm	ASTM D5185m	4250	4071	3758	4584
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.8	12.0	14.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.0	7.6	6.9
Visc @ 100°C	cSt	ASTM D445	14.4	13.9	14.1	13.9

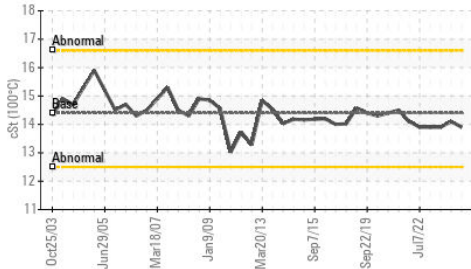
FT-IR (Direct Trend)



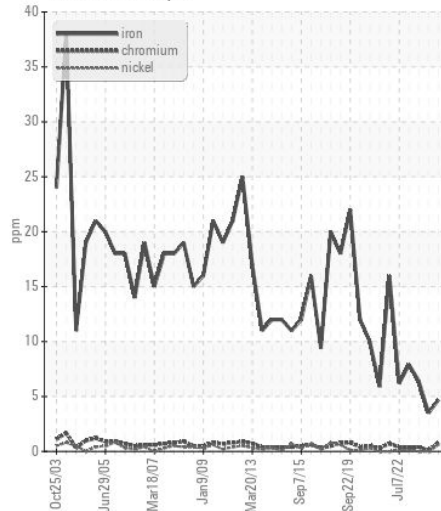
Base Number



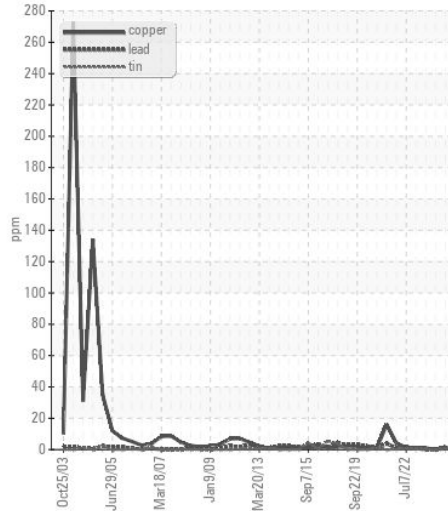
Viscosity @ 100°C



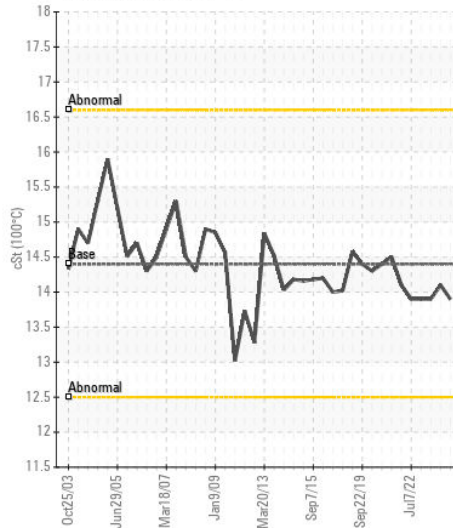
Ferrous Alloys



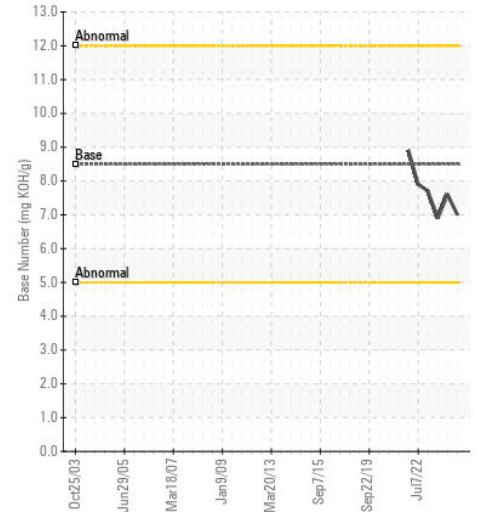
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : CL0005587 **Received** : 08 Jul 2024
Lab Number : 06229741 **Tested** : 09 Jul 2024
Unique Number : 11113234 **Diagnosed** : 09 Jul 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

PURCELL CONSTRUCTION
 3100 HIGH RIDGE RD
 CHARLOTTE, NC
 US 28270
 Contact: BEN MILKE
 ben@purcellconst.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)

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F: