



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
604200 CUMMINS X15
 Component
Diesel Engine
 Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0788694	WC0661316	WC0653649
Sample Date		Client Info		15 May 2024	21 Nov 2022	01 Sep 2022
Machine Age	hrs	Client Info		7004	4999	4489
Oil Age	hrs	Client Info		450	450	435
Filter Age	hrs	Client Info		450	450	435
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	38	32	27
Chromium	ppm	ASTM D5185m	>20	1	2	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	6	6	8
Lead	ppm	ASTM D5185m	>40	6	8	6
Copper	ppm	ASTM D5185m	>330	2	1	1
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
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.

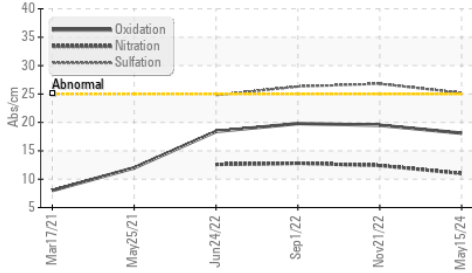
Silicon	ppm	ASTM D5185m	>25	5	7	6
Potassium	ppm	ASTM D5185m	>20	4	6	7
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	1.4	1.5	1.4
Nitration	Abs/cm	*ASTM D7624	>20	11.0	12.4	12.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.2	26.8	26.3
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

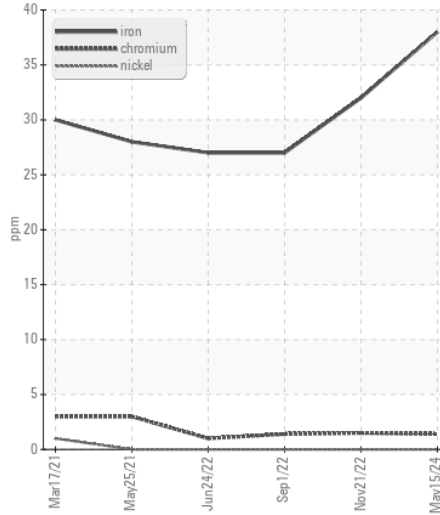
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>150	2	<1	2
Boron	ppm	ASTM D5185m		21	20	19
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		63	79	91
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		43	54	88
Calcium	ppm	ASTM D5185m		2214	2264	2119
Phosphorus	ppm	ASTM D5185m		945	984	996
Zinc	ppm	ASTM D5185m		1124	1185	1225
Sulfur	ppm	ASTM D5185m		3738	3479	3944
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.1	19.5	19.8
Base Number (BN)	mg KOH/g	ASTM D2896		4.8	6.3	6.6
Visc @ 100°C	cSt	ASTM D445		12.4	12.6	14.0

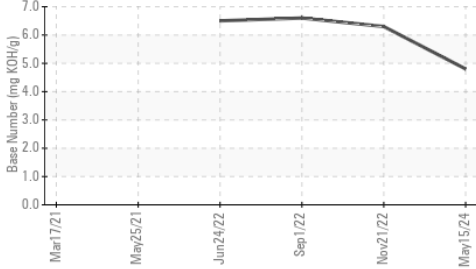
FT-IR (Direct Trend)



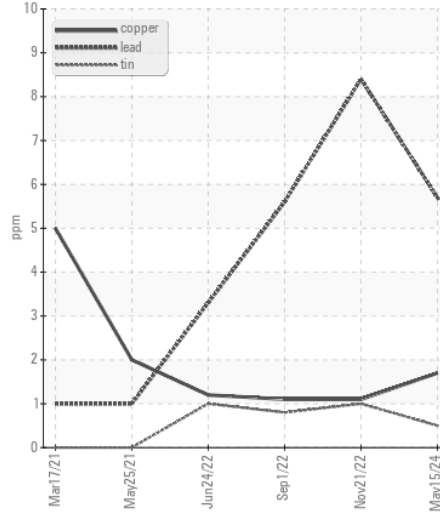
Ferrous Alloys



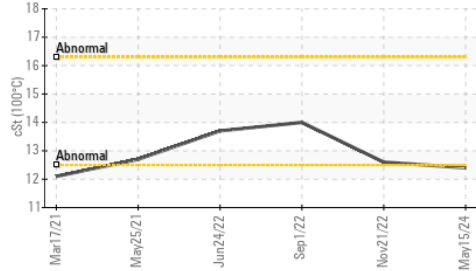
Base Number



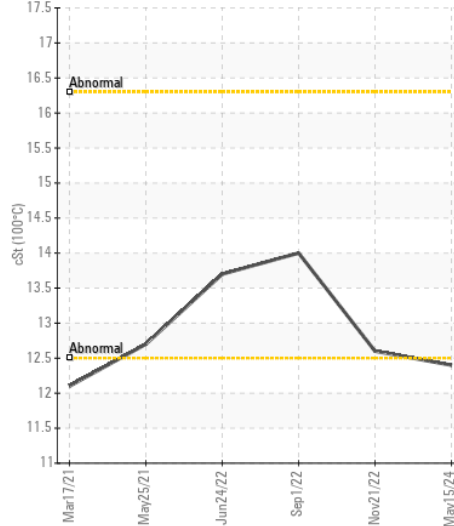
Non-ferrous Metals



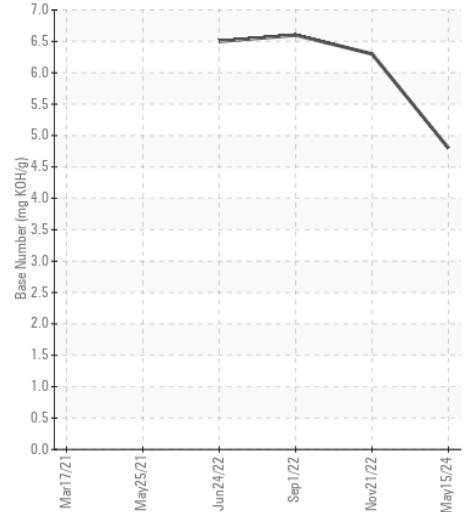
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0788694
Lab Number : 06191575
Unique Number : 11048327
Test Package : FLEET

Received : 24 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - Angela Borella

TRI-CITY HIGHWAY
 145 PODPADIC ROAD
 RICHMONDVILLE, NY
 US 12149
 Contact: DAN CORBETT
 dcorbett@tchpi.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)