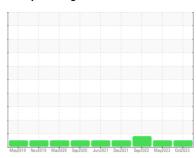


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 3019L Component

Diesel Engine

MOBIL 15W40 (--- QTS)

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

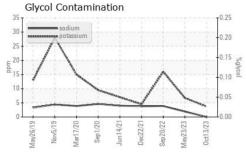
Fluid Condition

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

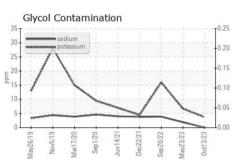
May2019 Nov2019 May2020 Sap2020 Jun2021 Dac2021 Sap2022 May2023 Oct0023						
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0032411	IL0028891	IL0025839
Sample Date		Client Info		13 Oct 2023	23 May 2023	20 Sep 2022
Machine Age	mls	Client Info		248092	242521	229313
Oil Age	mls	Client Info		0	13208	14407
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	32	58	81
Chromium	ppm	ASTM D5185m	>20	<1	3	3
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	9	<u>^</u> 26
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	3	2
Tin	ppm	ASTM D5185m	>15	0	<1	0
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		2	25	40
Barium				6	0	0
Danum	ppm	ASTM D5185m			U	0
Molybdenum	ppm	ASTM D5185m ASTM D5185m		63	52	29
				63 <1		
Molybdenum	ppm	ASTM D5185m			52	29
Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m		<1	52 <1	29 <1
Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		<1 938	52 <1 858	29 <1 385
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 938 1085	52 <1 858 1323	29 <1 385 1792
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 938 1085 1047	52 <1 858 1323 1016	29 <1 385 1792 822
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 938 1085 1047 1222	52 <1 858 1323 1016 1267	29 <1 385 1792 822 1010
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 938 1085 1047 1222 3521	52 <1 858 1323 1016 1267 3766	29 <1 385 1792 822 1010 2839
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25	<1 938 1085 1047 1222 3521 current	52 <1 858 1323 1016 1267 3766 history1	29 <1 385 1792 822 1010 2839 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	>25 >118	<1 938 1085 1047 1222 3521 current 4	52 <1 858 1323 1016 1267 3766 history1	29 <1 385 1792 822 1010 2839 history2 6
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>25 >118	<1 938 1085 1047 1222 3521 current 4 0	52 <1 858 1323 1016 1267 3766 history1 5	29 <1 385 1792 822 1010 2839 history2 6 4
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>25 >118	<1 938 1085 1047 1222 3521 current 4 0 4	52 <1 858 1323 1016 1267 3766 history1 5 2 7	29 <1 385 1792 822 1010 2839 history2 6 4 16
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >118 >20	<1 938 1085 1047 1222 3521 current 4 0 4 NEG current	52 <1 858 1323 1016 1267 3766 history1 5 2 7 NEG	29 <1 385 1792 822 1010 2839 history2 6 4 16 NEG
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >118 >20 limit/base	<1 938 1085 1047 1222 3521 current 4 0 4 NEG	52 <1 858 1323 1016 1267 3766 history1 5 2 7 NEG	29 <1 385 1792 822 1010 2839 history2 6 4 16 NEG history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D2982 **Method **ASTM D7844	>25 >118 >20 limit/base >3 >20	<1 938 1085 1047 1222 3521 current 4 0 4 NEG current 0.6	52 <1 858 1323 1016 1267 3766 history1 5 2 7 NEG history1 0.7	29 <1 385 1792 822 1010 2839 history2 6 4 16 NEG history2 1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m Method ASTM D5185m *ASTM D7844 *ASTM D7844	>25 >118 >20 limit/base >3 >20	<1 938 1085 1047 1222 3521 current 4 0 4 NEG current 0.6 9.5	52 <1 858 1323 1016 1267 3766 history1 5 2 7 NEG history1 0.7 11.4	29 <1 385 1792 822 1010 2839 history2 6 4 16 NEG history2 1 13.6
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	>25 >118 >20 limit/base >3 >20 >30 limit/base	<1 938 1085 1047 1222 3521 current 4 0 4 NEG current 0.6 9.5 20.8 current	52 <1 858 1323 1016 1267 3766 history1 5 2 7 NEG history1 0.7 11.4 22.5 history1	29 <1 385 1792 822 1010 2839 history2 6 4 16 NEG history2 1 13.6 26.2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624 *ASTM D76145	>25 >118 >20 limit/base >3 >20 >30 limit/base	<1 938 1085 1047 1222 3521 current 4 0 4 NEG current 0.6 9.5 20.8	52 <1 858 1323 1016 1267 3766 history1 5 2 7 NEG history1 0.7 11.4 22.5	29 <1 385 1792 822 1010 2839 history2 6 4 16 NEG history2 1 13.6 26.2



OIL ANALYSIS REPORT



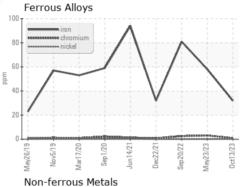
Vis	cosity	@ 10	0°C					
10 T								
17								
Abr	normal							
16 -								-
(0-15 (100-15)								
8 13								
E141								
8.,	_		_			Married Woman or widow		
13 - 41		$\overline{}$			_		$\overline{}$	
Abr	normal							_
12								
11								_
6	6	0	0	-21	121	2	63	
1/9	Nov5/19	72	12	4	2	0/2	3/3	
72	20	=	Sep1/	=	22	ep20	72	
May26/19	2	Mar17,	00	3	ã	S	May23/23	
_							_	

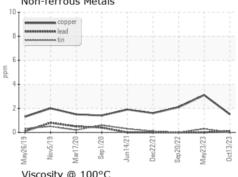


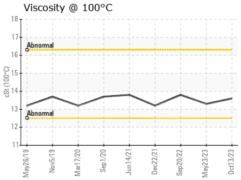
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

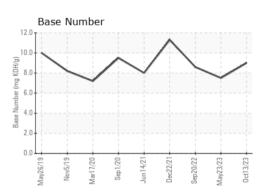
FLUID PROPER	RTIES	method			history2
Visc @ 100°C	cSt	ASTM D445	13.6	13.3	13.8

GRAPHS













Laboratory Sample No. Lab Number Unique Number : 10726036

: IL0032411 : 05997676

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received Diagnosed

: 03 Nov 2023 : 15 Nov 2023

Diagnostician : Doug Bogart

Test Package : FLEET (Additional Tests: Glycol) 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)

RUSH TRUCK CENTER - CHICAGO IDEALEASE

4655 SOUTH CENTRAL AVENUE CHICAGO, IL US 60638

Contact: MIKE LINLEY linleym@rushtruckcenters.com

T: (708)496-7500 F: (708)496-8818

Contact/Location: MIKE LINLEY - IDECHIIL