

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine Fluic

DIESEL ENGINE OIL SAE 15W40 (--- GAL)

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 INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0034370	IL0028827	IL0025817
Sample Date		Client Info		28 Nov 2023	21 Aug 2023	09 Feb 2023
Machine Age	mls	Client Info		272279	259611	237045
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	J	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	nnm	ASTM D5185m	>100	29	63	34
Chromium	nnm	ASTM D5185m	>20	<1	2	1
Nickel	nom	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	- 1	<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	mag	ASTM D5185m	>20	3	10	7
Lead	mag	ASTM D5185m	>40	0	0	0
Copper	mag	ASTM D5185m	>330	1	1	2
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	<1	4	1
Barium	ppm	ASTM D5185m	10	0	0	0
woiybaenum	ppm	ASTM D5185m	100	62	69	61
Manganese	ppm ppm	ASTM D5185m ASTM D5185m	100	62 <1	69 <1	61 <1
Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	100 450	62 <1 1018	69 <1 1091	61 <1 906
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000	62 <1 1018 1101	69 <1 1091 1205	61 <1 906 1086
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150	62 <1 1018 1101 985	69 <1 1091 1205 1066	61 <1 906 1086 942
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350	62 <1 1018 1101 985 1267	69 <1 1091 1205 1066 1391	61 <1 906 1086 942 1209
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250	62 <1 1018 1101 985 1267 2873	69 <1 1091 1205 1066 1391 3919	61 <1 906 1086 942 1209 2970
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 limit/base	62 <1 1018 1101 985 1267 2873 current	69 <1 1091 1205 1066 1391 3919 history1	61 <1 906 1086 942 1209 2970 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 limit/base >25	62 <1 1018 1101 985 1267 2873 current 5	69 <1 1091 1205 1066 1391 3919 history1 6	61 <1 906 1086 942 1209 2970 history2 4
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 kimit/base >25 >158	62 <1 1018 1101 985 1267 2873 current 5 <1	69 <1 1091 1205 1066 1391 3919 history1 6 2	61 <1 906 1086 942 1209 2970 history2 4 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 limit/base >25 >158 >20	62 <1 1018 1101 985 1267 2873 current 5 <1 2	69 <1 1091 1205 1066 1391 3919 history1 6 2 4	61 <1 906 1086 942 1209 2970 history2 4 2 3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 imit/base >25 >158 >20	62 <1 1018 1101 985 1267 2873 current 5 <1 2 2	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 4 history1	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3	62 <1 1018 1101 985 1267 2873 current 5 <1 2 current 0.5	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 4 history1 0.8	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2 0.5
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	62 <1 1018 1101 985 1267 2873 current 5 <1 2 2 current 0.5 11.7	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 4 history1 0.8 15.1	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2 0.5 12.3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	100 450 3000 1150 4250 imit/base >25 >158 >20 imit/base >3 >20 >30	62 <1 1018 1101 985 1267 2873 current 5 <1 2 current 0.5 11.7 25.2	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 4 history1 0.8 15.1 32.1	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2 0.5 12.3 24.1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624	100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >30	62 <1 1018 1101 985 1267 2873 current 5 <1 2 current 0.5 11.7 25.2 current	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 4 history1 0.8 15.1 32.1 history1	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2 0.5 12.3 24.1 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7415	100 450 3000 1150 4250 imit/base >25 >158 >20 imit/base >3 >20 >30 imit/base >25	62 <1 1018 1101 985 1267 2873 current 5 <1 2 current 0.5 11.7 25.2 current 26.7	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 history1 0.8 15.1 32.1 history1 37.3	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2 0.5 12.3 24.1 history2 24.8
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7414	100 450 3000 1150 1350 4250 imit/base >25 >20 imit/base >3 >20 20 imit/base	62 <1 1018 1101 985 1267 2873 current 5 <1 2 current 0.5 11.7 25.2 current 26.7	69 <1 1091 1205 1066 1391 3919 history1 6 2 4 history1 0.8 15.1 32.1 history1 37.3	61 <1 906 1086 942 1209 2970 history2 4 2 3 history2 0.5 12.3 24.1 history2 24.8



cSt (100°C) Ba

13 Abnorma

12

Apr25/19

OIL ANALYSIS REPORT



1c/8/21

Aar2/21

VISUAL		method				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
		mathad	limit/bass	ourropt	biotorut	history ()
	IE0	method	iimii/base	current	riistory i	riistory2
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	14.0	13.3
GRAPHS						



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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