

OIL ANALYSIS REPORT





Sample Number Client Info IL0032759 IL0027562 IL0027758			Apr2016 N	ov2016 Dec2017 Nov	2018 Nov2020 Apr2022	Apr2023	
Sample Date Client Info 25 Oct 2023 17 Apr 2023 29 Sep 2022 Machine Age mis Client Info 272307 255449 242177 Oil Age mis Client Info 16858 13272 13162 Oil Changed Client Info Changed NoRMAL NORMAL NORMAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >3.0 <1.0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 272307 255449 242177 Oil Age mis Client Info 16658 13272 13162 Oil Anaged Client Info 16658 13272 13162 Sample Status Client Info NORMAL NORMAL NORMAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		IL0032759	IL0027562	IL0027758
Oil Age mis Client Info 16858 13272 13162 Oil Changed Client Info Changed Ch	Sample Date		Client Info		25 Oct 2023	17 Apr 2023	29 Sep 2022
Oil Changed Sample StatusClient InfoChanged NORMALChanged NORMALChanged NORMALChanged NORMALCONTAMINATIONmethodimit/basecurrenthistory1history2FuelWC Method>3.0<1.0	Machine Age	mls	Client Info		272307	255449	242177
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Oil Age	mls	Client Info		16858	13272	13162
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >130 63 41 74 Chromium ppm ASTM D5185m >10 3 0 4 Nickel ppm ASTM D5185m >2 <1 0 1 Silver ppm ASTM D5185m >2 0 0 <1 0 Aduminum ppm ASTM D5185m >20 0 0 1 0 Copper ppm ASTM D5185m >125 2 <1 0 1 Cadmium ppm ASTM D5185m 0 0 0 1 1 Cadmium ppm ASTM D5185m 20 9 2 7 1 Barium ppm <th< td=""><td>•</td><td></td><td></td><td></td><th>U U</th><td>U</td><td>Ũ</td></th<>	•				U U	U	Ũ
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Titanium ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >20 15 13 6 Aluminum ppm ASTM D5185m >20 0 0 9 Copper ppm ASTM D5185m >20 0 0 9 Copper ppm ASTM D5185m >20 0 0 9 Copper ppm ASTM D5185m >20 0 0 2 Vanadium ppm ASTM D5185m >4 1 0 2 Vanadium ppm ASTM D5185m 0 0 0 <11	Chromium	ppm	ASTM D5185m	>10	3	0	4
Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 15 13 6 Lead ppm ASTM D5185m >20 0 0 9 Copper ppm ASTM D5185m >125 2 <1	Nickel	ppm	ASTM D5185m	>4	<1	0	1
Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 15 13 6 Lead ppm ASTM D5185m >20 0 0 9 Copper ppm ASTM D5185m >125 2 <1	Titanium	ppm	ASTM D5185m	>2	<1	0	<1
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Lead ppm ASTM D5185m >20 0 0 9 Copper ppm ASTM D5185m >125 2 <1	Aluminum		ASTM D5185m	>20	15	13	6
Copper ppm ASTM D5185m >125 2 <1 6 Tin ppm ASTM D5185m >4 1 0 2 Vanadium ppm ASTM D5185m 0 0 1 0 2 Cadmium ppm ASTM D5185m 0 0 <1	Lead		ASTM D5185m	>20	0	0	9
Tin ppm ASTM D5185m >4 1 0 2 Vanadium ppm ASTM D5185m 0 0 1 1 Cadmium ppm ASTM D5185m 0 0 1 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 269 42 37 11 Barium ppm ASTM D5185m 269 42 37 11 Barium ppm ASTM D5185m 269 42 37 11 Barium ppm ASTM D5185m 20 47 90 97 Magnesium ppm ASTM D5185m 0 47 90 79 Magnesium ppm ASTM D5185m 20 199 52 67 Calcium ppm ASTM D5185m 948 981 1053 985 Zinc ppm ASTM D5185m 948 981 1				>125	-		
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Molybdenum ppm ASTM D5185m 0 47 90 79 Manganese ppm ASTM D5185m 0 <1	Barium		ASTM D5185m		20	0	0
Manganese ppm ASTM D5185m <1 <1 2 Magnesium ppm ASTM D5185m 20 199 52 67 Calcium ppm ASTM D5185m 1521 1905 2338 2232 Phosphorus ppm ASTM D5185m 948 981 1053 985 Zinc ppm ASTM D5185m 948 981 1053 985 Sulfur ppm ASTM D5185m 948 981 1053 985 Sulfur ppm ASTM D5185m 948 981 1053 985 Sulfur ppm ASTM D5185m 893 1161 1379 1266 Sulfur ppm ASTM D5185m >25 7 5 11 Sodium ppm ASTM D5185m >20 7 4 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.5 </td <td>Molvbdenum</td> <td></td> <td></td> <td>0</td> <th>-</th> <td>90</td> <td>79</td>	Molvbdenum			0	-	90	79
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Silicon ppm ASTM D5185m >25 7 5 11 Sodium ppm ASTM D5185m 6 2 4 Potassium ppm ASTM D5185m >20 7 4 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.5 0.9 1.3 Nitration Abs/cm *ASTM D7624 >20 12.0 11.1 12.4 Sulfation Abs/.imm *ASTM D7415 >30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.imm *ASTM D7414 >25 20.0 17.2 21.7	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 6 2 4 Potassium ppm ASTM D5185m<>20 7 4 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844<>6 1.5 0.9 1.3 Nitration Abs/cm *ASTM D7624<>20 12.0 11.1 12.4 Sulfation Abs/.1mm *ASTM D7415<>30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414<>25 20.0 17.2 21.7							11
Potassium ppm ASTM D5185m >20 7 4 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.5 0.9 1.3 Nitration Abs/cm *ASTM D7624 >20 12.0 11.1 12.4 Sulfation Abs/.1mm *ASTM D7415 >30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.0 17.2 21.7	Sodium		ASTM D5185m		6	2	4
Soot % % *ASTM D7844 >6 1.5 0.9 1.3 Nitration Abs/cm *ASTM D7624 >20 12.0 11.1 12.4 Sulfation Abs/.1mm *ASTM D7415 >30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.0 17.2 21.7			ASTM D5185m	>20		4	6
Nitration Abs/cm *ASTM D7624 >20 12.0 11.1 12.4 Sulfation Abs/.1mm *ASTM D7415 >30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.0 17.2 21.7	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 12.0 11.1 12.4 Sulfation Abs/.1mm *ASTM D7614 >30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.0 17.2 21.7	Soot %	%	*ASTM D7844	>6	1.5	0.9	1.3
Sulfation Abs/.1mm *ASTM D7415 >30 25.1 20.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.0 17.2 21.7							
Oxidation Abs/.1mm *ASTM D7414 >25 20.0 17.2 21.7							
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 6.4 5 7.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.0	17.2	21.7
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.4	5	7.1

INTERNATIONAL 102620

Diesel Engine Fluid SHELL ROTELLA T 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

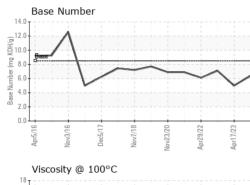
There is no indication of any contamination in the oil.

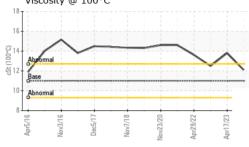
Fluid Condition

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

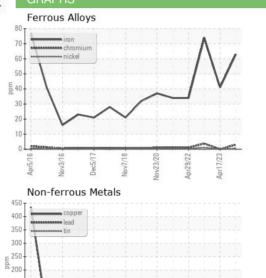


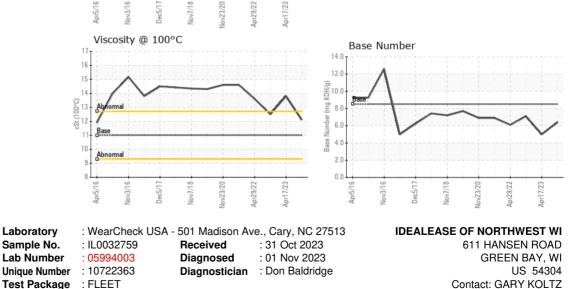
OIL ANALYSIS REPORT





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
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	11.0	12.1	13.8	12.5
GRAPHS						





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

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* - 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)

Certificate L2367

Contact/Location: GARY KOLTZ - IDEGREWI

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