

#### **PROBLEM SUMMARY**

#### Sample Rating Trend

### **DEGRADATION**

## INTERNATIONAL 8812198

Component **Diesel Engine** 

**VALVOLINE 15W40 (--- GAL)** 

#### **COMPONENT CONDITION SUMMARY**

No relevant graphs to display

#### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC T	EST RE	SULTS					
Sample Status				ABNORMAL	ABNORMAL	NORMAL	
Base Number (BN)	ma KOH/a	ASTM D2896	6.9	<b>△</b> 3.1	<b>△</b> 3.1	7.8	

Customer Id: IDETAMFL Sample No.: IL0034271 Lab Number: 05996473 Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data: Sean Felton +1 919-379-4092 sfelton@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

#### **RECOMMENDED ACTIONS**

Action	Status	Date	Done By	Description
Change Fluid			?	Oil and filter change at the time of sampling has been noted.
Change Filter			?	Oil and filter change at the time of sampling has been noted.

#### HISTORICAL DIAGNOSIS

#### 02 May 2023 Diag: Jonathan Hester

#### DEGRADATION



The oil is near the end of it's useful service life, recommend schedule an oil change. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN level is low. The condition of the oil is acceptable for the time in service.



#### 24 Feb 2022 Diag: Wes Davis

#### NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

# view report

#### 26 Dec 2020 Diag: Jonathan Hester

#### GLYCOL



No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is negative. 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**

#### Sample Rating Trend

#### **DEGRADATION**

#### **INTERNATIONAL 8812198**

**Diesel Engine** 

**VALVOLINE 15W40 (--- GAL)** 





#### **DIAGNOSIS**

#### Recommendation

Oil and filter change at the time of sampling has been noted. 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

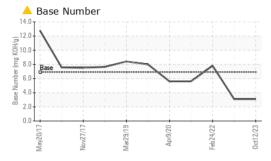
#### ▲ Fluid Condition

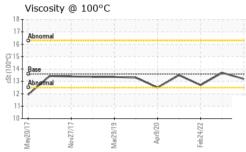
The BN level is low.

Sample Date         Client Info         12 Oct 2023         02 May 2023         2           Machine Age         mls         Client Info         311260         276276         2           Oil Age         mls         Client Info         0         0         0           Oil Changed         Client Info         Changed         N/A         N/A		May2017	Nov2017 Mar2019	Apr2020 Feb2022	Oct2023	
Sample Date	E INFORMATION	method	limit/base	current	history1	history2
Machine Age         mls         Client Info         311260         276276         2           Oil Age         mls         Client Info         0         0         0           Oil Changed         Client Info         Changed         N/A         1           Sample Status         Edition         Changed         N/A         1           CONTAMINATION         method         limit/base         current         history1           Fuel         WC Method         >5         <1.0	umber	Client Info		IL0034271	IL05840492	IL05482497
DOI   Age	ate	Client Info		12 Oct 2023	02 May 2023	24 Feb 2022
Contamped   Client Info   Changed   ABNORMAL   Info	ige mls	Client Info		311260	276276	200661
Contamped   Client Info   Changed   ABNORMAL   Info   I	mls	Client Info		0	0	0
CONTAMINATION   method   limit/base   current   history1	ed	Client Info		Changed	N/A	N/A
Fuel					ABNORMAL	NORMAL
WEAR METALS	MINATION	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185m         >100         81         48           Chromium         ppm         ASTM D5185m         >20         4         3           Nickel         ppm         ASTM D5185m         >4         <1		WC Method	>5	<1.0	<1.0	<1.0
		WC Method		NEG	NEG	NEG
Chromium	METALS	method	limit/base	current	history1	history2
Sickel	ppm	ASTM D5185m	>100	81	48	39
Silver	ppm	ASTM D5185m	>20	4	3	1
Silver		ASTM D5185m	>4	<1	<1	<1
Silver				<1		<1
Alluminum			>3			<1
Lead						5
Description						4
Tin	1.1					<1
Antimony						<1
Vanadium         ppm         ASTM D5185m         0         0           Cadmium         ppm         ASTM D5185m         <1         0           ADDITIVES         method         limit/base         current         history1           Boron         ppm         ASTM D5185m         39         16         24           Barium         ppm         ASTM D5185m         1         <1         0           Molybdenum         ppm         ASTM D5185m         49         85         63           Manganese         ppm         ASTM D5185m         1         <1         1           Magnesium         ppm         ASTM D5185m         616         676         848           Calcium         ppm         ASTM D5185m         1554         1397         1363           Phosphorus         ppm         ASTM D5185m         1069         1075         987           Zinc         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Godium         ppm         ASTM			>13			<1
Cadmium         ppm         ASTM D5185m         <1         0           ADDITIVES         method         limit/base         current         history1           Boron         ppm         ASTM D5185m         39         16         24           Barium         ppm         ASTM D5185m         1         <1						<1
ADDITIVES         method         limit/base         current         history1           Boron         ppm         ASTM D5185m         39         16         24           Barium         ppm         ASTM D5185m         1         <1	1-1-					0
Boron   ppm   ASTM D5185m   39   16   24						
Barium	/ES	method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         49         85         63           Manganese         ppm         ASTM D5185m         1         <1	ppm	ASTM D5185m	39	16	24	114
Manganese         ppm         ASTM D5185m         1         <1         1           Magnesium         ppm         ASTM D5185m         616         676         848           Calcium         ppm         ASTM D5185m         1554         1397         1363           Phosphorus         ppm         ASTM D5185m         899         863         775           Zinc         ppm         ASTM D5185m         1069         1075         987           Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	ppm	ASTM D5185m	1	<1	0	0
Magnesium         ppm         ASTM D5185m         616         676         848           Calcium         ppm         ASTM D5185m         1554         1397         1363           Phosphorus         ppm         ASTM D5185m         899         863         775           Zinc         ppm         ASTM D5185m         1069         1075         987           Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         0         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	um ppm	ASTM D5185m	49	85	63	94
Calcium         ppm         ASTM D5185m         1554         1397         1363           Phosphorus         ppm         ASTM D5185m         899         863         775           Zinc         ppm         ASTM D5185m         1069         1075         987           Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	e ppm	ASTM D5185m	1	<1	1	<1
Phosphorus         ppm         ASTM D5185m         899         863         775           Zinc         ppm         ASTM D5185m         1069         1075         987           Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         >20         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         "ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         "ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         "ASTM D7415         >30         32.0         25.7	m ppm	ASTM D5185m	616	676	848	750
Zinc         ppm         ASTM D5185m         1069         1075         987           Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         >20         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         "ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         "ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         "ASTM D7415         >30         32.0         25.7	ppm	ASTM D5185m	1554	1397	1363	1483
Zinc         ppm         ASTM D5185m         1069         1075         987           Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         0         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	us ppm	ASTM D5185m	899	863	775	794
Sulfur         ppm         ASTM D5185m         2624         2721         2490           CONTAMINANTS         method         limit/base         current         history1           Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         0         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7			1069			1016
Silicon         ppm         ASTM D5185m         >25         10         6           Sodium         ppm         ASTM D5185m         0         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7						2392
Sodium         ppm         ASTM D5185m         0         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	MINANTS	method	limit/base	current	history1	history2
Sodium         ppm         ASTM D5185m         0         4           Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	ppm	ASTM D5185m	>25	10	6	8
Potassium         ppm         ASTM D5185m         >20         10         8           INFRA-RED         method         limit/base         current         history1           Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7		ASTM D5185m		0	4	2
Soot %         %         *ASTM D7844         >3         0.8         0.3           Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	ppm	ASTM D5185m	>20		8	5
Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	RED	method	limit/base	current	history1	history2
Nitration         Abs/cm         *ASTM D7624         >20         13.6         13.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7	%	*ASTM D7844	>3	0.8	0.3	0.2
Sulfation         Abs/.1mm         *ASTM D7415         >30         32.0         25.7						10.9
FLUID DEGRADATION method limit/base current history1						23.4
	EGRADATION	method	limit/base	current	history1	history2
Oxidation	Ahs/1mm	*ASTM D7414	>25	32.5	30.1	19.3
Base Number (BN)   mg KOH/g   ASTM D2896   6.9   \( \triangle \) 3.1   \( \triangle \) 3.1						7.8



#### **OIL ANALYSIS REPORT**

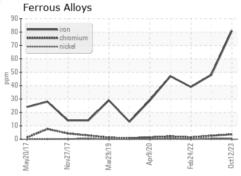


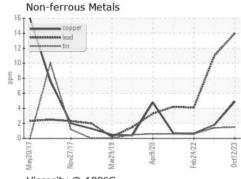


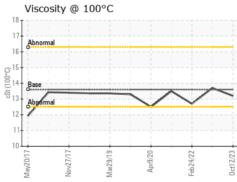
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

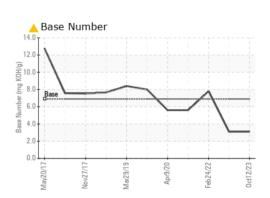
FLUID PROPERTIES		method	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	13.6	13.2	13.7	12.7

#### **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10724833

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : IL0034271 : 05996473

Received : 02 Nov 2023 Diagnosed Diagnostician : Sean Felton

: 03 Nov 2023

Test Package : FLEET

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)

T: (813)626-9285 F: (844)270-1356

TAMPA, FL

US 33610-9565

TAMPA IDEALEASE

5951 ORIENT ROAD

Contact: Russ Cook

russcook@idealease.com