



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area  
**Store 9 - Marietta**

Machine Id  
**1126**

Component  
**Diesel Engine**

Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LEC0048151</b>	LEC0048075	LEC0045800
Sample Date		Client Info		<b>14 Mar 2024</b>	09 Feb 2024	03 Jan 2024
Machine Age	mls	Client Info		<b>70852</b>	2328	1689
Oil Age	mls	Client Info		<b>5000</b>	400	400
Filter Age	mls	Client Info		<b>5000</b>	400	400
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>11</b>	13	12
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>2</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	4	6
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	2	1
Copper	ppm	ASTM D5185m	>330	<b>1</b>	2	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

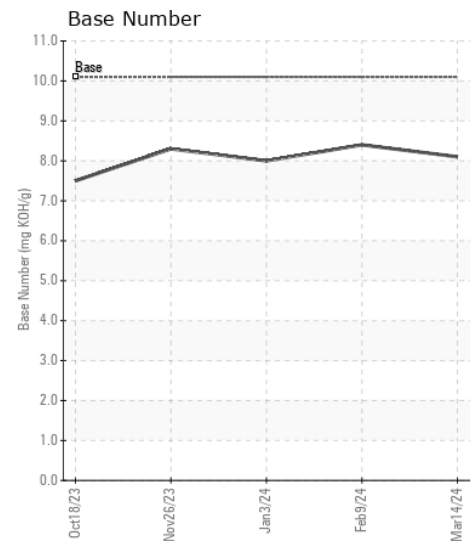
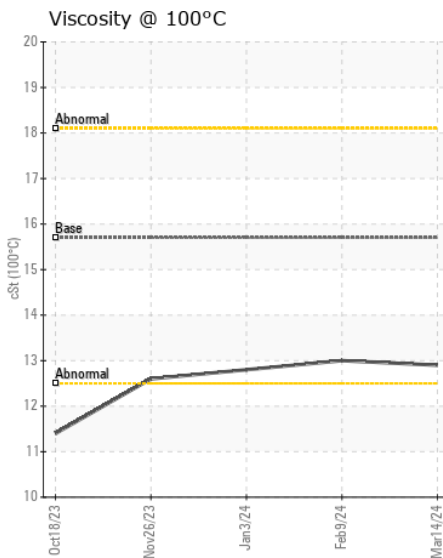
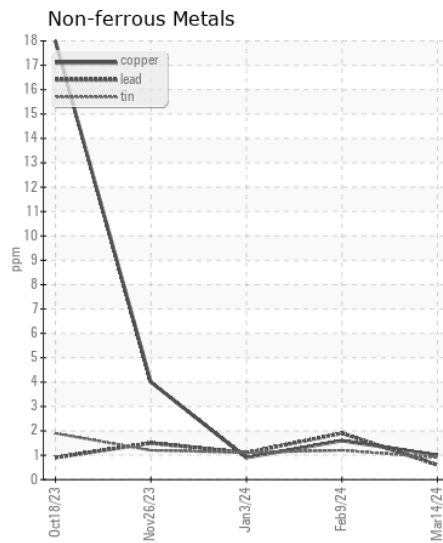
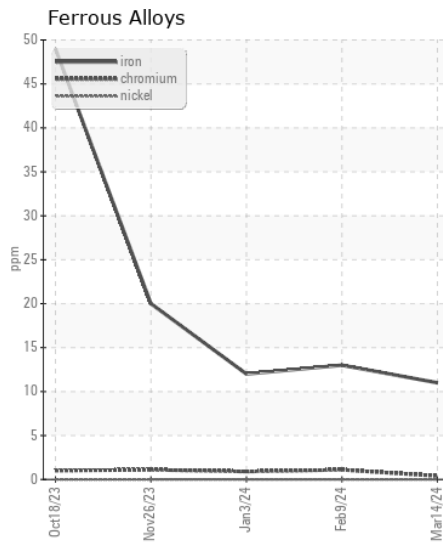
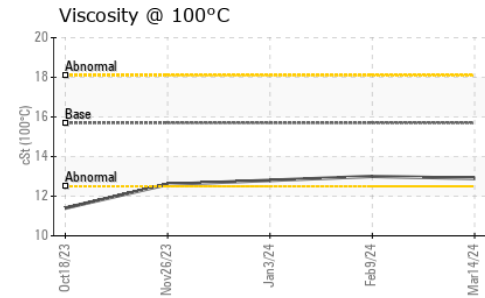
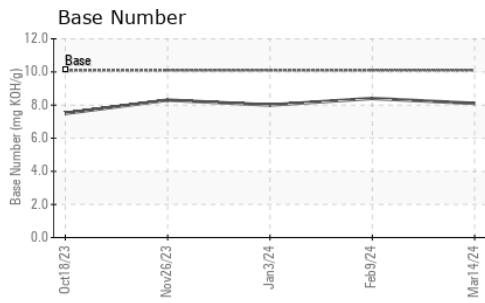
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	<b>6</b>	7	8
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	6	8
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.4</b>	8.5	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.1</b>	23.9	23.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## 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.

Sodium	ppm	ASTM D5185m		<b>1</b>	1	<1
Boron	ppm	ASTM D5185m	316	<b>216</b>	247	267
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>112</b>	138	130
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>686</b>	715	677
Calcium	ppm	ASTM D5185m	2292	<b>1507</b>	1589	1487
Phosphorus	ppm	ASTM D5185m	1064	<b>708</b>	741	750
Zinc	ppm	ASTM D5185m	1160	<b>845</b>	931	853
Sulfur	ppm	ASTM D5185m	4996	<b>2908</b>	2540	2413
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.1</b>	17.6	17.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>8.1</b>	8.4	8.0
Visc @ 100°C	cSt	ASTM D445	15.7	<b>12.9</b>	13.0	12.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0048151 **Received** : 20 Mar 2024  
**Lab Number** : 06124156 **Tested** : 21 Mar 2024  
**Unique Number** : 10938307 **Diagnosed** : 23 Mar 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**HALL DRILLING LLC**  
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 US 26346

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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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