



# OIL ANALYSIS REPORT

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

Area  
**Store 9 - Marietta**

Machine Id  
**1111**

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>LEC0048380</b>	LEC0046480	LEC0045991
Sample Date		Client Info		<b>16 Mar 2024</b>	17 Jan 2024	04 Nov 2023
Machine Age	mls	Client Info		<b>438564</b>	428627	419395
Oil Age	mls	Client Info		<b>10000</b>	10000	10000
Filter Age	mls	Client Info		<b>10000</b>	10000	10000
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>10</b>	10	8
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	2	3
Lead	ppm	ASTM D5185m	>40	<b>0</b>	2	<1
Copper	ppm	ASTM D5185m	>330	<b>0</b>	1	0
Tin	ppm	ASTM D5185m	>15	<b>0</b>	1	0
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

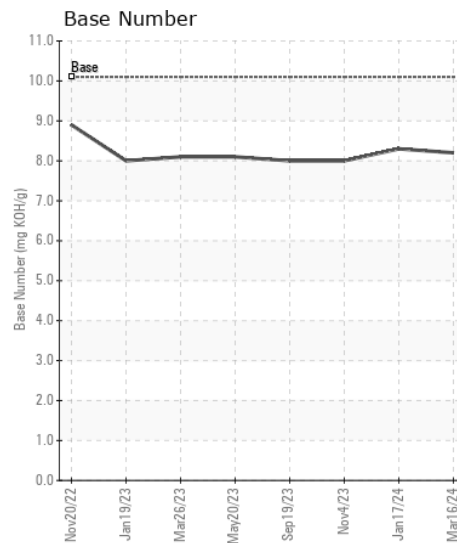
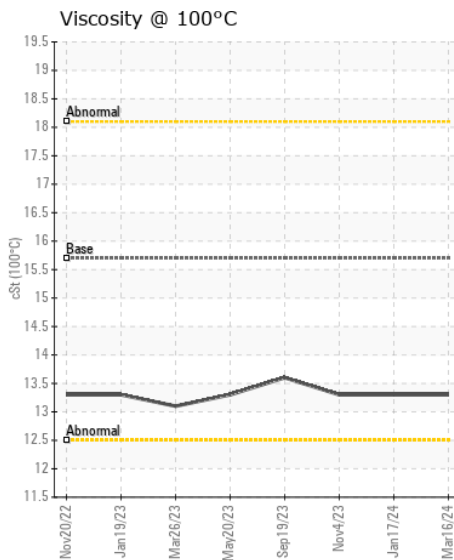
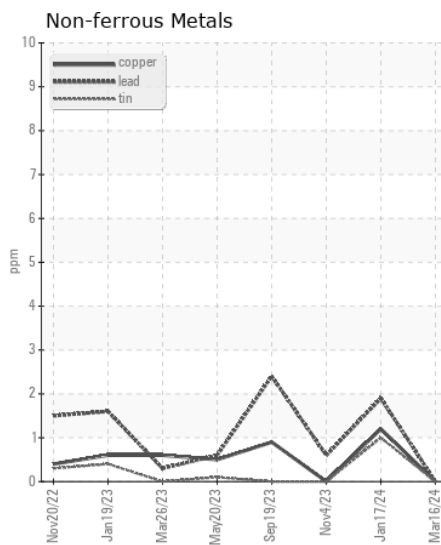
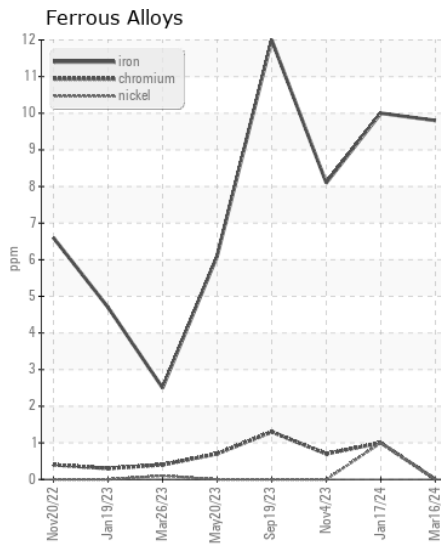
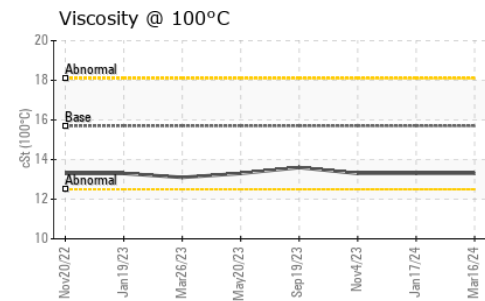
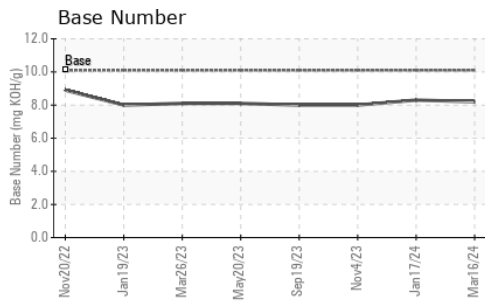
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	<b>6</b>	7	6
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	2	0
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>	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.9</b>	7.4	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.3</b>	24.0	24.2
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>	0	<1
Boron	ppm	ASTM D5185m	316	<b>284</b>	316	302
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	1	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>142</b>	132	133
Manganese	ppm	ASTM D5185m		<b>0</b>	1	0
Magnesium	ppm	ASTM D5185m	24	<b>768</b>	681	693
Calcium	ppm	ASTM D5185m	2292	<b>1798</b>	1509	1556
Phosphorus	ppm	ASTM D5185m	1064	<b>831</b>	744	651
Zinc	ppm	ASTM D5185m	1160	<b>985</b>	922	909
Sulfur	ppm	ASTM D5185m	4996	<b>3191</b>	2671	2500
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.9</b>	17.2	17.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>8.2</b>	8.3	8.0
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.3</b>	13.3	13.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0048380 **Received** : 20 Mar 2024  
**Lab Number** : 06123348 **Tested** : 21 Mar 2024  
**Unique Number** : 10937499 **Diagnosed** : 22 Mar 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: TBN )

**HALL DRILLING LLC**  
 PO BOX 249  
 ELLENBORO, WV  
 US 26346

Contact: CHRIS PETROVICH  
 chrispetrovich@halldrilling.com  
 T: (304)869-3404  
 F: (304)869-3408

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)