



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area SOLD LOCATIONS - LESCAM - CAMBRIDGE

Machine Id
1073

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		LEC0048272	LEC0046478	LEC0044843
Sample Date		Client Info		06 Mar 2024	16 Jan 2024	12 Dec 2023
Machine Age	hrs	Client Info		12744	12302	11720
Oil Age	hrs	Client Info		400	400	400
Filter Age	hrs	Client Info		400	400	400
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	31	18	8
Chromium	ppm	ASTM D5185m	>20	5	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	5	4	4
Lead	ppm	ASTM D5185m	>40	2	6	3
Copper	ppm	ASTM D5185m	>330	1	1	0
Tin	ppm	ASTM D5185m	>15	1	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

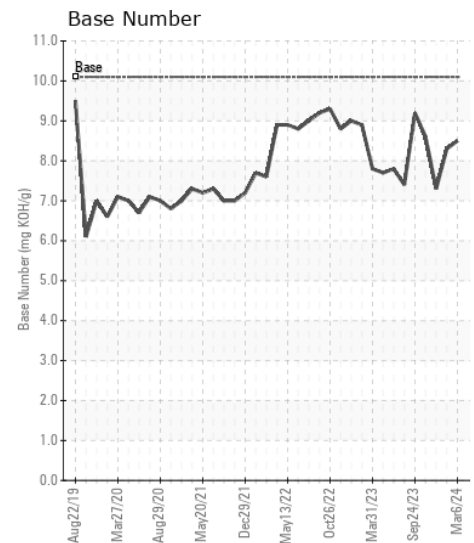
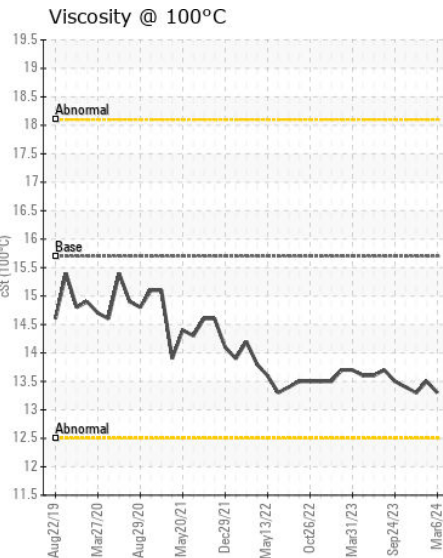
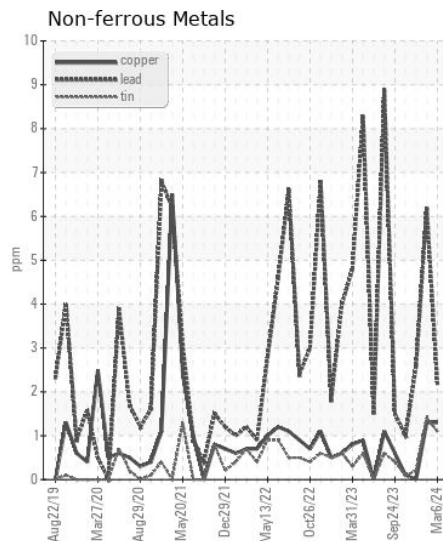
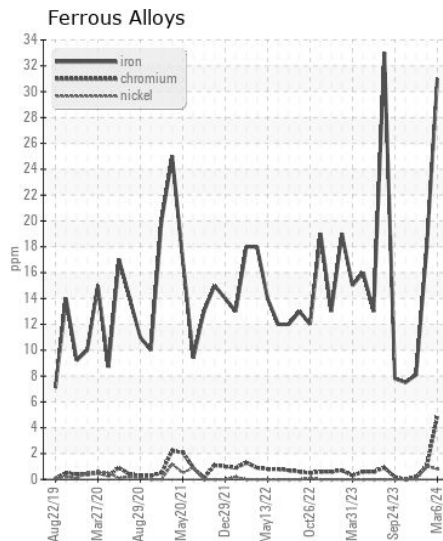
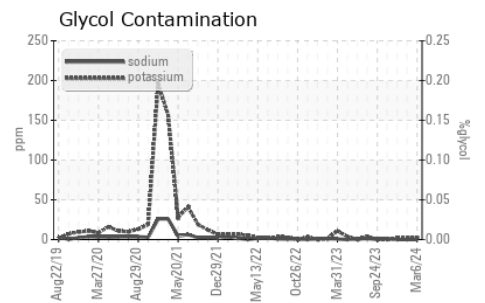
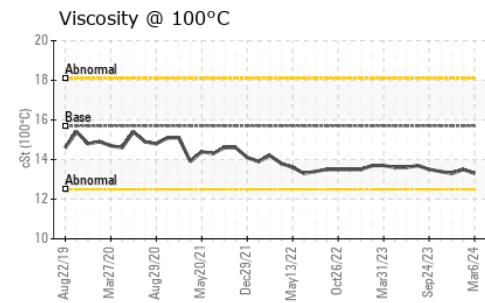
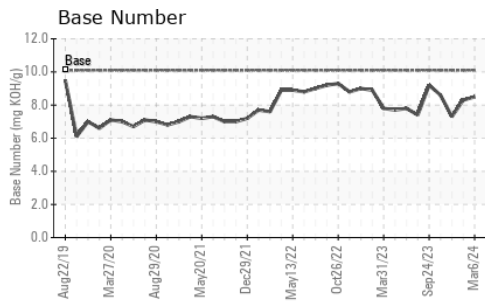
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	10	6	6
Potassium	ppm	ASTM D5185m	>20	2	2	2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.7	0.8	0.7
Nitration	Abs/cm	*ASTM D7624	>20	8.9	9.6	9.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.2	25.0	24.9
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

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		0	0	0
Boron	ppm	ASTM D5185m	316	293	261	243
Barium	ppm	ASTM D5185m	0.0	<1	1	0
Molybdenum	ppm	ASTM D5185m	1.2	135	141	127
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m	24	700	706	665
Calcium	ppm	ASTM D5185m	2292	1530	1520	1479
Phosphorus	ppm	ASTM D5185m	1064	789	738	727
Zinc	ppm	ASTM D5185m	1160	878	927	845
Sulfur	ppm	ASTM D5185m	4996	2603	2629	2393
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.7	19.0	19.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.5	8.3	7.3
Visc @ 100°C	cSt	ASTM D445	15.7	13.3	13.5	13.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0048272 **Received** : 20 Mar 2024
Lab Number : 06123328 **Tested** : 27 Mar 2024
Unique Number : 10937479 **Diagnosed** : 27 Mar 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, TBN)

HALL DRILLING LLC
 PO BOX 249
 ELLENBORO, WV
 US 26346

Contact: CHRIS PETROVICH
 chrispetrovich@halldrilling.com

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: (304)869-3404
 F: (304)869-3408