



# OIL ANALYSIS REPORT

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

Area

**Rockaway**

Machine Id

**KENWORTH 1237**

Component

**Diesel Engine**

Fluid

**GIBRALTAR 15W/40 SUPER S-3 LX (11)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0858424</b>	WC0840413	WC0774752
Sample Date		Client Info		<b>30 May 2024</b>	15 Jan 2024	03 Nov 2023
Machine Age	hrs	Client Info		<b>650</b>	650	450
Oil Age	hrs	Client Info		<b>650</b>	450	450
Filter Age	hrs	Client Info		<b>650</b>	450	450
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>49</b>	15	26
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	<1	1
Nickel	ppm	ASTM D5185m	>4	<b>1</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>2</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>10</b>	3	4
Lead	ppm	ASTM D5185m	>40	<b>2</b>	2	4
Copper	ppm	ASTM D5185m	>330	<b>7</b>	<1	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

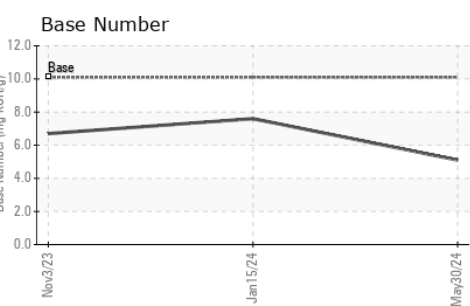
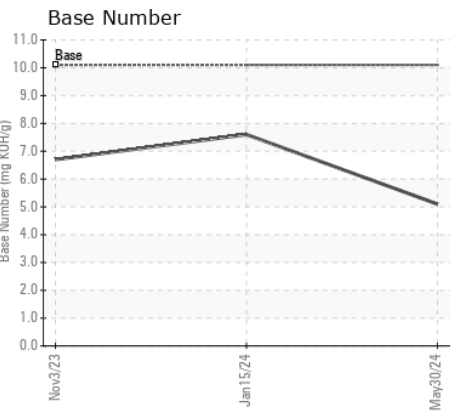
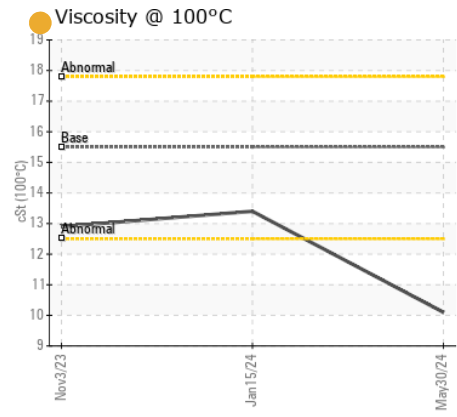
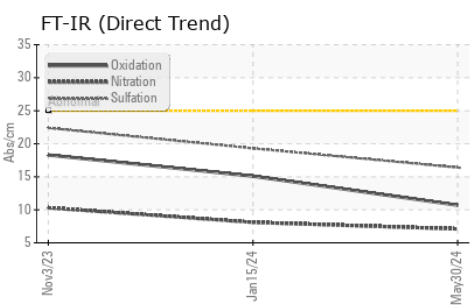
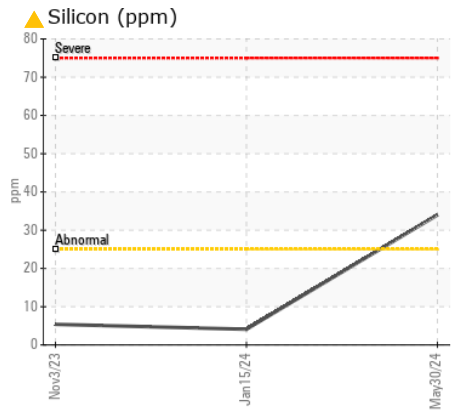
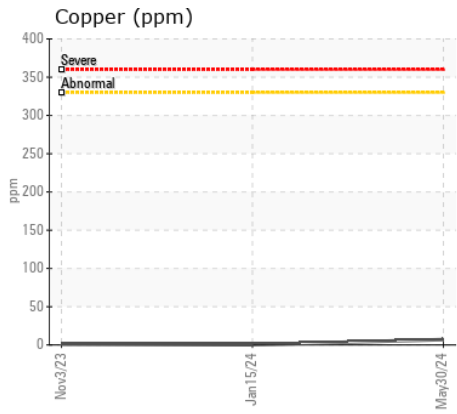
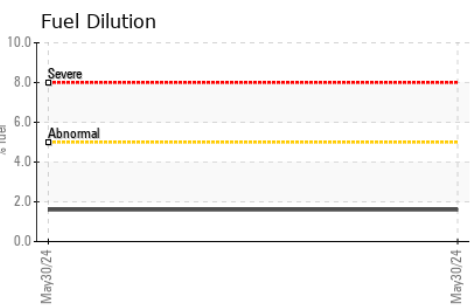
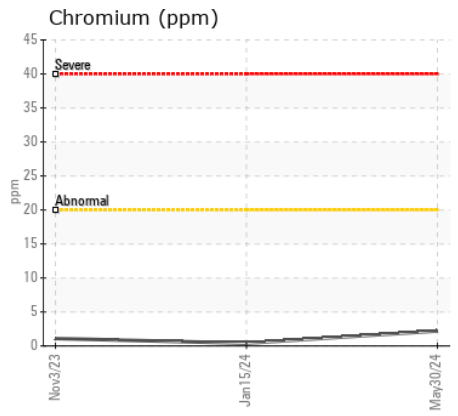
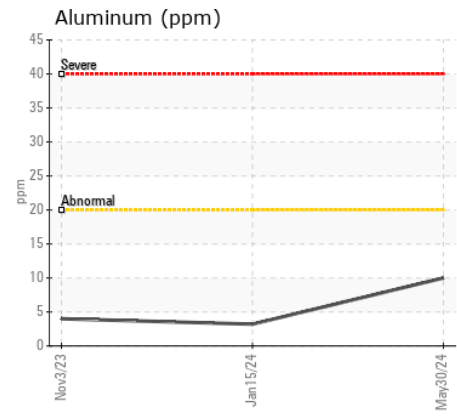
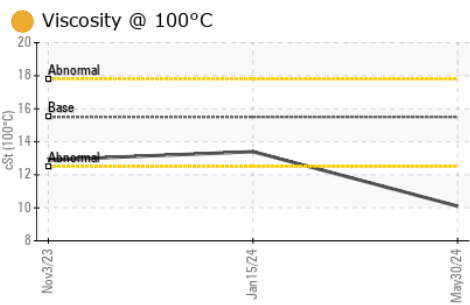
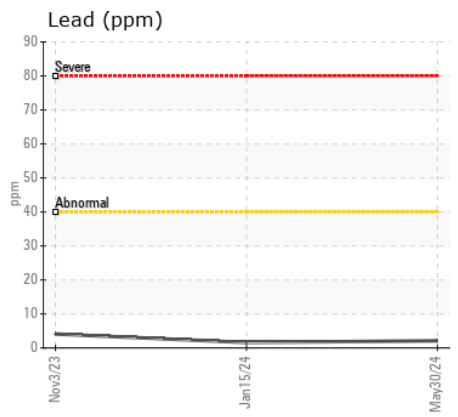
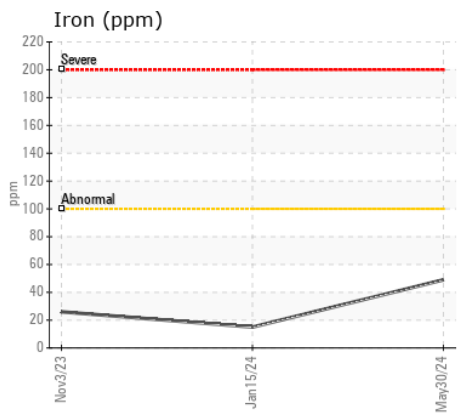
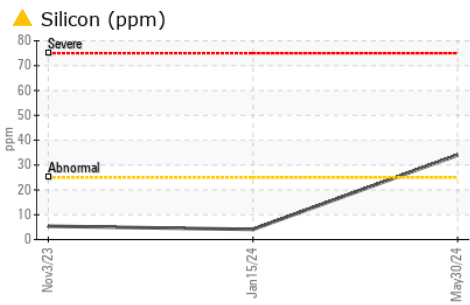
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	<b>▲ 34</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>17</b>	6	16
Fuel	%	ASTM D3524	>5	<b>1.6</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>0.2</b>	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.1</b>	8.1	10.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.4</b>	19.3	22.4
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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<b>17</b>	2	0
Boron	ppm	ASTM D5185m		<b>5</b>	13	7
Barium	ppm	ASTM D5185m		<b>3</b>	0	<1
Molybdenum	ppm	ASTM D5185m	66	<b>39</b>	62	69
Manganese	ppm	ASTM D5185m		<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1000	<b>493</b>	791	806
Calcium	ppm	ASTM D5185m	1050	<b>800</b>	1162	1341
Phosphorus	ppm	ASTM D5185m	1150	<b>705</b>	1032	1014
Zinc	ppm	ASTM D5185m	1270	<b>930</b>	1232	1255
Sulfur	ppm	ASTM D5185m		<b>4211</b>	3141	3007
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>10.7</b>	15.1	18.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>5.1</b>	7.6	6.7
Visc @ 100°C	cSt	ASTM D445	15.5	<b>● 10.1</b>	13.4	12.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0858424 **Received** : 28 Jun 2024  
**Lab Number** : 06223144 **Tested** : 02 Jul 2024  
**Unique Number** : 11101341 **Diagnosed** : 02 Jul 2024 - Don Baldridge  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel, TBN )

**INTERSTATE WASTE-ROCKAWAY**  
 311 WEST MAIN STREET, STE 8  
 ROCKAWAY, NJ  
 US 07866  
 Contact: Service Manager

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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F: