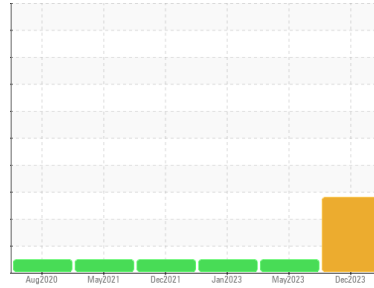




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area  
**3000 series [1767628]**  
 Machine Id  
**Freightliner 3224**

Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (26 LTR)**

## DIAGNOSIS

### Recommendation

The oil 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

Light fuel dilution occurring.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0886691</b>	WC0817379	WC0771253
Sample Date	Client Info		<b>16 Dec 2023</b>	20 May 2023	07 Jan 2023
Machine Age	mls	Client Info	<b>202507</b>	191690	185794
Oil Age	mls	Client Info	<b>10817</b>	5896	8617
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>75	<b>27</b>	72	80
Chromium	ppm	ASTM D5185(m)	>5	<b>2</b>	2	2
Nickel	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>4</b>	<1	<1
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>15	<b>4</b>	10	7
Lead	ppm	ASTM D5185(m)	>25	<b>4</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>100	<b>135</b>	4	6
Tin	ppm	ASTM D5185(m)	>4	<b>0</b>	<1	<1
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	0	<b>▲ 87</b>	5	2
Barium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	60	<b>▲ 16</b>	67	64
Manganese	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	<b>▲ 117</b>	1064	1029
Calcium	ppm	ASTM D5185(m)	1070	<b>▲ 2062</b>	1237	1199
Phosphorus	ppm	ASTM D5185(m)	1150	<b>976</b>	1143	1119
Zinc	ppm	ASTM D5185(m)	1270	<b>1137</b>	1320	1286
Sulfur	ppm	ASTM D5185(m)	2060	<b>2911</b>	2367	2427
Lithium	ppm	ASTM D5185(m)		<b>2</b>	<1	<1

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	<b>4</b>	6	7
Sodium	ppm	ASTM D5185(m)		<b>26</b>	4	4
Potassium	ppm	ASTM D5185(m)	>20	<b>27</b>	8	<1
Fuel	%	ASTM D7593*	>3.0	<b>▲ 1.4</b>	<1.0	<1.0
Glycol	%	ASTM D7922*		<b>0.0</b>	0.0	NEG

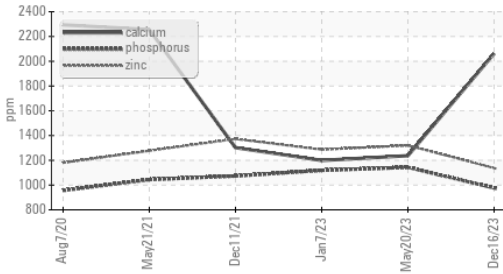
## INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>6	<b>0.6</b>	1.8	1
Nitration	Abs/cm	ASTM D7624*	>20	<b>11.3</b>	16.3	9.9
Sulfation	Abs./1mm	ASTM D7415*	>30	<b>24.1</b>	30.5	23.8



# OIL ANALYSIS REPORT

## ▲ Additives



## FLUID DEGRADATION

method	limit/base	current	history1	history2
Abs./1mm	ASTM D7414*	>25	30.4	19.2

## VISUAL

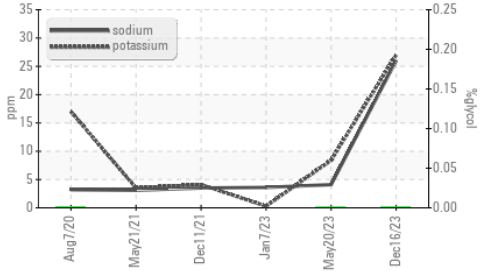
method	limit/base	current	history1	history2
scalar	Visual*	>0.2	NEG	NEG
scalar	Visual*	<b>NEG</b>	NEG	NEG

## FLUID PROPERTIES

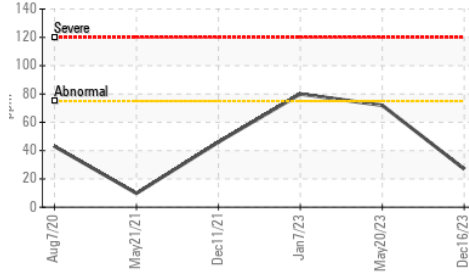
method	limit/base	current	history1	history2
cSt	ASTM D7279(m)	15.4	15.6	15.3

## GRAPHS

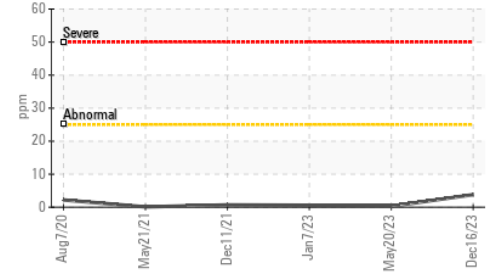
### Glycol Contamination



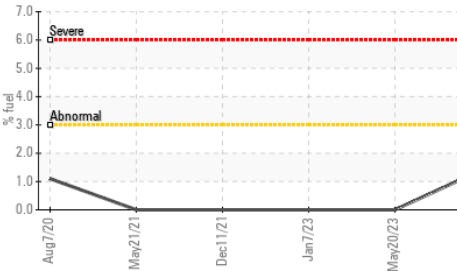
### Iron (ppm)



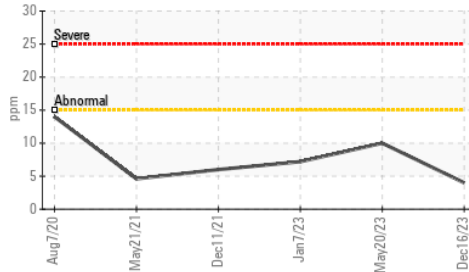
### Lead (ppm)



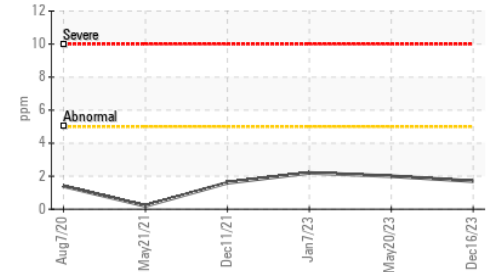
### ▲ Fuel Dilution



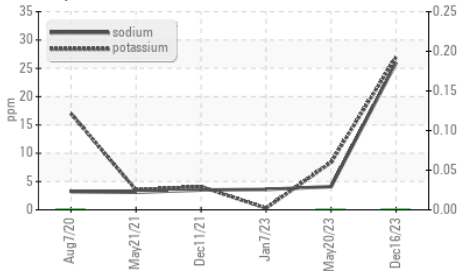
### Aluminum (ppm)



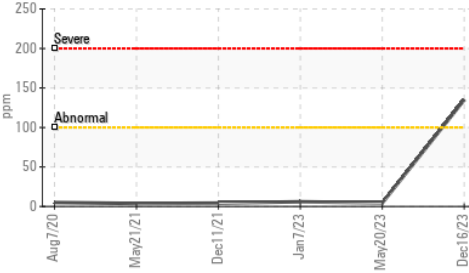
### Chromium (ppm)



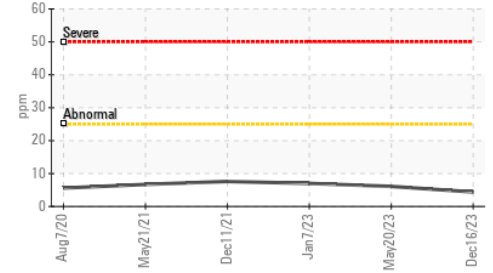
### Glycol Contamination



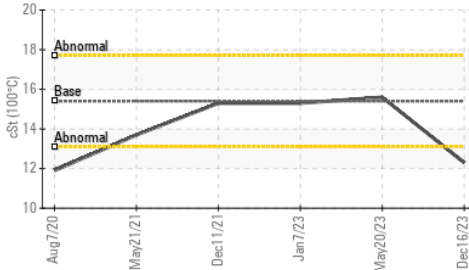
### Copper (ppm)



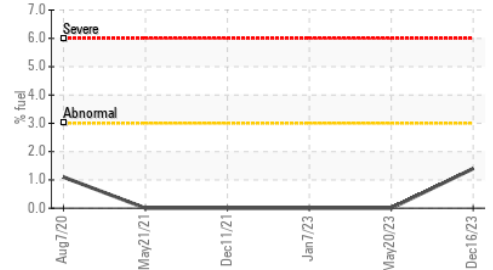
### Silicon (ppm)



### ▲ Viscosity @ 100°C



### ▲ Fuel Dilution



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOU LIN TRANSPORT (GARAGE)**  
**Sample No.** : WC0886691 **Received** : 22 Dec 2023 1335 SHAWSON DRIVE  
**Lab Number** : 02604901 **Diagnosed** : 27 Dec 2023 MISSISSAUGA, ON  
**Unique Number** : 5697986 **Diagnostician** : Wes Davis CA L4W 1C4  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, Glycol, PercentFuel ) Contact: Travis Spence

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

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