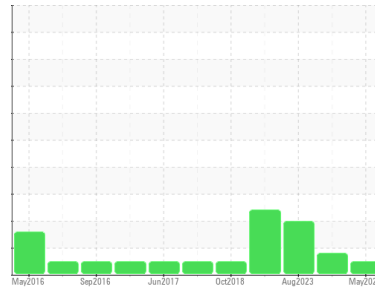




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area

[WO36033]

Machine Id

**WESTERN STAR TRK 1116**

Component

**Diesel Engine**

Fluid

**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Oil and filter 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

Fuel content negligible. There is no indication of any contamination in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. 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>WC0903649</b>	WC0822308	WC0822312	
Sample Date	Client Info	<b>28 May 2024</b>	05 Dec 2023	11 Aug 2023	
Machine Age	mls	Client Info	<b>501097</b>	476525	461536
Oil Age	mls	Client Info	<b>24572</b>	0	0
Oil Changed	Client Info	<b>Changed</b>	N/A	N/A	
Sample Status		<b>NORMAL</b>	ABNORMAL	SEVERE	

## 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 D5185m >100	<b>49</b>	33	39
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	1
Nickel	ppm	ASTM D5185m >4	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m >3	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m >20	<b>3</b>	4	4
Lead	ppm	ASTM D5185m >40	<b>0</b>	<1	1
Copper	ppm	ASTM D5185m >330	<b>2</b>	2	2
Tin	ppm	ASTM D5185m >15	<b>0</b>	0	<1
Antimony	ppm	ASTM D5185m	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	<b>0</b>	2	12
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	2
Molybdenum	ppm	ASTM D5185m 60	<b>59</b>	58	37
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 1010	<b>1001</b>	1001	494
Calcium	ppm	ASTM D5185m 1070	<b>1158</b>	1254	1501
Phosphorus	ppm	ASTM D5185m 1150	<b>1111</b>	1128	931
Zinc	ppm	ASTM D5185m 1270	<b>1335</b>	1269	1113
Sulfur	ppm	ASTM D5185m 2060	<b>3646</b>	3113	2947

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	<b>4</b>	7	7
Sodium	ppm	ASTM D5185m	<b>14</b>	23	37
Potassium	ppm	ASTM D5185m >20	<b>50</b>	52	42
Fuel	%	ASTM D3524 >5	<b>1.9</b>	▲ 5.4	▲ 9.6
Glycol	%	*ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

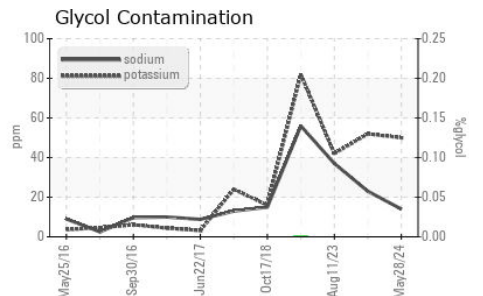
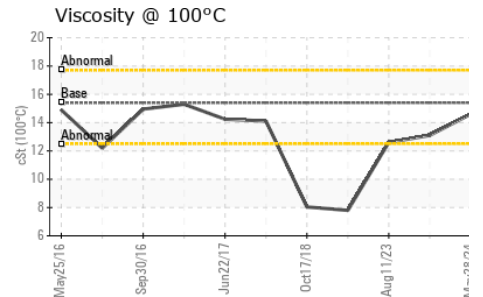
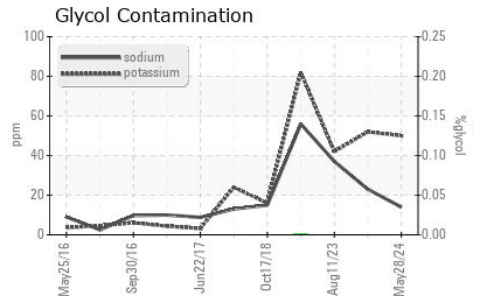
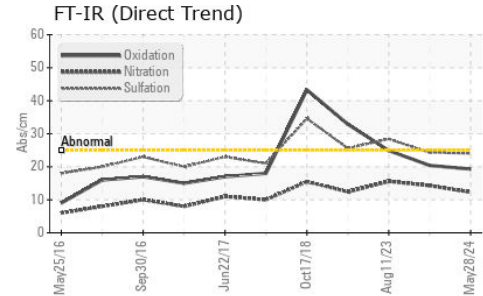
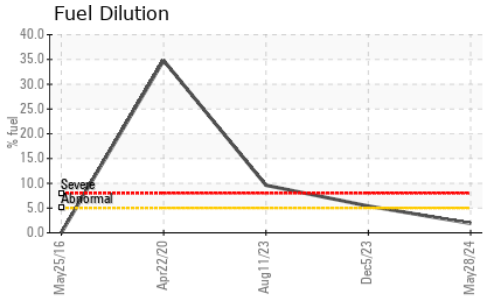
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >3	<b>1.8</b>	2	2.3
Nitration	Abs/cm	*ASTM D7624 >20	<b>12.3</b>	14.3	15.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>24.0</b>	24.3	28.4

## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>19.3</b>	20.4	24.9
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>9.3</b>	8.2	7.2



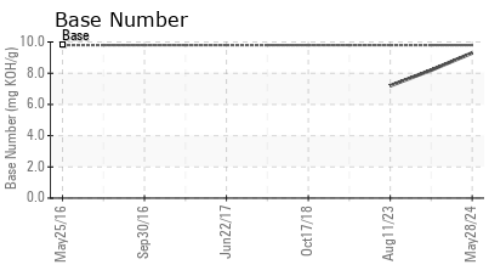
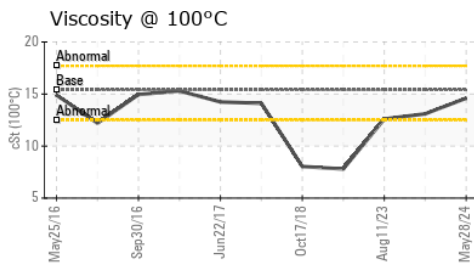
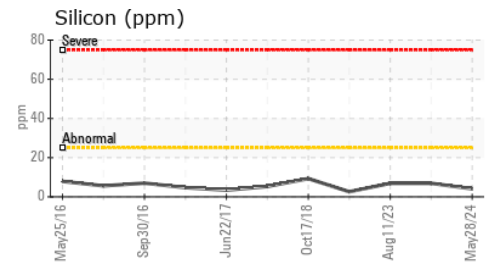
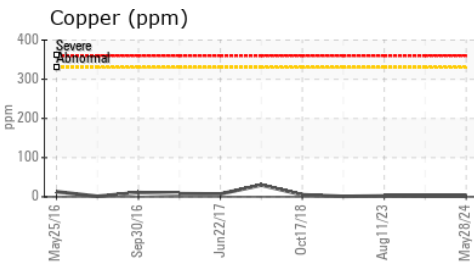
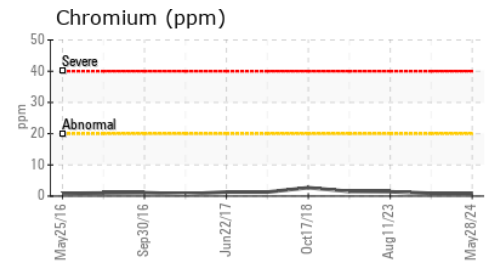
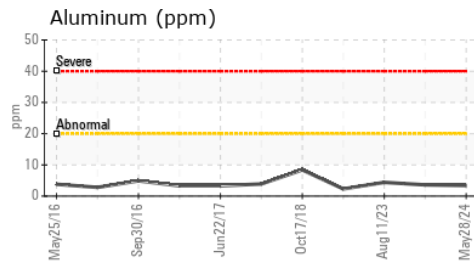
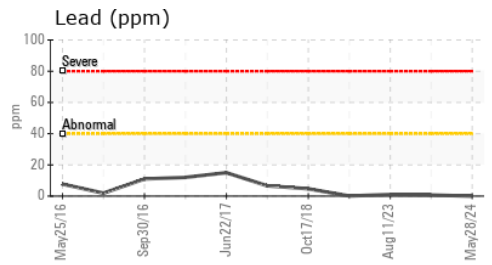
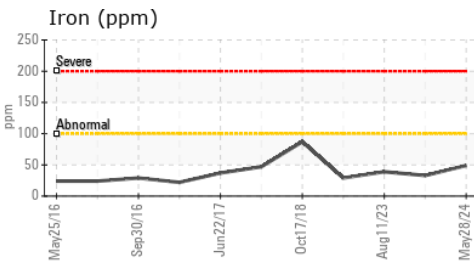
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	14.6	13.1	12.6

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0903649 **Received** : 19 Jun 2024  
**Lab Number** : 06214289 **Tested** : 21 Jun 2024  
**Unique Number** : 11087153 **Diagnosed** : 21 Jun 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: Glycol, PercentFuel, TBN )

**CAMPBELL OIL COMPANY**  
 PO BOX 637, 418 PEANUT ROAD  
 ELIZABETHTOWN, NC  
 US 28337  
 Contact: CHRIS CAMPBELL  
 chrisc@campbelloil.net

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)