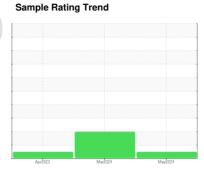


# **OIL ANALYSIS REPORT**

# (89817X) Walgreens - Tractor [Walgreens - Tractor] 136A68029

**Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (11 GAL)





### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

### **Fluid Condition**

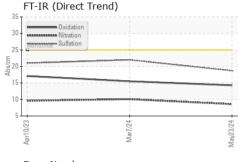
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

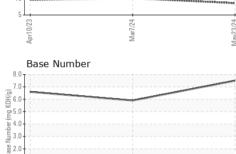
Oil Age Oil Changed Sample Status  CONTAMINATIO Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	mls mls mls  DN  ppm ppm ppm ppm ppm ppm ppm ppm ppm p	method Client Info Method WC Method WC Method WC Method WC Method MSTM D5185m ASTM D5185m	limit/base >80 >5 >2 >3 >30 >30 >150	Current PCA0123056 23 May 2024 183120 163510 Changed NORMAL	history1 PCA0110603 07 Mar 2024 163510 163510 Changed ABNORMAL history1 <1.0 NEG NEG history1 48 2 1 <1 0 6 <1 230 <1 0 0	history2 PCA0096565 10 Apr 2023 163510 163510 Changed NORMAL history2 <1.0 NEG NEG  history2 22 <1 0 6 0 0 1 0 0
Sample Date Machine Age Oil Age Oil Changed Sample Status  CONTAMINATIO Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm	Client Info Client Info Client Info Client Info Client Info Client Info  Mc Method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	23 May 2024 183120 163510 Changed NORMAL	07 Mar 2024 163510 163510 Changed ABNORMAL history1 <1.0 NEG NEG history1 48 2 1 <1 0 6 <1 ∴1 0 330 <1 0	10 Apr 2023 163510 163510 Changed NORMAL history2 <1.0 NEG NEG 0 0 0 1 0 0 0
Machine Age Oil Age Oil Age Oil Changed Sample Status  CONTAMINATIO Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm	Client Info Client Info Client Info Client Info  Method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	183120 163510 Changed NORMAL	163510 163510 Changed ABNORMAL history1 <1.0 NEG NEG  history1  48 2 1 <1 0 6 <1 △230 <1 0	163510 163510 Changed NORMAL history2 <1.0 NEG NEG 0 0 0 1 0 0
Oil Age Oil Changed Sample Status  CONTAMINATIO Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm	Client Info Client Info Client Info  method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	163510 Changed NORMAL  current  <1.0 NEG NEG  current  22 1 0 13 <1 3 1 21 <1 <1 <1	163510 Changed ABNORMAL  history1  <1.0 NEG NEG  history1  48 2 1 <1 0 6 <1  ▲230 <1 0	163510 Changed NORMAL history2 <1.0 NEG NEG 0 0 0 1 0 0
Oil Changed Sample Status  CONTAMINATIO Fuel Water Glycol  WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	Changed NORMAL current <1.0 NEG NEG Current 22 1 0 13 <1 3 1 21 <1 <1 <1	Changed ABNORMAL  history1  <1.0 NEG NEG  history1  48 2 1 <1 0 6 <1  230 <1 0	Changed NORMAL history2 <1.0 NEG NEG history2 22 <11 0 6 0 0 1 0 0
Sample Status  CONTAMINATIO Fuel Water Glycol  WEAR METALS Iron   Chromium Nickel   Titanium Silver Aluminum Lead   Copper Tin Vanadium Cadmium  ADDITIVES Boron   Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method WC Method WC Method WC Method WC Method ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	NORMAL  current  <1.0  NEG  NEG  current  22  1  0  13  <1  3  1  21  <1 <1	ABNORMAL  history1  <1.0  NEG  NEG  history1  48  2  1  <1  0  6  <1  △230  <1  0	NORMAL  history2  <1.0  NEG  NEG  history2  22  <1  0  6  0  0  1  0  0
CONTAMINATION Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method Method MSTM D5185m ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	current <1.0 NEG NEG current 22 1 0 13 <1 3 1 21 <1 <1	history1 <1.0 NEG NEG history1  48 2 1 <1 0 6 <1 △230 <1 0	history2 <1.0 NEG NEG history2 22 <1 0 6 0 0 0 0 1
Fuel Water Glycol WEAR METALS Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method Method MSTM D5185m ASTM D5185m	>5 >0.2 limit/base >80 >5 >2 >3 >30 >30 >150	<1.0 NEG NEG Current  22 1 0 13 <1 3 1 21 <1 <1	<1.0 NEG NEG history1  48 2 1 <1 0 6 <1 230 <1 0	<1.0 NEG NEG NEG history2 22 <1 0 6 0 0 1 0 0
Water Glycol  WEAR METALS  Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >80 >5 >2 >3 >30 >30 >150	NEG NEG 22 1 0 13 <1 3 1 21 <1	NEG NEG history1  48 2 1 <1 0 6 <1 230 <1 0	NEG NEG history2 22 <1 0 6 0 0 0
Glycol  WEAR METALS  Iron   Chromium   Nickel   Titanium   Silver   Aluminum   Lead   Copper   Tin   Vanadium   Cadmium   ADDITIVES  Boron   Barium   Molybdenum   Manganese   Magnesium   Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method  method  ASTM D5185m	limit/base >80 >5 >2 >3 >30 >30 >150	NEG  current  22  1  0  13  <1  3  1  21  <1  <1	NEG  history1  48  2  1  <1  0  6  <1  △230  <1  0	NEG history2 22 <1 0 6 0 0 1 0 0 0
WEAR METALS  Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	>80 >5 >2 >3 >30 >30 >150	current  22  1  0  13  <1  3  1  21  <1  <1	history1  48 2 1 <1 0 6 <1  230 <1 0	history2  22  <1 0 6 0 0 1 0 0 0 0 0 0 0
Iron   Chromium   Chromium   Nickel   Titanium   Silver   Aluminum   Lead   Copper   Tin   Vanadium   Cadmium   ADDITIVES   Boron   Barium   Molybdenum   Manganese   Magnesium   Calcium   Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>80 >5 >2 >3 >30 >30 >150	22 1 0 13 <1 3 1 21 <1	48 2 1 <1 0 6 <1 230 <1 0	22 <1 0 6 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>5 >2 >3 >30 >30 >150	1 0 13 <1 3 1 21 <1	2 1 <1 0 6 <1 • 230 <1 0	<1 0 6 0 0 0 1 0
Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>2 >3 >30 >30 >150	0 13 <1 3 1 21 <1	1 <1 0 6 <1 230 <1 0	0 6 0 0 0 1 0
Titanium Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3 >30 >30 >30 >150	13 <1 3 1 21 <1 <1 <1	<1 0 6 <1 • 230 <1 0	6 0 0 0 1 0
Silver Aluminum Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 >30 >150	<1 3 1 21 <1	0 6 <1 230 <1 0	0 0 0 1 0
Aluminum Lead Copper Tin Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 >30 >150	3 1 21 <1 <1	6 <1 ^ 230 <1 0	0 0 1 0
Lead Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 >150	1 21 <1 <1	<1 ^ 230 <1	0 1 0 0
Copper Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>150	21 <1 <1	▲ 230 <1 0	1 0 0
Tin Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		<1 <1	<1 0	0
Vanadium Cadmium  ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	>5	<1	0	0
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium	ppm	ASTM D5185m				
ADDITIVES  Boron   Barium   Molybdenum   Manganese   Magnesium   Calcium   Manganesium   Calcium   Manganesium   M				<1	0	0
Boron   Barium   Molybdenum   Manganese   Magnesium   Calcium	nnm	method			U	0
Barium  Molybdenum  Manganese  Magnesium  Calcium	nnm	memou	limit/base	current	history1	history2
Molybdenum   Manganese   Magnesium   Calcium	ppm	ASTM D5185m	2	20	4	5
Manganese   Magnesium   Calcium	ppm	ASTM D5185m	0	0	0	0
Magnesium   Calcium	ppm	ASTM D5185m	50	45	33	47
Calcium	ppm	ASTM D5185m	0	<1	2	<1
	ppm	ASTM D5185m	950	754	123	694
Phosphorus	ppm	ASTM D5185m	1050	1386	2015	1216
	ppm	ASTM D5185m	995	1059	820	918
Zinc	ppm	ASTM D5185m	1180	1237	1046	1111
Sulfur	ppm	ASTM D5185m	2600	3806	3269	3015
CONTAMINANT	S	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	5	8	5
Sodium	ppm	ASTM D5185m		13	<u></u> 116	15
Potassium	ppm	ASTM D5185m	>20	4	19	20
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.5	0.7	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.6	10.1	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	22.0	21.0
FLUID DEGRAD	ATION	method	limit/base	current	history1	14.4
Oxidation		mounou			history1	history2
Base Number (BN)	Abs/.1mm	*ASTM D7414	>25	14.3	15.5	17.1

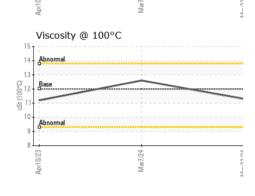


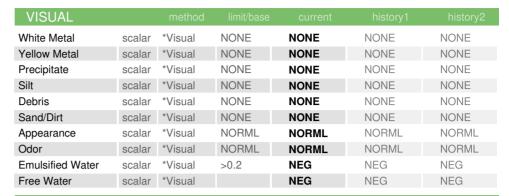
0.0

## **OIL ANALYSIS REPORT**



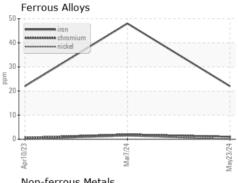


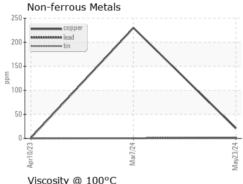


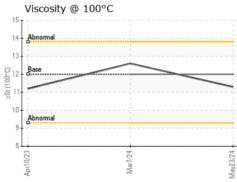


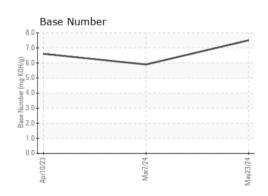
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	12.00	11.3	12.6	11.2	

### **GRAPHS**













Laboratory Sample No. Lab Number : 06195068 Unique Number : 11057191

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0123056

Received : 30 May 2024 **Tested** : 31 May 2024 Diagnosed

: 31 May 2024 - Wes Davis

Transervice - Shop 1376 - Berkeley-Linden 3425 Tremley Point Road Linden, NJ

> US 07036 Contact: Shop 1376 Oil Analysis shop1376@transervice.com

Test Package : FLEET Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

 $^st$  - 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:

F: