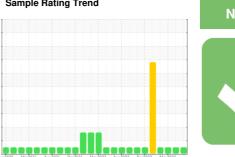


# **OIL ANALYSIS REPORT**

### Sample Rating Trend









10037 Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (9 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

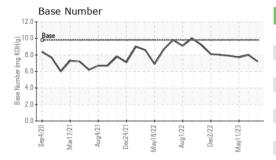
## **Fluid Condition**

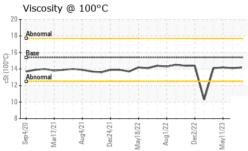
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		1)2020 Mai2	021 Aug2021 Dec2021	May2022 Aug2022 Dec2022	May2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0095297	PCA0098115	PCA0098085
Sample Date		Client Info		27 Jul 2023	08 Jun 2023	11 May 2023
Machine Age	hrs	Client Info		10429	10047	9753
Oil Age	hrs	Client Info		382	294	603
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	17	8	17
Chromium	ppm	ASTM D5185m	>20	1	<1	2
Nickel	ppm	ASTM D5185m	>5	4	4	4
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	<1	3
Lead	ppm	ASTM D5185m	>40	1	<1	3
Copper	ppm	ASTM D5185m	>330	4	3	5
Tin	ppm	ASTM D5185m	>15	2	1	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	1	17
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m		0	1 2	17 0
	• • •					
Barium	ppm	ASTM D5185m	0	1	2	0
Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0	1 63	2 69	0 63
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	1 63 <1	2 69 <1	0 63 1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	1 63 <1 946	2 69 <1 958	0 63 1 1010
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	1 63 <1 946 1089	2 69 <1 958 1114	0 63 1 1010 1162
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	1 63 <1 946 1089 934	2 69 <1 958 1114 1040	0 63 1 1010 1162 960
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	1 63 <1 946 1089 934 1211	2 69 <1 958 1114 1040 1279	0 63 1 1010 1162 960 1297
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	0 60 0 1010 1070 1150 1270 2060	1 63 <1 946 1089 934 1211 2537	2 69 <1 958 1114 1040 1279 3473	0 63 1 1010 1162 960 1297 3364
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 60 0 1010 1070 1150 1270 2060	1 63 <1 946 1089 934 1211 2537	2 69 <1 958 1114 1040 1279 3473 history1	0 63 1 1010 1162 960 1297 3364 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	1 63 <1 946 1089 934 1211 2537 current	2 69 <1 958 1114 1040 1279 3473 history1	0 63 1 1010 1162 960 1297 3364 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	1 63 <1 946 1089 934 1211 2537 current 5	2 69 <1 958 1114 1040 1279 3473 history1 4	0 63 1 1010 1162 960 1297 3364 history2 7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	1 63 <1 946 1089 934 1211 2537 current 5 13	2 69 <1 958 1114 1040 1279 3473 history1 4 9	0 63 1 1010 1162 960 1297 3364 history2 7 10
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	1 63 <1 946 1089 934 1211 2537 current 5 13 3 current	2 69 <1 958 1114 1040 1279 3473 history1 4 9 2	0 63 1 1010 1162 960 1297 3364 history2 7 10 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	1 63 <1 946 1089 934 1211 2537 current 5 13 3	2 69 <1 958 1114 1040 1279 3473 history1 4 9 2 history1 0.5	0 63 1 1010 1162 960 1297 3364 history2 7 10 4 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D76185m ASTM D7844 *ASTM D7624 *ASTM D76185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20	1 63 <1 946 1089 934 1211 2537 current 5 13 3 current 1.1 8.9	2 69 <1 958 1114 1040 1279 3473 history1 4 9 2 history1 0.5 6.8	0 63 1 1010 1162 960 1297 3364 history2 7 10 4 history2 0.7 8.2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D76185m ASTM D7844 *ASTM D7624 *ASTM D76185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	1 63 <1 946 1089 934 1211 2537 current 5 13 3 current 1.1 8.9 21.0	2 69 <1 958 1114 1040 1279 3473 history1 4 9 2 history1 0.5 6.8 20.1	0 63 1 1010 1162 960 1297 3364 history2 7 10 4 history2 0.7 8.2 20.2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415  Method	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	1 63 <1 946 1089 934 1211 2537 current 5 13 3 current 1.1 8.9 21.0 current	2 69 <1 958 1114 1040 1279 3473 history1 4 9 2 history1 0.5 6.8 20.1	0 63 1 1010 1162 960 1297 3364 history2 7 10 4 history2 0.7 8.2 20.2



# **OIL ANALYSIS REPORT**

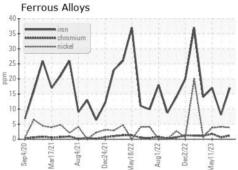


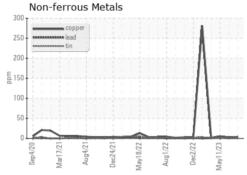


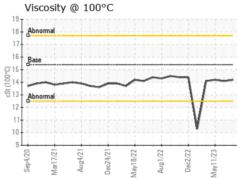
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

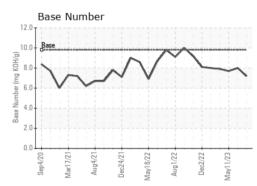
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.1	14.2

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0095297 : 05921287 : 10593201

Received Diagnosed

: 10 Aug 2023 : 11 Aug 2023 Diagnostician : Sean Felton

LRS - BETHEL HEIGHTS (NWA AR)

848 HWY 264 E BETHEL HEIGHTS, AR US 72764

Contact: ROBERT HEATH rheath@Irsrecycles.com T: (479)305-8958

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)

Report Id: ORIBET [WUSCAR] 05921287 (Generated: 08/11/2023 14:47:39) Rev: 1

Submitted By: ALSO ORIVANAR ORIHAR ORITOP - JAMIE HAYWORTH

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