

## **OIL ANALYSIS REPORT**





Machine Id

#### Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- LTR)

### DIAGNOSIS

#### Recommendation

Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil.

#### Fluid Condition

The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0093898	GFL0054198	GFL0041450
Sample Date		Client Info		29 Sep 2023	13 Jun 2022	10 Mar 2022
Machine Age	kms	Client Info		152162	0	0
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	N/A
Sample Status				ATTENTION	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	30	15	22
Chromium	ppm	ASTM D5185(m)	>20	2	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>20	3	2	2
Lead	ppm	ASTM D5185(m)	>40	2	<1	<1
Copper	ppm	ASTM D5185(m)	>330	2	1	<1
Tin	ppm	ASTM D5185(m)	>15	0	<1	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
			Discribe discrimination			In the term of the
ADDITIVES		method	limit/base	current	history1	nistory2
Boron	ppm	ASTM D5185(m)	limit/base	9	history1 3	3
ADDITIVES Boron Barium	ppm ppm	ASTM D5185(m) ASTM D5185(m)	2 0	9 <1	history1 3 0	3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50	9 <1 71	history1 3 0 57	3 0 57
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0	9 <1 71 <1	history1 3 0 57 <1	nistory2 3 0 57 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950	9 <1 71 <1 904	history1 3 0 57 <1 968	Nistory2           3           0           57           <1           965
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050	9 <1 71 <1 904 1120	history1 3 0 57 <1 968 1034	Nistory2           3           0           57           <1           965           1013
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995	9 <1 71 <1 904 1120 1020	history1 3 0 57 <1 968 1034 1036	Nistory2       3       0       57       <1       965       1013       1053
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995 1180	9           <1           71           <1           904           1120           1020           1167	history1 3 0 57 <1 968 1034 1036 1196	Nistory2       3       0       57       <1       965       1013       1053       1196
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	11mit/base 2 0 50 0 950 1050 995 1180 2600	9           <1           71           <1           904           1120           1020           1167           2535	history1 3 0 57 <1 968 1034 1036 1196 2569	Nistory2       3       0       57       <1       965       1013       1053       1196       2510
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	Method           ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600	9 <1 71 <1 904 1120 1020 1167 2535 <1	history1 3 0 57 <1 968 1034 1036 1196 2569 <1	Nistory2       3       0       57       <1       965       1013       1053       1196       2510       <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	IIMIL/Dase         2         0         50         0         950         1050         995         1180         2600         limit/base	9         <1         71         <1         904         1120         1020         1167         2535         <1         current	history1 3 0 57 <1 968 1034 1036 1196 2569 <1 history1	Nistory2       3       0       57       <1       965       1013       1053       1196       2510       <1       history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	IIMII/Dase         2         0         50         0         950         1050         995         1180         2600         limit/base         >25	9         <1         71         <1         904         1120         1020         1167         2535         <1         current	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1	Alight of the story of the
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	IIMIt/base         2         0         50         0         950         1050         995         1180         2600         limit/base         >25	9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2	Alignment         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	IIMIL/Dase         2         0         50         0         950         1050         995         1180         2600         Iimit/base         >25         >20	9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2         <1	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	ASTM D5185(m) ASTM D5185(m)	IIMIt/base         2         0         50         0         950         1050         995         1180         2600         limit/base         >25         >20	9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2         <1         NEG	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	IIMIt/base         2         0         50         0         950         1050         995         1180         2600         limit/base         >25         >20         limit/base         limit/base	current         9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0         current	history1 3 0 57 <1 968 1034 1036 1196 2569 <1 history1 4 2 <1 NEG history1	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D7922*           Common D7844*	IIMIL/Dase         2         0         50         0         950         1050         995         1180         2600         Iimit/base         >25         >20         limit/base         >20         s3	current         9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0         current         1.4	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2         <1         NEG         history1         1	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG         history2         1.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D7922*           method           ASTM D7844*           ASTM D7624*	IIMIL/Dase         2         0         50         0         950         1050         995         1180         2600         Iimit/base         >25         >20         limit/base         >3         >20	9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0         current         1.4         8.2	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2         <1         NEG         history1         1         7.7	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG         history2         1.1         8.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D7822*           method           ASTM D7844*           ASTM D7624*           ASTM D7415*	IIMIL/Dase         2         0         50         0         950         1050         995         1180         2600         Imit/base         >25         >20         limit/base         >3         >20         >3         >20         >3         >20         >30	9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0         current         1.4         8.2         22.1	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2         <1         NEG         history1         1         7.7         22.9	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG         history2         1.1         8.6         22.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D7022*           method           ASTM D7844*           ASTM D7624*           ASTM D7415*	Imit/base         2         0         50         0         950         1050         995         1180         2600         Imit/base         >25         >20         limit/base         >3         >20         >30         limit/base	current         9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0         current         1.4         8.2         22.1	history1 3 0 57 <1 968 1034 1036 1036 1036 1196 2569 <1 history1 4 2 <1 NEG history1 1 7.7 22.9 history1	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG         history2         1.1         8.6         22.6         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D7842*           ASTM D7844*           ASTM D7844*           ASTM D7415*           method           ASTM D7414*	IIMIt/base         2         0         50         0         950         1050         995         1180         2600         Iimit/base         >25         >20         limit/base         >3         >20         limit/base         >3         >20         Jimit/base         >3         >20         Jimit/base         >30         Jimit/base         >25	current         9         <1         71         <1         904         1120         1020         1167         2535         <1         current         15         257         33         0.0         current         1.4         8.2         22.1         current         15.5	history1         3         0         57         <1         968         1034         1036         1196         2569         <1         history1         4         2         <1         NEG         history1         1         7.7         22.9         history1         16.3	Nistory2         3         0         57         <1         965         1013         1053         1196         2510         <1         history2         4         3         2         NEG         history2         1.1         8.6         22.6         history2         17.0



# **OIL ANALYSIS REPORT**



8409 -15th Street NW Edmonton, AB CA T6P 0B8 Contact: Tim Greig tgreig@gflenv.com T: F:

ep29/23

0.25

0.20

0.15

0.10

0.05

0.00

history2

history2

NEG

NEG

11.4

Aar10/77

Mar10/22

Aar10/75



Diagnostician : Kevin Marson Test Package : MOB 1 (Additional Tests: Glycol) 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.

: 5656599

Unique Number