

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

#### 624561 Component Diesel Engine

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

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

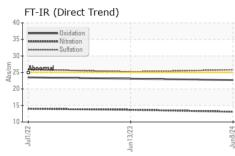
There is no indication of any contamination in the oil.

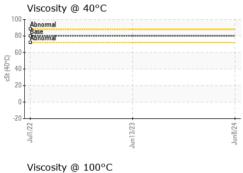
#### Fluid Condition

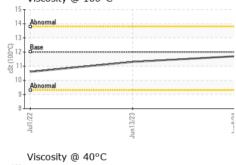
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0121072	PCA0097741	PCA0075990
Sample Date		Client Info		08 Jun 2024	13 Jun 2023	01 Jul 2022
Machine Age	mls	Client Info		29856	0	34134
Oil Age	mls	Client Info		10000	0	34134
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	54	64	80
Chromium	ppm	ASTM D5185m	>20	2	3	5
Nickel	ppm	ASTM D5185m	>4	<1	<1	2
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	13	21	43
Lead	ppm	ASTM D5185m	>40	<1	0	5
Copper	ppm	ASTM D5185m	>330	36	62	<b>4</b> 60
Tin	ppm	ASTM D5185m	>15	2	3	12
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	<1 current	0 history1	0 history2
	ppm ppm		limit/base		-	
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 15	history1 5	history2 24
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 15 <1	history1 5 12	history2 24 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 15 <1 65	history1 5 12 67	history2 24 0 7
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 15 <1 65 1	history1 5 12 67 2	history2 24 0 7 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 15 <1 65 1 867	history1 5 12 67 2 974	history2 24 0 7 4 711
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current           15           <1           65           1           867           1472	history1 5 12 67 2 974 1262	history2 24 0 7 4 711 1460
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995	current           15           <1           65           1           867           1472           1019	history1 5 12 67 2 974 1262 996	history2 24 0 7 4 711 1460 715
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current           15           <1           65           1           867           1472           1019           1293	history1 5 12 67 2 974 1262 996 1281	history2 24 0 7 4 711 1460 715 825
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 15 <1 65 1 867 1472 1019 1293 2262	history1 5 12 67 2 974 1262 996 1281 2831	history2 24 0 7 4 711 1460 715 825 3220
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current         15         <1         65         1         867         1472         1019         1293         2262         current	history1 5 12 67 2 974 1262 996 1281 2831 2831 history1	history2 24 0 7 4 711 1460 715 825 3220 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	current         15         <1         65         1         867         1472         1019         1293         2262         current         7	history1           5           12           67           2           974           1262           996           1281           2831           history1           5	history2           24           0           7           4           711           1460           715           825           3220           history2           8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	current         15         <1         65         1         867         1472         1019         1293         2262         current         7         <1	history1           5           12           67           2           974           1262           996           1281           2831           history1           5           4	history2         24         0         7         4         711         1460         715         825         3220         history2         8         7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3	current         15         <1         65         1         867         1472         1019         1293         2262         current         7         <1         32         current         1.5	history1         5         12         67         2         974         1262         996         1281         2831         history1         5         4         61         history1         1.4	history2         24         0         7         4         711         1460         715         825         3220         history2         8         7         126         history2         1.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3	current         15         <1         65         1         867         1472         1019         1293         2262         current         7         <1         32         current	history1         5         12         67         2         974         1262         996         1281         2831         history1         5         4         61         history1	history2         24         0         7         4         711         1460         715         825         3220         history2         8         7         126         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3	current         15         <1         65         1         867         1472         1019         1293         2262         current         7         <1         32         current         1.5	history1         5         12         67         2         974         1262         996         1281         2831         history1         5         4         61         history1         1.4	history2         24         0         7         4         711         1460         715         825         3220         history2         8         7         126         history2         1.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	current         15         <1         65         1         867         1472         1019         1293         2262         current         7         <1         32         current         1.5         13.1	history1         5         12         67         2         974         1262         996         1281         2831         history1         5         4         61         history1         1.4         13.7	history2         24         0         7         4         711         1460         715         825         3220         history2         8         7         126         history2         1.1         14.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	current         15         <1         65         1         867         1472         1019         1293         2262         current         7         <1         32         current         1.5         13.1         25.8	history1         5         12         67         2         974         1262         996         1281         2831         history1         5         4         61         history1         1.4         13.7         25.2	history2         24         0         7         4         711         1460         715         825         3220         history2         8         7         126         history2         1.1         14.0         25.9











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)	VISUAL		method				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
/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Jun 13/23 Jun 8/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
7	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual	20.2	NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	curren	t history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.7	11.3	10.6
	GRAPHS						
	Iron (ppm)			1	Lead (ppr	n)	
24	200 Severe				80 Severe		
Jun 13/23 Jun 8/24	_ 150-				60-		
7	Abnormal			mqq	40 Abnormal		
	50-			-	20-		
	0				0		
	Jul1/22	Jun 13/23		Jun8/24	Jul1/22	Jun 13,23	Jun8/24
		Jun		ηη		P	Ju L
	Aluminum (ppm)			,-	Chromiun	n (ppm)	
1	40 - Severe				40 - Severe		
	and a second sec			ud d	30-		
Jun 13/23	B <sub>20</sub> Abnormal			đ	20 - Abnormal		
un r	10-				10-		
	0				0		
1	Jul1/22	Jun13/23		Jun8/24	Jul1/22	Jun 13/23	Jun8/24
	Copper (ppm)	ηr		7	Silicon (p		~
	500 T				80 Severe		
	400 Severe				60		
	B 300 200				40		
	B 200			8	Abnormal	1	1
53	100				20		
Jun 13/23	04			++	0		4
۲ 	Jul1/22	Jun13/23		Jun8/24	Jul1/22	Jun 13/23	Jun8/24
	Viscosity @ 100°C			-	Base Num		-
	<sup>16</sup>			(B)	<sup>3.0</sup> T		
	Abnormal	nnndaaaaa			5.0		
	Base			u a	H.O.		
				Mumb			
	Abnormal	1		ase			
	52	23			).0		24 +
	/Ilut	un13/		Jun8/	/IInL	.in 13/	Jun8/24
Laboratory	Base Abnormal 2011 20	EZELIUN 1 Madisc	on Ave., Cary	Jun8/24 +	1.0 ZZ/LIN	MILLER TRUCK	LEASING #1
Sample No. Lab Number Unique Number Test Package	: PCA0121072 : 06225960	MILLER TRUCK LEASING #114 63 REPAUPO STATION ROAD LOGAN TOWNSHIP, N US 0808 Contact: ED DAVIS edavis@millertransgroup.com					

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