

# **OIL ANALYSIS REPORT**

Sample Rating Trend







**428134** Component

Area **020** 

## Diesel Engine

PETRO CANADA DURON SHP 15W40 (38 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.

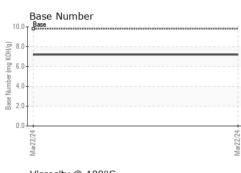
## Fluid Condition

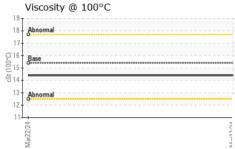
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0103785			
Sample Date		Client Info		22 Mar 2024			
Machine Age	hrs	Client Info		15180			
Oil Age	hrs	Client Info		800			
Oil Changed		Client Info		Changed			
Sample Status				NORMAL			
CONTAMINAT	ION	method	limit/base	current	history1	history2	
Fuel		WC Method	>5	<1.0			
Water		WC Method	>0.2	NEG			
Glycol		WC Method		NEG			
WEAR METAL	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	22			
Chromium	ppm	ASTM D5185m	>20	1			
Nickel	ppm	ASTM D5185m	>4	1			
Titanium	ppm	ASTM D5185m		<1			
Silver	ppm	ASTM D5185m	>3	0			
Aluminum	ppm	ASTM D5185m	>20	3			
Lead	ppm	ASTM D5185m	>40	2			
Copper	ppm	ASTM D5185m	>330	2			
Tin	ppm	ASTM D5185m	>15	1			
Vanadium	ppm	ASTM D5185m		<1			
Cadmium	ppm	ASTM D5185m					
oddinidini	ppm	AGTIVI DOTOSITI		<1			
ADDITIVES	ppm	method	limit/base	<1 current	 history1	history2	
	ppm		limit/base				
ADDITIVES		method		current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 45	history1 	history2	
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current 45 <1	history1 	history2 	
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 45 <1 73	history1  	history2  	
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current           45           <1           73           <1	history1   	history2   	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 45 <1 73 <1 187	history1   	history2	
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	0 0 60 0 1010 1070	current           45           <1           73           <1           187           2187	history1	history2	
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	0 0 60 0 1010 1070 1150	current           45           <1           73           <1           187           2187           1198	history1	history2	
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	0 0 60 0 1010 1070 1150 1270	current           45           <1           73           <1           187           2187           1198           1297	history1	history2	
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	Current 45 <1 73 <1 187 2187 1198 1297 3981	history1	history2	
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	0 0 60 1010 1070 1150 1270 2060	45         <1         73         <1         187         2187         1198         1297         3981         current	history1 history1	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	0 0 60 1010 1070 1150 1270 2060	current           45           <1           73           <1           187           2187           1198           1297           3981           current           8	history1 history1	history2 history2	
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	current           45           <1           73           <1           187           2187           1198           1297           3981           current           8           6	history1	history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	current           45           <1           73           <1           187           2187           1198           1297           3981           current           8           6           7	history1 history1	history2 history2	
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	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25	current         45         <1         73         <1         187         2187         1198         1297         3981         current         8         6         7         current	history1 history1 history1 history1	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	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current         45         <1         73         <1         187         2187         1198         1297         3981         current         8         6         7         current         0.5	history1 history1 history1 history1	history2 history2 history2 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current         45         <1         73         <1         187         2187         1198         1297         3981         current         8         6         7         current         0.5         9.9	history1                                             history1               history1	history2	
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	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <b>imit/base</b> >3 20 23	45         <1         73         <1         187         2187         1198         1297         3981         current         8         6         7         current         0.5         9.9         20.7	history1                        history1            history1            history1               history1	history2                                          history2                  history2	



# **OIL ANALYSIS REPORT**





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
2/24 -	Appearance	scalar	*Visual	NORML	NORML		
Mar22/24	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
°C	Free Water	scalar	*Visual		NEG		
	FLUID PROPE		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		14.4		
	GRAPHS						
	Ferrous Alloys						
	<sup>25</sup> T						
e e	iron						
	20 - nickel						
4	15						
	шdd						
	10						
	5						
	0						
	Mar22/24			Mar22/24			
	Mar			Mar			
	Non-ferrous Metal	s					
	10 copper 1						
	8 - lead						
	Personal III						
	6						
	ш dd 4-						
	2 -						
	0						
	754+0			/24			
	Mar22/24			Mar22/24			
	– Viscosity @ 100°C			-			
	<sup>19</sup> T			10.0	Base Number		
	18 - Abnormal			10.0			
	17			€ 8.0			
	C <sup>16</sup> Base			0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			
	Diamon Contraction			B 6.0			
	5 14			4.0			
	13 Abnormal			Base			
	12			<sup>°°</sup> 2.0			
	11			0.0	L <u></u>		
	Mar22/24			Mar22/24	Mar22/24		Mar22/24
	Mar			Mar	Mai		Mar
Laboratory Sample No. Lab Number Unique Number Unique Number Test Package To discuss this sample report,	: 10949665 : FLEET contact Customer Servi	Recei Teste Diagr	ived : 27 ed : 27 nosed : 29 800-237-1368	7 Mar 2024 7 Mar 2024 Mar 2024 - Don 9.		Contact: JER jeremy.shore	ast Gilbreath St Graham, NC US 27253 EMY SHORES es@gflenv.com
* - Denotes test methods that a Statements of conformity to sp					rule (JCGM 106		(336)668-3712 (336)229-0526