

OIL ANALYSIS REPORT

Sample Rating Trend



WESTERN STAR 22 Component

Diesel Engine

PETRO CANADA DURON SAE 10W30 (--- GAL)

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 condition of the oil is acceptable for the time in service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0073147		
Sample Date		Client Info		29 Apr 2023		
Machine Age	kms	Client Info		475864		
Oil Age	kms	Client Info		65843		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	46		
Chromium	ppm	ASTM D5185(m)	>20	2		
Nickel	ppm	ASTM D5185(m)	>4	1		
Titanium	ppm	ASTM D5185(m)		<1		
Silver	ppm	ASTM D5185(m)	>3	0		
Aluminum	ppm	ASTM D5185(m)	>20	9		
Lead	ppm	ASTM D5185(m)	>40	<1		
Copper	ppm	ASTM D5185(m)	>330	6		
Tin	ppm	ASTM D5185(m)	>15	<1		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		<1		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	nnm	ACTM DE10E(m)		0		
Gaumum	ppm	ASTM D5185(m)		0		
ADDITIVES	ppm	method	limit/base	current	history1	history2
	ppm		limit/base		history1	
ADDITIVES		method		current		history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	1	current 7		history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	1	current 7 0		history2
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1	current 7 0 40		history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1 1	current 7 0 40 <1		history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1 10 2942 1102	Current 7 0 40 <1 130		history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1 1 10 2942	Current 7 0 40 <1 130 2281 1014 1183	 	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1 10 2942 1102	Current 7 0 40 <1 130 2281 1014 1183 2857	 	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1 10 2942 1102 1351	Current 7 0 40 <1 130 2281 1014 1183		history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1 1 1 10 2942 1102 1351	Current 7 0 40 <1 130 2281 1014 1183 2857		history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	1 1 1 10 2942 1102 1351 3903	Current 7 0 40 <1 130 2281 1014 1183 2857 <1		history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	1 1 1 10 2942 1102 1351 3903	Current 7 0 40 <1 130 2281 1014 1183 2857 <1	 history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	1 1 1 10 2942 1102 1351 3903	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 current 6	 history1 	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	1 1 1 1 1 2942 1102 1351 3903 Imit/base >25	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 Current 6 3	 history1	history2
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	method ASTM D5185(m)	1 1 1 1 1 1 1 2942 1102 1351 3903 Imit/base >25 >20	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 Current 6 3 3	 history1 	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	1 1 1 1 1 2942 1102 1351 3903 Imit/base >25 Imit/base	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 current 6 3 3 3	 history1 history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	1 1 1 1 1 1 2942 1102 1351 3903 Imit/base >25 >20 Imit/base >3	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 Current 6 3 3 3 Current 1.5	 history1 history1	history2 history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7844* ASTM D7415*	1 1 1 1 1 1 1 2942 1102 1351 3903 Imit/base >25 20 Imit/base >3 >20	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 Current 6 3 Current 1.5 12.7	 history1 history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7644* ASTM D7624* ASTM D7415* method	1 1 1 1 1 1 2942 1102 1351 3903	Current 7 0 40 <1 130 2281 1014 1183 2857 <1 <i>current</i> 6 3 3 3 <i>current</i> 1.5 12.7 28.5	 history1 history1	history2 history2 history2 history2 <

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