

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 4578M Component

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (36 QTS)

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

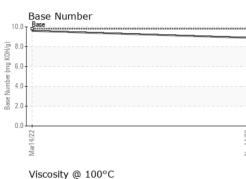
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

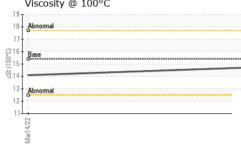
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0059243	GFL0018432	
Sample Date		Client Info		14 Nov 2023	14 Mar 2022	
Machine Age	hrs	Client Info		23212	19664	
Oil Age	hrs	Client Info		23212	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	25	18	
Chromium	ppm	ASTM D5185m	>20	1	<1	
Nickel	ppm	ASTM D5185m	>2	<1	0	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>20	3	1	
Lead	ppm	ASTM D5185m	>40	3	<1	
Copper	ppm		>330	0	3	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES	I- I-	method	limit/base	-		bistory 0
	nom			current	history1	history2
Boron	ppm	ASTM D5185m	0	3	10	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 0	10 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 60	10 0 59	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 60 <1	10 0 59 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 60 <1 986	10 0 59 <1 846	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 0 60 <1 986 1108	10 0 59 <1 846 1208	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 60 <1 986 1108 1087	10 0 59 <1 846 1208 1011	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	3 0 60 <1 986 1108 1087 1347	10 0 59 <1 846 1208 1011 1138	
Boron 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	0 0 60 1010 1070 1150 1270 2060	3 0 60 <1 986 1108 1087 1347 3068	10 0 59 <1 846 1208 1011 1138 2523	
Boron 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	0 0 60 0 1010 1070 1150 1270 2060 limit/base	3 0 60 <1 986 1108 1087 1347 3068 current	10 0 59 <1 846 1208 1011 1138 2523 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 60 1010 1070 1150 1270 2060	3 0 60 <1 986 1108 1087 1347 3068 current 7	10 0 59 <1 846 1208 1011 1138 2523 history1 4	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	3 0 60 <1 986 1108 1087 1347 3068 <u>current</u> 7 2	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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 0 60 1010 1070 1150 1270 2060 limit/base >25	3 0 60 <1 986 1108 1087 1347 3068 current 7	10 0 59 <1 846 1208 1011 1138 2523 history1 4	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	3 0 60 <1 986 1108 1087 1347 3068 <u>current</u> 7 2	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 	3 0 60 <1 986 1108 1087 1347 3068 <u>current</u> 7 2 2 <1	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11 0 history1 0.3	 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 	3 0 60 <1 986 1108 1087 1347 3068 <u>current</u> 7 2 <1 2 <1	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11 0 history1	 history2 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 .20 limit/base >6 >20	3 0 60 <1 986 1108 1087 1347 3068 <u>current</u> 7 2 <1 2 <1 0.4	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11 0 history1 0.3	 history2 history2 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 .20 limit/base >6 >20	3 0 60 <1 986 1108 1087 1347 3068 <i>current</i> 7 2 <1 2 <1 <i>current</i> 0.4 9.8	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11 0 history1 0.3 8.7	 history2 history2 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >20 imit/base >6 >20	3 0 60 <1 986 1108 1087 1347 3068 <u>current</u> 7 2 <1 2 <1 0.4 9.8 21.2	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11 0 <u>history1</u> 0.3 8.7 20.3	 history2 history2 history2
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	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >6 >20 imit/base >30	3 0 60 <1 986 1108 1087 1347 3068 <i>current</i> 7 2 <1 <i>current</i> 0.4 9.8 21.2 <i>current</i>	10 0 59 <1 846 1208 1011 1138 2523 history1 4 11 0 history1 0.3 8.7 20.3 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





	VISUAL		method	iiiiii/base	current	Thistory I	Thistory2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
Nov14/23	Odor	scalar	*Visual	NORML	NORML	NORML	
_	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar		20.L	NEG	NEG	
					NEG		_
	FLUID PROPE		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.7	14.1	
	GRAPHS						
	Ferrous Alloys						
	iron						
	20 - nickel						
	1						
1	15- E						
1	10						
	5						
	1/22			1/23 -			
	Mar14/22			Nov14/23			
	– Non-ferrous Meta	le		~			
	10 _T						
	copper						
	8 - tin						
	6-						
	E d						
	4						
			and an and a state of the local division of	COLORIDA IN			
	2	and and a state of the state of					
				~			
	Mar14/22			4/23			
	Mar1			Nov14/23			
	Viscosity @ 100°	C			Base Number		
	¹⁹ T			10.	 Base 		*****
	18 - Abnormal						
	17-			(B)	0-		
ç	Base			g Kol			
	Base 15 3 14			in			
ć	3 ₁₄			Base Number (mg KOH/g)	0		
	13 Abnormal			gase			
	12 Abnormal			^{°°} 2.	0		
	11			0.	0		
	4/22						
	Mar14/22			Nov14/23	Mar14/22		
boratory mple No. b Number	: WearCheck USA - : GFL0059243 : 06010563	501 Madi Receive Diagnos	d :17	ry, NC 2751 Nov 2023 Nov 2023	3 GFL Env	vironmental - 410 3900	- Michigan We 00 Van Born F Wayne, N
ique Number	: 10749707	Diagnos		s Davis			US 481
st Packade	: FLEET	Diagnos		o Duvio		• • •	t: Belal Dohei



Test Package : FLEET Certificate L2367 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)