

OIL ANALYSIS REPORT



Machine Id **258** Component **Diesel Engine** Fluid **PRIMROSE 790 Syn-O-Gen 8 (--- 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0925564	WC0584562	
Sample Date		Client Info		09 May 2024	30 Mar 2023	
Machine Age	mls	Client Info		616635	574750	
Oil Age	mls	Client Info		30000	30112	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	38	45	
Chromium	ppm	ASTM D5185m	>20	2	4	
Nickel	ppm	ASTM D5185m	>4	<1	1	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	5	6	
Lead	ppm	ASTM D5185m	>40	8	11	
Copper	ppm	ASTM D5185m	>330	3	12	
Tin	ppm	ASTM D5185m	>15	1	4	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 130	history1 142	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	130	142	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	130 1	142 6	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	130 1 91	142 6 92	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	130 1 91 1	142 6 92 2	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	130 1 91 1 471	142 6 92 2 421	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	130 1 91 1 471 1595	142 6 92 2 421 1478	
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	limit/base	130 1 91 1 471 1595 1127	142 6 92 2 421 1478 998	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	130 1 91 1 471 1595 1127 1337	142 6 92 2 421 1478 998 1211	
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		130 1 91 1 471 1595 1127 1337 3685	142 6 92 2 421 1478 998 1211 2835	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	130 1 91 1 471 1595 1127 1337 3685 current	142 6 92 2 421 1478 998 1211 2835 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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 ASTM D5185m	limit/base	130 1 91 1 471 1595 1127 1337 3685 <u>current</u> 19	142 6 92 2 421 1478 998 1211 2835 history1 23	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	limit/base	130 1 91 1 471 1595 1127 1337 3685 <u>current</u> 19 4	142 6 92 2 421 1478 998 1211 2835 history1 23 8	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	130 1 91 1 471 1595 1127 1337 3685 <u>current</u> 19 4 5	142 6 92 2 421 1478 998 1211 2835 history1 23 8 12	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	130 1 91 1 471 1595 1127 1337 3685 current 19 4 5 current	142 6 92 2 421 1478 998 1211 2835 history1 23 8 12 12 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	130 1 91 1 471 1595 1127 1337 3685 current 19 4 5 current 0.8	142 6 92 2 421 1478 998 1211 2835 history1 23 8 12 12 history1 0.8	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	130 1 91 1 471 1595 1127 1337 3685 current 19 4 5 current 0.8 10.1	142 6 92 2 421 1478 998 1211 2835 history1 23 8 12 23 8 12 12 history1 0.8 9.6	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >3 >20 >30	130 1 91 1 471 1595 1127 1337 3685 <u>current</u> 19 4 5 <u>current</u> 0.8 10.1 26.9	142 6 92 2 421 1478 998 1211 2835 history1 23 8 12 23 8 12 0.8 9.6 27.3	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	limit/base >25 >20 limit/base >3 >20 >30 >30	130 1 91 1 471 1595 1127 1337 3685 Current 19 4 5 Current 0.8 10.1 26.9 Current	142 6 92 2 421 1478 998 1211 2835 history1 23 8 12 23 8 12 0.8 9.6 27.3 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT

FT-IR (Direct Trend)	VISUAL		method	limit/base	current	history1	history2
35 - Oxidation	White Metal	scalar	*Visual	NONE	NONE	NONE	
30 - Sulfation	Yellow Metal		*Visual	NONE	NONE	NONE	
E 25 - Abnormal	Precipitate		*Visual	NONE	NONE	NONE	
₿ 20-	Silt		*Visual	NONE	NONE	NONE	
15-	Debris	scalar	*Visual	NONE	NONE	NONE	
10	Sand/Dirt		*Visual	NONE	NONE	NONE	
/23 +	Appearance	scalar	*Visual	NORML	NORML	NORML	
Mar30/23	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Base Number	Free Water	scalar	*Visual	20.L	NEG	NEG	
0,0 0,0 HQ 5.0	FLUID PROPER		method	limit/base	current	history1	history2
Ë 4.0	Visc @ 100°C	cSt	ASTM D445		14.6	14.1	
₩ 3.0 ₩ 2.0	GRAPHS	001	7.01mB110				
	Ferrous Alloys						
0.0	45						
Mar30/23	40 - and the second sec						
Ma	30						
Viscosity @ 100°C	e ²⁵ -						
15 Abnomal	15 -						
14	10						
G 13 6 12	5 -						
5 71	33			24			
10 Abnormal	Mar30/23			May9/24			
9	∠ Non-ferrous Meta	le					
0/23	¹²						
Mad0(23	10-	Calculus .					
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	0						
	ar30/23			lay9/24			
	Mari			Mar			
	Viscosity @ 100°	С			Base Number		
				7.			
	15 Abnormal			6.			
				(B/HOX B/HOX)		
	0012 311			<u>و</u> 4.	0+		
	ts 11			Number N	D -		
	10			ase 2.			
	Abnormal 9 -			1.			
	8						
	Mar30/23			May9/24	Mar30/23		May9/24
	Mar			Ma	Mar		Mar
Laboratory Sample No. Lab Number Unique Number Certificate 12367 Test Package To discuss this sample report	: 11021178 : FLEET t, contact Customer Sert are outside of the ISO	Rece Teste Diagr vice at 1-8 17025 sco	ived : 10 ed : 13 nosed : 13 800-237-136	0 May 2024 3 May 2024 3 May 2024 - V 9. ditation.		MIDD Conta tgoin	BOTTLING - MCCB BERLAND AVE LESBORO, KY US 40965 Int: TIM GOINS s@mccbw.com (606)248-0362
Statements of conformity to s	posifications are here!	on the -!-	nnla and	noo doci-i-	rula (ICOM to	C-2012) -	(606)248-1382

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Submitted By: TIM GOINS

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