

### **OIL ANALYSIS REPORT**

Sample Rating Trend







# KENWORTH 94

#### Component Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (--- 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	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0099451		
Sample Date		Client Info		30 May 2023		
Machine Age	mls	Client Info		92079		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	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	maa	ASTM D5185m	>100	16		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>4	<1		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	3		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	1		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 48	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 48 0	history1 	history2 
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0	current 48 0 9	history1  	history2  
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0	current 48 0 9 <1	history1   	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0 0	current 48 0 9 <1 830	history1   	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0 0	current 48 0 9 <1 830 1352	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	limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	current           48           0           9           <1           830           1352           822	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	current           48           0           9           <1           830           1352           822           981	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	limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	current           48           0           9           <1           830           1352           822           981           3891	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	limit/base	current           48           0           9           <1           830           1352           822           981           3891           current	history1 history1	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1	current           48           0           9           <1           830           1352           822           981           3891           current           5	history1 history1	history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method           ASTM D5185m	limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	current           48           0           9           <1           830           1352           822           981           3891           current           5           3	history1 history1 history1	history2 history2 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	limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	current           48           0           9           <1           830           1352           822           981           3891           current           5           3           4	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 TS ppm ppm	method           ASTM D5185m	limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	current           48           0           9           <1           830           1352           822           981           3891           current           5           3           4           current	history1 history1 history1 history1 history1	history2 history2 history2 history2 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	<pre>limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</pre>	current           48           0           9           <1           830           1352           822           981           3891           current           5           3           4           current           0.4	history1 history1 history1 history1 history1	history2 history2 history2 history2 history2
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	limit/base          0         0         0         0         0         0         1         1         1         1         1         2         1         20         1         20         23         20	current           48           0           9           <1           830           1352           822           981           3891           current           5           3           4           current           0.4           10.7	history1	history2 history2 history2 history2 history2 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	iimit/base 0 0 0 0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	current         48         0         9         <1         830         1352         822         981         3891         current         5         3         4         current         0.4         10.7         22.5	history1                        history1               history1                  history1                           history1 </th <th>history2 history2 history2 history2 history2</th>	history2 history2 history2 history2 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 TS ppm ppm ppm % Abs/cm Abs/1mm	method           ASTM D5185m           ASTM D5185m	limit/base   0	current         48         0         9         <1         830         1352         822         981         3891         current         5         3         4         current         0.4         10.7         22.5         current	history1                        history1            history1            history1               history1            history1            history1            history1            history1            history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	method           ASTM D5185m           ASTM D7844           *ASTM D7844           *ASTM D7415           method           *ASTM D7414	limit/base   0 <t< th=""><th>current         48         0         9         &lt;1         830         1352         822         981         3891         current         5         3         4         current         0.4         10.7         22.5         current         18.3</th><th>history1</th><th>history2 history2 history2</th></t<>	current         48         0         9         <1         830         1352         822         981         3891         current         5         3         4         current         0.4         10.7         22.5         current         18.3	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	method           ASTM D5185m           ASTM D7844           *ASTM D7844           *ASTM D7414           *ASTM D7414           *ASTM D7414	imit/base 0 0 0 0 0 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	current         48         0         9         <1         830         1352         822         981         3891         current         5         3         4         current         0.4         10.7         22.5         current         18.3         7.0	history1                        history1                           history1                     history1            history1   <	history2



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## **OIL ANALYSIS REPORT**



	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal		*Visual	NONE	NONE		
	Precipitate		*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris		*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
52/0	Appearance	scalar	*Visual	NORML	NORML		
May3	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FILID PROPE	RTIES	method	limit/base	current	historv1	history2
		cSt	ASTM D445	14	14 7		
1	GRAPHS	001	A31101 D443	14	14.7		
	Ferrous Allovs						
				_			
	14- iron						
	12 nickel						
	10-						
	E 8						
	6 -						
	4						
	2-						
	23 23			23			
	lay30/			lay30/			
	≥ Non-ferrous Metal	c		2			
	<sup>10</sup> T						
	copper						
	8 tin						
	6 -						
	mqq						
	4						
	2-						
	23			/23			
	1ay30			1ay30,			
	≥ Viscosity @ 100°C		2				
				10	Base Number		
	17-				Dase		
	Abnormal			(B)	0		
	Q 15-			OX D 6.	0 -		
	Base			per (m			
	S 17 5			5 4. 2	0		
	Abnormal			2.	0		
	12-						
	11 <del>1</del>			.0	0 23		23
	1ay30/			1ay30/	1ay30,		lay30/
	2			2	2		M
Laboratory	: WearCheck USA - 5	01 Madis	son Ave., Ca	ry, NC 2751	3 <b>PET</b>	ROSTAR INC ·	FAIRBANKS
Sample No.	: PCA0099451	Received	a :11/	Aug 2023			418 ILLINOIS
	: 10602670	Diagnost	cu ∶⊺4/ ician ∶W⊝	nuy ∠∪∠3 s Davis		FA	
Certificate L2367 Test Package	: FLEET	Jagnost		0 00010		Contact: PHII	SWAFFORD
To discuss this sample report,	contact Customer Servi	ice at 1-8	00-237-1369	Э.		pswafford@	petrostar.com
* - Denotes test methods that a	are outside of the ISO 1	7025 sco	pe of accred	litation.		T: (	907)452-0671
Statements of conformity to spec	cifications are based on th	ne simple	acceptance of	aecision rule (	(JCGM 106:2012)		F:

Contact/Location: PHIL SWAFFORD - PETFAI