



# PETROSAVERS TESTIMONIAL REVIEW



November  
2018

Save oil, save time & save costs

A brief testimonial review/report and analysis of several stationary installations of the PetroSavers® Engine Oil Refiner System on generator and compressor engines on land and at sea.



Since the PetroSavers® Engine Oil Refiner System comes in 7 standard model sizes the PetroSavers can be installed on engines with crankcase capacities ranging from 4 quarts of oil to 1,000 gallons of oil.

Typically, stationary engines have to change oil at a much greater frequency than transportation vehicles. This is due to the fact that these types of engines are in environments that require them to run continuously.

The engine manufacturers require that the oil on most generator engines be changed as follows:

1. Small generators every 250 engine hours, which is every 10 days  
(24 hours per day x 10 days)
2. Midsize generators every 750 engine hours, which is every 30 days  
(24 hours per day x 30 days)
3. Large generators every 1,500 engine hours, which is every 60 days  
(24 hours per day x 60 days)

Nearly all of the mentioned stationary engines/generators are typically running 24/7 continuously. We have successfully extended engine oil drain intervals from 300 engine hours to 11,000 engine hours.

Additionally, please note that the PetroSavers Engine Oil Refiner has great application to every kind of stationary engine throughout the world.

Here, we will be showing a series of different installations beginning with utilizing our PetroSavers Engine Oil Refiner model HD-10 on small generators, then to our large Refiner model HD-604 (480 gallons of oil) on larger generators.

Stationary engine applications include:

1. Tug Boats
2. Push Boats
3. Supply Boats
4. Shrimp Boats
5. Fishing Vessels
6. Drilling Rigs (Natural Gas or Crude Oil)
7. Inland Gas Production
8. Pumping Stations
9. Exploration Operators
10. Energy Transmission Stations (Throughout a Particular Country or Region)
11. Ship Building Construction and Repair Yards
12. Cruise Ships
13. Generators (All Kinds)

The first set of installation pictures below shows our PetroSavers model HD-10, our smallest commercial refiner (16 quarts crankcase capacity) on offshore generators.



The red star shown in the pictures is the PetroSavers return line back to the engine.

The blue star shown in the picture is a PetroSavers pressure line into the inlet of the refiner, including the shutoff ball valve for easy servicing while the engine is in operation.



Please note regarding the engine on the left, that  $\frac{1}{4}$ " hole had to be drilled and tapped into the valve cover, in order to accommodate the clean oil return line of the PetroSavers.

The engine on the left above already had a place for the return line of the PetroSavers to be connected to the top of the engine oil pan at the base of the engine.



On both engines, the pressure line was accomplished by placing a tee fitting into the oil pressure gallery of the engine.

Also note that the gold/brass item in the picture is a  $\frac{1}{8}$ " ball valve which allows the PetroSavers refiner to be shut off completely. By doing so, the customer can then service the refiner while the engine is running, without having to shut the engine down.

This engine's oil was being changed every 250 engine hours. Now they will easily go 6,000 engine hours without an oil change.

This company will save 24 oil changes in every 6,000 engine hour period on just this 1 engine.

Please note the mounting bracket includes an oil dip pan, since most companies in America are fined a minimum of \$10,000.00 for oil spills.



All of our refiner units and mounting brackets are sand blasted and powder coated with the highest quality products for longevity in harsh environments.

The second set of installation pictures below shows our PetroSavers model HD-30 refiner maximum crankcase capacity 18 gallons. The PetroSavers® Engine Oil Refiner System is the grey canister connected to the blue hose shown in the 4 images below. The refiner is mounted to a base stand with a pressure gauge on top of the refiner housing.



The image on the right below shows the inlet to the PetroSavers.

When this handle is in a closed position, the operator can service the PetroSavers refiner without shutting the engine down.

The other fitting shown in this picture, is the blue return line showing the clean oil returning from the refiner back to the engine.

Remember, there is always a pressure port that feeds the refiner from the engine typically connected to a ball valve and there is a return port from the refiner back to the engine with every PetroSavers installation.



The third set of installation pictures below shows our PetroSavers model HD-60 refiner maximum crankcase capacity 30 gallons.



The PetroSavers® Engine Oil Refiner System is the grey canister shown in these images.



Here the refiner is mounted to a base mounted stand with a pressure gauge on top of the refiner housing.



The image above shows the inlet valve to the PetroSavers.



And on here the blue hose, which is the return of the clean oil to the base of the engine



The fourth set of installation pictures below shows our PetroSavers model HD-601 refiner maximum crankcase capacity 50 gallons.

The PetroSavers® Engine Oil Refiner System is the grey canister shown in these images below.



Note the yellow handle on the bottom of the PetroSavers canister is a drain valve used when servicing the PetroSavers refiner. This is not to be confused with the yellow pressure handle on the engine.



The oil in this engine was being changed every 750 engine hours, once every month (12 x per year).

The independent oil analysis shows that the oil in this report has accumulated 13,266 engine hours without an oil change and that the oil is in satisfactory condition and is suitable for further use.

As a result of the PetroSavers Engine Oil Refiner, 18 oil changes have been saved (13,266 ÷ 750). This includes labor costs, new oil costs, new engine oil filter costs, and disposal costs.

This company has saved 900 gallons of oil just on this 1 engine (18 oil changes x 50 gallons per change).



**SPECTRO-SCAN, INC.**  
A DIVISION OF PETROLEUM LABORATORIES, INC.

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**OIL ANALYSIS REPORT**

COMPANY: Petrosavers National Corp. (TPIC)  
2112 Southern Oaks Drive  
Harvey, LA 70058

LOCATION: Crowley Field  
UNIT: 1905 Wankasha Engine  
Stakes #4 SWD  
FUEL TYPE: Nat Gas  
OIL TYPE: Petrosas 805

BLOCK:  
CUST: TPIC  
UNIT: CROW01B  
ORDER #:

ATTENTION: Ralph LeBlanc

		BASELINE				
		SXR-0670	SXP-0962	SXP-3809	SXR-0671	
UNIT DATA	SAMPLE DATE	11/29/2013	9/30/2013	10/25/2013	11/29/2013	
	SAMPLE BRND	12/2/2013	10/4/2013	10/28/2013	12/2/2013	
	REPORT DATE	12/3/2013	10/4/2013	10/29/2013	12/3/2013	
	MILES OR HOURS ON UNIT	0	0	0	0	
	MILES OR HOURS ON OIL	0	11,827	12,426	13,266	
	LAST OIL CHANGE		05/31/12	05/31/12	05/31/12	
	METAL ANALYSIS ppm	TIN	0	1	2	1
		LEAD	1	4	2	3
		ALUMINUM	6	11	10	10
		IRON	1	12	9	9
COBALT		3	3	2	2	
SILICON		0	2	2	2	
CHROMIUM		6	7	6	6	
NICKEL		0	0	0	0	
SILVER		1	0	0	0	
ROBILIN		2	2	1	3	
TITANIUM		0	0	0	0	
MAGNESIUM		6	15	12	13	
CALCIUM		1,319	2,261	2,027	1,991	
BARIUM		0	0	0	0	
PHOSPHORUS		795	517	451	425	
SMOLYBENSLIM		2	4	4	4	
CADMIUM		0	0	0	0	
ANTIMONY		0	1	1	1	
ZINC		242	616	560	542	
PHYSICAL PROPERTIES ANALYSIS		VISCOSITY - @100°F	650	810	820	850
	WATER - VOL %	< 0.05	< 0.05	< 0.05	< 0.05	
	SULFUR - VOL %	< 0.10	0.20	0.20	0.20	
	TOTAL ACID NO.	0.00	N/P	1.10	1.10	
	TOTAL BASE NO.	N/P	N/P	N/P	N/P	
	SOOT - % - % x 100	N/P	N/P	N/P	N/P	
	FUEL DILUTION - VOL %	N/P	N/P	N/P	N/P	
	COOLANT	NEG	NFG	NEG	NEG	
	OXIDATION - ABS @ 1mm	116	216	204	215	
	NITRATION - ABS @ 1mm	54	111	104	107	
COMMENTS	RECOMMENDATION CODE	N	N	N	N	
	OIL and UNIT appear to be in satisfactory condition. Resample at normal sample interval.					

Figures with Asterisk (\*) indicate Abnormal Values or bear watching  
 >= Indicates greater than  
 <= Indicates less than  
 N/P = Analysis not performed, I.S. = Insufficient sample.  
 Recommendation Codes: C = Critical, N = Normal, M = Moderate  
 Results and Recommendations are dependent on fresh and Representative Sample

See Reverse Side for Analyses Explanations

The fifth set of installation pictures below shows our PetroSavers model HD-602 refiner maximum crankcase capacity 200 gallons.

The PetroSavers® Engine Oil Refiner System is the gray canister shown in the 4 pictures below.

The engines shown in the attached pictures are 12 cylinders, 1,500 - 2,000 horsepower engines.

All of the engines presented within this entire document run continuously, 365 days per year and 24 hours per day.



The only time that these engines are shutdown is for the regular maintenance, most of which is to change the engine's oil and engine oil filters.



The red star on the canister shown in the pictures is the PetroSavers Engine Oil Refiner model HD-602.

The green star on the canister shown in the pictures is the engine manufacturer's oil filter housing.



Please note that none of the manufacturer's engine oil filter system, irrespective of the size and number of elements in each canister, cannot guarantee to extend the engine's oil to 12,000 engine hours without an oil change.

Due to the high efficiency of the PetroSavers Engine Oil Refiner System, the PetroSavers does extend the life of the manufacturer's engine oil filter system irrespective of how large it is. This is typically because the engine oil filtering system only filters solid particles down to 30 micron size particles, while the PetroSavers removes solid particles down to 1 micron size particles.

This means that the PetroSavers provides a 97% continuous improvement in the oil's cleanliness.



The PetroSavers® Engine Oil Refiner System is also very unique in its design because the PetroSavers removes all liquid contaminants, which also breaks down the oil’s ability to lubricate. These liquids are in the form of water (from condensation) when the engine cools down and from unburned fuels (from engines’ inconsistent fuel burn). No existing manufacturers’ engine oil filtering system has this capability of removing water and unburned fuels down to less than 0.05%.

Engine manufacturers are not interested in extending engine life, which is what the PetroSavers does this would diminish their recurring parts and labor business.

With the use of the PetroSavers Engine Oil Refiner System, the oil in these engines are extended to a minimum of 6,000 engine hours and the engine oil filters, along with the PetroSavers Refiner Pac element, only has to be serviced once every 3,000 engine hours in natural gas applications and once every 2,000 engine hours in diesel applications.

Note the image on the right, the yellow star shows the steady stream of “clean” oil continuously returning back to the engine at a turnover of 7 oil changes per hour.



Here are 2 independent oil analysis reports (see next page) on these engines that verify our claims. Engine #1 has 12,140 engine hours without an oil change and engine #2 has 10,954 engine hours without an oil change.

The oil in these engines is typically changed every 750 engine hours. With 12,140 engine hours, 16 oil changes have been eliminated ( $12,140 \div 750$ ).

This represents a minimum savings of 1,600 gallons of oil at a rate of 100 gallons per engine, thereby eliminating 16 oil changes on just this 1 engine.





The sixth set of installation pictures below shows our PetroSavers model HD-604 refiner maximum crankcase capacity 500 gallons.



The PetroSavers® Engine Oil Refiner System is the grey canister shown in these 2 images.

The engines shown here are 16 cylinders, 3,000 – 5,000 horsepower engines.

These engines also run 365 days a year, 24 hours per day.



Please note that the engine manufacturer's oil filter housing has 77 filter elements inside their housing (next page).

While the PetroSavers has only a total of 4 elements in its manifold unit; 2 Refiner Pac elements in each housing.

Thus, the PetroSavers refiner with only 4 Refiner Pac elements is doing a better job in not only filtering, but refining the engine's oil compared to the engine manufacturer's oil filter which has 77 elements in their housing.

The red star is the PetroSavers Engine Oil Refiner model HD-604 manifold unit.

The yellow star shows the inlet pressure to the PetroSavers. It is the one with the blue handle. This means that the operator can service the PetroSavers without shutting the engine down.





The green star on the canister shown in the pictures is the engine manufacturer's oil filter housing.

Each one of these engines cost \$2 million dollars and generates approximately \$5 million dollars a month in revenue.

Both of the engines shown in the images have approximately 420 gallons of oil throughout the system.

The oil in these engines are typically changed every 1,000 to a maximum of 1,500 engine hours.

The PetroSavers has successfully extended the engine oil to a minimum of 15,000 engine hours, which results in the elimination of 10 oil changes ( $15,000 \div 1,500$ ).

This represents a minimum savings of 4,200 gallons of oil at a rate of 420 gallons of oil per engine eliminating 10 oil changes.

With a fleet of 10 engines, this would mean a savings of 42,000 gallons of oil (10 engines x 4,200 gallons).

Finally, please note that in every application, the PetroSavers® Engine Oil Refiner System reduces engine wear by 90% which is an added benefit because ultimately, the engine life is extended and maintenance cost is reduced a minimum of 15-20% on every engine.



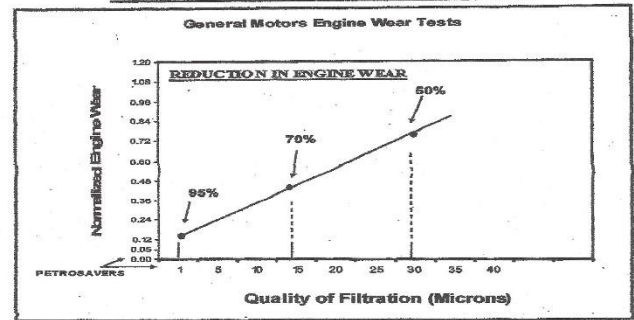


This is the seventh and final picture taken from the back of a boat going away from a \$300 million dollar drilling platform that these engines are widely used on which would also include the inland production fields.

Finally, as the PetroSavers® Engine Oil Refiner System refines the oil down to 1 micron filtration, on the right is a synopsis conducted by General Motors which tested Detroit diesel engines and found an 8 fold improvement in wear rates with lower lube oil contamination levels.

Therefore, based on their findings, the PetroSavers Engine Oil Refiner System should reduce engine wear down to an unprecedented 5%, thereby eliminating 90-95% engine wear, which results in extended engine life and a reduction in maintenance cost of a minimum of 15-20% over the life of each engine.

**PETROSAVERS ENGINE WEAR REDUCTION CHART**



AC Delco Division of General Motors tested Detroit Diesel engines and found an eight-fold improvement in wear rates and engine life with lower lube oil contaminant levels. Compared to a 40-micron filter, engine wear was reduced by 50% with 30-micron filtration. Likewise, wear was reduced by 70% with 15-micron filtration.

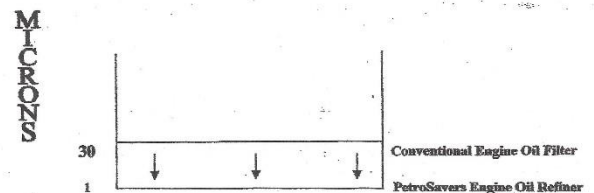
The PetroSavers Engine Oil Refiner filters down to 1-micron filtration and should therefore reduce engine wear down to an unprecedented 4.67% as compared to 70% with 15-micron filtration and 50% with 30-micron filtration.

Additionally, none of the findings listed above addressed the removal of liquid contaminants (unburned fuels and water), which also play a significant role in oil breakdown. The reason being that none of these systems have the capacity of removing the liquid contaminants.

The PetroSavers products do remove and eliminate both unburned fuel and water continuously up to 3% by volume of oil.

**PETROSAVERS EFFECTIVENESS**

The chart presented below is used to depict the effectiveness of the PetroSavers Engine Oil Refiner system as compared to the conventional engine oil filter.



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160,000 Miles or 12,000 Engine hours  
without an oil change on *any* Internal  
Combustion Engine..."