

#### Kleenoil Onboard Oil Recycling Systems Go Green - Keep it Kleen!





### **Kleenoil USA - Nabors Drilling Introduction**



The Kleenoil Onboard Oil Recycling System will provide cost savings to Nabors Drilling by extending oil drains, cutting labor costs, and reducing expensive engine repairs.

By working together, Nabors Drilling and Kleenoil USA can act environmentally responsible while lowering the company's engine oil usage by over 80%.

Kleenoil USA is excited about developing a business partnership with Nabors Drilling.

Thank you for the opportunity to serve you,

Jerry Robin President of Worldwide Operations Kleenoil USA Inc.



### Select Kleenoil USA Inc. Customers





## **Kleenoil Product Information**

## Go GREEN! - Keep it KLEEN!



### **Kleenoil Advantages**

**Single Canister Design** - The Kleenoil Onboard Oil Recycling System only requires a single canister to function. All water removal is done inside the cartridge so it does not require a separate canister to evaporate water from the oil.

**<u>4 Bolt Design</u>** - This design assures a complete seal around the top of the canister, eliminates leaks that can form around the edge.

**Large Surface Area Filter** - A larger surface area on the filter cartridge allows for dirt and wear particles to be trapped in the filter, creating a continuous, self-contained recycling system.

**<u>2-Stage Filtration</u>** - The filter cartridge has an additional disc at the bottom to capture 1-micron particles that may pass through the first stage of the filter.

**No Electrical Hookup** - The Kleenoil Filter Cartridge removes 99.95% of all moisture through absorption into the cellulose media. This is done without tying into the electrical system thereby avoiding the potential for costly repairs.

**Simple Installation** - The Kleenoil Filter System can be installed in less than 1 hour.

**No Internal Moving Parts** - The Kleenoil Filter System utilizes the oil pressure of the engine. There are not any mechanical moving parts to wear down, break or malfunction.

**Lifetime Warranty** - Kleenoil USA warranties the Kleenoil filter housing and brackets to the original purchaser for life.

<u>**30 Year Proven Track Record</u>** - Kleenoil's design has been proven in the global marketplace spanning over 30 years and hundreds of thousands of applications.</u>



### Features and Benefits

#### **Eliminates Water & Particles**

Water will always be present because of the heating and cooling of components in an engine. Diesel fuel used as the source of combustion contains sulfur. Small amounts of fuel will pass by the piston rings and end up in the oil. The sulfur will mix with the water resulting in sulfuric acids. Using the Kleenoil Filtration System will remove all water down to less than 0.05%, reducing the formation of sulfuric acid that cause accelerated wear to engine components.

#### **Removes Dirt and Contaminants**

Dirt and wear metals will always be present in hydraulic and engine oil. Therefore, most fluid changes are done to get rid of dirt and contaminants. Conventional fluid filtration components will filter the fluid down to approximately 25-40-microns in size. Accelerated wear and damage occurs somewhere around 3-6 micron. Use of the Kleenoil Filtration System will filter the fluid down to 1-micron (3 absolute) with a beta rating of  $220\mu^3$ . This means, in a single pass, the Kleenoil Filtration System will filter out 99.54% of all 3 micron particles in size, thereby reducing the chance of wear and ultimately reducing the number of engine failures and rebuilds during the life of the unit.

#### Doesn't Remove Desirable Elements

Certain components are purposely placed in lubrication oil to make it more effective. Some of the additives include dispersants, detergents, oxidation and rust inhibitors, pour-point depressants, metal deactivators, and anti-foaming and gelling agents. While the Kleenoil Filtration System is removing dirt, contaminants, wear metal particles and water; it is not removing the oil additives needed for continued use.

#### **Extends Drain Intervals**

Due to the above mentioned reasons, oil can be run longer as it is kept clean and free of water while maintaining its additive package. Proper oil analysis will reveal the useful life of the oil but, on average, the drain interval is extended up to 5 times beyond what it would be without the Kleenoil Filtration System.



#### **Features and Benefits**

#### **Reduces Time Needed for Service**

Changing the Kleenoil Filtration Cartridge requires much less time than performing a conventional full fluid change. Simply remove the lid from the container, remove the old cartridge and install the new cartridge and seal. This can be performed in less than 10 minutes without the worry of spilling oil and disposing of contaminated fluids.

#### **Continuous Protection Provided**

The Kleenoil Filtration System is installed to filter the fluid whenever there is oil pressure. Once the engine or the hydraulic pump is activated and there is fluid pressure, the fluid is continuously passing through the densely wound filter cartridge. The cartridge is wound with pure coniferous long fiber wood pulp paper from pine trees. This design extracts water from the fluid while still allowing the larger oil molecules to pass through unchanged. The dirt and wear particles are trapped in the filter giving you a continuous self-contained recycling system.

#### Good for the Environment

Since the fluid is being recycled inside of its own application, longer drain intervals can be realized. Oil is a finite resource that one-day will run out. Keeping the fluid running longer reduces the amount of oil that will have to be purchased throughout the now extended life of the unit.

Disposing of the used contaminated oil also creates a risk to the environment. Proper disposal methods are needed to safeguard the environment for our children. Reducing the amount of fluid that has to be disposed of is one way of reducing the impact on the already taxed environment.

Whenever a full fluid change is required to be done there is always a risk of spills and ground contamination. Reducing the number of full drains reduce this risk dramatically.



## The Kleenoil Filtration Unit **KU85**





#### Tech Data

- Remote mounted unit for easy servicing
- Maximum pressure rating of Unit 10 Bar
- Lid torque pressure 15-18lb/ft

Castings subjected to batch and individual testing. Constructed in aluminum (BS 1490 LM6 (M))

Specifications Table:	
Pressures:	Maximum rating of 10 Bar. Lid torque is 15-18 ft/lbs.
Oil Flow Rate:	Output levels are dependent on the viscosity, temperature, degree of contamination and oil pressure. (Guide - For SAE 15W40 oil at 158 degrees F and 60 psi, the flow rate would be 0.55 gpm to 0.81 gpm)
Operating Temperatures:	Within operating specifications of engine, gear and hydraulic oils.
Filtration Level:	Particulate contamination in accordance with BS 5540 part 4: 1981 and ISO/DIS 4406. ISO 14/9 equivalent to NAS 1638 class 6 - hydraulic oil specification.
Castings:	Constructed of aluminum to BS 1490 (M) subjected to batch and individual testing.
In accordance with our poli technical specifications wit	cy of continuous product improvements, we reserve the right to alter hout prior notice.



### The Kleenoil Filtration Unit



The Kleenoil filtration unit is made of cast aluminum with a stainless steel mounting bracket. It is connected to the engine lubricating oil circulating system in a bypass loop using high pressure braided hose and fittings to SAE standards.

Applications Table								
Kleenoil USA Part #	Typical Usage							
KU85	<ol> <li>For engines with an oil pan capacity up to 85 quarts.</li> <li>For hydraulic systems with tanks up to 400 gallons.</li> <li>As a diesel fuel filter in full flow.</li> </ol>							

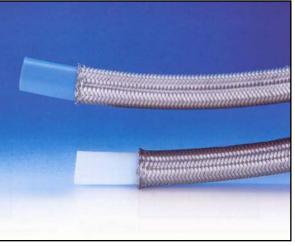
Specification Table:	KU85
Height	7.09 inches
Diameter	8.35 inches
Weight (Cartridges +/- 5%)	13.23 lbs.



### **Stainless Steel Braided Hoses**

#### **CONSTRUCTION**

The Jackson smooth bore hose is constructed of either an extruded innercore of virgin PTFE or carbon black static dissipative PTFE, both with type 304 stainless steel wire braid reinforcement. The braid acts as a pressure carrier and protective covering. There is a rubberized plastic wrap on the outside for further protection. Jackson smooth bore hose is found in many of the toughest service applications, handling



"problem" fluids such as acids, solvents, fuels, and chemicals of all types.

#### **APPLICATIONS AND BENEFITS**

- High Temperature Hydraulic / Air Applications
- Fuel and Lubricants
- High working and burst pressures
- Most economical of all hoses lined with Teflon®
- The low-friction surface of smooth bore hose provides for high flow rates
- Easily drained and/or cleaned
- Temperature Rating: -65°F (-54°C) to +450°F (+230°C)

Part Number	Nominal ID	ID	OD	Max Working Pressure	Minimum Burst Pressure	Minimum Bend Radius	Approx. Weight/ Ft.
Inlet	1/4″	.19″	.30″	3000 PSI	12000 PSI	1.9″	.060 lbs.
Outlet	3/8″	.32″	.40″	2500 PSI	10000 PSI	3.9″	.090 lbs.



### **Kleenoil Filter Cartridge Information**



The Kleenoil filter cartridge is a densely wound paper made from a long fiber coniferous pine tree that grows in Scandinavia where the pulp is only processed once. The filtration cartridge acts both by absorption and by adsorption in a continuous recycling process. The long fibers of the paper attract the water formed either through the combustion process or by condensation and absorb it like a sponge, while at the same time rejecting the large oil molecules which are forced to pass between the tight windings of the cartridge. As

the oil passes through the cartridge, minute carbon (soot), wear metals, and silicon particles (dirt) are extracted from the oil by adhering to the many surfaces of the filter - a process known as adsorption. The cartridge, by removing water inhibits the production of acids which both degrade the oil and cause corrosion. The simultaneous removal of minute contaminants as they occur enables the oil life to be extended while maintaining its original operating specification.

The Kleenoil filter cartridge will remove particles down to 1 micron (3 absolute) and (99.95%) remove water. The principle for filtering particulate matter is 'liquid liquid chromatography' which is in effect allowing a fluid to drain down a surface which will progressively arrest particles. This is achieved by having the tissue rolled on a core. Oil is passed up the core of a paper roll where it collects in a cavity between the lid of the filter housing and the paper roll. It is then forced down between the layers of the tissue where particles are adsorbed within the matrix created by the millions of cellulose fibers which form the tissue layer. The principle for filtering water is capilliary absorption into the hollow vegetable fiber of the cellulose tissue. The molecular structure of the oil is too large to be absorbed by 'capilliary action' into the fibers, however the water is absorbed into the fiber and separates from the oil.



### **Kleenoil Filter Cartridge Information**

The construction of the Kleenoil filter cartridge is cellulose tissue (paper), and we always seek to obtain a long fiber tissue which has not been previously processed. Short fibers will absorb the water, but the pressure of flowing oil will cause the water to be released back into the oil. A long fiber will have the ends crushed by the pressure of flow and a small portion of water will be permanently retained in each fiber. Water retention is approximately 1 quart per pound of tissue.

Most papers are made with a large amount of re-pulped material, with the fiber length approximately halved each time it is re-pulped. The shortened fiber will not retain a significant amount of water, and tends to collapse into a re-pulped state when water is introduced. To be able to retain a large amount of very small particles the winding of the cellulose roll must be extremely precise. Normal paper converters operate at high speed and the motion is not particularly smooth.

To make an efficient filter the winding must reflect a constant and even tension, yet not be so to tight that oil will not freely flow. Re-pulped tissue with shorter fibers will not have the tensile strength to permit the tension without breaking.

To conclude, the cellulose tissue used to manufacture a Kleenoil cartridge must be from 'virgin coniferous' or other long fiber wood. It must have no element of 'broke' (re-pulped material). There must be no chemicals such as optical bleach present, as these can alter the features of other chemicals added to the oil being cleaned. There must be a constant slow wind to give the material the optimum density and tension.

Kleenoil Cartridge Specifications	KF85
Water Retention <0.05%	0.26 Gallon
Height	4.13 inches
Diameter	7.80 inches
Weight (Cartridges +/- 5%)	2.15 lbs.



### Kleenoil Lifetime Warranty

Original equipment manufacturer warranties are unaffected by the installation of a Kleenoil Onboard Oil Recycling System - with the provision that Kleenoil USA Inc. take responsibility for its own product.

Kleenoil USA Inc. Onboard Oil Recycling Systems - (excluding hoses and fittings) carry a lifetime warranty.



Kleenoil USA Inc. warranties the Kleenoil filter housing and brackets to the original purchaser for life.

Adaptors, hose ends, and hosing will all carry the normal warranty of the original supplier of those parts.

The Kleenoil Lifetime Warranty does not cover any damages caused by you or due to external causes, including any act of God, natural disaster, accident, flood, war, sabotage, terrorism, military actions, or problems with the engine, e.g., failure to maintain the engine in accordance with its documentation (other than the manufactures' recommended oil change intervals).

Furthermore, Kleenoil USA Inc. also warranties any subsequent damage to third party property caused by a mechanical failure of its filter housing.



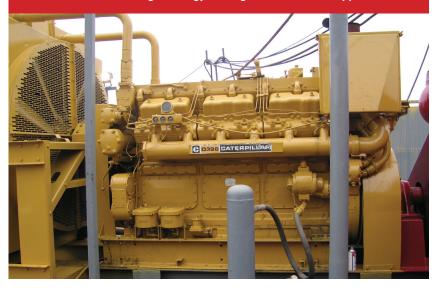


The primary benefit of **NNL 690G** is to reduce the friction caused by asperity (metal to metal) contact in the boundary lubrication regime. It is designed for lubricated systems which call for extreme pressure (EP) oils and engines requiring low ash-content oils.

#### Secondary Benefits of NNL 690G:

- Reduces ultrasonic wear noise which relates directly to component wear.
- Reduces dry start-ups.
- Lowers operating temperatures and slows oil degradation.
- Decreases wear in cold temperature applications (conventional EP additives are very dependent upon temperature to chemically react with the wear surfaces). The high film strength protection provided by NNL 690G is less dependent on temperature.
- Reduces fuel and/or electrical amperage consumption in gearbox or reducer applications.
- Improves filtration efficiency by reducing the generation of large wear particles.
- Non toxic.

"When we did our inspections on our mudpumps prior to using your product we would always find a lot of metal flake on the magnets that we placed in the bottom of our oil reservoirs. Since adding NNL 690G to our gear oil, we have dramatically reduced the amount of these metal particles found thus increasing the life of our mudpumps. The increase in the life of our mudpumps along with an effective oil analysis program to monitor the oil condition changes have saved us thousands of dollars in wear related costs. **Pat Burns, General Manager, Energy Drilling - Natchez, Mississippi** 



Toll Free: (800) 897-6937 • Fax: (972) 633-0027 • Email at: info@kleenoilusa.com





Power Up **Diesel FX** is a performance enhanced High Pressure Fuel Injector Antifoulant. **Diesel FX** prevents filter plugging and injector fouling due to extreme pressures and temperatures in today's common rail fuel injection systems. It also increases cetane number, disperses moisture, and contains both a fully synthetic lubricity improver and corrosion inhibitor. Although developed for newer model vehicles, **Diesel FX** can be used in any diesel motor engine. For use in ULSD and Biodiesel blends.

#### **Primary Benefits of Diesel FX:**

- Prevents filter plugging caused by thermal stressing within the engine
- Prevents fuel soot and sludge formation, extending fuel filter and injector life
- Cleans and prevents injector deposits in high pressure fuel injection systems
- Increases cetane number 3 to 5 numbers....can increase the Cetane number of diesel fuel up to 10%!
- Provides thermal and oxidative stability
- Improves and maintains fuel economy
- Reduces exhaust emissions
- Enhances lubricity with a fully synthetic non-acid lubricity improver
- Water dispersant to help safely remove water on a gradual basis
- Contains synthetic corrosion inhibitor
- Reduces cost of maintenance and downtime

#### Specially Formulated To Tackle the Shortcomings of Modern ULSD and Biodiesel

**Diesel FX** was developed in direct response to the performance issues surrounding modern diesel engines and new age fuels. **Diesel FX** complies with the federal low sulfur content requirements and does not exceed 15ppm.

To understand the benefits of **Diesel FX** it is important to appreciate how recent advances in engine and fuel technology have impacted vehicle performance and fleet maintenance costs. The technology at the core of the modern diesel engine is very sophisticated. Developments like high pressure common rail (HPCR) direct fuel injection have transformed vehicle performance. Today's engines are more powerful and more efficient resulting in lower emissions.



## Kleenoil USA Inc. Company Information

## Go GREEN! - Keep it KLEEN!



### **Kleenoil Company & History**

Bypass filtration has been in use for over 70 years. When faced with a national oil shortage during World War II, US Armed Forces used bypass filtration to extend oil life. With today's improved technology, including computer controlled manufacturing, more efficient filter designs and higher quality standards, bypass filtration has greatly improved.

Kleenoil USA Inc. markets and sells the Kleenoil Onboard Oil Recycling System, a bypass filtration system. Kleenoil Filtration has been in business for over 30 years, and is used worldwide. The Kleenoil Onboard Oil Recycling System is a cost-effective and energy-conscious solution targeting an annual \$13 billion potential oil market.

The Kleenoil Onboard Oil Recycling System is effective for internal combustion engines, hydraulic applications and automatic transmissions in the construction, trucking, oil field, transit, hydraulics, marine, OEM, mining, military, city, municipality, public works, agriculture, automotive, and power generating industries.

Kleenoil USA Inc. was founded and incorporated in Shreveport, Louisiana on May 5th, 2003. Kleenoil USA Inc. currently owns the national distribution rights and manufacturing rights for Power Up Lubricants product line, worldwide distribution rights for Bio-Matrix oil and chemical remediation products, and is the exclusive distributor for Kleenoil Onboard Oil Recycling Systems in North America.

Kleenoil USA Inc's. administrative functions, sales, recruiting, and marketing activities are conducted from its offices in **Plano, Texas**. The primary product warehouse and distribution center is based in Tulsa, Oklahoma.



### Manufacturers Warranty Excerpts

#### **CUMMINS**

"Cummins, Inc. neither approves nor disapproves any product which we do not manufacture or sell. The use of non-Cummins products is at the discretion of the end-user, and any problems attributed to these products would not be recognized as a Cummins responsibility.

Our warranty covers defects in workmanship and/or material as manufactured and sold by Cummins; therefore, the use of any product sold in the marketplace not manufactured by Cummins would not affect our warranty. However, any engine performance problem or failure caused by products or components not manufactured or sold by Cummins is not considered by Cummins as a warrantable type of failure."

#### VOLVO TRUCKS NORTH AMERICA INC.

"With reference to your telephone inquiry regarding the use of bypass filtration systems, we would confirm that the fitting or use of this product does not, in itself, invalidate the warranty on the engine but we reserve the right to dislaim liability for failure which, in our opinion, can be attributed directly or indirectly to the failure of any non-Volvo equipment fitted to the vehicle."

#### NAVISTAR INTERNATIONAL CORPORATION

"The position on using aftermarket products on Navistar's engines is as follows: "Navistar only recommends the use of genuine Navistar filters and maintenance items on Navistar products. When auxiliary devices, accessories, and/or consumables (filters, oil and fuel additives, synthetic oil, catalyst, etc..) made by other manufacturers are used on Navistar products, the Navistar warranty is not affected simply because of their use. The Navistar warranty continues to cover defects used by our material and workmanship. Failures resulting from the installation or usage of other manufacturers' products are not Navistar factory defects, and, therefore, are not covered by Navistar warranty. Navistar is not in a position to evaluate the many auxiliary devices, accessories, and consumables promoted by other manufacturers and their potential impact on Navistar products. Installation or use of such items is, therefore, at the discretion of the equipment owner who assumes all risks for the effects resulting from their usage. This position should be made clear to consumers/owners of Navistar equipment whenever a proposal or inquiry concerning the use of non-Navistar manufactured auxiliary devices, accessories, or consumables is received from them.

In addition to the above, we must also inform you that Navistar does not authorize the use of its trade name or trademark in a manner which implies our endorsement of these aftermarket products."



## Kleenoil USA Inc. Case Studies and Testimonials

## Go GREEN! - Keep it KLEEN!







#### July 22, 2008

To whom it may concern:

We started using the Power Up line of additives and grease about four years ago and the Kleenoil filter system about three years ago. With the Power Up additives we saw about a 6% reduction in our fuel consumption along with lower temperatures, lower RPM's, less noise, etc. The Gen 49D fuel additives make your engines burn cleaner and also adds lubricity which is very important on diesel engines because of the new low sulphur diesel.

The Gen 49D fuel additives cost about \$.09 per gallon. So with gasoline and diesel currently selling at about \$4.50, a 6% reduction in fuel consumption saves \$.27 per gallon minus the additive cost of \$.09 for a net savings of \$.18 per gallon. Plus you get the indirect savings of less wear and tear on the engine due to less rpm's, lower temperatures, etc.

We are saving even more money with the

lubricants for oil, transmissions, gear oil, etc. We were changing our engine oil on our rigs every 250-500 hours depending on the type of engine. By adding the Power Up product to our engine oil we were able to extend that oil change to 1500 hours all determined by regular oil analysis. However, when we tested the new Kleenoil filter system, we still had good oil at "5000 HOURS" and made the decision to use the Power Up additives and Kleenoil filter systems on all of our engines. We now change our oil at 2000 hours rather than the 250-500 hours mentioned above which has extended our oil life 4-8 times. Again, you also get the added value of less temperatures, rpm's, more lubricity, etc. We have oil analysis run at 1000 hours and based on ISO standards our oil at 1000 hours is better than new oil.

One big question is how this affects warranties. We are spending about \$5.0M on new CAT engines from Puckett and none of these practices will affect our warranty.

Thanks, Pat

Pat Burns, Jr General Manager Energy Drilling Company P.O. Box 905 Natchez, Ms.39121 pburns@energydrilling.com



### Energy Drilling CAT C13 Case Study





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VE RET CASH 10TH OF MONTH FOLLOWING INVOICE UNTLY HIGES SUBJECT TO CHANNER RETHERET TO DUNTS WHICH ARE NOT PAID IN THE INDITH FOLLOWING IN USED TO INTERPRET ON REICH A ACCOUNTS WILL DE ACASSED A DELIVICIANCY CHANGE AT THE RETY OF TAXE PRET POWTFICATION INVOICE IS SUBJECT TO THE CONFIDENCE DIRACT TO INTERVIEWE HERETP. SHE PRET CHATTER TO SUMMERS, ETHICS AND TOWNED THE REVIEWE HERETP. SHE PRET CHATTER TO SUMMERS, ETHICS AND TOWNED THE REVIEWE HERETP. SHE PRET CHATTER AND TO SUMMERS OF THE CONFIDENCE DIRACT HERE	FINDI 1. A SHARF 2. T DRILL 24,11 CONDI HOURS 3. A	YO HIGH INGS; ALL BEAU PE, TYPE THIS ENG ING RIG ING R	NTED TO KE HOURS ON RINGS WERE 2 300 RED, 31NE IS ON 3. THE OTH 3 AND THE CAT RECOMM N ON THE 3	ENGINE MEASURED ELECTRONI HE OF TWO F HER C-13 S/ BEARINGS W MENDS AN OW WITACHED SH TED BY THE TO	WITH A BROWN C CALIPER LOOR MOTORS N LCR04501 H MERE IN THE S FERHAUL © 12, TERNAUL © 12, TREAD SHEET, MEASUREMENTS TAL LABOR	4 AD AME 000 LITTLE SEG. A	ı			
VICE THEST APPCARS WILL DE ASSESSED A DRUBGERARY COMPARE AT THE RATE OF TANK IVE MONTH.  INVACIONATS WILL DE LOSSE WHEN THEY DRUGDER DE DATA HER STRUCTUS SAULGET TO THE CONDITIONS BHOWN ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCATION OUNTES, CHILD & AND TOWNS ON THE RAVIERE HERITIP. THE PRICE CONTENCETOR	FINDI 1. A SHARF 2. T DRILL 24,11 CONDI HOURS 3. A	YO HIGH INGS; ALL BEAU PE, TYPE THIS ENG ING RIG ING R	NTED TO KD HOURS ON RINGS WERH E 300 RED, GINK IS OR G. THE OT S. THE OT S. AND THE CAT RECOMP. N ON THE J IS EVIDENC	ENGINE MEASURED ELECTRONI HE OF TWO F HER C-13 S/ BEARINGS W HENDS AN OW WITACHED SH TED BY THE TO S	WITH A BROWN C CALIPER LOOR MOTORS N LCR04501 H MERE IN THE S FERHAUL © 12, TERNAUL © 12, TREAD SHEET, MEASUREMENTS TAL LABOR	4 AD AME 000 LITTLE				
COUNTIES, LITTES, AND TOWNS ON THE REVERSE HIRBON.	FINDI 1. A SHARF 2. T DRILL 24,11 CONDI HOURS 3. A GR NC	NO HIGH INGS; LLL BEAJ 28, TYPH HIS ENG ING RIG ING RI	NTED TO KD HOURS ON RINGS WENH E 300 RED, SINK IS ON S. THE OT S AND THE CAT RECOMP IS EVIDENC N ON THE J IS EVIDENC	ENGINE MEASURED ELECTRONI E OF TWO F HER C-13 S/ BEARINGS W HENDS AN OW ATTACHED SH TO SED BY THE TO S	WITH A BROWN C CALIPER LOOR MOTORS N LCR04501 H MERE IN THE S FERHAUL © 12, READ SHEET, MEASUREMENTS TAL LABOR FEGMENT AL TO	4 ON A AD AME 000 LITTLE SEG. A TAL PROFORM	A	CORT. D		
PROFORMAPS MISSISSIPPI LICENSE NO. 01949	FINDI 1. A SHARF 2. T DRILL 24,11 CONDI HOURS 3. A CR NO CR NO CR NO CR NO	NO HIGH INGS; LL BEAL R, TYPE HIS ENG ING RIG LA HOURS ING RIG S SHOWD WEAR WEAR HOTH OF HOD AGE NOT PAGE	NTED TO KD HOURS ON RINGS WERE 2 300 RED, GINE IS OF S AND THE OT S AND THE OT S AND THE CAT RECOMP N ON THE & IS EVIDENC * NOT	ENGINE S MEASURED ELECTRONI RE OF TWO F HER C-13 S/ BEARINGS M HENDS AN ON NTTACHED SE TO S TO S ETURNACE OCCOMMENT OCCOMMENT S S S S S S S S S S S S S	WITH A BROWN C CALIPER LOOR MOTORS 'N LCR04501 H HERE IN THE S TERHAUL © 12, TREAD SHEET, MEASUREMENTS TAL LABOR EGMENT AL TO	6 ON A AD AME 000 LITTLE SEG. A TAL PROFORM AMOUNT	A	CORT, D		



### Energy Drilling CAT C13 Case Study



Main Be	arings	Specs Lower: +/- 0.004mm						
	Spec.	1	2	3	4	5	6	7
Upper	3.950	3.940	3.940	3.930	3.930	3.930	3.940	3.940
Lower	3.946	3.930	3.930	3.930	3.920	3.920	3.930	3.930



### Energy Drilling CAT C13 Case Study



			Specs Up	ım				
Main Be	arings		Specs Lo	wer: +/-	0.004m	m		
	Spec.	1	2	3	4	5	6	7
Upper	3.950	3.940	3.940	3.930	3.940	3.940		
Lower	3.946	3.930	3.930	3.930	3.920	3.920	3.930	3.930



### Energy Drilling CAT C13 Case Study

#### **Individual PM Breakout Prior to Kleenoil**

CAT C13 Engine – recommended service @ 250 hours (prior to Kleenoil installation) Holds 15 gallons of oil @ \$9.76 / gallons = \$146.40 CAT spin on filter @ \$28.33 each Labor @ \$20 / hour Total Cost = \$194.73 / PM

#### Total Cost After 23,888 Hours Prior to Kleenoil/Power Up Installation

CAT C13 Engine - @ 250 hours service at 23,888 hours

Total Cost per PM = \$194.73 / PMWith 23,888 total hours / 250 hours = 96 Total PMs Total Cost for 96 PM's x \$194.73 = \$18,694.08CAT Recommended Engine Rebuild @ 12,000 hours = \$20,000 per rebuild x 2 (23,888 hours) = \$40,000Grand Total Cost = \$58,694.08 after 23,888 hours

#### PM Breakout After Kleenoil & Power Up Installed

CAT C13 Engine – service @ 500 hours (after Kleenoil installation & Power Up) Holds 15 gallons of oil @ \$9.76 / gallons = \$146.40 CAT spin on filter @ \$28.33 each Labor @ \$20 / hour Total Cost = \$194.73 / PM 60 oz Power Up @ \$0.99 / ounce (drum retail price) = \$59.40 Kleenoil KU50 @ \$649.00 Total Installed Cost = \$903.13

#### Total Cost After 23,888 Hours After Kleenoil/Power Up Installation

CAT C13 Engine – PM Service (Oil Changes) @ 2,000 hour intervals over 23,888 hours CAT C13 Engine – Kleenoil Cartridge Changes @ 500 hour intervals over 23,888 hours Total Cost per PM = \$194.73 / PMWith 23,888 total hours / hours = 12 Total PMs Total Cost for 12 PM's (Oil changes) x \$194.73 = \$2,336.76Total Cost for Power Up =  $$59.40 \times 12 = $712.80$ Initial Kleenoil System Cost = \$649.00Total Cost for Kleenoil Cartridges =  $$33 \times 48 = $1,584.00$ Grand Total Cost = \$5,282.56 after 23,888 hours

Total Cost Prior to Kleenoil / Power Up = \$58,694.08 after 23,888 hours Total Cost After Kleenoil / Power Up = \$5,282.56 after 23,888 hours Total Cost After Kleenoil / Power Up (Savings in Oil Changes Alone) = \$18,694.08 - \$5,282.56 = \$13,411.52 **Total Savings with Kleenoil / Power Up (Including Engine Rebuilds)** = \$58,694.08 - \$5,282.56 = \$53,411.52



### **Kleenoil USA Reference Contacts**

ENER(	Y DRILLING CO. RIG9	
Company	Contact	Phone Number
Energy Drilling	Pat Burns	(601) 446-5259
McVay Drilling	Dominick Mendoza	(575) 441-0666
Silveroak Drilling	Eddie Larue	(575) 703-5261
Bison Drilling	Darron Honea	(432) 207-2700
Latshaw Drilling	Joey Stockton	(405) 338-8023
Nalco Champion	Wes Fuller	(432) 634-2286

Each of these contacts are Kleenoil customers at drilling rig companies, which have used the Kleenoil System for many years.



## Kleenoil USA Inc. Oil Analysis Samples

## Go GREEN! - Keep it KLEEN!



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WEAP			CO	NTAMINATI	ON	NORM	IAL
MOB			C	DIL CONDITIO	ON	NORM	IAL
	DEDODE			WE.	AR	NORM	IAL
MOBILE OIL ANALYSIS	REPORT						
		RIG 2	228 DF	<b>AWWORK</b>	S 1 - I	Diesel I	Engine
Unit Make : DRAWWORKS 1							
Unit Model : {n/a}	Serial No	: {n/a}		Date Rec'd	: Apo	r 20, 2011	
Comp Make : {n/a}	Cust. Ref No.	: {n/a}		Sample Dat	e :Apo	r 12, 2011	
Comp Model : {n/a}	Stub No.	: KL-M2208709		Diagnostici	an : Do	n Baldrid	ge
RECOMMENDATION		Sample I	Date	02/23/11	03/16/11	Current	UOM
		Time on	Unit	0	0	0	hrs
Resample at the next service interval to monitor.		Time on		325	825	1350	hrs
		Time on 3		0	0	0	hrs
		Oil Main		n/a	n/a	not chg	
		Filter Ma		n/a	n/a	n/a	
CONTAMINATION		Sample I	Date		03/16/11		Abn
The amount and size of particulates present in th		Silicon Fuel (%)		2.2 <2.0	3.0 0.0	3.1 <2.0	
acceptable. There is no indication of any contamin	nation in the	Glycol		2.0	0.0	~2.0	
component.		Water (%	6)	<0.1	<0.1	<0.1	
		Soot (%)	*	0.4	0.7	1.8	
		>4µm(c)		358	910	346	
		>бµm(c)		195	495	188	
		>14µm(c)		33	84	32	
		>21µm(c)		11	28	10	
		>38µm(c) >70µm(c)		0	4	0	
		ISO 4406		15/12	16/14	15/12	
OIL CONDITION		Sample I			03/16/11		Base
OIL CONDITION		Potassiu		2.6	0.0	0.0	Dase
Oil Type: (GENERIC) SAE 15W40		Boron		3.6	2.2	2.0	
The condition of oil is suitable for further service.		Barium		0.3	0.0	0.0	
		Calcium		1200	1534	1580	
		Magnesi		817	640	555	
		Molybde Sodium	num	2.0	3.1	1.1	
		Phospho	rus	956	986	932	
		Sulfur		2677	5011	5652	
		Zinc		1152	940	808	
		Visc@10	0°C	14.02	13.03	13.41	14.5
		TBN		9.58	9.43	5.90	
WEAR		Sample I	Date	02/23/11	03/16/11	Current	Abn
All component wear rates are normal.		PQ					
		Iron		21	31	55	
		Nickel Chromiu		0.4	1.1 1.4	0.0 2.3	
		Titanium		0.6	1.4	0.9	
		Copper		1.3	1.1	6.5	
		Aluminu	m	0.6	0.7	0.7	
		Tin		0.9	0.0	0.0	
		Lead		0.0	0.0	3.7	
		Silver		0.1	0.0	0.0	
Report ID - UNIABI [WUSCAR] 02841323 - P	g. 1		C 1996-20	08WearCheck Canada In	e All Right	Reserved.	WCCF1110



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	WEAPTY				NTAM			NORM	
	CHELN			0	OIL COI			NORM	
	OBILE OIL ANA	LYSIS REPORT				WEA		NORM	IAL
				RIG 228 D	RAWW	VORK	S 2 - D	Diesel H	Engine
Unit Make	: DRAWWORKS 2								
Unit Model	: {n/a}	Serial No	: { <b>n/a</b> }	}	Da	te Rec'd	: Apr	20, 2011	
Comp Make	: {n/a}	Cust. Ref No.	: { <b>n</b> /a}	}	Sat	mple Dat	e : Apr	12, 2011	
Comp Model	: {n/a}	Stub No.	: KL-M	42208681	Dia	agnostici	an :Don	n Baldrid	ge
RECOMM	IENDATION			Sample Date			03/16/11		UOM
Resample at th	e next service interval to	monitor.		Time on Unit Time on Oil		0	0 825	0	hrs
				Time on Fltr		300 0	825	1350 0	hrs hrs
				Oil Maint.		-	not chg	-	
				Filter Maint.		n/a	not chg	n/a	
CONTAM	INATION		İ	Sample Date		02/22/11	03/16/11	Current	Abn
	nd size of particulates pre	cant in the curtom is		Silicon		1.6	3.9	2.8	
	ere is no indication of any			Fuel (%)		<2.0	<2.0	<2.0	
component.				Glycol		<0.1	<0.1	<0.1	
				Water (%) Soot (%)		0.3	1.5	1.1	
				>4µm(c)		653	1.2	474	
				>6µm(c)		356		258	
				>14µm(c)		60		44	
				>21µm(c)		20		14	
				>38μm(c) >70μm(c)		3		2	
				ISO 4406(c)		16/13		15/13	
OIL CONI	DITION			Sample Date		02/22/11	03/16/11	Current	Base
				Potassium		0.7	0.0	0.0	
Oil Type: 44 G	AL of (GENERIC) SAE	15W40		Boron		3.7	2.6	2.2	
The condition (	of oil is suitable for furth	er service.		Barium Calcium		0.3	0.2 1066	0.0	
				Magnesium		829	729	616	
				Molybdenum		2.1	0.9	1.4	
				Sodium		2.9	4.5	1.5	
				Phosphorus		946	949	932	
				Sulfur Zinc		2699 1157	2505 1052	4433 905	
				Zinc Visc@100°C		13.8	1052	13.43	14.5
				TBN		8.83	8.85	6.73	
WEAR				Sample Date		02/22/11	03/16/11	Current	Abn
	t wear rates are normal.			PQ					
An component	i wear rates are normal.			Iron		21	11	42	
				Nickel Chromium		0.4 1.0	2.5 0.5	0.0	
				Titanium		0.6	0.5	2.1 0.9	
				Copper		0.8	4.4	2.5	
				Aluminum		0.5	0.7	0.7	
				Tin		0.4	0.0	0.0	
				Lead		1.0	1.3	3.5	
Penert ID ID	NIABI (WUSCAR) 028	41224 Be 1	I	Silver 0 1996-2	008WearChec	0.0 & Canada In	0.0	0.0 Reserved	WCCELLIO
Report ID - UI	MABI [WUSCAR] 028	+1524 - Pg. 1		G 1990-2	ore wear-upc	a canada in	- An Aighb	Actived.	accertito



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WEAPOV			CO	NTAMINA	TION	NORM	IAL
MOB CHELL			(	DIL CONDI		NORM	
MOBILE OIL ANALYSI	S REPORT			W	EAR	NORM	IAL
			PIC 228 (	TENEDAT	0821	Diasal	Engine
Unit Make : GENERATOR 2			NG 220 C	GENERAT	OK 2 - 1	Dieser	ingine
Unit Model : {n/a}	Serial No	: {n/a}		Date Rec	'd : An	r 20, 2011	
Comp Make : {n/a}	Cust. Ref No.	: {n/a}		Sample I	-	r 12, 2011	
Comp Model : {n/a}	Stub No.		2208702	Diagnos	tician : Do		
RECOMMENDATION		S	Sample Date	02/23/	11 03/16/11	Current	UOM
Resample at the next service interval to monitor			l'ime on Unit	26		0	hrs
resulpte of the next service interval to mounty			Time on Oil		0 825	1350	hrs
			Fime on Fltr Dil Maint.		0 0 /a n/a	0 not chg	hrs
			Filter Maint.		/a not chg	-	
CONTAMINATION			Sample Date		11 03/16/11	_	Abn
			Silicon		.6 4.6	14	
The amount and size of particulates present in acceptable. There is no indication of any contan		F	Fuel (%)	<	.0 <2.0	<2.0	
component.			Glycol				
			Water (%)	<		<0.1	
			Soot (%) :4µm(c)	34	0.2 0.1 23 1294	0.2 589	
			•бµш(с)	18		321	
			14µm(c)	3	17 120	54	
		>	-21μm(c)	1	07 40	18	
			-38µm(c)		16 6	2	
			•70µm(c) SO 4406(c)	18/	1 0 15 17/14	0 16/13	
OIL CONDITION			Sample Date		11 03/16/11		Base
OIL CONDITION			otassium		.9 0.0		Dase
Oil Type: (GENERIC) SAE 15W40		E	Boron		.2 2.7	2.7	
The condition of oil is suitable for further service	e.	-	Barium		.2 0.0	0.0	
			Calcium	12	50 1355 49 715	1223	
			Magnesium Molybdenum			1.3	
			Sodium		.5 4.6		
		F	Phosphorus	9	60 962	913	
			Sulfur	25		3148	
			Zinc	11. 13.		1024	14.5
			Visc@100°C TBN		+5 14.45 69 7.02	14.36 5.93	14.5
WEAR		_	Sample Date		11 03/16/11		Abn
			Q Q				AU
All component wear rates are normal.			ron		14 17		
			Nickel		.5 1.3		
			Chromium		.3 0.4		
			Fitanium Copper		.7 0.9 .5 4.7		
			Aluminum		.0 1.2		
			lin		.9 0.0		
		I	lead		.7 0.0	4.0	
		S	Silver		.0 0.0	0.0	
Report ID - UNIABI [WUSCAR] 02841322 -	Pg. 1		C 1996-20	008WearCheck Canad	a Inc All Righ	is Reserved.	WCCF1110



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MOB WEAR		CC			
		OIL CONDITION WEAR	NORM		
MOBILE OIL ANA	LYSIS REPORT				
		RIG	228 GENSET 1	- Diesel H	Engine
Unit Make : GENSET 1					0
Unit Model : {n/a}	Serial No	: {n/a}	Date Rec'd	Apr 20, 2011	
Comp Make : {n/a}	Cust. Ref No.	: { <b>n</b> /a}	Sample Date	Apr 12, 2011	
Comp Model : {n/a}	Stub No.	: KL-M2208677	Diagnostician	Don Baldrid	ge
RECOMMENDATION		Sample Date	02/23/11 03/10	5/11 Current	UOM
Resample at the next service interval to n	nonitor	Time on Unit	4976	0 0	hrs
		Time on Oil	325	825 1350	hrs
		Time on Fltr Oil Maint.		0 0 n/a n/a	hrs
		Filter Maint.		chg not chg	
CONTAMINATION		Sample Date	02/23/11 03/10		Abn
		Silicon	1.9	3.7 4.1	101
The amount and size of particulates pres acceptable. There is no indication of any		Fuel (%)	<2.0 <	2.0 <2.0	
component.		Glycol			
		Water (%)		:0.1 <0.1	
		Soot (%) >4µm(c)	0 602 1	0.3 0.3 820 1525	
		>6μm(c)		991 831	
		>14µm(c)	55	168 141	
		>21µm(c)	18	57 47	
		>38µm(c)	2	8 7	
		>70µm(c) ISO 4406(c)	0 16/13 17	0 0 //15 17/14	
OIL CONDITION		Sample Date	02/23/11 03/10	5/11 Current	Base
OI THE CONTRACT OF A DE LOUIS		Potassium	2.2	0.0 0.0	
Oil Type: (GENERIC) SAE 15W40	Boron Barium	4.4	1.9 2.1 0.0 0.0		
The condition of oil is suitable for furthe	r service.	Calcium		552 1375	
		Magnesium		647 668	
		Molybdenum	2.5	1.9 0.4	
		Sodium	3.1	3.0 3.2	
		Phosphorus Sulfur		928 915 760 4369	
		Zinc		940 916	
		Visc@100°C	14.29 1	3.3 13.33	14.5
		TBN	9.31 7	.67 7.38	
WEAR		Sample Date	02/23/11 03/10	5/11 Current	Abn
All component wear rates are normal.		PQ			
		Iron Nickel	15	24 16 0.9 0.0	
		Chromium	0.5	0.5 0.5	
		Titanium	0.5	1.0 0.8	
		Copper	4.6	5.4 3.5	
		Aluminum	1.0	0.7 0.5	
		Tin Lead	0.9	0.0 0.0 0.4 1.4	
		Silver	0.0	0.4 1.4	
Report ID - UNIARI (WUSCAR) 0284	1321 - Pg 1		2008WearCheck Canada Inc All		WCCF1110
Second Concern Investigation/24	that PF 1	C 1990-1	Contrast of the contrast of the state of the	agene posta rut.	



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MOB WEARCK		CONTAMINATION OIL CONDITION			NORMAL	
MOBILE OIL ANALYSIS REPORT			WEAR	NORM	<b>IAL</b>	
		RIG 225	8 MUD PUMP	1 - Diesel I	Engine	
Unit Make : MUD PUMP 1		100 220	5 MOD I 0MI	Dieseri	Lugine	
Unit Model : {n/a} Serial No	: {n/a	}	Date Rec'd	: Apr 20, 2011	1	
Comp Make : {n/a} Cust. Ref No.	. : { <b>n</b> /a	}	Sample Date	: Apr 12, 2011	L	
Comp Model : {n/a} Stub No.	: KL-1	M2208679	Diagnostician	: Don Baldrid	ge	
RECOMMENDATION		Sample Date		16/11 Current	UOM	
Resample at the next service interval to monitor.		Time on Unit Time on Oil	2072	0 0 825 1350	hrs hrs	
		Time on Fltr	0	0 0	hrs	
		Oil Maint.	not chg n	ot chg not chg		
		Filter Maint.	n/a n	ot chg n/a		
CONTAMINATION		Sample Date	02/23/11 03/	/16/11 Current	Abn	
The amount and size of particulates present in the system is		Silicon	1.5	2.7 2.6		
acceptable. There is no indication of any contamination in the		Fuel (%)	<2.0	<2.0 <2.0		
component.		Glycol Water (%)	<0.1	<0.1 <0.1		
		Soot (%)	0.2	0.3 0.4		
		>4µm(c)	884	1166 3884		
		>бµт(с)	481	635 2116		
		>14µm(c)	82	108 360		
		>21µm(c)	27	36 121 5 18		
		>38µm(c) >70µm(c)	4	0 1		
		ISO 4406(c)		16/14 18/16		
OIL CONDITION		Sample Date		/16/11 Current	Base	
OF THE CENTRE OF A PLOT AND		Potassium	1.3	0.0 0.0		
Oil Type: (GENERIC) SAE 15W40		Boron Barium	7.6	5.1 4.7 0.2 0.0		
The condition of oil is suitable for further service.		Calcium	1220	1248 1190		
		Magnesium	838	752 726		
		Molybdenum	4.6	3.8 3.1		
		Sodium	3.6	4.1 4.0		
		Phosphorus Sulfur	948 2722	952 910 3270 3066		
		Zinc	1156	1040 998		
		Visc@100°C		14.28 14.12	14.5	
		TBN	10.9	8.25 7.24		
WEAR		Sample Date	02/23/11 03/	/16/11 Current	Abn	
All component wear rates are normal.		PQ				
•		Iron	8.4	10 11		
		Nickel Chromium	0.4	1.6 0.0 0.5 0.8		
		Titanium	0.3	0.7 0.6		
		Copper	19	53 62		
		Aluminum	1.5	1.1 0.8		
		Tin	0.1	0.0 0.0		
		Lead Silver	1.3	0.0 5.2		
Report ID - UNIABI [WUSCAR] 02841320 - Pg. 1			0.2 008WearCheck Canada Inc A		WCCF1110	
				-		



Kleenoil USA Inc • 6913 Aven	ue K • Suite ;	#303 •	Plano, Texas	• 75074 • www.kl	eenoilusa.c	com
MOB WEAP CHELK		CONTAMINATION OIL CONDITION WEAR			NORMAL NORMAL NORMAL	
MOBILE OIL ANALYSI	S REPORT			WEAK	NORM	IAL
			RIG 229	MUD PUMP 2	- Diesel H	Engine
Unit Make : MUD PUMP 2						
Unit Model : {n/a}	Serial No	: { <b>n/a</b> ]			: Apr 20, 2011	
Comp Make : {n/a}	Cust. Ref No.			-	: Apr 12, 2011	
Comp Model : {n/a}	Stub No.	: KL-8	42208678	Diagnostician		
RECOMMENDATION			Sample Date Time on Unit		Current 0	UOM hrs
Resample at the next service interval to monitor.			Time on Oil		1350	hrs
			Time on Fltr		0	hrs
			Oil Maint.		not chg	
			Filter Maint.		n/a	
CONTAMINATION			Sample Date Silicon		Current 6.1	Abn
The amount and size of particulates present in the			Fuel (%)		<2.0	
acceptable. There is no indication of any contam component.	ination in the		Glycol			
component.			Water (%)		<0.1	
			Soot (%)		0.2	
			>4µm(c) >бµm(c)		859 467	
			>14µm(c)		79	
			>21µm(c)		26	
			>38µm(c)		4	
			>70μm(c) ISO 4406(c)		0 16/13	
OIL CONDITION			Sample Date		Current	Base
Oil Type: (GENERIC) SAE 15W40			Potassium Boron		0.0	
The condition of oil is suitable for further service			Barium		0.0	
The condition of on 15 Salable for Identic Scivic			Calcium		2092	
			Magnesium		364	
			Molybdenum Sodium		4.4	
			Phosphorus		1045	
			Sulfur		4042	
			Zinc		1092	
			Visc@100°C TBN		14.45 9.56	14.5
WIT AD			Sample Date		Current	Abn
WEAR			PQ		Current	AU
All component wear rates are normal.			Iron		18	
			Nickel		0.0	
			Chromium		1.0	
			Titanium Copper		0.5	
			Aluminum		2.9	
			Tin		0.0	
			Lead		10	
			Silver		0.7	
Report ID - UNIABI [WUSCAR] 02841317 - I	/g. 1		C 1996-20	008WearCheck Canada Inc All	Rights Reserved.	wCCF1110



## Nabors Drilling Cost Savings Using Kleenoil and Power Up

## Go GREEN! - Keep it KLEEN!



### Nabors Drilling Savings Analysis

#### Current Situation (Changing the oil on every rig every 3 weeks):

\$8,000 per oil change (cost of oil, filters and service) x 17 1/3 (every 3 week oil changes)
 x 600 rigs = \$83,184,000 annually.

#### Proposed Kleenoil / Power Up Cost (Initial):

- Kleenoil Onboard Oil Recycling Systems @ \$799 per unit x 8 units per rig x 600 rigs = \$3,835,200
- Installation for Kleenoil Onboard Oil Recycling Systems @ \$200 per installation x 8 units per rig x 600 rigs = \$960,000
- Kleenoil Onboard Oil Recycling System Cartridges for 1 Year @ \$79 per cartridge x 8 units per rig x 600 rigs x 17 1/3 (every 3 week cartridge changes) 4800 Kleenoil Cartridges included with initial Kleenoil System purchase = **\$6,192,336**
- Power Up NNL-690G Oil Additive @ \$699 per 5 gallon pail x 4 x 3.46 oil changes per year x 600 rigs = \$5,804,496
- Full Traditional Oil Changes @ \$8,000 x 3.46 times (every 15 week oil changes) x 600 rigs; annual costs = \$16,608,000
- Filter Change and Sample Taking Personnel 4 people @ \$75,000 each = \$300,000
- <u>New Cost Year 1 for Nabors Drilling with Kleenoil / Power Up changing the oil every</u>
   15 weeks = \$ 33,700,032

Total Initial First Year Savings Switching to Kleenoil / Power Up for Nabors Drilling = \$49,483,968

Each Additional Year Savings for Nabors Drilling Using Kleenoil / Power Up (Capital expense for Kleenoil Systems and Installation already absorbed year 1)

#### = \$53,899,968



### Nabors Drilling Rollout - Year 1 (200 Rigs)

#### <u>Current Situation (Changing the oil on every rig every 3 weeks):</u>

\$8,000 per oil change (cost of oil, filters and service) x 17 1/3 (every 3 week oil changes)
 x 200 rigs = \$27,728,000 annually.

#### Proposed Kleenoil / Power Up Cost (Initial):

- Kleenoil Onboard Oil Recycling Systems @ \$799 per unit x 8 units per rig x 200 rigs = \$1,278,400
- Installation for Kleenoil Onboard Oil Recycling Systems @ \$200 per installation x 8 units per rig x 200 rigs = \$320,000
- Kleenoil Onboard Oil Recycling System Cartridges for 1 Year @ \$79 per cartridge x 8 units per rig x 200 rigs x 17 1/3 (every 3 week cartridge changes) 1600 Kleenoil Cartridges included with initial Kleenoil System purchase = **\$2,064,112**
- Power Up NNL-690G Oil Additive @ \$699 per 5 gallon pail x 4 x 3.46 oil changes per year x 200 rigs = \$1,934,832
- Full Traditional Oil Changes @ \$8,000 x 3.46 times (every 15 week oil changes) x 200 rigs; annual costs = \$5,536,000
- Filter Change and Sample Taking Personnel 4 people @ \$75,000 each = \$300,000
- <u>New Cost Year 1 for Nabors Drilling with Kleenoil / Power Up changing the oil every</u>
   <u>15 weeks</u> = \$ 11,233,344

Total Initial First Year Savings Switching to Kleenoil / Power Up for Nabors Drilling = \$16,494,656

Each Additional Year Savings for Nabors Drilling Using Kleenoil / Power Up (Capital expense for Kleenoil Systems and Installation already absorbed year 1) = \$17,966,656



### Nabors Drilling Rollout - Year 2 (400 Rigs)

#### Current Situation (Changing the oil on every rig every 3 weeks):

\$8,000 per oil change (cost of oil, filters and service) x 17 1/3 (every 3 week oil changes)
 x 400 rigs = \$55,456,000 annually.

#### Proposed Kleenoil / Power Up Cost (Initial):

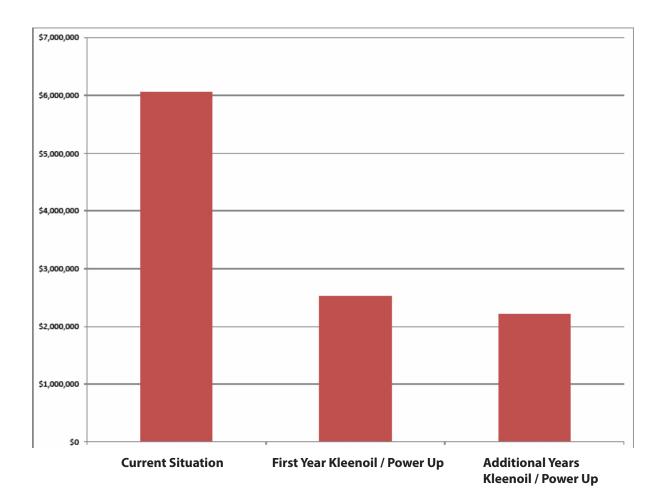
- Kleenoil Onboard Oil Recycling Systems @ \$799 per unit x 8 units per rig x 400 rigs = \$2,556,800
- Installation for Kleenoil Onboard Oil Recycling Systems @ \$200 per installation x 8 units per rig x 400 rigs = \$640,000
- Kleenoil Onboard Oil Recycling System Cartridges for 1 Year @ \$79 per cartridge x 8 units per rig x 400 rigs x 17 1/3 (every 3 week cartridge changes) 3200 Kleenoil Cartridges included with initial Kleenoil System purchase = **\$4,128,224**
- Power Up NNL-690G Oil Additive @ \$699 per 5 gallon pail x 4 x 3.46 oil changes per year x 400 rigs = \$3,869,664
- Full Traditional Oil Changes @ \$8,000 x 3.46 times (every 15 week oil changes) x 400 rigs; annual costs = \$11,072,000
- Filter Change and Sample Taking Personnel 4 people @ \$75,000 each = \$300,000
- New Cost Year 1 for Nabors Drilling with Kleenoil / Power Up changing the oil every <u>15 weeks</u> = \$ 22,466,688

Total Initial Second Year Savings Switching to Kleenoil / Power Up for Nabors Drilling = \$32,989,312

Each Additional Year Savings for Nabors Drilling Using Kleenoil / Power Up (Capital expense for Kleenoil Systems and Installation already absorbed year 2) = \$35,933,312



### Nabors Drilling Annual Cost Comparison





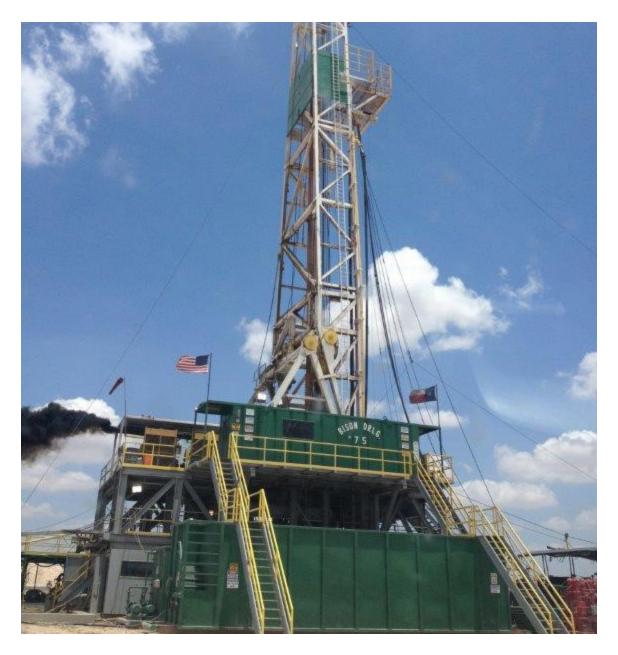
### Silveroak Drilling Kleenoil Installations Photos



Toll Free: (800) 897-6937 • Fax: (972) 633-0027 • Email at: info@kleenoilusa.com



### **Bison Drilling Kleenoil Installations Photos**



Toll Free: (800) 897-6937 • Fax: (972) 633-0027 • Email at: info@kleenoilusa.com



### McVay Drilling Kleenoil Installations Photos





# McVay Drilling Testimonial

401 East Bender, Hobbs, NM 88241

To Whom it May Concern,

In June 2012, Sid Preston, with Triad Lubrication LLC, contacted me regarding a unique On-Board Oil Recycling System called Kleenoil. My interest in the product was its ability to reduce wear in our rig engines.

Triad Lubrication installed these by-pass filtration systems on all the engines on Rig 5. Sid and his crew began servicing the Kleenoil devices every twenty days by changing the filter cartridges and taking an oil sample. The samples were sent to an independent oil analysis lab, Wear Check USA. After the first service, the cleanliness of the oil had improved. The oil was clean, the chemical condition of the oil had changed very little and there was no wear taking place.

Over the next year, the lab results remained the same. The decision was made to install Kleenoil on all the engines on all the McVay rigs. We also began using PowerUp NNL- 690. This was done to boost the additive package of the oil and add a boundary lubricant. At the same time we added PowerUp NNL – 690G to the pump gear boxes.

Initially, we at McVay, were only interested in extending engine life by reducing wear. We soon realized another financial benefit. By using both the Kleenoil System and PowerUp lubricants, we are now able to go up to six months (4000+ hours) between oil changes based on the strict oil analysis program provided by Triad. We know this is a large cash savings.

Of great value to us has been the detection of contamination in the oil before a catastrophic failure. There have been three occasions where severe fuel dilution was detected and reported to us in time to fix the problem before losing the engine. I estimated we saved over \$30,000 in repairs on this engine during the first year.

I would recommend the products and professionalism of Triad Lubrication.

Sincerely,

Dominik Mendoza, Yard Supervisor for McVay Drilling



### NALCO Oil and Gas Kleenoil Installations Photos





#### NALCO Testimonial

#### **NALCO** Champion

An Ecolab Company



To whom it may concern,

I strongly recommend using Power Up Lubrication products and Kleenoil Bypass Filtration Systems. The use of their lubricants and filtration systems has saved my company a lot of money, downtime and is good for our planet (GREEN). The money saved by less materials used (i.e oil, filters and disposal) is huge. The money saved by keeping the trucks in the field instead of in the shop is even bigger. On average, over the 500 trucks we have the filtration systems on, we save 4 trips to the shop for PM Service, per year, per truck. This means that the trucks are in the field working instead of having to be scheduled to be down for service. Materials used saving plus less waste to pay or disposal fees and trucks working instead of being worked on means real dollar savings. Like my Daddy used to say, "A penny saved is a penny earned". This is more than pennies. We have saved barrels of real dollars, not to mention making your equipment last longer.

In short, I can't say enough for or about Power Up Lubricants or Kleenoil Bypass Filtration Systems except that it is money well spent.

Thanks, Full

Wesley Fuller Nalco Champion Equipment Maintenance Manager N.A. P 432-634-2286 F 915-975-8096



#### **Dominion Kleenoil Installations Photos**

