



High-Velocity Oil Flushing and Filtration Services

for Critical Rotating Equipment
and Hydraulic Systems



About EPT Clean Oil

EPT Clean Oil is a lube oil and control fluid specialist offering end-to-end lifecycle management for critical rotating equipment and hydraulic systems. We offer a family of engineered products and services focused on the root cause of lubricant-related failure, driving system integrity over the lifecycle of critical assets.

Our goal is to work alongside our customers to optimize the life of turbine lube oil and control fluid, providing solutions that transform operational results and eliminate failures.

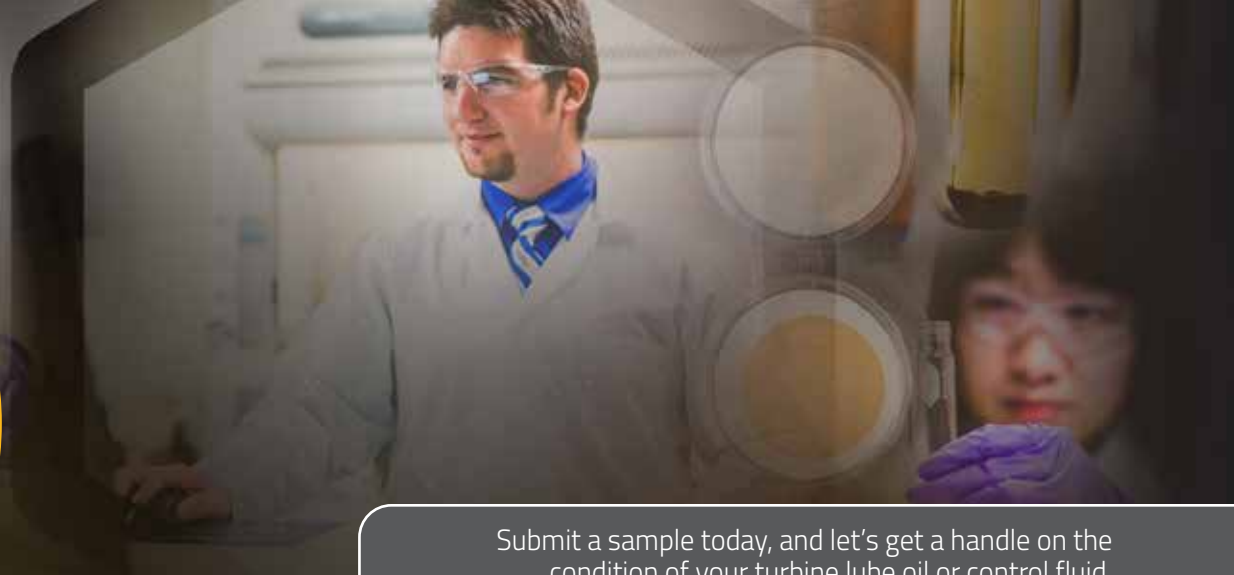
Since 1994, EPT Clean Oil has been regarded as a leader in high-velocity flushing, lubricant polishing and chemical cleaning Canada-wide. We integrate next-generation filtration technology and lubricant management expertise to drive the strategic execution of customer projects.

Our team of professional Service Technicians provide comprehensive solutions focused on lube oil purification, dehydration and varnish removal to ensure you:

1. Meet or exceed ISO and NAS cleanliness requirements
2. Extend equipment, oil and filter life
3. Reduce system maintenance and downtime

Redefine rotating and hydraulic equipment flushing and cleaning services with our integrated lubricant maintenance solutions, best-in-class equipment and professional service technicians. You can expect more when you partner with EPT Clean Oil.

To learn more, visit cleanoil.com/field-services



Submit a sample today, and let's get a handle on the condition of your turbine lube oil or control fluid.

lab@cleanoil.com

It Starts With Lubricant Condition Monitoring




The foundation of critical rotating equipment and hydraulic system maintenance programs starts with the right test, at the right time and to the right ASTM standard. When you partner with EPT Clean Oil, we provide this foundation, bringing certainty and predictability to your maintenance program.

Our Fluid Technical Center team of subject matter expert professional and Ph.D. chemists provide comprehensive interpretations of your oil's condition and remaining lifetime to optimize, extend and align lubricant asset lifecycles with maintenance windows years in advance.

Our ASTM-compliant Testing Packages

Rust & Oxidation Turbine Oil ASTM D4378	Phosphate Ester Fluid ASTM D8323	Aeroderivative Turbine Oil
<ul style="list-style-type: none"> ▪ MPC Varnish Potential ▪ Acid Number ▪ Fluid Color ▪ Viscosity (40°C) ▪ Water ▪ ISO Particle Count ▪ Dissolved Metals ▪ Antioxidant Levels ▪ Demulsibility (Steam Turbine Lube Oils) 	<ul style="list-style-type: none"> ▪ Acid Number ▪ MPC Varnish Potential ▪ Patch Weight ▪ Resistivity (20°C) ▪ Phenol Levels ▪ Water Content ▪ ISO Particle Count ▪ Dissolved Metals ▪ Fluid Color ▪ Viscosity (40°C) 	<ul style="list-style-type: none"> ▪ Acid Number ▪ MPC Varnish Potential and Patch Weight ▪ Viscosity (40°C) ▪ Water ▪ ISO Particle Count ▪ Dissolved Metals ▪ Fluid Color ▪ Antioxidant Levels





High-Velocity Oil Flushing

Critical rotating equipment hydraulic and lube oil systems demand stringent cleanliness tolerances that must be maintained to optimize equipment performance. System contaminants ranging from pipe scale, welding slag, metal shavings, dirt, dust and water compromise system operation, reliability and the potential equipment lifetime.

Higher turbulent flow rates are demanded to force contaminants, including large debris and small particles, out of the system. Laminar flow, or regular system flow, does not result in the required agitation, contributing to deadheads and costly downtime. Through high flow turbulent oil flushing services, flows more than two to three times the regular flow rate of the system's pumps can be achieved.

Maintain the stringent cleanliness tolerances your system demands and optimize equipment performance by rapidly removing contaminants with our High-Velocity Oil Flushing Services.

WHEN TO CONSIDER HIGH-VELOCITY OIL FLUSHING SERVICES

1. Newly installed systems
2. Preventative maintenance
3. Contamination
4. Oil change-out
5. Excessive bearing wear
6. Catastrophes



Contact EPT Clean Oil to learn more about our proven High-Velocity Oil Flushing Services. sales@cleanoil.com

Meet Our Services

At EPT Clean Oil, we offer best-in-class equipment and analysis to successfully flush the system, including portable reservoirs, high-velocity external pumps, vacuum dehydrators, moisture removal equipment, external filtration equipment and on-site real-time oil analysis. Armed with our Pre-job Inspection Test Plan (ITP) Checklist, robust safety and spill prevention plans, flushes are executed to the system cleanliness demanded, achieving at minimum API 614 for general-purpose lube oil systems ISO Code and NAS Class cleanliness requirements.

Our approach is customized according to customer needs with up to 600 gal/min flow rates. Our flushing process adheres to the ASTM D6439-11 standards, incorporating other industry best practices and proprietary procedures based on our extensive experience in flushing to ensure successful results.

1. Selection of flushing fluid – For new turbine lubricant systems, the need for a separate flushing fluid is not always necessary. The operating fluid rather than a flushing or chemical agent can be used as the flushing fluid depending on the flushing specifications.
2. Preparation of system for flushing – Our pre-cleaning of flushing equipment ensures that flushing fluids exceed OEM fluid specifications before the process begins.
3. Charging flushing fluid to the reservoir – Fluid is purified, dehydrated and qualified extensively throughout this process.
4. Flushing operation – Flushing occurs with optimal flow rates, thermal processing, vibration and dehydration with real-time oil analysis qualifying the cleanliness of the flushing loop.
5. Draining of fluid used for flushing – When operating fluid is used for flushing, it can be analyzed and qualified fit for service, contained, and repurposed as system fill, make-up oil or flushing oil.
6. Displacement fluid – Disposal of all waste products is administered following environmental regulations.





Chemical Cleaning Services



0 HRS



6 HRS



24 HRS



72 HRS

Mineral oil lubricants are subject to oxidation, giving rise to breakdown products that ultimately lead to harmful sludge and varnish deposits. Varnish insulates cooler components, making them less efficient heat exchangers, and can lead to pitting corrosion on cooler turbulators.

A sub-optimal performing cooler manifests production constraints and lost capacity. In normal operating conditions, efficient functioning coolers provide a 20°C delta to avoid equipment operating temperature ceilings. In the absence of adequate cooling performance, system downtime and costly production losses are a reality.

Meet ecoREM™

ecoREM is a non-harmful and ecological chemical treatment solution designed to remove unwanted contaminants including debris, oxides and varnish from piping or vessels. Eliminating the risks associated with lubricant varnishing and sludge formation, ecoREM ensures 100% production capacity and optimal asset performance.



Contact EPT Clean Oil to learn more about our Chemical Cleaning Services. sales@cleanoil.com



Contact EPT Clean Oil to learn more about proactive maintenance and monitoring programs for your critical application. sales@cleanoil.com

Proactive Fluid Maintenance and Monitoring

After draining, flushing, cleaning and filling your system, protect your trouble-free operating window and maintain your turbine lube oil or control fluid in a predictable managed state.

STEP ONE: **LUBRICANT MONITORING**

Submit monthly samples to EPT Clean Oil's Fluid Technical Center for testing and monitoring against the final flushing report to ensure fluid quality remains in specification. We will test to ASTM standards required for warranty purposes and satisfy any insurance company documentation requirements.

STEP TWO: **LUBRICANT CHEMISTRY MANAGEMENT**

From the first day, a lubricant is put into service, it begins to break down due to oxidation. Skid-mounted dialysis lubricant conditioning system, SVR®, back by patented ion-exchange technology, ICB®, proactively manages the fluid chemistry and contamination levels.

STEP THREE: **ANNUAL TOP-UP**

Don't dismiss the importance of topping up fluids annually by 5% to maintain additive levels. In partnership with lubricant monitoring and chemistry management, there is no oxidation material in the system to react with the additive in the top-up, allowing you to get the maximum benefit from the additive available.



Clean-up Solutions are available at a managed fixed monthly cost.



ICB® AW

ICB® JET

ICB® RO

ICB® FRF

Be In Touch

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