



TECHNICAL

Monitor™

FLUID ANALYSIS PROGRAM

FLUID ANALYSIS





MONITOR™
FLUID ANALYSIS PROGRAM

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MONITOR™ FLUID ANALYSIS PROGRAM



What can the MONITOR Fluid Analysis Program Do For You?

Fluid Analysis provides you with a snapshot of what is happening inside your equipment. It tells you the condition of the lubricant or fluid and identifies component wear and contamination in virtually any application. With the MONITOR Fluid Analysis program, you can identify dirt, wear particles and other contaminants that can cause catastrophic failure or significantly shorten equipment life.

Why MONITOR?

High-quality Testing

MONITOR's independent testing laboratories are ISO 17025 A2LA accredited – the highest level of quality attainable by a testing laboratory backed by the most stringent accrediting body on the industry.

Benefits of Using MONITOR

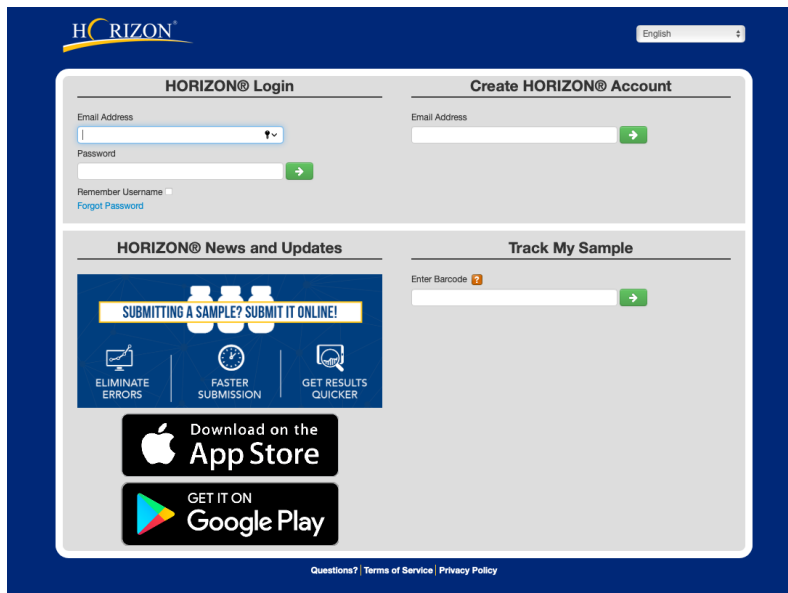
- **Identify minor problems before they become major failures** – State-of-the-art fluid analysis identifies dirt, wear particles, fuel dilution and coolant – contaminants that can cause catastrophic failure or significantly shorten equipment life.
- **Maximize asset reliability** – Testing and analysis expands your Extended Service environment to ensure that units are up, running and making money.
- **Increase resale value** – Analysis results provide valuable sampling history documentation that can easily justify higher equipment resale values.





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What is Horizon?

The HORIZON web and mobile apps help you interact and manage your fluid analysis program. These apps help you quickly perform the day-to-day operations of ordering kits, submitting sample information and delivering reports. In addition, the program management tools allow you evaluate your program's performance, see which units are due for sampling and even mine report data to discover common equipment problems.

- Results available on-line immediately upon sample processing completion
- Innovative data management tools that will help you affect change in daily maintenance practices

How do I set up my Horizon account?

1. Go to www.eoilreports.com in a web browser. Or download the application available for Android and Apple.
2. Enter the email address in the Create Horizon Account section.
3. Enter "Account Name" found on label. See image on next page in account setup.

If you have any issues with account registration, please reach out to your regional representative.

Why Horizon over paper?

The best reason to submit sample information online is that it will save time and money while avoiding problems. While paper can be used to submit sample info and test results are emailed upon completion, HORIZON can provide a faster, more accurate platform for sending and receiving information. It also eliminates the need to manage the emails and PDF reports.

In addition, the mobile app uses built-in cameras to scan barcodes and equipment tags that reduce the chance of manual errors or missing information, which allows for the fastest submission. Available to download for both Android and Apple.



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Oil		CC2525 CC2528*	CC2527	CC2543	CC2544	CC2548	CC36136	CC36135
Purpose		Basic Engine Analysis	Hydraulic Fluid Analysis	Extended Oil Drain Analysis	Engine Failure Analysis	OPE Oil Drain Analysis	Extended Oil Drain Analysis with Oxidation	Filter Debris Analysis
Test	Method							
Elemental Metals by ICP	mod. ASTM D5185	✓	✓	✓	✓	✓	✓	✓
Viscosity at 40°C or 100°C	mod. ASTM D445	✓	✓	✓	✓	✓	✓	
Water % (estimate)	Internal	✓	✓	✓	✓	✓	✓	
Fuel Dilution %	ASTM D7593	✓		✓	✓	✓	✓	
Soot %	ASTM E2412	✓		✓	✓	✓	✓	
Oxidation/Nitration	ASTM E2412		✓		✓		✓	
Acid Number	mod. ASTM D664					✓		
Base Number	mod. ASTM D4739			✓	✓	✓	✓	
Particle Count OR Particle Quantifier	ISO 4406/ Manufacturer		✓		✓			
Analytical Ferrography					✓			
Filter Debris	Internal							✓
Micro Patch	Internal							✓

Note: Unit type determines the testing the sample receives. *Test package is identical to CC2525 but includes pre-paid postage. For U.S. only.

MONITOR Oil Analysis Test Packages

MONITOR Oil Analysis is an advanced diagnostic, preventive maintenance service designed to evaluate lubricant condition, component wear and contamination in engines, hydraulic systems and transmissions. A test report is provided by an independent laboratory for each sample submitted.

MONITOR Fuel Analysis Test Packages

MONITOR Fuel Analysis will determine if the fuel you are using is negatively affecting fuel filter life, premature plugging, or engine performance and loss of power or poor injector performance. Testing fuels in bulk storage tanks will tell you if your fuel meets ASTM D975 #2 diesel fuel specifications.

Fuel		CC2650*	CC2651*	CC2719
Purpose		Determines fuel's suitability for use & extends fuel filter life	Determines if product in bulk storage tanks complies with specifications	Monitor fuel cleanliness
Test	Method			
Elemental Metals by ICP	mod. ASTM D5185	✓	✓	
Viscosity @ 40°C	mod. ASTM D445			
% Sulfur	ASTM D7220			
API Gravity	ASTM D7777		✓	
Distillation	ASTM D7345		✓	
Flash Point – Closed Cup	ASTM D3828			
Cloud Point	ASTM D7689		✓	
Pour Point	ASTM D7346	✓	✓	
Water & Sediment	ASTM D2709	✓		
Bacteria, Fungi & Mold	Manufacturer	✓	✓	
Cetane Index	ASTM D976		✓	
Thermal Stability	mod. ASTM D6468	✓	✓	
Water by Karl Fisher % or PPM	mod. ASTM D6304C		✓	✓
Particle Count (Calibration: ISO 11171)	ISO 4406		✓	✓

*Can only be analyzed in a U.S. lab. If these tests are needing outside the U.S please contact your regional sales representative.



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MONITOR Coolant Analysis Test Packages

MONITOR Coolant Analysis evaluates metal movement, the corrosive attributes of the coolant, and can detect the source of such cooling system problems as combustion gas leaks, electrical ground problems, localized overheating and contamination inside and outside the system.

Coolant		CC2700 CC2706*	CC2717
Purpose		Monitors coolant's corrosiveness & metal movement	Identifies sources of combustion gas leaks, electrical ground problems & system contamination
Test	Method		
Visuals (foam, color, oil, fuel, magnetic & non-magnetic precipitate & odor)	Internal	✓	✓
Elemental Metals by ICP	mod. ASTM D6130	✓	✓
Antifreeze %	Internal	✓	✓
Freeze Point	mod. ASTM D3321	✓	✓
Boil Point	Internal	✓	✓
pH Waters	ASTM D1287	✓	✓
Total Hardness	Internal	✓	✓
SCA Number	Internal	✓	✓
Nitrites	Internal	✓	✓
Total Dissolved Solids	Meter Measurement	✓	✓
Specific Conductance	Meter Measurement	✓	✓
Ion Chromatography (Chloride, Sulfate, Nitrite, Nitrate, Phosphate, Glycolate, Acetate, Formate & Oxalate)	ASTM D5827		✓

*Test package is identical to CC2700 but includes pre-paid postage. For U.S. only.



MONITOR™ FLUID ANALYSIS PROGRAM

Taking Samples

MONITOR Fluid Analysis will show you how regular sampling and trend analysis – monitoring test data over an extended period of time – will provide the information you need to continually maximize asset reliability and increase company profits.

Fluid analysis is most effective when samples are representative of the typical environmental conditions under which they operate. Dirt, system debris, water and light fuels tend to separate from lubricants and coolants when system temperatures cool. Samples should be taken while the systems are operating under normal conditions or immediately after shutdown while they are still at operating temperature.

Samples should also be taken at regularly scheduled intervals and from the same sampling point each time. Although an equipment manufacturer’s recommendations provide a good starting point for developing preventive maintenance practices, sampling intervals can easily vary. A major consideration for determining sampling frequency is how critical a piece of equipment is to production. Environmental factors are also important, such as hot, dirty operating conditions, short trips with heavy loads and excessive idle times.

Sampling Equipment and Supplies	
Short PN	Description
CC2802	Oil Vacuum Pump
3899452S	100 ft. of 1/4 diameter polyethylene tubing
CC2723	Fuel Vacuum pump
CC2724	Quickdraw Valve – Sample probe fitting
CC2523	Fuel Tank Sampling Kit
CC2818	Fuel Sampling Kit Includes 4oz Sampling Bottle, Plastic Bag, and Black Protection Bottle.
CC2524	Fuel Microbicide Test Kit
Analysis kits, sampling equipment and supplies can be ordered online at www.cumminsfiltration.com or by calling 1-800-22FILTER.	

MONITOR Sampling Intervals and Methods		
	Sampling Interval	Suggested Method & Location
Diesel Engines – Oil	Monthly or at 250 hours	By sample extraction pump through dipstick retaining tube or sampling valve installed in filter return
Diesel Engines – Coolant	4 times a year	By vacuum pump through radiator
Diesel Engines – Fuel	4 times a year	By vacuum pump through gas tank
Hydraulics	250 – 500 hours	By vacuum pump through oil fill port or system reservoir at mid-level
Automatic Transmissions	500 hours / 25,000 miles	By vacuum pump through dipstick retaining tube or sampling valve installed in filter return
Manual Transmissions & Differentials	750 hours / 50,000 miles	By vacuum pump through oil level plug or dipstick retaining tube



MONITOR™ FLUID ANALYSIS PROGRAM

How to Read MONITOR Fluid Analysis Reports

MONITOR fluid analysis produces a wealth of important data and useful recommendations for identifying and correcting the root cause of abnormal conditions. Use the report descriptions and explanations below to better understand your results. Your Cummins Filtration Sales Representative can assist you in effectively utilizing individual test reports as well as the full data management capabilities of the program.

Equipment and Sample Information

The information submitted with a sample is as important to who is reading the report as it is to the analyst interpreting the test results and making recommendations. Properly document your equipment and share this knowledge with your laboratory. Implement a sampling process for every piece of equipment in your fluid analysis program that can be followed consistently each time the unit is sampled.

Fleetguard		Monitor™ Lubricant Analysis Report		Overall report severity based on comments																				
Cummins Filtration 2931 Elm Hill Pike Nashville, TN 37214		1-800-22FLTR cumminsfiltration.com fleetmaster@cummins.com		0	1	2	3	4																
NORMAL		ABNORMAL		CRITICAL																				
Account Information		Component Information			Sample Information																			
Account Number: Company Name: Contact: Address: Phone Number:		Component ID: MAIN E Secondary ID: Component Type: DIESEL ENGINE Manufacturer: CUMMINS Model: NTC 290 Application: TRANSPORTATION Sump Capacity: 20 qt			Tracking Number: 3291U01667 Lab Number: 1123456 Lab Location: Indianapolis Data Analyst: JAS Sampled: 11-Jan-2021 Submitted: 11-Jan-2021 Received: 12-Jan-2021 Completed: 13-Jan-2021																			
Filter Information		Miscellaneous Information			Product Information																			
Filter Type: FULLFLOW Micron Rating: 0					Product Manufacturer: ES Product Name: SUPER X GOLD Viscosity Grade: SAE 15W40																			
Comments		Check for source of FUEL LEAK. Fuel is at a SEVERE LEVEL. Fuel dilution may be caused by component faults related to injectors, ignition/timing, or excessive blow-by. Additional causes include heavy throttle application, engine lugging, frequent short trips and excessive idling. FUEL DILUTION has caused viscosity to decrease SEVERELY. FUEL DILUTION reduces the viscosity of the lubricant which decreases FILM STRENGTH and LUBRICITY and may lead to increased wear. Lubricant and filter change acknowledged. Resample at half interval.																						
Wear Metals (ppm)		Contaminant		Multi-Source Metals (ppm)		Additive Metals (ppm)																		
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Niobium	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
1	31	1	0	1	6	5	1	0	0	0	2	1	0	0	39	0	0	0	1	597	626	0	621	743
Sample Information		Contaminants				Fluid Properties																		
Sample #	Date Sampled	Date Received	Lube Time Elapsed	Unit Time	Lube Change	Lube Added	Filter Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100°C	Acid Number	Base No.	Base No. DHF39	Oxidation	Nitration							
1	11-Jan-2021	12-Jan-2021	3090	800000	Yes	0	Yes	>10 - GC	0.7 - E2412	<1 - FTIR	4.9													
Particle Count (particles/ml)												Additional Testing												
Sample #	ISO Code	Based On	particles	particles	particles	particles	particles	particles	particles	particles	Test Method	Particle Index Number	Quantifier											
1	4/6/14	>4	>6	>10	>14	>21	>38	>70	>100			13												

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Results relate only to the items tested. Missing fluid or component information limits the evaluation. No warranty is expressed or implied. Measurement uncertainty available upon request.



Accurate, thorough and complete fluid and equipment information allows for more in-depth analysis and can eliminate confusion when interpreting results.

Component Type should give as much detail as possible. **What kind** of compressor, gearbox, engine, etc., influences flagging parameters and depth of analysis. Different metallurgies require different lubrication and have great impact on how results are interpreted.

Manufacturer and Model can also identify metallurgies involved as well as the OEM's standard maintenance guidelines and possible wear patterns to expect.

Component ID is each customer's opportunity to uniquely identify components being tested and their location.

Application identifies in what type of environment the equipment operates and is useful in determining exposure to possible contaminants.

Filter Types and their **Micron Ratings** are important in analyzing particle count – the higher the micron rating, the higher the particle count results.

Sump Capacity identifies the total volume of oil (in gallons) in which wear metals are suspended and is critical to trending wear metal concentrations.

Product Information identifies a lube's properties and its viscosity and is critical in determining if the right lube is being used.

Severity Status Levels:

- 0 - Normal.
- 1 - At least one or more items have violated initial flagging points yet are still considered minor.
- 2 - A trend is developing.
- 3 - Simple maintenance and/or diagnostics are recommended.
- 4 - Failure is eminent if maintenance is not performed.

The laboratory at which testing was completed is denoted by an **I** for **Indianapolis**, **S** for **Salt Lake City**, **H** for **Houston**, **B** for **Bogota**, **C** for **Canada**, **G** for **Guatemala**, **P** for **Poland**. The following **Lab #** is assigned to the sample upon entry for processing and should be the reference number used when contacting the lab with questions, concerns or feedback.

Data Analysts Initials

Make note of the difference between the **Date Sampled** and the **Date Received** by the lab. Turnaround issues may point to storing samples too long before shipping or shipping service problems. Also noted is testing **Date Completed**.

Account Information			Component Information			Sample Information		
Account Number: Company Name: Contact: Address: Phone Number:			Component ID: MAIN E Secondary ID: Component Type: DIESEL ENGINE Manufacturer: CUMMINS Model: NTC 290 Application: TRANSPORTATION Sump Capacity: 20 qt			Tracking Number: 3291U01667 Lab Number: I-123456 Lab Location: Indianapolis Data Analyst: JAS Sampled: 11-Jan-2021 Submitted: 11-Jan-2021 Received: 12-Jan-2021 Completed: 13-Jan-2021		
Filter Information			Miscellaneous Information			Product Information		
Filter Type: FULLFLOW Micron Rating: 0						Product Manufacturer: FS Product Name: SUPER X GOLD Viscosity Grade: SAE 15W40		
Comments Check for source of FUEL LEAK. Fuel is at a SEVERE LEVEL. Fuel dilution may be caused by component faults related to injectors, ignition/timing, or excessive blow-by. Additional causes include heavy throttle application, engine lugging, frequent short trips and excessive idling. FUEL DILUTION has caused viscosity to decrease SEVERELY; FUEL DILUTION reduces the viscosity of the lubricant which... FILM STRENGTH... LUBRICITY and may lead to increased wear... filter change acknowledged. Resample at half...								



MONITOR™ FLUID ANALYSIS PROGRAM

Recommendations

A data analyst's job is to explain and, if necessary, recommend actions for rectifying significant changes in the lubricant or the unit's condition. Reviewing comments before looking at the actual test results will provide a road map to the report's most important information. Any actions that need to be taken are listed first in order of severity. Justifications for recommending those actions immediately follow.

Comments Check for source of FUEL LEAK. Fuel is at a SEVERE LEVEL. Fuel dilution may be caused by component faults related to injectors, ignition/timing, or excessive blow-by. Additional causes include heavy throttle application, engine lugging, frequent short trips and excessive idling. FUEL DILUTION has caused viscosity to decrease SEVERELY; FUEL DILUTION reduces the viscosity of the lubricant which decreases FILM STRENGTH and LUBRICITY and may lead to increased wear. Lubricant and filter change acknowledged. Resample at half interval.

Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
1	31	1	0	1	6	5	1	0	0	0	2	1	0	0	39	0	0	0	1	597	626	0	621	743
Sample Information										Contaminants						Fluid Properties								
Sample #	Date Sampled	Date Received	Lube Time mi	Unit Time mi	Lube Change	Lube Added qt	Filter Change	Fuel % Dilution	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100°C cSt	Acid Number mg KOH/g	Base No. D4739 mg KOH/g	Oxidation abs/cm	Nitration abs/0.1mm								
1	11-Jan-2021	12-Jan-2021	3000	800000	Yes	0	Yes	> 10 - GC	0.7 - E2412	< .1 - FTIR		6.9												
Particle Count (particles/mL)										Additional Testing														

Laboratory will request additional unit and lube information if incomplete on sample label.



MONITOR™ FLUID ANALYSIS PROGRAM

Elemental Analysis

Elemental Analysis, or Spectroscopy, identifies the type and amount of wear particles, contamination and oil additives. Determining metal content can alert you to the type and severity of wear occurring in the unit. Measurements are expressed in parts per million (ppm).

Combinations of these **Wear Metals** can identify components within the machine that are wearing. Knowing what metal a unit is made of can greatly influence an analyst's recommendations and determine the value of elemental analysis.

Knowledge of the environmental conditions under which a unit operates can explain varying levels of **Contaminant Metals**. Excessive levels of dust and dirt can be abrasive and accelerate wear.

Additive and Multi-Source Metals may turn up in test results for a variety of reasons. Molybdenum, antimony and boron are additives in some oils. Magnesium, calcium and barium are often used in detergent/dispersant additives. Phosphorous is used as an extreme pressure additive in gear oils. Phosphorous, along with zinc, are used in anti-wear additives (ZDDP).

Wear Metals (ppm)													Contaminant				Multi-Source Metals (ppm)					Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc		
1	31	1	0	1	6	5	1	0	0	0	2	1	0	0	39	0	0	0	1	597	626	0	621	743		
Sample Information										Contaminants				Fluid Properties												
Sample #	Date Sampled	Date Received	Lube Time mi	Unit Time mi	Lube Change	Lube Added qt	Filter Change	Fuel Dilution %	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100°C cSt	Acid Number mg KOH/g	Base No. D4739 mg KOH/g	Oxidation abs/cm	Nitration abs/0.1mm										
1	11-Jan-2021	12-Jan-2021	3000	800000	Yes	0	Yes	> 10 - GC	0.7 - E2412	< .1 - FTIR			6.9													
Particle Count (particles/mL)										Additional Test Results																



MONITOR™ FLUID ANALYSIS PROGRAM

Test Data

Test results are listed according to age of the sample – oldest to most recent, top to bottom – so that trends are apparent. Significant changes are flagged and printed in the yellow areas of the report.

Samples are listed by **Date Received** in the lab oldest first. They are also assigned a **Lab Number** for easy internal tracking. Important to also note is whether or not the **Lube** has been **Changed** since the last sample was taken.

Viscosity measures a lubricant's resistance to flow at temperature and is considered its most important physical property. Depending on lube grade, it is tested at 40 and/or 100 degrees Centigrade and reported in Centistokes.

Sample Information										Contaminants			Fluid Properties				
Sample #	Date Sampled	Date Received	Lube Time mi	Unit Time mi	Lube Change	Lube Added qt	Filter Change	Fuel Dilution %	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH/g	Base No. mg KOH/g	Oxidation abs/cm	Nitration abs/0.1mm	
1	11-Jan-2021	12-Jan-2021	3000	800000	Yes	0	Yes	> 10 - GC	0.7 - E2412	<.1 - FTIR		6.9					
Particle Count (particles/mL)										Additional Testing							
Sample #	ISO Code	> 4 particles/mL	> 6 particles/mL	> 10 particles/mL	> 14 particles/mL	> 21 particles/mL	> 38 particles/mL	> 70 particles/mL	> 100 particles/mL	Test Method	Particle Quantifier	Index Number					
1	4/6/14	11	11	11	11	11	11	11	11		13						

The **ISO Code** is an index number that represents a range of particles within a specific micron range, i.e., 4, 6, 14. Each class designates a range of measured particles per one mL of sample.

The **Particle Count** is a cumulative range between 4 and 100 microns. This test is valuable in determining large particle wear in filtered systems.

Fuel and **Soot** are reported in % of volume. High fuel dilution decreases unit load capacity. Excessive soot is a sign of reduced combustion efficiency (only on engine oil samples).

Water in oil decreases lubricity, prevents additives from working and furthers oxidation. Its presence can be determined by crackle or FTIR and is reported in % of volume. Water by Karl Fischer ASTM D1744 determines the amount of water present. These results appear in the Special Testing section of your report.




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How to Use the EZ Sample Label


The EZ sample label is smaller, more convenient and easier to use than previous labels. Combined with online sample submission, this label reduces paperwork, minimizes errors and moves your samples to the laboratory floor more quickly.

Do not lose or throw away these labels. They are the proof of purchase for your fluid analysis testing and cannot be re-issued.



BASIC ENGINE
Filtration
2931 Elm Hill Pike
Nashville, TN 37214
1-800-22-FILTER
www.cummins.com
fleetmaster@cummins.com

00000A00000 Part Number:CC02525




Fleetguard Monitor™

ONLINE SUBMISSION INSTRUCTIONS

1

APPLY TO SAMPLE



Date Taken _____
00000A00000


Component ID _____


RETAIN FOR YOUR RECORDS


Date Taken _____


Component ID _____


00000A00000


 Send an email to: custserv@eolreports.com to establish an online account

 Log into your online account to add or edit components under **Equipment Management**

 Use **Sample Submission** to send sample information to the laboratory (if online access is not available, please complete form) →

 Apply **label** to sample jar

 **Ship** sample to laboratory via trackable delivery service (see address list below)

 Receive **results** via email or access them online

ACCOUNT INFORMATION (ACCT: MONITR)

Distributor/Sales Rep _____

Company Name _____

Contact _____

Address _____

City / Country _____

Telephone _____

Email _____

SAMPLE INFORMATION Baseline Reference:

Component ID _____

Secondary ID _____

Component/Fluid Type (check one)

Engine Transmission Differential Planetary

Diesel Auto Final Drive

Natural Gas Manual Hydraulic

Gasoline Other _____

Position: Front Rear Left Right Center Chassis

Date Taken _____

Fluid Time km hr mo
 mi day yr kt

Component Time km hr mo
 mi day yr kt

Fluid Changed Yes No Unknown

Filter Changed Yes No Unknown

Misc _____

Comments _____

COMPONENT INFORMATION (For first-time samples or changes only)

Manufacturer _____

Model _____


Product Mfr _____

Product & Viscosity Grade ISO
 SAE

MONITOR LABORATORY 7451 WINTON DRIVE P.O. BOX 68983 INDIANAPOLIS, IN 46268	MONITOR LABORATORY 10910 W. SAM HOUSTON PKWY N STE 700 HOUSTON, TX 77064-9903	MONITOR LABORATORY UL RUBIEZ 46 H/128 61-612 POZNAN, POLAND
MONITOR LABORATORY P.O. BOX 30820 3050 CALIFORNIA AVE, STE B SALT LAKE CITY, UT 84104	MONITOR LABORATORY 5140 75 STREET NW EDMONTON, AB T6E 6W2 CANADA	

1. Submit Your Sample Information

First-time users need to establish a HORIZON® account, and new components (sample point) need to be added to your account. Component registration is easy to perform in HORIZON® online or the mobile app.


Next, fill out the **QR (quick response) code label** () with the corresponding **Component ID** and **Sample Date**. Attach the label to the sample jar and retain the other label for your records.

To improve accuracy and ensure faster processing, use the **Sample Submission** feature in HORIZON to send the sample information to the laboratory. Once the information is submitted online, the QR code will contain all required sample information needed for processing.

NOTE: Provide the laboratory with as much detailed equipment and fluid information as possible. More in-depth analysis is possible when the data analyst knows the time on both the unit and fluid and whether the fluid and/or filter have been changed since last sampled.




MONITOR™ FLUID ANALYSIS PROGRAM



BASIC ENGINE
Filtration
2931 Elm Hill Pike
Nashville, TN 37214
1-800-22-FILTER
www.cummins.com
fleetmaster@cummins.com

00000A00000
Part Number: CC02525




0 0 0 0 0 0 A 0 0 0 0 0

Fleetguard Monitor™

Complete this form **only** if online access is not available. Utilize HORIZON to provide the laboratory with more detailed component/sample information.

ONLINE SUBMISSION INSTRUCTIONS

APPLY TO SAMPLE




Date Taken _____
00000A00000


Component ID _____


RETAIN FOR YOUR RECORDS


Date Taken _____


Component ID _____
00000A00000


 Send an email to: custserv@oilreports.com to establish an online account

 Log into your online account to add or edit components under **Equipment Management**

 Use **Sample Submission** to send sample information to the laboratory (If online access is not available, please complete form) →

 Apply **label** to sample jar

 **Ship** sample to laboratory via trackable delivery service (see address list below)

 Receive **results** via email or access them online

ACCOUNT INFORMATION (ACCT: MONITR)

Distributor/Sales Rep _____

Company Name _____

Contact _____

Address _____

City / Country _____

Telephone _____

Email _____

SAMPLE INFORMATION Baseline Reference

Component ID _____

Secondary ID _____

Component/Fluid Type (check one)

Engine Transmission Differential Planetary
 Diesel Auto Final Drive
 Natural Gas Manual Hydraulic
 Gasoline Other _____

Position: Front Rear Left Right Center Chassis

Date Taken _____

Fluid Time km hr mo
 mi day yr kt

Component Time km hr mo
 mi day yr kt

Fluid Changed Yes No Unknown

Filter Changed Yes No Unknown

Misc _____

Comments _____

COMPONENT INFORMATION (For first-time samples or changes only)

Manufacturer _____

Model _____

Product Mfr _____

Product & Viscosity Grade ISO
 SAE

MONITOR LABORATORY
7451 WINTON DRIVE
P.O. BOX 68983
INDIANAPOLIS, IN 46268

MONITOR LABORATORY
P.O. BOX 30820
3060 CALIFORNIA AVE, STE B
SALT LAKE CITY, UT 84104

MONITOR LABORATORY
10910 W. SAM HOUSTON PKWY N
STE 700
HOUSTON, TX 77064-9903

MONITOR LABORATORY
5140 75 STREET NW
EDMONTON, AB T6E 6W2
CANADA

MONITOR LABORATORY
UL. RUBIEZ 46 H/128
61-612
POZNAN, POLAND

2. Choose a Laboratory Location

A list of available laboratory locations is included on the form. Label your package with the laboratory address of your choice and ship it using a trackable shipping service, such as UPS, FedEx or DHL.

3. Paper Form Option

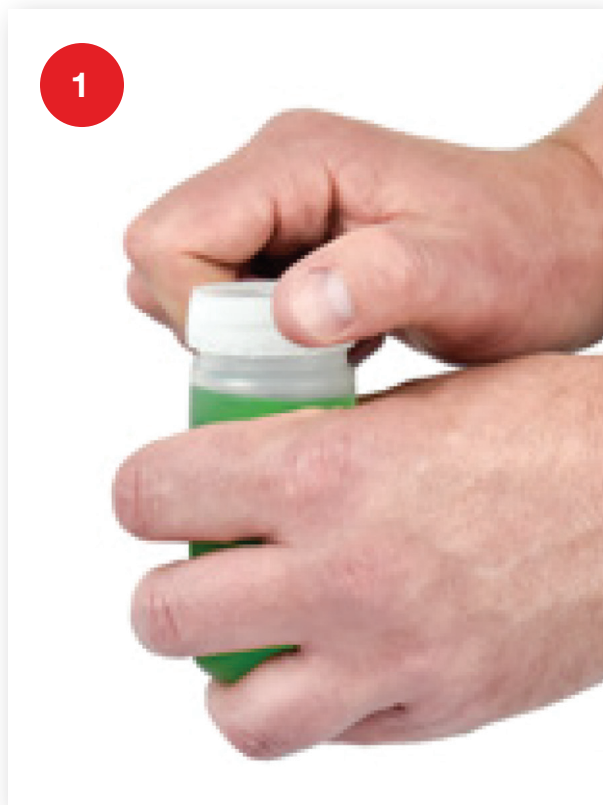
For faster results, we recommend submitting your sample information online in HORIZON but, if the sample information cannot be submitted online, complete the simple form on the right side of the label, detach it and pack it with the sample. To avoid delays in the laboratory, do not include any paperwork if sample information was submitted online.

IMPORTANT: Samples will be placed on hold if the component ID does not match an ID in your account and no component information is included on the paper form. Components can be added to your account online via HORIZON or by contacting Customer Service at **877-808-3750** or custserv@oilreports.com. Samples placed on hold for more than 30 days will be disposed.

How to Ship Fluid Samples

Packaging and shipping fluid samples is easy! A tight seal and proper labeling are the best ways to ensure your sample arrives at your destination intact and on time.

1. Close the sample jar as soon as you collect the sample. Hand-tighten only – the new non-back off cap with a wedge seal makes it so you don't have to use a tool or torque the cap to tighten. It is not necessary nor recommended to do so.



2. Register sample information online using the HORIZON® desktop or mobile apps. Write the date and component ID on the removable sample identification sticker and place it on the outside of the clear jar.



3. Place clear sample jar into the black hard plastic container and tighten lid.



4. Pack sample jar(s) into an appropriate-sized box, envelope mailer or hard plastic mailer. Label the outside of the package with the laboratory address and your return address before applying the appropriate postage.



Note: Do NOT wait until you have a full box to ship the samples. Delays in this step allows damaging wear inside of equipment to continue for days or sometimes weeks.



Note: Do NOT include written paperwork when sample information has been submitted online. It will slow down how quickly your sample is processed at the labs.

For more information, review the resources on Horizon or reach out to your Regional Representative.



MONITOR™ FLUID ANALYSIS PROGRAM

Fuel Sample Container & Shipping Instructions

Diesel Fuel Sample Container

Our fuel sample container is constructed to reduce sample contamination prior to testing. The seamless container is stamped from a single piece of aluminum as opposed to the top, bottom and body being constructed from multiple pieces of sheet metal crimped together at the seams. It also features an epoxy lining, polypropylene seal, and security cap.

Contamination

The fuel can's design greatly reduces the ingress of external contaminants by eliminating "crimped" seams. External contaminants can adversely affect test results for Water and Sediment (ASTM D-2709) and Particle Count (ASTM D7647 / ISO 4406) and may indirectly affect microbial results for such testing as bacteria, fungi and mold. The container also has a higher tolerance to heat and is chemically resistant.



Shipping Instructions

Combustible substances with a flashpoint equal to or greater than 38° C (100° F) are not considered hazardous material. Therefore, our fuel sample containers can be shipped ground through a small package carrier, such as UPS or FedEx, without any special labeling or registration, according to Title 49, Section 173.150 of the Code of Federal Regulations. The United States Postal Service, however, will not accept or transport fuel samples of any kind. **Check with your preferred carrier to confirm transportation and handling requirements for shipping diesel fuel.**

Are there shipping restrictions for lubricants?

There are no restrictions for shipping most new or used lubricants via ground or air mail in countries where labs are located (Canada, Colombia, Guatemala, Poland and the United States). It is considered non-hazardous, non-toxic and non-flammable, so it operates under the same shipping considerations as water. When shipping internationally using local post, be sure to check the rules for shipping lubricants in the country of origin to ensure compliance with local laws.

For more information on shipping, please visit Horizon's technical library or reach out to your Regional Representative.



MONITOR™ FLUID ANALYSIS PROGRAM

Shipping to Your Desired Laboratory

- 1. Pick a laboratory.** To ensure the fastest test results, pick the laboratory closest to you within your region. Sending fluid samples to a laboratory outside of your region are subject to import regulations which vary from region to region and will result in a longer turnaround time for test results.
- 2. Scan desired language QR code.** Once the desired language QR code has been scanned, you will be directed to a landing page where you must select which type of fluid you want to have analyzed. Note: It is recommended to use the translated label from the QR code as a guide to fill out the paper label.

Monitor™ Fluid Analysis Program

EN - Laboratory Locations / ES - Direcciones de laboratorios / DE - Laborkontakten / FR - Adresses des laboratoires / IT - Laboratori Abbonati / PL - Adresy laboratory / PT - Endereços de laboratórios / TK - Çözümlenen laboratuvarları

EN - Send your samples to the closest laboratory based on the region below if ES - Envíe sus muestras al laboratorio más cercano según la región a continuación / DE - Senden Sie Ihre Proben an das nächstgelegene Labor basierend auf der Region unten / FR - Envoyez vos échantillons au laboratoire le plus proche en fonction de la région ci-dessous / IT - Invia i tuoi campioni al laboratorio più vicino in base alla regione sottostante / PL - Wyśl próbki do najbliższego laboratorium w wybranej części regionu / PT - Envie suas amostras para o laboratório mais próximo com base na região abaixo / TK - Numenlendirilmiş aparatları ilgili bölgeye en yakın laboratuvarlara gönderin

North America		South America		Europe	
1421 Wilshire Drive Indianapolis, IN 46208 USA	1910 W. Sam Houston Parkway Suite 700 Houston, TX 77064-6314 USA	3880 W. California Avenue Suite B Tulsa, OK 74104 USA	5142 707 Street Edmonton, AB T6E 0Y0 CANADA	3000 W. Roggenlaan Carelis Effraimweg 18 Middelburg, Zeeland 4661 CA, COLUMBIA	UL, Rulawy 46 1128 81-012, Poznan, POLAND
Tel: +1 317 468 3762 Email: en@oilreports.com		Tel: +1 317 468 3762 Email: es@oilreports.com		Tel: +49 81 827 21 92 Email: en@oilreports.com	

EN - Scan for a translation guide of your region sample information form / ES - Escanee para obtener una guía de información de su formulario de información de muestra en español / DE - Scannen Sie nach einem Übersetzungshilfen für Ihre englischen Informationsformulare / FR - Scannez pour un guide de traduction de votre formulaire d'information en français / IT - Cerca una guida alla traduzione del tuo modulo di informazioni di esempio in inglese / PL - Znajdź przewodnik po formularzu języka polskiego formularze informacyjne w języku angielskim / PT - Procure um guia de tradução de seu formulário de informações de exemplo em inglês / TK - İngilizce örnek bilgi formlarının çeviri kılavuzuna bakınız

- 3. Select Fluid type you wish to have analyzed – Oil, Fuel, Coolant.** After selecting the sample type, a translated sample label will be in the selected language.



- 4. Completely fill out label.** Be sure to fill out all label information completely and accurately to ensure proper testing and accurate results.

BASIC ENGINE

ONLINE SUBMISSION INSTRUCTIONS

APPLY TO SAMPLE

Date Taken

Component ID

22014J77004

Send an email to en@oilreports.com to establish an online account.

Use your online account to add or edit components under Equipment Management.

Use Barcode Submission to send sample information to the laboratory. If online access is not available, please complete form.

Apply label to sample jar.

Ship sample to laboratory via trackable delivery service (see address list below).

Requisitos mínimos de envío al aceptar Form online

Company Name

Address

City/Country

Telephone

Email

Component ID

Component Type

Engine

Transmission

Oil Filter

Hydraulic

Other

Position

Fluid Type

Component Time

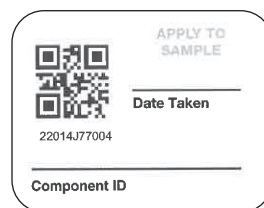
Fluid Changed

Filter Changed

Miscellaneous

Comments

- 5. Apply label to the clear sample jar and retain the other label for your records.** Label is found on the English form. Follow the “How to Use the EZ Sample Label” instructions.



Note: For sample kits ordered in Europe or Latin America, an additional insert will be added to select a desired language.



Need additional Information?

Login to Horizon (www.oilreports.com) and visit the Technical Library. Or Scan QR code.



Laboratory Locations

Send your samples to the laboratory location nearest you.



For more information, visit www.fleetguard.com

LT36251

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INDIANAPOLIS

7451 Winton Drive
Indianapolis, IN 46268

SALT LAKE CITY

3060 W. California Avenue, Suite B
Salt Lake City, UT 84104

HOUSTON

10910 W. Sam Houston Pkwy. N., Suite 700
Houston, TX 77064-6314

EDMONTON

5140 75th Street
Edmonton, Alberta
Canada T6E 6W2

POZNAN

ul. Rubież 46H
61- 612
Poznan, Poland

GUATEMALA CITY

Calzada Atanasio Tzul 22-00 zona 12, 01012
Centro Empresarial El Cortijo II, Ofibodega 319
Guatemala City, Guatemala

BOGOTÁ

Km 3,4 vía Bogotá-Siberia
Centro Empresarial Metropolitano
Modulo1, Bodega 21, Cota