



Account:	MICROLAB SYSTEM TEST								
Address:	1 EXECUTIVE DR CHELMSFORD MA 01824								
Phone:									
Email:									
Vehicle ID:	OVER-ROAD								
Vehicle Make:	FORD								
Vehicle Model:	EXPLORER LIMITED								
Vehicle Year :	2017								
Component ID:	OVER-ROADSGENERAL								
Component Type :	GASOLINE ENGINE								
Oil Brand:	MOBIL								
Oil Type:	MOBIL 1 FORMULA								
Oil Weight:	5W30								
Sump Capacity:	6 QUARTS								
Viscosity Limit 40 Deg C	50 - 68								
Viscosity Limit 100 Deg C	9.3 - 12.5								
Diagnosis for current sample	HEAVY CONCENTRATION OF WATER PRESENT. CHECK FOR SOURCE OF WATER ENTRY. OIL DRAIN AND REFILL MAY BE NECESSARY. CONSULT SERVICE PROVIDER FOR FURTHER RECOMMENDATIONS. TO CONFIRM, RESAMPLE AT 5,000 MILES (8,000 KM) OR 100 HOURS.								
Legend	<table border="0"> <tr> <td>ABNORMAL</td> <td>CRITICAL</td> <td>X = NOT TESTED / NOT APPLICABLE</td> <td>-- NOT DETECTED</td> </tr> <tr> <td>NA = NOT AVAILABLE</td> <td>C = CALCULATED</td> <td>M = MEASURED</td> <td></td> </tr> </table>	ABNORMAL	CRITICAL	X = NOT TESTED / NOT APPLICABLE	-- NOT DETECTED	NA = NOT AVAILABLE	C = CALCULATED	M = MEASURED	
ABNORMAL	CRITICAL	X = NOT TESTED / NOT APPLICABLE	-- NOT DETECTED						
NA = NOT AVAILABLE	C = CALCULATED	M = MEASURED							

Sample history for trending analysis

Analysis Results:	Units	Current Sample	5	4	3
Sample ID		8	5	4	3
Date Analyzed		9/19/2017	9/19/2017	9/19/2017	9/19/2017
Date Sample Taken		9/19/2017	9/19/2017	9/19/2017	9/19/2017
Top Up	q/gall				
Miles on Oil		7500	3500	7500	3000
Miles on Component		15000	10000	7500	3000
Oil Changed	Y/N	No	Yes	No	No
Oil Condition:					
Metals	ppm	<2.0	<2.0	6.1	-
Contamin	ppm	<2.0	<2.0	6.1	-
Total Base Number	mg KOH/g	8.9	9.4	3.9	3.9
Viscosity @ 100°C (M)	cSt	13.0	11.0	7.6	8.0
Viscosity @ 40°C (M)	cSt	66	65	48	49
Viscosity Index		140	140	130	140
Contaminants:					
Glycol	%	-	-	-	-
Polycyclic	ppm	<2	<2	<2	<2
Silicon	ppm	<2	<2	<2	9
Sodium	ppm	<2	<2	3.1	24
Soot	%	<0.1	<0.1	<0.1	<0.1
Water	%	2.0	<0.1	2.0	2.0
Wear Metals:					
Aluminum	ppm	<2	<2	<2	<2
Chromium	ppm	<2	<2	<2	<2
Copper	ppm	<2	3	6	12
Iron	ppm	<2	<2	15	17
Manganese	ppm	0	0	0	1
Molybdenum	ppm	<2	<2	52	59
Nickel	ppm	0	1	6	9
Lead	ppm	<2	<2	<2	<2
Tin	ppm	<2	<2	<2	<2
Titanium	ppm	0	0	0	0
Vanadium	ppm	1	0	0	0
Additives:					
Boron	ppm	0	0	0	0
Barium	ppm	41	31	25	27
Calcium	ppm	1524	1182	1936	1906
Magnesium	ppm	41	22	0	0
Phosphorus	ppm	764	693	614	756
Zinc	ppm	1004	779	1208	877
Additional Tests:					
Fuel Dilution	%	0.7	1.0	4.0	4.5
Total Acid Number	mg KOH/g	5.0	3.0	6.0	6.2
Total Peroxide	ppm	250.0	200.0	625.0	620.0
Water	%	2.0	0.0	3.0	3.0

Color-coded alarm limits

Diagnostic statements with maintenance recommendations

Results from external devices



Account:	SPECTRO SCIENTIFIC	
Address:	ONE EXECUTIVE DRIVE CHELMSFORD MA 2683	
Phone:	978-486-0123	
Email:	Info@spectrosci.com	
Vehicle ID:	123456	
Truck Make:	FORD	
Truck Model:	F-250	
Vehicle Year :	2016	
Component ID:	9455	
Component Type :	GEARBOX	
Oil Brand:	SHELL	
Oil Type:	DENTAX GEAR	
Oil Weight:	85W90	
Sump Capacity:	20 GALLONS	
Diagnosis for current sample		
<p>SUSPECT CLUTCH/DISC PACK DAMAGE. BEARING/GEAR WEAR INDICATED. HEAVY CONCENTRATION OF WATER PRESENT. VISCOSITY LOWER THAN TYPICAL FOR THE GIVEN OIL TYPE. FLUSH UNIT THOROUGHLY. OIL DRAIN AND REFILL MAY BE NECESSARY. CONSULT SERVICE PROVIDER FOR FURTHER RECOMMENDATIONS.</p>		
Legend		
ABNORMAL	SEVERE	X = NOT TESTED / NOT APPLICABLE

Analysis Results:	Units	Current Sample			
Sample ID		3009	3008	3007	3006
Date Analyzed		7/10/2017	7/10/2017	7/10/2017	7/10/2017
Date Sample Taken		7/10/2017	7/10/2017	7/10/2017	7/10/2017
Top Up	qt/galL				
Hours on Oil		250	250	250	250
Hours on Component		10000	10000	10000	10000
Oil Changed	Y/N	No	No	No	No
Oil Condition:					
Nitration	abs	3.2	4.1	2.0	<2.0
Oxidation	abs	8.1	6.1	3.1	5.2
Total Base Number	mg KOH/g	7.5	7.2	8.9	7.4
Viscosity @ 100°C (M)	cSt	15.3	10.3	13.4	15.8
Viscosity @ 40°C (M)	cSt	112	70	121	110
Viscosity Index		145	133	108	151
Contamination:					
Glycol	%	-	-	-	-
Potassium	ppm	3	4	<2	42
Silicon	ppm	6	49	3	<2
Sodium	ppm	7	7	14	85
Soot	%	1.8	<0.1	0.8	2.1
Water	%	1.7	1.6	1.7	1.2
Wear Metals:					
Aluminium	ppm	11	29	<2	20
Chromium	ppm	2	3	3	10
Copper	ppm	112	2	5	5
Iron	ppm	131	51	91	157
Manganese	ppm	2	2	1	0
Molybdenum	ppm	11	45	221	280
Nickel	ppm	0	0	0	0
Lead	ppm	74	14	<2	7
Tin	ppm	41	11	2	<2
Titanium	ppm	0	0	0	0
Vanadium	ppm	0	3	4	6
Additives:					
Barium	ppm	0	0	0	0
Boron	ppm	0	2	0	1
Calcium	ppm	3221	3312	3987	6310
Magnesium	ppm	34	23	48	90
Phosphorus	ppm	1088	488	745	584
Zinc	ppm	997	1122	1433	1819
Cleanliness:					
ISO 4406	4/8/14	20/19/15	20/19/15	20/19/15	20/19/15
>4µ(c)	/100 ml	25114	25114	25114	25114
>8µ(c)	/100 ml	11014	11014	11014	11014
>14µ(c)	/100 ml	2581	2581	2581	2581
Additional Tests:					
Fuel Dilution	%	10.8	10.1	3.7	8.7
Total Acid Number	mg KOH/g	4.8	0.8	0.2	7.2
Total Ferrous	ppm	11.9	5.1	9.4	3.8

Account: MICROLAB SYSTEM TEST
Address: 1 EXECUTIVE DR
CHELMSFORD MA 01824

Phone:
Email:

Vehicle ID: OVER-ROAD
Vehicle Make: FORD
Vehicle Model: EXPLORER LIMITED
Vehicle Year: 2017

Component ID: OVER-ROADGSGENERAL
Component Type: GASOLINE ENGINE

Oil Brand: MOBIL
Oil Type: MOBIL 1 FORMULA
Oil Weight: 5W30
Sump Capacity: 6 QUARTS
Viscosity Limit 40 Deg C: 50 - 68
Viscosity Limit 100 Deg C: 9.3 - 12.5

Diagnosis for current sample

HEAVY CONCENTRATION OF WATER PRESENT. CHECK FOR SOURCE OF WATER ENTRY. OIL DRAIN AND REFILL MAY BE NECESSARY. CONSULT SERVICE PROVIDER FOR FURTHER RECOMMENDATIONS. TO CONFIRM, RESAMPLE AT 5,000 MILES (8,000 KM) OR 100 HOURS.

Legend

ABNORMAL SEVERE X = NOT TESTED / NOT APPLICABLE - = NOT DETECTED

NA = NOT AVAILABLE C = CALCULATED M = MEASURED

Analysis Results:	Units	Current Sample			
Sample ID		6	5	4	3
Date Analyzed		9/19/2017	9/19/2017	9/19/2017	9/19/2017
Date Sample Taken		9/19/2017	9/19/2017	9/19/2017	9/19/2017
Top Up	qt/gal/L				
Miles on Oil		7500	2500	7500	3850
Miles on Component		15000	10000	7500	3850
Oil Changed	Y/N	No	Yes	No	No
Oil Condition:					
Nitration	abs	<2.0	<2.0	8.1	-
Oxidation	abs	<2.0	<2.0	8.1	-
Total Base Number	mg KOH/g	8.9	9.4	3.9	3.9
Viscosity @ 100°C (M)	cSt	10.3	11.0	7.6	8.2
Viscosity @ 40°C (M)	cSt	64	65	46	48
Viscosity Index		148	162	132	145
Contamination:					
Glycol	%	-	-	-	-
Potassium	ppm	<2	<2	<2	<2
Silicon	ppm	<2	<2	<2	3
Sodium	ppm	<2	<2	31	24
Soot	%	<0.1	<0.1	<0.1	<0.1
Water	%	2.0	<0.1	3.0	>3
Wear Metals:					
Aluminium	ppm	<2	<2	<2	<2
Chromium	ppm	<2	<2	<2	<2
Copper	ppm	<2	3	8	12
Iron	ppm	<2	<2	15	17
Manganese	ppm	0	0	0	1
Molybdenum	ppm	<2	<2	52	59
Nickel	ppm	0	1	6	0
Lead	ppm	<2	<2	<2	<2
Tin	ppm	<2	<2	<2	<2
Titanium	ppm	0	0	0	0
Vanadium	ppm	1	0	0	0
Additives:					
Barium	ppm	0	0	0	0
Boron	ppm	41	31	25	27
Calcium	ppm	1524	1162	1508	1360
Magnesium	ppm	41	22	0	0
Phosphorus	ppm	744	663	814	756
Zinc	ppm	1004	779	1243	877
Additional Tests:					
Fuel Dilution	%	0.7	1.0	4.8	4.5
Total Acid Number	mg KOH/g	5.0	3.0	6.0	6.2
Total Ferrous	ppm	250.0	200.0	925.0	920.0
Water	%	2.0	0.0	3.0	3.2

Account: MICROLAB TEST
Address: 1 EXECUTIVE DRIVE
CHELMSFORD MA 01824
Phone: 978-431-1120
Email:

Vehicle ID: TRUCK_1
Truck Make: CHEVROLET
Truck Model: G2500
Vehicle Year: 2017

Component ID: TRUCK_1GSCENTER
Component Type: GASOLINE ENGINE
Component Make: 1.3L
Component Model: GENERAL

Oil Brand: TEST123
Oil Type: TEST123
Oil Weight: 0W20
Sump Capacity: 5 QUARTS
Viscosity Limit 40 Deg C: 32 - 53
Viscosity Limit 100 Deg C: 6.5 - 9.2

Diagnosis for current sample

ENGINE WEAR RATES NORMAL FOR FIRST OIL CHANGE AND OR BREAK-IN OVERHAUL PERIOD. ELEVATED WEAR METAL(S) COULD BE CONSIDERED BREAK-IN MATERIAL. HEAVY CONCENTRATION OF WATER PRESENT. CHECK FOR SOURCE OF WATER ENTRY. REDUCING YOUR OIL CHANGE INTERVAL IS ADVISED. SUSPECT HIGH OPERATING TEMPERATURE AND/OR OVER EXTENDED DRAIN INTERVAL. OIL DRAIN AND REFILL MAY BE NECESSARY. CONSULT SERVICE PROVIDER FOR FURTHER RECOMMENDATIONS. TO CONFIRM, RESAMPLE AT 5,000 MILES (8,000 KM) OR 100 HOURS.

Legend

ABNORMAL **SEVERE** D = DETECTED -- NOT DETECTED
X = NOT TESTED / NOT APPLICABLE NA = NOT AVAILABLE C = CALCULATED M = MEASURED

Analysis Results:	Units	Current Sample		
Sample ID		8	5	4
Date Analyzed		9/13/2017	9/13/2017	9/13/2017
Date Sample Taken		9/13/2017	9/13/2017	9/13/2017
Top Up	qt/gal/L			
Miles on Oil		4350	4350	4220
Miles on Component		4350	4350	4220
Oil Changed	Y/N	No	No	No
Oil Condition:				
Nitration	abs	-	13.8	-
Oxidation	abs	-	13.8	-
Total Base Number	mg KOH/g	<3.0	16.4	6.7
Viscosity @ 100°C (C)	cSt	8.5	X	7.9
Viscosity @ 40°C (C)	cSt	82	64	63
Viscosity Index		128	X	88
Contamination:				
Glycol	%	-	-	-
Potassium	ppm	<2	<2	X
Silicon	ppm	3	3	X
Sodium	ppm	<2	<2	X
Soot	%	<0.1	<0.1	<0.1
Water	%	2.9	2.9	1
Wear Metals:				
Aluminum	ppm	11	<2	X
Chromium	ppm	<2	<2	X
Copper	ppm	23	19	X
Iron	ppm	28	24	X
Manganese	ppm	3	3	X
Molybdenum	ppm	47	48	X
Nickel	ppm	0	0	X
Lead	ppm	<2	<2	X
Tin	ppm	<2	<2	X
Titanium	ppm	13	13	X
Vanadium	ppm	1	1	X
Additives:				
Barium	ppm	0	0	X
Boron	ppm	75	73	X
Calcium	ppm	3857	3805	X
Magnesium	ppm	12	12	X
Phosphorus	ppm	770	781	X
Zinc	ppm	1114	1088	X
Additional Tests:				
Fuel Dilution	%	4.4	5.3	3.5
Total Acid Number	mg KOH/g	6.4	6.2	3.7
Total Ferrous	ppm	950.0	1000.0	3.6
Water	ppm	3.2	2.8	3.8