

## WEAR NORMAL CONTAMINATION SEVERE FLUID CONDITION SEVERE

## Area (EMN864) Machine Id AUTOCAR 10854 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (7 GAL)

## RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

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All component wear rates are normal.

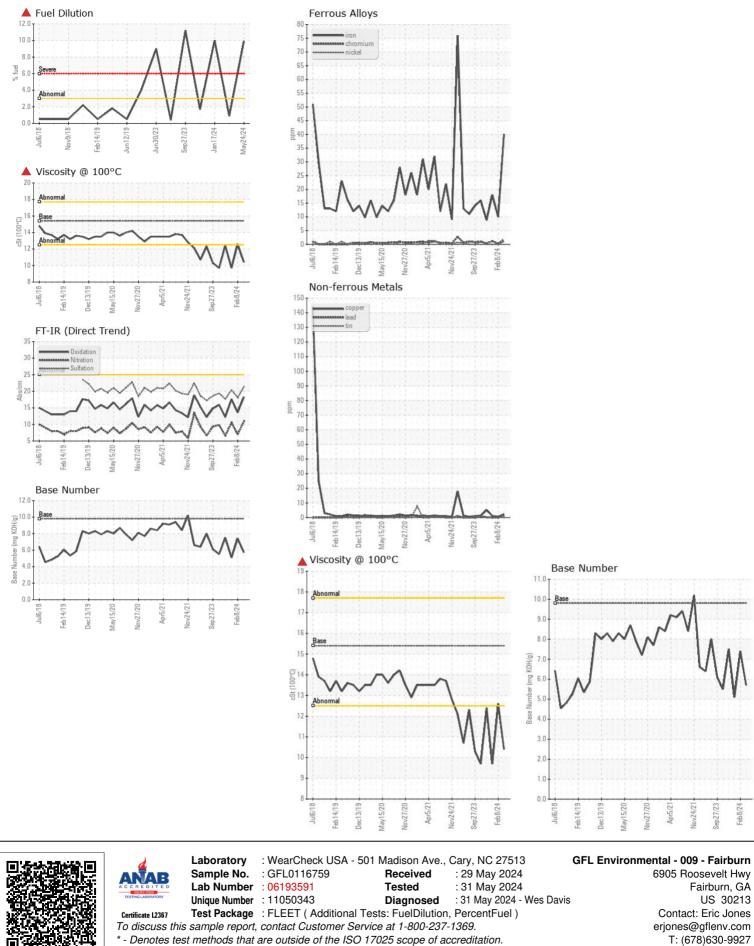
## CONTAMINATION

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

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The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sample Date     Client Info     24 May 2024     08 Feb 2024     17 Jan 2024       Machine Age     hrs     Client Info     4606     4131     4030       Oil Age     hrs     Client Info     0     0     0     0       Filter Age     hrs     Client Info     Not Changd     N/A     N/A       Filter Changed     Client Info     Not Changd     N/A     N/A     N/A       Sample Status     Visit     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m<>75     40     10     18       Chromium     ppm     ASTM D5185m<>2     -<1								
Sample Number     Client Info     GFL0116759     GFL0109077     GFL0109077     GFL0109077       Sample Date     Client Info     24 May 2024     08 Feb 2024     17 Jan 2024       Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     Not Changed     N/A     N/A       Filter Changed     Client Info     NA     N/A     N/A     N/A       Sample Status     Client Info     N/A     N/A     N/A     N/A       Chromium     ppm     ASTM D5185m     >5     2     <1     1       Nickel     ppm     ASTM D5185m     >5     2     <1     0     0       Silver     ppm     ASTM D5185m     >1     0     0     0     0       Aluminum     ppm     ASTM D5185m     >1     0     0     0     0       Vanadium     ppm     ASTM D5185m     >25     1     0     0     0       Valuanium     ppm     ASTM D5185m     >20	Test	UOM	Method	Limit/Abn	Current	History1	History2	
Sample Date     Client Info     24 May 2024     08 Feb 2024     17 Jan 2024       Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     0     0     0       Filter Age     hrs     Client Info     Not Changd     N/A     N/A       Sample Status     Client Info     N/A     N/A     N/A     N/A       Sample Status     SEVERE     NORMAL     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m<>75     40     10     18       Chromium     ppm     ASTM D5185m<>2     1     0     0       Silver     ppm     ASTM D5185m<>2     1     0     0       Silver     ppm     ASTM D5185m<>100     2     <1     1     1       Copper     pm     ASTM D5185m<>100     2     <1     0     0       Visual     NONE     NONE     NONE     NONE     NONE     NONE       Visual     ND1585m<>20     2	Sample Number		Client Info		GFL0116759		GFL0109091	
Machine Age     hrs     Client Info     4606     4131     4030       Oil Age     hrs     Client Info     0     0     0       Filter Age     hrs     Client Info     Not Chang     N/A     N/A       Goll Changed     Client Info     N/A     N/A     N/A     N/A       Sample Status     Client Info     N/A     N/A     N/A     N/A       Sample Status     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m     >5     2     <1     1       Nickel     ppm     ASTM D5185m     >2     1     0     0       Silver     ppm     ASTM D5185m     >2     1     0     0       Copper     ppm     ASTM D5185m     >2     1     0     0       Vanadium     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m     >2     9     3     8       Potassium     ppm     ASTM D5185m			Client Info				17 Jan 2024	
Oil Age     hrs     Client Info     0     0     0       Filter Age     hrs     Client Info     Not Changed     N/A     N/A       Filter Changed     Client Info     Not Changed     N/A     N/A     N/A       Sample Status     SEVERE     NORMAL     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m     >75     40     10     18       Chromium     ppm     ASTM D5185m     >75     2     <1     1       Nickel     ppm     ASTM D5185m     >2     <1     0     0       Silver     ppm     ASTM D5185m     >2     1     0     0       Qanadium     ppm     ASTM D5185m     >2     1     0     0       Vianadium     ppm     ASTM D5185m     >2     1     0     0       Yeltow Metal     scalar     'Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     16     3		hrs						
Filter Åge     hrs     Client Info     0     0     0       Gil Changed     Client Info     NA Khang     N/A     N/A       Sample Status     Client Info     N/A     N/A     N/A       Sample Status     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m     >75     40     10     18       Chromium     ppm     ASTM D5185m     >2     <1     0     0       Nickel     ppm     ASTM D5185m     >2     <1     0     0       Silver     ppm     ASTM D5185m     >2     1     0     0       Copper     ppm     ASTM D5185m     >2     1     0     0       Vanadium     ppm     ASTM D5185m     >2     1     0     0       Vanadium     ppm     ASTM D5185m     >2     9     3     8       Potassium     ppm     ASTM D5185m     >2     9     3     8       Potassium     ppm     ASTM D5185m     >2	Ū	-						
Oil Changed Filter Changed     Client Info     Not Changed N/A     N/A     N/A       Sample Status     Client Info     N/A     N/A     N/A       Sample Status     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m<>75     40     10     18       Chromium     ppm     ASTM D5185m<>5     2     <1     1       Nickel     ppm     ASTM D5185m<>2     1     0     0       Silver     ppm     ASTM D5185m<>2     1     0     0       Aluminum     ppm     ASTM D5185m<>100     2     <1     1       Tin     ppm     ASTM D5185m<     2     1     0     0       Vanadium     ppm     ASTM D5185m     2     1     0     0       Vanadium     ppm     ASTM D5185m     2     9     3     8       Potassium     ppm     ASTM D5185m     2     9     3     8       Potassium     ppm     ASTM D5185m     2     9     3     8	0				-	0		
Filter Changed     Client Into     N/A     N/A     N/A     N/A       Sample Status     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m     >75     40     10     18       Chromium     ppm     ASTM D5185m     >2     <1     0     0       Nickel     ppm     ASTM D5185m     >2     <1     0     0       Silver     ppm     ASTM D5185m     >2     1     0     0       Aluminum     ppm     ASTM D5185m     >2     1     0     0       Aluminum     ppm     ASTM D5185m     >2     1     0     0       Visual     NONE     NONE     NONE     NONE     NONE     NONE     NONE       Visual     NONE     NONE     NONE     NONE     NONE     NONE     NONE     NONE       Visual     NONE     NONE     NONE     NONE     NONE     NONE     NONE       Visual     NONE     NONE     NONE     NON	0				-	•		
Sample Status     SEVERE     NORMAL     SEVERE       Iron     ppm     ASTM D5185m<>75     40     10     18       Chromium     ppm     ASTM D5185m<>5     2     <1     1       Nickel     ppm     ASTM D5185m<>2     1     0     0       Silver     ppm     ASTM D5185m<>2     1     0     0       Aluminum     ppm     ASTM D5185m<>25     1     0     0       Lead     ppm     ASTM D5185m<>150     7     66     4       Lead     ppm     ASTM D5185m<>100     2     <1     1       Tin     ppm     ASTM D5185m<>100     2     <1     0     0       Vanadium     ppm     ASTM D5185m     >4     1     0     0     0       Veltow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D7845     >3.0     9.9     0.9     10.0       Water     WC Method     >0.2     <	•				•			
Iron     ppm     ASTM D5185m     >75     40     10     18       Chromium     ppm     ASTM D5185m     >5     2     <1     1       Nickel     ppm     ASTM D5185m     >2     <1     0     0       Silver     ppm     ASTM D5185m     >2     1     0     0       Aluminum     ppm     ASTM D5185m     >2     1     0     0       Aluminum     ppm     ASTM D5185m     >2     1     0     0       Copper     ppm     ASTM D5185m     >10     2     <1     1     0       Vanadium     ppm     ASTM D5185m     >25     1     0     <1     0     <1       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE     NONE       Glicon     ppm     ASTM D5185m     >20     2     16     3 <t< th=""><th>Ū</th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	Ū							
Chromium     ppm     ASTM D5185m     >5     2     <1								
Nickel     ppm     ASTM D5185m     >4     1     0     0       Titanium     ppm     ASTM D5185m     >2     <1     0     0       Silver     ppm     ASTM D5185m     >2     1     0     0       Aluminum     ppm     ASTM D5185m     >15     7     6     4       Lead     ppm     ASTM D5185m     >25     1     0     0       Copper     ppm     ASTM D5185m     >25     1     0     0       Vanadium     ppm     ASTM D5185m     >25     9     3     8       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D5185m     >20     10.9     9.9     10.0       Water     WC Method     >0.2     NEG     NEG	Iron	ppm	ASTM D5185m	>75	40	10	18	
Titanium     ppm     ASTM D5185m     >2     <1	Chromium	ppm	ASTM D5185m	>5	2	<1	1	
Titanium     ppm     ASTM D5185m     >2     <1	Nickel	ppm	ASTM D5185m	>4	1	0	0	
Silver     ppm     ASTM D5185m     >2     1     0     0       Aluminum     ppm     ASTM D5185m     >15     7     6     4       Lead     ppm     ASTM D5185m     >25     1     0     0       Copper     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m     >4     1     0     0     1       Vanadium     ppm     ASTM D5185m     >20     2     16     3       Vellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D5185m     20     P.0     9.0     4     10.0       Vattrition     Abs/rm     YASTM D784     >	Titanium		ASTM D5185m	>2	<1	0	0	
Aluminum     ppm     ASTM D5185m     >15     7     6     4       Lead     ppm     ASTM D5185m     >25     1     0     0       Copper     ppm     ASTM D5185m     >100     2     <1     1       Tin     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m     >4     1     0     <1       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m<>20     2     16     3     5       Fuel     %     ASTM D5185m<>20     2     16     3     5       Glycol     WC Method     >0.2     NEG     NEG     NEG       Sott %     %     *ASTM D7624<>20     10.9     7.0     10.5       Sulfation     Abs/1mm     *ASTM D7624<>20     10.9 <th>Silver</th> <th></th> <th></th> <th></th> <th></th> <th>0</th> <th>0</th>	Silver					0	0	
Lead     ppm     ASTM D5185m     >25     1     0     0       Copper     ppm     ASTM D5185m     >100     2     <1     1       Tin     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m      <1     0     <1       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D5185m     >20     2     16     3       Glycol     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       Sott %     %     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.m     *ASTM D7624     >20     <					7			
Copper     ppm     ASTM D5185m     >100     2     <1					-		0	
Tin     ppm     ASTM D5185m     >4     1     0     0       Vanadium     ppm     ASTM D5185m     < <td>&lt;1</td> 0     <1       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D5185m     >20     2     16     3       Glycol     WC Method     >0.2     NEG     NEG     NEG       Sott %     %     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/cm< *Visual     NONE     NONE <t< th=""><th></th><th></th><th></th><th></th><th>-</th><th></th><th></th></t<>	<1					-		
Vanadium     ppm     ASTM D5185m     <1					_			
White Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m<>25     9     3     8       Potassium     ppm     ASTM D5185m<>20     2     16     3       Fuel     %     ASTM D5185m     >20     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG     Secalar       Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/cm<*ASTM D7415     >30     21.3     18.1     20.4       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NORE     NONE     NONE     NORE       Appearance     scalar     *Visual     NORL     NORML     NORML     NORML       Boron     ppm <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>					-			
Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m<>25     9     3     8       Potassium     ppm     ASTM D5185m<>20     2     16     3       Fuel     %     ASTM D5185m<>20     NEG     NEG     NEG       Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/cm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/tmm<*ASTM D7644     >6     1.1     0.3     0.7       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NORE     NORML     NORML     NORML       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML  <				NONF		-		
Silicon     ppm     ASTM D5185m     >25     9     3     8       Potassium     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D5185m     >20     2     16     3       Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       Soot %     %     *ASTM D7644     >6     1.1     0.3     0.7       Nitration     Abs/cm     *ASTM D7644     >6     1.1     0.3     0.7       Sulfation     Abs/cm     *ASTM D7644     >20     10.9     7.0     10.5       Sulfation     Abs/cm     *ASTM D7644     >20     10.9     7.0     10.5       Sulfation     Abs/cm     *ASTM D7415     >30     21.3     18.1     20.4       Silt     scalar     *Visual     NONE     NONE     NONE     NORE       Debris     scalar     *Visual     NORM     NORML								
Potassium     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D3524     >3.0     ▲ 9.9     0.9     ▲ 10.0       Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/.mm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.mm     *ASTM D7624     >20     10.9     NONE     NONE       Debris     scalar     *Visual     NORE     NORM     NORM     NORM     NORM     NORML     NORML     NORML     NOR		Jouran	Violal	NONE		NONE	NONL	
Potassium     ppm     ASTM D5185m     >20     2     16     3       Fuel     %     ASTM D3524     >3.0     ▲ 9.9     0.9     ▲ 10.0       Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/.tm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.tm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.tm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.tm     *ASTM D715     >30     21.3     18.1     20.4       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Ador     scalar     *Visual	Silicon	ppm	ASTM D5185m	>25	9	3	8	
Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     NEG     NEG     NEG     NEG       Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/cm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/tmm     *ASTM D7624     >20     NORE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NORML     NORML     NORML     NORML       Appearance     scalar     *Visual     NOR     NORML     NORML     NORML     NORML <th>Potassium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;20</th> <th>2</th> <th>16</th> <th>3</th>	Potassium	ppm	ASTM D5185m	>20	2	16	3	
Glycol     WC Method     NEG     NEG     NEG       Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/m     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/imm     *ASTM D7614     >30     21.3     18.1     20.4       Silt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORM     NORML	Fuel	%	ASTM D3524	>3.0	<b>4</b> 9.9	0.9	▲ 10.0	
Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/cm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     18.1     20.4       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NOR     NORE     NONE     NONE       Appearance     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NOR     NORML     NORML     NORML     NORML       Emulsified Water     scalar     *Visual     >0.2     NEG     NEG     NEG       Sodium     ppm     ASTM D5185m     0     9     14     9       Barium     ppm     ASTM D5185m     0     1     0     0       <	Water		WC Method	>0.2	NEG	NEG	NEG	
Soot %     %     *ASTM D7844     >6     1.1     0.3     0.7       Nitration     Abs/cm     *ASTM D7624     >20     10.9     7.0     10.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     18.1     20.4       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NOR     NORE     NONE     NONE       Appearance     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NOR     NORML     NORML     NORML     NORML       Emulsified Water     scalar     *Visual     >0.2     NEG     NEG     NEG       Sodium     ppm     ASTM D5185m     0     9     14     9       Barium     ppm     ASTM D5185m     0     1     0     0       <	Glycol		WC Method		NEG	NEG	NEG	
SulfationAbs/.tmm*ASTM D7415>3021.318.120.4Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORLNORMLNORMLNORMLNORMLOdorscalar*VisualNORLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m6049BariumppmASTM D5185m09149BariumppmASTM D5185m0100MagnesiumppmASTM D5185m10106777698599CalciumppmASTM D5185m107010551036936PhosphorusppmASTM D5185m127010151047911SulfurppmASTM D5185m127010151047911SulfurppmASTM D5185m2060284425542358OxidationAbs/.tmm<*ASTM D7414>2518.313.617.6Base Number (BN)mg KOH/gASTM D28969.85.77.45.1	-	%	*ASTM D7844	>6	1.1	0.3	0.7	
Siltscalar*VisualNONENONENONENONENONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m09149BariumppmASTM D5185m0090MolybdenumppmASTM D5185m0100MagnesiumppmASTM D5185m10106777698599CalciumppmASTM D5185m107010551036936PhosphorusppmASTM D5185m1150839796749ZincppmASTM D5185m127010151047911SulfurppmASTM D5185m2060284425542358OxidationAbs/:1mm<*ASTM D28969.85.77.45.1	Nitration	Abs/cm	*ASTM D7624	>20	10.9	7.0	10.5	
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m09149BariumppmASTM D5185m0090MolybdenumppmASTM D5185m01000MagnesiumppmASTM D5185m10106777698599CalciumppmASTM D5185m1150839796749ZincppmASTM D5185m127010151047911SulfurppmASTM D5185m2060284425542358OxidationAbs/1mm*ASTM D218969.85.77.45.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	18.1	20.4	
Sand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m6049BariumppmASTM D5185m09149BariumppmASTM D5185m0090MolybdenumppmASTM D5185m010607698MaganeseppmASTM D5185m10106777698599CalciumppmASTM D5185m107010551036936PhosphorusppmASTM D5185m127010151047911SulfurppmASTM D5185m2060284425542358OxidationAbs/1mm*ASTM D28969.85.77.45.1	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
Sand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m6049BariumppmASTM D5185m09149BariumppmASTM D5185m0090MolybdenumppmASTM D5185m010607698MaganeseppmASTM D5185m10106777698599CalciumppmASTM D5185m107010551036936PhosphorusppmASTM D5185m127010151047911SulfurppmASTM D5185m2060284425542358OxidationAbs/1mm*ASTM D28969.85.77.45.1	Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
Odor     scalar     *Visual     NORML     NOR       Sodium     ppm     ASTM D5185m     0     6     0     9     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0	Sand/Dirt	scalar		NONE	NONE	NONE	NONE	
Odor     scalar     *Visual     NORML     NOR       Sodium     ppm     ASTM D5185m     0     6     0     9     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Sodium     ppm     ASTM D5185m     6     0     4       Boron     ppm     ASTM D5185m     0     9     14     9       Barium     ppm     ASTM D5185m     0     0     9     0       Molybdenum     ppm     ASTM D5185m     0     0     9     0       Manganese     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     1010     677     698     599       Calcium     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs.1mm     *ASTM D2896     9.8     5.7     7.4     5.1		scalar	*Visual	NORML	NORML	NORML	NORML	
Boron     ppm     ASTM D5185m     0     9     14     9       Barium     ppm     ASTM D5185m     0     0     9     0       Molybdenum     ppm     ASTM D5185m     0     0     9     0       Molybdenum     ppm     ASTM D5185m     60     54     60     50       Manganese     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     1010     677     698     599       Calcium     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs.1mm<*ASTM D2896     9.8     5.7     7.4     5.1	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
Boron     ppm     ASTM D5185m     0     9     14     9       Barium     ppm     ASTM D5185m     0     0     9     0       Molybdenum     ppm     ASTM D5185m     0     0     9     0       Molybdenum     ppm     ASTM D5185m     60     54     60     50       Manganese     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     1010     677     698     599       Calcium     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs.1mm<*ASTM D2896     9.8     5.7     7.4     5.1								
Barium     ppm     ASTM D5185m     0     0     9     0       Molybdenum     ppm     ASTM D5185m     60     54     60     50       Manganese     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     1010     677     698     599       Calcium     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     150     839     796     749       Zinc     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs.1mm<*ASTM D7414<>25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1		ppm			-			
Molybdenum     ppm     ASTM D5185m     60     54     60     50       Manganese     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     1010     677     698     599       Calcium     ppm     ASTM D5185m     1010     677     698     936       Phosphorus     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     1150     839     796     749       Zinc     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs./1mm<*ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1		ppm	ASTM D5185m	0	9		9	
Manganese     ppm     ASTM D5185m     0     1     0     0       Magnesium     ppm     ASTM D5185m     1010 <b>677</b> 698     599       Calcium     ppm     ASTM D5185m     1070 <b>1055</b> 1036     936       Phosphorus     ppm     ASTM D5185m     1150 <b>839</b> 796     749       Zinc     ppm     ASTM D5185m     1270 <b>1015</b> 1047     911       Sulfur     ppm     ASTM D5185m     2060 <b>2844</b> 2554     2358       Oxidation     Abs/.1mm     *ASTM D7414     >25 <b>18.3</b> 13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8 <b>5.7</b> 7.4     5.1		ppm						
Magnesium     ppm     ASTM D5185m     1010     677     698     599       Calcium     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     1150     839     796     749       Zinc     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs/.1mm     *ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1		ppm						
Calcium     ppm     ASTM D5185m     1070     1055     1036     936       Phosphorus     ppm     ASTM D5185m     1150     839     796     749       Zinc     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs/.1mm     *ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1	-	ppm						
Phosphorus     ppm     ASTM D5185m     1150     839     796     749       Zinc     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs/.1mm     *ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1	-	ppm	ASTM D5185m		677	698		
Zinc     ppm     ASTM D5185m     1270     1015     1047     911       Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs/.1mm     *ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1		ppm						
Sulfur     ppm     ASTM D5185m     2060     2844     2554     2358       Oxidation     Abs/.tmm     *ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1	Phosphorus	ppm	ASTM D5185m	1150	839	796	749	
Oxidation     Abs/.1mm     *ASTM D7414     >25     18.3     13.6     17.6       Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1		ppm	ASTM D5185m	1270	1015	1047	911	
Base Number (BN)     mg KOH/g     ASTM D2896     9.8     5.7     7.4     5.1	Sulfur	ppm	ASTM D5185m	2060	2844	2554	2358	
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	13.6	17.6	
Visc @ 100°C cSt ASTM D445 15.4 🚺 10.4 / 12.6 🔺 9.7	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	5.7	7.4	5.1	
	Visc @ 100°C	cSt	ASTM D445	15.4	🔺 10.4 🌙	12.6	<b>9</b> .7	



\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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