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VOLVO EC380EL 311499

Component Diesel Engine

{not provided} (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is SAE 30 Diesel Engine Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample.

$E \land D$	

All component wear rates are normal.

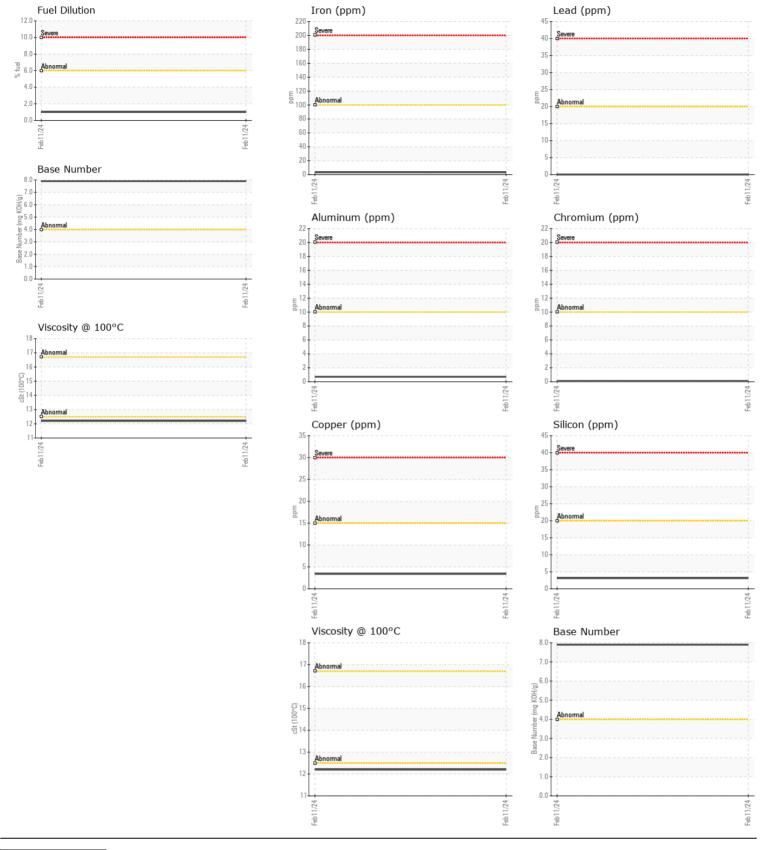
## CONTAMINATION

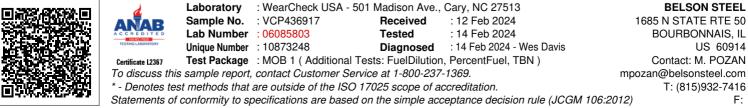
Light fuel dilution occurring. No other contaminants were detected in the oil.

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test  UOM  Method  Limit/Ab  Current  History1  History2    Sample Number  Client Info  VCP438917      Sample Date  Client Info  0      Oil Age  hrs  Client Info  0      Oil Age  hrs  Client Info  0      Oil Changed  Client Info  N/A      Sample Status  Client Info  N/A      Iron  ppm  ASTM D5185m<>100  3      Iron  ppm  ASTM D5185m<>10  0      Nickel  ppm  ASTM D5185m<>20  0      Silver  ppm  ASTM D5185m<>10  0      Auminum  ppm  ASTM D5185m<>10  0							
Sample Date  Client Info  11 Feb 2024      Machine Age  hrs  Client Info  0      Oil Age  hrs  Client Info  0      Oil Age  hrs  Client Info  N/A      Oil Changed  Client Info  N/A      Filter Age  m  Client Info  N/A      Sample Status  Client Info  N/A       Iron  ppm  ASTM D5185m  >10  C1      Nickel  ppm  ASTM D5185m  >10  0      Silver  ppm  ASTM D5185m  >20  0      Lead  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >20  0     Vellow Metal  scalar<'tvisual  NONE<	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age  hrs  Client Info  0      Filter Age  hrs  Client Info  0      Filter Age  hrs  Client Info  N/A      Filter Changed  Client Info  N/A      Sample Status  Client Info  N/A      Iron  ppm  ASTM D5185m  >100  3      Chromium  ppm  ASTM D5185m  >10  0      Nickel  ppm  ASTM D5185m  >10  0      Aluminum  ppm  ASTM D5185m  >20  0      Age  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >20  0      Vanadium  ppm  ASTM D5185m  >20  0      Veltow Metal  sc	Sample Number		Client Info		VCP436917		
Oil Age  hrs  Client Info  0      Filter Age  hrs  Client Info  N/A      Oil Changed  Client Info  N/A      Filter Changed  Client Info  N/A      Sample Status  MORMAL       Iron  ppm  ASTM D5185m<>100  3      Chromium  ppm  ASTM D5185m<>10  0      Nickel  ppm  ASTM D5185m<>20  0      Aluminum  ppm  ASTM D5185m<>20  0      Lead  ppm  ASTM D5185m<>20  0      Vanadium  ppm  ASTM D5185m<>20  0      Vanadium  ppm  ASTM D5185m<>20  3      Veltow Metal  scalar  Visual  NONE <t< th=""><th>Sample Date</th><th></th><th>Client Info</th><th></th><th>11 Feb 2024</th><th></th><th></th></t<>	Sample Date		Client Info		11 Feb 2024		
Filter Åge Oli Changed  hrs  Client Info  N/A      Filter Changed  Client Info  N/A      Sample Status  Vian      Iron  ppm  ASTM D5185m<>100  3      Chromium  ppm  ASTM D5185m<>100       Nickel  ppm  ASTM D5185m<>10  0      Nickel  ppm  ASTM D5185m<>10  0      Silver  ppm  ASTM D5185m<>10  -1      Lead  ppm  ASTM D5185m<>10  0      Vanadium  ppm  ASTM D5185m<>10  0      Vellow Metal  scalar  'Visual  NONE  NONE     Vellow Metal  scalar  'Visual  NONE  NONE     Silicon  ppm  ASTM D5185m  20  0	Machine Age	hrs	Client Info		0		
Oil Changed  Client Info  N/A      Filter Changed  Client Info  N/A      Sample Status  NORMAL      Iron  ppm  ASTM D5185m  >100  3     Nickel  ppm  ASTM D5185m  >10      Nickel  ppm  ASTM D5185m  >10      Aluminum  ppm  ASTM D5185m  >20  0      Aluminum  ppm  ASTM D5185m  >20  0      Qanadium  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  0  0      Vellow Metal  scalar  *Visual  NONE  NONE      Vellow Metal  scalar  *Visual  NONE  NONE      Vellow Metal  scalar  *Visual	Oil Age	hrs	Client Info		0		
Filter Changed Sample Status  Client Info  N/A      Iron  ppm  ASTM D5185m<>100  3      Iron  ppm  ASTM D5185m<>100  3      Nickel  ppm  ASTM D5185m<>10  0      Nickel  ppm  ASTM D5185m<>20  0      Silver  ppm  ASTM D5185m<>20  0      Lead  ppm  ASTM D5185m<>10  -1      Lead  ppm  ASTM D5185m<>10  0      Vanadium  ppm  ASTM D5185m<>10  0      Vanadium  ppm  ASTM D5185m<>20  3      Yellow Metal  scalar  *Visual  NONE      Yellow Metal  scalar  *Visual  NONE      Silicon  ppm  ASTM D5185m  20  0  -	Filter Age	hrs	Client Info		0		
Filter Changed  Client Info  N/A      Sample Status   NORMAL      Iron  ppm  ASTM D5185m  >100  3      Chromium  ppm  ASTM D5185m  >10  0      Nickel  ppm  ASTM D5185m  >10  0      Silver  ppm  ASTM D5185m  >20  0      Lead  ppm  ASTM D5185m  >20  0      Lead  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >10  0      Vellow Metal  scalar  *Visual  NONE      Vellow Metal  scalar  *Visual  NONE      Silicon  ppm  ASTM D5185m  >20  0      Fuel	Oil Changed		Client Info		N/A		
Sample Status  NORMAL      Iron  ppm  ASTM D5185m<>100  3      Chromium  ppm  ASTM D5185m<>10  0      Nickel  ppm  ASTM D5185m  >10  0      Silver  ppm  ASTM D5185m  >20  0      Aluminum  ppm  ASTM D5185m  >20  0      Lead  ppm  ASTM D5185m  >10  0      Copper  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >10  0      Veltaw Metal  scalar  *Visual  NONE      Veltow Metal  scalar  *Visual  NONE      Veltow Metal  scalar  *Visual  NONE      Silicon  ppm	-		Client Info		N/A		
Iron  ppm  ASTM D5185m  >100  3      Chromium  ppm  ASTM D5185m  >10  <1      Nickel  ppm  ASTM D5185m  >10  0      Titanium  ppm  ASTM D5185m  >20  0      Aluminum  ppm  ASTM D5185m  >20  0      Aluminum  ppm  ASTM D5185m  >20  0      Copper  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >20  3      Vanadium  ppm  ASTM D5185m  >20  3      Silicon  ppm  ASTM D5185m  >20  3      Sulicon  Abs/m  ASTM D5185m </th <th>0</th> <th></th> <th></th> <th></th> <th>NORMAL</th> <th></th> <th></th>	0				NORMAL		
Chromium  ppm  ASTM D5185m  >10  <1							
Nickel  ppm  ASTM D5185m  > 10  0      Titanium  ppm  ASTM D5185m  2  0      Silver  ppm  ASTM D5185m  >20  0      Aluminum  ppm  ASTM D5185m  >20  0      Lead  ppm  ASTM D5185m  >10  <1      Copper  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >0  0      Vanadium  ppm  ASTM D5185m  >20  3      Vanadium  ppm  ASTM D5185m  >20  3      Vallow Metal  scalar  "Visual  NONE      Silicon  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D5185m  20	Iron	ppm	ASTM D5185m	>100	3		
Titanium  ppm  ASTM D5185m  0      Aluminum  ppm  ASTM D5185m  >2  0      Aluminum  ppm  ASTM D5185m  >20  0      Lead  ppm  ASTM D5185m  >20  0      Copper  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  0       Vanadium  ppm  ASTM D5185m  0  0      Vanadium  ppm  ASTM D5185m  >20  0      Vanadium  ppm  ASTM D5185m  >20  0      Vallow Metal  scalar  *Visual  NONE      Silicon  ppm  ASTM D5185m  >20  0      Glycol  WC Method  >0.1  NEG  -	Chromium	ppm	ASTM D5185m	>10	<1		
Silver  ppm  ASTM D5185m  >2  0      Aluminum  ppm  ASTM D5185m  >10  <1      Lead  ppm  ASTM D5185m  >20  0      Copper  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >10  0      White Metal  scalar  "Visual  NONE  NONE      Yellow Metal  scalar  "Visual  NONE  NONE      Solicon  ppm  ASTM D5185m<>20  3       Vellow Metal  scalar  "Visual  NONE  NONE      Solicon  ppm  ASTM D5185m<>20  3       Water  WC Method  >0.1  NEG	Nickel	ppm	ASTM D5185m	>10	0		
Aluminum  ppm  ASTM D5185m  >10  <1	Titanium	ppm	ASTM D5185m		0		
Lead  ppm  ASTM D5185m  >20  0      Copper  ppm  ASTM D5185m  >15  3      Vanadium  ppm  ASTM D5185m  >10  0      White Metal  scalar  *Visual  NONE  NONE      Yellow Metal  scalar  *Visual  NONE  NONE      Silicon  ppm  ASTM D5185m<>20  3      Potassium  ppm  ASTM D5185m<>20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1       Sout %  %  YASTM D7624<>20  8.7      Sulfation  Abs/m  Yisual  NONE      Sodi %  Yoisual  NORE  NORE	Silver	ppm	ASTM D5185m	>2	0		
Copper  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  >10  0      White Metal  scalar  *Visual  NONE  NONE      Yellow Metal  scalar  *Visual  NONE  NONE      Silicon  ppm  ASTM D5185m  >20  0      Potassium  ppm  ASTM D5185m  >20  0      Water  WC Method  0.1  NEG       Glycol  WC Method  0.1  NEG       Sott %  %  *ASTM D7624  >20  8.7      Sulfation  Abs/:mm  *ASTM D7624  >20  8.7      Sulfation  Abs/:mm  *ASTM D7624  >20  8.7      Sulfation  Ab	Aluminum	ppm	ASTM D5185m	>10	<1		
Copper  ppm  ASTM D5185m  >15  3      Tin  ppm  ASTM D5185m  >10  0      Vanadium  ppm  ASTM D5185m  0      White Metal  scalar  *Visual  NONE  NONE      Yellow Metal  scalar  *Visual  NONE  NONE      Silicon  ppm  ASTM D5185m<>20  3      Potassium  ppm  ASTM D5185m<>20  0      Fuel  %  ASTM D5185m<>20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1  NEG      Sot %  %  'ASTM D7644<>3  0.1      Sulfation  Abs/rm  'ASTM D7645<>30  19.2      Sulfation	Lead	ppm	ASTM D5185m	>20	0		
Vanadium  ppm  ASTM D5185m  0      White Metal  scalar  *Visual  NONE  NONE      Yellow Metal  scalar  *Visual  NONE  NONE      Silicon  ppm  ASTM D5185m  >20  3      Potassium  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D5185m  >20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1  NEG      Soot %  %  *ASTM D7844  >3  0.1      Sulfation  Abs/cm< *ASTM D71624  >20  8.7      Sulfation  Abs/imm  *ASTM D71624  >30  19.2      Debris  scalar  *Visual  NONE  NONE <td< th=""><th>Copper</th><th></th><th>ASTM D5185m</th><th>&gt;15</th><th>3</th><th></th><th></th></td<>	Copper		ASTM D5185m	>15	3		
Vanadium  ppm  ASTM D5185m  0      White Metal  scalar  *Visual  NONE  NONE      Yellow Metal  scalar  *Visual  NONE  NONE      Silicon  ppm  ASTM D5185m  >20  3      Potassium  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D5185m  >20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1  NEG      Sotd %  %  *ASTM D7624  >20  8.7      Sulfation  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/Imm  *ASTM D7624  >30  19.2      Sulfation  Abs/Imm  *ASTM D7624  >20 <td< th=""><th>Tin</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;10</th><th>0</th><th></th><th></th></td<>	Tin	ppm	ASTM D5185m	>10	0		
White Metal  scalar  *Visual  NONE  NONE      Yellow Metal  scalar  *Visual  NONE  NONE      Silicon  ppm  ASTM D5185m  >20  0      Potassium  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D5185m  >20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1  NEG      Soot %  %  *ASTM D7644  >3  0.1      Sulfation  Abs/um  *ASTM D7644  >30  19.2      Sulfation  Abs/um  *ASTM D7644  >30  19.2      Sulfation  Abs/um  *ASTM D7644  >30  19.2      Debris  scalar  *Visual <td< th=""><th>Vanadium</th><th></th><th>ASTM D5185m</th><th></th><th>0</th><th></th><th></th></td<>	Vanadium		ASTM D5185m		0		
Silicon  ppm  ASTM D5185m  >20  3      Potassium  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D5185m  >20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1  NEG      Sott %  %  *ASTM D7844  >3  0.1      Sulfation  Abs/cm< *ASTM D7624  >20  8.7      Sulfation  Abs/cm< *ASTM D715  >30  19.2      Sulfation  Abs/imm<*ASTM D7145  >30  19.2      Sulfation  Abs/imm<*ASTM D7145  >30  19.2      Sulfation  scalar  *Visual  NONE  NONE      Sad/D1rit  scalar  *Visual  NORH  NORML   <	White Metal	scalar	*Visual	NONE	NONE		
Silicon  ppm  ASTM D5185m  >20  3      Potassium  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D5185m  >20  0      Water  WC Method  >0.1  NEG      Glycol  WC Method  >0.1  NEG      Sott %  %  *ASTM D7844  >3  0.1      Sulfation  Abs/cm< *ASTM D7624  >20  8.7      Sulfation  Abs/cm< *ASTM D715  >30  19.2      Sulfation  Abs/imm<*ASTM D7145  >30  19.2      Sulfation  Abs/imm<*ASTM D7145  >30  19.2      Sulfation  scalar  *Visual  NONE  NONE      Sad/D1rit  scalar  *Visual  NORH  NORML   <	Yellow Metal	scalar	*Visual	NONE	NONE		
Potassium  ppm  ASTM D5185m  >20  0      Fuel  %  ASTM D3524  >6.0  1.0      Water  WC Method  >0.1  NEG      Glycol  WC Method  NEG       Soot %  %  *ASTM D7844  >3  0.1      Soot %  %  *ASTM D7624  >20  8.7      Sulfation  Abs/.tmm  *ASTM D7624  >20  8.7      Sulfation  scalar  *Visual							
Fuel  %  ASTM D3524  >6.0  1.0      Water  WC Method  >0.1  NEG      Glycol  WC Method  NEG      Soot %  %  *ASTM D7844  >3  0.1      Nitration  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/.mm  *ASTM D7624  >20  8.7      Sulfation  Abs/.mm  *ASTM D7624  >20  8.7      Sulfation  Abs/.mm  *ASTM D7152  >30  19.2      Sulfation  Abs/.mm  *ASTM D7152  >30  19.2      Sulfation  scalar  *Visual  NONE  NORE      Appearance  scalar  *Visual  NORML	Silicon	ppm	ASTM D5185m	>20	3		
Water  WC Method  >0.1  NEG      Glycol  WC Method  NEG      Soot %  %  *ASTM D7844  >3  0.1      Nitration  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/.1mm  *ASTM D7615  >30  19.2      Sulfation  Abs/.1mm  *ASTM D7615  >30  19.2      Sulfation  Abs/.1mm  *ASTM D7624  >20  8.7      Sulfation  Abs/.1mm  *ASTM D7615  >30  19.2      Sulfation  Abs/.1mm  *Visual  NONE       Debris  scalar  *Visual  NORML  NORML      Appearance  scalar  *Visual  NORML  NORML      Boron  ppm  ASTM D5185m	Potassium	ppm	ASTM D5185m	>20	0		
Glycol  WC Method  NEG     Soot %  %  *ASTM D7844  >3  0.1     Nitration  Abs/cm  *ASTM D7624  >20  8.7     Sulfation  Abs/cm  *ASTM D784  NONE      Sulfation  scalar  *Visual  NONE  NONE      Appearance  scalar  *Visual  NORML  NORML      Appearance  scalar  *Visual  NORML  NORML      Appearance  scalar  *V	Fuel	%	ASTM D3524	>6.0	1.0		
Soot %  %  *ASTM D7844  >3  0.1      Nitration  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/cm  *ASTM D7624  >30  19.2      Sulfation  Abs/cm  *Visual  NONE  NONE      Debris  scalar  *Visual  NONE  NONE      Sand/Dirt  scalar  *Visual  NOR  NORML      Appearance  scalar  *Visual  NORML  NORML      Odor  scalar  *Visual  NORML  NORML      Godium  ppm  ASTM D5185m  1      Boron  ppm  ASTM D5185m  0      Malganese  ppm  ASTM D5185m	Water		WC Method	>0.1	NEG		
Nitration  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/.1mm  *ASTM D7624  >30  19.2      Silt  scalar  *Visual  NONE  NONE      Debris  scalar  *Visual  NONE  NONE      Sand/Dirt  scalar  *Visual  NONE  NONE      Appearance  scalar  *Visual  NORML  NORML      Odor  scalar  *Visual  NORML  NORML      Godor  scalar  *Visual  NORML  NORML      Odor  scalar  *Visual  >0.1  NEG      Sodium  ppm  ASTM D5185m  <1      Boron  ppm  ASTM D5185m  59      Malganese  ppm  ASTM D5185m	Glycol		WC Method		NEG		
SulfationAbs/.1mm*ASTM D7415>3019.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLCdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m1BoronppmASTM D5185m0MalganeseppmASTM D5185m59MagnesiumppmASTM D5185m1048PhosphorusppmASTM D5185m1048ZincppmASTM D5185m1239SulfurppmASTM D5185m2944OxidationAbs/.1mm*ASTM D7414>2515.7Base Number (BN)mg KOHlgASTM D28967.9	Soot %	%	*ASTM D7844	>3	0.1		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m1BoronppmASTM D5185m0BariumppmASTM D5185m0MalganeseppmASTM D5185m<11MagnesiumppmASTM D5185m<1048PhosphorusppmASTM D5185m1069ZincppmASTM D5185m1239SulfurppmASTM D5185m2944OxidationAbs/.1mm*ASTM D28967.9Base Number (BN)mg KOHlgASTM D28967.9	Nitration	Abs/cm	*ASTM D7624	>20	8.7		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m1BoronppmASTM D5185m<1BariumppmASTM D5185m0MolybdenumppmASTM D5185m<59MagneseppmASTM D5185m<1048MagnesiumppmASTM D5185m1048PhosphorusppmASTM D5185m1239SulfurppmASTM D5185m2944OxidationAbs/.1mm*ASTM D28967.9Base Number (BN)mg KOHgASTM D28967.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2		
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m1BoronppmASTM D5185m<1BariumppmASTM D5185m0MolybdenumppmASTM D5185m59MaganeseppmASTM D5185m<11MagnesiumppmASTM D5185m<1048PhosphorusppmASTM D5185m1069ZincppmASTM D5185m1239SulfurppmASTM D5185m2944OxidationAbs/.1mm*ASTM D28967.9	Silt	scalar	*Visual	NONE	NONE		
Appearance  scalar  *Visual  NORML  NORML     Odor  scalar  *Visual  NORML  NORML      Emulsified Water  scalar  *Visual  >0.1  NEG      Sodium  ppm  ASTM D5185m  1      Boron  ppm  ASTM D5185m  <1      Barium  ppm  ASTM D5185m  <1      Molybdenum  ppm  ASTM D5185m  0      Maganese  ppm  ASTM D5185m  59      Magnesium  ppm  ASTM D5185m  <11      Calcium  ppm  ASTM D5185m  962      Phosphorus  ppm  ASTM D5185m  1069      Zinc  ppm  ASTM D5185m  1239      Sulfur  ppm  ASTM D5185m<	Debris	scalar	*Visual	NONE	NONE		
Odor  scalar  *Visual  NORML  NORML     Emulsified Water  scalar  *Visual  >0.1  NEG      Sodium  ppm  ASTM D5185m  1       Boron  ppm  ASTM D5185m  <1       Barium  ppm  ASTM D5185m  <1       Molybdenum  ppm  ASTM D5185m  0       Manganese  ppm  ASTM D5185m  59       Magnesium  ppm  ASTM D5185m  <11       Phosphorus  ppm  ASTM D5185m  <14       Zinc  ppm  ASTM D5185m  1069       Sulfur  ppm  ASTM D5185m  1239       Oxidation  Abs/.1mm  <	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water  scalar  *Visual  >0.1  NEG     Sodium  ppm  ASTM D5185m  1      Boron  ppm  ASTM D5185m  <1      Barium  ppm  ASTM D5185m  0      Molybdenum  ppm  ASTM D5185m  0      Manganese  ppm  ASTM D5185m  59      Magnesium  ppm  ASTM D5185m  <1      Calcium  ppm  ASTM D5185m  962      Phosphorus  ppm  ASTM D5185m  1048      Zinc  ppm  ASTM D5185m  1069      Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm<*ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9	Appearance	scalar	*Visual	NORML	NORML		
Sodium  ppm  ASTM D5185m  1     Boron  ppm  ASTM D5185m  <1     Barium  ppm  ASTM D5185m  0     Barium  ppm  ASTM D5185m  0     Molybdenum  ppm  ASTM D5185m  59     Manganese  ppm  ASTM D5185m  <1     Magnesium  ppm  ASTM D5185m  <1     Calcium  ppm  ASTM D5185m  962     Phosphorus  ppm  ASTM D5185m  1048     Zinc  ppm  ASTM D5185m  1069     Sulfur  ppm  ASTM D5185m  1239     Sulfur  ppm  ASTM D5185m  2944     Oxidation  Abs/.1mm<*ASTM D7414<>25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9	Odor	scalar	*Visual	NORML	NORML		
Boron  ppm  ASTM D5185m  <1	Emulsified Water	scalar	*Visual	>0.1	NEG		
Boron  ppm  ASTM D5185m  <1							
Barium  ppm  ASTM D5185m  0     Molybdenum  ppm  ASTM D5185m  59     Manganese  ppm  ASTM D5185m  <1		ppm			-		
Molybdenum  ppm  ASTM D5185m  59      Manganese  ppm  ASTM D5185m  <1      Magnesium  ppm  ASTM D5185m  962      Calcium  ppm  ASTM D5185m  1048      Phosphorus  ppm  ASTM D5185m  1069      Zinc  ppm  ASTM D5185m  1239      Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm<*ASTM D7414<>25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9		ppm					
Manganese  ppm  ASTM D5185m  <1		ppm					
Magnesium  ppm  ASTM D5185m  962      Calcium  ppm  ASTM D5185m  1048      Phosphorus  ppm  ASTM D5185m  1069      Zinc  ppm  ASTM D5185m  1239      Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm  *ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9		ppm					
Calcium  ppm  ASTM D5185m  1048      Phosphorus  ppm  ASTM D5185m  1069      Zinc  ppm  ASTM D5185m  1239      Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm  *ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9	Manganese	ppm					
Phosphorus  ppm  ASTM D5185m  1069      Zinc  ppm  ASTM D5185m  1239      Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm  *ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9	•	ppm	ASTM D5185m				
Zinc  ppm  ASTM D5185m  1239      Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm  *ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9		ppm					
Sulfur  ppm  ASTM D5185m  2944      Oxidation  Abs/.1mm  *ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9	Phosphorus	ppm	ASTM D5185m				
Oxidation  Abs/.1mm  *ASTM D7414  >25  15.7      Base Number (BN)  mg KOH/g  ASTM D2896  7.9		ppm			1239		
Base Number (BN)  mg KOH/g  ASTM D2896  7.9	Sulfur	ppm	ASTM D5185m		2944		
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7		
Visc @ 100°C cSt ASTM D445	Base Number (BN)	mg KOH/g	ASTM D2896		7.9		
	Visc @ 100°C	cSt	ASTM D445		12.2		





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