

## **OIL ANALYSIS REPORT**



#### Machine Id **3198** Component **Diesel Engine** Fluid **CHEVRON DELO 400 XLE 10W30 (--- QTS)**

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

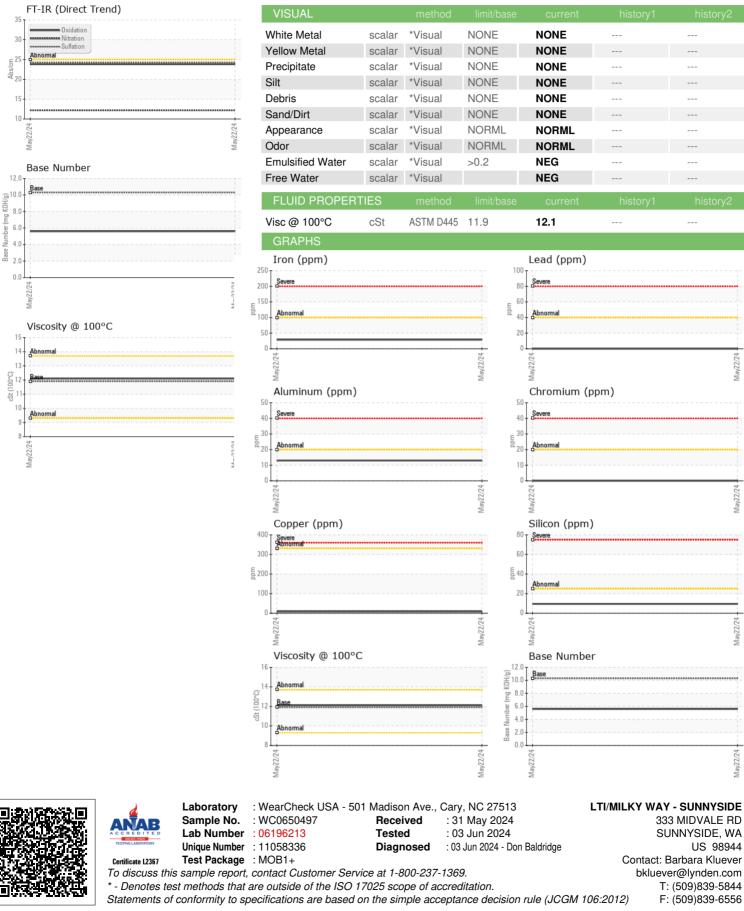
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date      Client Info      22 May 2024          Machine Age      mis      Client Info      0          Oil Age      mis      Client Info      0          Sample Status      Client Info      N/A          CONTAMINATION      method      limit/base      current      history1      history2        Fuel      WC Method      >5      <1.0          Qiyool      WC Method      >0.2      NEG          WEAR METALS      method      limit/base      current      history1      history2        Iron      ppm      ASTM 05165m      >100      29          VEAR METALS      method      limit/base      current      history1      history2        Iron      ppm      ASTM 05165m      >20      0          Istainum      ppm      ASTM 05165m      >30           Silver      ppm      ASTM	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age    mis    Client Info    99887        Oil Aga    mis    Client Info    0        Sample Status    Client Info    N/A        Sample Status    Client Info    N/A        CONTAMINATION    method    5    <1.0        Water    WC Method    >5    <1.0        Water    WC Method    >0.2    NEG        WEAR METALS    wC Method    >2.2    NEG        Kert METALS    method    100    29         Koronium    ppm    ASTM 05185m    >20    0         Nickel    ppm    ASTM 05185m    >30          Aluminum    ppm    ASTM 05185m    >15    2         Age    ppm    ASTM 05185m    >15    2         Ag	Sample Number		Client Info		WC0650497		
Oil Age      mis      Client Info      NA          Oil Changed      Client Info      NA          Sample Status      Imitbase      current      History1      History2        CONTAMINATION      method      5      <1.0          Water      WC Method      >.5      <1.0          Water      WC Method      >.0      NEG          Water      WC Method      >.0      Partition          WEAR METALS      method      Imit/base      current      History1      History2        Iron      ppm      ASTM D585m      >100      29          Iranium      ppm      ASTM D585m      >20      0          Silver      ppm      ASTM D585m      >20      13          Copper      ppm      ASTM D585m      >30      9          Adminum      ppm      ASTM D585m <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>22 May 2024</th> <th></th> <th></th>	Sample Date		Client Info		22 May 2024		
Oil Changed      Client Info      N/A          Sample Status      Imit/base      current      Nistory1      Nistory2        CONTAMINATION      WC Method      >5      <1.0          Water      WC Method      >5      <1.0          Glycol      WC Method      >0.2      NEG          WEAR METALS      method      Imit/base      current      history1         VEAR METALS      method      Imit/base      current      history2         Iron      ppm      ASTM D5185m      >100      29          Iranium      ppm      ASTM D5185m      >20      0          Sliver      ppm      ASTM D5185m      >3      <1          Auminum      ppm      ASTM D5185m      >30      9          Copper      ppm      ASTM D5185m      30           ADDITVES      method	Machine Age	mls	Client Info		99887		
Sample Status      Image: Status      NORMAL          CONTAMINATION      method      limit/base      current      history1      history2        Fuel      WC Method      >5      <1.0          Water      WC Method      >0.2      NEG          WEAR METALS      method      limit/base      current      history1      history2        Iron      ppm      ASTM D5185m      >100      29          Okromium      ppm      ASTM D5185m      20      0          Nickel      ppm      ASTM D5185m      20      13          Lead      ppm      ASTM D5185m      >30      9          Acamium      ppm      ASTM D5185m      330      9          Vanadium      ppm      ASTM D5185m      30           Astm D5185m      0	Oil Age	mls	Client Info		0		
CONTAMINATION    method    limit/base    current    history1    history2      Fuel    WC Method    >5    <1.0        Glycol    WC Method    >0.2    NEG        WEAR METALS    method    limit/base    current    history1    history2      Iron    ppm    ASTM D5185m    >100    29        MEAR METALS    method    limit/base    current    history1    history2      Iron    ppm    ASTM D5185m    >100    29        Nickel    ppm    ASTM D5185m    >4    0        Aluminum    ppm    ASTM D5185m    >3    <1        Aluminum    ppm    ASTM D5185m    >30    9        Aluminum    ppm    ASTM D5185m    >30    9        Adadium    ppm    ASTM D5185m    0         Copper    ppm    ASTM D5185m    0 <t< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>N/A</th><th></th><th></th></t<>	Oil Changed		Client Info		N/A		
Fuel      WC Method      >5      <1.0	Sample Status				NORMAL		
Water      WC Method      >0.2      NEG          Glycol      WC Method      NEG          WEAR METALS      method      limit/base      current      history1      history2        Iron      ppm      ASTM 05185m      >100      29          Chromium      ppm      ASTM 05185m      >20      0          Nickel      ppm      ASTM 05185m      >3      <1          Aluminum      ppm      ASTM 05185m      >3      <1          Aluminum      ppm      ASTM 05185m      >30      9          Aluminum      ppm      ASTM 05185m      >30      9          Adaminum      ppm      ASTM 05185m      10           Adaminum      ppm      ASTM 05185m      0           Adaminum      ppm      ASTM 05185m      0	CONTAMINATION	N .	method	limit/base	current	history1	history2
Glycol      WC Method      NEG          WEAR METALS      method      imit/base      current      history1      history2        Iron      ppm      ASTM D5185m      >100      29          Nickel      ppm      ASTM D5185m      >20      0          Nickel      ppm      ASTM D5185m      >4      0          Silver      ppm      ASTM D5185m      >3      <1          Auminum      ppm      ASTM D5185m      >20      13          Auminum      ppm      ASTM D5185m      >15      2          Auminum      ppm      ASTM D5185m      0           Agadium      ppm      ASTM D5185m      0           Adminum      ppm      ASTM D5185m      0           Adminum      ppm      ASTM D5185m      0	Fuel		WC Method	>5	<1.0		
WEAR METALS      method      limit/base      current      history1      history2        Iron      ppm      ASTM D5185m      >20      0          Nickel      ppm      ASTM D5185m      >20      0          Titanium      ppm      ASTM D5185m      >4      0          Silver      ppm      ASTM D5185m      >3      <1          Aluminum      ppm      ASTM D5185m      >3      <1          Lead      ppm      ASTM D5185m      >30      9          Copper      ppm      ASTM D5185m      >15      2          Cadmium      ppm      ASTM D5185m      0           ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30           Magnesium      ppm      ASTM D5185m <td< th=""><th>Water</th><th></th><th>WC Method</th><th>&gt;0.2</th><th>NEG</th><th></th><th></th></td<>	Water		WC Method	>0.2	NEG		
Iron      ppm      ASTM D5185m      >100      29          Chromium      ppm      ASTM D5185m      >20      0          Nickel      ppm      ASTM D5185m      >4      0          Silver      ppm      ASTM D5185m      >3      <1          Aluminum      ppm      ASTM D5185m      >3      <13          Lead      ppm      ASTM D5185m      >40      0          Copper      ppm      ASTM D5185m      >40      0          Cadmium      ppm      ASTM D5185m      >15      2          ADDTIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Magnesium      ppm      ASTM D5185m      40          Magnesium      ppm      ASTM D5185m      526	Glycol		WC Method		NEG		
Chromium      ppm      ASTM D5185m      >20      0          Nickel      ppm      ASTM D5185m      >4      0          Titanium      ppm      ASTM D5185m      >3      <1          Silver      ppm      ASTM D5185m      >3      <1          Aluminum      ppm      ASTM D5185m      >20      13          Copper      ppm      ASTM D5185m      >20      13          Copper      ppm      ASTM D5185m      >40      0          Cadmium      ppm      ASTM D5185m      >15      2          ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      0          Magnesium      ppm      ASTM D5185m      200      1718          Magnesium      ppm      ASTM D5185m      2200      1718 </th <th>WEAR METALS</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	WEAR METALS		method	limit/base	current	history1	history2
Nickel      ppm      ASTM D5185m      >4      0          Titanium      ppm      ASTM D5185m      >3      <1          Silver      ppm      ASTM D5185m      >3      <1          Aluminum      ppm      ASTM D5185m      >20      13          Lead      ppm      ASTM D5185m      >20      13          Copper      ppm      ASTM D5185m      >20      13          Tin      ppm      ASTM D5185m      >20      0          Vanadium      ppm      ASTM D5185m      15      2          ADDITIVES      method      imit/base      current      history1      history2        Boron      ppm      ASTM D5185m      10          Magnesium      ppm      ASTM D5185m      200      1718          Magnesium      ppm      ASTM D5185m      220      16	Iron	ppm	ASTM D5185m	>100	29		
Titanium      ppm      ASTM D5185m      0          Silver      ppm      ASTM D5185m      >3      <1          Aluminum      ppm      ASTM D5185m      >20      13          Lead      ppm      ASTM D5185m      >30      9          Copper      ppm      ASTM D5185m      >30      9          Vanadium      ppm      ASTM D5185m      >15      2          Vanadium      ppm      ASTM D5185m      0           Vanadium      ppm      ASTM D5185m      0           ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      0           Magneseum      ppm      ASTM D5185m      40           Calcium      ppm      ASTM D5185m      2900 <th>Chromium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;20</th> <th>0</th> <th></th> <th></th>	Chromium	ppm	ASTM D5185m	>20	0		
Silver      ppm      ASTM D5185m      >3      <1	Nickel	ppm	ASTM D5185m	>4	0		
Aluminum      ppm      ASTM D5185m      >20      13          Lead      ppm      ASTM D5185m      >40      0          Copper      ppm      ASTM D5185m      >330      9          Tin      ppm      ASTM D5185m      >15      2          Cadmium      ppm      ASTM D5185m      0           ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Molybdenum      ppm      ASTM D5185m      0          Manganese      ppm      ASTM D5185m      526          Manganese      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      100          Sulfur      ppm      ASTM D5185m      200      16	Titanium	ppm	ASTM D5185m		0		
Lead      ppm      ASTM D5185m      >40      0          Copper      ppm      ASTM D5185m      >330      9          Tin      ppm      ASTM D5185m      >15      2          Vanadium      ppm      ASTM D5185m      0          Cadmium      ppm      ASTM D5185m      0          ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Molybdenum      ppm      ASTM D5185m      40          Maganese      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      526          Sulfur      ppm      ASTM D5185m      100          Sulfur      ppm      ASTM D5185m      225      10          Solifur      ppm	Silver	ppm	ASTM D5185m	>3	<1		
Copper      ppm      ASTM D5185m      >330      9          Tin      ppm      ASTM D5185m      >15      2          Vanadium      ppm      ASTM D5185m      0          Cadmium      ppm      ASTM D5185m      0          ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Molybdenum      ppm      ASTM D5185m      40          Marganese      ppm      ASTM D5185m      40          Marganese      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      2900      1718          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      >25      10          Sod	Aluminum	ppm	ASTM D5185m	>20	13		
Tin      ppm      ASTM D5185m      >15      2          Vanadium      ppm      ASTM D5185m      0           Cadmium      ppm      ASTM D5185m      0           ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Molybdenum      ppm      ASTM D5185m      0          Magnese      ppm      ASTM D5185m      526          Magnesium      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      526          Sulfur      ppm      ASTM D5185m      100      794          Sulfur      ppm      ASTM D5185m      200      2945          Sulfur      ppm      ASTM D5185m      20      16          Sodium </th <th>Lead</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;40</th> <th>0</th> <th></th> <th></th>	Lead	ppm	ASTM D5185m	>40	0		
Vanadium      ppm      ASTM D5185m      0          Cadmium      ppm      ASTM D5185m      0          ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Barium      ppm      ASTM D5185m      0          Molybdenum      ppm      ASTM D5185m      40          Magnaese      ppm      ASTM D5185m      40          Magnesium      ppm      ASTM D5185m      1          Magnesium      ppm      ASTM D5185m      100      794          Calcium      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      25      10          Solicon      <	Copper	ppm	ASTM D5185m	>330	9		
Cadmium      ppm      ASTM D5185m      0          ADDITIVES      method      limit/base      current      history1      history2        Boron      ppm      ASTM D5185m      30          Barium      ppm      ASTM D5185m      0          Molybdenum      ppm      ASTM D5185m      40          Manganese      ppm      ASTM D5185m      40          Magnesium      ppm      ASTM D5185m      1          Calcium      ppm      ASTM D5185m      2900      1718          Calcium      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      200      16          Sulfur      ppm      ASTM D5185m      >20      16          INFRA-RED	Tin	ppm	ASTM D5185m	>15	2		
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m30BariumppmASTM D5185m0MolybdenumppmASTM D5185m40ManganeseppmASTM D5185m1MagnesiumppmASTM D5185m526CalciumppmASTM D5185m29001718PhosphorusppmASTM D5185m1200967ZincppmASTM D5185m1200967SulfurppmASTM D5185m2510CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2510INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7624>2012.2NitrationAbs/tm*ASTM D7624>3024.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/tmm*ASTM D7414>2523.8	Vanadium	ppm	ASTM D5185m		0		
Boron      ppm      ASTM D5185m      30          Barium      ppm      ASTM D5185m      0          Molybdenum      ppm      ASTM D5185m      40          Manganese      ppm      ASTM D5185m      40          Magnesium      ppm      ASTM D5185m      40          Magnesium      ppm      ASTM D5185m      1          Calcium      ppm      ASTM D5185m      2900      1718          Calcium      ppm      ASTM D5185m      100      794          Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      >25      10          Solicon      ppm      ASTM D5185m      >20      16	Cadmium	ppm	ASTM D5185m		0		
Barium      ppm      ASTM D5185m      0          Molybdenum      ppm      ASTM D5185m      40          Manganese      ppm      ASTM D5185m      1          Magnesium      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      2900      1718          Calcium      ppm      ASTM D5185m      100      794          Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      945          Sulfur      ppm      ASTM D5185m      1200      2945          Sulfur      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >20      16	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum      ppm      ASTM D5185m      40          Manganese      ppm      ASTM D5185m      1          Magnesium      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      2900      1718          Calcium      ppm      ASTM D5185m      100      794          Phosphorus      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      2945          Sulfur      ppm      ASTM D5185m      4000      2945          Solicon      ppm      ASTM D5185m      >25      10          Solium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current	Boron	ppm	ASTM D5185m		30		
Manganese      ppm      ASTM D5185m      1          Magnesium      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      2900      1718          Calcium      ppm      ASTM D5185m      2900      1718          Phosphorus      ppm      ASTM D5185m      100      794          Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      4000      2945          CONTAMINANTS      method      limit/base      current      history1      history2        Solicon      ppm      ASTM D5185m      >25      10          Solicon      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current	Barium	ppm	ASTM D5185m		0		
Magnesium      ppm      ASTM D5185m      526          Calcium      ppm      ASTM D5185m      2900      1718          Phosphorus      ppm      ASTM D5185m      1100      794          Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      4000      2945          CONTAMINANTS      method      limit/base      current      history1      history2        Silicon      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7844      >3      0.7          Sulfation      Abs/.1mm      *ASTM D7624      >20 <th>Molybdenum</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>40</th> <th></th> <th></th>	Molybdenum	ppm	ASTM D5185m		40		
Calcium      ppm      ASTM D5185m      2900      1718          Phosphorus      ppm      ASTM D5185m      1100      794          Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      2945          CONTAMINANTS      method      limit/base      current      history1      history2        Silicon      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7624      >20      12.2          Sulfation      Abs/.mm      *ASTM D7415	Manganese	ppm	ASTM D5185m		1		
Phosphorus      ppm      ASTM D5185m      1100      794          Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      4000      2945          CONTAMINANTS      method      limit/base      current      history1      history2        Silicon      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7844      >3      0.7          Intration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.1mm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      metho							
Zinc      ppm      ASTM D5185m      1200      967          Sulfur      ppm      ASTM D5185m      4000      2945          CONTAMINANTS      method      limit/base      current      history1      history2        Silicon      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7844      >3      0.7          Nitration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.tmm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.tmm      *ASTM	Magnesium	ppm			526		
SulfurppmASTM D5185m40002945CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2510SodiumppmASTM D5185m>2016PotassiumppmASTM D5185m>2016INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.7NitrationAbs/cm*ASTM D7624>2012.2SulfationAbs/.1mm*ASTM D7415>3024.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2523.8	Magnesium Calcium		ASTM D5185m	2900			
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2510SodiumppmASTM D5185m>2016PotassiumppmASTM D5185m>2016INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.7NitrationAbs/cm*ASTM D7624>2012.2SulfationAbs/.1mm*ASTM D7415>3024.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2523.8	0	ppm	ASTM D5185m ASTM D5185m		1718		
Silicon      ppm      ASTM D5185m      >25      10          Sodium      ppm      ASTM D5185m      >20      16          Potassium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7844      >3      0.7          Nitration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.1mm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.1mm      *ASTM D7414      >25      23.8	Calcium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1100	1718 794		
Sodium      ppm      ASTM D5185m      4          Potassium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7844      >3      0.7          Nitration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.1mm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.1mm      *ASTM D7414      >25      23.8	Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1200	1718 794 967		
Potassium      ppm      ASTM D5185m      >20      16          INFRA-RED      method      limit/base      current      history1      history2        Soot %      %      *ASTM D7844      >3      0.7          Nitration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.1mm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.1mm      *ASTM D7414      >25      23.8	Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1200 4000	1718 794 967 2945		
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.7NitrationAbs/cm*ASTM D7624>2012.2SulfationAbs/.1mm*ASTM D7415>3024.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2523.8	Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1100 1200 4000 limit/base	1718 794 967 2945 current	   history1	   history2
Soot %      %      *ASTM D7844      >3      0.7          Nitration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.1mm      *ASTM D7615      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.1mm      *ASTM D7414      >25      23.8	Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	1100 1200 4000 limit/base	1718 794 967 2945 current 10	   history1	   history2
Nitration      Abs/cm      *ASTM D7624      >20      12.2          Sulfation      Abs/.1mm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.1mm      *ASTM D7414      >25      23.8	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1200 4000 limit/base >25	1718 794 967 2945 <u>current</u> 10 4	   history1 	   history2 
Sulfation      Abs/.1mm      *ASTM D7415      >30      24.2          FLUID DEGRADATION      method      limit/base      current      history1      history2        Oxidation      Abs/.1mm      *ASTM D7414      >25      23.8	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1200 4000 <i>limit/base</i> >25 >20	1718 794 967 2945 current 10 4 16	   history1  	   history2  
FLUID DEGRADATION  method  limit/base  current  history1  history2    Oxidation  Abs/.1mm  *ASTM D7414  >25  23.8	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1200 4000 <i>limit/base</i> >25 >20 <i>limit/base</i>	1718 794 967 2945 current 10 4 16 current	   history1   history1	  history2   history2
Oxidation Abs/.1mm *ASTM D7414 >25 23.8	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1200 4000 <i>limit/base</i> >25 >20 <i>limit/base</i> >3	1718 794 967 2945 current 10 4 16 current 0.7	  history1   history1	   history2   history2
	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844	1100 1200 4000 225 >20 1imit/base >20 1imit/base >3 >20	1718 794 967 2945 <u>current</u> 10 4 16 <u>current</u> 0.7 12.2	   history1   history1 	   history2   history2  history2
Base Number (BN) mg KOH/g ASTM D2896 10.3 5.6	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm pm spm kbs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D51854 *ASTM D7844 *ASTM D7844	1100 1200 4000 225 >20 20 1imit/base >3 >20 >30	1718 794 967 2945 <u>current</u> 10 4 16 <u>current</u> 0.7 12.2 24.2	  history1  history1  history1 	  history2  history2  history2  history2
	Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415	1100 1200 4000 >25 >20 1imit/base >3 >20 >30 iimit/base	1718 794 967 2945 current 10 4 16 current 0.7 12.2 24.2 current	  history1   history1  history1   history1	  history2   history2  history2   history2



Base

# **OIL ANALYSIS REPORT**



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