

Laboratory	Bharat Petroleum Corporation Limited, QA Laboratory, Bijwasan Installation, PO: Bijwasan, New Delhi Location 1: QA Laboratory, Bijwasan, New Delhi Location 2: QA Laboratory, Loni Location 3: QA Laboratory, Jalandhar Location 4: QA Laboratory, Piyala		
Accreditation Standard	ISO/IEC 17025:2005		
Discipline	Chemical Testing	Issue Date	01.04.2014
Certificate Number	T-0844	Valid Until	31.03.2016
Last Amended on	-	Page	1 of 17

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
--------------	---	------------------------------------	--	---

Location 1:

I. PETROLEUM PRODUCTS

1	ATF	Acidity, Total	IS:1448(P-113) / 1983 (Reaffirmed 2010)	0 - 0.100 mg KOH/g
		API Gravity	IS 1571: 2008 (Table -1/ Note 9)	30 – 80
		Doctor Test	IS:1448(P-19) / 1989 (Reaffirmed 2007)	+ve to –ve
		Freezing Point	IS:1448(P-11) / 2004 (Reaffirmed 2011) ASTM D 2386/2012	(-) 70 - 0 °C
		Kinematic Viscosity at (-20)°C	IS:1448(P-25)/ 1976 (Reaffirmed 2007) ASTM D445 /2012	1.0 - 10 cSt
		Electrical conductivity	ISO 6297/ 1997 IP274/ 2009	20 – 1000 pS/m
		Naphthalene	IS:1448(P-118) /1985 (Reaffirmed 2007) ASTM D-1840 / 2013	0- 5%
		Specific Energy	ASTM D 3338/2009	30 - 60 MJ/kg

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **2 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

Location 1:

		Water reaction	IS:1448(P-42)/ 1977 (Reaffirmed 2010)	
		a)Interface rating	ASTM D 1094/2007 (Re affirmed 2013)	0 - 4
		b)Separation Rating		1 – 3
		Silver Strip Corrosion	IP 227 / 1999	0 - 4 Rating
2.	MS/HSD/SKO/ ATF/SOLVENT/ ETHANOL/HEXANE	Appearance	WI -02:Rev. No. 01 Rev. Date 27.03.2014	Visual
3.	ATF/SOLVENTS/MS	Aromatics Olefins Content	IS:1448(P-23) 2004 (Reaffirmed 2010)	Aromatics : 5-50% by Vol Olefins : 0.3 - 40% by Vol
4.	MS	Aromatics	ASTM D-3606 / 2010	Benzene 0.1-3.0%by Vol Toluene 1-15% by Vol
		Aromatic Content (Individual & Total)	ASTM D-5580 / 2002 (Reaffirmed 2007)	Benzene 0.1-3.0% by Vol Toluene 1-15% by Vol
		Ethanol Content	IS 2796-2008 (Annexure E)	0-20% by vol

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **3 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
Location 1:				
		Oxygenates	ASTM D 4815 / 2013	Alcohols : 0.1 to 20% by vol
		Research Octane No.(RON)	IS:1448(P-27)/ 2013 ASTMD2699/ 2013b	80 - 100
		RVP	ASTM D-6378 / 2010	20-100 kPa
		Unwashed gum	IS:1448(P-9) / 2004	1 - 800 ppm
5.	HSD/LDO/FO	Ash Content	IS:1448(P-4) / 2008	0.001 -0.18% wt
		Water Content	IS:1448(P-40) / 2010	0 - 25% by Vol.
		Sediments	IS: 1448 (P-30)/ 2013	0-10%
6.	FO	Calorific Value-Gross	IS:1448(P-7) / 2004	Not Applicable
		Kinematic Viscosity at 50°C	IS:1448(P-25) / 1976 (Reaffirmed 2007)	100 - 400 cSt
		Relative Density at 15/15°C	IS:1448(P-32) / 1992 (Reaffirmed 2008)	850 - 1000
7.	HSD	Cetane Index (Calculated)	ASTM D-4737 / 2010	40 – 65
8.	MS/HSD/SKO	Colour (Visual)	WI -03: Rev. No. 01 Rev. Date 27.03.2014	Visual
9.	SKO/SOLVENTS/ATF	Colour Saybolt	IS:1448(P-14) / 2008	0 -30 Units

Laboratory	Bharat Petroleum Corporation Limited, QA Laboratory, Bijwasan Installation, PO: Bijwasan, New Delhi Location 1: QA Laboratory, Bijwasan, New Delhi Location 2: QA Laboratory, Loni Location 3: QA Laboratory, Jalandhar Location 4: QA Laboratory, Piyala		
Accreditation Standard	ISO/IEC 17025:2005		
Discipline	Chemical Testing	Issue Date	01.04.2014
Certificate Number	T-0844	Valid Until	31.03.2016
Last Amended on	-	Page	4 of 17

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
Location 1:				
10.	FO/HSD	Conradson Carbon Residue	IS 1447 (P:122) / 2013	0.01 - 30% wt
11.	MS/HSD/SKO/ LDO/ATF/SOLVENTS	Cu Strip Corrosion	IS:1448(P-15)/ 2004 (Reaffirmed 2011)	1a- 4c Rating
12.	MS/HSD/SKO/LDO/ FO/SOLVENTS/ATF/ HEXANE	Density	IS:1448(P-16)/ 1990 (Reaffirmed 2007) ASTM D1298 / 2012b	0.660 -1.00 gm/ml or 660-1000 kg/m ³
13.	MS/HSD/SKO/ATF/ SOLVENT (SBP& MTO)/ HEXANE	Distillation a)Temperature b)Volume, % Vol.	IS:1448 (P-18) / 1991 (Reaffirmed 2010) ASTM D-86/ 2012	30 - 400 °C 0 - 100 ml
14.	ETHANOL	Ethanol Content at 15.6/15.6°C Miscibility with Water Relative Density at 15.6/15.6°C	IS 15464 : 2004 (Reaffirmed 2009) IS 15464 : 2004 (Annexure-C) IS 15464 : 2004/ (Annexure-A) (Reaffirmed 2009)	94 – 100% v/v Yes / No 0.60 - 0.85
15.	MS/ATF/SOLVENTS	Existent Gum	IS:1448(P-29) / 2004 (Reaffirmed 2011)	0 – 40 g/m ³
16.	SKO/HSD/ATF/ SOLVENTS	Flash Point (Abel)	IS:1448(P-20) / 1998 (Reaffirmed 2008) IP 170 /2009	0- 66°C

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory, Bijwasan Installation, PO: Bijwasan, New Delhi**
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **5 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
Location 1:				
17.	HFHSD/LDO/FO	Flash Point (Pensky Marten)	IS:1448(P-21) / 2012 ASTM D93 /2012	Above 66°C
18.	HSD/LDO	Kinematic Viscosity at 40°C	IS:1448(P-25) / 1976 (Reaffirmed 2007) ASTM D445 / 2012 ASTM D7042/ 2012	1.0 - 400 cSt
		Pour Point	IS:1448(P-10) / 2013, Rev.2 ASTM D 97/2012	-38 to +20°C
19.	HEXANE	Non Volatile Residue	IS3470/ 2002(Annexure A) (Reaffirmed 2007)	0.0001 to 0.1 gm/100 ml
20.	ATF/SKO	Smoke point	IS:1448(P-31) / 1968 (Reaffirmed 2008) ISO 3014/1993	10-30 mm
21	MS/HSD/SKO/LDO/ FO/ATF	Sulphur, Total	ASTM D:2622 / 2010 ASTM D 4294 / 2010 ISO 20847/ 2004	0.0005- 5.0% by Mass 0.0017%-5.0%
II. OILS & LUBRICANTS				
1.	LUBRICANTS	Additive elements (Ca, Zn, P & S)	ASTM D-6443 / 2004 (Reaffirmed 2010)	0.002 - 0.60 % mass
		Colour ASTM	ASTM D : 1500/ 2012 IS:1448 (P-12) / 2013	0 – 8.0 units
		Crackle	WI 03 A, Issue No. 06,	Visual

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **6 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

Issue Date. 01.10.2013

Location 1:

LUBRICANTS

Flash Point (COC)	ASTM D : 92/2012 IS:1448(P-69)/ 2013	80 - 400°C
Kinematic Viscosity at 100°C	IS:1448(P-25) / 1976 (Reaffirmed 2007) ASTM D445 / 2012 ASTM D7042 /2012	1.0 - 50 cSt
Total Acid Number (TAN)	ASTM D : 664/2011a IS:1448 (P : 1)/ 2002	0.1-10.0 mg KOH/gm
Total Base Number (TBN)	ASTM D : 2896/ 2011 IS:1448 (P:86) / 1977 (Reaffirmed 2011)	0.1-40.0 mg KOH/gm
Viscosity Index	ASTM D:2270/2010e IS:1448(P : 56)/ 2013	By Calculation
Appearance	WI-02: Rev. No. 01 Rev. Date 27.03.2014	Visual
Ash Content	IS:1448(P-4) / 2008	0.001 -0.18% wt
Colour (Visual)	WI-03: Rev. No. 01 Rev. Date 27.03.2014	Visual
Cu Strip Corrosion	IS:1448(P-15)/ 2004 (Reaffirmed 2011)	1a- 4c Rating

Laboratory

**Bharat Petroleum Corporation Limited, QA Laboratory,
 Bijwasan Installation, PO: Bijwasan, New Delhi
 Location 1: QA Laboratory, Bijwasan, New Delhi
 Location 2: QA Laboratory, Loni
 Location 3: QA Laboratory, Jalandhar
 Location 4: QA Laboratory, Piyala**

Accreditation Standard ISO/IEC 17025:2005

Discipline Chemical Testing Issue Date 01.04.2014
Certificate Number T-0844 Valid Until 31.03.2016
Last Amended on - Page 7 of 17

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
Location 1:	LUBRICANTS	Density	IS:1448(P-16)/ 1990 (Reaffirmed 2007) ASTM D1298 / 2012b	0.660 -1.00 / gm/ml 660-1000 or kg/m ³
		Flash Point (Pensky Marten)	IS:1448(P-21) / 2012 ASTM D93 /2012	Above 66°C
		Kinematic Viscosity at 40°C	IS:1448(P-25) / 1976 (Reaffirmed 2007) ASTM D445 / 2012 ASTM D7042/ 2012	1.0 - 400 cSt
		Pour Point	IS:1448(P-10) / 2013, Rev.2 ASTM D 97/2012	-38 to +20°C
		Water Content	IS:1448(P-40) / 2010	0 - 25% by Vol.
2.	GREASE	Consistency of worked Grease at 25 + 0.5°C	IS:1448(P : 60) / 1994 (Reaffirmed 2010)	160-400 units
		Drop Point	IS:1448(P : 52) / 1971 (Reaffirmed 2007) ASTM D 2265 /2006	30-300°C

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **8 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

Location 2:

I. OILS & LUBRICANTS

1	LUBRICANT	Appearance	WI -02, Rev. No. 01, Rev. Date – 27.03.2014	Visual
		Colour (Visual)	WI -03, Rev. No. 01, Rev. Date – 27.03.2014	Visual
		Colour ASTM	ASTM D : 1500/ 2012 IS:1448(P-12) / 2013	0 - 8.0 units
		Cu Strip Corrosion	IS:1448(P-15) / 2004 (Reaffirmed 2011)	1a to 4c Rating
		Crackle	WI-03A, Issue No. 06, Issue Date- 01.10.2013	Visual
		Density	IS:1448(P-16)/ 1990 (Reaffirmed 2007) ASTM D1298 / 2012b	0.800 -1.00 gm/ml
		Flash Point (COC)	ASTM D : 92/2012 IS:1448(P-69)/ 2013	80 - 380°C
		Flash Point (Pensky Marten)	IS:1448(P-21) / 2012 ASTM D93/ 2012	Above 66°C
		Kinematic Viscosity at 40°C	ASTM D7042 /2012 IS:1448 / (P-25) /1976 (Reaffirmed 2007)	1.0 - 400 cSt

Laboratory Bharat Petroleum Corporation Limited, QA Laboratory,
 Bijwasan Installation, PO: Bijwasan, New Delhi
 Location 1: QA Laboratory, Bijwasan, New Delhi
 Location 2: QA Laboratory, Loni
 Location 3: QA Laboratory, Jalandhar
 Location 4: QA Laboratory, Piyala

Accreditation Standard ISO/IEC 17025:2005

Discipline Chemical Testing **Issue Date** 01.04.2014

Certificate Number T-0844 **Valid Until** 31.03.2016

Last Amended on - **Page** 9 of 17

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			ASTM D445/ 2012	
Location 2:				
	LUBRICANTS	Kinematic Viscosity at 100°C	ASTM D7042 /2012 IS:1448 (P-25) /1976 (Reaffirmed 2007) ASTM D445/ 2012	1.0 - 50 cSt
		Pour Point	IS:1448(P-10)/ 2013,Rev.2 ASTM D 97/ 2012	-38 to +20°C
		Viscosity Index	ASTM D:2270/ 2010e IS:1448(P : 56) /2013	By Calculation
		Water Content	IS:1448(P-40) /2010	0 - 25%by Vol.
		Additive elements Ca, Zn (% mass)	ASTM D-6481 /1999 (Reaffirmed 2010)	0.002- 0.60%
2.	GREASES	Consistency of worked Grease at 25 + 0.5°C	IS:1448(P : 60) / 1994 (Reaffirmed 2010)	100-475 units
		Drop Test	IS: 1448 (P:52)/ ASTM D 2265	30-300°C

Location 3:

I. PETROLEUM PRODUCTS

1	MS/HSD/MTO/SKO ETHANOL	Appearance	W1-02: Rev. No. 01 Rev. Date 27.03.2014	Visual
2	MTO/ MS	Aromatics	IS:1448(P-23)/ 2004	Aromatics : 5 - 50% by Vol

Laboratory Bharat Petroleum Corporation Limited, QA Laboratory,
 Bijwasan Installation, PO: Bijwasan, New Delhi
 Location 1: QA Laboratory, Bijwasan, New Delhi
 Location 2: QA Laboratory, Loni
 Location 3: QA Laboratory, Jalandhar
 Location 4: QA Laboratory, Piyala

Accreditation Standard ISO/IEC 17025:2005

Discipline Chemical Testing **Issue Date** 01.04.2014

Certificate Number T-0844 **Valid Until** 31.03.2016

Last Amended on - **Page** 10 of 17

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Olefins Content	(Reaffirmed 2010)	Olefins : 0.3 - 40% by Vol
Location 3:				
3	HSD	Cetane Index, (Calculated)	ASTM D-4737/ 2010	40 – 65
		Kinematic Viscosity at 40°C	IS:1448(P-25)/ 1976 (Reaffirmed 2007) ASTM D445/ 2012 ASTM 7042/2012	1.0 - 400 cSt
		Pour Point	IS:1448(P-10) / 2013,Rev.2 ASTM D 97/ 2012	-38 to +20°C
		Water Content	IS:1448(P-40) /2013	0 - 25% by Vol.
4	MS/HSD/SKO	Colour (Visual)	WI-03, Rev. No. 01 Rev. Date 27.03.2014	Visual
		Sulphur, Total	ASTM D 4294 /2010 ISO 20847 / 2004	0.0017- 3.0 % by Mass
5	SKO/MTO	Colour Saybolt	IS:1448(P-14) / 2008	0 - 30 units
6	MS/HSD/SKO/MTO	Cu Strip Corrosion	IS:1448(P-15) / 2004, (Reaffirmed 2011)	1a - 4c Rating
		Density	IS:1448(P-16) / 1990 (Reaffirmed 2007) ASTM D1298 / 2012b	0.660 -1.00 gm/ml
		Distillation a)Temperature	IS:1448 (P-18) /1991 (Reaffirmed 2010) ASTM D-86 / 2012	30 - 400°C

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **11 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		<i>b)Volume, % Vol.</i>		0 - 100 , ml
Location 3:				
7	ETHANOL	Ethanol Content % by Volume at 15.6/15.6°C	IS 15464 : 2004/ (Reaffirmed 2009)	94 – 100% v/v
		Miscibility with Water	IS 15464 : 2004 (Annexure-C)	Yes / No
		Relative Density at 15.6/15.6°C	IS 15464 : 2004 (Annexure-A) (Reaffirmed 2009)	0.60 - 0.85
8	MS	Ethanol Content	IS 2796-2008/ (Annexure E)	0-20% by vol
		Research Octane No. (RON)	IS:1448(P-27)/ 2013 ASTM D2699 /2013b	80 - 100
		Unwashed gum	IS:1448(P-29) / 2004	1 - 800 ppm
9	MS/MTO	Existent Gum	IS:1448(P-29) 2004, (Reaffirmed 2011)	0-40 g/m ³
10	SKO/HSD/MTO	Flash Point (Abel)	IS:1448(P-20)/ 1998 (Reaffirmed 2008) IP 170/2009	0- 66°C
11	SKO	Smoke point	IS:1448(P-31)/ 1968 (Reaffirmed 2008), ISO 3014 / 1993	10-30 mm

Laboratory Bharat Petroleum Corporation Limited, QA Laboratory,
 Bijwasan Installation, PO: Bijwasan, New Delhi
 Location 1: QA Laboratory, Bijwasan, New Delhi
 Location 2: QA Laboratory, Loni
 Location 3: QA Laboratory, Jalandhar
 Location 4: QA Laboratory, Piyala

Accreditation Standard ISO/IEC 17025:2005

Discipline Chemical Testing **Issue Date** 01.04.2014

Certificate Number T-0844 **Valid Until** 31.03.2016

Last Amended on - **Page** 12 of 17

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

Location 3:

II. OIL & LUBRICANTS

1. LUBRICANTS	Viscosity Index	ASTM D:2270 / 2010e IS:1448 (P : 56) /2013	By Calculation
	Water Content	IS:1448(P-40) /2013	0 - 25% by Vol.
	Appearance	WI -02 Rev. No. 01 Rev. Date 27.03.2014	Visual
	Colour (Visual)	WI-03, Rev. No. 01 Rev. Date 27.03.2014	Visual
	Colour ASTM	ASTM D : 1500 / 2012 IS:1448 (P-12) / 2008	0 - 5.0 units
	Crackle Test	WI-03A, Issue No. 6 Issue Date 0 01.10.2013	Visual
	Cu Strip Corrosion	IS:1448(P-15) / 2004, (Reaffirmed 2011)	1a - 4c Rating
	Density	IS:1448(P-16) / 1990 (Reaffirmed 2007) ASTM D1298 / 2012b	0.660 -1.00 gm/ml
	Flash Point (COC)	ASTM D : 92/2012 IS:1448(P-69)/2013 (Reaffirmed 2008)	150- 380°C

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **13 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

		Flash Point (Pensky Marten)	IS:1448(P-21)/ 2012 ASTM D93 /2012	Above 66°C
Location 3:		Kinematic Viscosity at 40°C	IS:1448(P-25)/ 1976 (Reaffirmed 2007) ASTM D445/ 2012 ASTM 7042/2012	1.0 - 400 cSt
		Kinematic Viscosity at 100°C	IS:1448(P-25)/ 1976 (Reaffirmed 2007) ASTM D445/ 2012 ASTM 7042/2012	1.0 - 50 cSt
		Pour Point	IS:1448(P-10) / 2013,Rev.2 ASTM D 97/ 2012	-38 to +20°C

Location 4:

I. PETROLEUM PRODUCTS

1	MS/HSD/SKO/ ATF/ETHANOL	Appearance	WI -02, Rev. No. 01 Rev. Date 27.03.2014	Visual
2	MS/ATF	Aromatics, Olefins Content	IS:1448(P-23) /2004 (Reaffirmed 2010)	Aromatics : 5 - 50% by Vol Olefins : 0.3 - 40% by Vol
		Existent Gum	IS:1448(P-29)/ 2004, (Reaffirmed 2011)	1.0 – 100 g/m ³
3	FO	Calorific Value-Gross	IS:1448(P-7)/2004	Not Applicable
		Flash Point (Pensky Marten)	IS:1448(P-21) /2012	Above 66°C

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **14 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			ASTM D93/2012	
Location 4:				
		Kinematic Viscosity at 50°C	IS:1448(P-25)/ 1976 (Reaffirmed 2007) ASTM D445/ 2012 ASTM D7042/ 2012	100 - 400 cSt
		Relative Density at 15/15°C	IS:1448(P-32) / 1992 (Reaffirmed 2008)	850 - 1000 °C
4	HSD	Cetane Index, (Calculated)	ASTM D-4737 / 2010	40 – 60
		Kinematic Viscosity at 40°C	IS:1448(P-25) /1976 (Reaffirmed 2007) ASTM D445/ 2012 ASTM D7042/ 2012	1.0 - 400 cSt
		Pour Point	IS:1448(P-10)/ 2013	-38 - 20°C
5	SKO	Colour Saybolt	IS:1448(P-14) / 2008	0 - 30 units
6	MS/HSD/SKO/LDO/ATF/SOLVENTS	Colour (Visual)	WI-03, Rev. No. 01 Rev. Date 27.03.2014	Visual
7	MS/HSD/SKO/ATF	Cu Strip Corrosion	IS:1448(P-15)/2004 (Reaffirmed 2011)	1a - 4c Rating
		Distillation	IS:1448 (P-18) /1991 (Reaffirmed 2010)	
		a)Temperature	ASTM D-86/2012	30 - 400°C
		b)Volume, % Vol.		0 - 100, ml

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **15 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

Location 4:

8	ETHANOL	Ethanol Content % by Volume at 15.6/15.6°C	IS 15464 : 2004/ (Reaffirmed 2009)	94 – 100% v/v
		Miscibility with Water	IS 15464 : 2004 (Annexure-C)	Yes / No
		Relative Density at 15.6/15.6°C	IS 15464 : 2004 (Annexure-A)	0.60 - 0.85°C
9	MS	Ethanol Content	IS 2796-2008/ (Annexure E)	0-20% by vol
		Research Octane No.(RON)	IS:1448(P-27) / 2013 ASTM D2699 /2013b	80 – 100
		Unwashed gum	IS:1448(P-29) / 2004	1 - 800 ppm
11	SKO/HSD/ATF	Flash Point (Abel)	IS:1448(P-20)/ 1998 (Reaffirmed 2008) IP 170/2009	0 to 66°C
13	HSD/FO	Sediments	IS:1448(P-30)/ 2013	0 - 10% by mass
		Water Content	IS:1448(P-40) /2010	0 - 25% by Vol.
14	ATF/SKO	Smoke point	IS:1448(P-31) /1968 (Reaffirmed 2008), ISO 3014 / 1993	10-30mm

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **16 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------------	----------------------------	---	---

Location 4:

15	MS/HSD/SKO/FO/ATF	Sulphur, Total	ASTM D 4294 / 2010 ISO 20847 / 2004 ASTM D 7220 / 2012	0.0005- 5.0% by Mass
		Density	IS:1448(P-16)/ 1990 (Reaffirmed 2007) ASTM D1298/ 2012b	0.660 -1.00 gm/ml

II. OIL & LUBRICANTS

1	LUBRICANT	Appearance	WI -02, Rev. No. 01 Rev. Date 27.03.2014	Visual
		Colour (Visual)	WI-03, Rev. No. 01 Rev. Date 27.03.2014	Visual
		Colour ASTM	ASTM D: 1500/ 2012 IS:1448(P-12)/ 2013	0 - 5.0 units
		Crackle Test	WI-03A, Issue No. 03 Issue Date- 01.10.2013	Visual
		Cu Strip Corrosion	IS:1448(P-15)/2004 (Reaffirmed 2011)	1a - 4c Rating
		Density	IS:1448(P-16)/ 1990 (Reaffirmed 2007) ASTM D1298/ 2012b	0.660 -1.00 gm/ml

Laboratory **Bharat Petroleum Corporation Limited, QA Laboratory,
Bijwasan Installation, PO: Bijwasan, New Delhi
Location 1: QA Laboratory, Bijwasan, New Delhi
Location 2: QA Laboratory, Loni
Location 3: QA Laboratory, Jalandhar
Location 4: QA Laboratory, Piyala**

Accreditation Standard **ISO/IEC 17025:2005**

Discipline **Chemical Testing** **Issue Date** **01.04.2014**

Certificate Number **T-0844** **Valid Until** **31.03.2016**

Last Amended on **-** **Page** **17 of 17**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-------	----------------------------	-------------------------	---	--

Location 4:

LUBRICANT

Flash Point (COC)	ASTM D : 92/2012 IS:1448(P-69)/2013	80 - 400°C
Flash Point (Pensky Marten) °C	IS:1448(P-21) /2012 ASTM D93/2012	Above 66°C
Kinematic Viscosity at 40°C	IS:1448(P-25) /1976 (Reaffirmed 2007) ASTM D445/ 2012 ASTM D7042/ 2012	1.0 - 400 cSt
Kinematic Viscosity at 100°C	IS:1448(P-25)/ 1976 (Reaffirmed 2007) ASTM D445 /2012 ASTM D7042 /2012	1.0 - 50 cSt
Pour Point	IS:1448(P-10)/ 2013	-38 - 20°C
Viscosity Index	ASTM D:2270 /2010e IS:1448(P : 56)/ 2013	By Calculation
Water Content	IS:1448(P-40) /2010	0 - 25% by Vol.

-X-X-X-X-X-X-X-X-X-X-X-X-X-