INDIAN OIL CORPORATION LIMITED

Executive Summary for Existing 3 additional above ground tanks for the of storage capacity of 1 x 2,929 KL & 1 x 2,933 KL HSD & 1 x 1,347 KL MS at IOCL Akola depot, Maharashtra.

Category: A {as per MoEF&CC notification dated 14/03/2017, [S.O. 804 (E)]}

[Schedule no. : 6(b) Isolated storage and handling of hazardous chemicals]

Prepared By:

ABC TECHNO LABS INDIA PVT. LTD.

AN ISO ISO 9001:2008, ISO14001:2004 & OHSAS 18001:2007 certified

Environmental Engineering and Consultancy Organization

QCI NABET Accredited (Certificate No. NABET / EIA / 1619 / RA0048)

Corporate Office:

#400, 13th Street,SIDCO Industrial Estate (North Phase), Ambattur – 600 098
Land Mark: Near National Productivity Council.
Ph: 94442 60000

Mumbai Office:

A-355, Balaji Bhavan, Plot No. 42 A, Sector 11, CBD Belapur, Navi Mumbai – 400614. Maharashtra, India, Tel: 022 27580044

www.abctechnolab.com abc@abctechnolab.com

IOCL Akola

EXECUTIVE SUMMARY

1.1 BACKGROUND

Indian Oil Corporation Limited, Akola Depot is a marketing Division of Motor spirit, High Speed Diesel, Superior Kerosene Oil (SKO). The Depot receives stores and distributes Petroleum Products namely Motor Spirit BS IV (MS), High Speed Diesel BS IV (HSD) and Superior Kerosene Oil (SKO).

Indian Oil Corporation Limited (IOCL) is India's largest commercial enterprise, with a sales turnover of Rs. 3,99,601crore (US$ 61 billion) and profits of Rs. 10,399 crore (US$ 1,589 million) for the year 2015-16. Indian Oil is ranked 161st among the world's largest corporate (and first among Indian enterprises) in the prestigious Fortune 'Global 500' listing for the year 2016.

As India's flagship national oil company, with a 33,000-strong work-force currently, Indian Oil has been meeting India's energy demands for over half a century. With a corporate vision to be 'The Energy of India' and to become 'A globally admired company,' Indian Oil's business interests straddle the entire hydrocarbon value-chain – from refining, pipeline transportation and marketing of petroleum products to exploration & production of crude oil & gas, marketing of natural gas and petrochemicals, besides forays into alternative energy and globalization of downstream operations.

Environment plays a vital role in overall development of the country. Recognizing the importance of environmental protection and sustainable development, the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India had formulated policies and procedures governing the industrial and other developmental activities to prevent indiscriminate exploitation of natural resources and promote integration of environmental concern in industrial projects. To assess and evaluate potential environmental impacts during design, construction & operation phases and to suggest mitigation measures with detailed environmental management plan, environmental impact assessment study has been conducted for the additional tankage project.

M/s ABC Techno Labs India Private Limited (ABC Techno Labs), NABET Accredited Environmental Consultant Organization, has been engaged by M/s. Indian Oil Corporation Limited (IOCL) to carry out Environmental Impact Assessment studies for the additional 3 tanks at IOCL Akola depot.

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1.2 NEED OF THE PROJECT

Indian oil corporation ltd., a major public sector oil company under overall administrative control of the Ministry of Petroleum and Natural Gas, Govt.of India. To cater growing petroleum product demand in markets attached with Akola depot. The additional three tanks which are constructed are to meet additional petroleum demand of areas attached with IOCL Akola depot.

1.3 PROJECT DESCRIPTION

As per EIA Notification dated 14 Sep 2006 this projects falls under 6 (b) category i.e. for isolated storage & handling of hazardous chemicals. This is a Violation case ,hence as per the MoEF&CC notification dated 14th March, 2017 [S.O. 804(E)], IOCL Pune Terminal proposes to obtain environmental clearance from MoEF for already constructed new three tanks at Pune depot. Now, the said project would fall under Category "A".

Receipt of additional tanks :. MS, HSD & SKO are received from IOCL Gujarat Refinery Koyali& BPC Manmad Terminal through rail tank wagons at the BG siding located south of the depot.

S. No.	Name of Chemical	Physical state	Tank No.	Number of storage tanks	Capacity of Storage Tank (KL)	Type of Storage Tank	Tank Height (m)	Tank Dia. (m)
1	HSD	Liquid	T012,T013	2	2929,2933 (each)	A/G	15 (each)	16 (each)
2	MS	Liquid	T011	1	1347	A/G	8	16

Dispatch: By Tanker Trucks to various retails outlets in neighboring districts of Akola

Land Requirement

The Depot is established on an existing land area of 1,87,500Sq.m& no additional land have been acquired for the construction of 3 additional tankages.

Power Requirement

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A total electrical load of 400 KW is sufficient for the depot. The power will be sourced from MSEDCL.

S.No.	Description	Capacity	Source	Fuel type & quantity
1	Electricity	400KW	MSEDCL	-
2	DG Set	2 * 250 KVA	-	HSD

Water Requirement

The source of water supply is from bore well which was installed under the project. The details of water requirements are as follows:

S.No.	Description	Water Consumption in KLD		
		Existing	Addition	Total
1	Processing	NIL	NIL	NIL
2	Gardening	2 KLD	NIL	2 KLD
3	Domestic	3 KLD	NIL	3 KLD
Total		5 KLD	NIL	5 KLD

Fire Fighting Facility at IOCL Akola depot.

The following fire fighting facilities will be provided at the additional 3 constructed tanks:

Fire Fighting Facilities at the plant	No./Quantity
Fire Extinguisher (10kg) DCP Type	: 100 Nos.
Fire Extinguisher (75kg) DCP Type	: 9 Nos.
Fire Extinguisher (4.5 kg) CO_2 Type	: 12 Nos.
Fire Extinguisher (6.5 kg) CO_2 Type	: 2 Nos.
Sand Bucket (9 Liter's)	: 20 Nos.
Water Storage Capacity	: 2300 KL X 2 nos., 1600 KL X 1 no.

Deluge Valves (Sprinklers)	: 17 Nos.
Main Fire Pump (410 kL/hr)	: 5 Nos.
Jockey Pump (37 KL/hr)	: 2 Nos.
Deluge Valve with heat Detector	: 17 Nos.
Water Monitors	: 34 Nos.
Fire Hydrant	: 22Nos.
Hose Box	: 23Nos.
Fire Hose	: 46Nos.
Jet Nozzle	: 27 Nos.
Fog Nozzle	: 2 Nos
Universal Nozzle	: 2 Nos
Water Curtain Nozzle	: 2 Nos.
Pressurised fire hydrant system	Available

Other necessary facilities to support firefighting during emergency are as given below:

Internal communication: page phone, VHF hand sets, public address system

External communication: landline and mobile

Warning system for fire: 1 no. electrical siren with 3 km range and 7 hand siren with range 1 km.

1.3.1 DESCRIPTION OF ENVIRONMENT

The Preliminary data, Secondary data and Baseline data collection was done for both Pre Monsoon (March 2017 to June 2017) and Post Monsoon Seasons.

Topographic Features

On the north, Akola is bordered by the Melghat Hills and forest region. The Morna River flows through Akola. Purna River forms a part of the north border of the district, and the top north portion of the district lies within its watershed along with Aas River and Shahnur River. Vaan River forms a part of the northwest boundary of the district after entering from the Amravati district. Maan River drains the south-western portion of the district. Morna River drains the mid-south

portion of the district, while the southeast is drained by the Katepurna and Uma rivers. It is at an altitude of 925 ft (282m) above sea level.

Soil

Soils in surrounding areas are loamy, clay, and sandy in texture.

Water Quality

Ground water quality in the study area, generally meets the permissible limits and used for drinking in the absence of better quality potable water availability.

Micro-meteorology

The metrological data collected in the month March ,2017. The wind speed, wind direction, humidity temperature recorded during study period is as follows.

Table: Meteorological Data Monitored Showing Maximum and Minimum Average Temperature

Month	Mean Temp. °C		Mean Total Rainfall (mm.)	Mean Number of Rainy Days.	Predominant wind direction (blowing from)	Average wind speed (m/s)
	Daily Max.	Daily Min.				
March 2017	42	17.2	64.6	39	10	West

Wind speed and direction data recorded during the study period is useful in identifying the influence of meteorology on the air quality of the area. Based on the meteorological data wind roses the diagrammatic representation of wind speed and wind direction along with their persistence for a fractional period of occurrence at a given location is constructed.

Ambient Air Quality

National Air Quality Standards in the study area are met for all monitored parameters for the AAQM locations.

Noise

Measured Leq noise levels are below the prescribed limit stipulated for commercial area at IOCL Plant site, However, sometime noise levels exceed the limit of the because occasional traffic movement.

1.3.2 PLACES OF HISTORICAL IMPORTANCE

There is no historical or archaeological monument in the study area.

Forest Cover

There is no reserved or protected forest-land involved in the project.

4 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

Soil

The northern fringe of the district is hilly and forms part of Satpura Range. South of these hill ranges, covering almost entire north-central part constitutes the Alluvialplain. Southern part of the district is characterized by hilly rugged terrain as a part of Deccan Plateau. Purna is the main river flowing through the district. Other important rivers are Man, Murna and Kate. Two types of soils have been observed in the district namely medium black soil occurring in plain central part of trap origin and deep black soil occurring in valley in northern part.

Water Environment

The source of water supply is from bore well. Domestic sewage generated onsite is currently treated in septic tank and disposed off through soak pit. The quantity of wastewater generated by existing operation is about 2.5 KLD. Adequate capacity of wastewater treatment system has been provided for treating domestic wastewater. There is no trade effluent generation since project does not involve manufacturing process.

Solid Waste

The municipal solid waste generated is being disposed through local body/authorized recyclers. Approximately 33.5 kg (0.5 kg/person/day) of waste is generated per day from the project premises.

Ambient Air Quality

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Akola Depot at present having a total storage capacity of 19759 KL (Tankages Constructed before EIA Notification 2006 - 12550 KL & additional tankages constructed - 7209 KL) of petroleum products. The Depot receives stores and distributes Petroleum Products namely Motor Spirit BS IV (MS), High Speed Diesel BS IV (HSD), Superior Kerosene Oil (SKO), and Lube Oil and grease. In addition to above the Depot also handles Ethanol, which is mixed in a proportion of 10% by volume with MS for dispatches. MS, HSD & SKO are received from IOCL Gujarat Refinery Koyali & BPC Manmad Terminal through rail tank wagons at the BG siding located south of the depot. Emission arising from raw material transfer from wagons & trucks through pipeline to storage tanks is negligible and is easily detectable & rectifiable.

Noise

Activities within the depot is not causing any disturbances to people living in the proximate areas and outside the boundary. The only source of noise within the premises is D.G operation. DG sets are placed within acoustic enclosures. Necessary greenbelt with total area of 61,875Sq.mhas been provided to contain the noise emissions. There is no significant effect on the ambient noise environment surrounding the project site.

Socio-economic Impacts

There is no increase in manpower requirement for the project activity. Hence there will be no major impacts on the socio-economic environment surrounding the project site. However, the present project is aimed to cater to growing petroleum product demand in markets attached with Akola Depot. The additional three tanks which are constructed are to meet additional petroleum demand of areas attached with IOCL Akola depot.

5 Alternative Analysis

This section analyses various alternatives to meet the objective of the project from certain identified angles as recommended by MOEF. These are:

1. Siting of the project
2. Technology/Process

1. **Siting of the project:** No alternative site is considered, as it is an expansion of an existing Akola

depot installation in which all infrastructure facilities exist. The site has been selected mainly with the following considerations:

- Availability of existing infrastructural facilities for a Akola installation

- No additional land acquisition is required for the expansion project. The total land is under possession of IOCL

- Availability of Raw water

2. **Alternative for Technology/Process:** The project site will only deal with receipt, storage and distribution of petroleum product (viz. MS, HSD, SKO and Ethanol).The additional tanks will be floating roof / cone roof tank type to minimize hydrocarbon vapour loses.

6. Environmental Monitoring Plan

To check the efficacy of the adopted mitigation measures and environmental Management plan, post project monitoring is carried out for various environmental parameters. In case, the monitored results of environmental parameter are found to exceed the allowable/stipulated values, the Environmental Management Cell suggests remedial actions and gets these suggestions implemented through the concerned personnel.

Ambient Air Quality (AAQ) Monitoring

The parameters chosen for assessment of ambient air quality were Particulate Matter<10 (PM_{10}), Particulate Matter<2.5 ($PM_{2.5}$), Sulphur dioxide (SO_2), Oxides of Nitrogen (NO_x),Ammonia (NH_3), Ozone (O_3), Carbon Monoxide (CO), Benzene (C_6H_6), Benzo[a]Pyrene (BaP), Lead, Nickel and Arsenic. Data should be generated 24 hourly during operation phase at identified locations in accordance to the National Ambient Air Quantity Standards.

Water Quality Monitoring

Water sampling has been conducted to establish baseline water quality in the area. Water analysis was carried out for physical and chemical parameters as per the methods prescribed in IS and “Standard Methods for the Examination of Water and Wastewater (American Public Health Association)”.

Noise Levels Monitoring

A preliminary reconnaissance survey was undertaken to identify the major noise sources in the area. The sampling location in the area was identified considering the location of industry, residential area, Highways and Institutional areas. The ambient noise level parameters like L day and L night are compared to the standards specified by CPCB.

7 Risk Assessment and Disaster Management Plan

The Risk Analysis study conducted at IOCL Akola includes a description of the process, screening of dangerous goods, qualitative assessment and where required, subsequent quantitative risk assessment that reviews: Input/output materials receipt, storage and handling,, Primary items of the process, to demonstrate the risks identified in the process area and to determine they are acceptable in relation to the surrounding land use ,that any residual risk will be appropriately managed and to advise risk reduction strategies where unacceptable risks are identified. The primary objectives of a RA are to;

- Identify potential hazards associated with the project;
- Analyze the consequences of significant hazards on people and the environment, and the likelihood or frequency of these hazards occurring;
- Estimate the resultant risk to the surrounding land uses and environment and

Analyze the safeguards to ensure they are adequate, and therefore demonstrate that the operation can operate within acceptable risk levels to its surroundings.

8 Project Benefits

The project is expected to bring significant socio-economic and environmental benefits both at local and national level as listed below:

Benefits

- Establishment of projects of this category will improve availability of the physical infrastructures like drainage, communication and transportation facilities, etc.
- Implementation of the project will indirectly boost up the social infrastructure of the surrounding, like local education, medical and communication of the whole surrounding area.
- The project will provide indirect employment to unskilled, semiskilled and skilled categories.

Other Benefits

- Besides above, indirect benefits are also expected to be accrued to the region by way of reduction of delivery distance by tankers which in turn will reduce trucks on the road reducing the vehicular load on the public roads. This will result in reduced air pollution and reduced probability of accidents on the roads due to less movement of tank trucks.
- Moreover, the proposed expansion project in Maharashtra will improve supply position of the petroleum products which is vital for economic growth as well as improving the quality of life. The improved petroleum supply will have strong logistic support for delivering the products to customers without interruption.
- Thus, the proposed project has ushered in the social and economic up-liftmen of the persons living in the vicinity of the Project i.e. of society at large.

9 Environment Management Plan

The Environment Management Plan is designed within the framework of various legislative and regulatory requirements on environmental and socio-economic aspects of different national and international bodies. EMP includes the Impact Mitigation Measures of the IOCL plant, Akola.

Environmental Management Cell

IOCL Akola of additional above ground tanks will have full-fledged Safety and Environmental Protection (S&EP) cell at corporate level to take care of any environmental issue at its LPG plant. It is suggested that IOCL should designate one of its official for implementation of EMP during construction of proposed installation of mounded Vessels. This official will be responsible for day-to-day environmental affairs including implementing monitoring programme.

Ecological impacts

Ecological impacts from this type of project will be insignificant.

Primary and secondary impacts from the proposed project on the biological environment have been identified and the significance of ecological impact have been evaluated based on:

- Habitat Quality
- Species affected

- Size/abundance of habits/organisms affected
- Duration of Impacts
- Magnitude of environmental changes

The project study area does not involves any reserve forests and wildlife area. The project will not have adverse impacts on the existing flora and fauna. Hence there will not be any insignificant impact whatsoever on biodiversity.

During operation phase of the depot facilities, no impact is anticipated on the topography; therefore, no mitigation measure is required.

Corporate Social Responsibility

As IOCL strongly believes that it is a part of the larger community where it operates, the company has, therefore, taken cognizance of the cultural ethos and socio economic environment of the locality where its plants are located. With this approach, IOCL shall consider the following general measures for the socio – economic upliftment of the nearby villages under Corporate Environmental Responsibility.