



## **Workshop on EOR**

### **Heavy Oil Production: A case history Baola & Modhera Fields of SunPetro in Gujarat**

**Sun Petrochemicals Private Limited  
17/B, Mahal Industrial Estate, Mahakali Caves Road,  
Andheri (E), Mumbai – 400093. India.  
Website : [www.sunpetro.com/song/](http://www.sunpetro.com/song/)**



# Technical Strength of SunPetro

- SunPetro has a team of 35 highly qualified & experienced professionals from Oil & Gas Industry (Conventional & Unconventional, Onland, Shallow & Deepwater)
- Team has mix of Industry Stalwarts with proven track record and young enthusiastic engineers and scientists
- Team can provide expert services for all kind of petroleum operations for conventional and unconventional fields.
  - Expertise from Reservoir Management to Custody Transfer (RM to CT).
  - Projects development from Concept to Commissioning (C to C).
- SunPetro and Prestil Energy / ESTC, Ukraine have exclusive agreement for applying technology to enhance the heavy oil recovery



# Techniques used in Baola & Modhera Fields

## ➤ **By past operator (IPL):**

- Cyclic steam injection
- Microbial enhanced oil recovery
- Use of flow improver
- Acid stimulation
- Artificial Lift

## ➤ **By SunPetro:**

Baola & Modhera fields got transferred in the name of SunPetro on the 10<sup>th</sup> June, 2016. Since above technologies did not work, SunPetro applied Multistage Physico-Chemical Treatment (**MPCT**) which has following advantages:

- This technique has two mixtures of some chemicals - one mixture with 1.3 sp.gr. & another with 1.6.
- Once these two chemicals are placed in rat hole one after the other, the mixing of these chemicals results into exothermic reaction (270 deg C) and generation of nascent Hydrogen and other gases which percolate in the reservoir.
- It treats the fluid in reservoir and reduces viscosity
- Breaks heavier HC into lighter ones
- Creates micro fracture & increase in permeability



# Heavy Oil Properties of Baola & Modhera Fields

- Oil API : 12 deg
- Pour Point : 24 deg C
- Maximum Gas-to-Liquid Ratio :  
10 v/v
- Viscosity @ 30 deg C : 12800
- Viscosity @ 40 deg C : 6057



# MPCT Video

- Demonstration

# MPCT – Technology Holders

- SunPetro, Prestil & ESTC, Ukraine have exclusive MOU for applying MPCT in India
- ESTC, Ukraine is a company established by Mr. Sergiy Malygon
- Contact Details of Technology Holders:
  - ❖ Dr. Taras Kulyi : +380676708172
  - ❖ Mr. Sergiy Malygon : +380503234236
  - ❖ Mr. Padam Singh : +918879334657
- MPCT is more efficient in comparing with commonly applied well stimulation technologies:
  - in oil wells output increases by 1.5 to 10 times
  - in gas wells output increases by 3 to 15 times
  - in gas condensate wells output increases by 3 to 15 times





# Application of MPCT

- Treatment requires work over rig or CTU operations
- Typical job requires 2 to 3 days
- Chemicals being used and products of reaction are ecologically friendly
- MPCT cost in a well gets recovered within 2-6 months depending upon successful treatment, productivity of the well & type of crude oil.
  
- **Results:**
  - Earlier Baola & Modhera fields were not producing
  - After treatment each well produces from 30 – 90 bbl/d

## Summary

- SunPetro has successfully conducted the test of Ukrainian MPCT in its oil fields.
- MPCT has been proved in our Modhera & Baola fields & increased the production of heavy oil from earlier nil to presently about 90 bbl/d.
- MPCT could be applied to many mature & heavy oil fields in India.





*Thank you*