सत्यमेव जयते

Ministry of Petroleum & Natural Gas
Government of India

# GEOSCIENTIFIC INFORMATION

of CBM BLOCKS for

## SPECIAL CBM BID ROUND-2022



## Disclaimer

This booklet, Geoscientific information, is prepared based on original inputs of data within the Contract area wherever available. The information surrounding the Contract Area and Basin/ Coalfield have also been used for general understanding. DGH has collated the key information of the subsurface with the intent to guide and support the prospective bidders through their bidding process, including viewing of data at NDR. The factual correctness and content clarity of information including the prognosticated CBM resource are therefore tentative and limited to available information and will stand for future review and scrutiny upon additional and clarified data/information.

# GEOSCIENTIFIC INFORMATION of CBM BLOCKS for SPECIAL CBM BID ROUND-2022



# Special Coal Bed Methane Bid Round-2022

## 1 – Bengal-Purnea Basin

- 2 Blocks
- States Covered- Jharkhand and West Bengal

## 2 - Pranhita-Godavari Basin

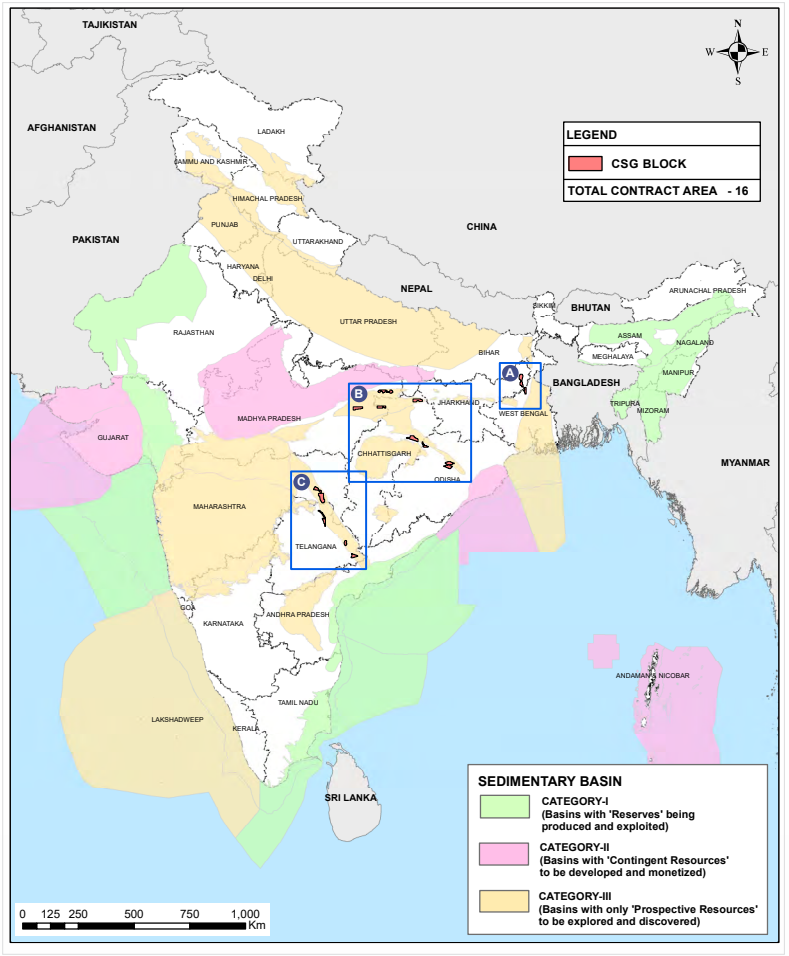
- 5 Blocks
- States Covered- Maharashtra & Telangana

## 3- South Rewa Basin

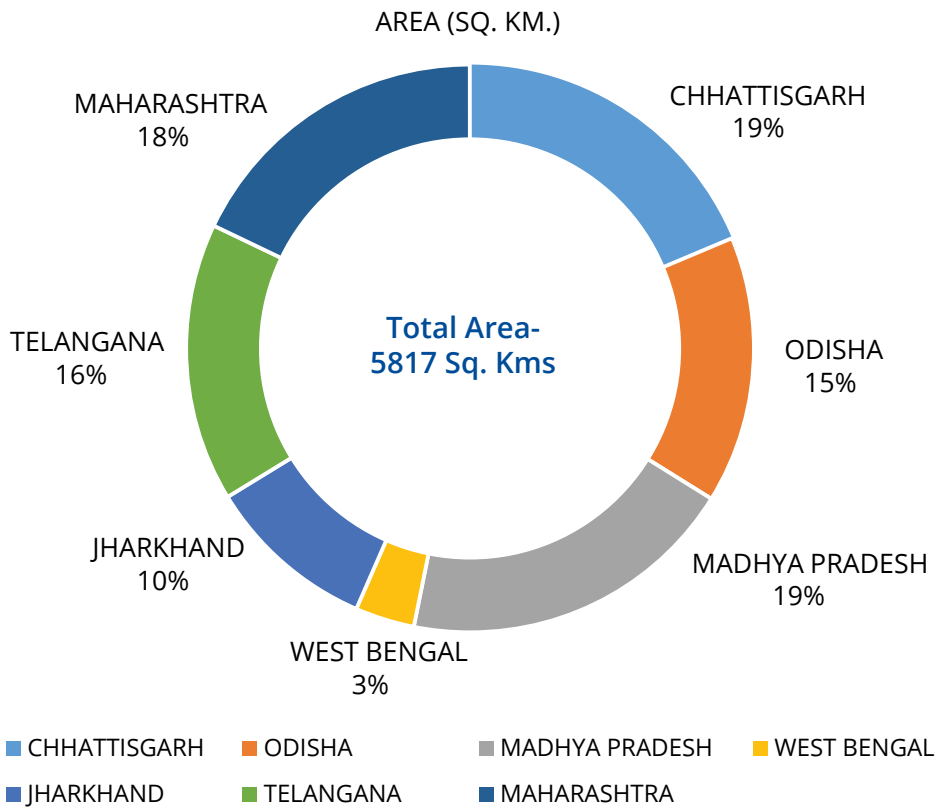
- 9 Blocks
- States Covered- Madhya Pradesh, Chhattisgarh & Odisha

| BASIN | STATE | NO. OF BLOCKS | AREA (SQ. KM.) |
|---|---|---|---|
| SOUTH REWA | CHHATTISGARH | 3 | 1086 |
| | ODISHA | 2 | 884 |
| | MADHYA PRADESH | 4 | 1123 |
| BENGAL PURNEA | WEST BENGAL | 1 | 197 |
| | JHARKHAND | 1 | 564 |
| PRANHITA GODAVARI | TELANGANA | 3 | 923 |
| | MAHARASHTRA | 2 | 1040 |
| | TOTAL | 16 | 5817 |

Map of Indian Sedimentary Basins



## State Wise Area Distribution Total Area- 5817 Sq. Kms



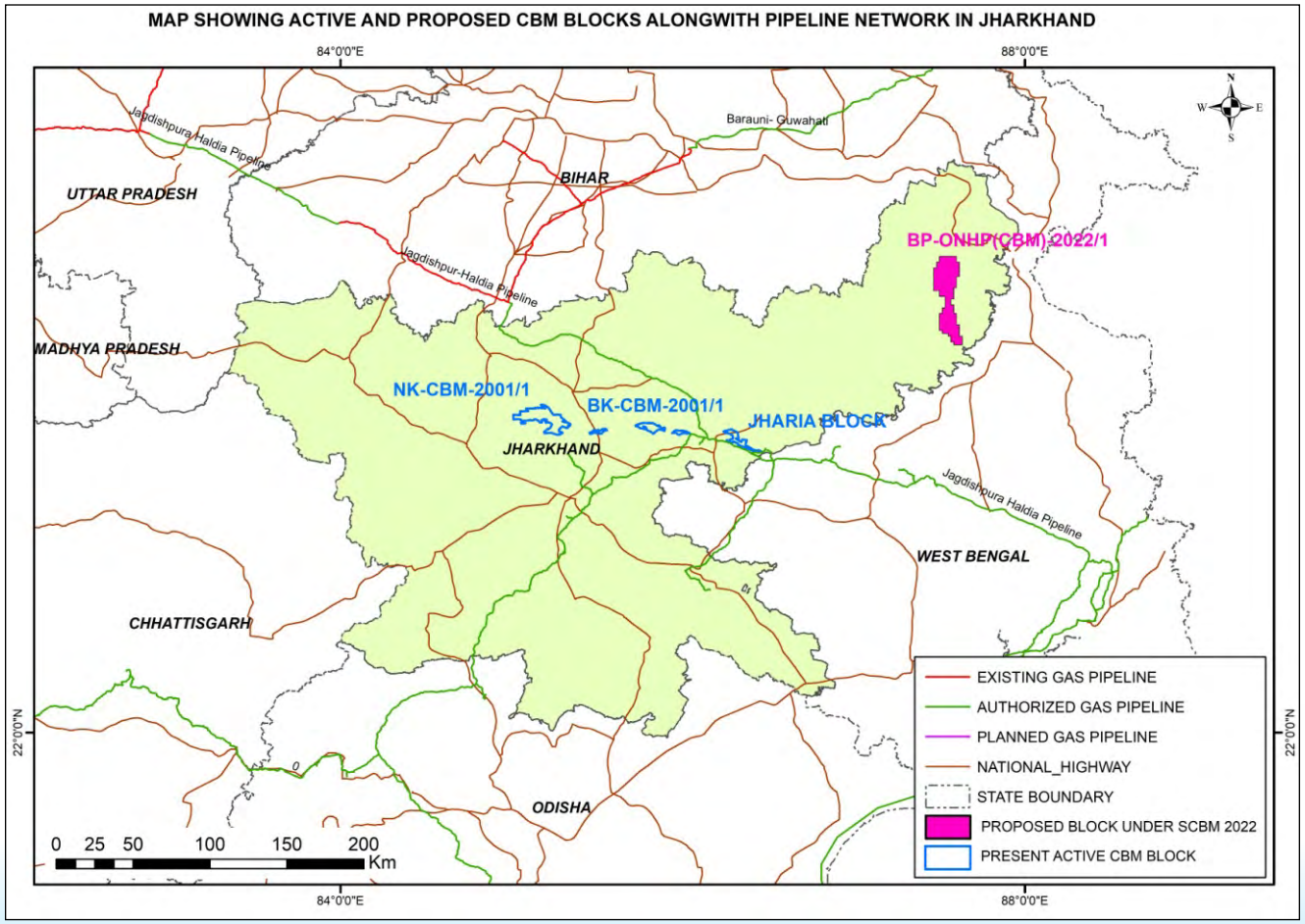



# Details of Blocks on Offer

| SL. NO. | STATE | BLOCK | BASIN | AREA (Sq.km) |
|---|---|---|---|---|
| 1 | **JHARKHAND** | BP-ONHP(CBM)-2022/1 | BENGAL-PURNEA | 564.21 |
| 2 | **WEST BENGAL** | BP-ONHP(CBM)-2022/2 | BENGAL-PURNEA | 197.04 |
| 3 | **MAHARASHTRA** | PG-ONHP(CBM)-2022/1 | PRANHITA-GODAVARI | 331.21 |
| 4 | **MAHARASHTRA** | PG-ONHP(CBM)-2022/2 | PRANHITA-GODAVARI | 708.87 |
| 5 | **TELANGANA** | PG-ONHP(CBM)-2022/3 | PRANHITA-GODAVARI | 443.65 |
| 6 | **TELANGANA** | PG-ONHP(CBM)-2022/4 | PRANHITA-GODAVARI | 195.40 |
| 7 | **TELANGANA** | PG-ONHP(CBM)-2022/5 | PRANHITA-GODAVARI | 284.14 |
| 8 | **MADHYA PRADESH** | SR-ONHP(CBM)-2022/1 | SOUTH REWA | 272.14 |
| 9 | **MADHYA PRADESH** | SR-ONHP(CBM)-2022/2 | SOUTH REWA | 222.13 |
| 11 | **MADHYA PRADESH** | SR-ONHP(CBM)-2022/4 | SOUTH REWA | 418.18 |
| 12 | **MADHYA PRADESH** | SR-ONHP(CBM)-2022/5 | SOUTH REWA | 210.60 |
| 10 | **CHHATTISGARH** | SR-ONHP(CBM)-2022/3 | SOUTH REWA | 407.80 |
| 13 | **CHHATTISGARH** | SR-ONHP(CBM)-2022/6 | SOUTH REWA | 88.01 |
| 14 | **CHHATTISGARH** | SR-ONHP(CBM)-2022/7 | SOUTH REWA | 590.00 |
| 15 | **ODISHA** | SR-ONHP(CBM)-2022/8 | SOUTH REWA | 190.70 |
| 16 | **ODISHA** | SR-ONHP(CBM)-2022/9 | SOUTH REWA | 693.33 |

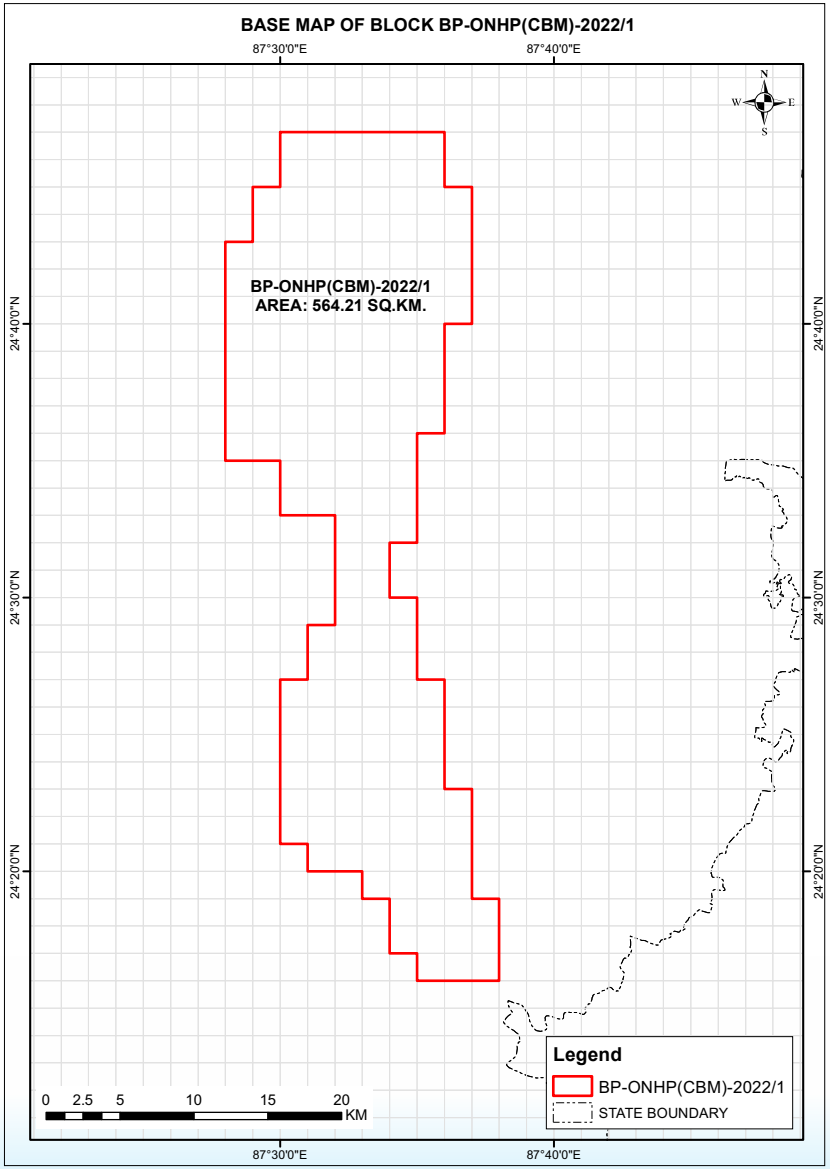
# Jharkhand

| SL. NO. | BLOCK | BASIN | AREA (Sq.km) | DISTRICT |
|---|---|---|---|---|
| 1 | BP-ONHP(CBM)-2022/1 | BENGAL-PURNEA | 564.21 | PAKUR |



# 1. BP-ONHP(CBM)-2022/1

## Block Overview



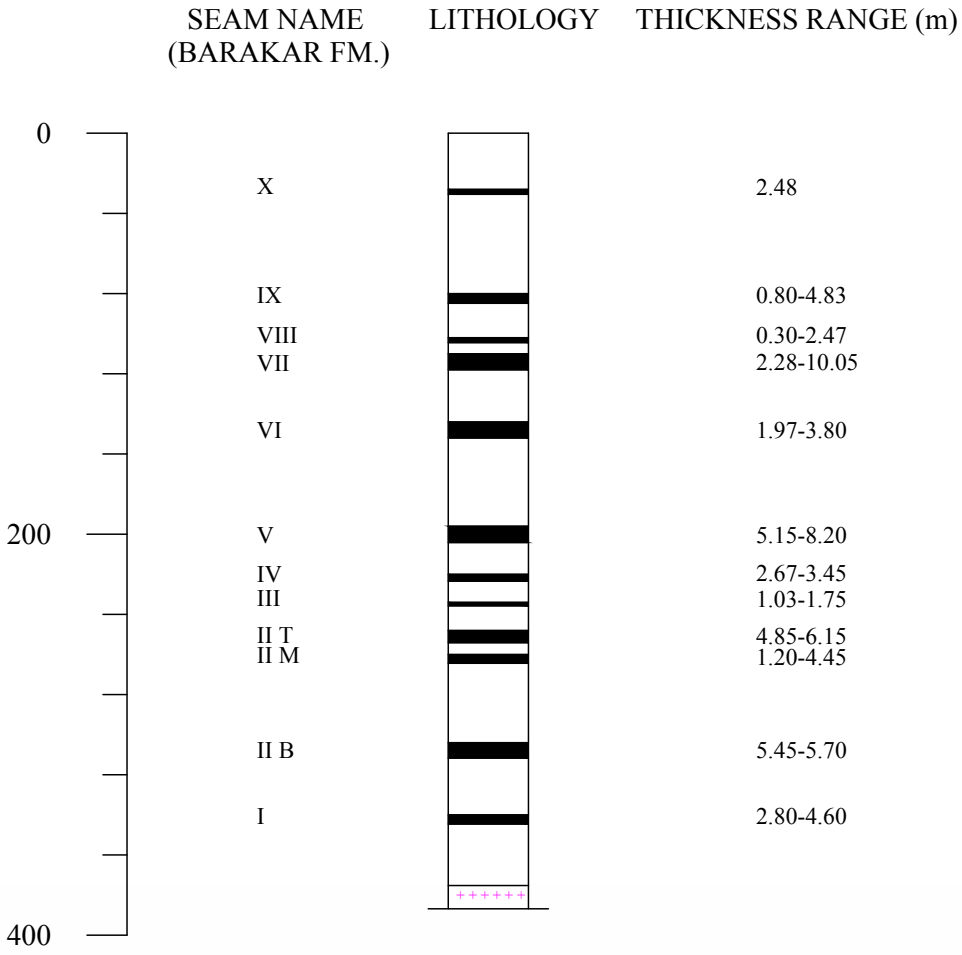

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Bengal Purnea |
| 2 | Age | Permian |
| 3 | Location | Jharkhand |
| 4 | Area (Sq. Km.) | 564.21 |
| 5 | Basin category | III |
| 6 | Coal Field | Rajmahal |
| 7 | Thickness (Min to max) | 3-10 |
| 8 | Target Formation | Barakar |
| 9 | Vitrinite content (%) | 29.3-79.5 |
| 10 | Average Gas content ($m^3$/t) | 5 |
| 11 | Vitrinite Reflectance (%) | 0.38-0.57 |
| 12 | Ash Content (%) | 18-46.3 |
| 13 | Permeability (md) | 12.6-34 |
| 14 | Coal rank | Bituminous |

| | |
|---|---|
| Data Availability | 1 well report |
| Nearest active Blocks | Jharia, Bokaro & North Karanpura |
| Numbers of wells drilled | Nil |
| Distance from Nearest Gas pipeline | 87 km |

# BP-ONHP(CBM)-2022/1

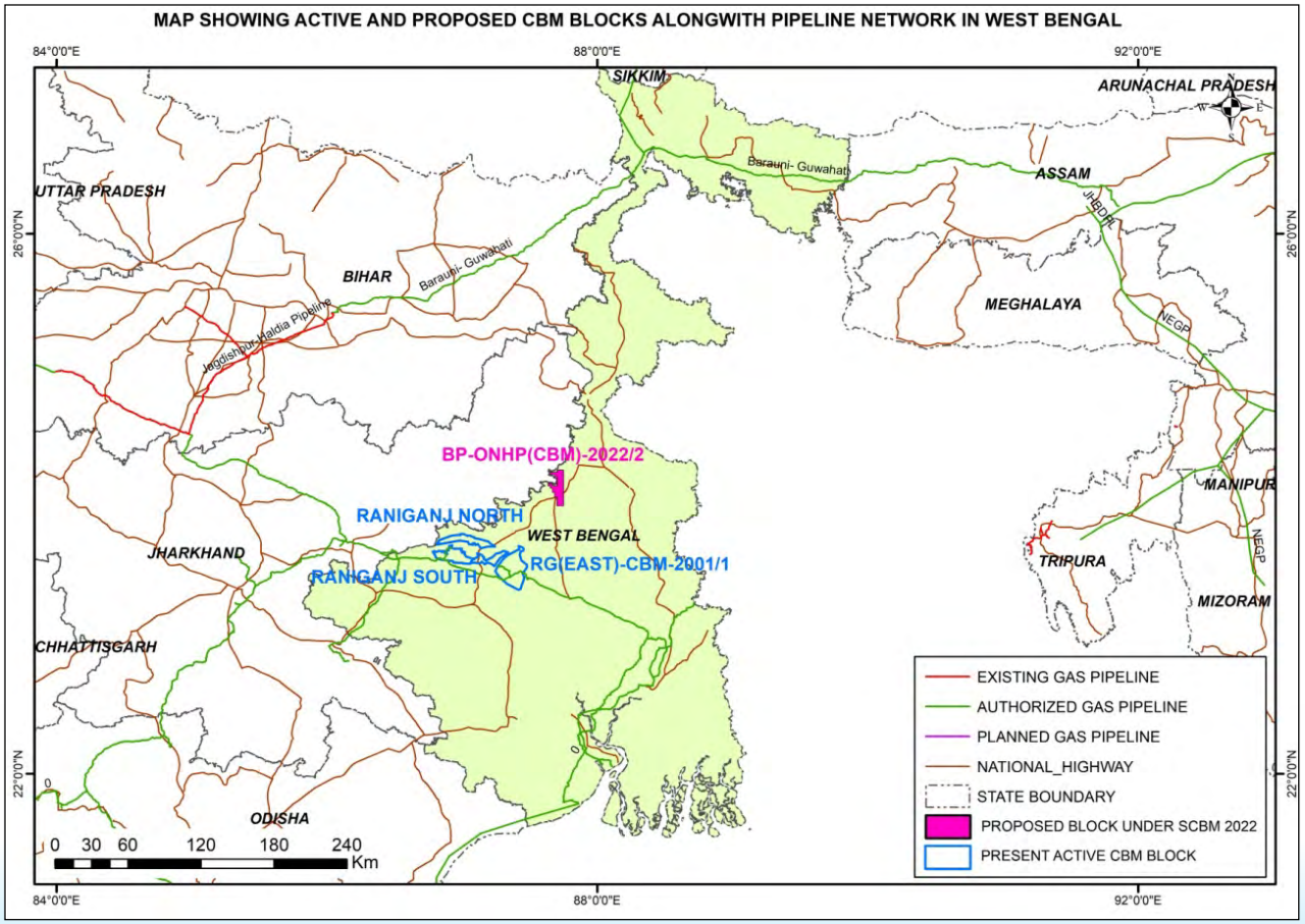
| Generalised Stratigraphy of Rajmahal Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Maximum Thickness (m)** |
| Recent | Suficial deposit | Soil/alluvium | |
| Quarternary | Suficial deposit | Laterite, Lateritic soil, Lateritic gravel with petrified wood | |
| Tartiary | Undifferentiated Tartiary deposit | Dirty white clay sandy clay and coarse grained friable sandstones | 45 |
| | | UNCONFORMITY | |
| Early Crateceous | Igneous intrusives | Basic (Dolerite) dykes/sills | |
| Crateceous | Rajmahal Formation | Theoleitic basalt with beds of grey shale carbs shale, sandstone olite etc. | 250 |
| | | UNCONFORMITY | |
| Late Triassic to Early Jurassic | Dubrajpur Formation | Pebbly S.stones, mottled coarse to medium grained sandstone, red siltstone, arenaaceous clay with coarbonaceous shale and thin Coal bands | 130 |
| | | UNCONFORMITY | |
| Lower Permain | Barkakar Formation | Conglomerate, white to light grey fine to coarse grain sandstone, grey shale, carb shale, fire clay and Coal seams | 650 |
| Early Permain | Talchir Formation | Diamictite, greenish sandstone Rhythmites, clays and muds etc. | 310 |
| | | UNCONFORMITY | |
| Precambrian | Chotanagarpur Granite Gneiss | Granite, gneiss pegmatite quartz veins, basic dykes etc. | |

## SCHEMATIC LOG SECTION RAJMAHAL, COALFIELD



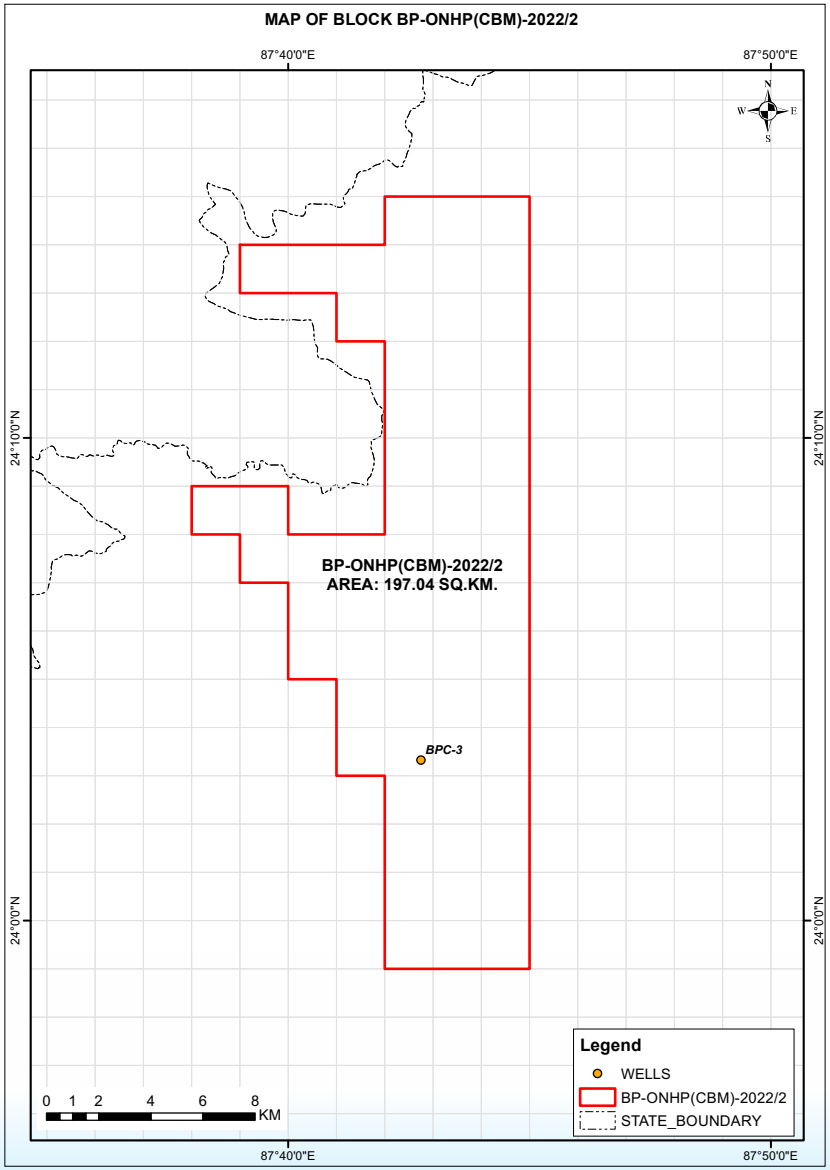
# West Bengal

| SL No | BLOCK | BASIN | AREA (Sq.km) | DISTRICT |
|---|---|---|---|---|
| 1 | BP-ONHP(CBM)-2022/2 | BENGAL-PURNEA | 197.04 | BIRBHUM |



# 2. BP-ONHP(CBM)-2022/2

## Block Overview



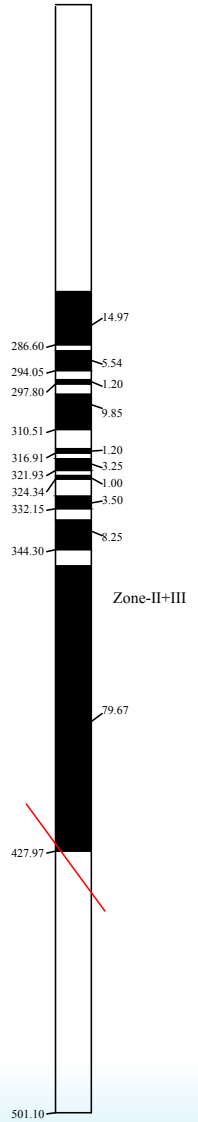

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Bengal Purnea |
| 2 | Age | Permian |
| 3 | Location | West Bengal |
| 4 | Area (Sq. Km.) | 197 sq. Km |
| 5 | Basin Category | III |
| 6 | Coal Field | Birbhum |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 16.5-79.5 |
| 9 | Average Gas content ($m^3/t$) | 4 |
| 10 | Vit Reflectance (%) | 0.42-0.55 |
| 11 | Ash Content (%) | 24-28 |

| | |
|---|---|
| Data Availability | 1 well completion report |
| Nearest active Blocks | Raniganj |
| Numbers of wells drilled | 1 Core hole |
| Distance from Nearest Gas pipeline | 67 KM |

# BP-ONHP(CBM)-2022/2

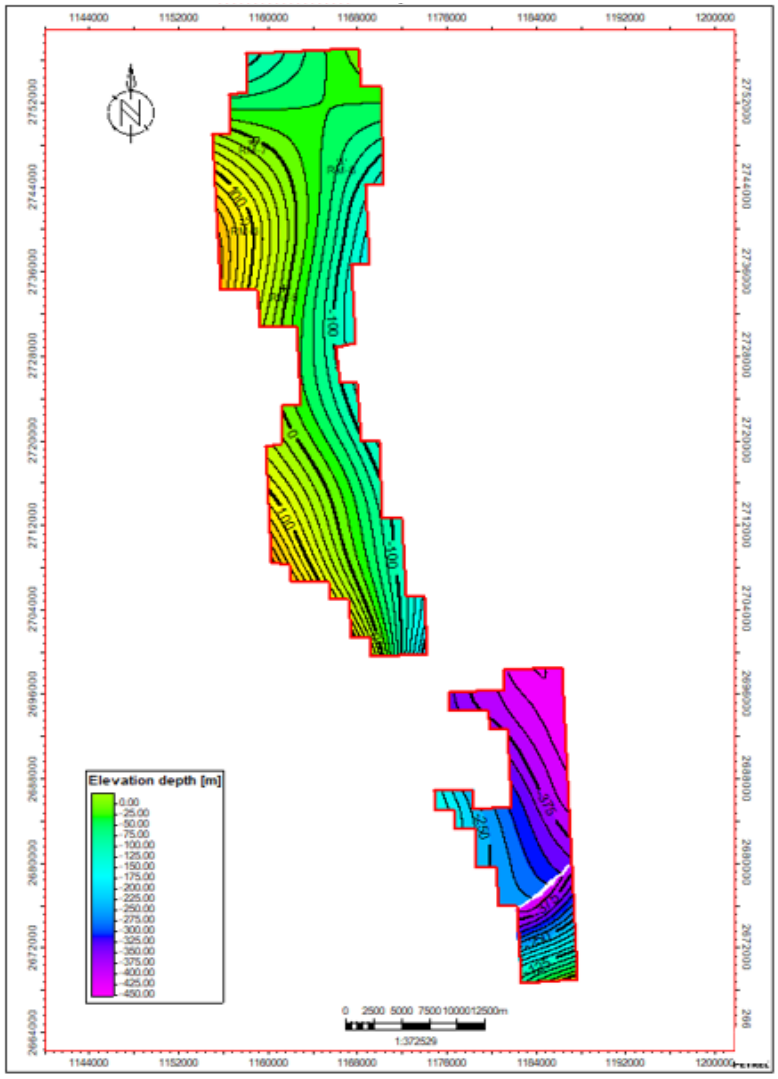
| Birbhum Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Maximum Thickness (m)** |
| Recent | Suficial deposit | Soil/alluvium | -- |
| Quarternary | Suficial deposit | Laterite, Lateritic soil, Lateritic gravel with petrified wood | -- |
| Tartiary | Undifferentiated Tartiary deposit | Dirty white clay, sandy clay and coarse grained friable sandstones | 45 |
| | | UNCONFORMITY | |
| Early Crateceous | Igneous intrusives | Basic (Dolerite) dykes/sills | |
| Crateceous | Rajmahal Formation | Tholeiitic basalt with beds of grey shale carb shale, sandstone olite etc. | 250 |
| | | UNCONFORMITY | |
| Late Triassic to Early Jurassic | Dubrajpur Formation | Pebbly S.stones, mottled coarse to medium grained sandstone, red siltstone, arenaaceous clay with carbonaceous shale and thin Coal bands | 130 |
| | | UNCONFORMITY | |
| Lower Permian | Barkakar Formation | Conglomerate, white to light grey fine to coarse grain sandstone, grey shale, carb shale, fire clay and Coal seams | 650 |
| Early Permian | Talchir Formation | Diamictite, greenish sandstone Rhythmites, clays and muds etc. | 310 |
| | | UNCONFORMITY | |
| Precambrian | Chotanagapur Granite Gneiss | Granite, gneiss pegmatite quartz veins, basic dykes etc. | |

**SCHEMATIC LOG SECTION**
**BIRBHUM COALFIELD**

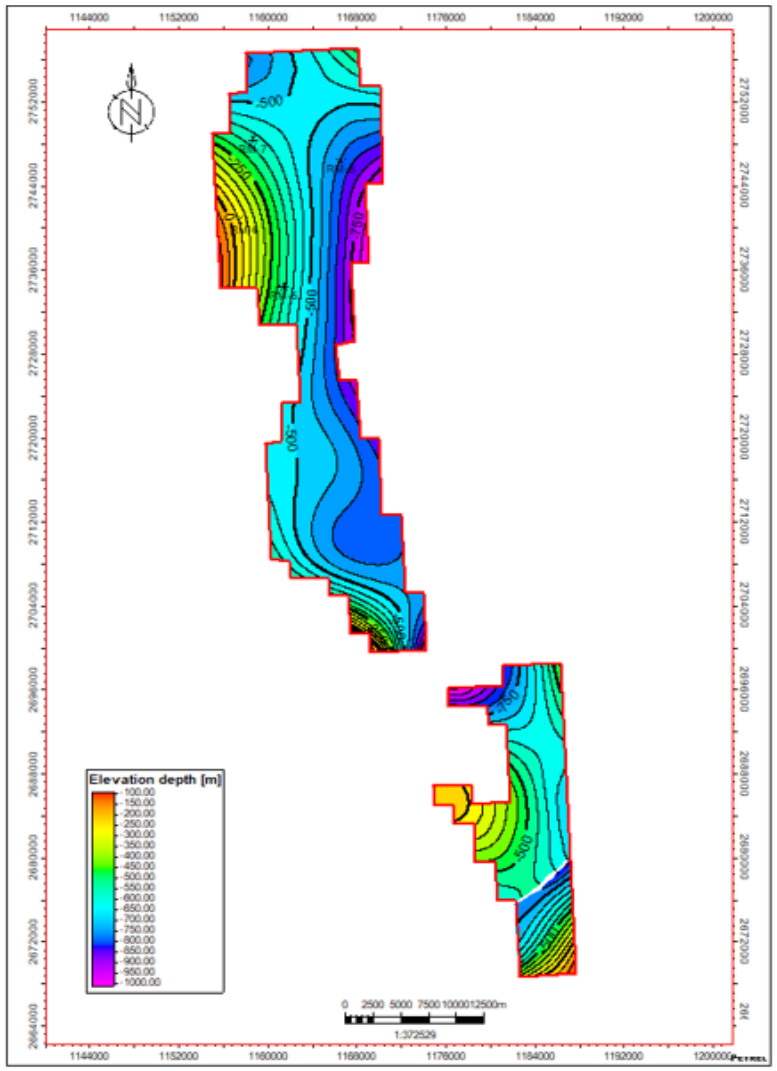


# BP-ONHP(CBM)-2022/1 & BP-ONHP(CBM)-2022/2

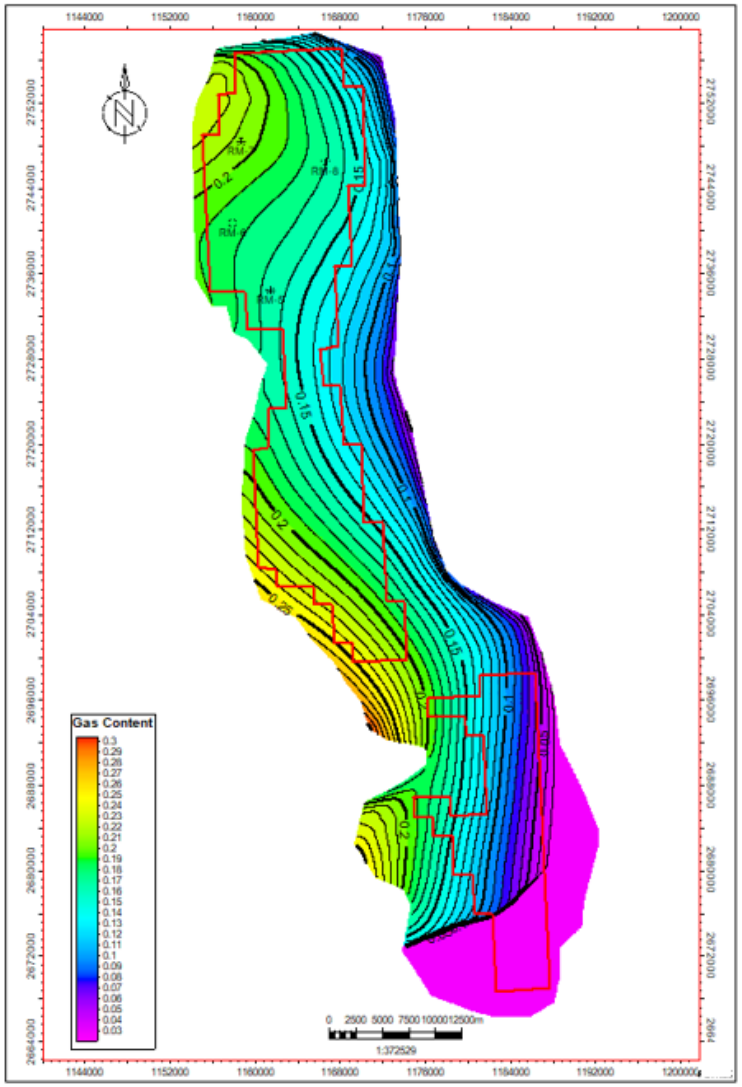
## Barakar Top

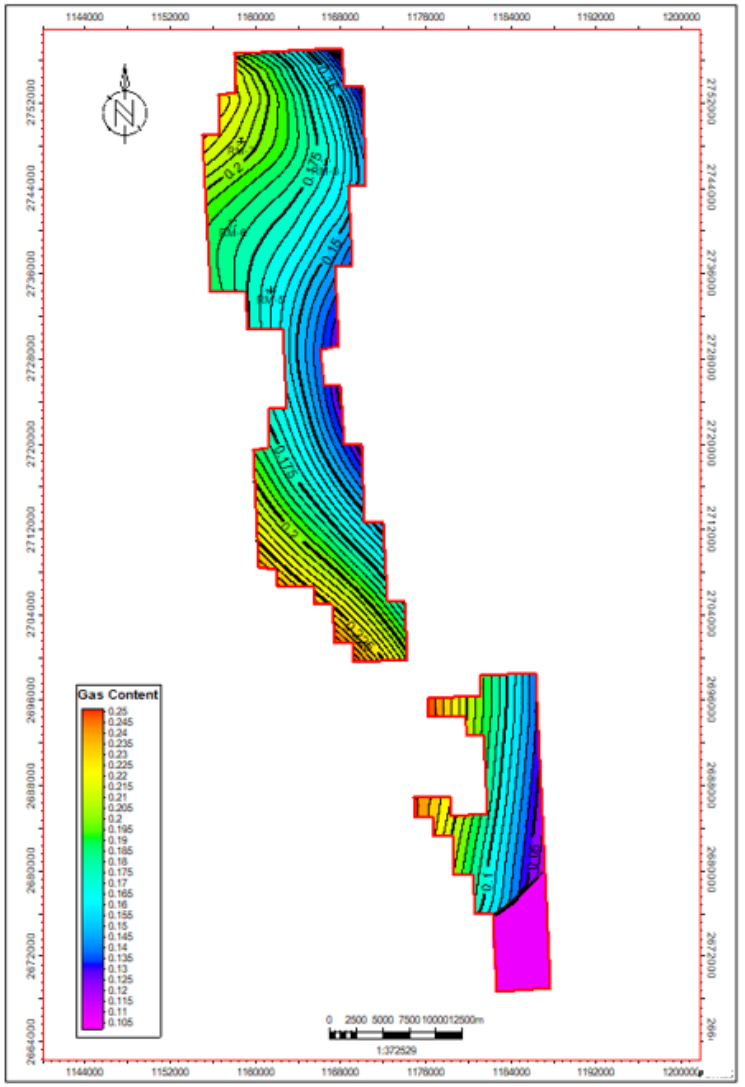



## Barakar Bottom



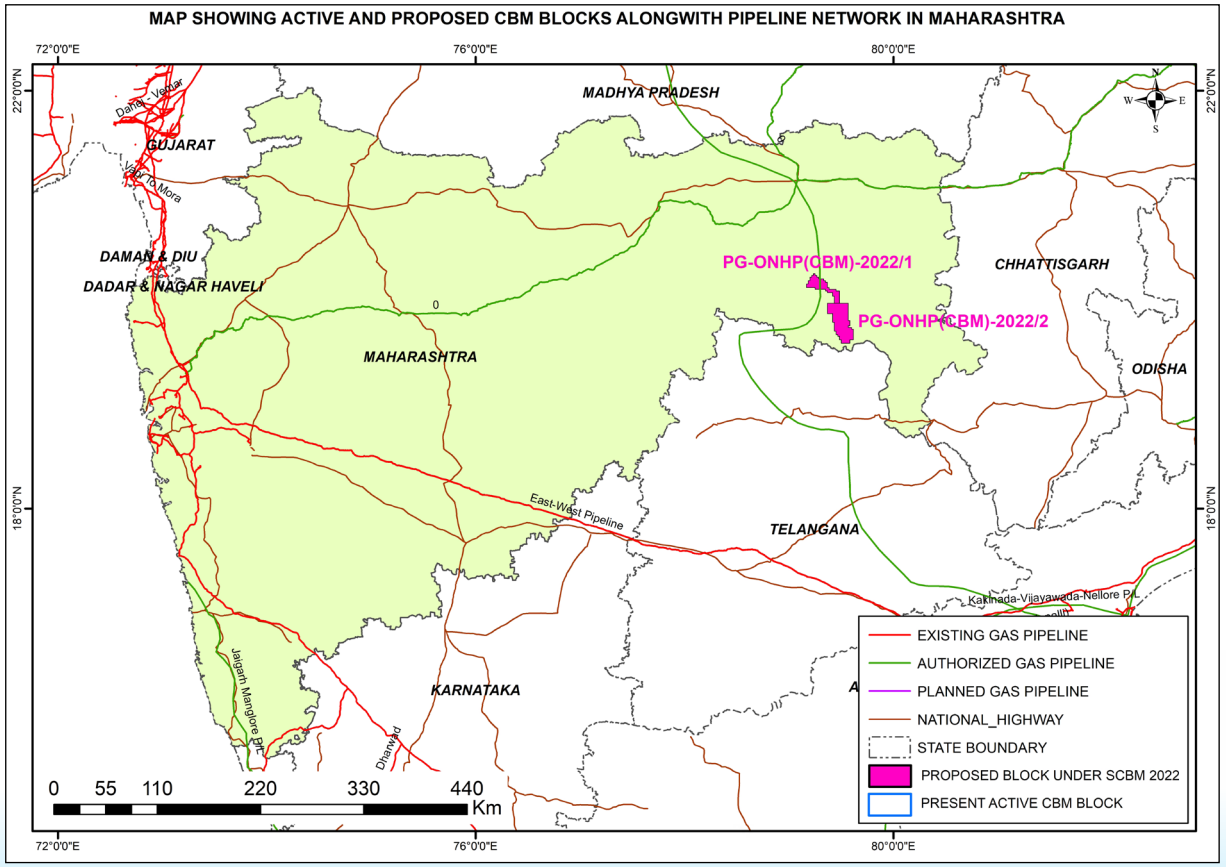
# BP-ONHP(CBM)-2022/1 & BP-ONHP(CBM)-2022/2
## Gas content map ($m^3$/ton)



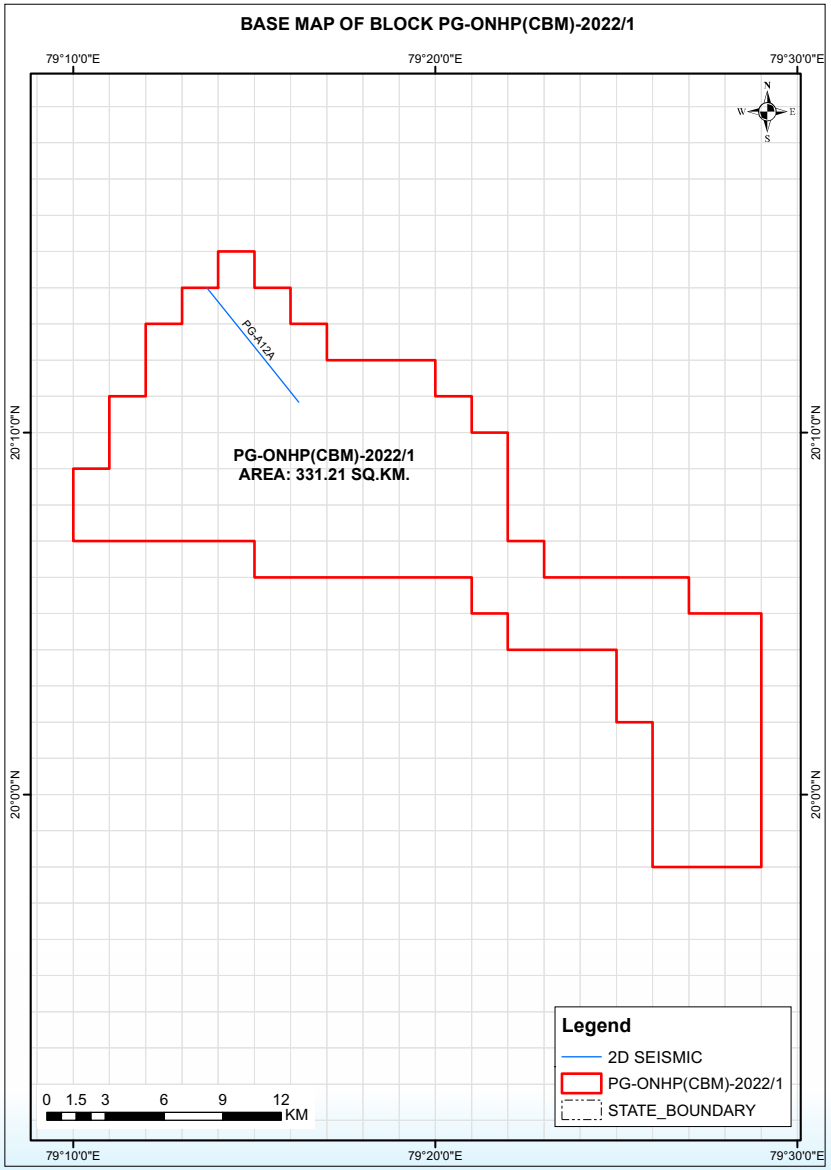
# Maharashtra

| SL NO | BLOCK | BASIN | AREA (Sq.km.) | DISTRICT |
|---|---|---|---|---|
| 1 | PG-ONHP(CBM)-2022/1 | PRANHITA-GODAVARI | 331.21 | CHANDRAPUR |
| 2 | PG-ONHP(CBM)-2022/2 | PRANHITA-GODAVARI | 708.87 | |



# 3. PG-ONHP(CBM)-2022/1

## Block Overview

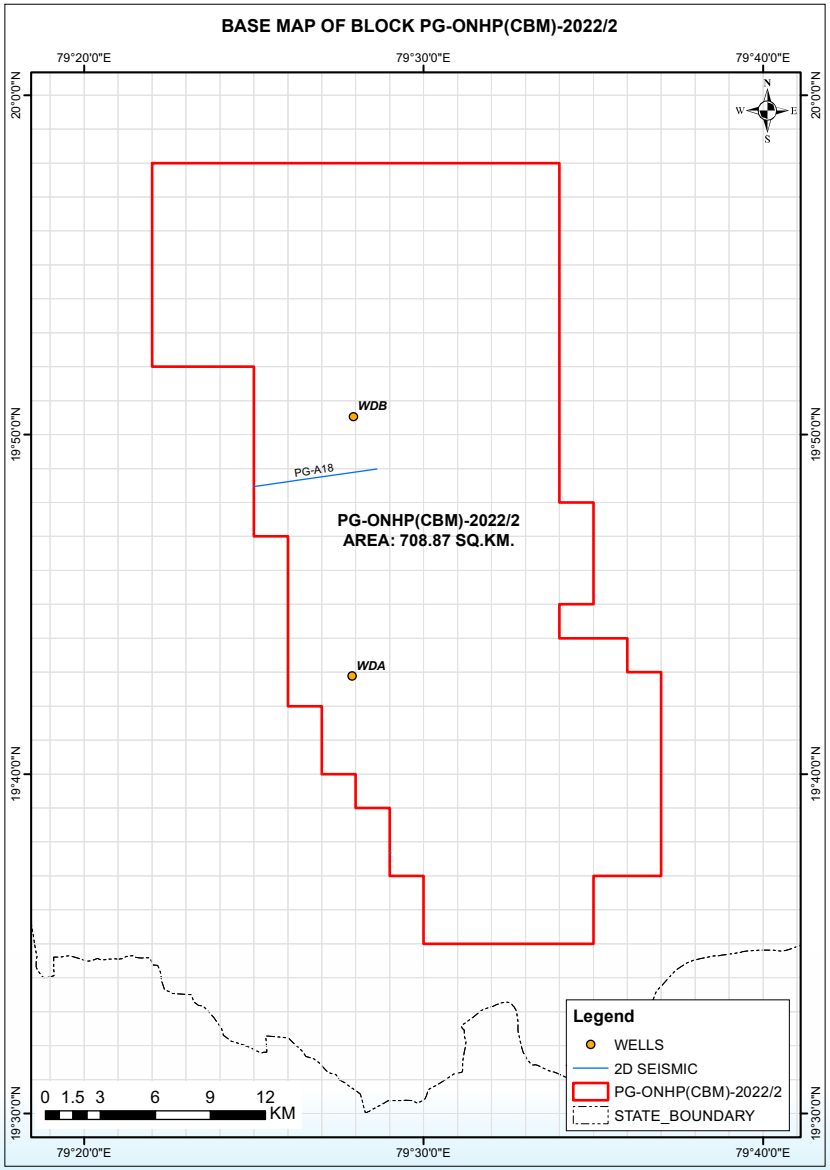



| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Pranhita Godavari |
| 2 | Age | Permian |
| 3 | Location | Maharashtra |
| 4 | Area (Sq. Km.) | 331.21 |
| 5 | Basin Category | III |
| 6 | Coal Field | Wardha |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 20-76 |
| 9 | Average Gas content ($m^3$/t) | 4-6 |
| 10 | Vit Reflectance (%) | 0.5-0.70 |
| 11 | Ash Content (%) | 16-40 |
| 12 | Coal rank | Bituminous B to submituminous C |

| | |
|---|---|
| Data Availability | 2D Seismic 7 LKM |
| Nearest active Blocks | Sohagpur |
| Distance from Nearest Gas pipeline | 0 KM |

# 4. PG-ONHP(CBM)-2022/2

## Block Overview



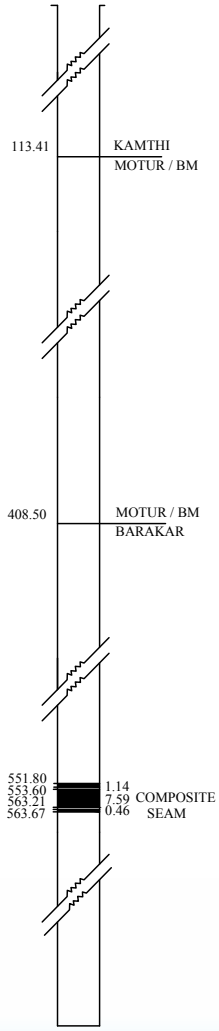

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Pranhita Godavari |
| 2 | Age | Permian |
| 3 | Location | Maharashtra |
| 4 | Area (Sq. Km.) | 708.87 sq.km |
| 5 | Basin Category | III |
| 6 | Coal Field | Wardha |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 20-76 |
| 9 | Average Gas content (m3/t) | 4-6 |
| 10 | Vit Reflectance (%) | 0.5-0.70 |
| 11 | Ash Content (%) | 16-40 |
| 12 | Coal rank | Bituminous B to sub bituminuos C |

| | |
|---|---|
| Data Availability | 2D Seismic 6.4 LKM and 1 well report |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 2 wells |
| Distance from Nearest Gas pipeline | 8.4 KM |

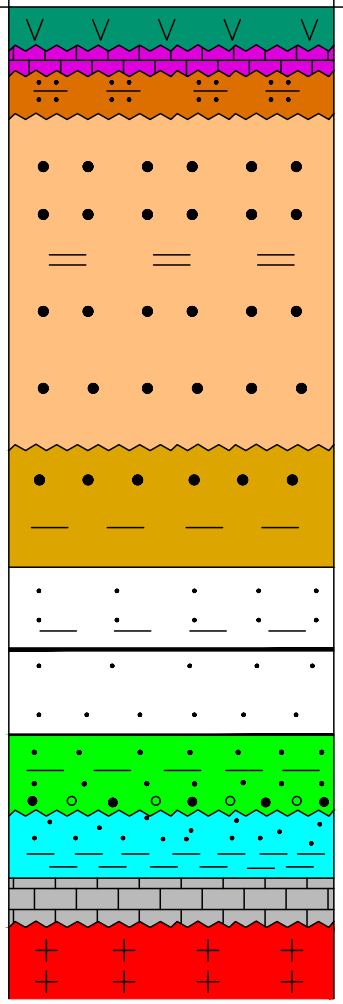
# PG-ONHP(CBM)-2022/1 & PG-ONHP(CBM)-2022/2

| Wardha valley Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | | **Lithology** |
| Recent | Alluvium | | Black cotton soil, sandy soil, kankar, laterite, etc. (20 m) |
| Upper Cretaceous to Eocene | Deccan Trap | | Basalts (100 m) |
| UNCONFORMITY | | | |
| Cretaceous | Lameta | | Limestone, Cherts and Silicified sandstone (50 m) |
| UNCONFORMITY | | | |
| Upper Triassic | Maleri (only in the south-eastern extremity) | | Fine to medium grained sandstone and red shales (100 m) |
| Upper Permian to Lower Triassic | Kamthi | | Red, brown and variegated sandstone, reddish siltstone and variegated shales, thin coal bands (800m) |
| UNCONFORMITY | | | |
| Middle Permian | Motur | | Medium to fine grained variegated sandstone, variegated clays, and shales (300m) |
| Lower Permian | Barakar | | Light grey to white sandstones, shales and coal seams (400 m) |
| Upper Carboniferous to Lower Permian | Talchir | | Greenish to dark grey shale and sandstone (200m) |
| UNCONFORMITY | | | |
| Proterozoic | Vindhyan Group | Sullavai Sandstone | White to light brown, fine to coarse grained sandstone, conglomerates (thickness not estimated) |
| Early Permain | | Pakhal Limestone | Grey, bluish, pinkish limestone (thickness not estimated) |
| UNCONFORMITY | | | |
| Archaean | Metamorphics | | Gneisses & Schists |

**SCHEMATIC LOG SECTION WARDHA VALLEY COAL FIELD**

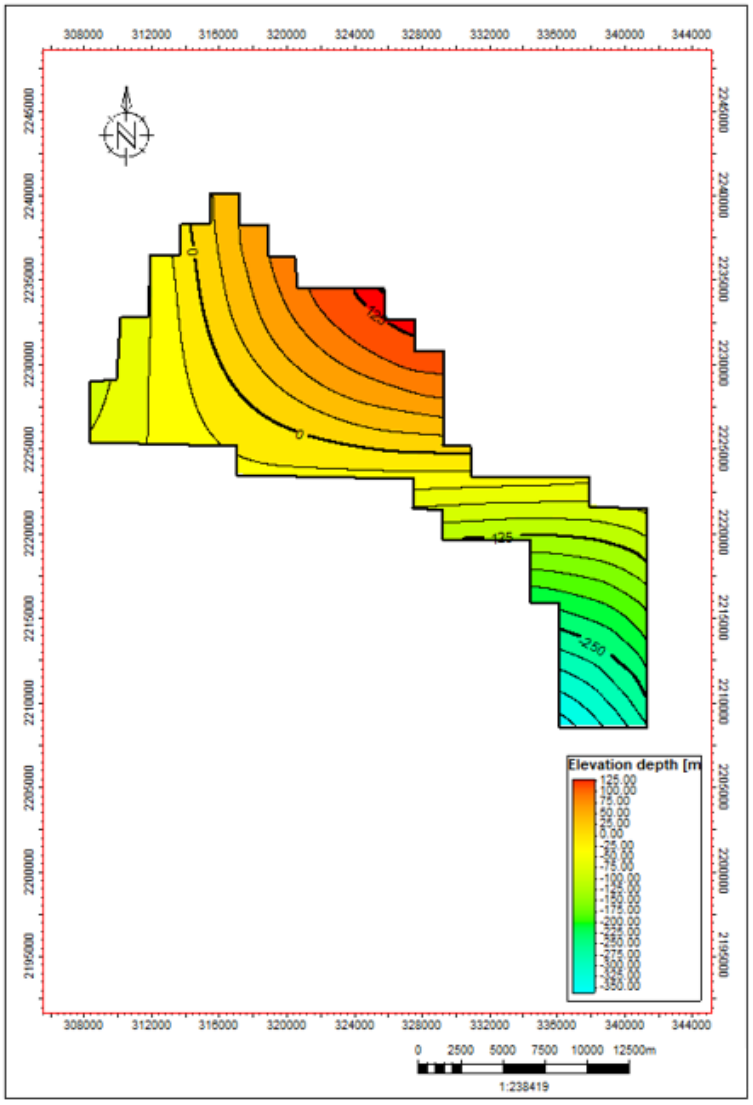


## SCHEMATIC LOG SECTION WARDHA VALLEY COALFIELD

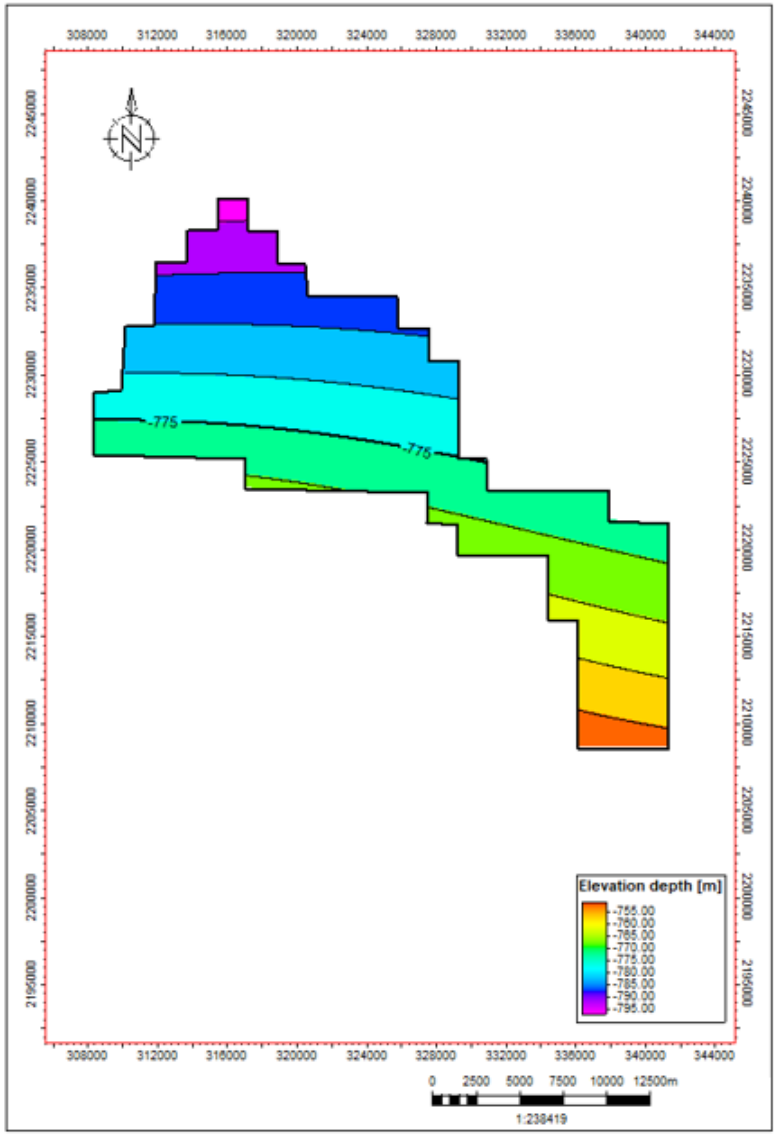
| AGE | FORMATION | LITHOLOGY | MAXIMUM THICKNESS (m) |
|---|---|---|---|
| UP.CRETACEOUS TO EOCENE | DECCAN TRAP |  | 100 |
| CRETACEOUS | LAMETA | | 50 |
| UPPER TRIASSIC | MALERI | | 100 |
| UPPER PERMIAN TO LOWER TRIASSIC | KAMTHI | | 800 |
| MIDDLE PERMIAN | MOTUR | | 300 |
| LOWER PERMIAN | BARAKAR | | 400 |
| UPPER CARBONIFEROUS TO LOWER PERMIAN | TALCHIR | | 200 |
| PROTEROZOIC | VINDHYAN | | NOT ESTIMATED |
| ARCHAEAN | METAMORPHICS | | |

# PG-ONHP(CBM)-2022/1

Barakar Top

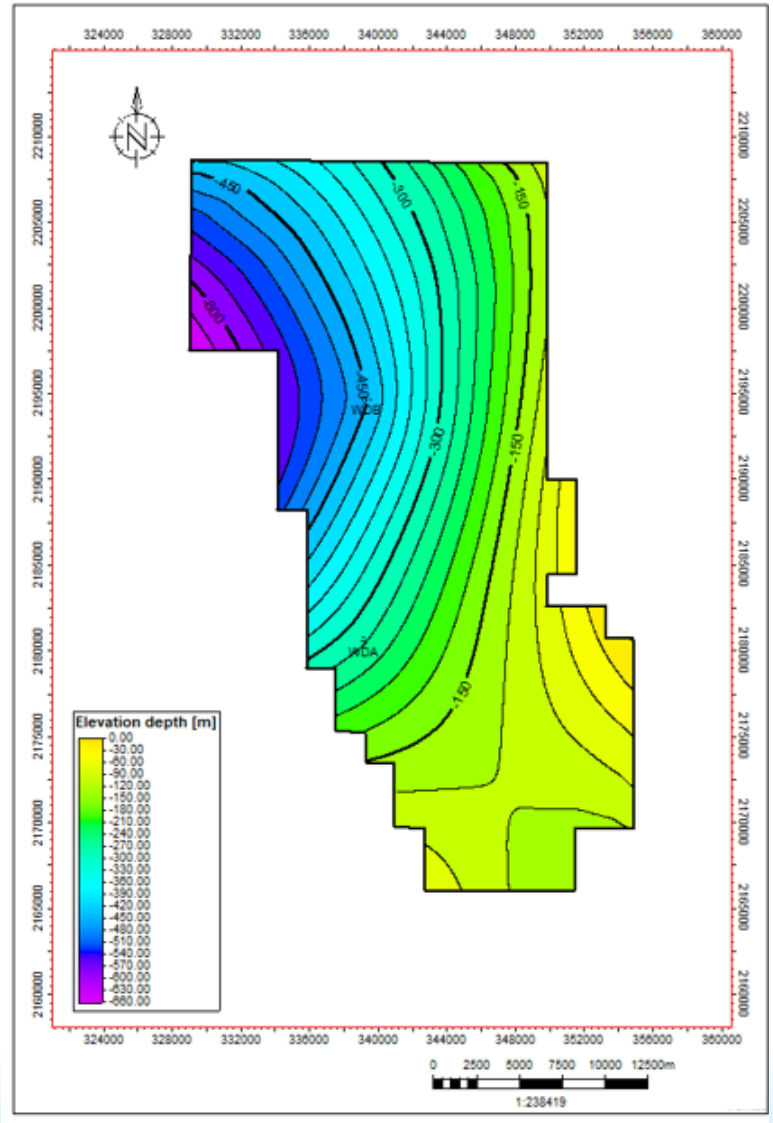



Barakar Bottom

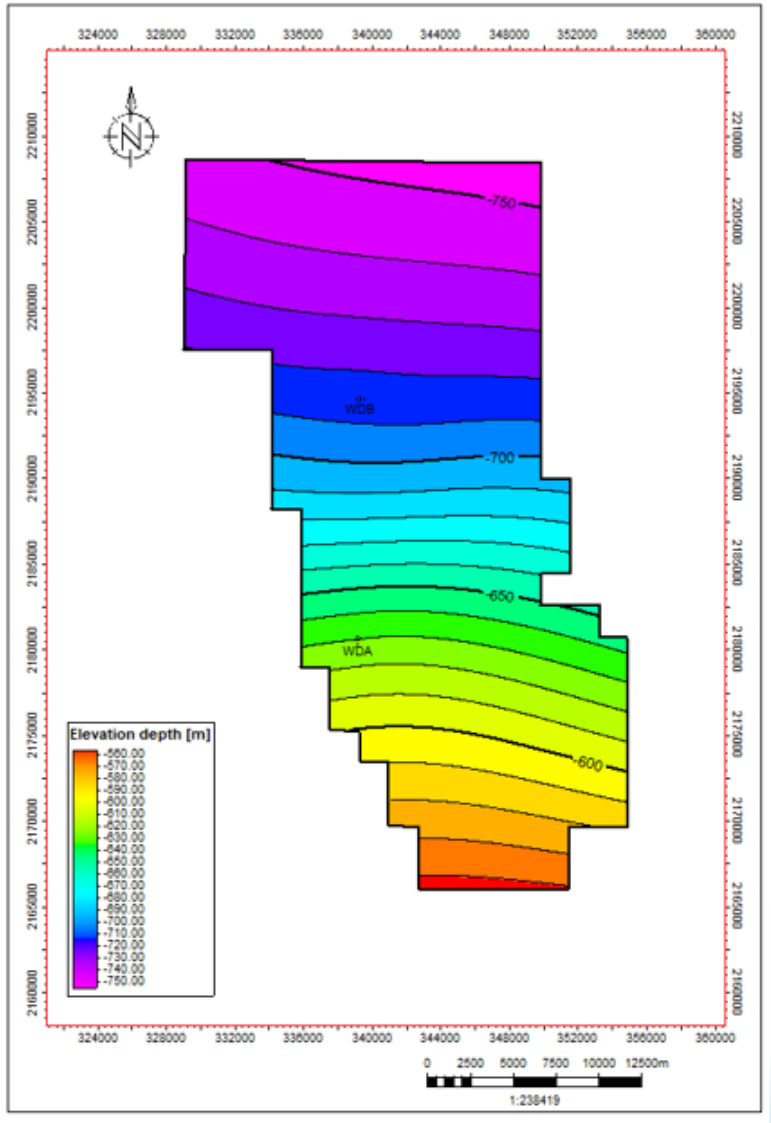


# PG-ONHP(CBM)-2022/2

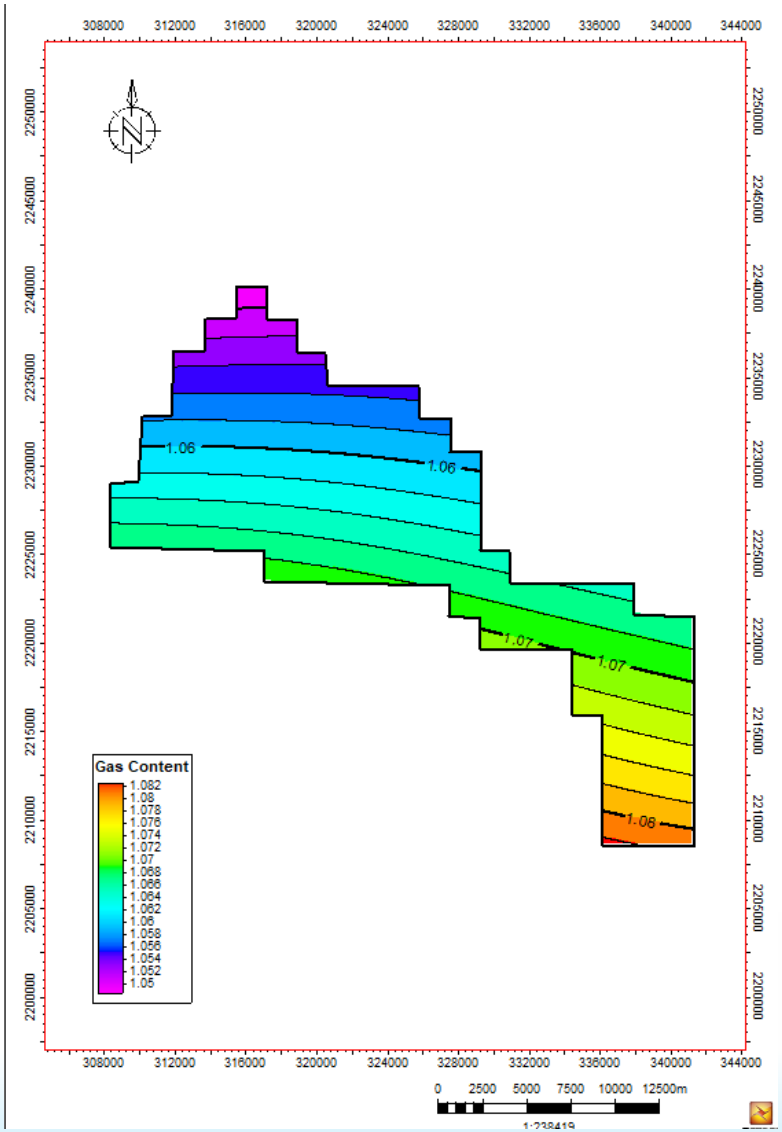
Barakar Top

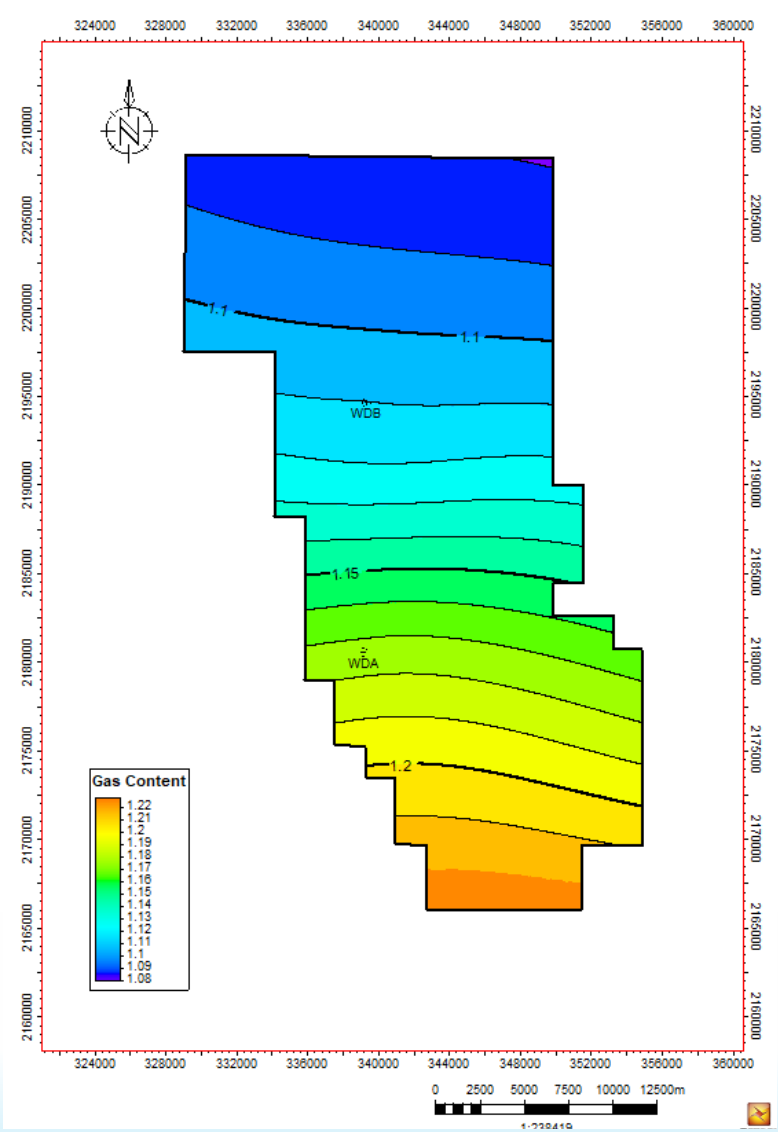



Barakar Bottom



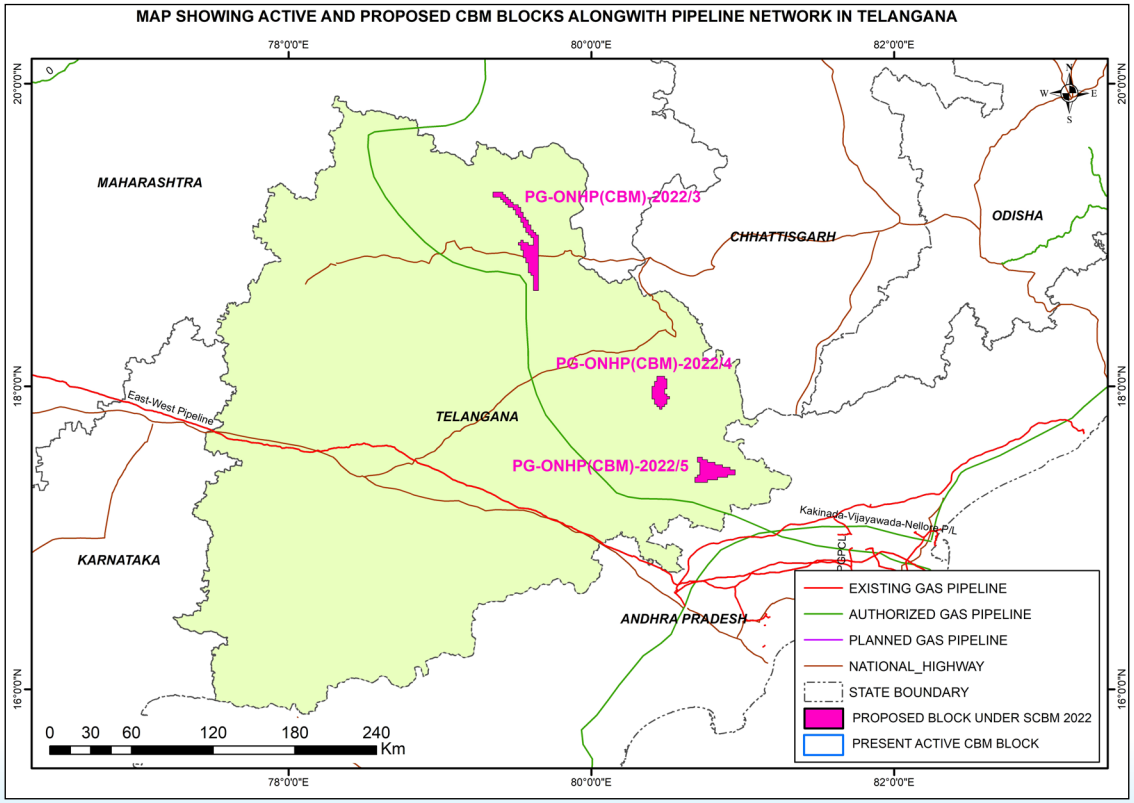
# PG-ONHP(CBM)-2022/1 & PG-ONHP(CBM)-2022/2
## Gas Content Map ($m^3$/ton)



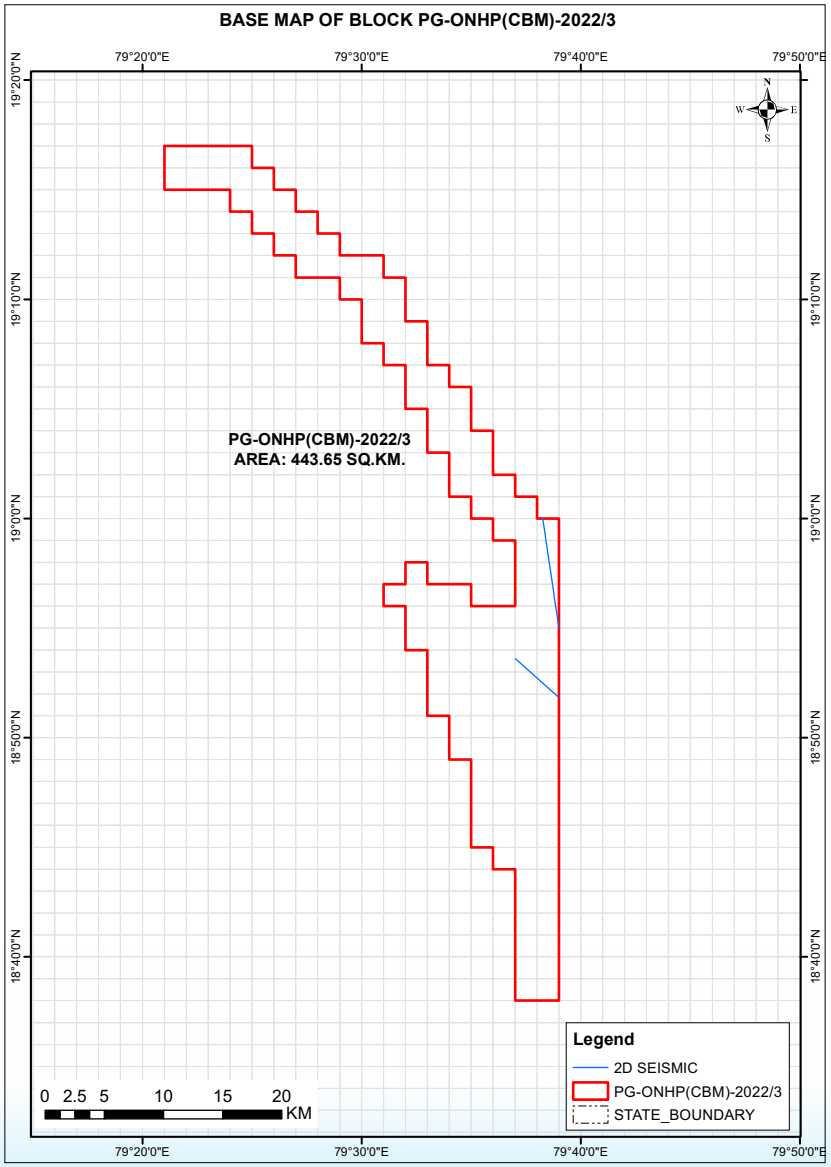
# Telangana

| SL No | BLOCK | BASIN | AREA (Sq.km) | DISTRICT |
|---|---|---|---|---|
| 1 | PG-ONHP(CBM)-2022/3 | PRANHITA-GODAVARI | 443.65 | ADILABAD |
| 2 | PG-ONHP(CBM)-2022/4 | PRANHITA-GODAVARI | 195.40 | KHAMMAM |
| 3 | PG-ONHP(CBM)-2022/5 | PRANHITA-GODAVARI | 284.14 | KHAMMAM |



# 5. PG-ONHP(CBM)-2022/3

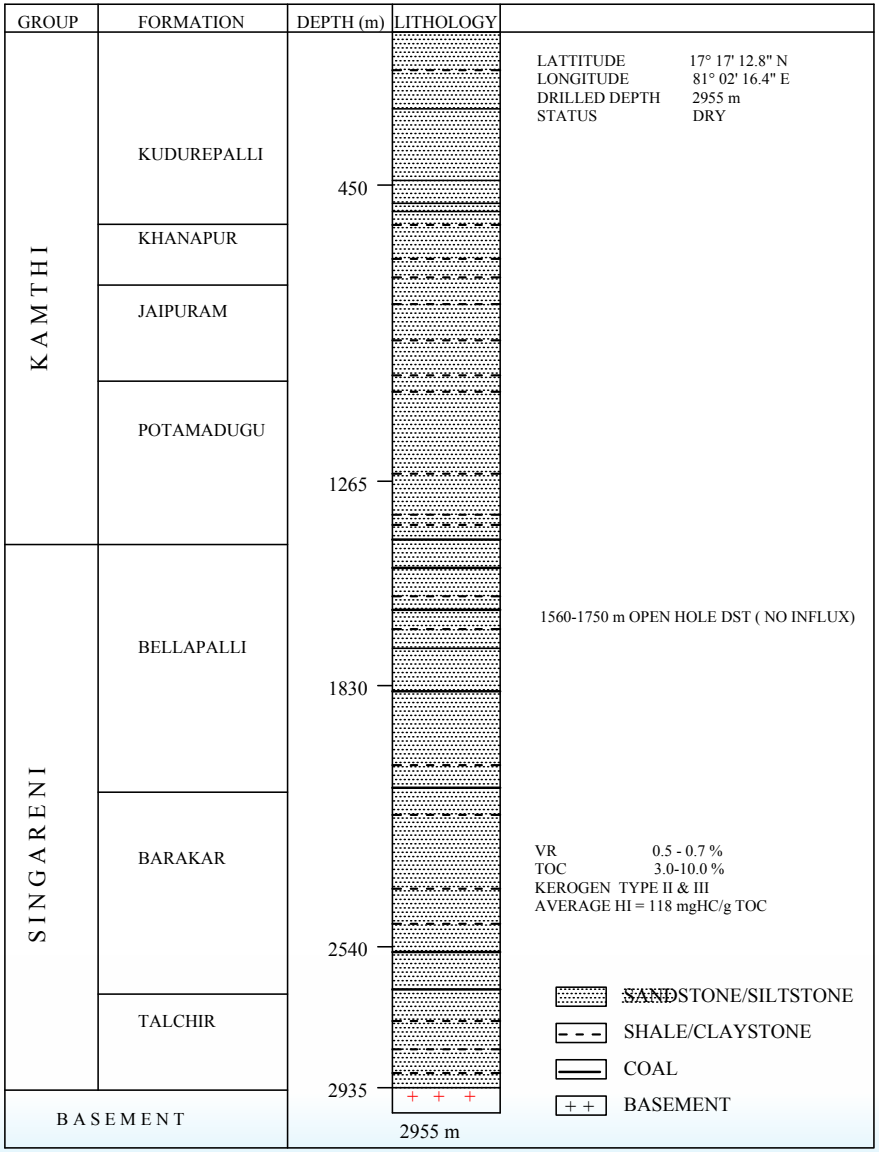
## Block Overview



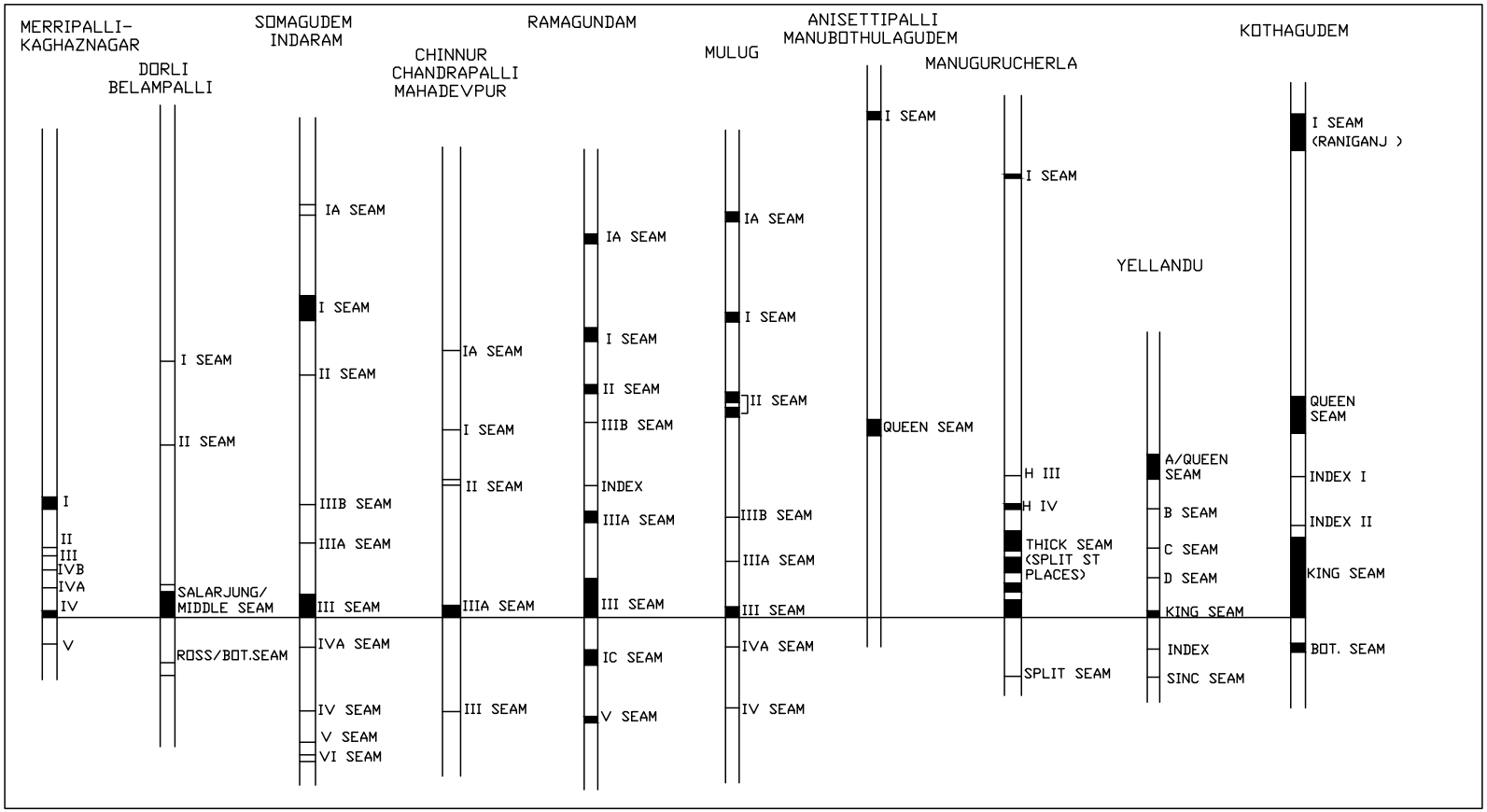

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Pranhita Godavari |
| 2 | Age | Permian |
| 3 | Location | Telangana |
| 4 | Area (Sq. Km.) | 443.65 |
| 5 | Basin Category | III |
| 6 | Coal Field | Godavari Valley |
| 7 | Target Formation | Barakar and Raniganj |
| 8 | Vitrinite content (%) | 20-76 |
| 9 | Average Gas content (m3/t) | 4-5 |
| 10 | Vit Reflectance (%) | 0.55-0.73 |
| 11 | Ash Content (%) | 15-50 |
| 12 | Coal rank | Bituminous B |

| | |
|---|---|
| Data Availability | 2D Seismic 6.4 LKM and 1 well report |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 0 wells |
| Distance from Nearest Gas pipeline | 8 KM |

## SCHEMATIC LOG SECTION GODAVARI VALLEY, COALFIELD

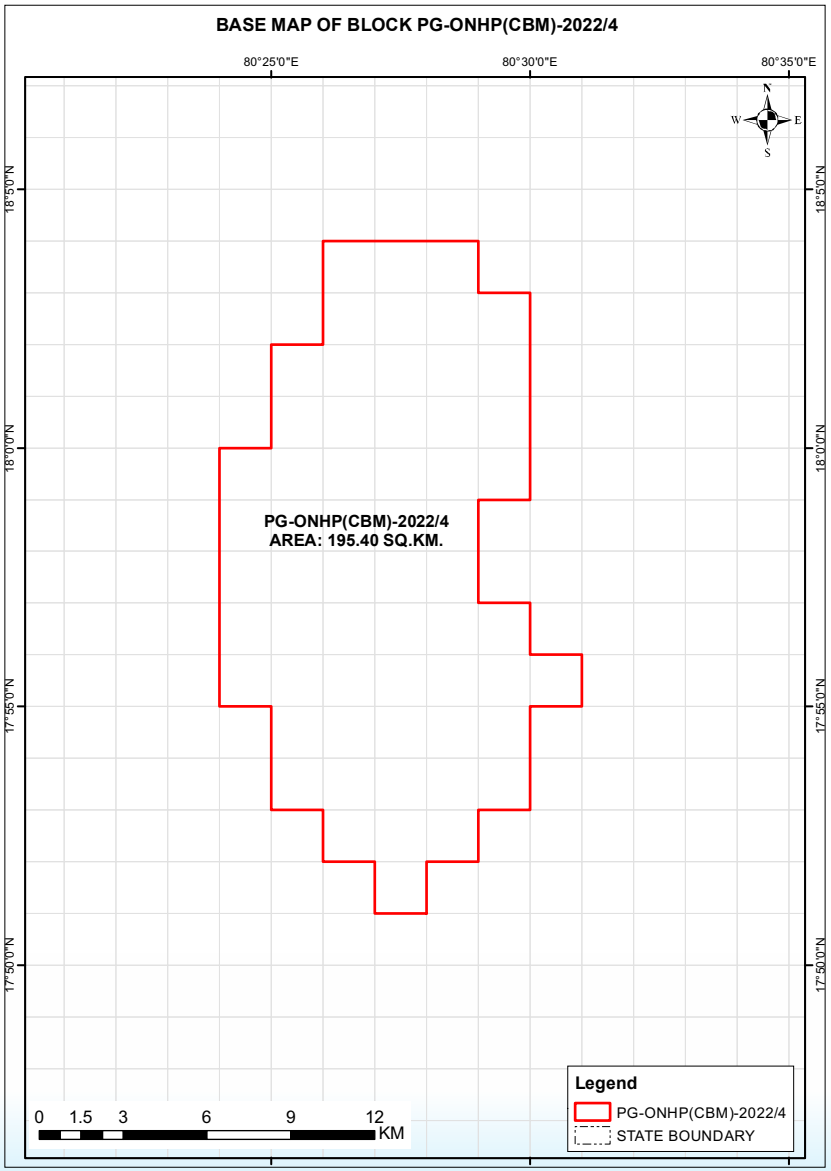


## SCHEMATIC LOG SECTION BELTS OF GODAVARI VALLEY, COALFIELD



# 6. PG-ONHP(CBM)-2022/4

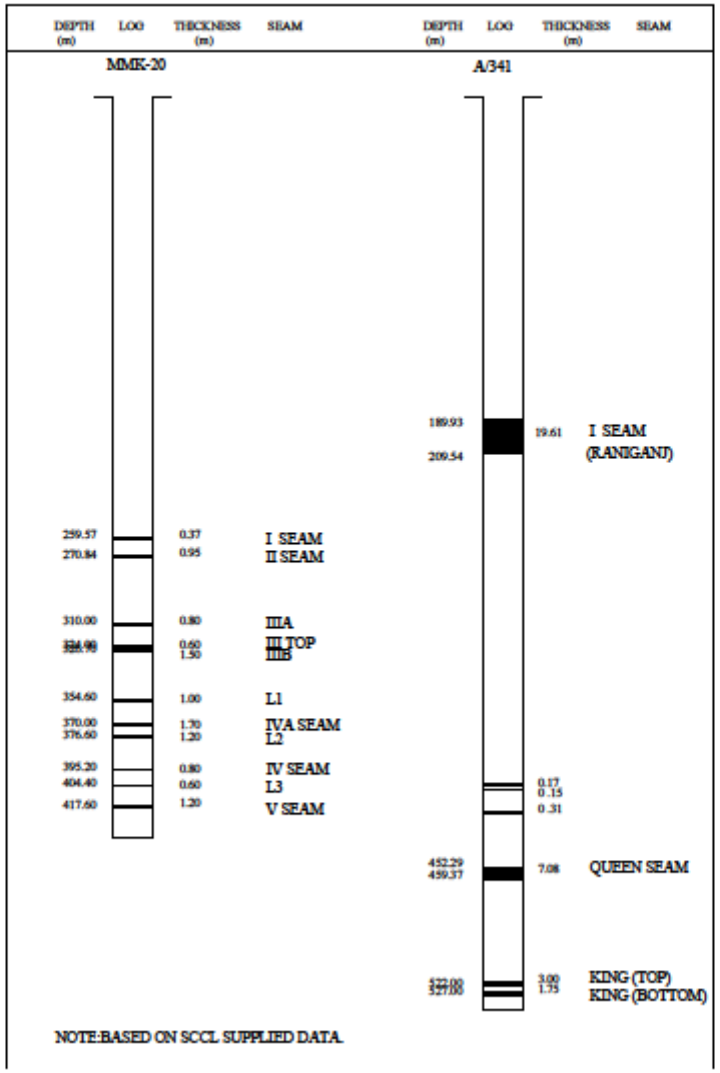
## Block Overview



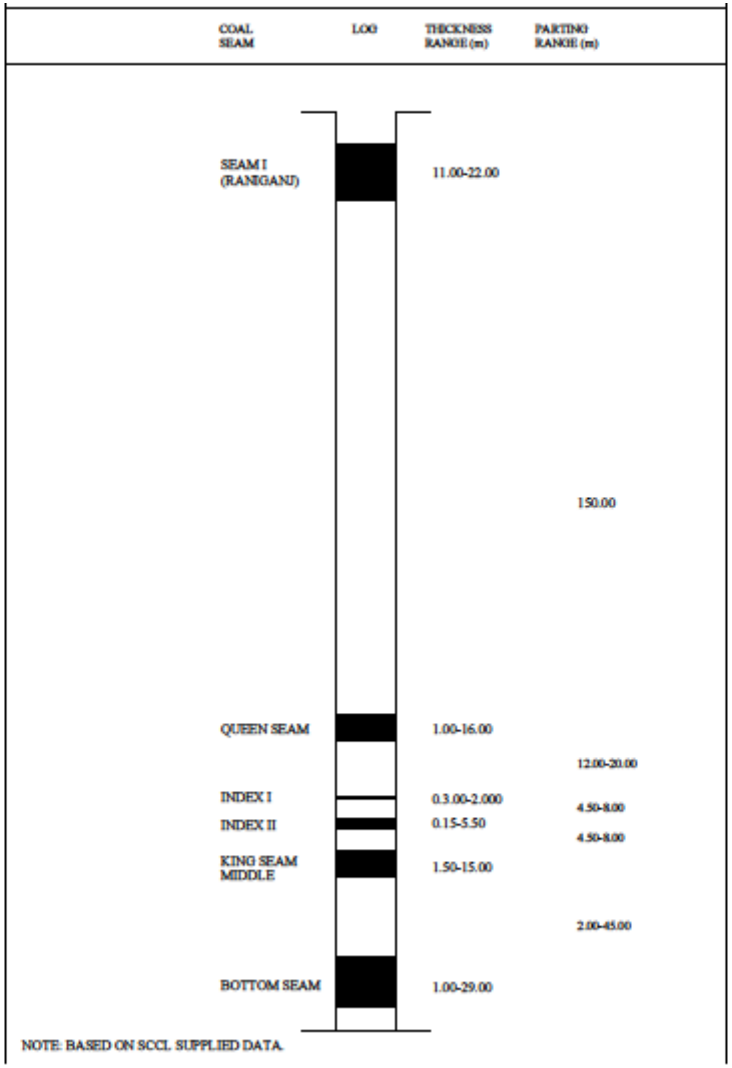

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Pranhita Godavari |
| 2 | Age | Permian |
| 3 | Location | Telangana |
| 4 | Area (Sq. Km.) | 195.40 |
| 5 | Basin Category | III |
| 6 | Coal Field | Godavari valley |
| 7 | Target Formation | Barakar and Raniganj |
| 8 | Coal rank | Bituminous B |

| | |
|---|---|
| Data Availability | No data available |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 0 wells |
| Distance from Nearest Gas pipeline | 65 KM |

## SCHEMATIC LOG SECTION KOTHAGUDEM AREA, GODAVARI VALLEY, COALFIELD

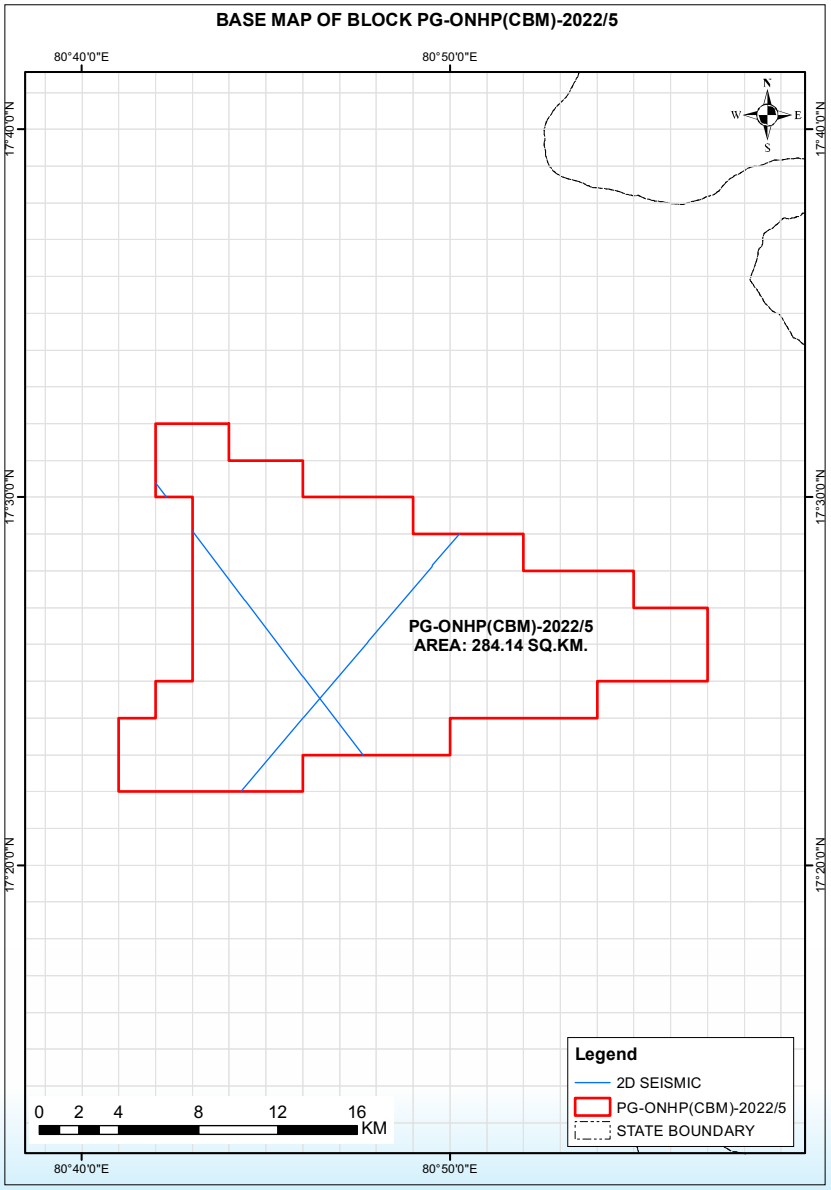



## SCHEMATIC LOG SECTION KOTHAGUDEM AREA, GODAVARI VALLEY, COALFIELD



# 7. PG-ONHP(CBM)-2022/5

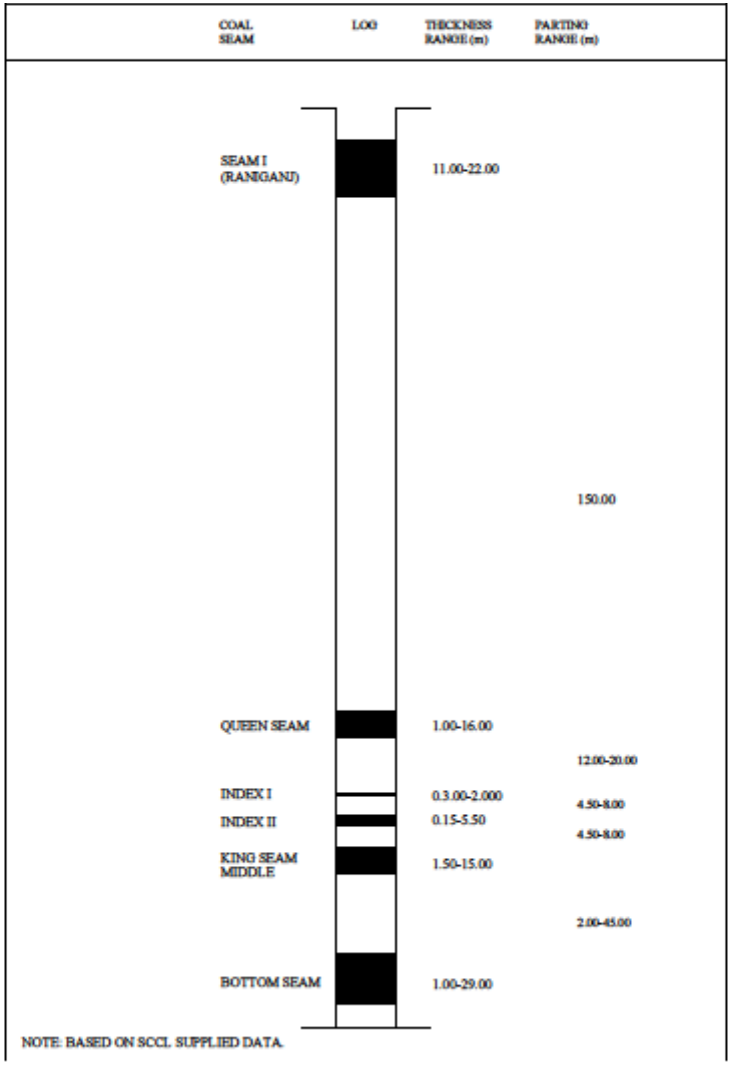
## Block Overview




| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | Pranhita Godavari |
| 2 | Age | Permian |
| 3 | Location | Telangana |
| 4 | Area (Sq. Km.) | 284.15 |
| 5 | Basin Category | III |
| 6 | Coal Field | Godavari |
| 7 | Coal rank | Bituminous B |

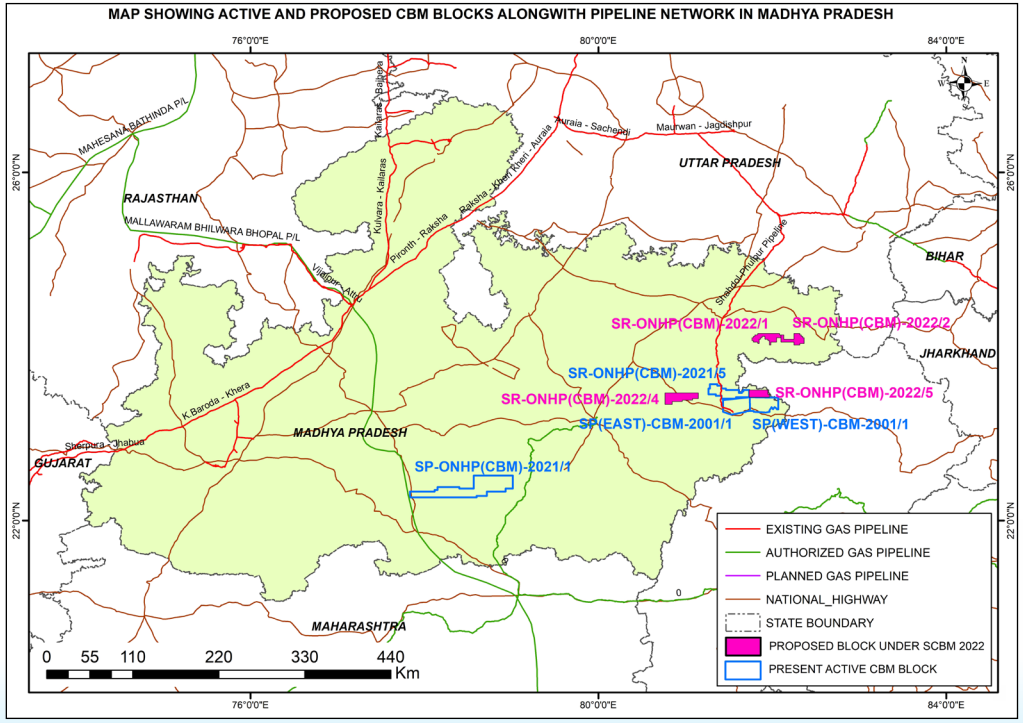
| | |
|---|---|
| Data Availability | |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 0 wells |
| Distance from Nearest Gas pipeline | 18 KM |

## SCHEMATIC LOG SECTION
## KOTHAGUDEM AREA, COAL FIELD



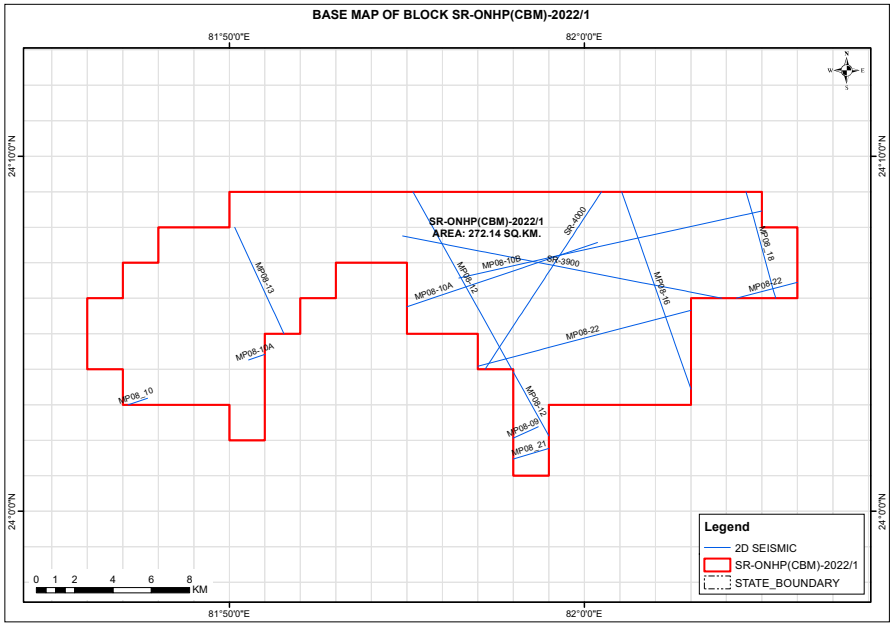
# Madhya Pradesh

| SL No | BLOCK | BASIN | AREA (Sq.km) | DISTRICT |
|---|---|---|---|---|
| 1 | SR-ONHP(CBM)-2022/1 | SOUTH REWA | 272.14 | SINGRAULI/SIDHI |
| 2 | SR-ONHP(CBM)-2022/2 | SOUTH REWA | 222.13 | SINGRAULI |
| 3 | SR-ONHP(CBM)-2022/4 | SOUTH REWA | 418.18 | UMARIA |
| 4 | SR-ONHP(CBM)-2022/5 | SOUTH REWA | 210.60 | SOHAGPUR |



# 8. SR-ONHP(CBM)-2022/1

## Block Overview

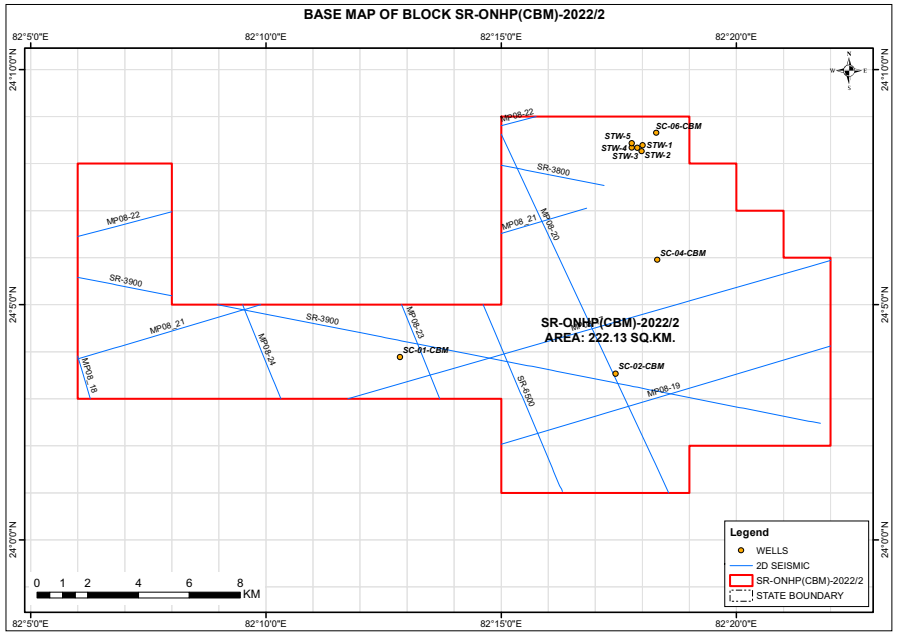



| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Madhya Pradesh |
| 4 | Area (Sq. Km.) | 272.14 |
| 5 | Basin Category | III |
| 6 | Coal Field | Singrauli |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 23.1-73.8 |
| 9 | Average Gas content ($m^3$/t) | 2.5 |
| 10 | Vit Reflectance (%) | 0.51-0.60 |
| 11 | Ash Content (%) | 8.2-55.6 |
| 12 | Average Permeability | 0.38-165 (600 850 m) adjacent SR Block |
| 13 | Coal rank | Bituminous C |

| | |
|---|---|
| Data Availability | 2D Seismic -106 LKM. |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | Nil |
| Distance from Nearest Gas pipeline | 41 KM |

# 9. SR-ONHP(CBM)-2022/2

## Block Overview



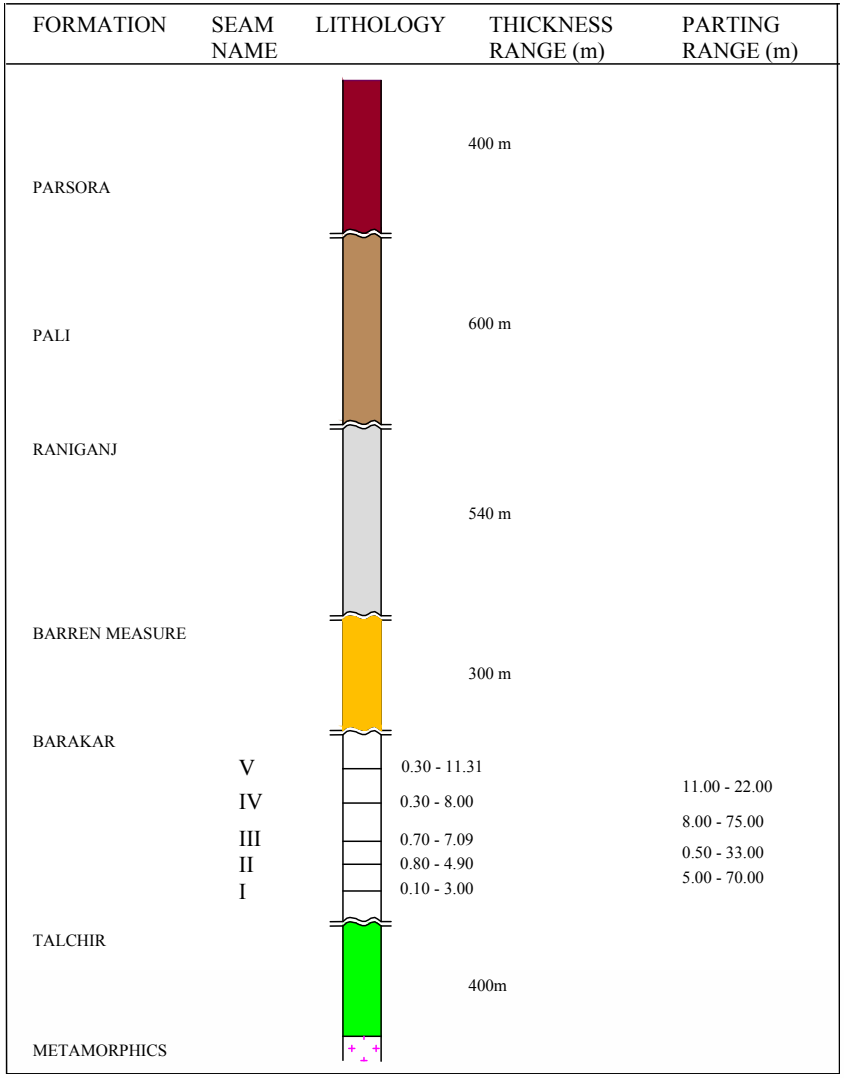

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Madhya Pradesh |
| 4 | Area (Sq. Km.) | 222 |
| 5 | Basin Category | III |
| 6 | Coal Field | Singrauli |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | ~45 |
| 9 | Average Gas content (m3/t) | 2.5 |
| 10 | Vit Reflectance (%) | 0.42-0.62 |
| 11 | Ash Content (%) | 19.8-38.2 |
| 12 | Average Permeability | 0.38-165 (600-800 m) |
| 13 | Coal rank | Bituminous C |

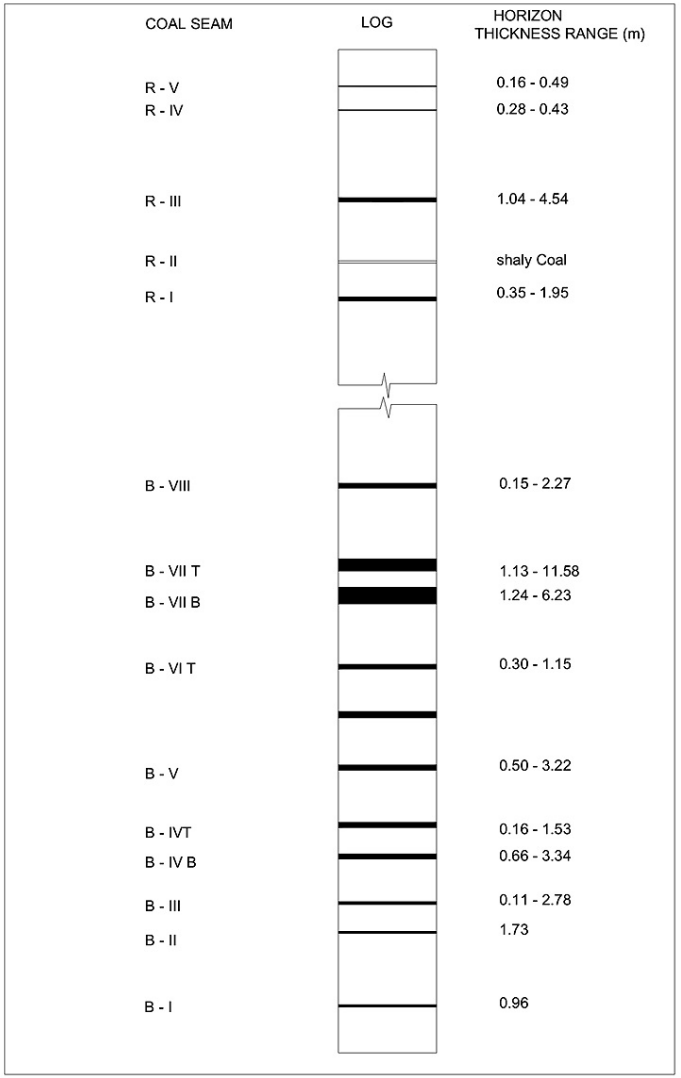
| | |
|---|---|
| Data Availability | 9 wells report and 2D Seismic -108 Sq.km. |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 9 Wells |
| Distance from Nearest Gas pipeline | 68 KM |

# SR-ONHP(CBM)-2022/1 & SR-ONHP(CBM)-2022/2

| Singrauli Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Maximum Thickness (m)** |
| Late Cretaceous | Deccan trap | Basic sills and dykes | 60 |
| UNCONFORMITY | | | |
| Early Triassic | Pali/Panchet Formation | Fine to coarse grained sandstone, white grey, green and buff shales | 150-250 |
| Upper Permian | Raniganj Formation | Fine-grained sandstone, shale, carbonaceous shale and thin coal seams | Maximum 200 |
| Middle Permian | Barren Measures | White, greenish white coarse-grained ferruginous sandstone, green clays and shales | 40-100 |
| Lower Permian | Barakar Formation | Medium to coarse grained sandstone, shales and coal seams | 120-500 |
| Early Permian | Talchir Formation | Diamictite, calcareous sandstones, green shales | - |
| UNCONFORMITY | | | |
| Proterozoic | Mahakosal group and Sarguja crystalline | Migmatites, gneiss and meta-sediments. | |

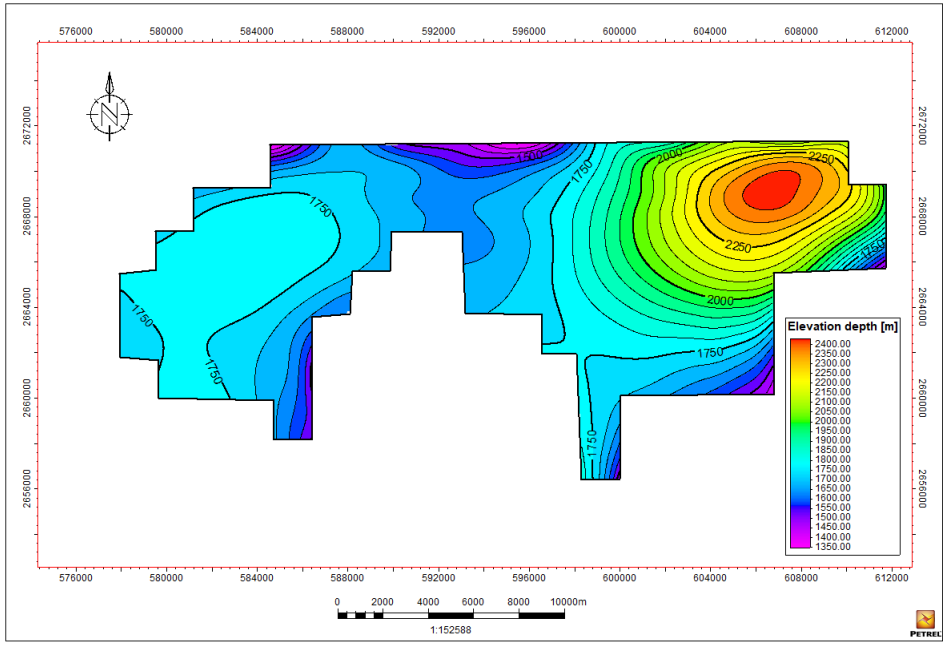
## SCHEMATIC LOG SECTION SOHAGPUR COALFIELD



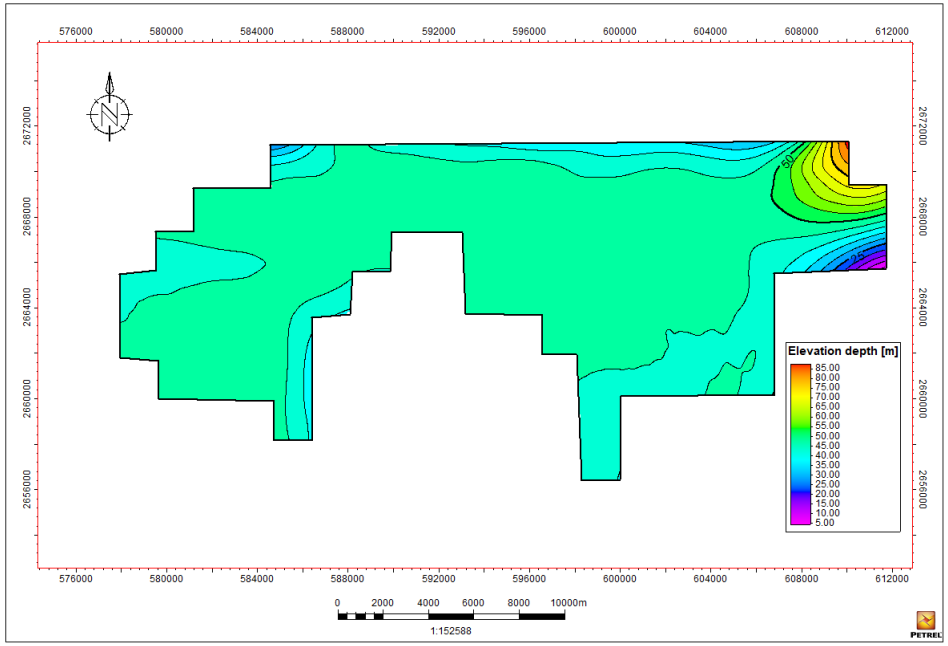



# SR-ONHP(CBM)-2022/1

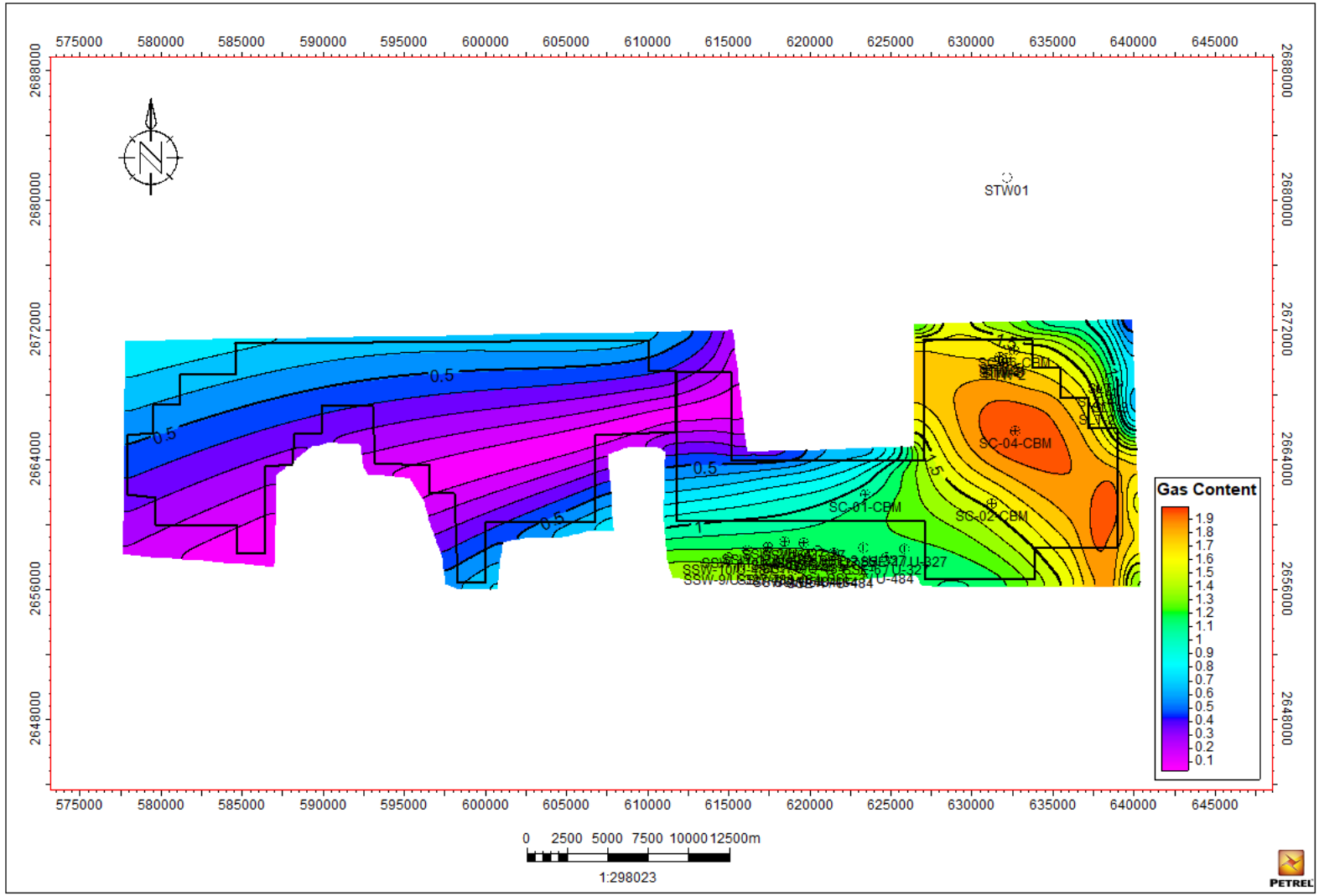
## Barakar Top



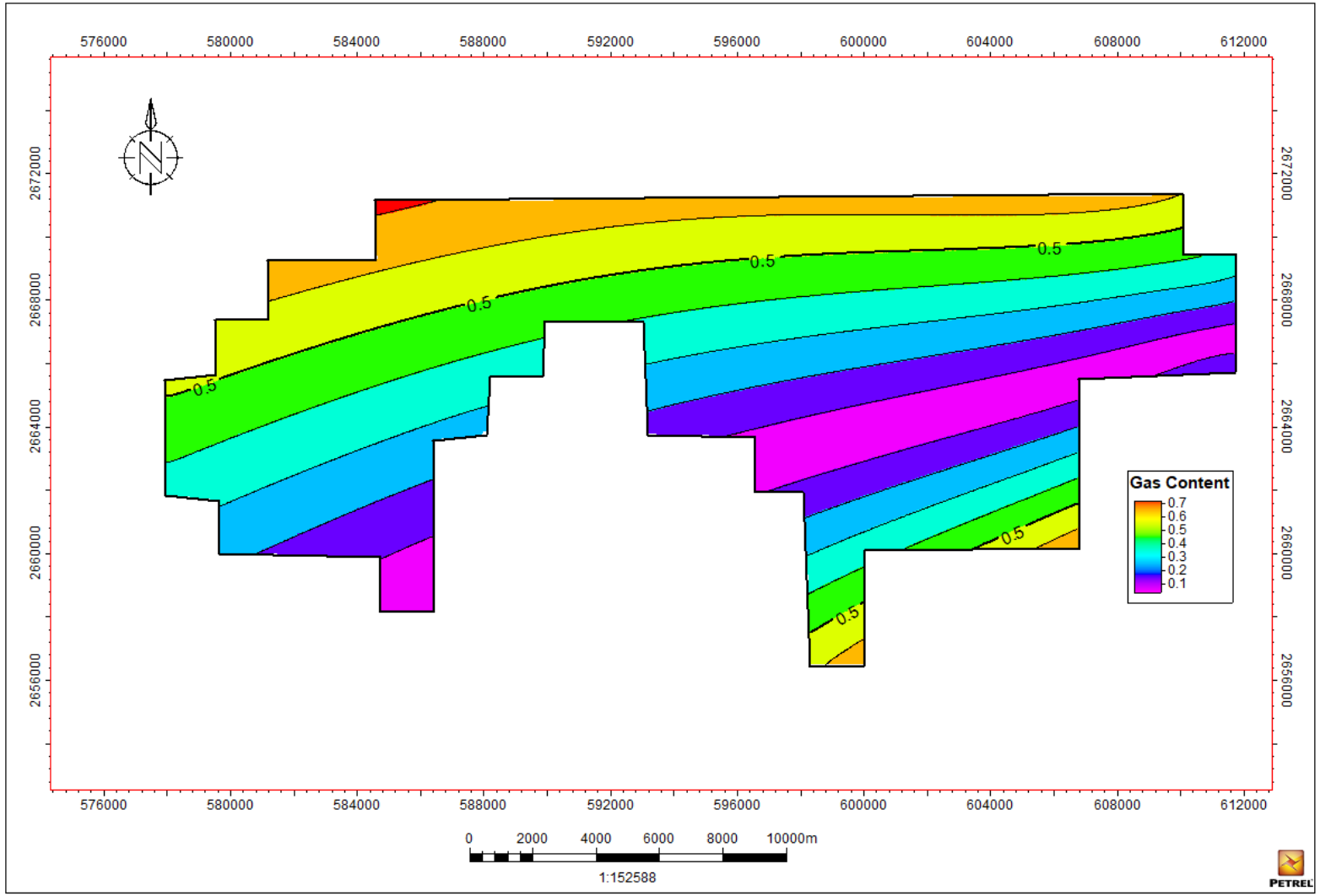

## Barakar Bottom



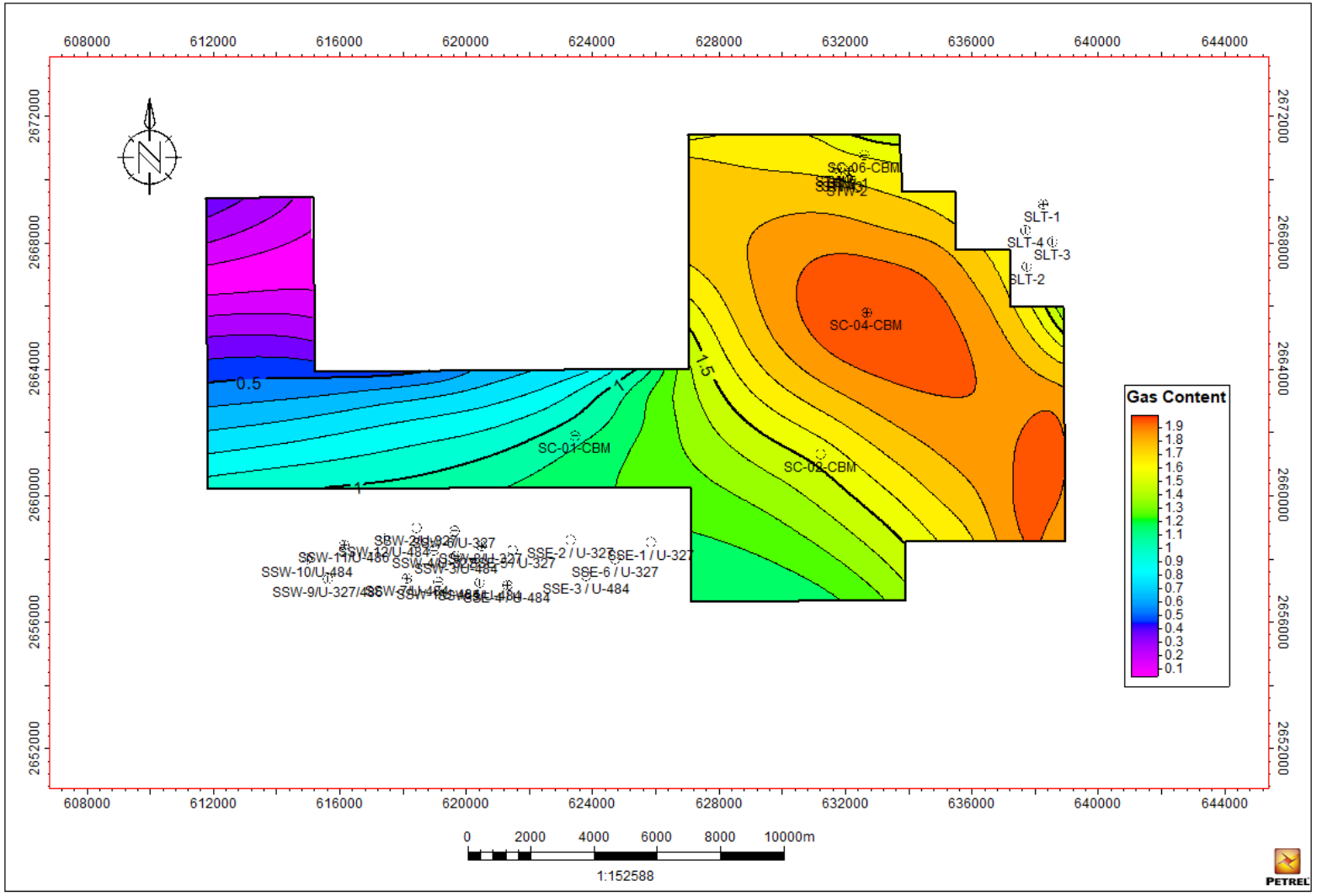
# SR-ONHP(CBM)-2022/1 & SR-ONHP(CBM)-2022/2
## Gas Content Map ($m^3$/ton)



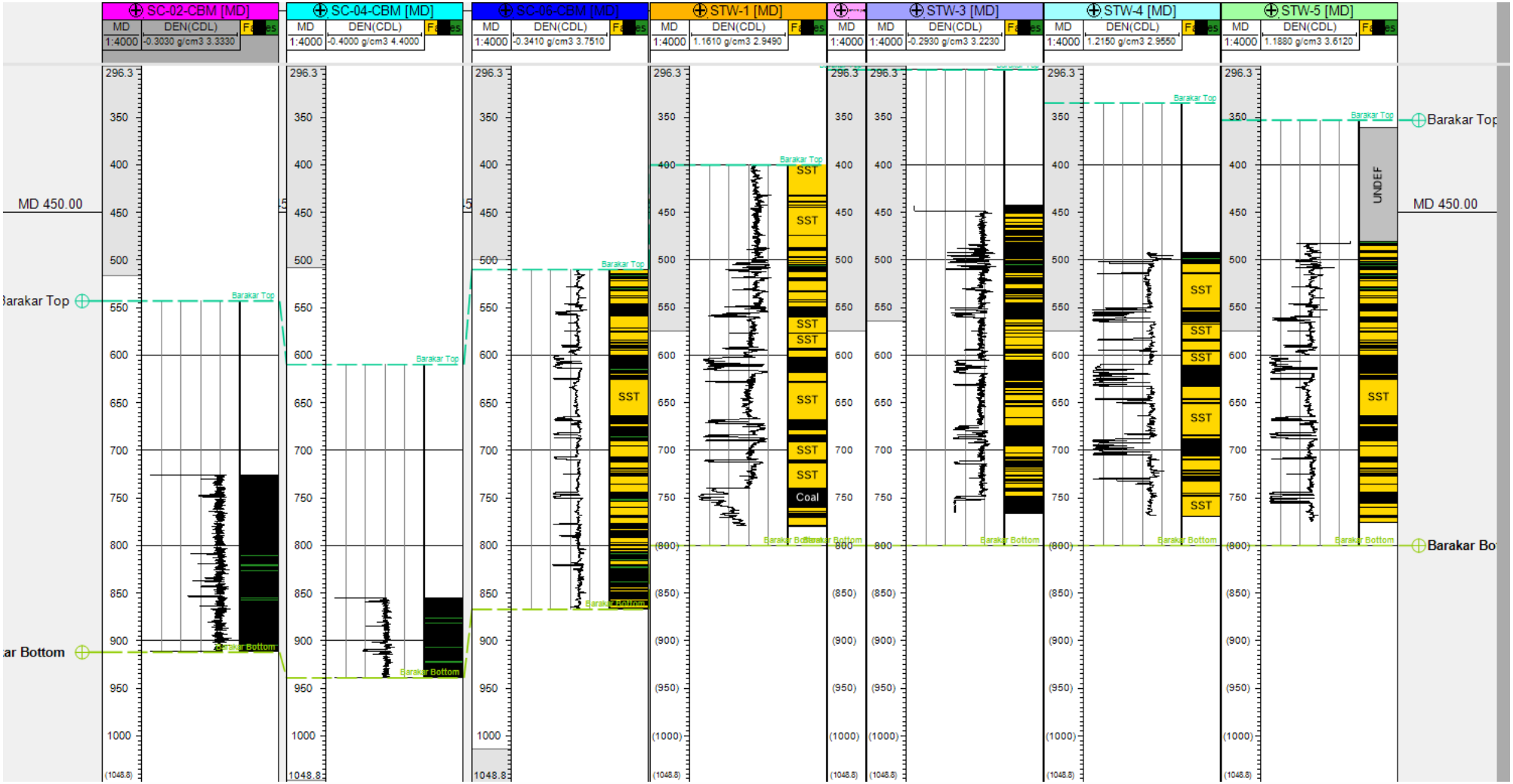
# SR-ONHP(CBM)-2022/1
# Gas Content Map ($m^3$/ton)



# SR-ONHP(CBM)-2022/2
# Gas Content Map ($m^3$/ton)

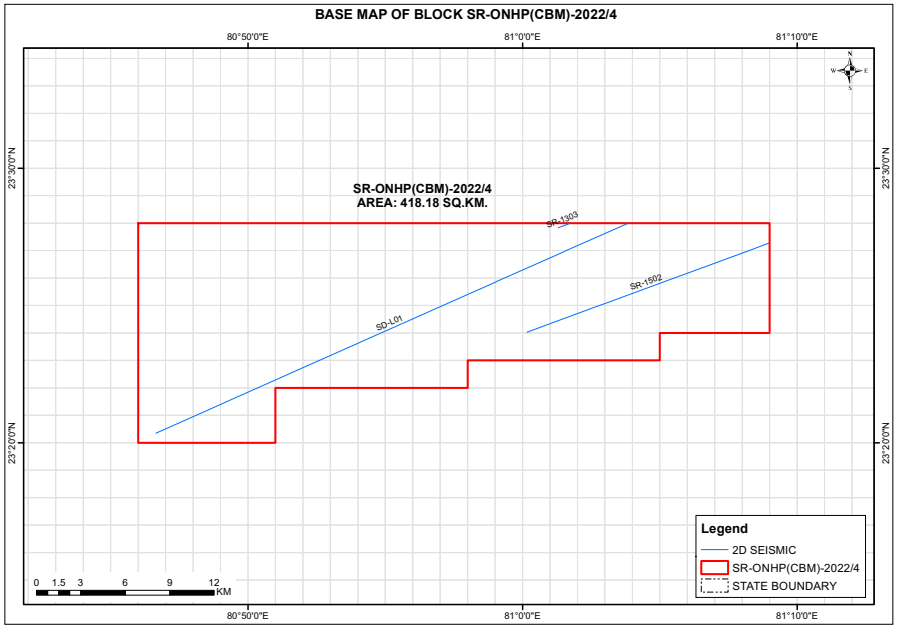


# SR-ONHP(CBM)-2022/2
## Well cross section



# 10. SR-ONHP(CBM)-2022/4

## Block Overview



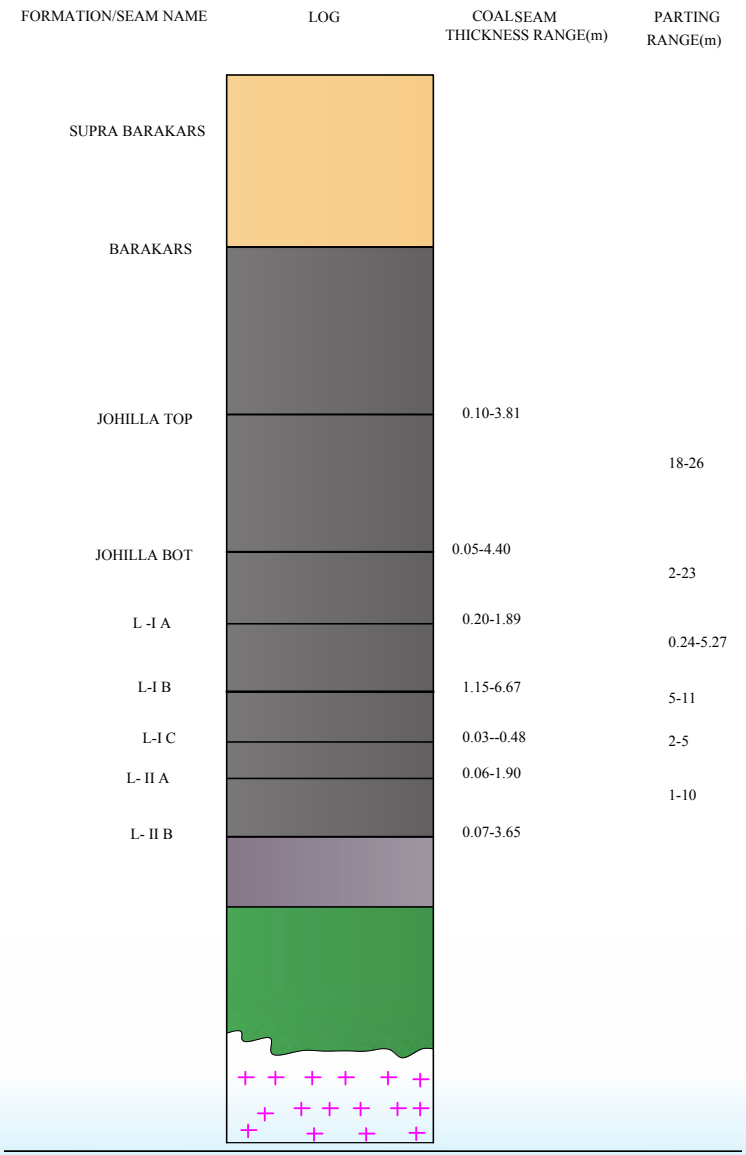

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin and | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Madhya Pradesh |
| 4 | Area (Sq. Km.) | 418.18 |
| 5 | Category | III |
| 6 | Coal Field | Johilla |
| 7 | Target Formation | Johilla coal seams top and bottom |
| 8 | Vitrinite content (%) | 28-34 |
| 9 | Average Gas content (m3/t) | 3 |
| 10 | Vit Reflectance (%) | 0.40-0.43 |
| 11 | Ash Content (%) | 18.6-29.4 |
| 12 | Coal rank | Sub Bituminous C |

| | |
|---|---|
| Data Availability | 2D Seismic 49 LKM |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | Nil |
| Distance from Nearest Gas pipeline | |

# SR-ONHP(CBM)-2022/4

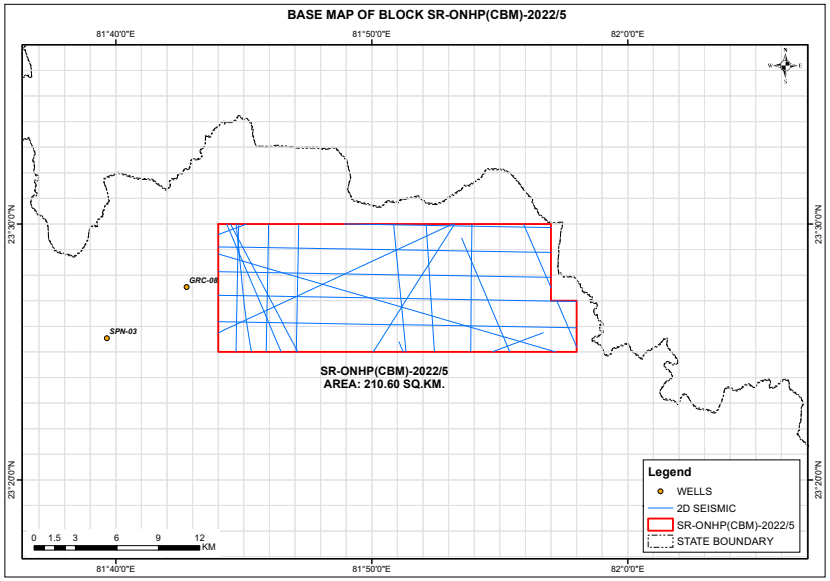
| Johila Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Maximum Thickness (M)** |
| Late Cretaceous to Eocene | Deccan Trap | Basalt flow and dolerite dyke | |
| Late Cretaceous | Lameta Formation | Pink to brownish calcareous sandstone and marlstone | 30 |
| Early to Middle Jurassic | Parsora Formation | Mature Sandstone, very fine to coarse grained, light grey to buff color with brownish, purple and lavender tint | 125 |
| Middle to Early Triassic | Pali Formation | Mineralogically as well as texturally immature sandstone, medium to coarse grained, light grey, brown, coffee brown, buff white, brick red, with brownish and violet tints, contains feldspar, mica, clay patches and galls. | 125 |
| Late Permian | Raniganj Formation | Grey shale with coal streaks and dark grey carbonaceous shale, greenish grey to olive green siltstone, mudstone, claystone interbedded with immature feldspathic sandstone. | 450 |
| Middle Permian | Barren Measures | Upper part with immature feldspathic sandstone with minor amount of shale/ siltstone/clatystone: Lower part with thick argillaceous horizons. | 300 |
| Early Permian | Barakar | Feldspathic sandstone, shale and coal seams | 250 |
| Late Carboniferous to Early Permian | Talchir | Tillite:sandstones, green shales, siltstone, diamictite | |
| Pre-Cambrian | Crystalline Basement | Granite gneiss(porphyritic granite with large phenocryst of pink feldspar) mica schists and quartzites. | |

## SCHEMATIC LOG SECTION
## JOHILLA, COAL FIELD



# 11. SR-ONHP(CBM)-2022/5

## Block Overview

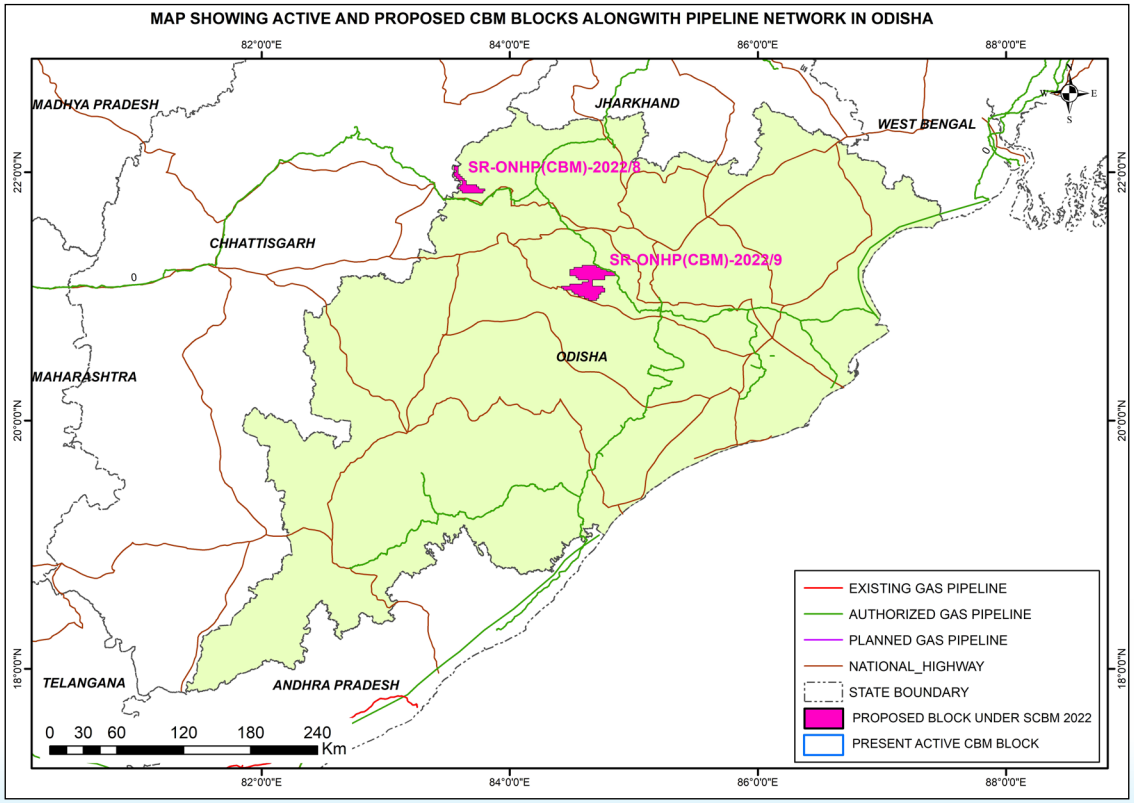



| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Madhya Pradesh |
| 4 | Area (Sq. Km.) | 211 |
| 5 | Category | III |
| 6 | Coal Field | Sohagpur |
| 7 | Target Formation | Barakar Coal Seams I, III,IV &V |
| 8 | Vitrinite content (%) | 55.4-60.2 |
| 9 | Vit Reflectance (%) | 0.51-0.54 |
| 10 | Ash Content (%) | 10.2-13.5 |
| 11 | Coal rank | High Volatile Bituminous B |

| | |
|---|---|
| Data Availability | 266.93 LKM 2D SEISMIC |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 0 wells |
| Distance from Nearest Gas pipeline | 33 KM |

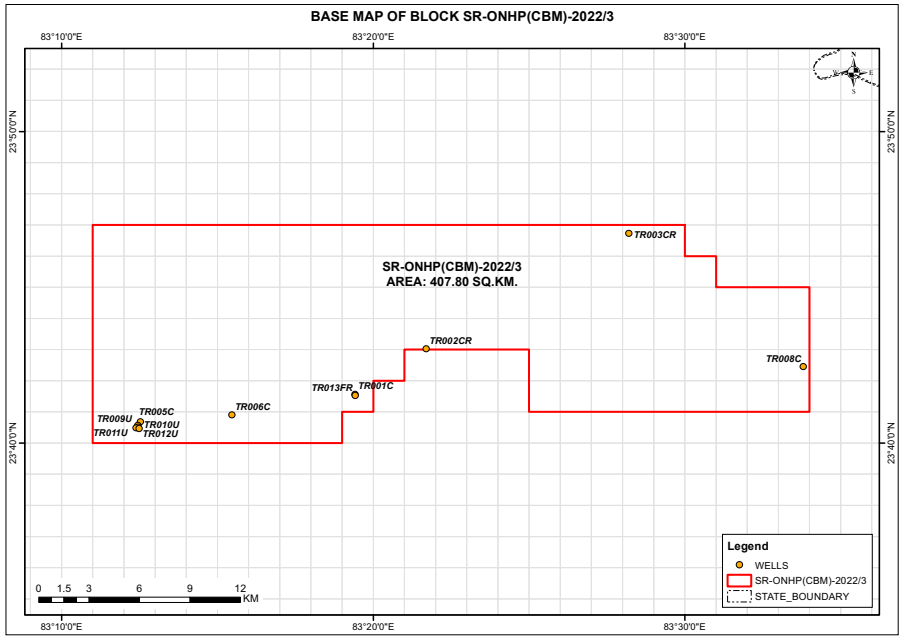
# Chhatishgarh

| SL No | BLOCK | BASIN | AREA (Sq.km) | DISTRICT |
|---|---|---|---|---|
| 1 | SR-ONHP(CBM)-2022/3 | SOUTH REWA | 407.80 | BALRAMPUR |
| 2 | SR-ONHP(CBM)-2022/6 | SOUTH REWA | 88.01 | KOREA |
| 3 | SR-ONHP(CBM)-2022/7 | SOUTH REWA | 590.00 | RAIGARH/KORBA |



# 12. SR-ONHP(CBM)-2022/3

## Block Overview



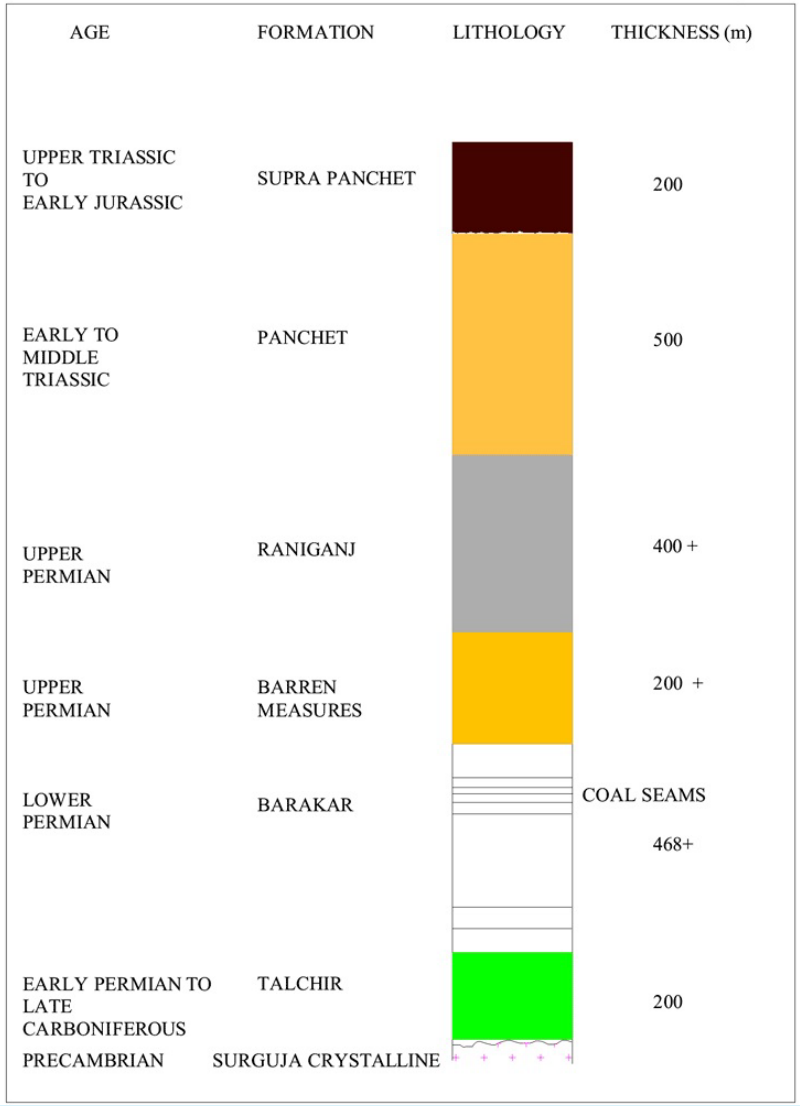

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Chhattisgarh |
| 4 | Area (Sq. Km.) | 407.8 |
| 5 | Category | III |
| 6 | Coal Field | Tatapani Ramkola |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 29.92-67.4 |
| 9 | Average Gas content (m3/t) | 4 |
| 10 | Vit Reflectance (%) | 0.57-0.9 |
| 11 | Ash Content (%) | 10.5-14.8 |
| 12 | Average Permeability | 11-18 |
| 13 | Coal rank | Medium Volatile Bituminous B/C |

| | |
|---|---|
| Data Availability | 11 well reports |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 11 wells |
| Distance from Nearest Gas pipeline | 145 KM |

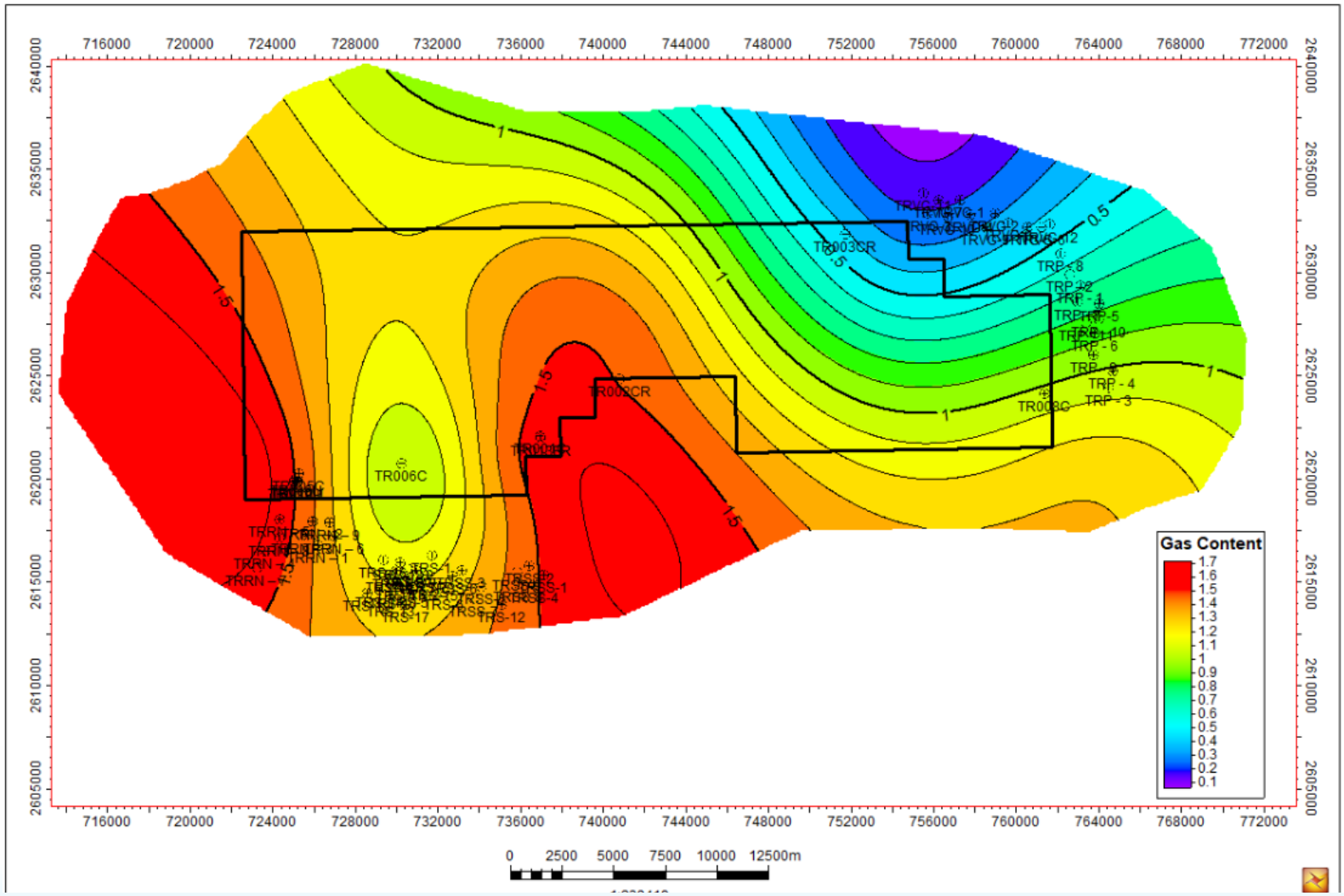
# SR-ONHP(CBM)-2022/3

| Tata-Pani Ramkola Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Maximum Thickness (M)** |
| Upper Triassic to Early Jurassic | Supra-Panchet | Dirty white to brick red, medium to coarse-grained arenite with oligomictic conglomerate, red clay | 200 |
| | | UNCONFORMITY | |
| Early to Middle Triassic | Panchet | Cross-bedded white to red mottled medium to coarse grained arkose, red and variegated clay. | 500 |
| Upper Permian | Raniganj | Fine to medium grained micaceous sandstone, grey and carbonaceous shale's, impersistent Coal seams. | 400+ |
| Upper Permian | Barren Measures | Predominantly grey to black shale with light grey fine to medium-grained felspathic sandstone. | 200+ |
| Lower Permian | Barakar | Dirty white to light grey fine to coarse-grained arkose's pebble bed, debris flow deposit, grey and carbonaceous shales, Coal seams. | 468+ |
| Early Permian to Late Carboniferous | Talchir | Diamictites, coarse to fine grained sandstone, green shale, limestone bands. | 200 |
| | | UNCONFORMITY | |
| Pre-Cambrian | Surguja Crystalline | Granite, gneiss, mica schist phyllite, quartzite, etc. | |

**SCHEMATIC LOG SECTION OF COAL SEAMS, TATAPANI RAMKOLA COALFIELD**

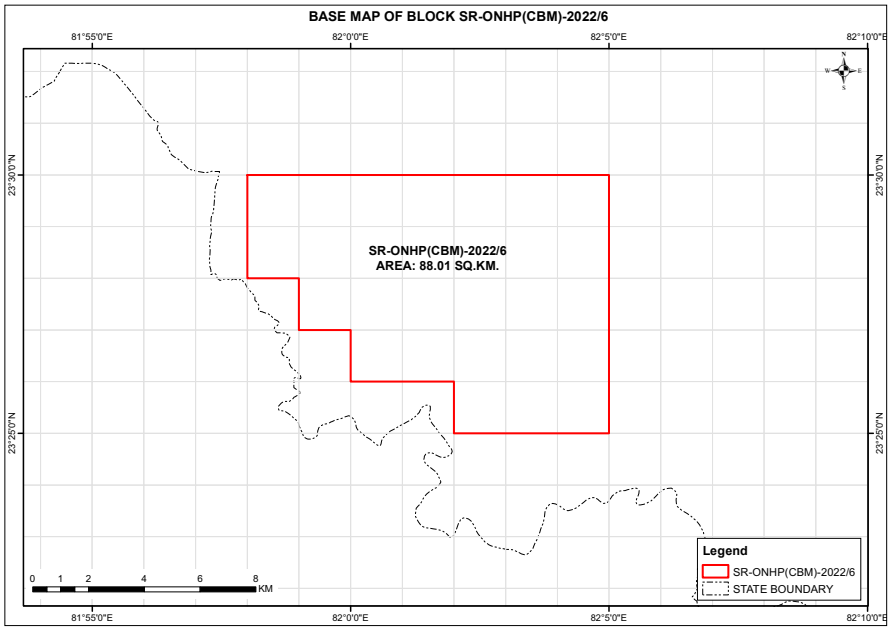


# SR-ONHP(CBM)2022/3
# Gas content map ($m^3$/ton)



# 13. SR-ONHP(CBM)-2022/6

## Block Overview

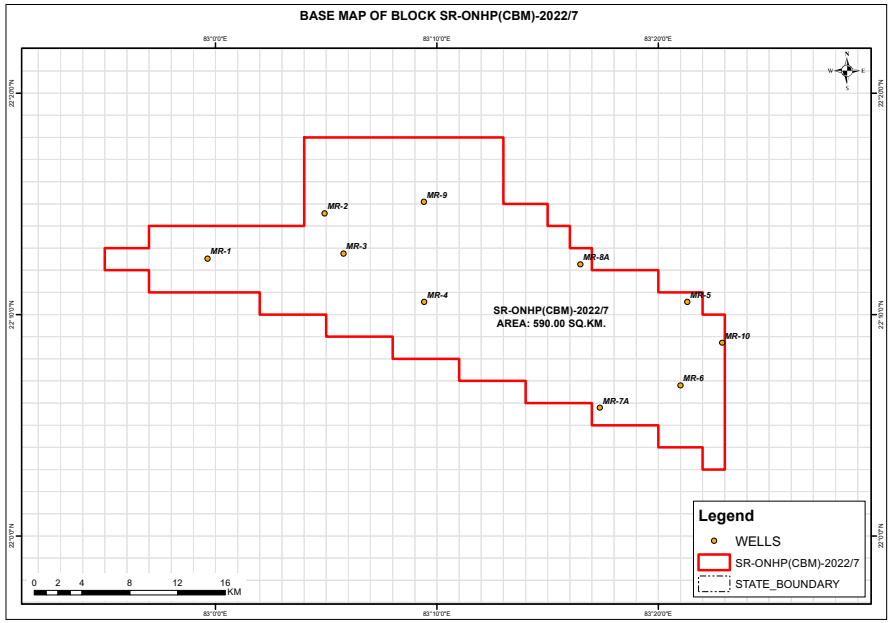



| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Chhatishgarh |
| 4 | Area (Sq. Km.) | 88 |
| 5 | Basin Category | III |
| 6 | Coal Field | Sohagpur |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 47.6-57.6 |
| 9 | Average Gas content (m3/t) | 0.58-6.02 |
| 10 | Vit Reflectance (%) | 1.3-1.69 |
| 11 | Ash Content | 12.6-61.3 |
| 12 | Coal rank | High Volatile Bituminous B |

| | |
|---|---|
| Data Availability | No data available |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 0 wells |
| Distance from Nearest Gas pipeline | 33 KM |

# 14. SR-ONHP(CBM)-2022/7

## Block Overview



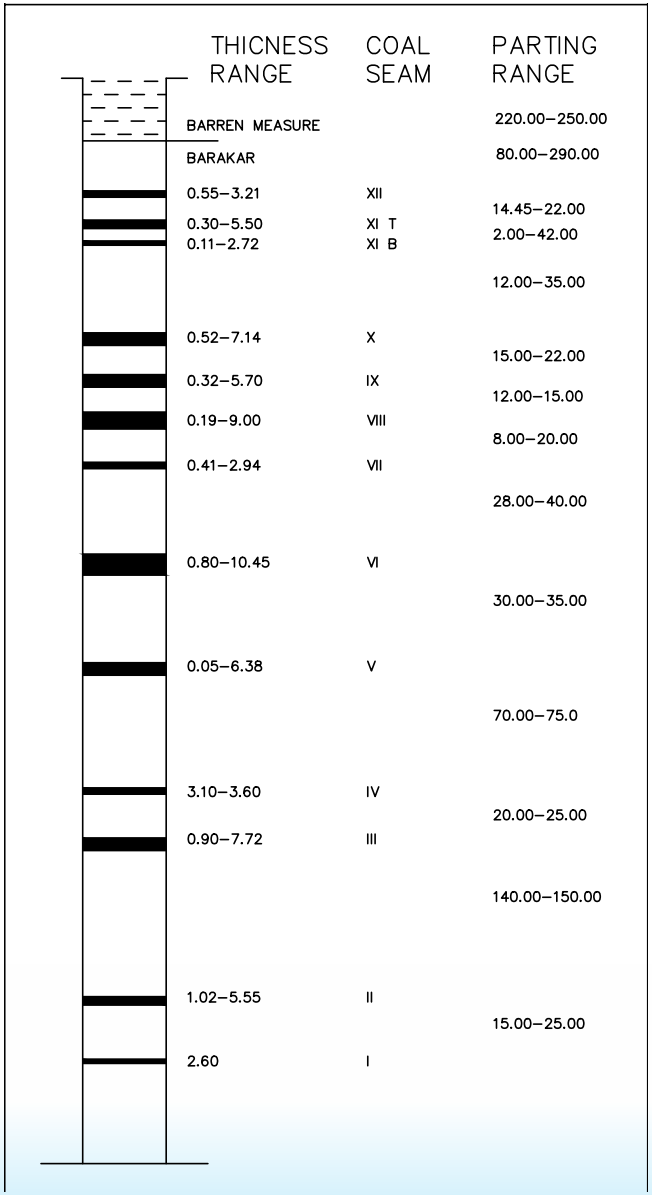

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Chhattishgarh |
| 4 | Area (Sq. Km.) | 590 |
| 5 | Basin Category | III |
| 6 | Coal Field | Mand Raigarh |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 44.9-45.7 |
| 9 | Average Gas content (m3/t) | 4.5-5.5 (>300m) |
| 10 | Vit Reflectance (%) | 0.40-0.62 |
| 11 | Ash Content | 34.5-48.8 |
| 12 | Coal rank | Bituminous A- B |

| | |
|---|---|
| Data Availability | 10 well reports |
| Nearest active Blocks | Sohagpur |
| Numbers of wells drilled | 10 Wells |
| Distance from Nearest Gas pipeline | 0 KM |

# SR-ONHP(CBM)-2022/7

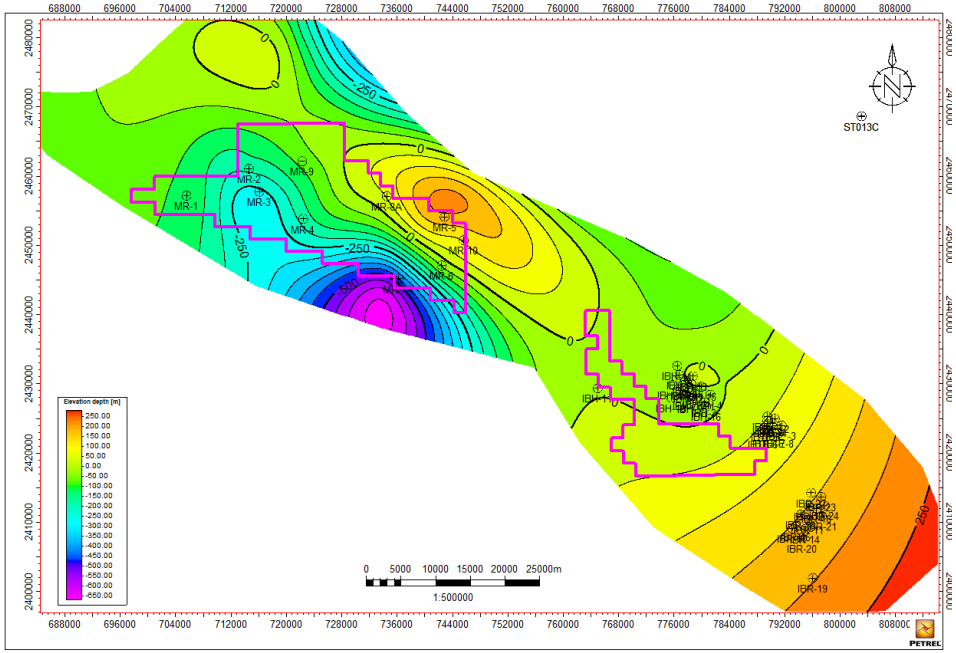
| Mand Raigarh Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Maximum Thickness (M)** |
| Recent | Alluvium | Up to 15 | |
| Lower Cretaceous | Rajmahal Trap | Basaltic lava flows with inter-trappen beds of shale and sandstone | 20 to over 200 |
| | | UNCONFORMITY | |
| Upper Triassic-Jurassic | Dubrajpur Formation | Medium to coarse grained ferruginous sandstone, pebbly sandstone, siltstone and chocolate shale | Up to 130 |
| | | UNCONFORMITY | |
| Lower Permian | Barakar Formation | Conglomerate, coarse to fine grained sandstone, carbonaceous shale, siltstone, Coal seams | 330-600 |
| Early Permian | Talchir Formation | Diamictite, Fine grained sandstone, chocolate and green shale. | 5-70 |
| | | UNCONFORMITY | |
| Pre-Cambrian | Unclassified metamorphites | Granite gneiss, Hornblende gneiss, Schists, Pegmatite | |

**SCHEMATIC LOG SECTION**
**MAND-RAIGARH, COAL FIELD**

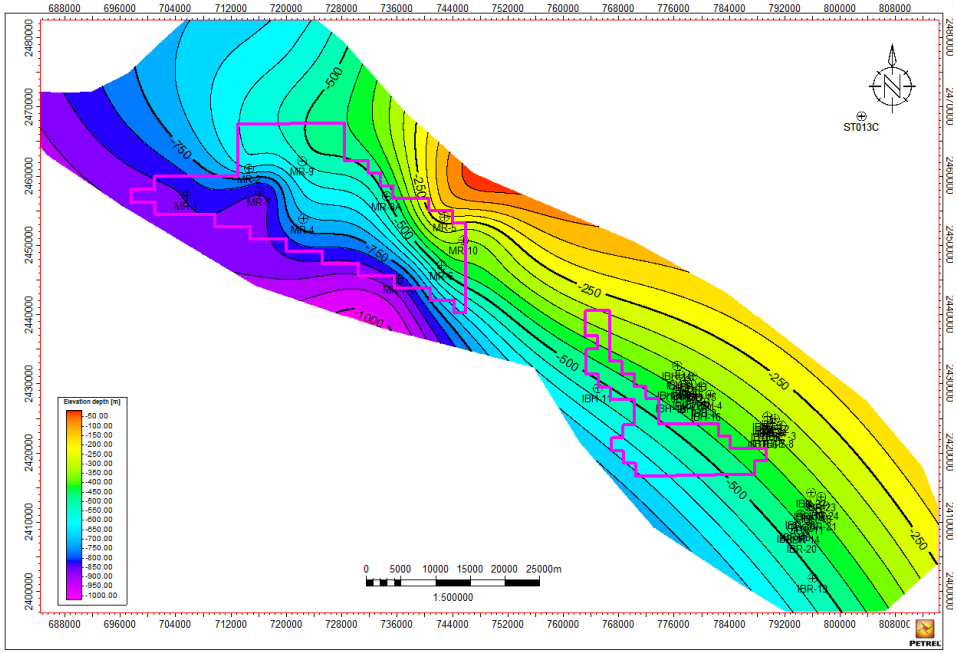


# SR-ONHP(CBM)-2022/7 & SR-ONHP(CBM)-2022/8

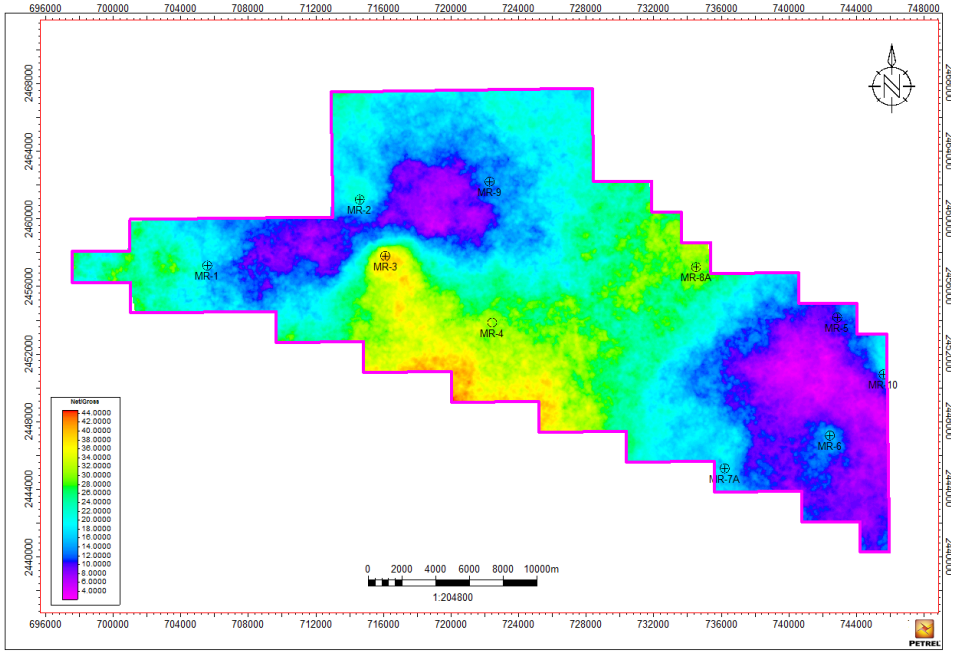
## Barakar Top

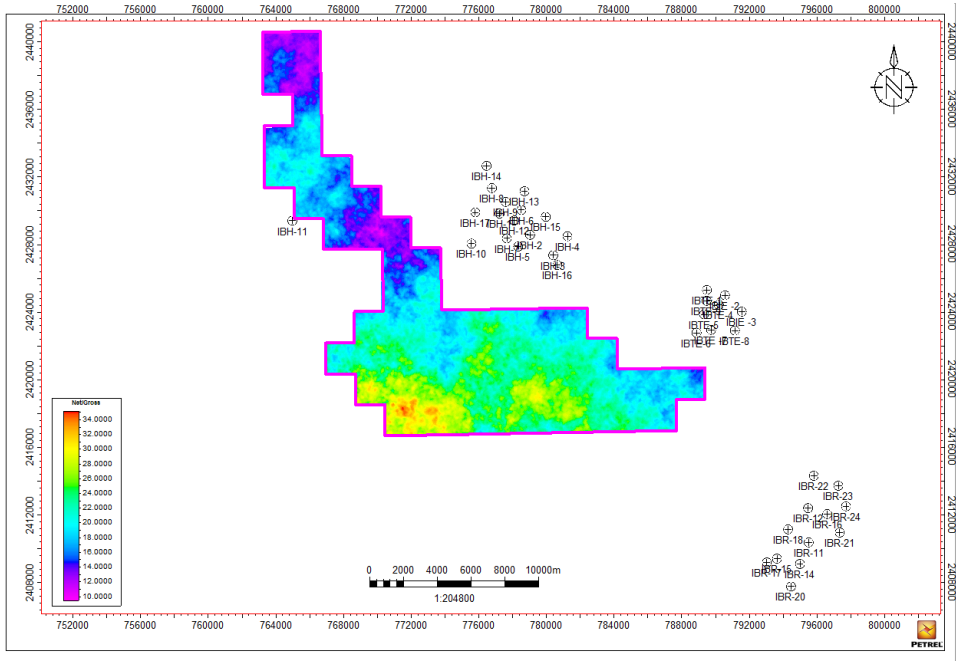



## Barakar Bottom



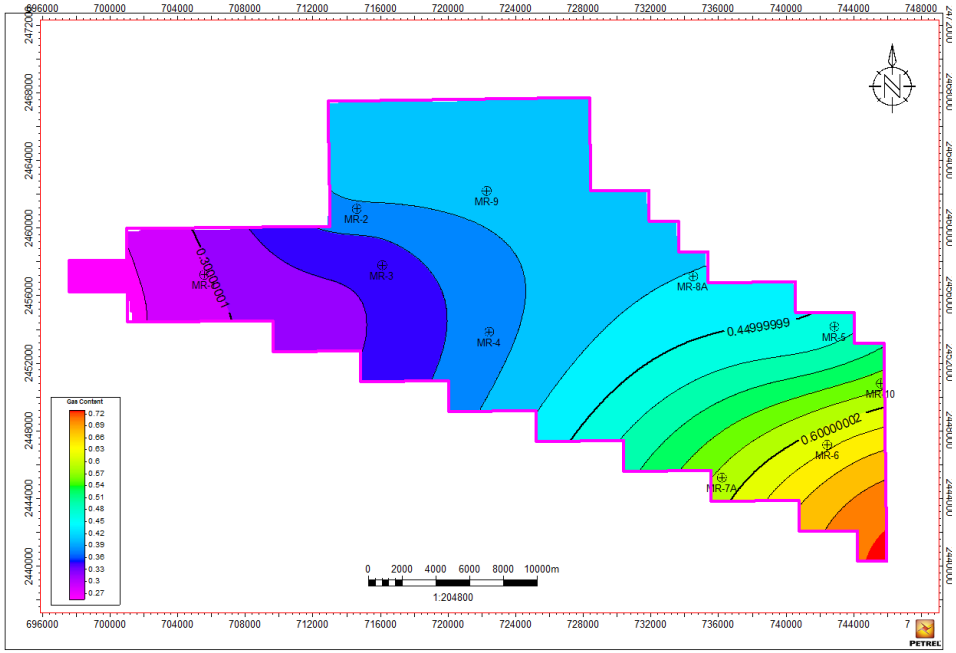
# SR-ONHP(CBM)-2022/7 & SR-ONHP(CBM)-2022/8
## Net Coal Pay Map



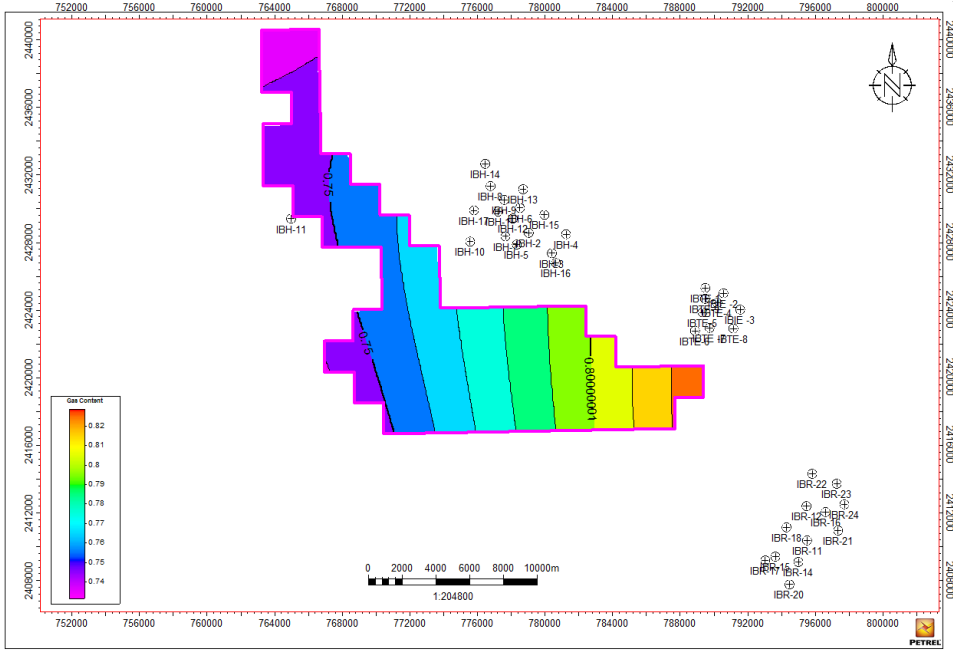



# Gas Content map ($m^3$/ton)

SR-ONHP(CBM)-2022/7

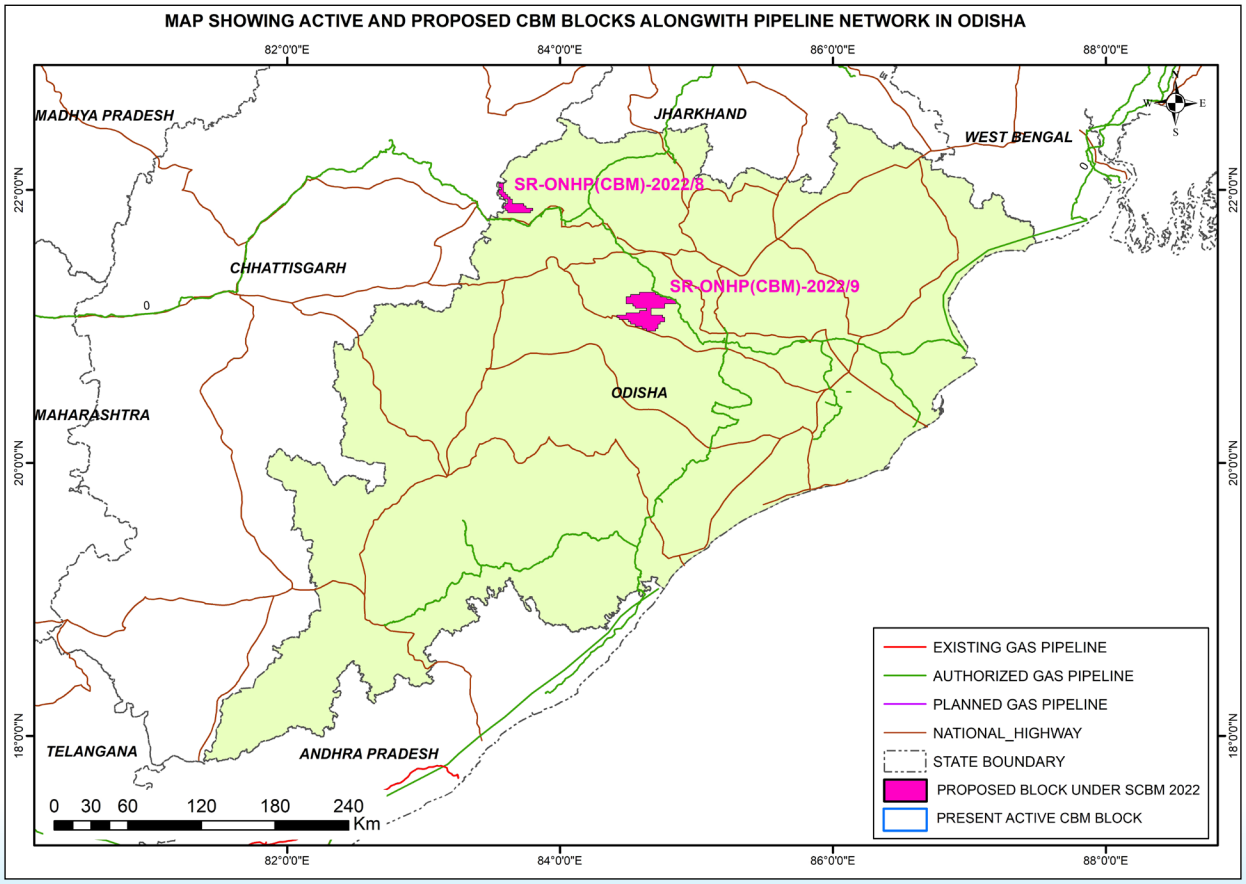



SR-ONHP(CBM)-2022/8



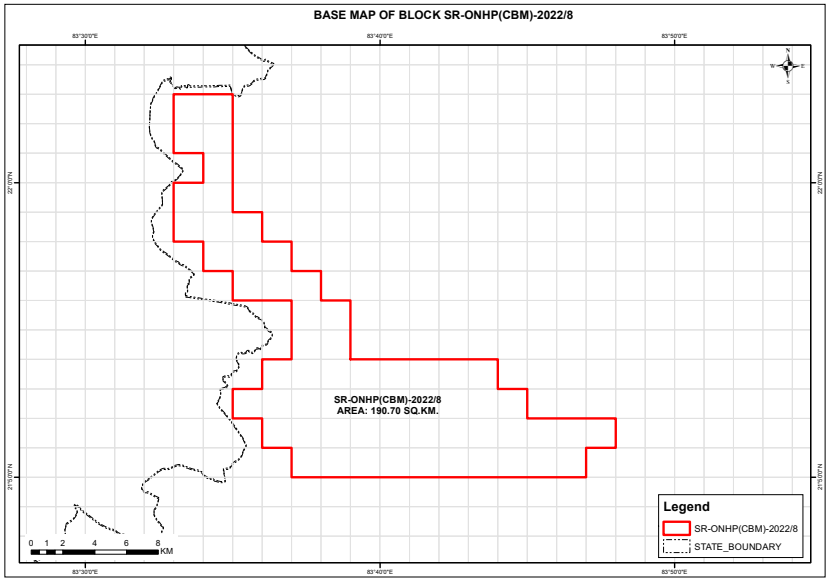
# Odisha

| SL No | BLOCK | BASIN | AREA (Sq.km) | DISTRICT |
|---|---|---|---|---|
| 1 | SR-ONHP(CBM)-2022/8 | SOUTH REWA | 190.70 | SUNDERGARH |
| 2 | SR-ONHP(CBM)-2022/9 | SOUTH REWA | 693.33 | SAMBALPUR/ANGUL/DEOGARH |



# 14. SR-ONHP(CBM)-2021/8

## Block Overview



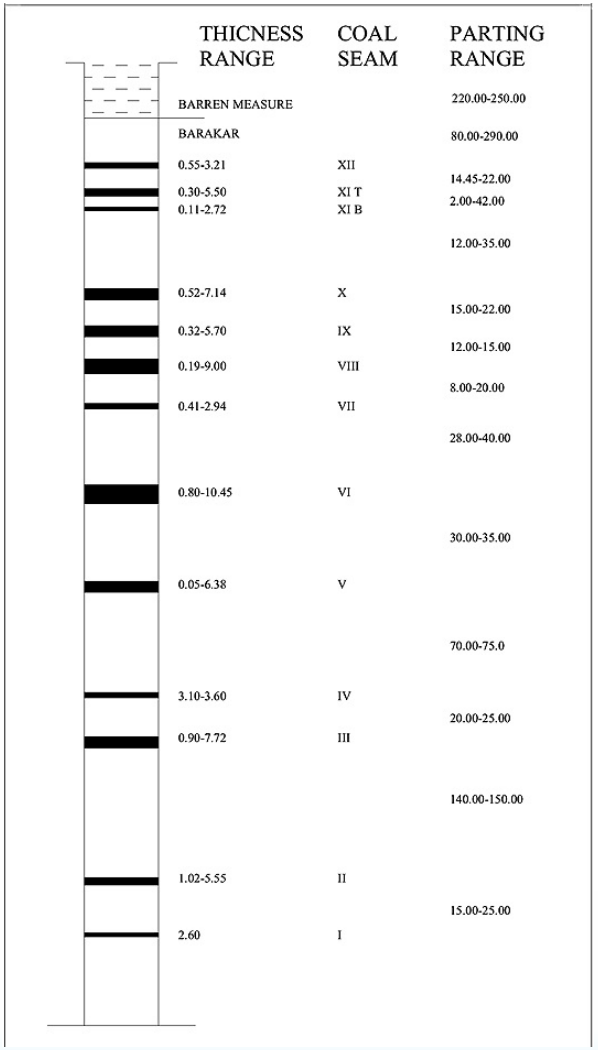

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Odisha |
| 4 | Area (Sq. Km.) | 190.70 |
| 5 | Basin Category | III |
| 6 | Coal Field | Talchir |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 17.7-60.4 |
| 9 | Average Gas content (m3/t) | 3 |
| 10 | Vit Reflectance (%) | 0.41-0.57 |
| 11 | Ash Content (%) | 24.5-49.7 |
| 12 | Average Permeability | 1.5-5 |
| 13 | Coal rank | Bituminous B |

| | |
|---|---|
| Data Availability | Zero data |
| Nearest active Blocks | Raniganj |
| Numbers of wells drilled | No wells |
| Distance from Nearest Gas pipeline | 05 Km |

# SR-ONHP(CBM)-2021/8

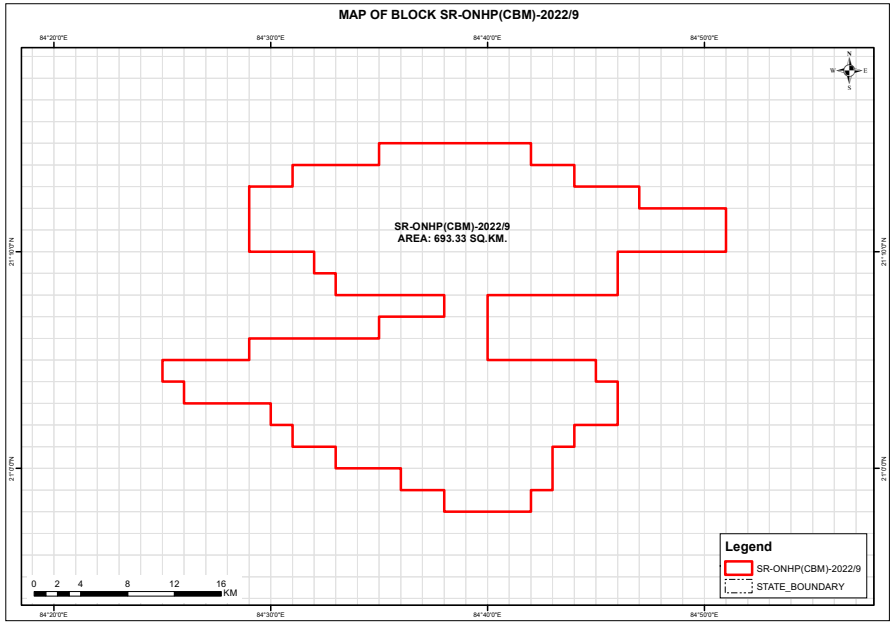
| IB Valley Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Thickness range(m** |
| Early to Middle Triassic | Kamthi | Pebbly sandstone, ferruginous sandstone and red shales | 50 – 200+ |
| | | UNCONFORMITY | |
| Upper Permian | Raniganj | Fine to medium grained sandstone, siltstone, shale and coal seams. | 300+ |
| Upper Permian | Barren Measures | Grey to dark grey shales with phosphatic clay, ironstone bands, sandstones and rare thin coal seams. | 300+ |
| Lower Permian | Barakar Formation | Felspathic sandstone, grey and carbonaceous shales, fireclay and coal seams. | 350-550 |
| Basal Permian | Karharbari | Mostly coarse grained sandstone, fireclay and one coal horizon. | 90 – 125 |
| Upper Carboniferous to Early Permian | Talchir | Diamictite, greenish sandstone, Olive and chocolate shales and rthymites. | 130+ |
| | | UNCONFORMITY | |
| Precambrian | | Granite, gneisses, amphibolites | |

**SCHEMATIC LOG SECTION**
**IB VALLEY, COAL FIELD**



# 15. SR-ONHP(CBM)-2022/9

## Block Overview



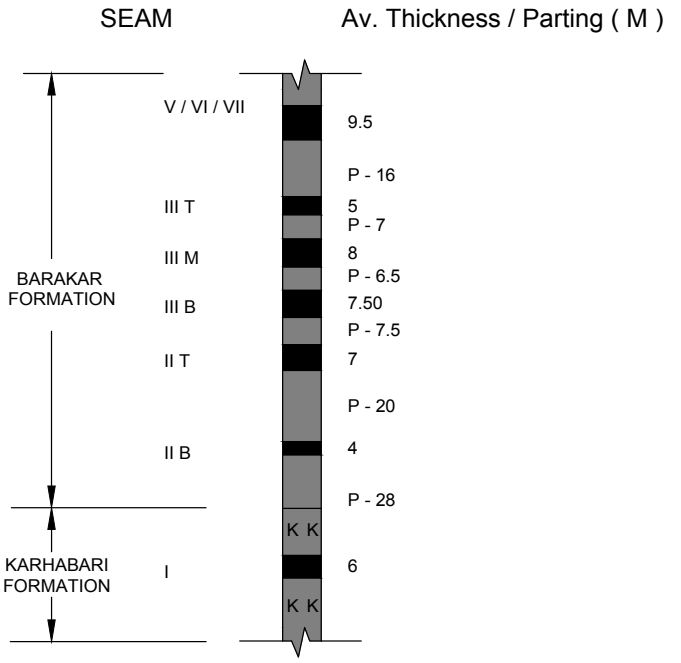

| S. No. | Particular | Details |
|---|---|---|
| 1 | Basin | South Rewa |
| 2 | Age | Permian |
| 3 | Location | Odisha |
| 4 | Area (Sq. Km.) | 693.33 |
| 5 | Basin Category | III |
| 6 | Coal Field | Talchir |
| 7 | Target Formation | Barakar |
| 8 | Vitrinite content (%) | 17.7-60.4 |
| 9 | Average Gas content (m3/t) | 3 |
| 10 | Vit Reflectance (%) | 0.41-0.57 |
| 11 | Ash Content (%) | 24.5-49.7 |
| 12 | Average Permeability | 1.5-5 |
| 13 | Coal rank | Bituminous B |

| | |
|---|---|
| Data Availability | No data available |
| Nearest active Blocks | Raniganj |
| Numbers of wells drilled | No wells available |
| Distance from Nearest Gas pipeline | 0 Km |

# SR-ONHP(CBM)-2022/9

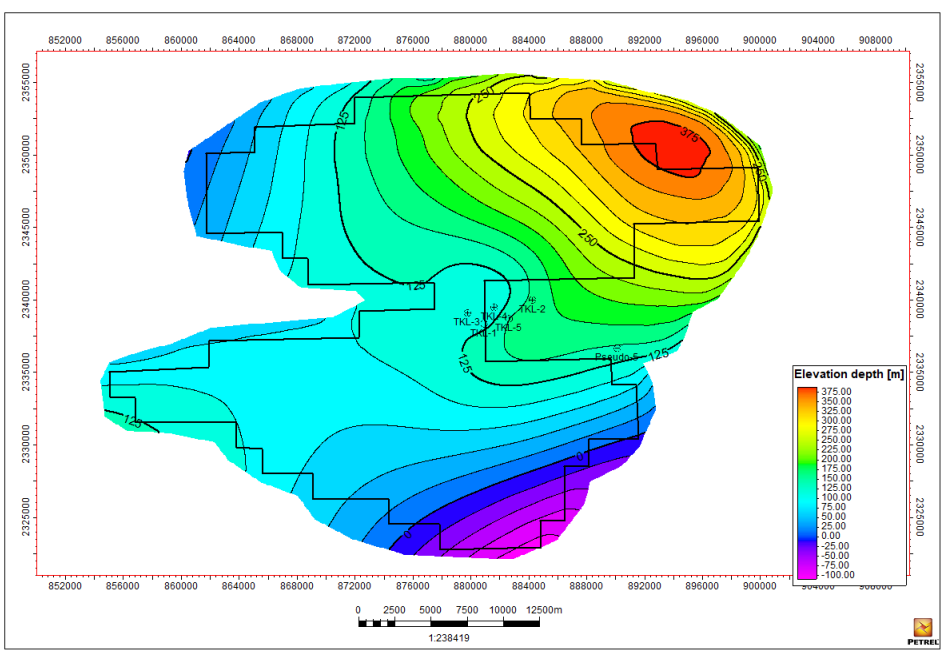
| Talchir Valley Coal Field | | | |
|---|---|---|---|
| **Age** | **Formation** | **Lithology** | **Max Thickness (m)** |
| Triassic | Kamthi | Conglomerates, ferruginous sandstone, pink to red shale argillaceous at the bottom, arenaceous and pebbly towards the top part. | 550+ |
| | | UNCONFORMITY | |
| Upper Permian | Barren Measures | Light grey to greenish grey fine grained sandstone, occasional medium to coarse grained cross bedded sandstones, grey shale, chocolate shale, carbonaceous shale and then coal seams. | 411+ |
| Lower Permian | Barakar Formation | Greyish white to white, coarse, medium to fine grained arkosic sandstone, siltstone grey shale coal seams. A gritty sandstone to conglomerate horizon at the base. | 450+ |
| Early Permian | Karharbari | Coarse to medium grained white sandstone, grey and carbonaceous shales and coal seams. | 240 |
| Early Permian to Upper Carboniferous | Talchir Formation | Diamictite, turbidites, varves, fine to medium grained sandstone | 325+ |
| | | UNCONFORMITY | |
| Precambrian | | Granite, gneisses, migmatite, amphibolites, mica schist, quartzite etc. | |

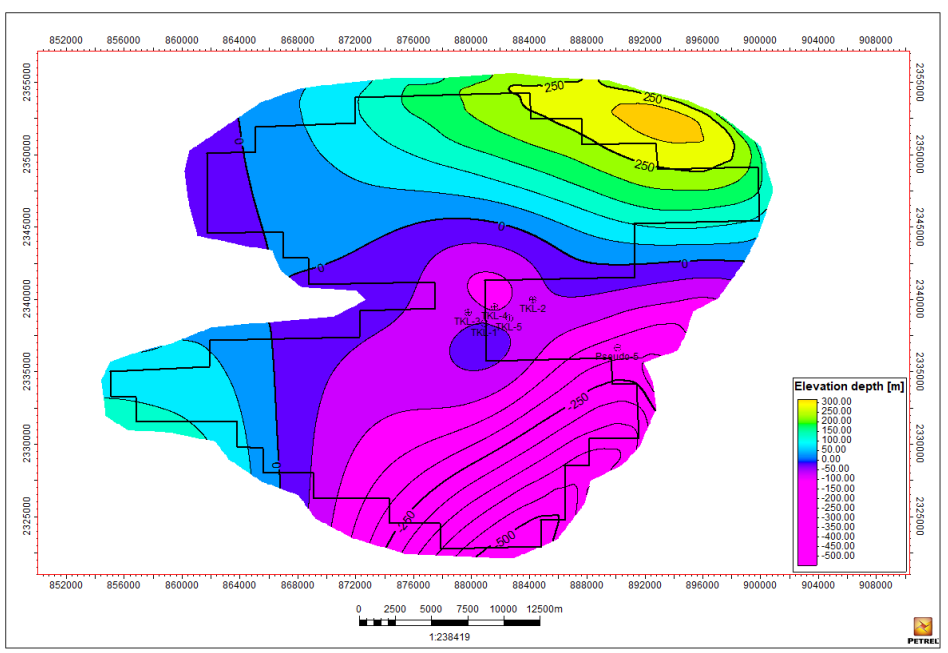
**SCHEMATIC LOG SECTION**
**TALCHIR VALLEY, COAL FIELD**



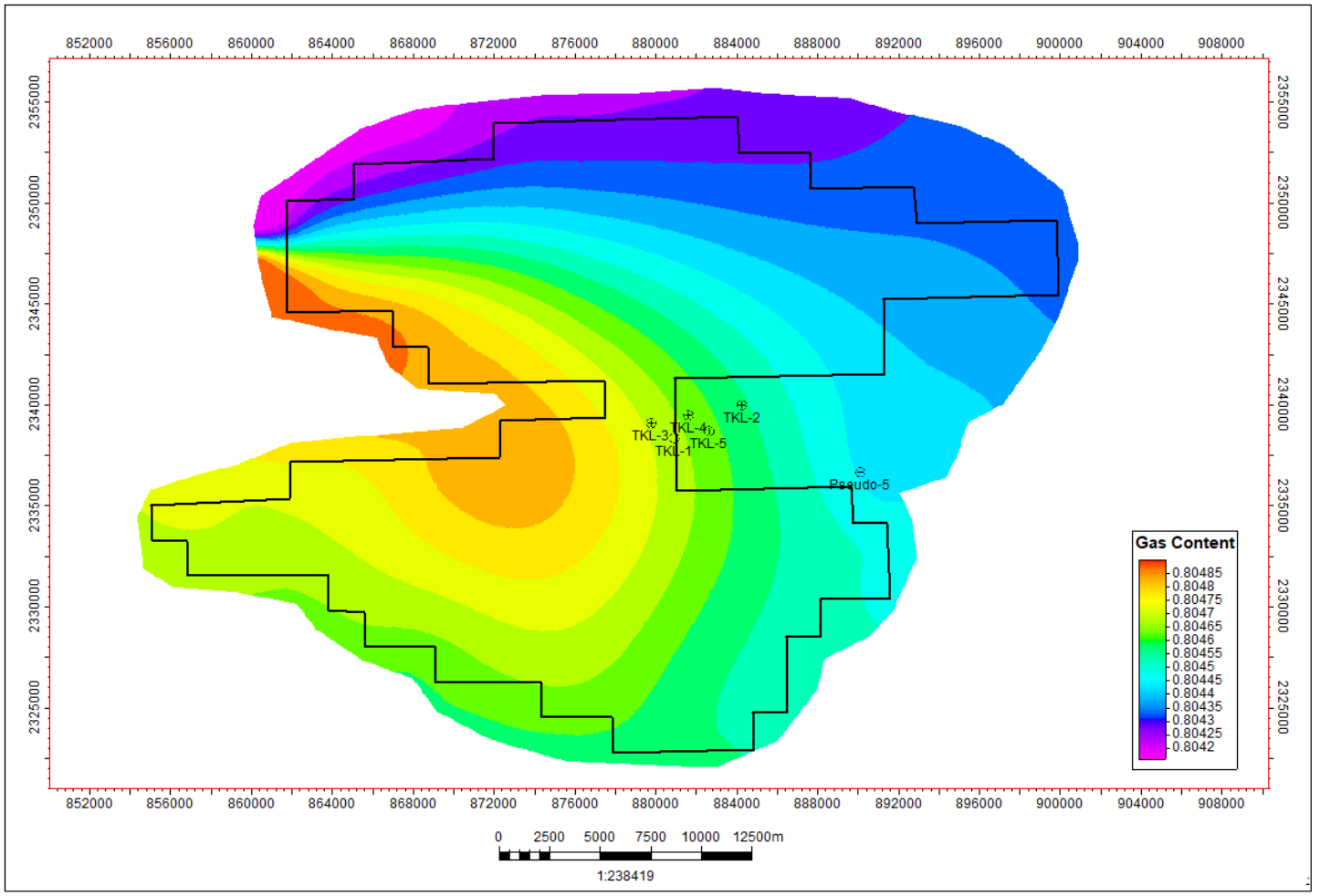
# SR-ONHP(CBM)-2022/9

## Barakar Top & Bottom



# SR-ONHP(CBM)-2022/9
# Gas content map ($m^3$/ton)






Ministry of Petroleum and Natural Gas
Government of India
**http://petroleum.nic.in**




**Directorate General of Hydrocarbons**

**Ministry of Petroleum & Natural Gas (Government of India)**

+91-120-2472000 +91-120-2472049 facilitationcbm@dghindia.gov.in

DGH India

**www.dghindia.gov.in**