

2022 ANH TECHNICAL WORKSHOPS

NEWS ABOUT FINANCIAL PROGRAMS

- **PROGRAM TO FINANCE THESIS AND LOCAL POSTGRADUATE STUDIES FOR GEOLOGIST AND ENGINEERS
MORE DETAILS WITH DIANA RUA MINCIENCIAS**
- **COST OF DATA IN FRONTIER AREAS FOR RESEARCH GROUPS AND INDUSTRY COMPANIES
MORE DETAILS PEDRO RANGEL SGC**

2022 ANH TECHNICAL WORKSHOPS

- **FEBRUARY 4th ANH**

Pacific Project introduction

Seismic program acquired in the Bosconia área Lower Magdalena Basin

Area with production returned to the ANH Atrarraya Llanos Basin

- **FEBRUARY 11th UPTC UNIVERSITY**

Hydrocarbon prospectivity in the northern part of the Middle Magdalena Basin

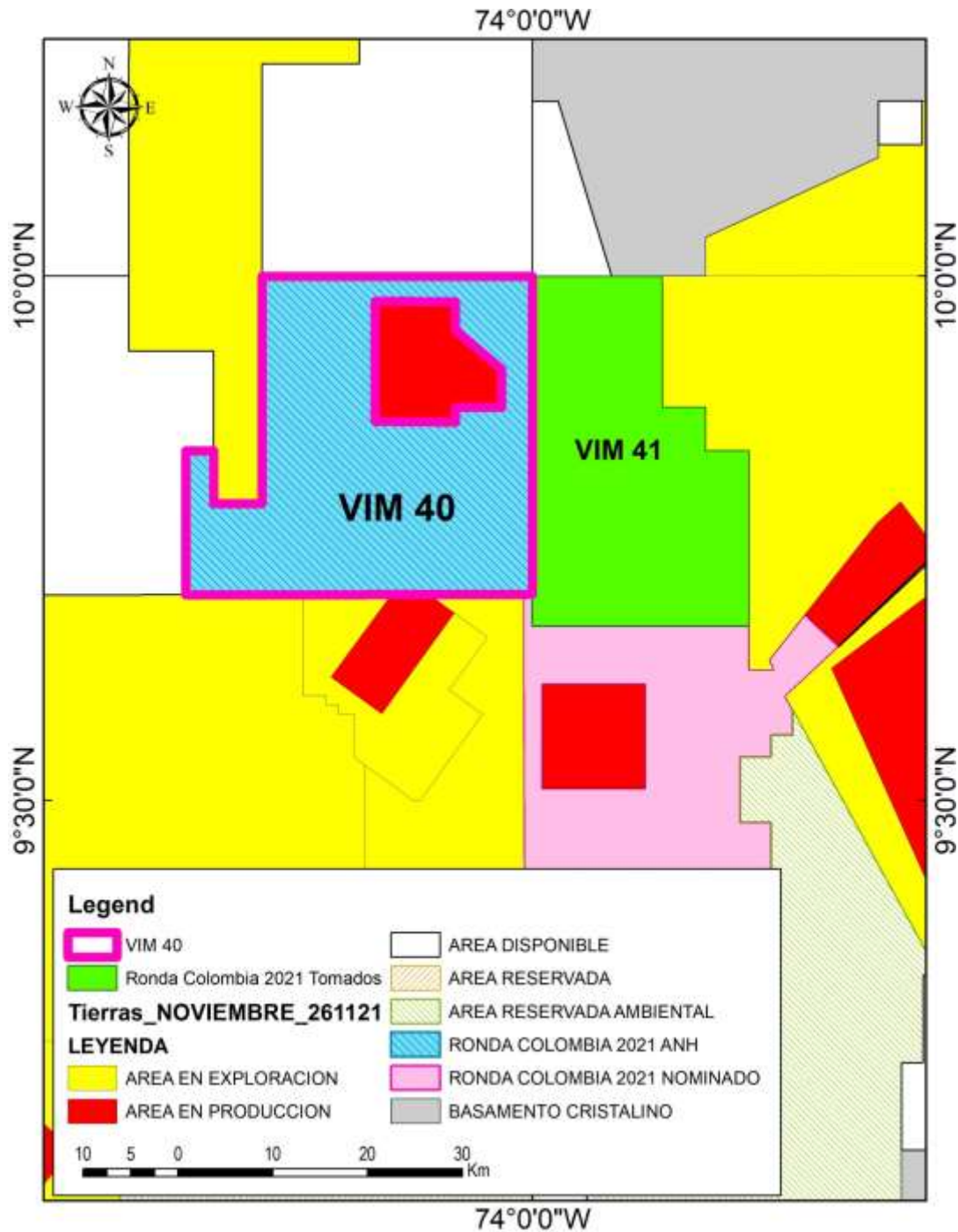
- **FEBRUARY 18th CALDAS UNIVERSITY**

Hydrocarbon prospectivity in the southern part of the Middle Magdalena Basin

- **FEBRUARY 25 th ANH**

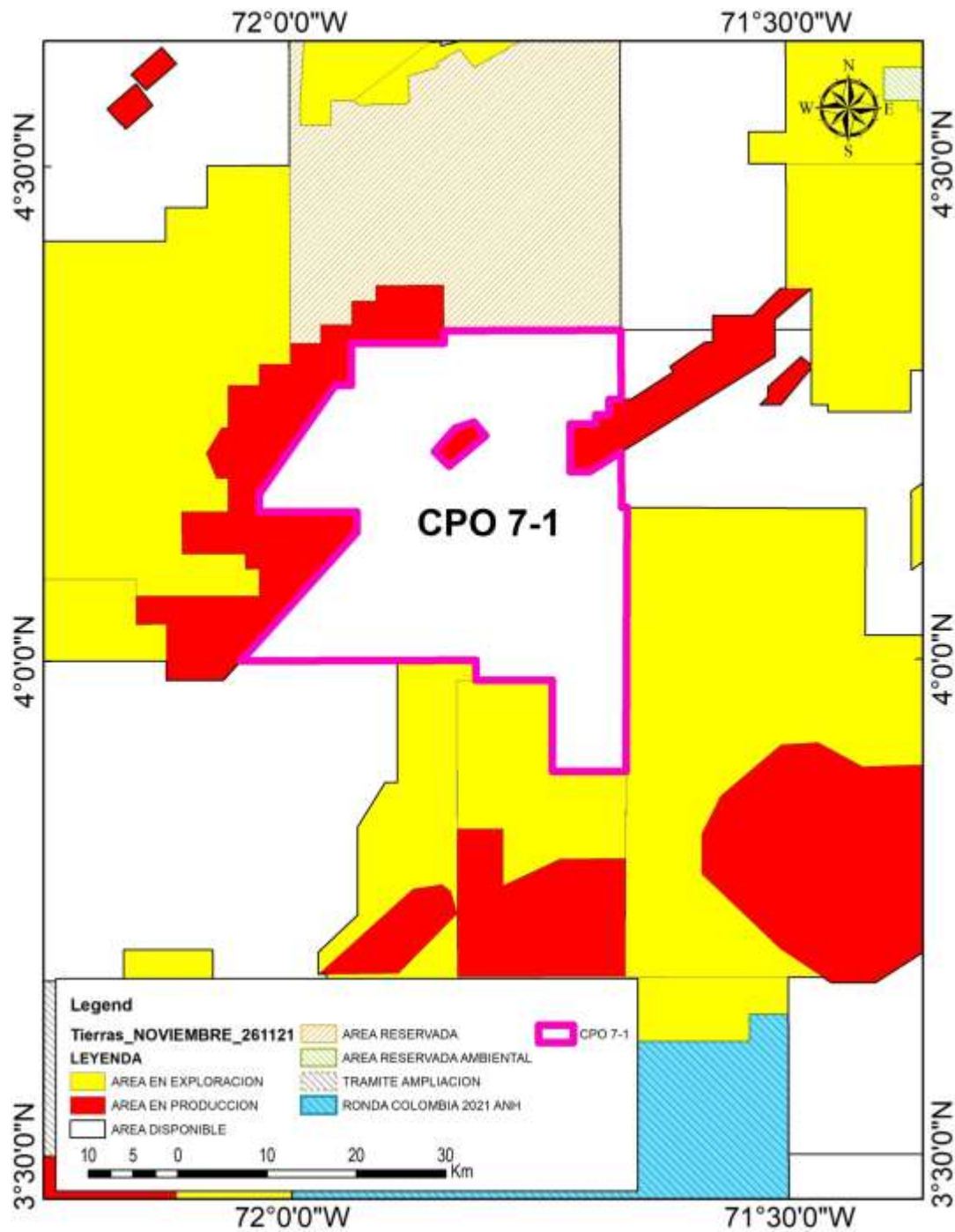
Seismic program acquired in the Las Mercedes área Catatumbo Basin

Area with production returned to the ANH Morichito Llanos Basin



WORKSHOP FEBRUARY 4th

**AREA TO NOMINATE
VIM 40**



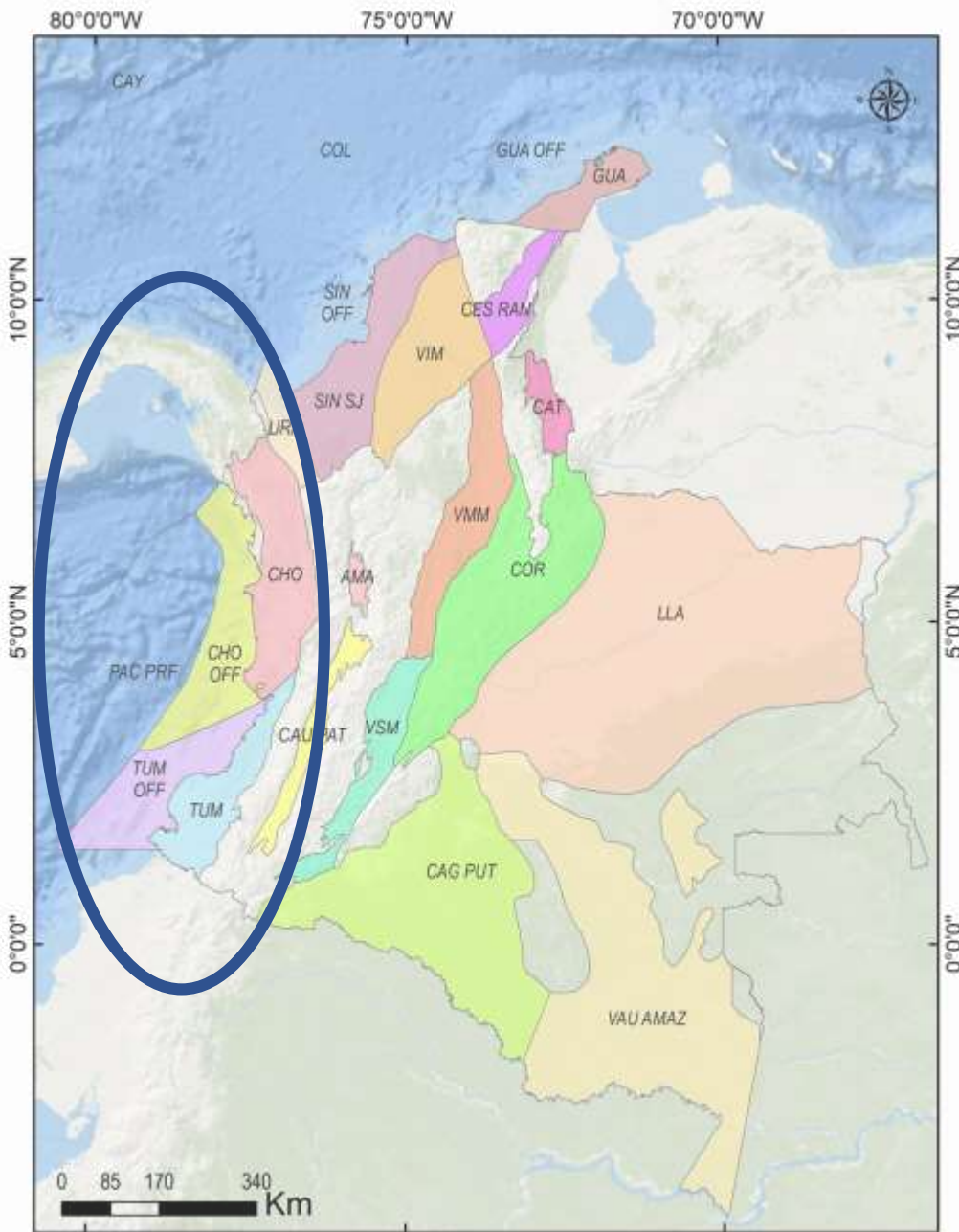
WORKSHOP FEBRUARY 4th

**AREA TO NOMINATE
CPO 7-1(ATARRAYA)**

PACIFIC PROJECT 2022-2025

SGC - UTCHOCO - ENTERRITORIO – UNAL – UNICALDAS - PGS - ANH

PACIFIC PROJECT 2022 - 2025



CHALLENGES

- LACK OF KNOWLEDGE
- HIGH TECHNICAL RISK
- SOCIAL, ENVIRONMENTAL, AND SECURITY LIMITATIONS

HOW TO REDUCE THE TECHNICAL RISK

- DETERMINE DEPTH AND GEOMETRY OF BASEMENT
- SURFACE GEOLOGY (MAPPING)
- GEOMETRY OF ROCKS (SEISMIC)
- RECOGNITION OF ROCK PROPERTIES (DRILLING)
- GEOCHEMISTRY
- BIOSTRATIGRAPHY
- DETERMINE HYDROCARBON SYSTEM

PACIFIC PROJECT 2022 - 2025

**GRAVIMETRY – MAGNETOMETRY
2022**

UNIVERSIDAD NACIONAL DE COLOMBIA



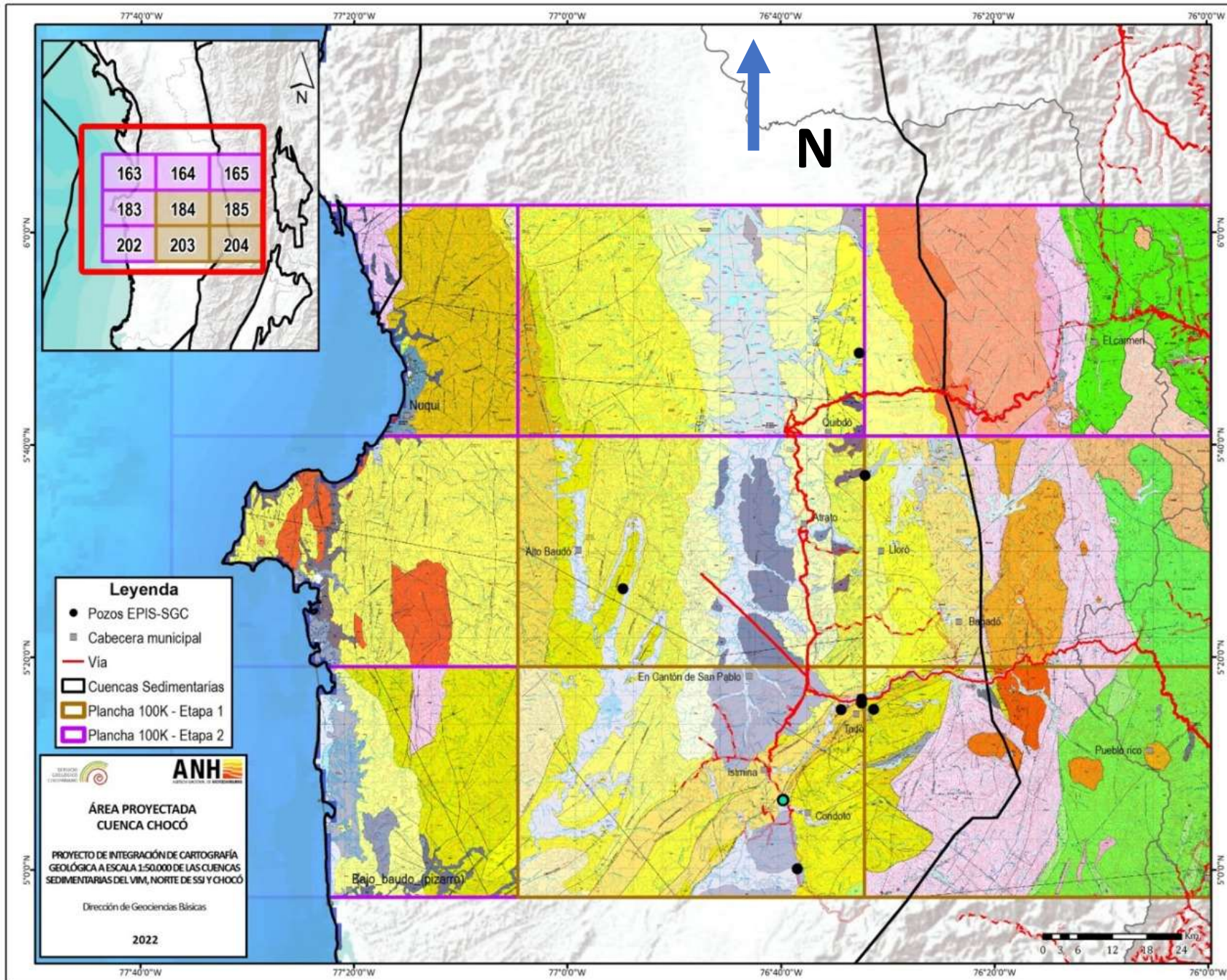
INTEGRATION OF POTENTIAL FIELD DATA

GRAVIMETRY

MAGNETOMETRY

BATIMETRY OF HIGH RESOLUTIÓN

**GENERATION OF BASEMENT MODEL AND
IDENTIFICATION OF MAJOR STRUCTURES**



EXISTING GEOLOGICAL MAP

PACIFIC MODEL 2022 - 2025

GEOLOGIC MAPPING

COLOMBIAN GEOLOGICAL SERVICE SGC

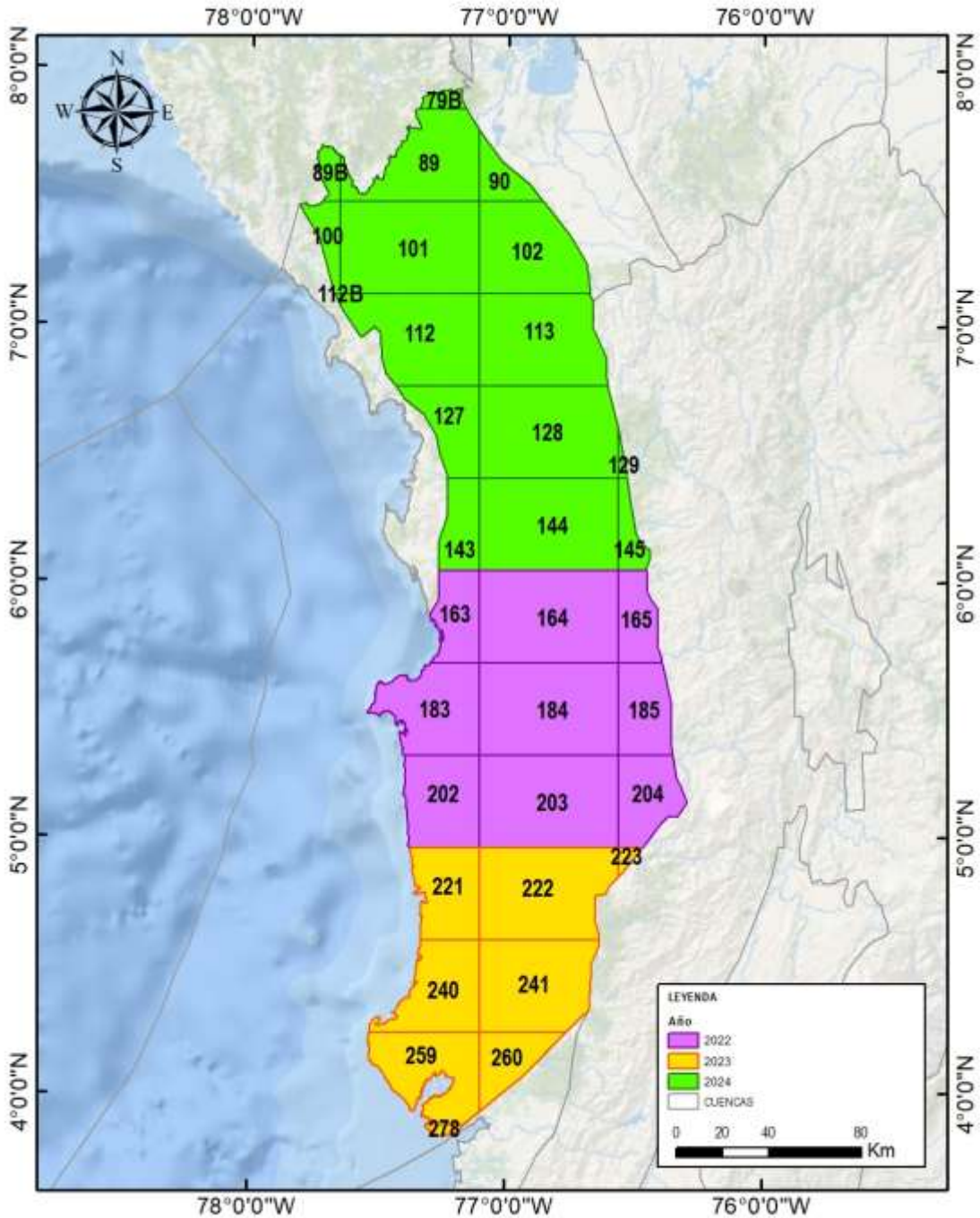
REMOTE SENSING
FIELD GEOLOGY

2022
Área = 13.054 km²

2023
Área = 8.612 km²

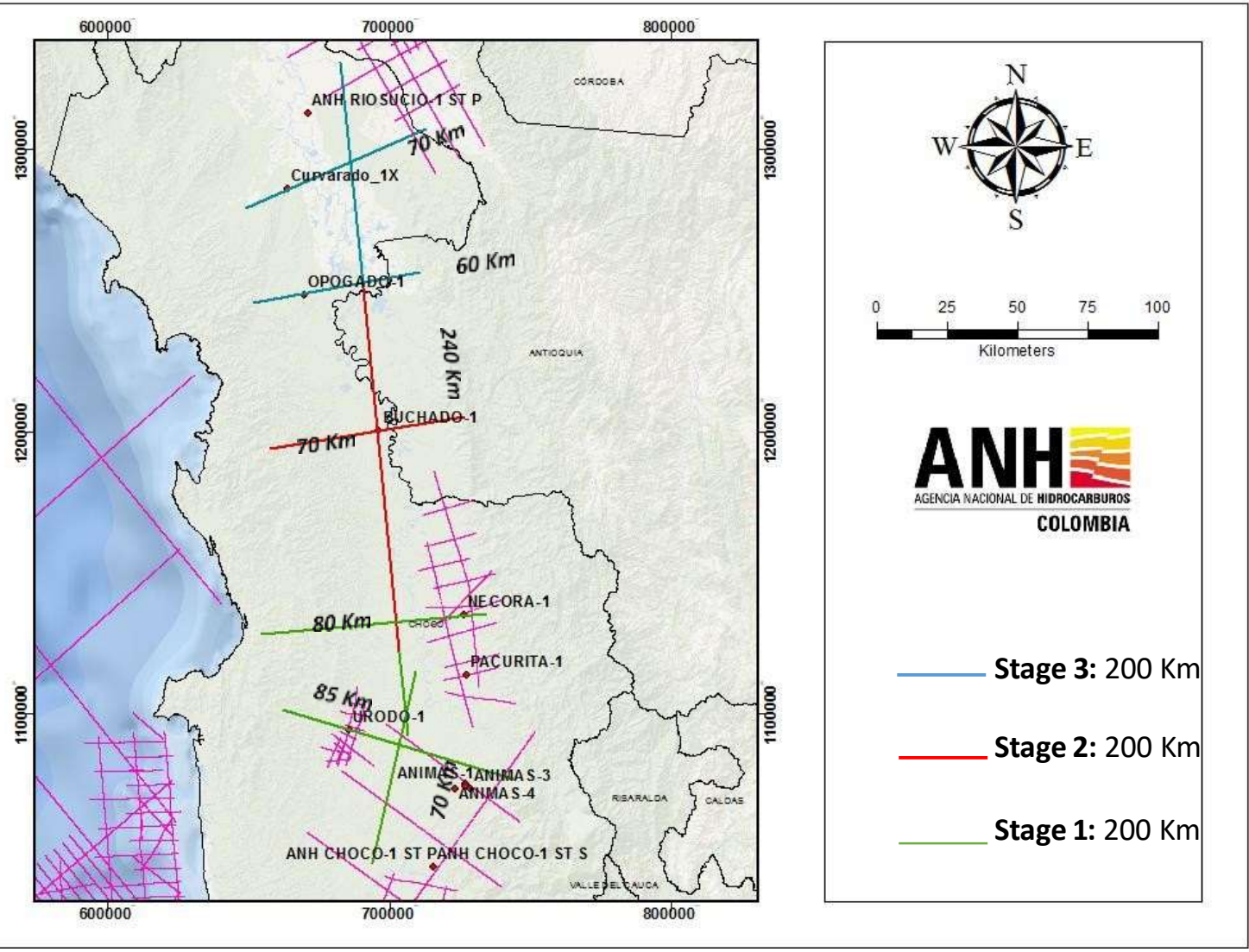
2024
Área = 17.254 km²

TOTAL 38,000 Km²



PACIFIC PROJECT 2022 – 2025

SEISMIC PROGRAM



SEISMIC

**3 STAGES 200 KMS 2D EACH ONE
TOTAL 600 KMS**

2023
2024
2025

**2D SEISMIC ACQUISITION
FROM ITSMINA TO RIO SUCIO**

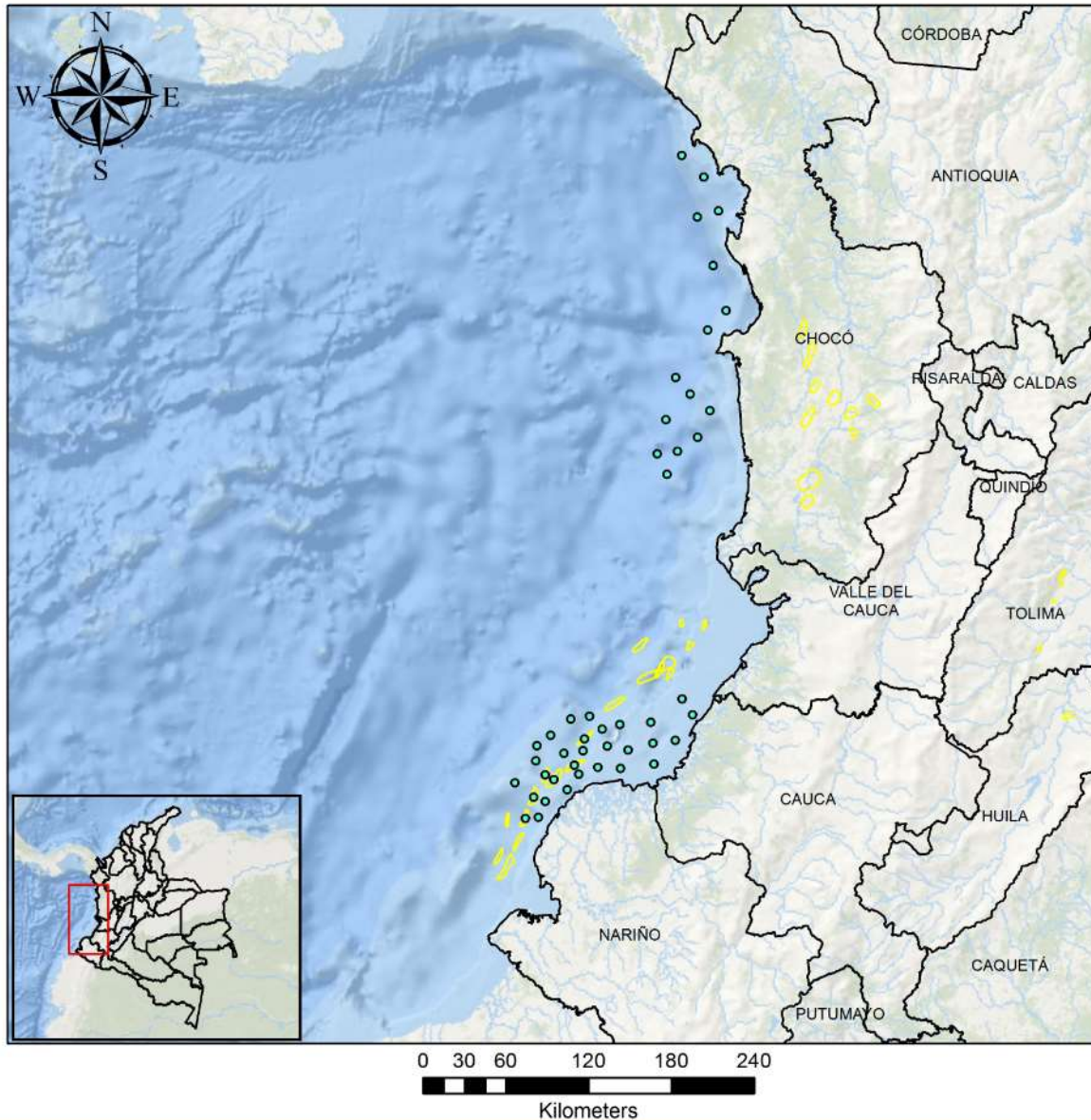
- Stage 3: 200 Km
- Stage 2: 200 Km
- Stage 1: 200 Km

PACIFIC PROJECT 2022 - 2025

GEOCHEMISTRY

45 SAMPLES PISTON CORES
20 SAMPLES HEAT FLOW

2022 DIMAR





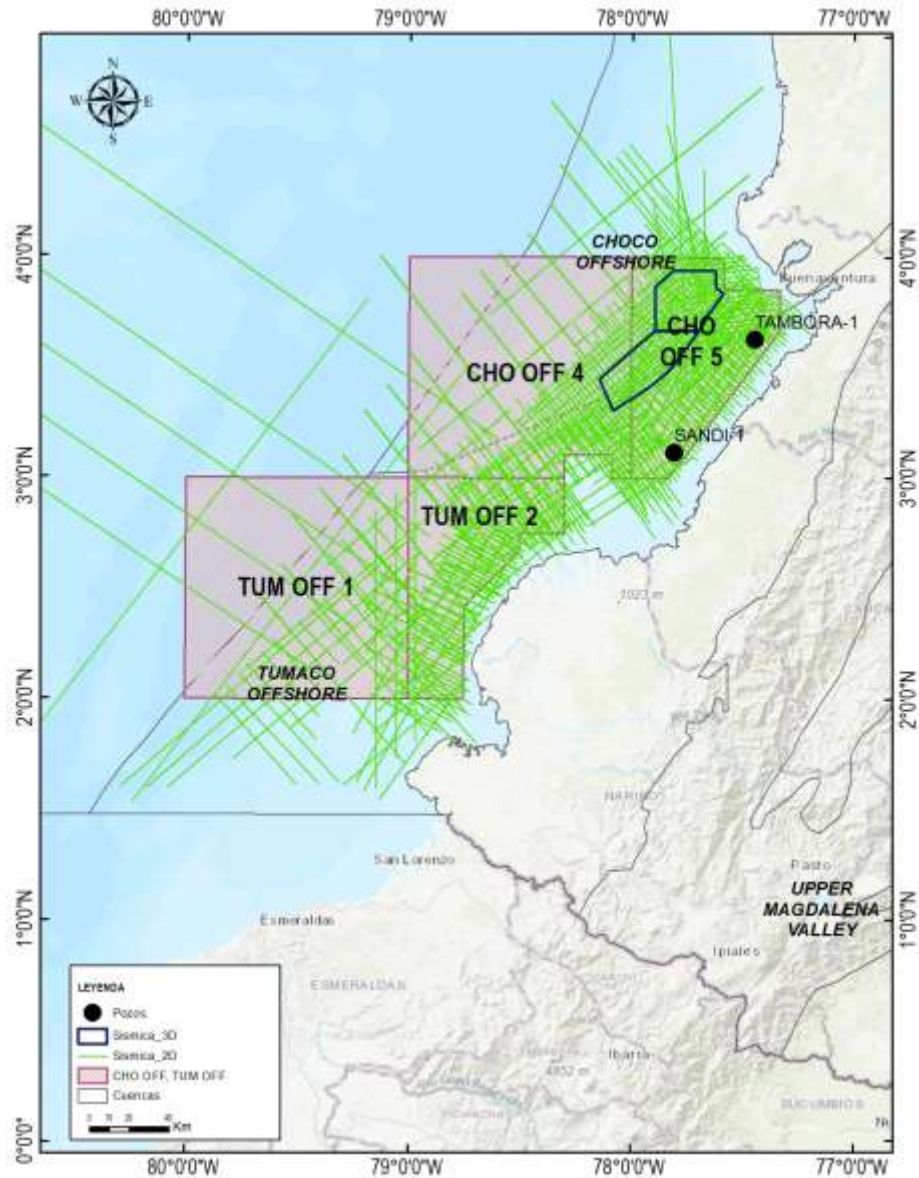
PACIFIC PROJECT 2022 - 2025

**PROSPECTIVE PLAY FAIRWAY STUDIES
ATRATO AND PACIFIC OFFSHORE
2022**

UNIVERSIDAD NACIONAL

**EVALUATION AND INTEGRATION OF TECHNICAL
INFORMATION
EXISTING WELLS; SEISMIC, REPORTS , ETC**

PACIFIC PROJECT 2022 - 2025



SEISMIC REPROCESSING

17,591 kms 2D

1,731 kms 3D

2022

PGS

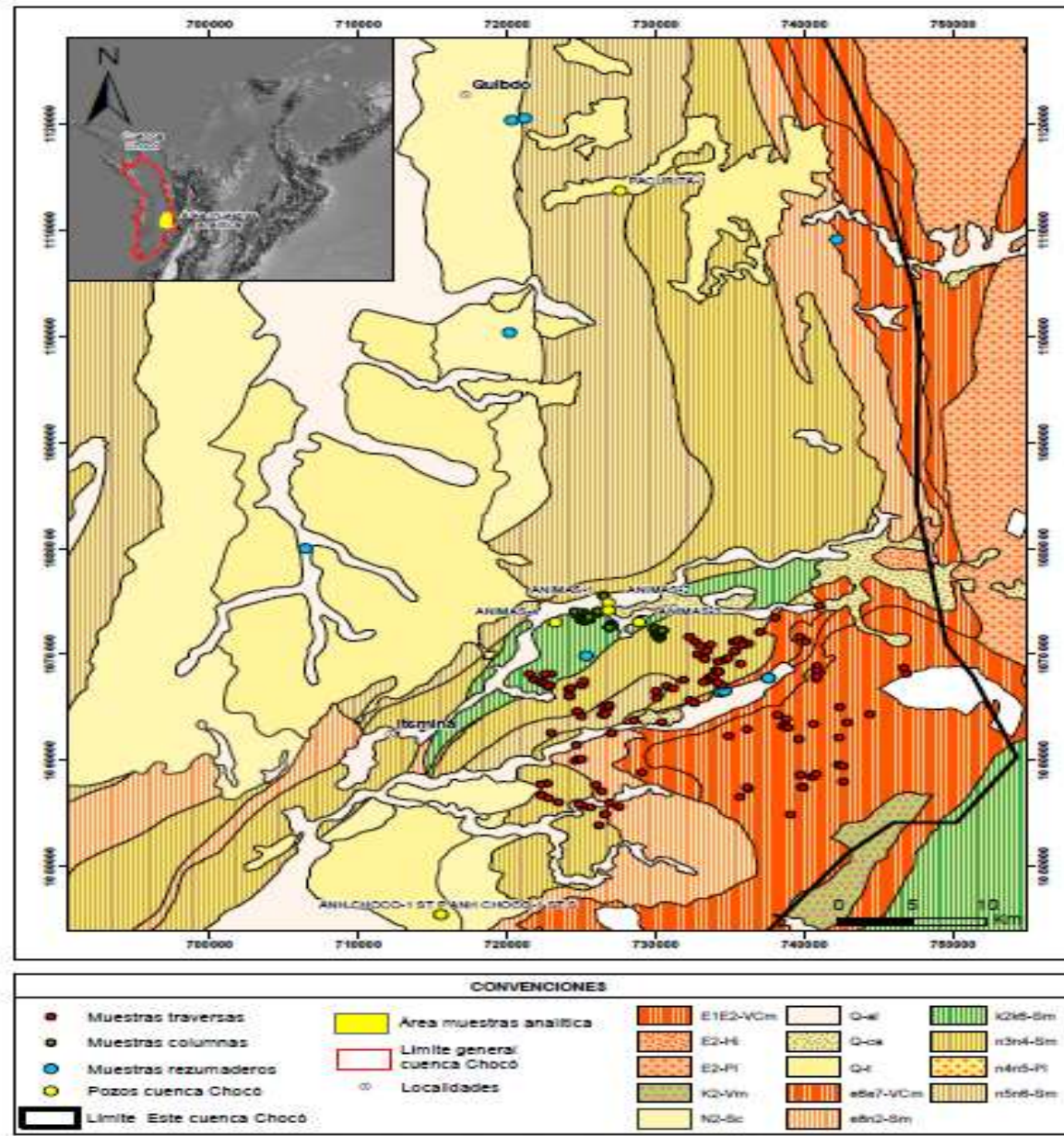
PACIFIC PROJECT 2022 - 2025

ROCK CHARACTERIZATION THROUGH LAB ANALYSES

2022

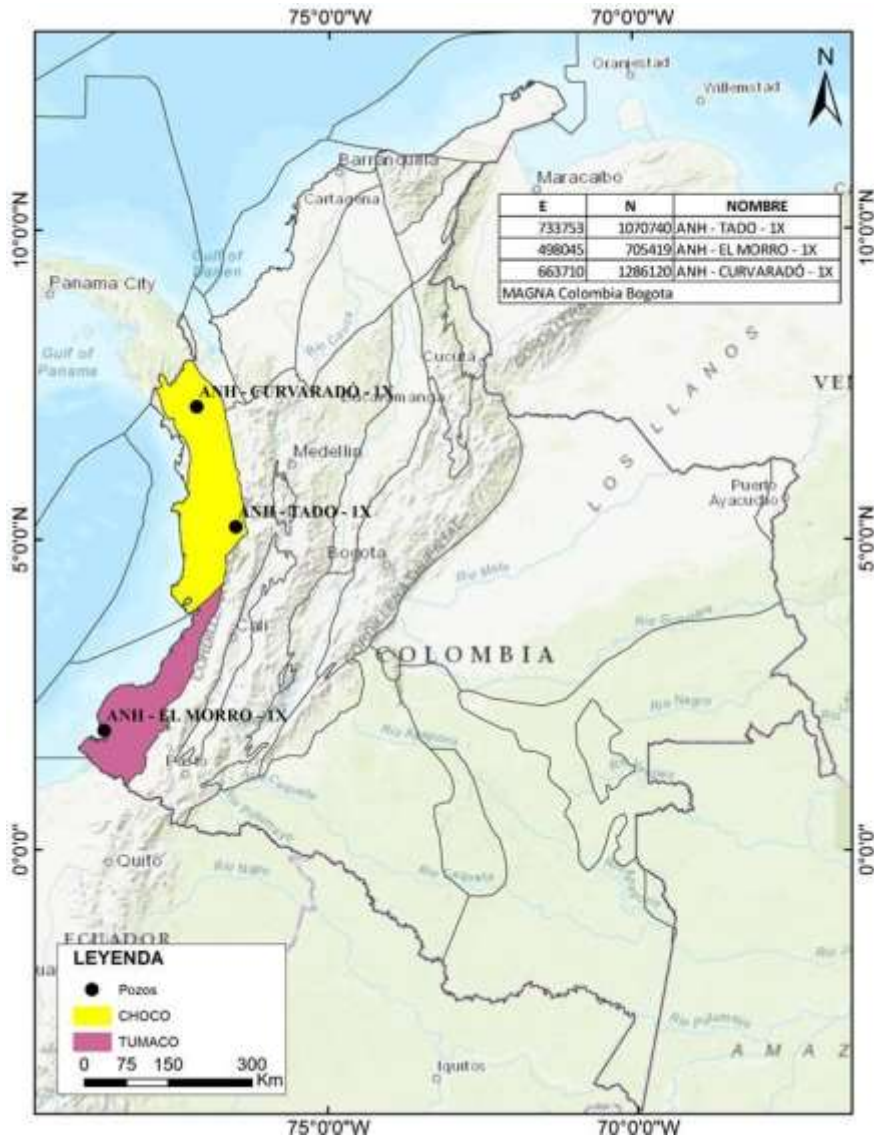
UNIVERSIDAD DE CALDAS

GEOCHEMISTRY
PETROPHYSICS
BIOSTRATIGRAPHY
550 SAMPLES ALREADY COLLECTED BY THE ANH



PACIFIC PROJECT 2022 - 2025

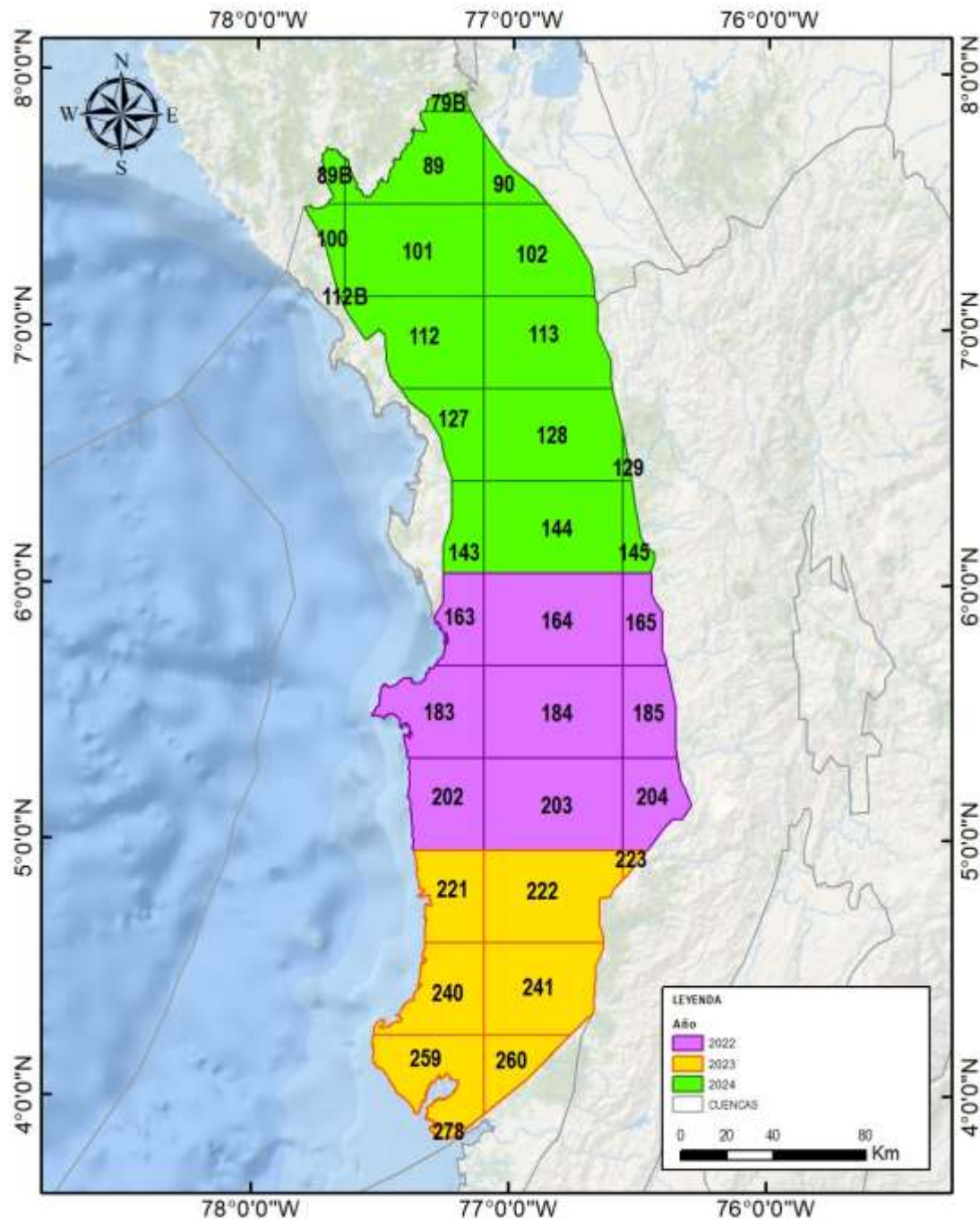
ENTERRITORIO



THREE 3 WELLS

- TADO (7.500 FEET) 2022
- EL MORRO (8.500 FEET) 2023
- CURVARADO (12.000 FEET) 2024

PACIFIC PROJECT 2022 – 2025



- Geological mapping of 38,000 kms² - SGC
- Seismic acquisition of 600 kms 2D - ENTERRITORIO
- Drilling of three (3) stratigraphic wells- ENTERRITORIO
 - Tado 7,500 feet
 - El Morro 8,500 feet
 - Curvarado 12,000 feet
- Gravimetric and magnetometric evaluation - UNAL
- Pistón cores and heat flow - DIMAR
- Reprocessing of 17,000 kms seismic 2D - PGS
- Study of prospective play fairways in the Atrato and Pacifico offshore basins - UNAL
- Lab characterization of rocks – UCALDAS
- PGS, PGA, CP – UT CHOCO