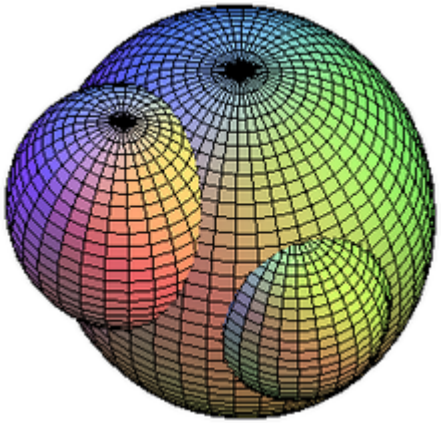
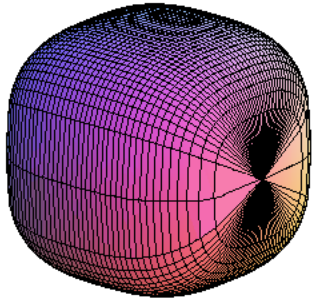
Analysis and Interpretation of Maps



Concepts and application

INDOKLANICSA / INFINY Bloque Tyra y Perlas



Managua, June -2014

OBJECTIVES:

- Manage basic cartographic concepts and procedures for interpretation and handling of maps.
- Interpret and analyze the components and main features of the thematic maps;
- Show some examples of current cases: INDOKLANICSA maps; Block and maps INFINY Tyra and Perlas.

Basics.

- What is analysis
- What is interpretation.
- What is map

Analysis

According to The Royal Academy of the Spanish Language (RAE) in the RAE dictionary, is the reference work of the Academy. .'s Currently 22nd edition, published in 2001 -

- Distinction and separation of parts of a whole in order to learn its principles or elements.
- Disruption or completely shred things into their component parts to inspect and discover each of its individual elements or their causes.
- Involves identifying the components of a whole, separate them and examine them to gain access to their basic principles.

Interpretation

Action and effect to interpret.

interpret:

- Designing, order or express a personal mode of reality.

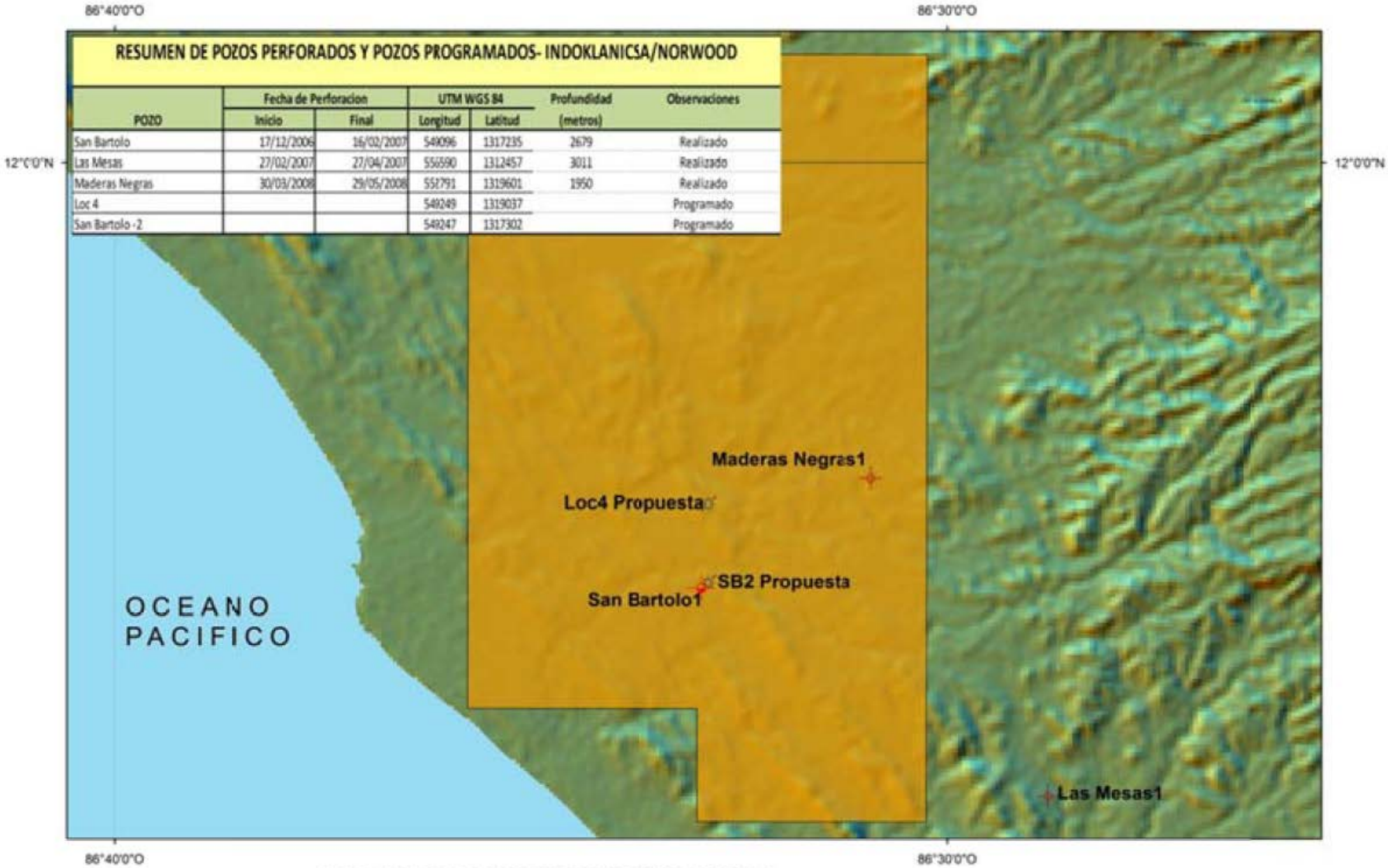
- Explain or tell the meaning of something.

Map

- Geographical representation of a portion of the earth's surface, in which information is given to a particular science.

- Geographical representation of the Earth or part of it on a flat surface

INDOKLANICSA



RESUMEN DE POZOS PERFORADOS Y POZOS PROGRAMADOS- INDOKLANICSA/NORWOOD

POZO	Fecha de Perforacion		UTM WGS 84		Profundidad	Observaciones
	Inicio	Final	Longitud	Latitud	(metros)	
San Bartolo	17/12/2006	16/02/2007	549096	1317235	2679	Realizado
Las Mesas	27/02/2007	27/04/2007	556590	1312457	3011	Realizado
Maderas Negras	30/03/2008	29/05/2008	552791	1319601	1950	Realizado
Loc 4			549249	1319037		Programado
San Bartolo -2			549247	1317302		Programado

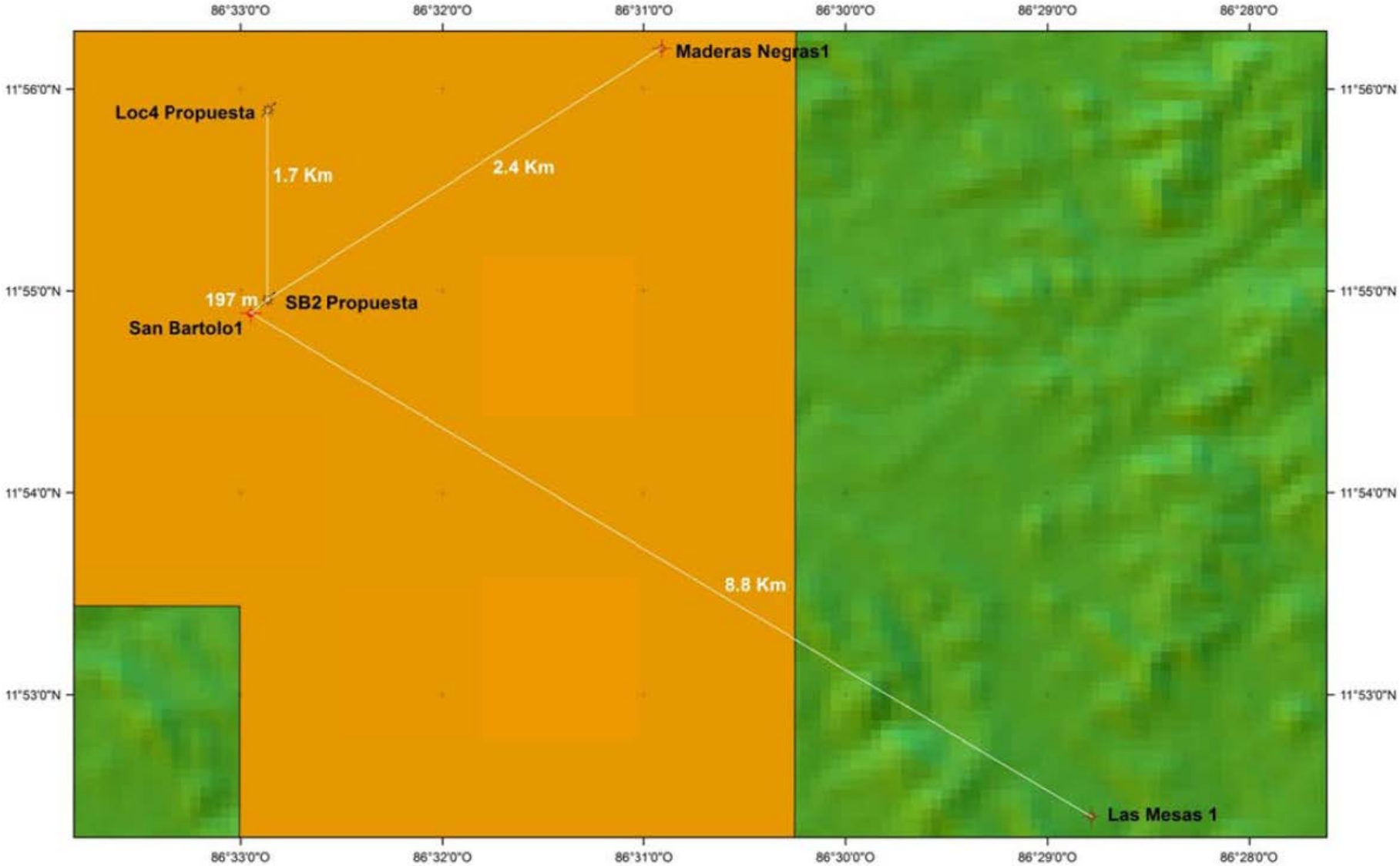
UBICACION DE POZOS INDOKLANICSA
REALIZADOS Y PROYECTADOS

MINISTERIO DE ENERGIA Y MINAS
DIRECCION GENERAL DE HIDROCARBUROS

Escala Grafica
0 0.5 1 2 3 4 Km

Datum: D_WGS_1984
Esferoide: CGS_WGS_1984

INDOKLANICSA



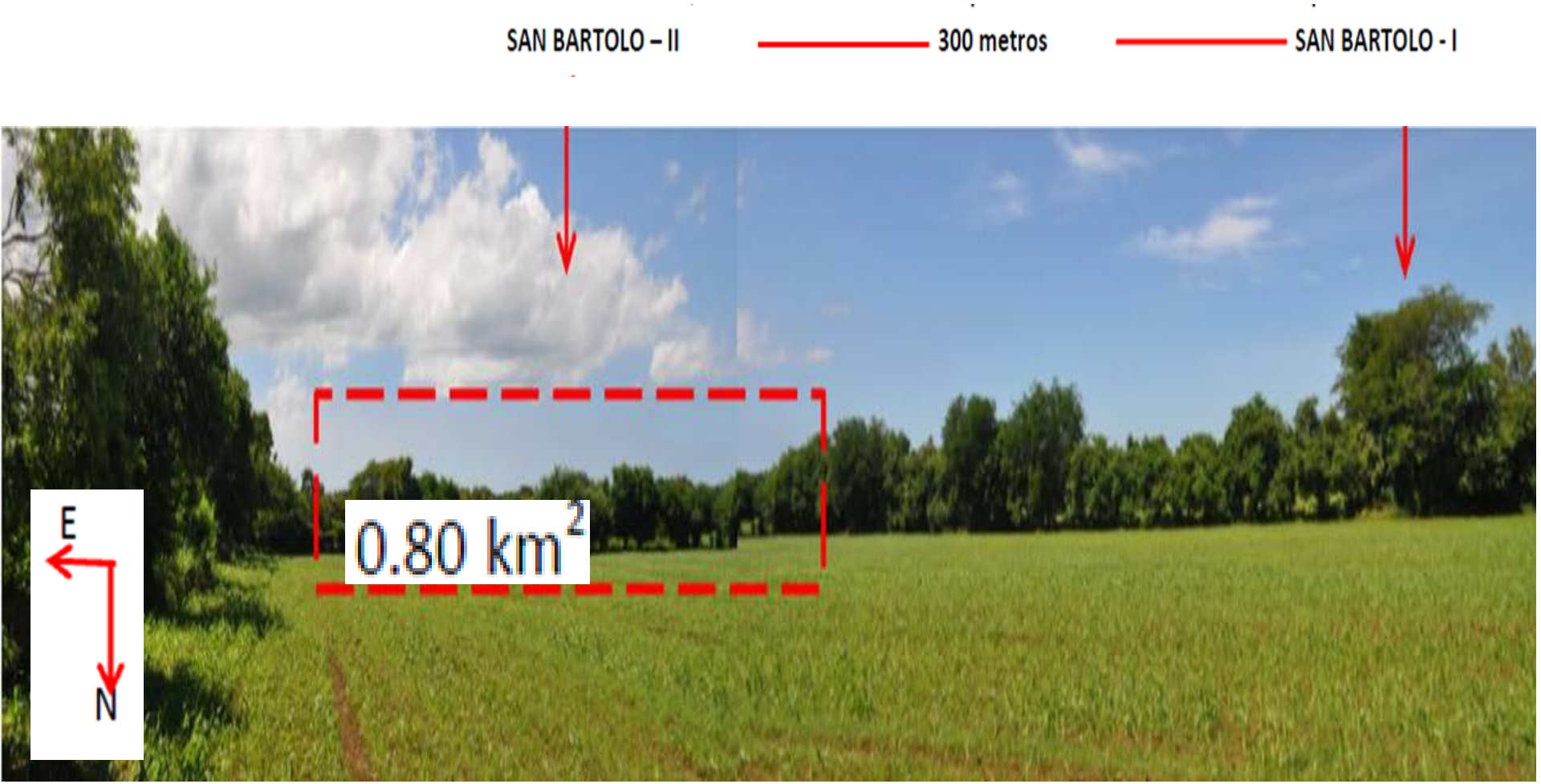
UBICACION DE POZOS INDOKLANICSA
DETALLE

MINISTERIO DE ENERGIA Y MINAS
DIRECCION GENERAL DE HIDROCARBUROS

Escala Grafica
0 0.25 0.5 1 1.5 2 Km

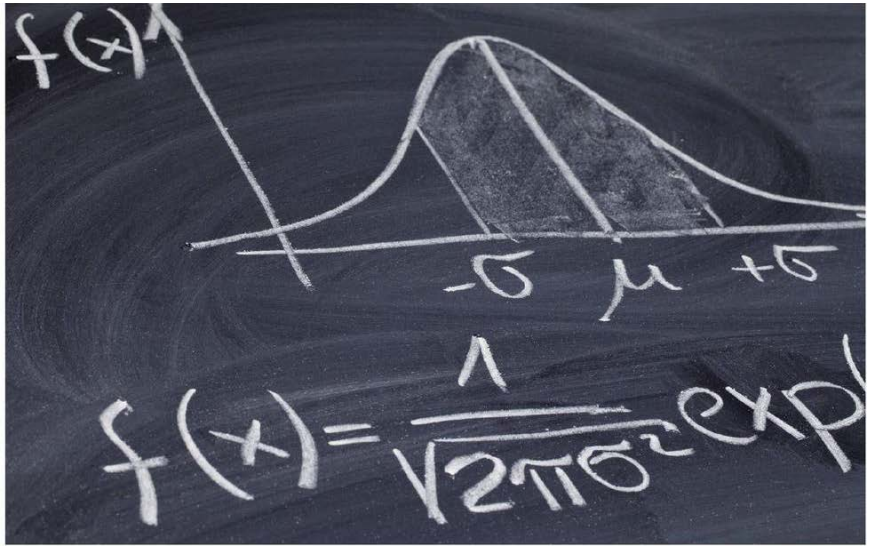
Datum: D_WGS_1984
Esferoide: CGS_WGS_1984

INDOKLANICSA



Elements of a Map

- Title and Subtitle map
- Points, lines and polygons (various colors)
- Scale of work (graphic, numerical or verbal)
- Datum: WGS 84
- Coordinate projection system
- (Mathematics of Projection)
- Programs included in calculations as:
- ArcGIS; AutoCad, ArcMap.



$$\frac{\partial x}{\partial \lambda} = \cos(\phi)\frac{\partial y}{\partial \phi}$$

$$\frac{\partial y}{\partial \lambda} = -\cos(\phi)\frac{\partial x}{\partial \phi}$$

De $x = \lambda$ se tiene:

$$\frac{\partial x}{\partial \lambda} = 1$$

$$\frac{\partial x}{\partial \phi} = 0$$

resultando

$$1 = \cos(\phi)\frac{\partial y}{\partial \phi}$$

$$0 = \frac{\partial y}{\partial \lambda}$$

$$\begin{aligned} x &= \lambda - \lambda_0 \\ y &= \ln\left[\tan\left(\frac{\pi}{4} + \frac{\phi}{2}\right)\right] \\ &= \frac{1}{2}\ln\left(\frac{1+\operatorname{sen}\phi}{1-\operatorname{sen}\phi}\right) \\ &= \operatorname{senh}^{-1}(\tan\phi) \\ &= \tanh^{-1}(\operatorname{sen}\phi) \\ &= \ln(\tan\phi + \sec\phi) \end{aligned}$$

$$\begin{aligned} \phi &= 2\tan^{-1}(e^y) - \frac{\pi}{2} \\ &= \tan^{-1}(\sinh(y)) \\ \lambda &= x\$\lambda_0 \end{aligned}$$

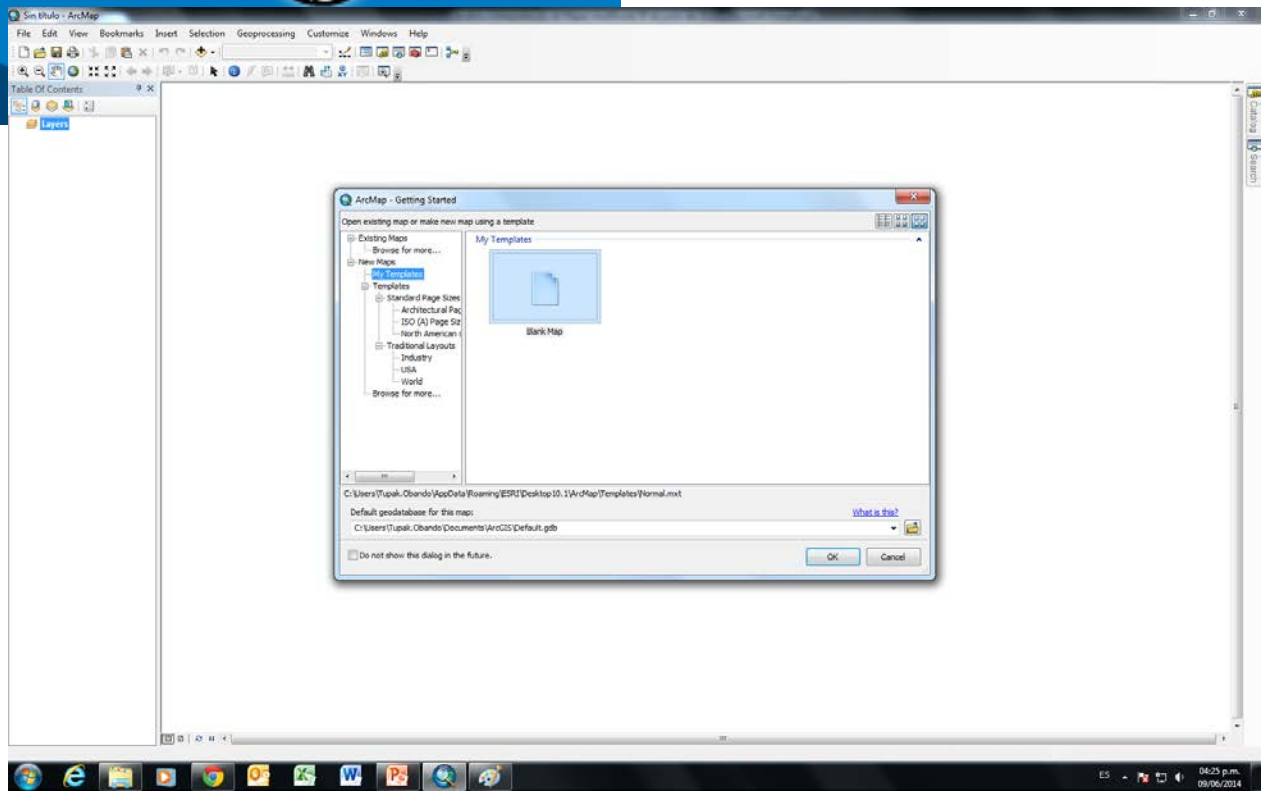
$$y = \ln[\sec(\phi) + \tan(\phi)] + C$$

Mathematics of Projection

ArcGIS® ArcMap™

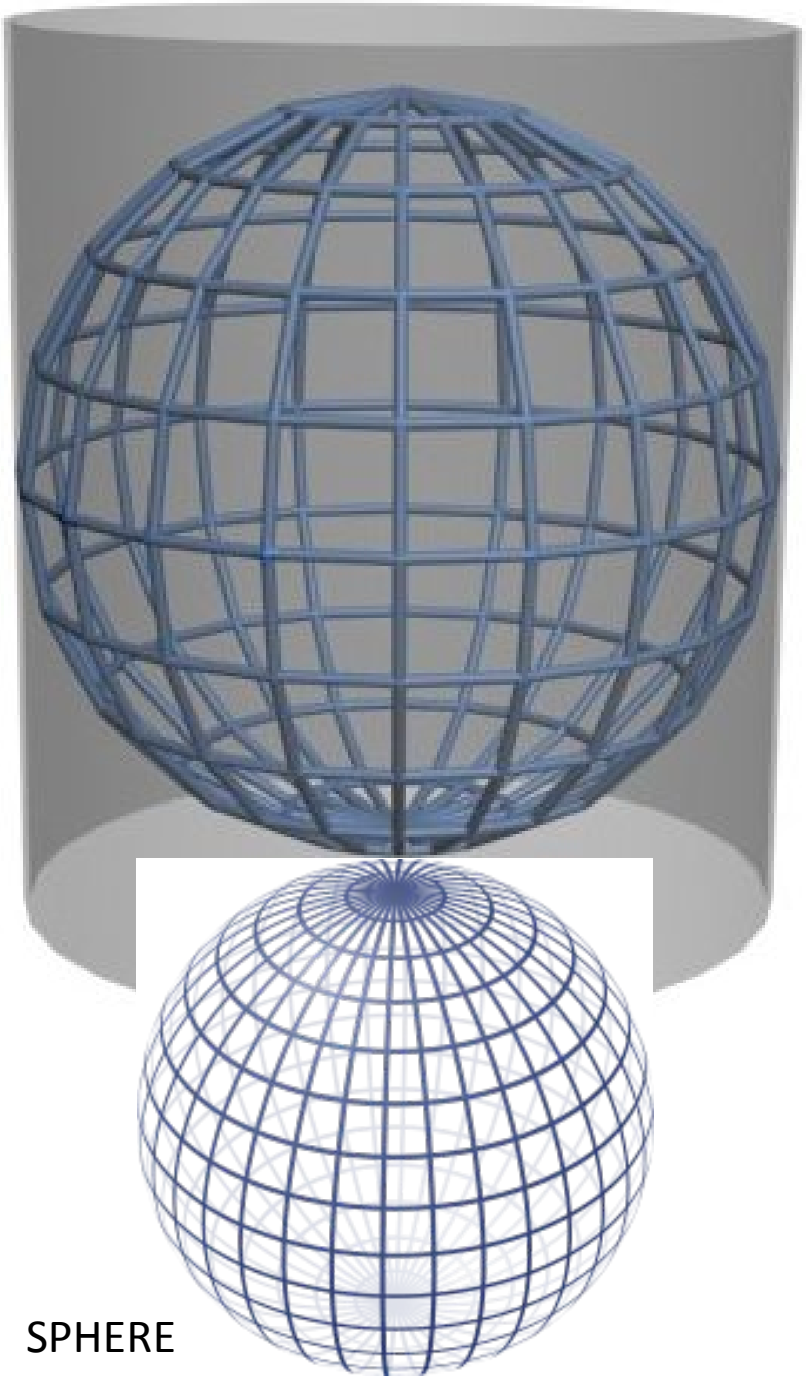
10.1

Loading Document...

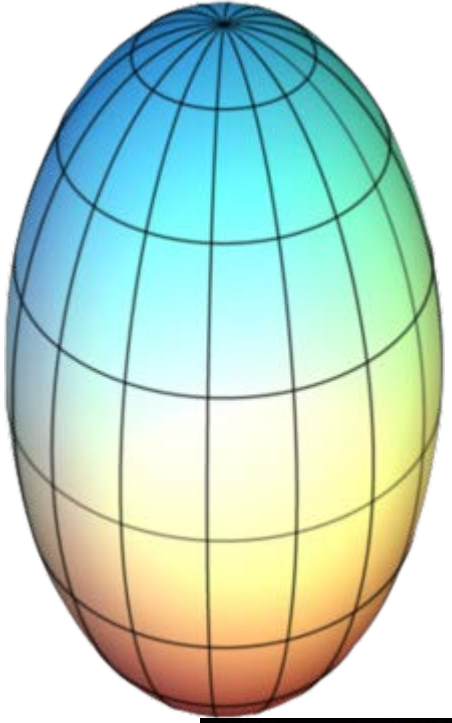


Technical details:

- **Created by**: ESRI (Environmental Systems Research Institute), founded in 1969 by Jack Dangermond, leader in worldwide located in California, USA company. W...
- **Generic Name**: ArcGis
- **Scope**: Geographic Information Systems, GIS
- **Basic Tools**: ArcReader, ArcMap, ArcCatalog, ArcToolbox, ArcScene, ArcView, ArcEditor and ArcInfo, ArcGIS Server, ArcGIS Mobile, ArcGIS Desktop, ArcGlobe
- **Objective:** Capture, editing, analysis, processing, design, printing and publishing geographic information.
- **Services:** It has extensions 3D Analyst, Geostatistical Analyst, Maplex, Network Analyst, Schematics, Spatial Analyst, Tracking Analyst and ArcScan.
- **Versatilities:** ***Spatial Data Analysis*** (Spatial Analyst), create, access and analyze raster data; combine multilayer raster; implement mathematical functions, build and get new information from existing data, etc.. find suitable locations; analyzes of distance and cost of the journey; identify the best existing route between two points; statistical analysis and interpolate data values for a given area of study. ArcGIS ***3D Analyst extension***, creation, visualization and analysis of GIS data in a three dimensional context; ArcScene function eg for creating and animating 3D environments; modeling of geological strata and groundwater data. ***Geostatistical Analyst***. This tool makes it possible geo statistical analysis, based on the exploratory analysis of the data to its spatial representation.

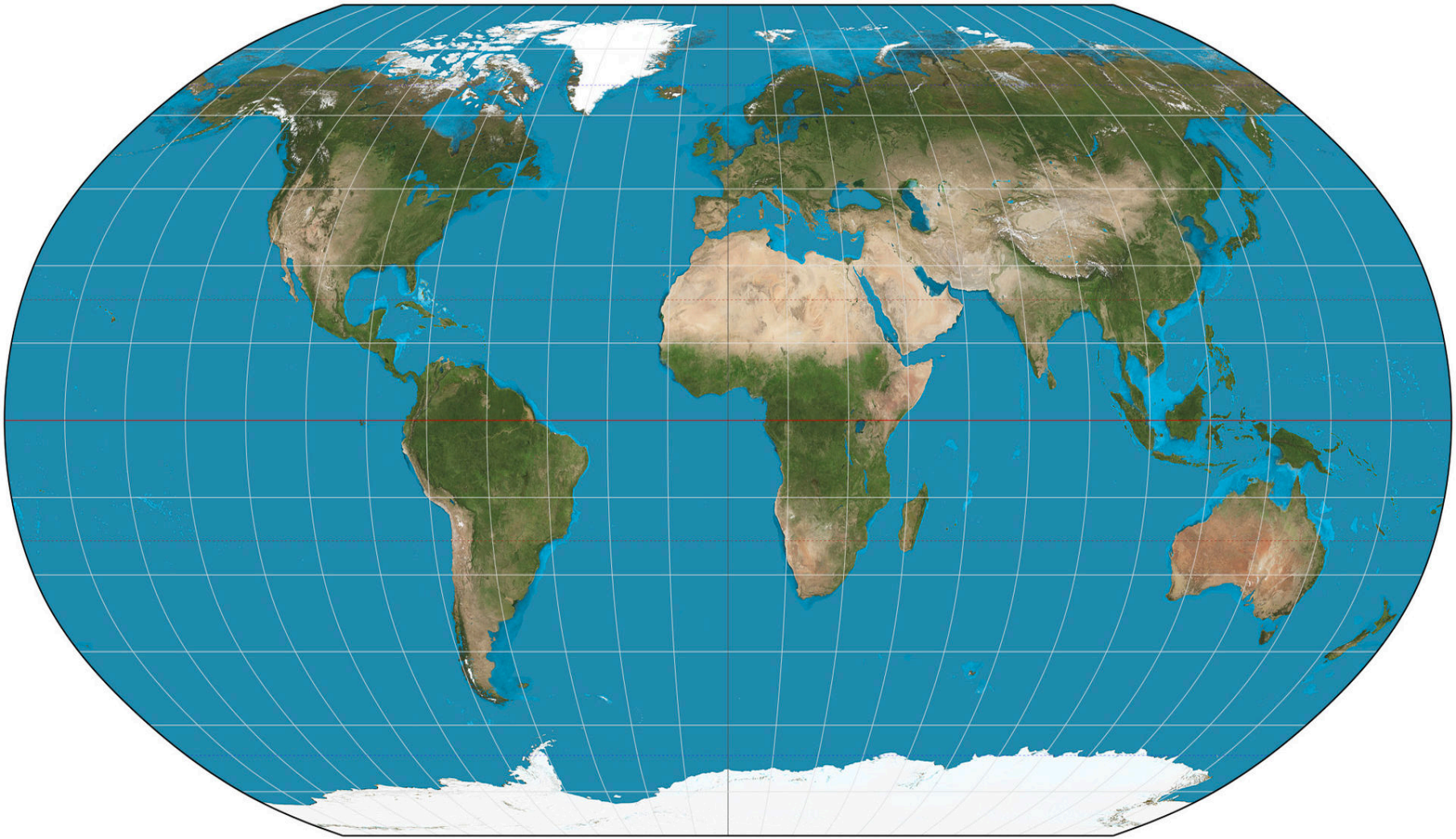


SPHERE



SPHEROID

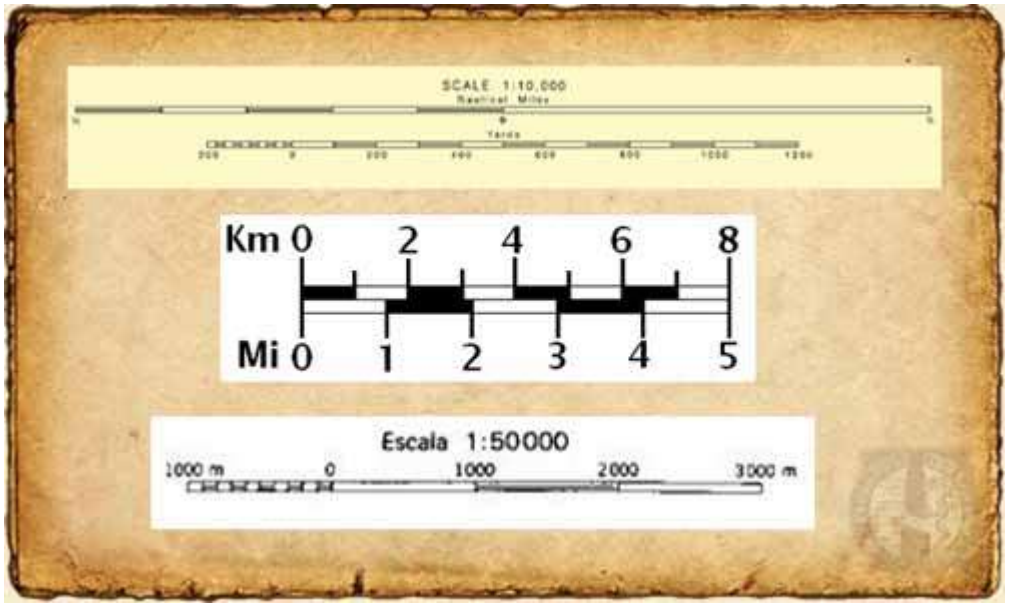
GEOID



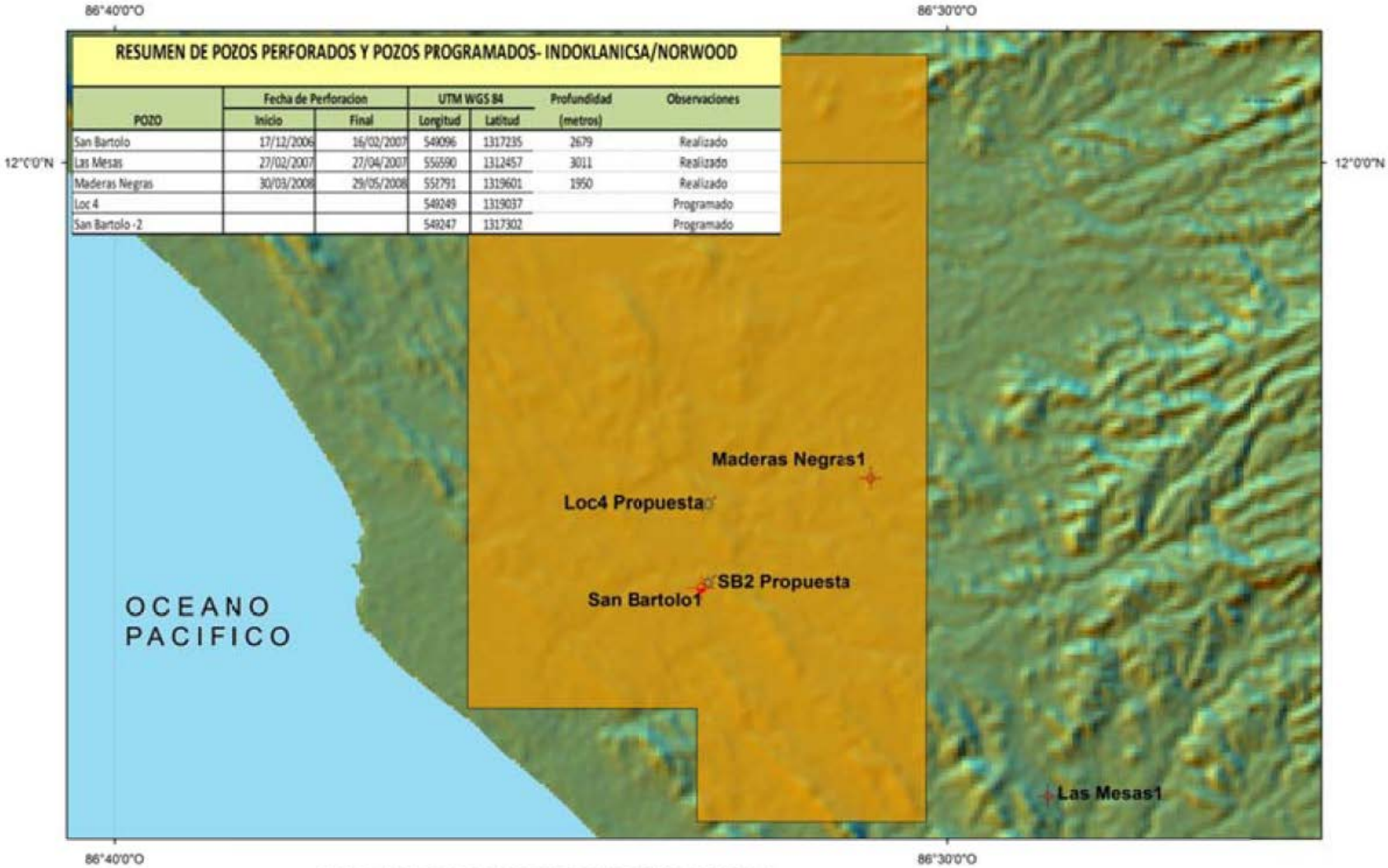
Scale

Line divided equally representing meters, miles, etc.., And

measurement serves to draw proportionately on a map or drawing distances and dimensions of land, building, machine or other object, and to find out about the plane than the actual measurements drawn.



INDOKLANICSA



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UBICACION DE POZOS INDOKLANICSA
REALIZADOS Y PROYECTADOS

MINISTERIO DE ENERGIA Y MINAS
DIRECCION GENERAL DE HIDROCARBUROS

Escala Grafica
0 0.5 1 2 3 4 Km

Datum: D_WGS_1984
Esferoide: CGS_WGS_1984

Other components of the map

- Location of sites of interest tanker
- Delimitation workspace
- legend
- True North.

- Surface water bodies (rivers, lakes, pond or other)
- Demarcation of land and sea.

legend

- Text accompanying map, to a plane.
- Explanation is provided on the symbols and colors that appear on the map.
- In the legend usually draw each of the symbols used on the map and an explanation of its meaning is placed.

LEYENDA

- Sendero
- Zonas de acampada
- Centro de visitantes
- Albergue y aulas en la naturaleza
- Áreas recreativas
- Casas forestales
- Granjas cinegéticas
- Núcleos urbanos
- Presa
- Límite de términos municipales

ESPACIOS NATURALES PROTEGIDOS:

- Monumento natural
- Paisaje protegido
- Parque natural
- Parque rural
- Reserva natural especial
- Reserva natural integral
- Sitio de interés científico

LEYENDA

- FACETAS DE FALLA
- ZONA MAL DRENADA EN LECHO INUNDABLE
- CULTIVOS
- ESCURRIMIENTO LAMINAR
- ESCURRIMIENTO CONCENTRADO (SURCOS)
- CICATRIZ DE DESLIZAMIENTO
- FLUJO DEL DESLIZAMIENTO
- BORDE DE TERRAZA
- FALLA NORMAL
- ABANICO ALUVIAL
- ▲ 950 COTA DE ALTURA
- DIRECCION DEL ESCURRIMIENTO
- LIMITE DEL LECHO DE INUNDACION

LEYENDA

Sismos fuertes

sismos en las últimas 24 horas

Actividad sísmica en Lago Xolotlán y alrededores

REPÚBLICA DE NICARAGUA

MAPA DE LA DIVISIÓN POLÍTICA ADMINISTRATIVA

(MAPA ESCOLAR)

REPUBLICA DE NICARAGUA – AMERICA CENTRAL

LEYENDA

- Capital de la República
- Cabecera Departamental
- Cabecera Municipal
- Límite Internacional
- Límite Departamental
- Límite Municipal
- Carretera Panamericana
- Carretera Pavimentada
- Carretera no Pavimentada
- Aeropuertos

Escala 1 : 750 000

15 7.5 0 15 30 45 60 75 Km

1 cm equivale a 7.5 Km

Proyección Transversa de Mercator

GOBIERNO DE LA REPÚBLICA DE NICARAGUA

Preparado por la Dirección General de Geodesia y Cartografía

Editado en 2010

Leyenda

- Zona de amenaza identificada
- Pendiente mayor de 20 grados
- Deslizamiento conocido
- Area susceptible a lahares
- Límites municipales
- Límites internacionales
- Ciudades
- Límite del municipio de Managua
- Vías

- Poblados
- Cab. Departamental
- Cab. Municipal
- Volcán
- V.---- Volcán
- C.---- Cerro
- R.---- Río

Leyenda hipsométrica

Menos de 100 200 300 400 500 600 800 1,000 Más de 1,200

Leyenda

- Baja Densidad
- Media Densidad
- Alta Densidad
- Límite Area Protegida

L E Y E N D A

- Capital de la República
- Cabecera departamental
- Cabecera municipal
- Otras poblaciones
- Carreteras pavimentadas
- Carreteras de revestimiento ligero
- Caminos

- Límite internacional
- Límite departamental
- Límite municipal
- Cota de elevación *1778
- Ríos
- Lagos y Lagunas

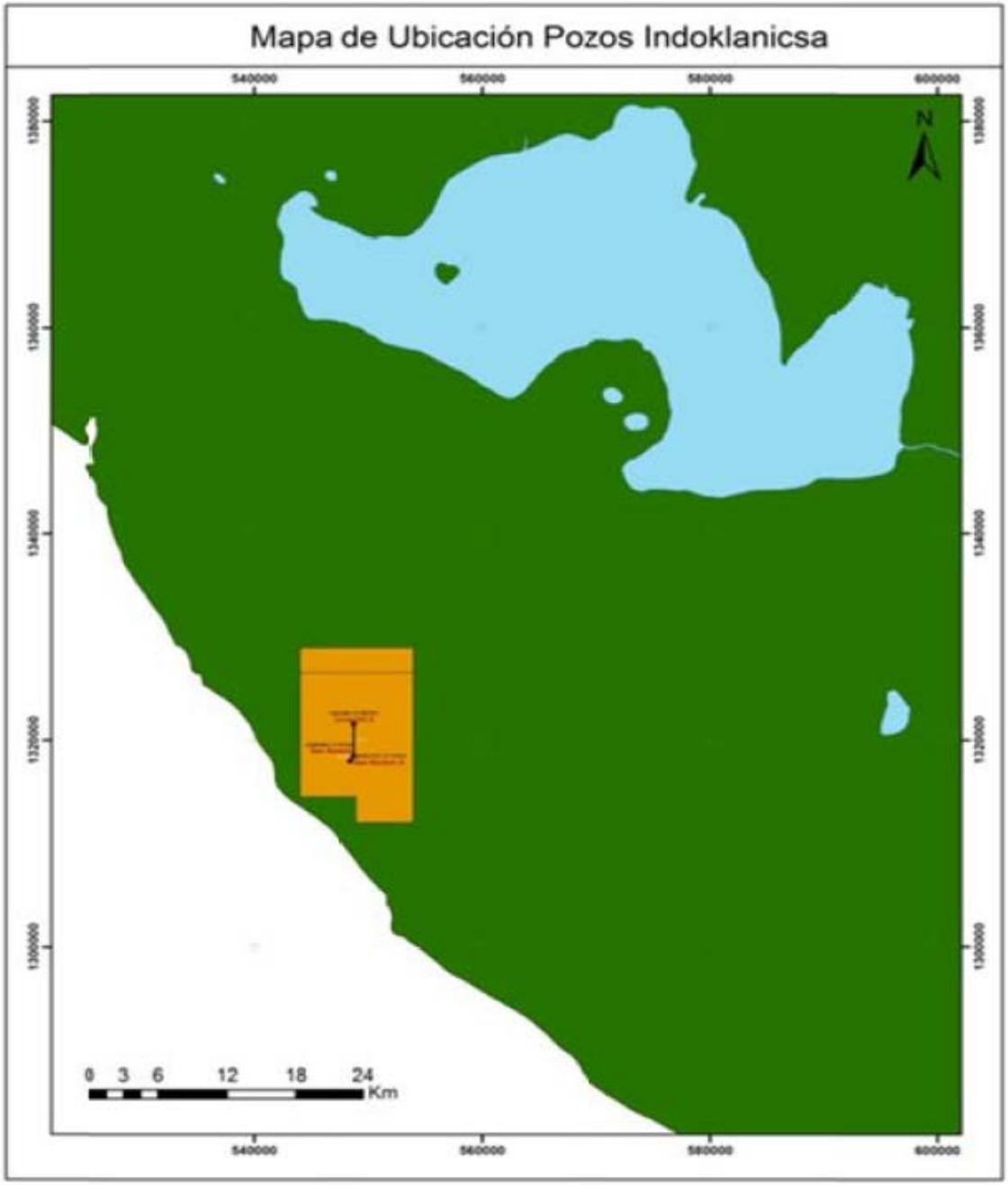
Escala 1 : 350 000

7 0 7 14 21 28 35km.

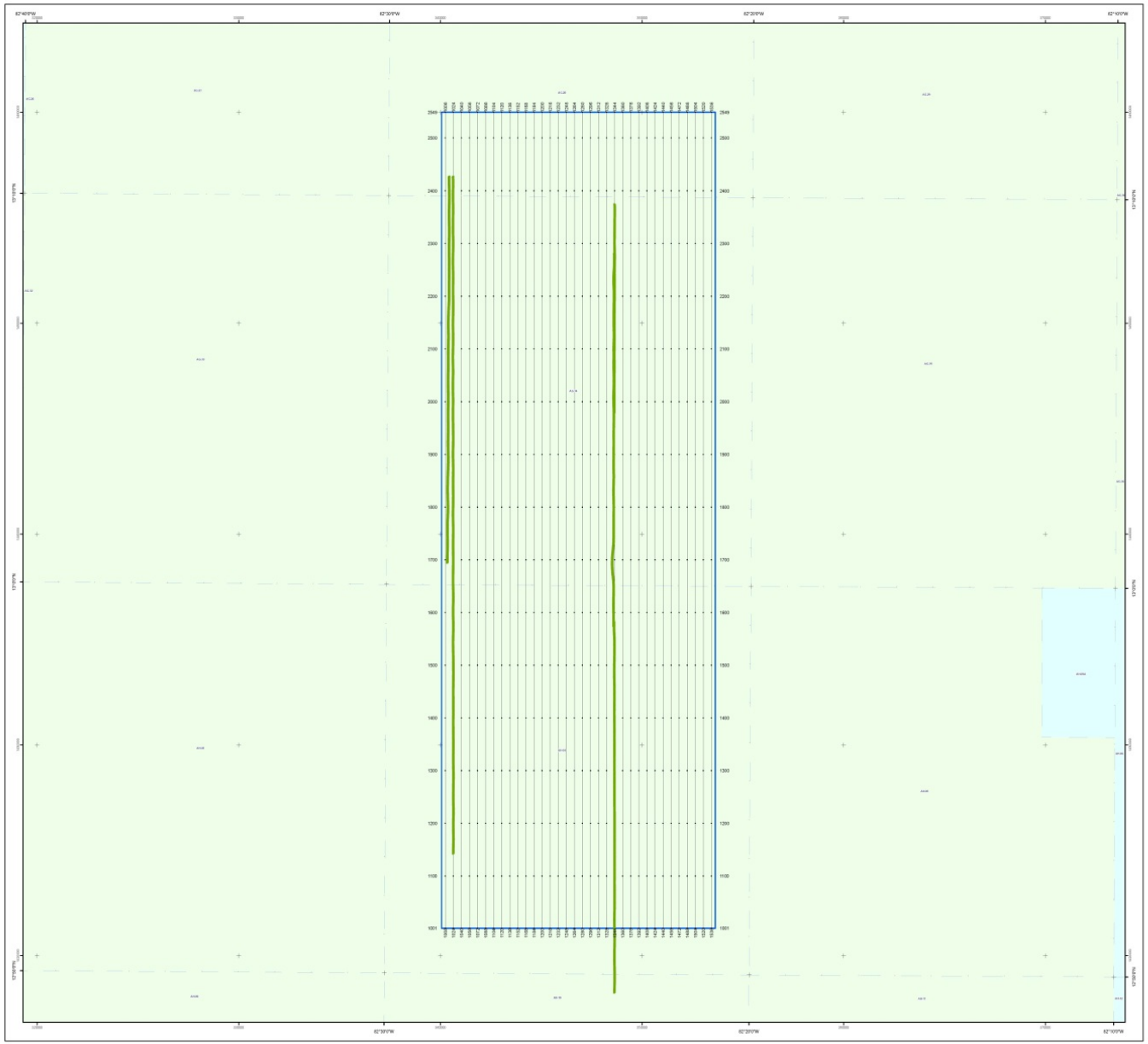
1 cm. en el mapa equivale a 3.5 Km. en el terreno

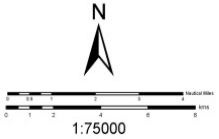
PROYECCIÓN TRANSVERSAL DE MERCATOR

INDOKLANICSA



INFINITY





LEGEND

- 2013_Acquired_Lines
- Nicaragua_3D_Infinity_v9_shots
- Nicaragua_3D_Infinity_v9_eslines
- Nicaragua_3D_Infinity_v9_outline
- Blocks
- Licensed Area

GEODETIC INFORMATION

Coordinate System: WGS 1984 UTM Zone 17N
Projection: Transverse Mercator
Datum: WGS 1984
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -81.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter

PROJECT INFORMATION

Project ID:	412 10 33 06 00-02
Survey:	Nicaragua 3D
Area:	Offshore Nicaragua
Preplot Base Map:	
Shot Point Interval:	25.00m
Number of Sources:	2
Source Separation:	50.00m
Number of Streamers:	8
Streamer Separation:	100.00m
Sail Line Interval:	400.00m
Line Generation Mode:	Grid
Number of Sail Lines:	34
Number of CMP LinesL:	544
Survey Azimuth:	0.000

Infinity
Nicaragua 3D

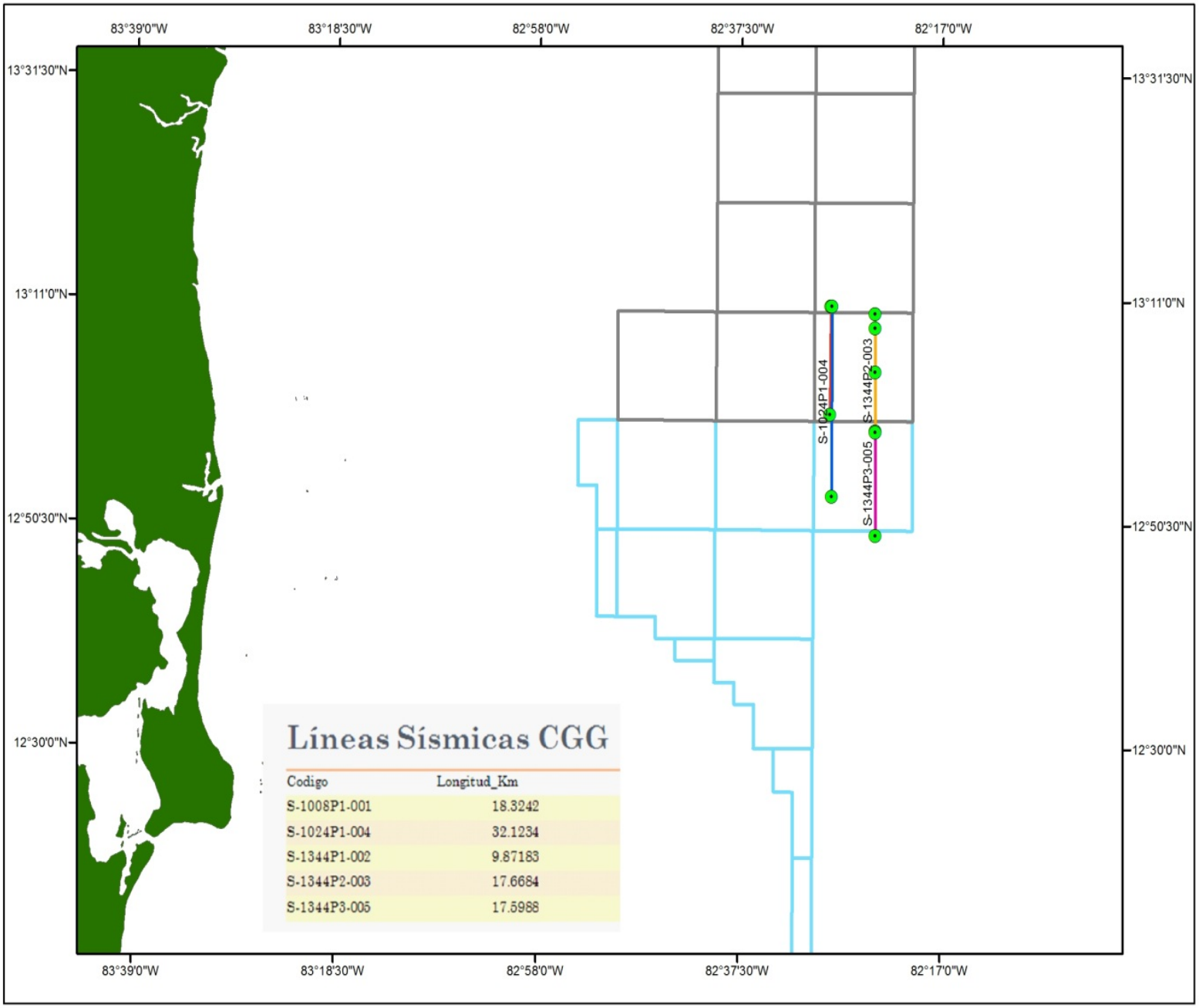
CGG

Author:	Date:	Document Name:
CGG Services (US) Inc - Houston	2/11/2014	Nicaragua_Infinity_3D_Source_11Feb14.pdf

More traits displayed

- Oil company logo
- Author, code and document name.
- Meshing or grid of the study area.
- Traces of seismic profiles lines and points.
- Additional information (seismic lines, lengths, codes, or other relatives).

INFINITY



Líneas Sísmicas CGG

Codigo	Longitud_Km
S-1008P1-001	18.3242
S-1024P1-004	32.1234
S-1344P1-002	9.87183
S-1344P2-003	17.6684
S-1344P3-005	17.5988

THANK YOU FOR YOUR ATTENTION