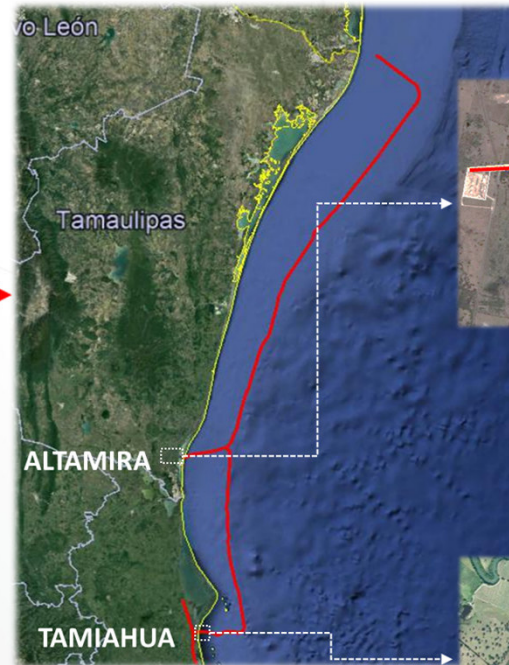
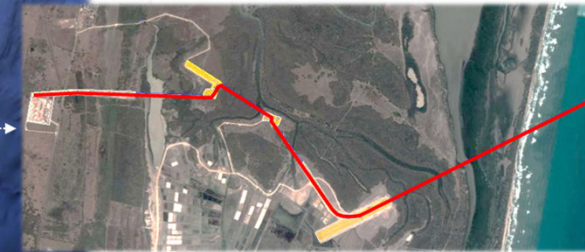




«PIPE-LAYING THROUGH THE UNCONTAMINATED MANGROVE FOREST»



NORTH SCOPE



SOUTH SCOPE



Index:

- 1) Business Profile*
- 2) The Project*
- 3) Challenge & Solutions*
- 4) Technology and Safety*
- 5) Achievements*



1 – BUSINESS PROFILE

58 years of experience

SICIM is a Construction Company established in 1962 and offering all types of services related to the installation of pipelines and relevant ancillary facilities for the transmission and distribution of oil and gas on international basis.

*Our past, including the installation of over than **15.000 km** of pipelines and **250.000 tons** of steel in facilities world-wide, is a guarantee of success*

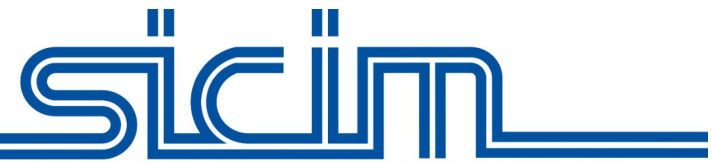
Range of services

- ⇒ Project Management;*
- ⇒ Engineering and Procurement for EPC works (approx. 200.000 hrs/year);*
- ⇒ Pipelines and Flowlines for oil, gas, petroleum and other industry's products, water, etc., including rehabilitations of existing pipelines;*
- ⇒ Oil/gas plants & facilities.*





1 – BUSINESS PROFILE



WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

	2016	2017	2018	2019
<i>Man-Hours</i>	23.413.125	25.803.142	15.783.534	18.789.095
<i>Turnover (€)</i>	512.716.204	545.522.159	438.364.487	500.000.000*

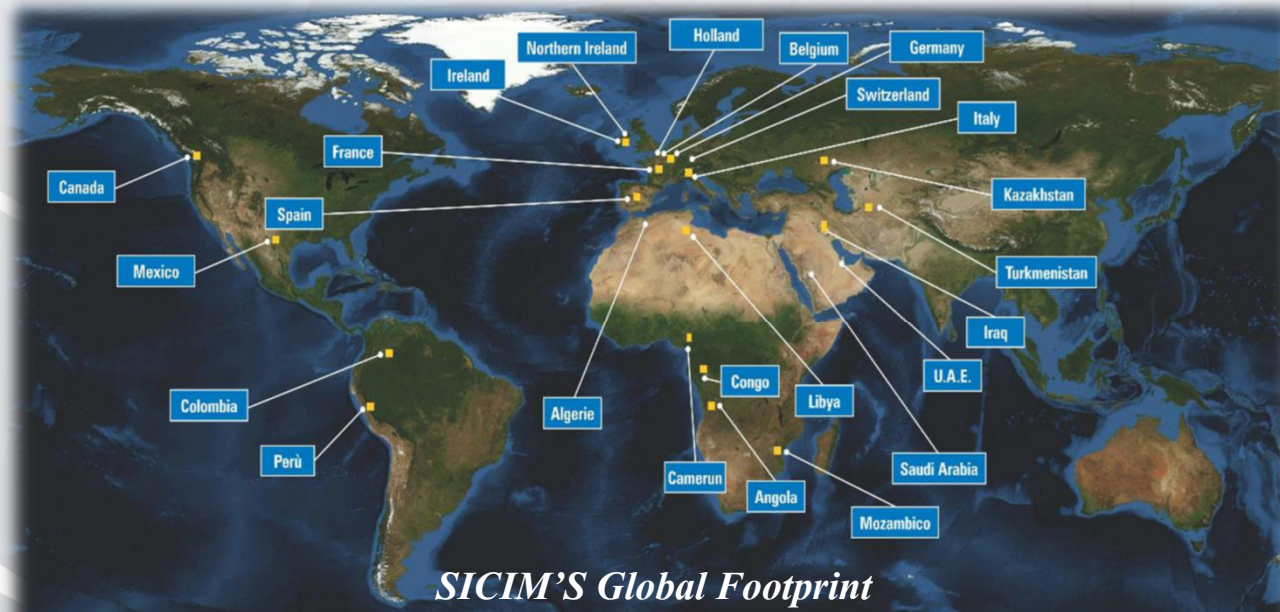
*FORECAST

HEAD OFFICE

⇒ *BUSSETO (PARMA) – ITALY*

DATE OF ESTABLISHMENT

⇒ *22nd January 1962*



⇒ *19 Branches/Subsidiaries*

● SICIM OFFICE



2 – THE PROJECT

Sicim wishes to present for the 2020 project execution excellency award the Sur de Texas (onshore) Pipeline project, executed between 2017 and 2018 in the region of Altamira (Tampico, Mexico).

Pipeline diameter 42", X70 grade, wall thickness from 23,7 to 45,52.

The scope of the onshore project has 3 basic components: landfall execution, landfall support and pipeline. This is further divided into a northern scope (Altamira Tamaulipas) and southern scope (Tamihaua, Veracruz).

The execution plan has been largely based on unconventional construction techniques: temporary platforms to support the landfall construction (north), 4 double line HDD crossings, trenchless crossings, direct pipe installation landfall (south), docks and river crossings. And very little conventional pipe laying works.

Pipes have been installed in flooded areas and across the lagoons and coastal wetlands. The working strip has been restricted to account for challenging geological conditions, permitting and the environmental regulations, embraced by the project, in order to preserve a unique flora and fauna richness of the area: the Mangroves.

The results of this project embody Sicim's commitment towards sustainable solutions for the new generations. Timely achievement of all project milestones, 1 mil manhours worked, 0 LTI's, and a stunning 'below zero' impact on the mangroves: 100% preservation of existing forest, and plus 33% successful new mangrove reforestation.



2 – THE PROJECT

NORTH SCOPE (Altamira)

Landfall

- Design, construction and maintenance of the landfall platform + access road to the 800 m x 130 m platform, welding/NDT/coating/hydrotest of 20 pipe strings of 500 m/each, staging and bundling to install 2 x 42" pipe strings and 1 x 24" pipe string stripped together into the tunnel (tunnel diameter ≈ 4 m).

Pipeline

- Engineering, permits application, procurement and construction of dual NPS 42" x 3.802 m parallel pipelines, from the landfall to the compressor station.
- The pipeline included 3 HDDs (double line)
 - 4 NPS 42" conventional HDD crossings, 2 x 566 m and 2 x 619 m
 - 2 NPS 42" HDD crossings including NPS 62" casing installation, NPS 42" 2 x 758 m and NPS 62" 2 x 80 m casingAnd 2 NPS 42" x 84 m trenchless road crossings.

SOUTH SCOPE (Tamiahua)

Landfall

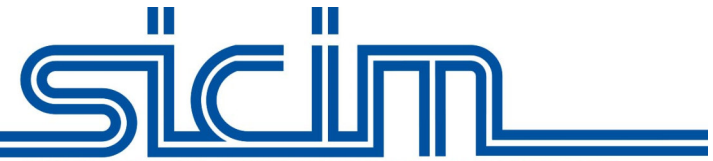
- Design, construction and maintenance of the landfall platform + access road to 885 m X 50 m platform, welding/NDT/coating/hydrotest of 3 pipe strings of 100 m, 471 m, 500 m, tie-ins of the strings to be installed by direct pipe methodology
- 700 m long, NPS 56" casing direct pipe installation.

Pipeline

- Engineering, permits application, procurement and construction of NPS 42" x 3.710 m pipelines, from Tamiahua Landfall to Tamiahua Pressure Control Station.
- 1 NPS 42" conventional HDD crossing, 700 m.
- 1 NPS 42" x 48 m trenchless road crossing.

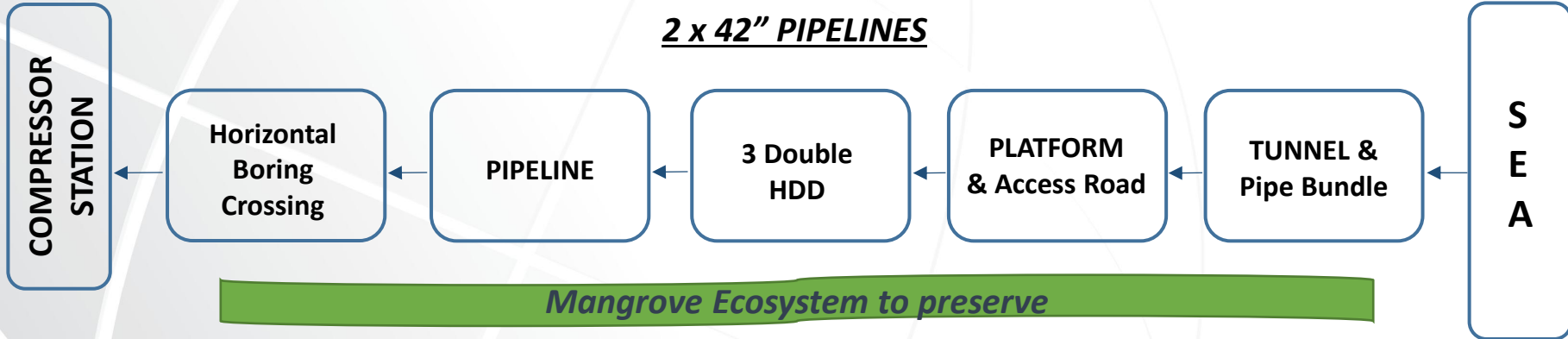


2 – THE PROJECT : NORTH SCOPE (Altamira)



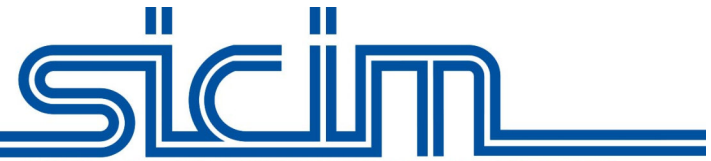
WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

NORTH SCOPE (Altamira)





2 – THE PROJECT : NORTH SCOPE (Altamira)



WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

2 x 42" PIPELINES

COMPRESSOR
STATION

Horizontal
Boring
Crossing

PIPELINE

3 Double
HDD

PLATFORM
& Access Road

TUNNEL &
Pipe Bundle

S
E
A



Unstable ground and flooded area



(4 conventional & 2 including NPS 62" casing installation)



Landfall Platform 800 m x 130 m in a swampy area



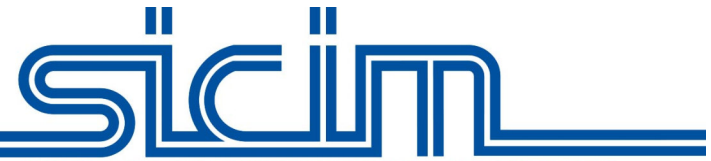
(2 x 42" and 1 x 24" pipe strings stripped together)



Mangrove Ecosystem to preserve

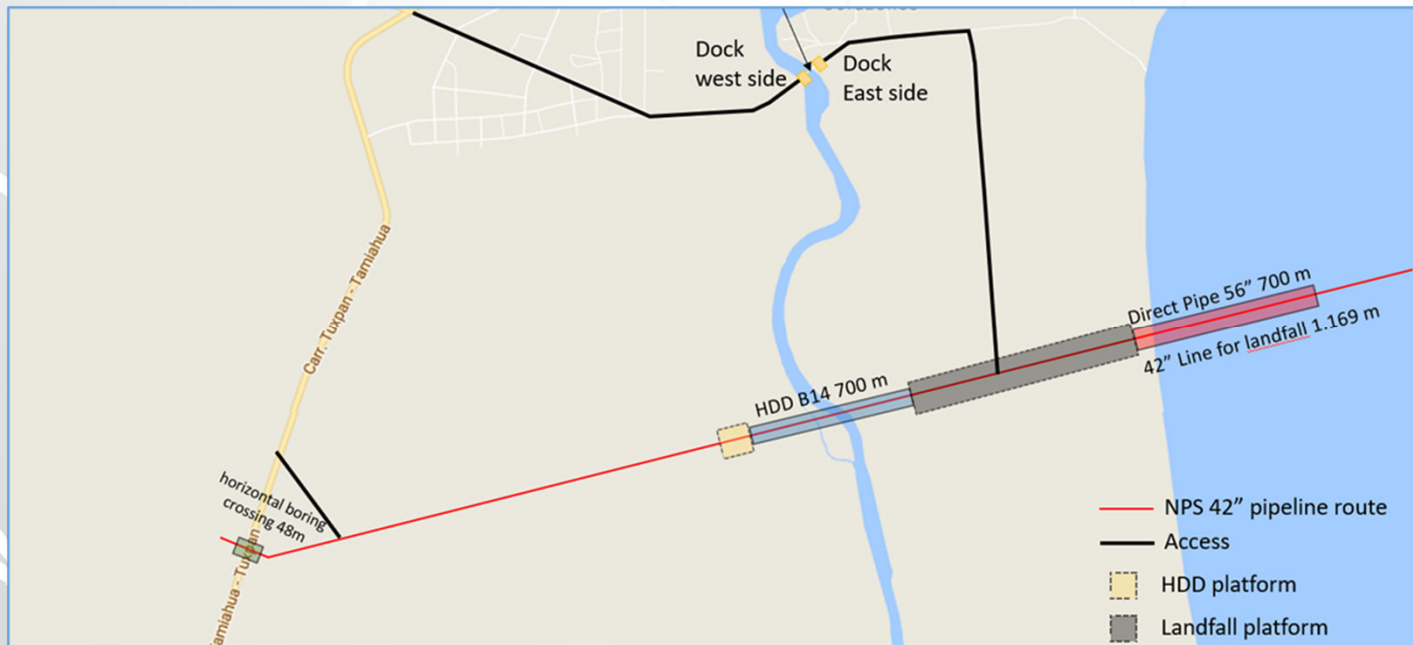
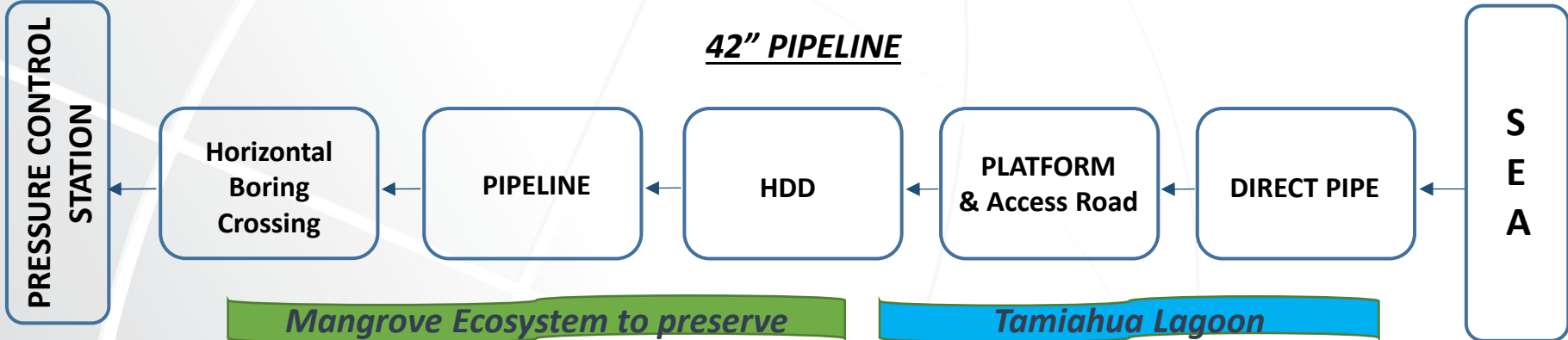


2 – THE PROJECT : SOUTH SCOPE (Tamiahua)



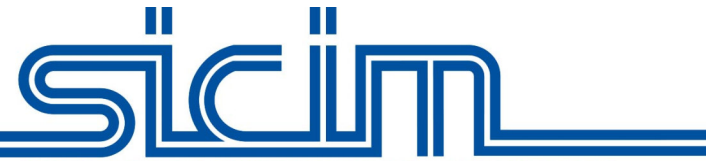
WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

SOUTH SCOPE (Tamiahua)





2 – THE PROJECT : SOUTH SCOPE (Tamiahua)



WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

**PRESSURE CONTROL
STATION**

42" PIPELINE



**S
E
A**



**Ground Conditions
(Tamiahua Lagoon)**



**1 NPS 42" conventional
HDD crossing**



**Landfall Platform 885 m X 50 m
in a swampy area**



**NPS 42" deployment inside
the NPS 56" casing up to TBM**



Mangrove Ecosystem to preserve



3 – CHALLENGES & SOLUTIONS

LOGISTIC

Limitations of access to the site due to morphological and regulatory factors

TECHNOLOGY

Unconventional pipe laying, extensive use of trenchless technique, welding of heavy wall pipes, handling of pipe string and onshore/offshore interface

ENVIRONMENTAL

Preservation, conservation and restoration of coastal wetlands, lagoons, sensitive areas, mangrove ecosystem, seaside and associate complex of constraints



UNDER A TIGHT SCHEDULE



3 – CHALLENGES & SOLUTIONS

<i>CHALLENGE</i>	<i>SOLUTION</i>	<i>HSE & SUSTAINABILITY</i>
<i>Logistics</i>	<i>Embankment Access road</i>	<i>Working on stable ground</i>
<i>Landfall Works</i>	<i>Tunnel & Direct Pipe</i>	<i>Maximizes safety of operations Minimizes impact on environment</i>
<i>Works in Mangroves / Lagoons</i>	<i>HDDs & Trenchless</i>	<i>Preservation of the mangrove ecosystems</i>
<i>Preservation of the environment</i>	<i>Robust environment plan to include Flora & Fauna rescue</i>	<i>«Below Zero» Impact on Mangroves</i>



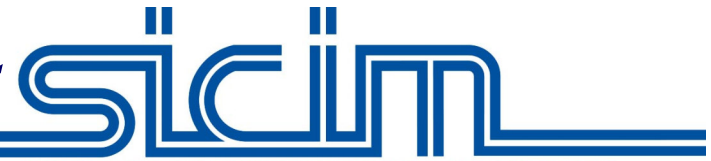
Access road & Landfall platform

- Construction of a solid platform in a swapy / flooded area, using imported material, ensuring stability required to support heavy equipment
- Allow early mobilization of the contractor in charge of the execution of the tunnel
- Minimize traffic impact on local community due to road material transportation with appropriate traffic management plan.





4 – TECHNOLOGY AND SAFETY : LOGISTIC



WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

Access road & Landfall platform

The construction of the access roads required to connect the Dock with the landfall platform immediately after the receipt of the relevant environmental permits.



The platform embankment (at Altamira) was 2 m high in the tunnel area and 1 m high in the area where the NPS 42" & 24" pipe strings were prefabricated and staged.

The existing quarry is located 7 km from the project area. A detailed traffic plan was developed to minimize the traffic impact on the local community.





4 – TECHNOLOGY AND SAFETY : TUNNEL

Tunnel: Pipe bundling



Buoyancy modules were installed on the nearshore part of the bundle, bundle section no. 1 & 2.

This to avoid the pipe bundle sank into the seabed after the tunnel punch out in order to minimize the pull force.

2' 226 m long tunnel

tunnel diameter \approx 4 m





4 – TECHNOLOGY AND SAFETY: HDDs

HDD - Tamiahua Lagoon crossing

Pipeline installation through a thin layer of ground with unfavorable conditions for HDD at the east side of the 758 m long HDDs. In consideration with the reduced length of these new crossings with the related reduction of the required pull force during pull back, the presence of this thin layer was considered manageable with the conventional HDD technique.

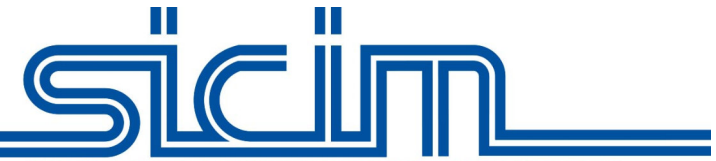
Considering the flooded area where the HDD rig had to be installed, a solid embankment importing soil from an existing quarry was constructed.

Item	Code	NPS	Line	Length (m)
1	B14	42"	Incoming	700
TOTAL Length (m)				700



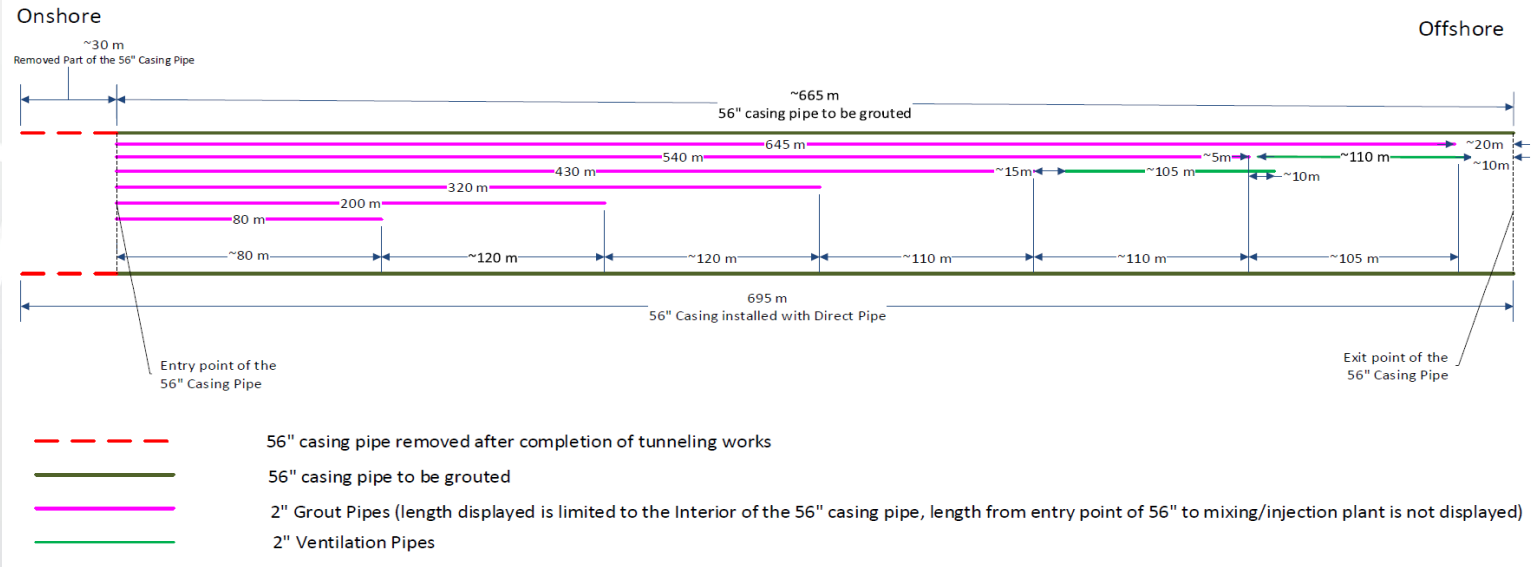


4 – TECHNOLOGY AND SAFETY: DIRECT PIPE



WORLDWIDE EPC SOLUTIONS FOR OIL & GAS SINCE 1962

Direct pipe: NPS 42” deployment inside the NPS 56” casing up to TBM.



Thruster pit construction

The construction of the pit for the installation for DPI thruster started immediately after the completion of the platform.



4 – TECHNOLOGY AND SAFETY: ENVIRONMENTAL CHALLENGES

Environmental plan to minimize impact on existing mangroves and local flora & fauna.

The mangroves are considered **one of the most important natural settings, of major environmental, economic, and social importance.**

In Mexico, an official regulation protects the mangrove ecosystem: NOM-022-SEMARNAT-2003

This law establishes the **specific guidelines for the preservation, conservation, sustainable development, and restoration of mangrove ecosystems.**

SICIM has re-engineered crossing solution (HDD and Direct pipe) to take into account problematic geological conditions and restriction of the temporary and permanent working strips dictated by environmental constraints and the need to preserve a unique flora and fauna richness of the area.





4 – TECHNOLOGY AND SAFETY: ENVIRONMENTAL CHALLENGES

Flora rescue and recovery



Mangroves Reforestation & Sprouting



Common Name	Scientific Name	#
Pinuela	<i>Bromelia pinguin</i>	31
Ebano	<i>Ebanopsis ebano</i>	249
Tizana	<i>Havardia pallens</i>	143
Mezquite	<i>Prosopis laevigata</i>	37
Framboyan	<i>Delonix regia</i>	148
Guamuchuil	<i>Pithecellobium dulce</i>	95
Huizache	<i>Vachellia franesiana</i>	143
Limoncillo	<i>Zanthoxylum fagara</i>	33
Nopal	<i>Nopalea dejecta</i>	110
Palmilla	<i>Zamia loddigesii</i>	37
Chiococca	<i>Chiococca belisensis</i>	89
Uva de mar	<i>Coccoloba uvifera</i>	266
Ficus	<i>Ligustrum vulgare</i>	89
Colima	<i>Zanthoxylum fagara</i>	89
Orquidea	<i>Myrmecophila tibicinis</i>	500
Bromelia	<i>Bromelia aechmea bracteata</i>	112
Encino barcino	<i>Quercus oleoides</i>	3300
Espino blanco	<i>Jacquina macrocarpa</i>	542
Cedro rojo	<i>Cedrela odorata</i>	48
Jacube	<i>Acanthocereus tetragonus</i>	30
Tapame	<i>Bachellia pennatula</i>	68
Papelillo	<i>Burcera simaruba</i>	61
Others		29
	TOTAL	6250

Common Name	Scientific Name	#
Mezquite	<i>Prosopis laevigata</i>	29
Guamuchuil	<i>Pithecellobium dulce</i>	318
Limoncillo	<i>Zanthoxylum fagara</i>	33
Mangle	<i>Avicennia germinans</i>	2046
Cedro rojo	<i>Cedrela odorata</i>	48
		2485



4 – TECHNOLOGY AND SAFETY: ENVIRONMENTAL CHALLENGES

Fauna rescue

TOTAL FAUNA RESCUED : 183 EJEMPLARES

5



Nombre común / Common name	Nombre científico / Scientific name	Ejemplares presentes
Culebra parda	Storeria dekayi	1
Ratón pigmeo norteño	Bojomys taylori	1
Culebra negra ciega	Epictia goudotti	1
Ratón casero	Mus musculus	3
Huico pintado del noreste	Aspidoscelis gularis	1
Falsa nauyaca mexicana	Trimorphodon tau	1
Culebra bejuquilla mexicana	Oxibelis aeneus	3
Iguana verde	Iguana iguana	1
Culebra perico mexicana	Leptophis mexicanus	1
Culebra verde rugosa	Opheodrys aestivus	1
Toloque coronado	Laemactus serratus	1
Zorrillo sureño	Mephitis macroura	1
Rana de la huasteca	Lithobates johni	12
Sapo jaspeado	Incilius marmoratus	2
Rana grillo norteña	Acris crepitans	3
Lagartija espinosa de macanita	Sceloporus grammicus	7
Chipre dorso verde	Setophaga virens	1



3

Nombre común / Common name	Nombre científico / Scientific name	Ejemplares presentes
Cocodrilo de río	Crocodylus acutus	3
Tortuga pinta	Trachemys scripta elegans	6
Culebra	Drymobioides margaritifer	1
Lagartija espinosa de pastizal	Sceloporus scalaris	2
Iguana espinosa del noroeste	Ctenosaura acanthura	9
Sapo de espuela	Spea multiplicata	2
Sapo boca angosta elegante	Gastrophryne elegans	3
Sapo nebuloso	Incilius nebulifer	25
Rana leopardo	Lithobates berlandieri	5
Chirionera	Coluber mentovarius	3
Rana de bigotes	Leptodactylus fragilis	9
Besucona	Hemidactylus frenatus	2
Anolis sedoso	Anolis sericeus	2
Escombrera del sureste	Leptodeira maculata	7
Ratonera de maíz	Pantherophis guttatus	1
Sapo gigante	Rhinella horribilis	1
Bejuquillo	Oxybelis aeneus	1
Lagartija espinosa vientre rosado	Sceloporus variabilis	2
Sapo excavador mexicano	Rhinophrynus dorsalis	7
Aboniquillo pardo	Anolis sagrei	1
Lagartija coliroja	Acanthodactylus erythrus	3
Rana termitera	Hypopachus variolosus	12



1

Nombre común / Common name	Nombre científico / Scientific name	Ejemplares presentes
Lagartija arcoiris	holcosus undulatus	1
Lagartija anolis de Veracruz	Anolis cymbops	3
Java Flying frog	Rhacophorus margaritifer	6
Culebra ojo de gato bandada	Ceptodera annulata	1
Cangrejo rojo	Gecarcinus Aeneus	15
Rana de ojos rojos	Agalychnis callidryas	1
Java Flying frog	Rhacophorus margaritifer	1
Tortuga casquillo	Kinosternon herrerae	5
Coral ratonera	Lampropeltis triangulum	1
Mazacuata	Boa constrictor	1



5 - ACHIEVEMENTS

<i>Project Man-Hours</i>	<i>≈ 1'000'000</i>
<i>Metres Of Pipes Laid</i>	<i>≈ 11'400</i>
<i>Metres Of HDD</i>	<i>≈ 4'500</i>
<i>Metres Of Tunnel</i>	<i>≈ 6'900</i>

LTI RATE <i>0</i>	QUALITY <i>100% findings closed within 30 days</i>	«BELOW ZERO» IMPACT ON MANGROVES <i>100% preserved mangroves + 33% new mangroves</i>
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SCHEDULE
START: March 2017
MECHANICAL COMPLETION: August 2018