



Commissioning & Pre-Commissioning Companies Presentation

Pipeline Engineering and Services

- **INTRODUCTION**
- **PORTFOLIO**
- **SHARED ACTIVITIES**
 - **NITROGEN DISPLACEMENT OF A 250 KM PIPELINE**
 - **PIPELINE CLEANING FOR CRUDE TO REFINED CONVERSION**
 - **STUCK PIG RECOVERY**
 - **ILI – PRE-LAUNCH CLEANING OPERATIONS**
 - **ILI - SEALINE PIGGABILITY**
 - **OTHER SHARED PROJECTS**
- **OTHER CAPABILITIES**

Introduction



Introduction

Company Name:

TECMA Srl

Head quarter:

MILAN, ITALY

Specialty Pipeline

Services since:

1989



Mission:

**SUPPORTING OIL & GAS COMPANIES with PIPELINE
SPECIALTY PRODUCTS & SERVICES ACTIVITIES**

Introduction

Company Name:

**STREAMLINE
ENGINEERING Srl**

Group:

SIMECO MILANO SpA

Head quarter:

MILAN, ITALY



Mission:

**SUPPORTING OIL & GAS COMPANIES with
ENGINEERING for DESIGN & SERVICES**



TECMA & STREAMLINE AREAS OF EXPERTISE:

- **PRE-COMMISSIONING & COMMISSIONING,**
- **DE-COMMISSIONING,**
- **PIPELINE CLEANING & NITROGEN DISPLACEMENT,**
- **ILI – RISK ASSESMENT – MAOP REDEFINITION,**
- **SPECIAL OPERATIONS.**

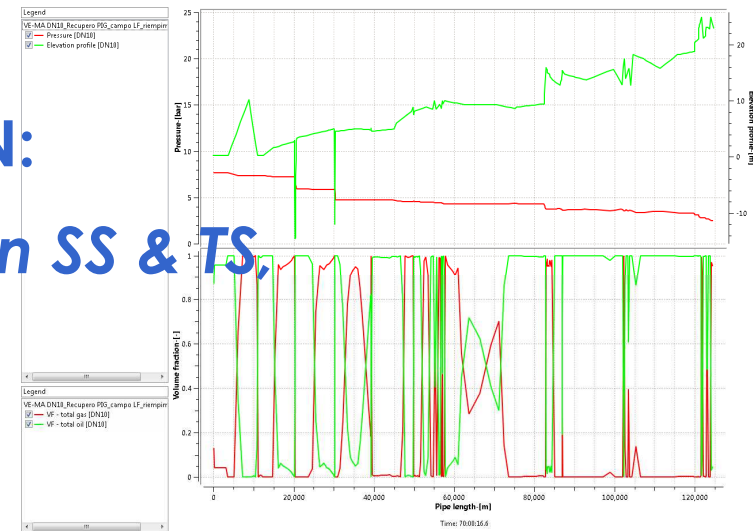
WE CAN SUPPORT YOU WITH:

- **PROCESS & MECHANICAL ENGINEERING,**
- **PIPELINE PRODUCTS, LOGISTICS, SERVICES,**
- **DETAILED ENGINEERING,**
- **TURN-KEY PROJECTS,**
- **ON SITE OPERATIONS & SUPERVISION.**

ACTIVITIES BREAK-DOWN

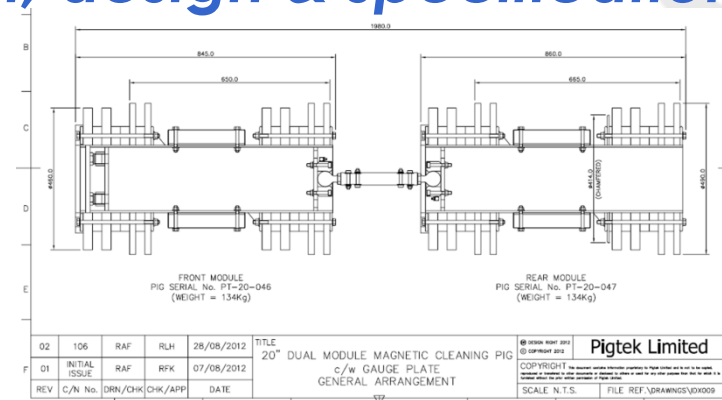
➤ PROCESS & EQUIPMENT DESIGN:

- ✓ Calculations & Simulations in SS & TS,
 - ✓ LedaFlow & Multiflash
 - ✓ AFT Fathom – Impulse - Arrow
 - ✓ Excel Spread-sheets
- ✓ Philosophies, Specifications & Procedures,
- ✓ P&IDs', PFDs' & Mechanical Drawings,
- ✓ Equipment definition, design & specification,



➤ CONSULTANCY:

- ✓ Support to Logistics,
- ✓ On-Site Supervision,



➤ PRODUCTS:

✓ Pigs & Special Equipment,

✓ Pig Supply, Logistics, Pingers & Receivers, Non intrusive
Magnetic pig signallers

✓ Caliper pigs,

➤ OPERATIONS & SERVICES:

✓ Turn-key Pre-Commissioning activities,

✓ Filling, Hydrotesting, Caliper Inspection, dewatering &
Drying

✓ Turn-key Cleaning & Displacement activities,

✓ Pre-Cleaning, Pumping System, Nitrogen, Tracking, Filling

✓ Pig Launching, Receiving & Tracking,

✓ Complete inspection activities.

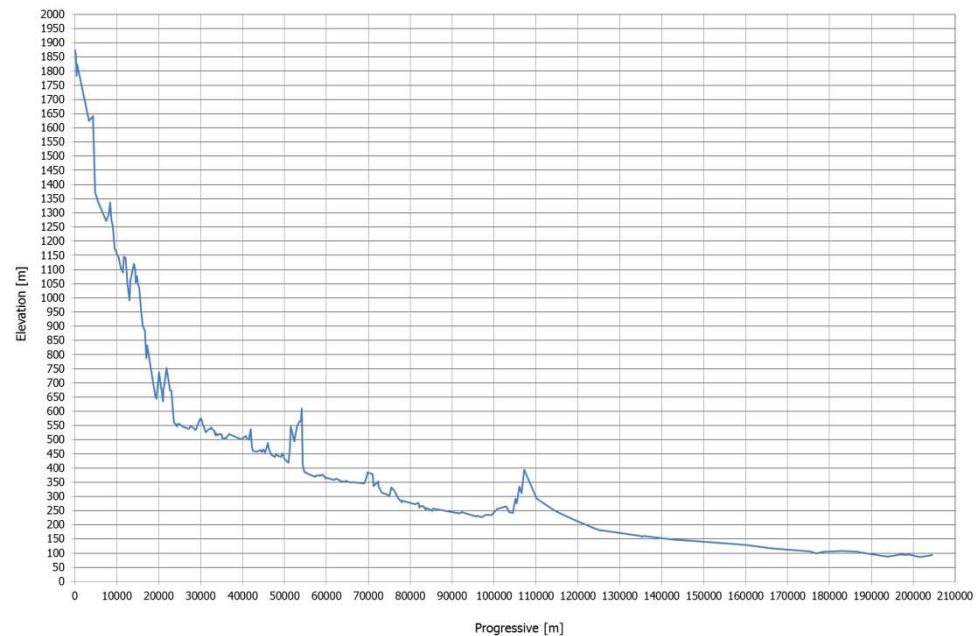


Shared Activities



NITROGEN DISPLACEMENT – FERRERA - AIGLE

- **Client:** ENI R&M
- **Pipeline Location:** Italy & Switzerland
- **Period:** March – April 2015
- **Product:** Crude & Diesel
- **Diameter:** 20 – 16 – 12"
- **Length:** about 350 km –
240 km Italy & 100 km
Switzerland



NITROGEN DISPLACEMENT – FERRERA - AIGLE

- **DETAILED ENGINEERING – PIG SUPPLY & TRACKING – ON-SITE OPERATIONS & SUPERVISION**

Brief description:

- *Philosophy & Pigging Strategy: Displacement direction*
- *Calculations, Specification & Procedure: Nitrogen quantities, timing, Pumper Flow rate*
- *Equipment Design & Supply: Plant Upgrade, Pigs Design & Supplying,*
- *On-Site Operations: Pig Tracking, Launching & Receiving, Supervision*

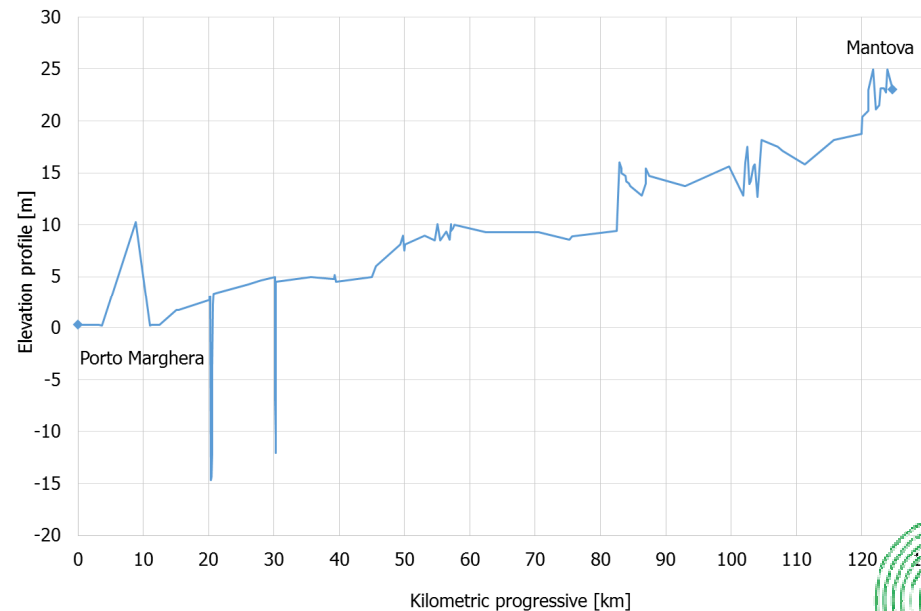
NITROGEN DISPLACEMENT – FERRERA - AIGLE

PHOTO GALLERY



PIPELINE CLEANING FOR CRUDE TO REFINED PRODUCT CONVERSION

- **Client:** IES Mantova (MOL Group)
- **Location:** Venice-Mantova Italy
- **Period:** July-September 2014
- **Product:** Crude Oil
- **Diameter:** 24 – 10"
- **Length:** 120 km



PIPELINE CLEANING FOR CRUDE TO REFINED PRODUCT RE-CONVERSION

- **TURN-KEY PROJECT FOR CLEANING OPERATIONS & NITROGEN
DISPLACEMENT:**
 - **DETAILED ENGINEERING, TOOLS & PIG SUPPLY, MANAGEMENT, LOGISTICS,
ON-SITE OPERATIONS**

Brief description:

- **Philosophy & Pigging Strategy: Cleaning Pigs runs**
- **Calculations, Specification & Procedure: Cleaning product
Quantities, Scheduling, Nitrogen Quantities, Flow-Rates**
- **Equipment Design & Supply: Pumper Definition, Nitrogen Supply**
- **On-Site Operations: Pig Tracking, Launching & Receiving,
Management & Supervision**

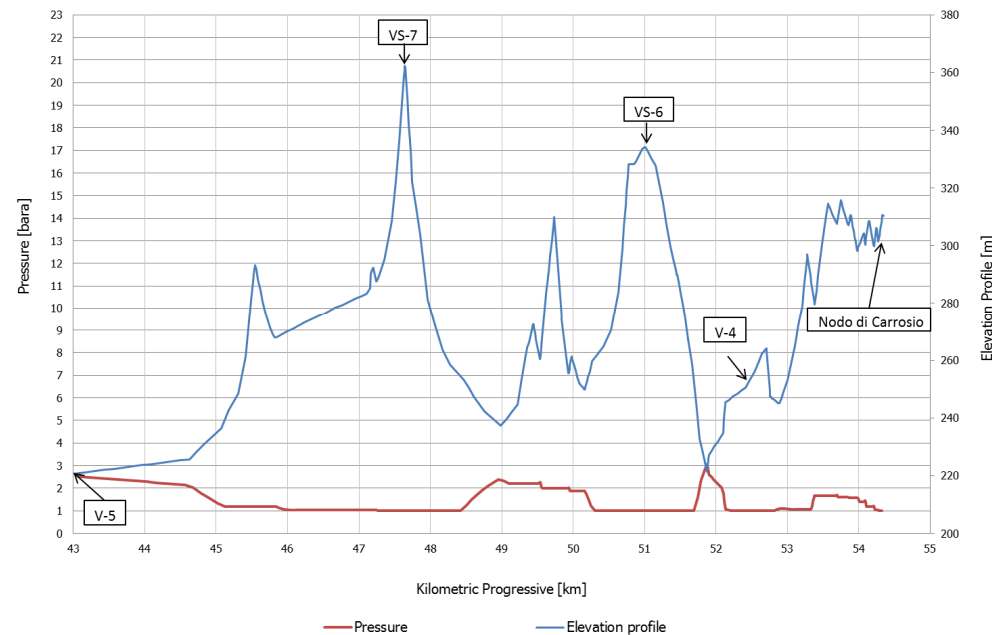
PIPELINE CLEANING FOR CRUDE TO REFINED PRODUCT RE-CONVERSION

PHOTO GALLERY



STUCK PIG DISLODGING

- **Client: ENI R&M**
- **Location: Ferrera – Fegino DN12"**
- **Period: October 2013**
- **Diameter: 12"**
- **Length: 82 km – 11 km Displaced**



PIG STUCK DISLODGING

- **NITROGEN DISPLACEMENT WITHOUT PIG:**
 - **ENGINEERING, CALCULATIONS, PROCEDURE & ON-SITE SUPERVISION**

Brief description:

- *Philosophy & Pigging Strategy: injection point, flow direction*
- *Calculations, Specification & Procedure: Scheduling, Nitrogen Quantities, Flow-Rates, blow-down simulation*
- *Equipment Design & Supply: Pumper Definition, Nitrogen Supply*
- *On-Site Operations: Pig recovery, Management & Supervision*

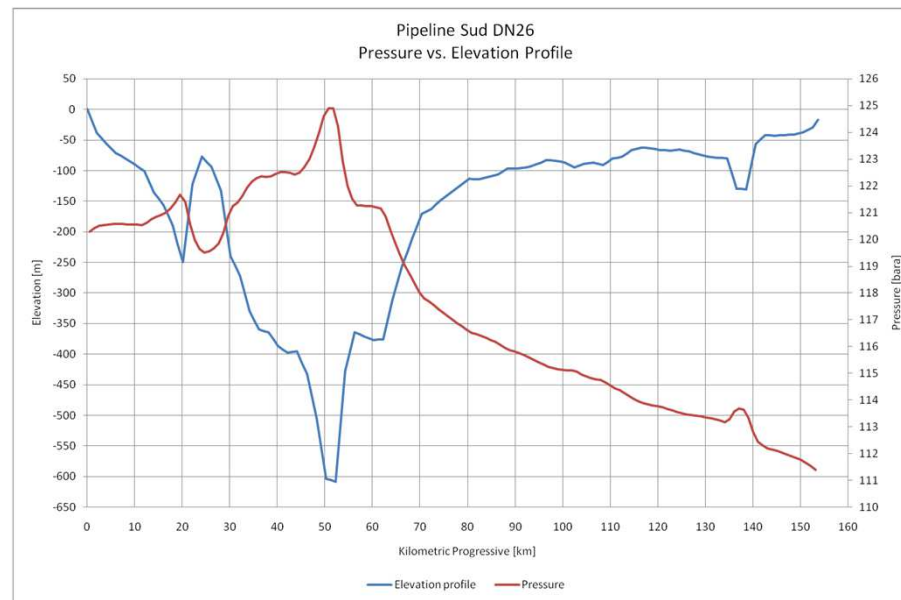
PIG STUCK DISLODGING

PHOTO GALLERY



ILI & SEALINE PIGGABILITY

- **Client:** Trans Mediterranean Pipeline Company (TMPC)
- **Location:** Canale di Sicilia
- **Period:** 2012
- **Pipeline Fluid:** Natural Gas
- **Diameter:** Three off ND 20''- Three off ND 26''
- **Length:** 150 km each



ILI & SEALINE PIGGABILITY

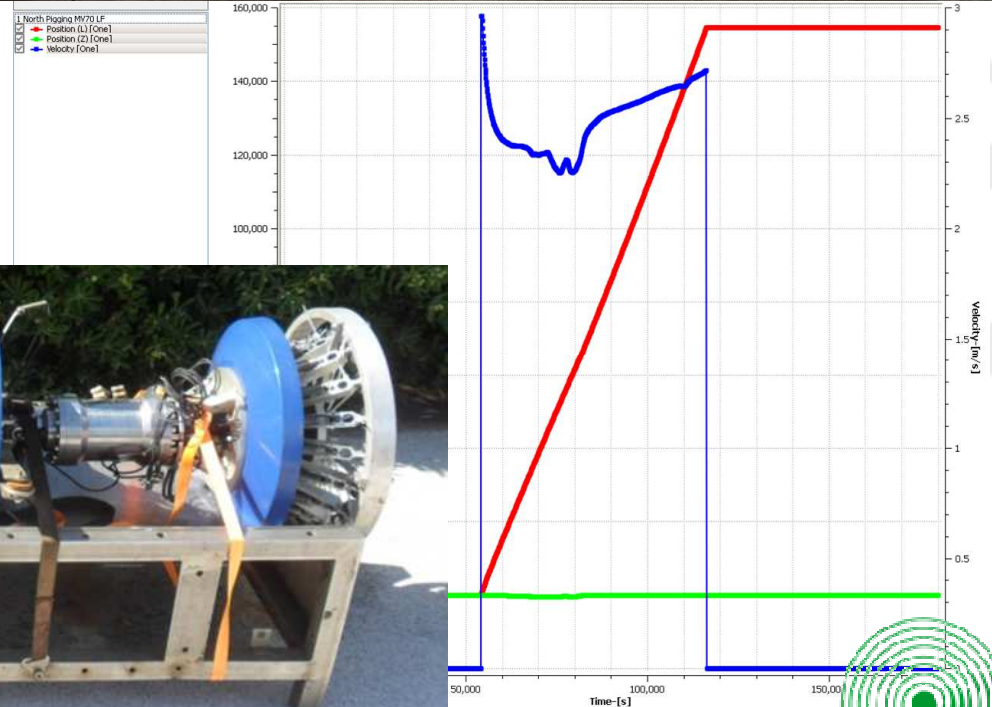
- **TURN KEY - IN LINE INSPECTION**
 - **PIGGABILITY & FLOW PARAMETERS, PIPELINE CLEANING, PIG SUPPLY, INSPECTION, LOGISTICS, ON-SITE OPERATIONS**

Brief description:

- **Philosophy & Pigging Strategy: standard inspection activity**
- **Calculations, Specification & Procedure: Gas flow rates for each pipeline, pig velocity evaluation**
- **Equipment Design & Supply: Regulation valves design, Gauging and caliper pigs, Cleaning Pigs, Intelligent Pigs**
- **On-Site Operations: Launching & Receiving, inspection, integrity assesment, logistics, supervision**

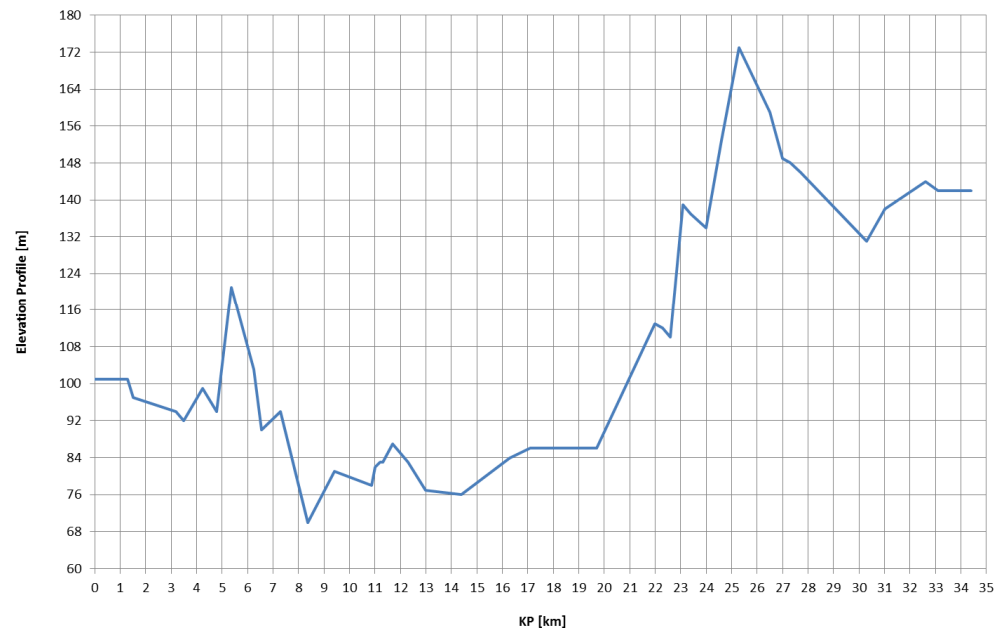
ILI & SEALINE PIGGABILITY

PHOTO GALLERY



POST ILI CLEANING OPERATION

- **Client: Air Liquide**
- **Location: Castelnovo – Lonato**
- **Period: 2014**
- **Pipeline Fluid: Oxygen & Nitrogen**
- **Diameter: 8"**
- **Length: 34 km**



POST ILI CLEANING OPERATION

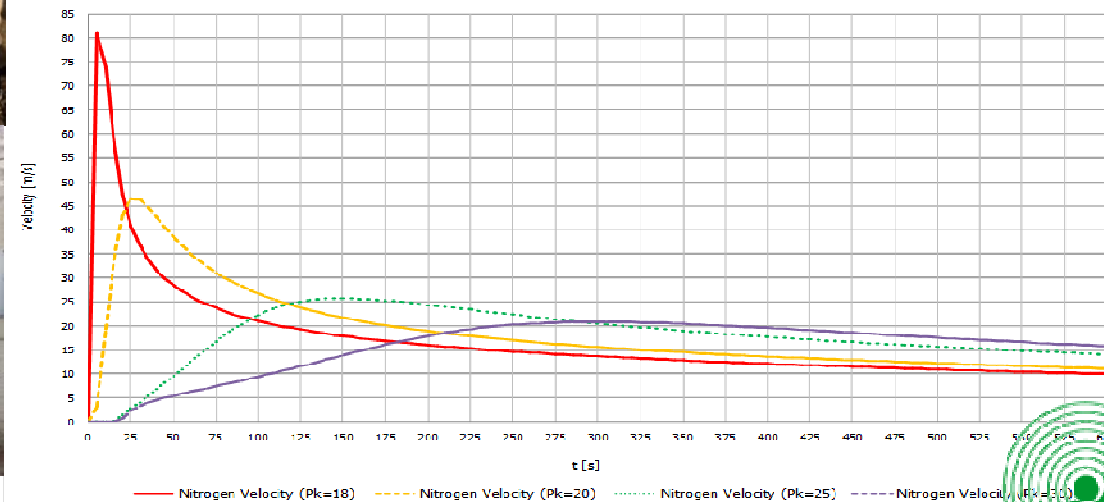
- **TURN KEY - IN LINE INSPECTION**
 - **DEFINITION OF CLEANING & FLOW PARAMETERS, PIPELINE CLEANING, PIG SUPPLY, INSPECTION, LOGISTICS, ON-SITE OPERATIONS**

Brief description:

- **Philosophy & Pigging Strategy: Cleaning & Blow down Direction**
- **Calculations, Specification & Procedure: Nitrogen Quantities for cleaning operations, Scheduling, Flow-Rates, Saltation velocity definition, Pressurization & Blow Down Calculations**
- **Equipment Design & Supply: Plant upgrade, Pumper Definition, Nitrogen Supply, Logistics, cleaning & foam pigs, caliper pigs**
- **On-Site Operations: Pig Tracking, Launching & Receiving, Inspection, Management & Supervision**

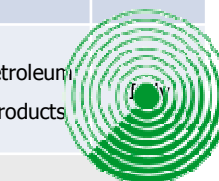
POST ILI CLEANING OPERATION

PHOTO GALLERY



ALL SHARED ACTIVITIES

Project / Description	Client	Year	NPS	Length Rating	Scope of Work	Product	Location
Pegli - Sannazzaro DN32" <i>Nitrogen displacement</i>	ENI	2015	32" Pipeline	100 km 600#	Pig Positioning, Pipeline Displacement Study	Crude Oil	Italy
Sealines: Luna B – Luna A, BEAF – Luna A, Luna A - Crotone <i>Sealines' Cleaning & Inspection</i>	TECMA & Ionicagas (Eni)	2014	14" Sealine 10" Sealine 16" Sealine	5 km 6 km 7 km	Dynamic Flow Assurance – Sealines Cleaning and Inspection Simulation	Natural Gas	Italy
Multedo - Busalla DN8" & DN16" <i>Nitrogen displacement</i>	IPLOM	2014	8" & 16" Pipeline	25 km 600#	Pipeline Displacement Study, Working Procedure, On site supporting & supervision	Petroleum Products	Italy
Sannazzaro-Rho DN8" Pipeline Valve area V8B Nitrogen Displacement & Pig Dislodging	Eni R&M	2014	8" Pipeline	51 km 600#	Pipeline Displacement Study, Work Procedure, On site supporting & supervision	Petroleum Products	Italy
Venezia Refinery <i>42" Sealine Products Re-Conversion</i>	Eni R&M Div.	2013	42" Sealine	10 km 150#	Sealine DN42" Hydraulic and Interface length Analysis, Pig Traps Data Sheet	Petroleum Products	Italy
Ferrera - Fegino DN12" Pipeline Valve area VL4 Nitrogen Displacement & Pig Dislodging	Eni R&M	2013	12" Pipeline	100 km 900#	Pipeline Displacement Study, Work Procedure, On site supporting & supervision	Petroleum Products	Italy
Ragusa - Mostringiano - Magnisi DN10"- 24" Pipeline <i>Nitrogen Displacement</i>	Eni / PPC	2012- 2013	10" & 24" Pipelines	60 km & 7 km	Hydraulic Analysis, Specification and Working Procedure	Crude Oil	Italy
Ferrera - Fegino DN12" Pipeline Valve area VL2-Cesino Nitrogen Displacement & Pig Dislodging	SEAPAD	2012	12" Pipeline	100 km 900#	Hydraulic Analysis, Specification and Working Procedure	Petroleum Products	Italy



OTHER CAPABILITIES

PRE-COMMISSIONING

STREAMLINE ACTIVITY

- **Client: Saipem**
- **Location: Nord Stream**
- **Period: 2007-2009**
- **Diameter: 48"**
- **Length: 1200 km**
- **ENGINEERING**
 - **GENERAL SPECIFICATION: Issuing of general Specifications for Cleaning, Flooding, de-watering and Drying**

PRE-COMMISSIONING

TECMA ACTIVITY

- **Client: ISAB ERG (LUKOIL)**
- **Location: SICILY**
- **Period: 2011-2012-2013**
- **Diameter: 16"(12 KM) , 8",10",12" ,20",28" (PIER TO REFINERY DEPOT each section 3 km)**
- **TURN KEY – PRE-COMMISSIONING ACTIVITIES**
 - **PIPELINE CLEANING, FLOODING, HYDROTESTING, DE-WATERING & DRYING, PIG SUPPLY, LOGISTICS, ON-SITE OPERATIONS**