



**COMPANY  
PROFILE**

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Our portfolio of services helps you confidently manage the lifecycle of your asset: delivering timely and stress free start up, supporting day to day reliability and controlled decommissioning.

The mutual goal – safe operations, asset integrity and enhanced profitability.

Delivering a unique portfolio of:

- Pipeline and process pre-commissioning and maintenance services
- Inline inspection and integrity services

# **TOJ** PROCESS & PIPELINE SERVICES



## PROCESS & PIPELINE SERVICES



Safe operations



Enhanced profitability

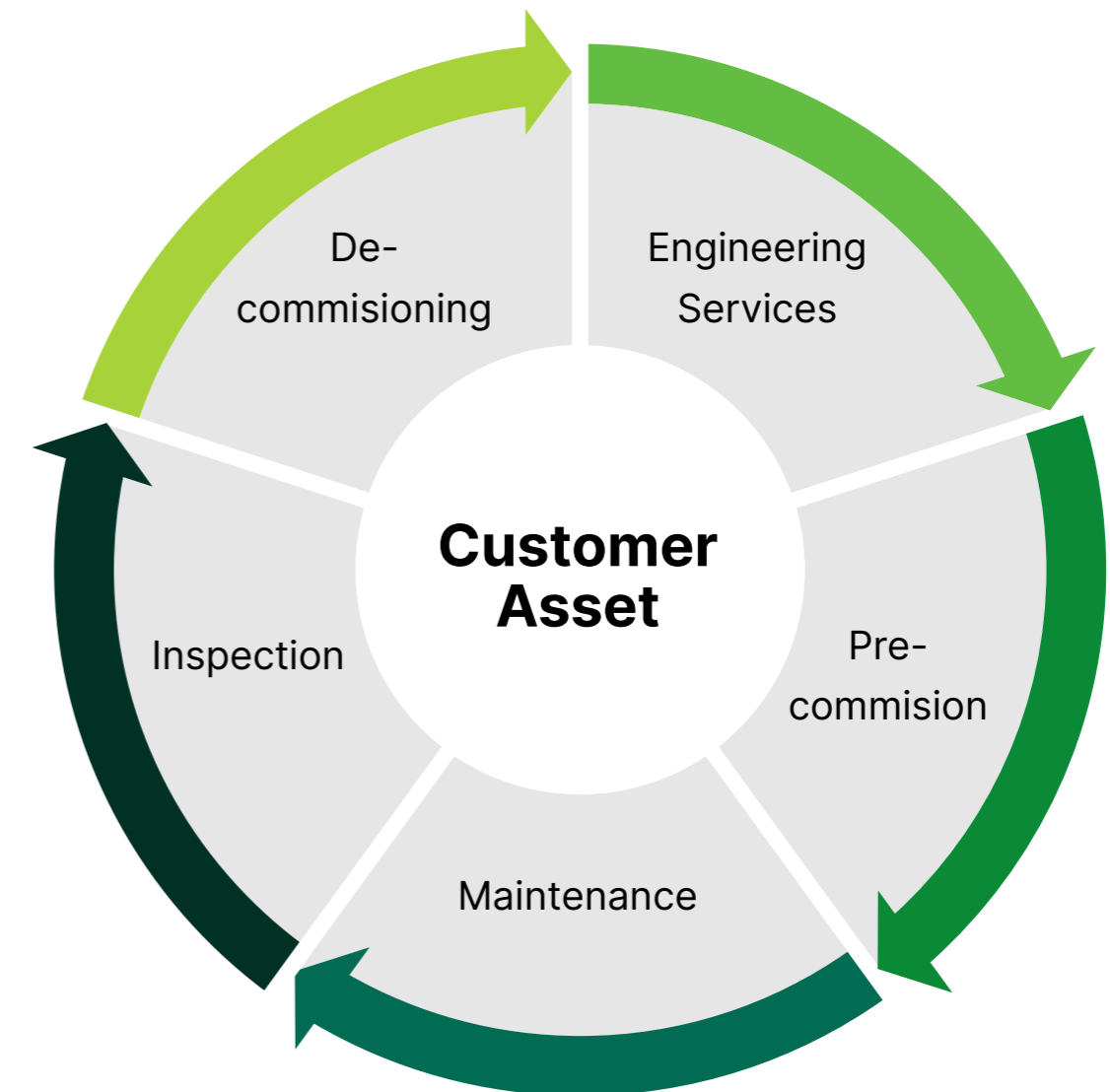


Asset integrity

Combining our powerful engineering capabilities and experience with a strong service footprint brings peace of mind to even the most complex challenges. We partner with you to deliver technology, solutions and expertise for smarter ways of working.

## INTEGRATED SOLUTIONS

- Our unique portfolio of services helps you confidently manage the lifecycle of your asset: delivery timely stress free start up, supporting day to day reliability and controlled decommissioning
- Greater job continuity
- One crew = multiple services
- Improved schedules & cost efficiencies



# PROCESS & PIPELINE SERVICES

Integrated Solutions | Greater Job Continuity | One Crew = Multiple Services | Improved Schedules & Cost Efficiencies



Subsea pumping module connected to customer ROV



Gas transfer equipment on location



VECTRA tool ready to launch



Flaring activity for process plant



N2 pump

## PIPELINE SERVICES

### Pre-commissioning

- Engineering
- Flooding, Cleaning and Gauging
- Testing
- Conditioning
- Subsea Services
- Umbilical Services
- Commissioning – Product
- First Fill
- Site Preparations

### Maintenance

- Mechanical Cleaning
- Gel Cleaning
- Chemical Cleaning
- Testing and Revalidation
- Nitrogen Services
- Gas Transfer/ Recompression
- Temporary Flaring
- Temporary Isolations
- Temporary Pumping
- Pig Manufacture

### Pipeline inspection (ILI)

- Internal Geometry Inspection
- Mapping
- Corrosion and Crack Detection
- Ultrasonic Pipeline Inspection

## PROCESS SERVICES

### Pre-commissioning

- Strength Testing
- Leak Detection
- Chemical Cleaning
- Flushing/Jetting
- Air Blowing
- Drying
- Controlled Bolting
- On-Site Machining
- Camera Inspection
- Temp Fuel Gas Supply

### Maintenance

- Nitrogen Services
- Leak Detection
- Decontamination
- Tank Cleaning
- Chemical Cleaning
- Temporary Flaring
- Gas Compression and Transfer
- Controlled Bolting
- On-Site Machining
- Camera Inspection
- Gas Recompression
- Foam Interting
- Preservation
- Oil Flushing

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# HEALTH, SAFETY & ENVIRONMENT



Through our culture of HSE we protect our people, our customers, and the environment

Health, Safety and Environment (HSE) and Social Responsibility are built into everything we do, from how we design our products, to the way we plan and execute for our customers.

## **HSE, part of Our DNA**

We integrate HSE in everything we do.

## **High Standards**

All employees are accountable for maintaining the same high HSE standards.

## **Collaboration**

We work together with our colleagues, suppliers and customers to improve the HSE outcomes of our company and the industry.

## **Sustainability and Efficiency**

We continuously improve our sustainable and efficient use of resources.

## **Immediate Action**

We identify and stop any unsafe acts before they happen.





# QUALITY



**Everything we create is aimed at meeting the needs and expectations of our customers**

We believe in doing the right thing every time, and delivering the best quality and safest products, services, processes, and technologies in the industry by following these fundamental principles:

## **Customer Focus**

Passionately drive customer satisfaction with our products and services.

## **Compliance**

Identify, understand, and ensure strict compliance with all regulatory requirements in every country in which we operate.

## **Risk Management**

Identify potential risks and take necessary actions to mitigate them in order to ensure customer satisfaction.

## **Flawless Execution**

Pursue quality at the source by performing each job right every time.

## **Improvement**

Take action to assess, simplify, and continually improve our products, services, processes, and technologies.

# UMBILICAL SERVICES

## SERVICE SPOTLIGHT

We provide complete turnkey services for pre-commissioning and commissioning umbilical systems from load-out at the manufacturing facility to installation.

- Hydraulic monitoring during transit
- Hydraulic monitoring during lay
- Flushing, pressure testing with system fluid
- Continuity resistance (CR)
- Insulation resistance (IR)
- Time domain reflectometry (TDR)
- Optical time domain reflectometry (OTDR)



**Our objective expertise and unmatched experience ensure cleanliness and integrity whilst verifying lines conform to predefined specifications**

# GAS TRANSFER

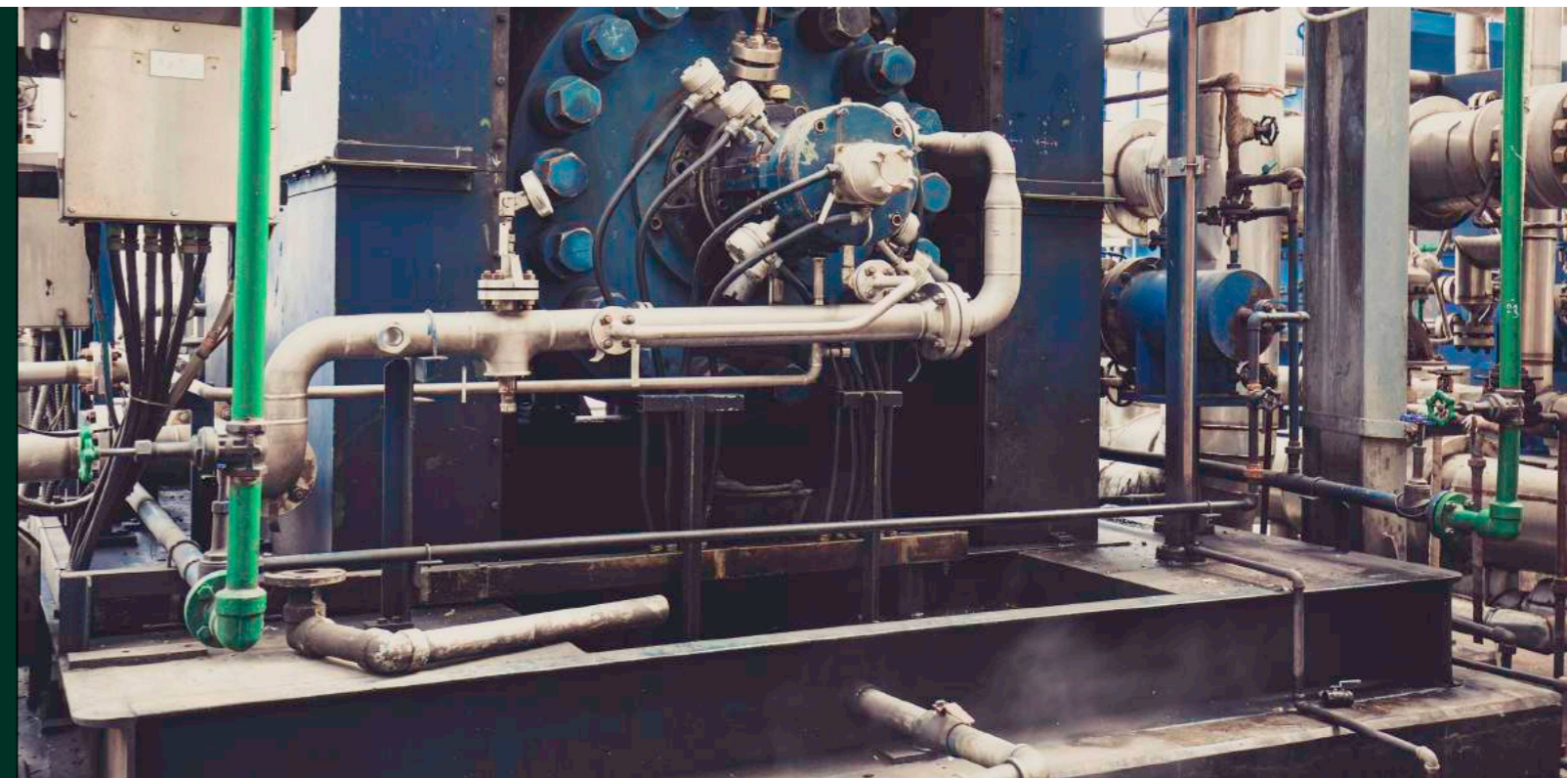
## PIPELINE MAINTENANCE

PPS has the ability to transfer natural gas from one system or pipeline to another at discharge pressure of up to 100 barg and to a residual pressure approaching 0 barg (gravity).

Our market leading gas compressors have greatly enhanced the effectiveness of the service, increasing the recovery volumes and reducing transfer time.

Our gas transfer service utilizes two types of equipment;

- High Pressure (HP) Compressor – 7 to 100 barg
- Low Pressure (LP) Compressor – 0 to 28 barg
- High Pressure (HP) + Low Pressure (LP) - 0 to 100 barg

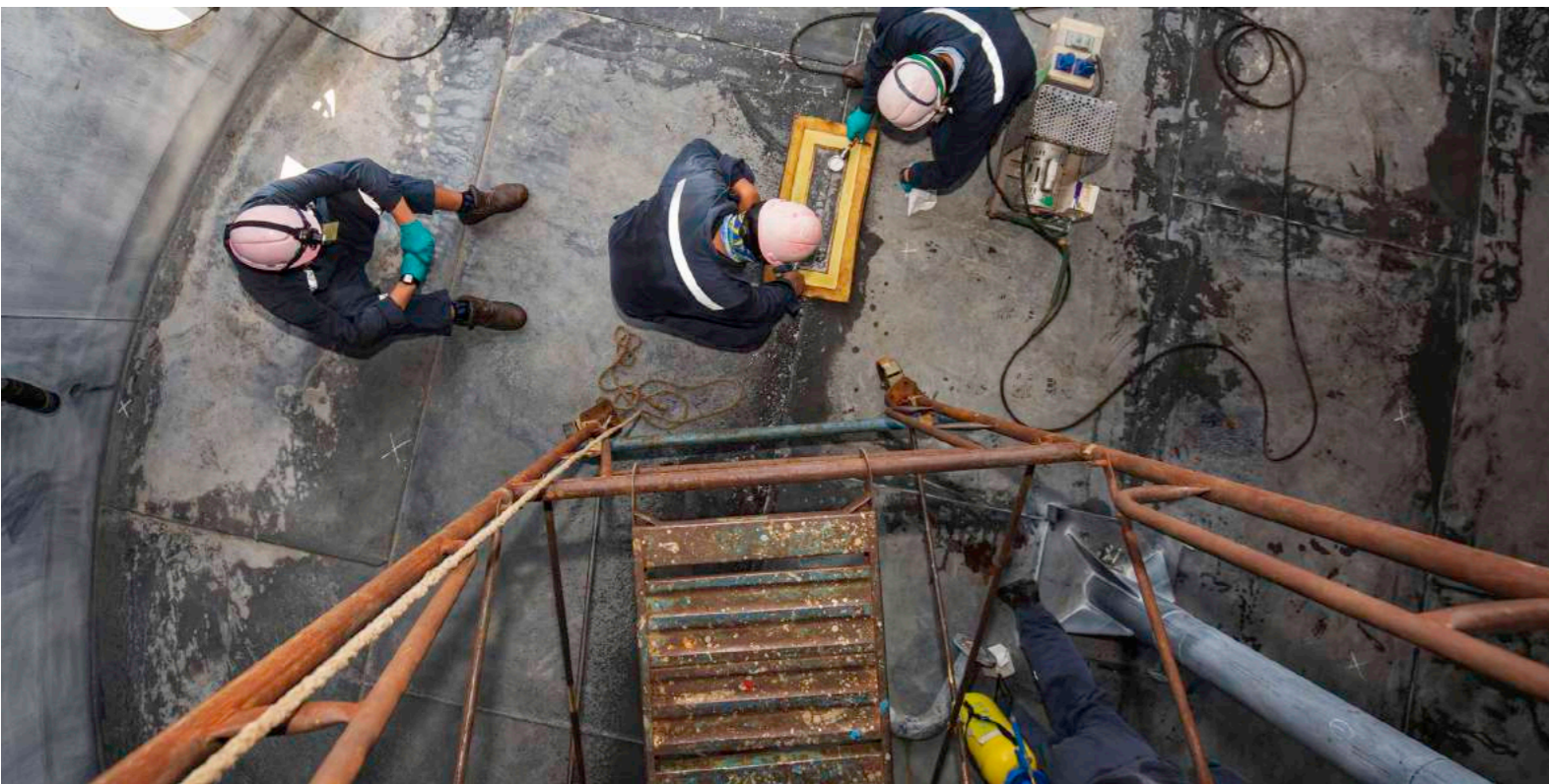


# PROCESS PRE-COMMISSIONING & MAINTENANCE

- Reliable, trusted start-up
- Profitable operations

Delivering **leak-free, trusted + reliable** start-up

Driving **profitable and efficient** operations for process life





# PROCESS PRE-COMMISSIONING

Mechanical and Chemical Cleaning, Pressure Testing, Leak Testing, Drying, Nitrogen Purging, Gas Transfer and Flaring



## Nitrogen Services

- Identifies leaks in excess of predetermined spec
- Industry's preferred method of checking joint integrity and preparing hydrocarbon process facilities for leak-free start up
- Frees the system of oxygen prior to start up



## Hydrotesting

A strength test is always required for new piping and associated vessels to ensure the following:

- Safety
- Reliability of operation
- Leak tightness of pressure systems

All work is conducted under rigid procedures and according to code, ensuring total control at all times.



## Air Services

- Variety of effective drying techniques for process systems that are sensitive to moisture
- Suitable for complex plant configurations with multiple vent points
- Equipment can be cross-utilized for air blowing, pneumatic strength testing and purging (w. membrane nitrogen)



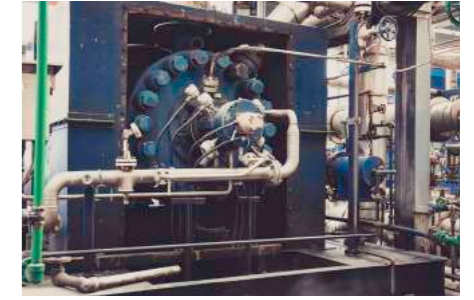
## Chemical Cleaning

- Environmentally friendly non toxic and non hazardous cleansing fluids
- Non classified and carries CEFAS approval (Gold Band).
- Degreasing, descaling, passivation
- Cleaning of critical compressor/turbine associated pipework post assembly



## Temporary Flaring

- Regulate and ensure low emissions using the patented, hi-lo variable flare tip
- Self-erecting, trailer-mounted for small operations or as a modular system for a long-term cost-effective solution
- Clean and efficient burn of waste gases, even if gas flow rate continuously changes



## Lube Oil & Hydraulic Oil Flushing

- A fluid circulation process designed to remove contaminants and decomposition from a lubrication-based system
- Improves lifecycle of rotating equipment and reduces
- Follows industry best practices and ISO cleanliness codes to minimize risk to people and equipment

# PRE-COMMISSIONING & COMMISSIONING SERVICES

Integrated Solutions | Greater Job Continuity | One Crew = Multiple Services | Improved Schedules & Cost Efficiencies

## PIPELINE SERVICES

## PROCESS SERVICES

Pre-commissioning

Maintenance

Pipeline inspection (ILI)

Pre-commissioning

Maintenance

- Flushing and Jetting
- Air Blowing
- Chemical Cleaning
- Oil Flushing
- Pigging
- Camera Inspection
- Laboratory Services

- Air Drying
- Nitrogen Drying
- Vacuum Drying
- Accelerating Cooling
- Accelerated Heating
- Inerting

Debris free start-up

Leak free start-up

Plant conditioning

Temporary process solutions

- Valve Testing
- PRV Calibration
- Pressure Testing
- Mechanical Joint Integrity (MJI)
- Leak Testing

- Compression
- LNG Supply
- Turbine Testing
- Pumping Systems
- Cooling/Heating
- Compressor Testing
- Temporary Flaring

# PROCESS MAINTENANCE

Mechanical and Chemical Cleaning, Pressure Testing, Leak Testing, Drying, Nitrogen Purging, Gas Transfer, Flaring, Controlled Bolting, On-Site Machining, Camera Inspection, Gas Recompression, Foam Inerting, Preservation, Oil Flushing and Decontamination.

## Nitrogen Services

- Prevent loss of production due to unplanned shutdowns
- Industry's preferred method of checking joint integrity & preparing hydrocarbon process facilities
- Can be engineered, planned and scheduled in advance to minimize impact on concurrent work

## Drying Services

- Variety of effective drying techniques for process systems that are sensitive to moisture
- Suitable for complex plant configurations; multiple vent points
- Equipment can be cross-utilized for air blowing, pneumatic strength testing and purging (w. membrane nitrogen)

## Reactive Chemical Cleaning & Decontamination

- Variety of effective drying techniques for process systems that are sensitive to moisture
- Suitable for complex plant configurations with multiple vent points
- Equipment can be cross-utilized for air blowing, pneumatic strength testing and purging (w. membrane nitrogen)

## Temporary Flaring

- Regulate and ensure low emissions using the patented, hi-lo variable flare tip
- Self-erecting, trailer mounted for small operations or as a modular system for a long-term cost-effective solution
- Clean and efficient burn of waste gases, even if gas flow rate continuously changes

## Mechanical Joint Integrity (MJl)

Whether you're developing a Greenfield site, expanding a refinery, building process modules in a construction yard or hooking up an offshore platform our Mechanical Joint Integrity offering including our Electronic flange management system can be key driver to realising a leak free start up.

Our Mechanical joint integrity service is offered as a standalone offering or as a part of integrated services.

# MAINTENANCE & SHUTDOWN SERVICES

Integrated Solutions | Greater Job Continuity | One Crew = Multiple Services | Improved Schedules & Cost Efficiencies

## PIPELINE SERVICES

## PROCESS SERVICES

Pre-commissioning

Maintenance

Pipeline inspection (ILI)

Pre-commissioning

Maintenance

- Flushing and Jetting
- Air Blowing
- Pigging
- Camera Inspection
- Decontamination

**Debris free start-up**

**Leak free start-up**

- Valve testing
- PRV calibration
- Pressure Testing
- Mechanical Joint Integrity (MJI)
- Leak Testing

- Air Drying
- Nitrogen Drying
- Vacuum Drying
- Accelerated Cooling
- Accelerated heating
- Inerting

**Plant conditioning**

**Temporary process solutions**

- Compression
- LNG Supply
- Turbine Testing
- Pumping Systems
- Cooling/Heating
- Temporary Flaring

# REDUCING PLANT TURNAROUND COST WITH SMART CLEAN™ \*

## DECONTAMINATION

SMART CLEAN decontamination services deliver performance with unyielding attention to safety and environmental compliance.

- Proven chemical cleaning products and environmentally sound cleaning
- Reduce need to process, store, or remove hazardous waste
- Safe, on-time vessel entry so that turnaround schedules are met or shortened.
- Increase hydrocarbon recovery for reprocessing without adversely affecting operations
- High performance industrial cleaning chemistry, targeting-specific cleaning needs
- After application, workers can then quickly and safely enter these vessels and tanks for inspection and repair

\*Applications include offshore production facilities (platforms, FPSOs) and Hydrocarbon processing facilities (petrochemical plants, refineries, LNG plants)

# SMART CLEAN™ \* DECONTAMINATION SERVICES

## PROCESS MAINTENANCE

### Safe Vessel Entry

- Minimal exposure of people to hazards

### Environmental Impact

- Proper handling and disposal of waste
- Reduced environmental risk

### Reduced Total Cost of Operation

- On-time unit handover

## BENEFITS OF USING PPS

- The only decontamination process to eliminate pyrophoric risk
- Industry advocated high-performance industrial cleaning chemistry
- Minimizes post-cleaning hazardous waste volumes
- Mobilized and trained competent workforce

\*Applications include offshore production facilities (platforms, FPSOs) and Hydrocarbon processing facilities (petrochemical plants, refineries, LNG plants)

Fast,  
effective  
equipment  
cleaning



# INCREASED SAFETY AND REDUCED EQUIPMENT COSTS WITH OUR TANK CLEANING SERVICES

## TANK CLEANING

### Treatment options

- Batch treatment to rapidly reduce sludge in tanks and reduce tank turnaround costs
- Continuous treatment to slowly reduce sludge; reduce water, salt and solids to the CDU; allow processing of difficult opportunity crudes and reduce CDU operation costs
- Offline clean to clean up remaining sludge and allow vessel entry

### Benefits

- Lower costs and reduced manpower
- Recovery of viable “re-run” feedstock, blendstock and marketable fuel

# INCREASED SAFETY, IMPROVED RECOVERIES AND REDUCED TURNAROUND TIME WITH OUR TANK CLEANING SERVICES

## TANK CLEANING FOR INSPECTION AND MAINTENANCE

- Heat and horsepower only transfer the problem from one tank to the next
- Candix Energy’s speciality chemicals applied during the initial mixing stabilize the hydrocarbons so they remain as a liquid recoverable hydrocarbon
- Maximises recoverable hydrocarbon yields
- Allow wastewater to be processed through the refinery WWTP with no adverse effects
- Solid inorganic waste is generally non hazardous waste
- Provide shorter turnaround times when compared to standard mechanical methods
- Reduced safety concerns as there is no manned entry until tanks are gas free

**Minimized hazardous waste disposal & cost**



# MECHANICAL JOINT INTEGRITY AND IN SITU MACHINING

## INTEGRATED SERVICES

- MJl supplied to client base through construction into commissioning
- Supply of hand, hydraulic torqueing and hydraulic bolt tensioning
- Equipment to cover 1/2"NB to 36"NB flanges and clamps in all class's
- Joint integrity management
- Software package
- Technical Support

### On site machining includes:

- Flange facing 1/2" to 36"NB
- Pipe cutting 1/2" to 36"NB

# MOBILE FLARING SERVICES

## OUR INNOVATIVE AND COST EFFECTIVE SERVICE FOR SAFE FLARING

### Mobile flaring services

- Plant shutdown waste gas incineration
- Well testing H<sub>2</sub>S incineration
- Gas flaring during well testing
- Incineration of H<sub>2</sub>S or sulphur, CH<sub>4</sub>, C<sub>2</sub> to C<sub>6</sub>
- Degassing of tankers, storage tanks, or vessels
- Incineration of waste vapours or by-products
- Degassing of landfill sites

### Main features

- Shrouded flame to minimize visual disruption/heat radiation (40-50oC outside wall)
- Clean smokeless burn using "variable flare tip" system
- Low noise thanks to the enclosed flame (72dB @ 3 – 5 m t )
- Over 1,000oC sustainable for waste gas incineration
- Automated variable air ducts incorporated into stack

### Specification

- Stack capacity: 20.1 Mega Watts
- Auxiliary fuel injection for low calorific value waste gases
- Two independent suction pump to pull waste gases out of a system
- Air pre-mix
- Fail safe PLC controlled
- Continuous emission monitoring



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# NITROGEN SERVICES

## PROCESS MAINTENANCE

TOJ Energy's nitrogen services reduce project time, risk and cost with efficient nitrogen usage onshore or offshore during new construction or turnarounds.

- Purging and blanketing
- Leak testing
- Accelerated cooldowns
- Drying

We ensure you have a clean, dry, leak-free, and inert unit ready to safely receive product the first time, according to industry standards. If temperature is an issue, we can precool or preheat your piping and vessels to the required level.





# OWNED ASSETS

S/N	ASSET DESCRIPTION
1.	Pressure Gauge 0-1000 Bar
2.	Gauge 0-700 Bar 10" dia 1/2" BSP-M inlet
3.	Recorder, Pressure_Z09E600835
4.	Data Acquisition System, Keller 0-700bar
5.	Gauge, Pressure
6.	Recorder, Pressure
7.	Recorder, Pressure_Z09E600835
8.	Radio Kit
9.	Meter, Multi Gas
10.	Umbilical Inst,Pall Fluid Samp_ZUT022A
11.	Meter, TDR, Seba, TFX - SX_ZTDR9
12.	Umbilical Inst,Pall Fluid Samp_ZUT025A
13.	Test Cabin, DNV, 10ft Umbilical
14.	Assorted Test manifolds
15.	Assorted High pressure Fittings kits
16.	Pump, Fluid, Triplex DD, Aqua, 15K
17.	Test Cabin, DNV, Rigsafe, 10ft_ZCLT58
18.	Pump, Fluid, Triplex Skid (OPI)_Z422
19.	Power Unit Detr Deisel V12 Engine_Z418
20.	Pump, Fluid, Triplex Skid, DD, Hughes
21.	Test Cabin, DNV, Rigsafe, 10ft_ZCLT60
22.	Data Logger, Pressure_ZDL008A
23.	Data Logger, Gauge, Subsea, HYDROlog2000
24.	Power Pack, Diesel Driven, DD, V12_ZPP08
25.	Power Pack, Diesel Driven, DD V8 Zone II
26.	Pump Fluid, Triplex, Volvo, Hammelman
27.	Reel, Hose, Air Driven, DNV, 3/4" _ZHR61
28.	Assorted hoses suction
29.	Assorted hoses discharge
30.	Assorted manifolds & cross overs

S/N	ASSET DESCRIPTION
31.	Assorted Valves
32.	Pig Loader, Tool_ZPGLT01
33.	Reel,Hose, Air Dr. 1,2&4Capable_ZHR006A
34.	Filter Skid,Fluid,Pall,Lp,14Bar_ZLPP006A
35.	Pump, Fluid, Centrifugal Multi, Caprari
36.	Pump, Fluid, Suction, Isuzu, Selwood 6
37.	Filter Skid, Fluid
38.	Pump, Fluid, Submersible
39.	Reel, Hose, Sub Sea
40.	Tank, Break, Skid, 20Ft Dnv, 2-7.1, 25M3
41.	Tank, Break, Filter, Skid, 9m3_ZBCT161
42.	Container, GP, Half Height
43.	Container, OT, DNV Storage, 20ft_ZCON188
44.	Pump, Fluid, Suction, Duetz, SPP 6x8
45.	Tank, Break, Skid, 10ft, 12m3
46.	Pump, Fluid, Triplex Iveco, Aqua Z2_D41R
47.	Tank, Fuel, Double Skinned Skid 5383 Gal
48.	Pump Fluid, S, Cent, DD, SPP, Zone II
49.	Reel, Hose, Air Driven, DNV, 4" _ZHR62
50.	Tank, Break, Filter, Skid, 9m3_ZBCT162
51.	Pump, Fluid, Centrifugal Multi
52.	Assorted hoses suction and discharge 4" - 12"
53.	Assorted manifolds & cross overs
54.	Assorted Valves ranging from 2" - 10"
55.	Air, Compressor CAT, SUL, 1150-1350scfm
56.	Air, Compressor CAT SUL 1350scfm 350psig
57.	Container, OT, DNV Storage, 20ft_ZCON187
58.	Container, DNV Storage, 20ft_ZCON186
59.	Container, GP, Half Height, 20ft_Z23015A
60.	Meter, Dewpoint

<b>S/N</b>	<b>ASSET DESCRIPTION</b>
61.	Nitrogen Membrane AP, 1500scfm, 24bar
62.	Nitrogen Membrane Generon 1500scfm 24Bar
63.	Air, Comp Dual,350/500Psi @1200/1050Scfm
64.	Air, Compressor CAT, SUL, 1350-1525scfm
65.	Filter Skid, Air, 4K/16,000Scfm/001Ppm
66.	Meter, Dewpoint, MDM300IS_ZMM88
67.	Air, Drier Unit, DA, 2400scfm, 350psig
68.	Assorted hoses 2"
69.	Assorted manifolds & cross overs
70.	Nitrogen Pump Skid, 180K, Zone II_ZNU113
71.	Nitrogen Tank Skid, 3 Bar,2000g_ZNT6334
72.	Nitrogen Vaporiser, Amb,850 m3/hr_ZSFV25
73.	Container, DNV Storage, 20ft
74.	Gas booster pump
75.	PRV package
76.	OPP
77.	Set of cryogenic hoses
78.	Fittings kit
79.	Pump, Fluid, Triplex Skid_ZPRHPJ059
80.	Pump, Fluid, Triplex Skid, Ds180 Jetting
81.	Camera,Boroscope,Inspection Unit_ZCIU-01
82.	Hoses
83.	Turtle Suits
84.	Lances
85.	Associated equipment
86.	Tank, Break, Skid, 1,500 Gal_ZBCT24
87.	Particle Counter, Fluid, Hach_ZPC5
88.	Particle Counter, Fluid, Hach_ZPC04A
89.	Flushing Unit, Elec Driven_ZPU0008
90.	Utility generator rigsafe

<b>S/N</b>	<b>ASSET DESCRIPTION</b>
91.	Filter skid
92.	Fiting kit
93.	valves, manifold, adapters
94.	IBC, drip tray
95.	Stores container
96.	Bolting, Torque Tester, 50000Nm_ZM347
97.	Bolting, Tension Test Bench
98.	Bolting, Flange Facing Machine, AX0-12
99.	Bolting, Torque Hyd Pump
100.	Bolting, Flange Facing Machine, FXB6-30
101.	Manual torque wrenches
102.	Hydraulic torque wrenches
103.	hoses
104.	air driven torque pumps
105.	Pump,Air Driven,Hydratron,DHDA66_ZPTP336
106.	Fittings package
107.	hoses package
108.	HP manifolds
109.	PRV package



**TOJ ENERGY**