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Pure Fonte Ltée

PURE FONTE LTÉE

PIG IRON PRODUCTION PLANT – FEASIBILITY STUDY

CUSTOMER Nº: 1821

tenova

TECHINT

TENOVA

TECHINT ENGINEERING & CONSTRUCTION

FEASIBILITY STUDY

SECTION 2

PARTNERS OF THE STUDY

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2.4. Sanitary & surface water treatment (Norda Stelo)
    2.4.1. Company Profile
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NOTICE

This document contains the expression of the professional opinion of TENOVA and TECHINT ENGINEERING AND CONSTRUCTION ("Tenova/TEIC") as to the matters set out herein, using its professional judgment and reasonable care. It is to be read in the context of the purchase order dated December 22, 2015 (the "**Agreement**") between Tenova/TEIC and PURE FONTE LTÉE (the "**Client**"), and the methodology, procedures and techniques used, Tenova/TEIC's assumptions, and the circumstances and constrains under which its mandate was performed. This document is written solely for the purpose stated in the Agreement, and for the sole and exclusive benefit of the Client, whose remedies are limited to those set out in the Agreement. This document is meant to be read as a whole, and sections or parts thereof should thus not be read or relied upon out of context.

Tenova/TEIC have, in preparing drawings, notes, specifications, calculations and estimates, as the case may be, followed methodology and procedures, and exercised due care consistent with the intended level of accuracy, using its professional judgment and reasonable care, and is thus of the opinion that there is a high probability that actual values will be consistent with the estimate(s). However, no warranty should be implied as to the accuracy of estimates. Unless expressly stated otherwise, assumptions, data and information supplied by, or gathered from other sources (including the Client, other consultants, testing laboratories and equipment suppliers, etc.) upon which Tenova/TEIC's opinion as set out herein is based has not been verified by Tenova/TEIC's; Tenova/TEIC makes no representation as to its accuracy and disclaims all liability with respect thereto.

The concepts, drawings, descriptions, and other information contained in this proposal are considered to be proprietary and are furnished solely for the exclusive use of Tenova/TEIC for the purposes of project evaluation or award of contract, and are not to be disclosed in any form whatsoever to any third party without the expressed written consent of Tenova/TEIC.

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SECTION 2 – PARTNERS OF THE STUDY

CHAPTER 2.1

PROCESS & AUXILIARY EQUIPMENT

ESC.: N/A	JOB: CD-335	**REVISION 2** REVISION

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FIGURES AND REFERENCES

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[2] Techint Group, *The Techint Group 2015,* February 29, 2016.

[3] Tenova HYL, "Final acceptance of the Nucor Energiron® DRI plant," *HYL NEWS,* p. 9, July 2015.

2.1 Process & Auxiliary Equipment (Tenova Group)

For the FS Tenova has studied the best possible combination of proprietary process equipment, as the Energiron® ZR DRI technology, DRI hot charging, EAF DRI melting, and has gathered actual quotes and proposals – some of them being firm proposals – from reputable suppliers well known in the industry and with a very good track record of successful projects.

The following paragraphs provide a brief description of the Tenova Group

2.1.1 Tenova at a glance

Tenova is a worldwide supplier of advanced technologies, products, and services for the metals and mining industries providing innovative, integrated solutions for complete process areas. Tenova is organized in two divisions: Metals and Mining. The Metals division is the one involved in this FS for PURE FONTE LTÉE. The Metals division provides

- Integrated electric arc furnaces from iron and scrap up to liquid iron and steel;
- Thermal processing from reheating to heat treatment of flat & long products;
- Processing of metal strips from hot strip mill down to all final products;
- Cold rolling mills & auxiliary equipment for ferrous and non-ferrous flat strip products
- Fully automated roll shops for hot strip and cold mills

Figure 2.1-1.: photo of a Tenova strip processing line [1]

2.1.2 Company profile

2.1.2.1 Mission, Values and Innovation

Tenova mission is to provide Iron & Steel and Mining industries with the most advanced technologies, products and services through a network of synergic companies.
To deliver customer value increasing efficiency, reliability and cost savings in their production processes and quality in their products.
To innovate continuously targeting the needs of quality, energy saving and effective pollution reduction essential for a sustainable development.

Technological innovation is the main pillar of Tenova's competitiveness. Tenova is fully committed to R&D to effectively meet the most pressing requirements of today's metal and mining industries. Tenova focuses on the areas of product quality improvement, energy saving, and effective pollution reduction that it considers essential for sustainable development within its client's industries

2.1.2.2 Key figures

- 2014-15 Revenues of 1,343 million USD
- Permanent Employees at the end of June 2015 were 3,988

Note: Tenova fiscal year ends June 30th, financial report for 2015-16 was still being audited at the date of issuance of this FS

2.1.3 Roots and Heritage

2.1.3.1 History

- 1945 to 1960 - Starting of the operations in the steelmaking industry. After the foundation of Techint in 1945, the company entered the steelmaking industry with the construction of a steel tube production plant for Dalmine Safta, later Siderca, in Campana (Argentina).
- 1960 to 1980 - Steel plants become the core business of the Techint Group. During the 1960's, the company designed, built, and started-up a plant for Propulsora Siderurgica (later Siderar) in Ensenada (Argentina). This was the first phase of an integrated-cycle plant for hot and cold flat rolling production and now is part of Ternium.
- 1980 to 2000 - Acquisitions drive expansion in the steel business. Techint Technologies was established. The new company was expanded with the acquisition of Pomini and Giustina International, two leading roll grinder manufacturers; Intersteel Technology (USA), with its leading-edge "Consteel®" technology; and a branch of the business of Italimpianti comprising reheating and heat treatment furnaces, strip processing lines, and material handling systems.
- 2000 to 2006 - Global growth. Techint Technologies acquires Canada's Goodfellow Efsop™, a well-known process control system for EAF; Mexico's HYL Technologies, world leader in the supply of gas based direct reduction plants;
- 2007 – Tenova. Techint Technologies became Tenova to have an independent and strong identity in the marketplace.
- 2008 to 2009 – Expanding in the mining industry. Tenova's acquisition strategy continued with the entry of Pyromet, the leading South African company specialized in electric smelting furnaces and complete smelting plants for ferroalloys, and Germany's TAKRAF, a worldwide leader in open pit mining equipment and systems that complements and strengthens Tenova's bulk materials handling business.
- 2010 to 2013 – Specialization and market niches. Tenova extended its network into three new countries: with Tenova Vietnam in the steel business, Pomini Tenova Sweden in roll grinders and the new operating office of Tenova Takraf in Thailand. It also moved into the Chinese mining business with Tenova TAKRAF China.
- 2014 – Consolidation and integration. Tenova has increased its size sevenfold in the last ten years and it will continue innovatively to reinvent itself to develop the industrial plants of the next 100 years, answering the questions that really matter together with its customers.

2.1.4 The Techint Group

2.1.4.1 Main companies of the Techint Group

Tenova is part of the Techint Group of Companies, comprising Tenaris (NYSE:TS), Ternium (NYSE:TX), Tecpetrol, Techint Engineering & Construction, Humanitas.

- Tenaris. A leading global manufacturer and supplier of steel tubes and related services for the world's energy industry and certain other industrial applications
- Ternium. One of the leading steel companies in Latin America, manufacturing and processing a wide range of flat and long steel products. Its main operations are in Mexico and Argentina.
- Techint Engineering & Construction. The company provides worldwide engineering, procurement, construction, operation and management for high complexity, large-scale projects.
- Tecpetrol. An oil and gas exploration and production company, that promotes and manages natural gas transmission and distribution networks in Latin America.
- Humanitas. A network of hospitals in Italy, focused on research, promoting a patient-oriented management and the use of integrated state-of-the-art technology systems.

2.1.4.2 Company's highlights

	2011	2012	2013	2014	2015
Revenues	24,105	25,477	25,378	23,826	19,108
Capital Expenditures*	1,918	2,282	2,085	2,455	2,405
Total Assets	31,364	33,755	33,226	34,026	29,928
Permanent Employees	57,359	59,196	59,429	58,257	51,191

Table 2.1-1.: Techint Group Consolidated Companies' Highlights in USD, millions [2]

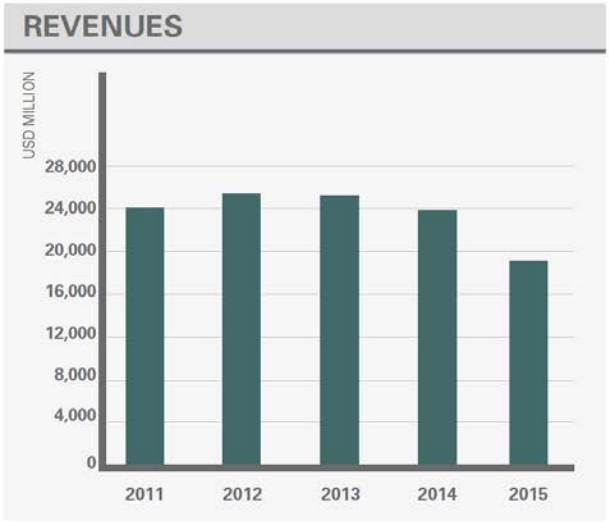

Table 2.1-2.: Techint consolidated revenues and permanent employees [2]

Tenaris: total (seamless and welded) tubes shipments in 2015 (million tons)	2.6
Ternium: shipments of steel products* in 2015 (million tons)	9.6
Techint Engineering & Construction: backlog of work as of December 31, 2015 (billions of USD)	1.3
Tenova: backlog of work as of December 31, 2015 (billions of USD)	1.1
Tecpetrol: operated and service contracts working interest in oil and gas production in 2015 (million bbl of oil equivalent)	30
Tecpetrol: operated oil and gas pipelines at end-2015 (thousand kilometers)	11
Humanitas hospitals admissions in 2015 (thousands)	126.7

Table 2.1-3.: Techint significant data [2]

Figure 2.1-2.: Employees of Ternium during the “safe hour” induction training

2.1.5 Recent Project

2.1.5.1 Significant jobs recently performed in Direct Reduction

The Energiron® ZR DRI technology is the major part of the process equipment for the PURE FONTE LTÉE project. Tenova has recently successfully accomplished the design, supply and commissioning of Energiron® ZR DRI plants of much larger size than the one foreseen for PURE FONTE LTÉE, as follows:

- Energiron® III plant of 1.9 Mtpy for Ezz Rolling Mills, Egypt in 2014
- Energiron® ZR plant of 2.5 Mtpy for Nucor Steel Louisiana, USA in 2013
- Energiron® ZR plant of 1.95 Mtpy for Suez Steel, Egypt in 2013
- Energiron® ZR plant of 1.6 Mtpy for Emirates Steel, Abu Dhabi in 2011

Figure 2.1-3. photo of Nucor Steel Louisiana and Emirates Steel [3]

Nucor Louisiana, sith 2.5 Mtpy plant is the largest proven DRI production facility in the world. This DRI plant has demonstrated its ability to routinely produce premium quality DRI with metallization of 96%, carbon ranging from 3.6 to 4.0% and at a productivity above 300 tph. The plant operation is smooth and stable. Considering the DRI quality obtained and selective CO2 removal, the plant achieves one of the most efficient NG consumption rates worldwide; just ~2.4 Gcal/t of product.

2.1.5.2 Significant jobs recently performed in EAF

Tenova has a history in EAF manufacturing of more than 50 years and is today the OEM with the largest experience in EAF fed with cold and hot DRI. In fact, companies like Ternium and Tenaris, part of the Techint Group as Tenova, do operate EAFs using cold and hot DRI as raw material:

- Ternium Monterrey (Mexico) has two EAF fed with hot DRI
- Tenaris Siderca (Argentina) has two EAF fed with cold DRI

Tenova has also designed and built EAFs fed by DRI for companies like Sidor (Venezuela), ArcelorMittal Acindar (Argentina) and several others.

Tenova will offer to PURE FONTE LTÉE the opportunity to train its own operating personnel at one if its plants operating with the Energiron® ZR DRI technology and EAFs

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PIG IRON PRODUCTION PLANT – FEASIBILITY STUDY
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SECTION 2 – PARTNERS OF THE STUDY

CHAPTER 2.2

PLANT ENGINEERING & INFRASTRUCTURE

ESC.: N/A

JOB: CD-335

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FIGURES AND REFERENCES

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[2] Techint, "Our History," 2016. [Online]. Available: http://www.techint-ingenieria.com/en/our-history. [Accessed 31 July 2016].

[3] Techint, "Board of directors' report and special consolidated financial statement," 2013.

2.2 Plant Engineering and Infrastructure (TEIC)

Techint Engineering & Construction (TEIC) provides engineering, procurement, construction, operation and management services for large-scale projects in worldwide locations. The company's multi-local presence allows it to have deep knowledge of the technical standards, laws and regulations, taxes, financial entities, labor unions and subcontractors in the regions where it operates.

TEIC's 19,500 professionals worldwide, backed by 70 years of experience, are committed to the development of timely and competitive solutions to complex project requirements, complying with the highest industry quality and safety standards, while protecting the environment and promoting the development of local communities.

Currently, the company delivers services in the following market segments: Oil & Gas, Energy, Industrial Plants, Oil Refineries and Petrochemical Plants, Mining & Metals, Infrastructure and Architecture Civil Works.

TEIC has performed the PURE FONTE LTÉE plant design and engineering activities related to this FS, including the detailed calculation of the MTOs.

The following paragraphs provide a brief description of the Tenova Group

Figure 2.2-1.: recent job including the construction of large piping work performed by TEIC [1]

2.2.1 Company Profile

2.2.1.1 Mission, Vision and Values

TEIC mission is to provide shareholders and customers with value through the provisioning of engineering services, procurement, construction, operation and management of infrastructure, industrial and power projects. TEIC considers the empowerment of human resources to be fundamental in building a permanent knowledge base. TEIC is committed to its employees' safety and the development of the countries it works in, seeking the well-being of those communities and caring for the environment.
TEIC vision is to be the recognized as the leading Engineering and Construction company for its work method, technology and human resources competences
TEIC values are

- Commitment to the safety of people, environmental care and community development.
- Local roots and respect for cultural diversity in the context of a business overview
- Human resources development and knowledge building
- Management transparency and professionalism
- Emphasis on processes and predictability

2.2.1.2 Key Figures

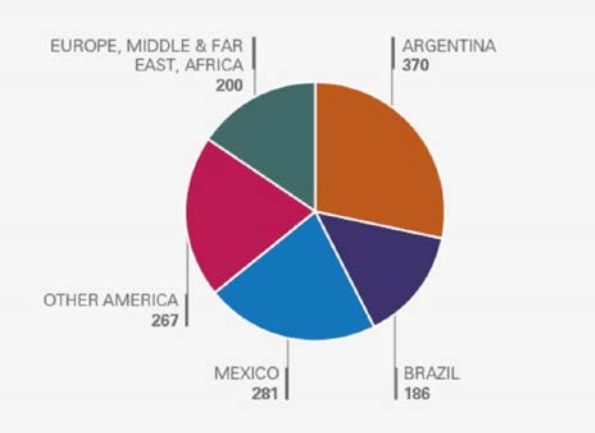

Figure 2.2-2.: TEIC Backlog of Orders by region as of 12/31/2015 in USD, total of 1.304 USD, million

2.2.2 Roots and Heritage

2.2.2.1 History

- 1945 Agostino Rocca creates "Compagnia Tecnica Internazionale" (Techint) in Italy as an international company
- 1946 Construction activities start in Argentina with a network of large diameter pipelines in Argentina and Brazil
- 1947 Techint establishes a branch in Brazil. Subsequently, in 1950, the company carries out the construction of the Santos-São Paulo pipeline – 160 km with three river crossings and twelve air crossings.
- 1951 The company begins operations in Chile. Techint's initial activities include the construction of roads, highways and civil works for the public sector.
- 1954 Techint starts operations in Mexico to build Tamsa, a seamless tubes production plant in Veracruz. Since then, it has participated in major industrial and infrastructure projects in Mexico and Central America building pipelines, petrochemical, and gas plants, steel plants, hospitals, hydroelectric and combined cycle power plants, transmission lines and electrical substations, coal handling facilities, coal and pet coke fired power plants.
- 1965 The company begins operations in Uruguay and focuses activities on roads, highways, airports and other civil infrastructure works.
- 1974 Techint is established in Egypt and Ecuador.
- 1975 Operations are launched in Peru. Subsequently, in 2000 the company carries out the construction of one of the most important infrastructure projects in Latin America: the Camisea gas and NGL pipelines, 730 and 560 km long, which run from the Peruvian rainforest across the Andes mountain range to the city gate in Lima, and a destination close to the port of Pisco, respectively.
- 1978 Saudi Techint starts working in the Middle East, with a major gas pipeline project -the Shedgum-Yanbu pipeline- in Saudi Arabia. Other important projects soon follow, as the Yanbu-Madinah water pipeline and the Hawiyah gas pipeline, both also in Saudi Arabia.
- 1979 The company begins operations in Colombia, focusing on oil and gas industry projects.
- 1991 The company starts operating in Trinidad & Tobago with the revamping of the Pointe-A-Pierre refinery
- 1997 Techint acquires CimiMontubi. Among others, it is active in the sector of liquefied natural gas (LNG) plants in Nigeria. In 2010, CimiMontubi ceased operations as a separate legal entity in order to merge with Techint

- 1999 Techint begins work in Kazakhstan as a lump-sum turnkey contractor for oil and gas, chemical and petrochemical, pipelines, power generation and infrastructure work.
- 2001 In Ecuador, the company builds the Heavy Crude Oil Pipeline (OCP) and facilities, one of the largest and most difficult projects in the country's history
- 2009 Techint starts operations in the United Arab Emirates, with a branch located in Abu Dhabi
- 2010 The company sets up operations in Mumbay, India, specializing in detailed engineering.
- 2011 Techint opens a new branch in Moscow to bolster local operations.
- 2011 Techint concluded projects like the Gate LNG Terminal in the Netherlands, which has the greatest capacity in Europe; the Scandale thermal power plant in Italy, and the Damietta project in Egypt, one of the biggest methanol plants worldwide. The third natural gas processing unit was completed for the Sábalo plant in Bolivia as well as the works in the Petrotin plant in Trinidad & Tobago. In the energy field, the company worked in the Atucha II nuclear center in Argentina, marking its return to this growing segment. It also concluded the expansion of the TenarisTamsa plant in Mexico and conducted works in various refineries of Brazil.
- Techint currently has over 40 projects in different parts of the world: the extension of the H Subway line in Argentina, power plants and mining facilities in Peru and Mexico, the Dunkerque LNG terminal in France and the Yanbu sulfur and coke refinery. Moreover, the company has expanded its offshore expertise with the development of the P-76 project in Brazil.

Figure 2.2-3.: photos of the Camisea Project, Peru. and the gate regassification terminal, Holland [2]

2.2.3 TEIC's services

2.2.3.1 Engineering

Techint executes on average about 1.8 million man-hours of engineering services per year, using state-of-the-art computer technology, like the 3-D Plant Design System (PDS) as well as its own Material Management System (MMS). The company provides the following engineering services:

- Technical and economic feasibility studies.
- Conceptual design for front-end engineering.
- Basic and detailed design.
- Preliminary, definitive and executive design.
- Budgeting services and specialized consultancy.
- Pre-commissioning, commissioning and startup services of plants for owned projects in Engineering, Procurement and Construction (EPC) as well as of third parties.

Figure 2.2-4.: Pascua-Lama: bi-national mining project on the Argentine-Chilean border, for the development of an open-pit gold mine, located at more than 4,000 masl. [3]

Engineering specializations include mechanical, vessels, piping and pipelines, electrical, implementation and control, civil, architectural and structural, project engineering, process and steel processing plants and mining.
Experienced personnel with specific know-how are based in regional areas, while engineering teams manned with senior staff and young professionals are deployed on each project. World class services are performed with common engineering standards and management procedures while integrated shared software licenses and a common 'lessons-learned' database allow each project to benefit from the expertise of Techint E&C's seven specialized engineering centers.

2.2.3.2 Procurement

Techint applies the most renowned tools and procedures to assure application of the company's policies and principles in purchasing processes globally, providing efficient and cost competitive support to customers.
The company's Procurement Management includes:

- Global quality consistency: continuous improvement of the processes and application of state-of-the-art IT tools to ensure efficiency in processes and procedures standardization.
- Strategic Sourcing: continuous maintenance of an approved vendor list throughout a careful selection of vendors and contractors along with a global procurement and e-business organization, giving real-time information on material and equipment deliveries.
- A specialized Corporate Department to support procurement activities for Engineering Equipments, Subcontracts and Operations (Expediting and Logistics). This allows a global monitoring of suppliers and their inclusion in the company's vendor list.
- Local multidisciplinary and flexible teams to support on each project site.
- Material management: Techint's integrated management system combines the supply process with the engineering discipline and is integrated with all the areas that interact in the development of a project, in order to ensure the follow up of all the steps of the process.
- Expediting: modern and up to date methodology that ensures the proper completion, time and quality of the purchased items.
- Post Order: inspection and logistics complemented with expediting to ensure a proper post-order treatment of the purchased items.

2.2.3.3 Construction

Techint Engineering & Construction performs ca 80 million man-hours of construction per year.

The construction phase of a project is critical due to its relevant economic impact in the overall project performance. This is why Techint E&C plans, manages and conducts projects focused on meeting customer's quality requirements, deadlines and budget, while working safely and preserving the environment.

A shared Lessons Learned platform together with knowledge sharing programs and updated project management tools enable the company to meet this objective. Additionally, a solid and PMI-qualified direct hiring experience and a consolidated sub-contracting track record, careful time management and construction solutions ability in the harshest environmental conditions contribute to deliver quality EPC to the most demanding customers.

Figure 2.2-5.: In El Ain Sokhna, Egypt, Techint E&C built a steam generating thermal power plant, the first of its type in that region. [3]

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CHAPTER 2.3

ENVIRONMENTAL AND CAPITAL BUDGET

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[1] SNC Lavalin, "Krill Oil," 27 May 2016. [Online]. Available: http://www.snclavalin.com/en/krill-oil. [Accessed 31 July 2016].

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[3] SNC Lavalin, "Projects: Taconite Mining Project," [Online]. Available: http://www.snclavalin.com/en/taconite-mining-project. [Accessed 31 July 2016].

[4] Alain Duchesne, Martin Dolbec (SNC-Lavalin GEM Québec inc.), "Pig Iron Production Plant Port-Saguenay Chemin de la Grande-Anse Ville Saguenay (Québec) - Geotechnical Investigation," Jonquière (Québec) Canada, May 5th, 2016.

[5] SNC Lavalin, "A history of value creation," [Online]. Available: http://www.snclavalin.com/en/a-history-of-value-creation. [Accessed 31 July 2016].

[6] SNC Lavalin, "Projects: Lake Hodges Pumped Storage Facility," [Online]. Available: http://www.snclavalin.com/en/lake-hodges-pumped-storage-facility. [Accessed 31 July 2016].

2.3 Environmental and capital budget (SNC-Lavalin)

SNC-Lavalin Inc. (SNC-Lavalin) was directly contracted by PURE FONTE LTÉE to perform two important parts of this FS:

- The environmental study and
- The capital budget calculation.

SNC-Lavalin brings great value to the study thanks to its deep roots in the province of Quebec, its intimate knowledge of the environmental process and regulations, and its familiarity with the local construction industry.

This is not the first time that Tenova, TEIC, and SNC-Lavalin are cooperating on a study or project. As often happens for important projects, firms like ours may associate to divide the scope of work, each covering its area of maximum expertise, to provide the best possible result for the end client.

Figure 2.3-1.: Goldcorp's Éléonore gold project in Northern Quebec where SNC-Lavalin provided EPCM services[1]

2.3.1 SNC-Lavalin Company Profile

2.3.1.1 Overview

105 YEARS
OF EXCELLENCE

OVER 37,000
EMPLOYEES

OFFICES IN OVER
50 COUNTRIES

Founded in 1911, SNC-Lavalin is one of the leading engineering and construction groups in the world and a major player in the ownership of infrastructure. From offices in over 50 countries, SNC-Lavalin's employees are proud to build what matters. SNC-Lavalin teams provide engineering, procurement construction, completions and commissioning services together with a range of sustaining capital services to clients in our four industry sectors: mining and metallurgy, oil and gas, infrastructure, and power. SNC-Lavalin can also combine these services with its financing and operations and maintenance capabilities to provide complete end-to-end project solutions.

SNC-Lavalin maintains exceptionally high standards for health and safety, ethics and compliance and environmental protection, and is committed to delivering quality projects on budget and on schedule to the complete satisfaction of its clients.

Figure 2.3-2 below illustrates the geographical distribution of SNC-Lavalin's 2015 revenues.

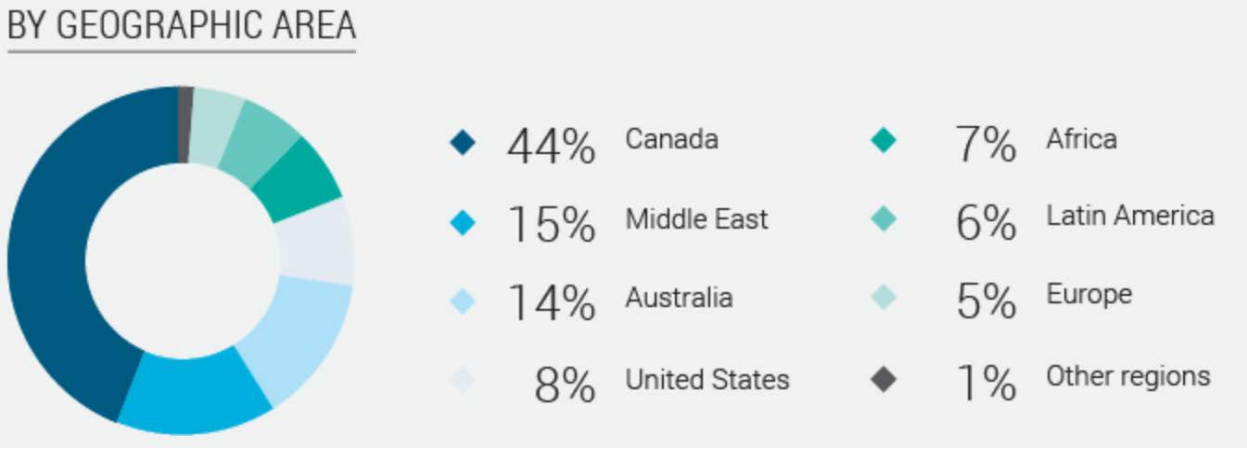

Figure 2.3-2.: distribution by area of the $10 billion revenues of SNC-Lavalin in 2015 [2]

2.3.2 SNC-Lavalin Services

SNC-Lavalin delivers end-to-end services in four principal markets: Mining and Metallurgy, Oil and Gas, Infrastructure, and Power. In-house comprehensive environment and geoscience services support projects in all these markets.

For the PURE FONTE LTÉE project, SNC-Lavalin provided expertise from its Mining and Metallurgy sector, specifically in projects controls and estimating, and environment and geoscience.

2.3.2.1 Mining and Metallurgy

SNC-Lavalin Mining and Metallurgy (M&M) business unit has a solid reputation as an international leader in consulting, design, and construction of facilities for mineral processing including infrastructure components and environmental systems. Its M&M team combines global caliber expertise with deep local capabilities to provide tailored solutions for projects of any size, scope or complexity in the iron ore, aluminum, gold, copper, nickel, fertilizers and sulfur product sectors, among others.

- End-to-end project solutions—delivered anywhere
  Today's Greenfield mining projects, where SNC-Lavalin delivers services, are increasingly located in remote locations and extreme climate zones (the Taconite Iron Ore Project area shown in Figure 2.3-3 below is just such an example). Although PURE FONTE LTÉE has selected a site in Saguenay that does not present challenges in terms of logistical arrangement, it does present climate challenges. SNC-Lavalin has provided to Tenova and TEIC an assessment of these challenges.

- Health & Safety—more than a commitment
  SNC-Lavalin takes seriously its responsibility to protect everyone the company comes into contact with. Health and Safety is ingrained in its culture, keeping the company anchored and on track. This culture speaks to how SNC-Lavalin operates its business, how it expresses itself as a group and how it engages with and inspires the trust of its stakeholders. For the PURE FONTE LTÉE project, SNC-Lavalin has performed capital cost budgeting services while considering health and safety for project construction as key criteria.

2.3.2.2 Environment and Geoscience

SNC-Lavalin delivers comprehensive environment and geoscience services for studies and investigations as well as support for the design and construction of engineering works involving mine sites, buildings, underground infrastructure, pavement, civil and retaining structures, etc. SNC-Lavalin provides key environmental and geoscience services throughout the entire project life cycle for projects of any scale. These include:

- air quality
- brownfield remediation
- climate change
- impact assessment
- geo-hazards
- soil mechanics
- materials engineering and
- building sciences.

SNC-Lavalin uses state-of-the-art approaches to capture data and develop sustainable solutions that serve the best interests of project stakeholders and adjacent communities. Thanks to its ability to offer a broad spectrum of services, SNC-Lavalin helps clients create projects that not only overcome sustainability challenges, but also set new standards for excellence in the area of environment; this will be the case for PURE FONTE LTÉE with respect to water control and air emissions.

Drawing on its experience in diverse geographies and climates and on thousands of projects delivered across Canada and around the world, SNC-Lavalin was able to solve for PURE FONTE LTÉE the challenges presented by the process of production of pig iron via direct reduced iron (DRI).

Figure 2.3-3.: Taconite Mining Project in Northern Quebec and Labrador for New Millennium Iron Corp. and Tata Steel in 2011 [5]

2.3.2.3 Geotechnical Investigations: Qualitas

Qualitas, known as SNC-Lavalin GEM Québec Inc. as of January 1, 2016, is a subsidiary of SNC-Lavalin specialized in geotechnical investigations and engineering. PURE FONTE LTÉE has hired Qualitas for the geotechnical study of this FS.

The team's areas of expertise are:

- Inspection, quality control, on-site testing
- Sampling and laboratory testing, specialized tests
- Destructive and non-destructive testing
- Mix design (cement and asphalt concrete)
- In-factory inspection and quality control of prefabricated elements
- Infrastructure condition surveys
- Process audits (in-factory fabrication or construction)
- Mixing plant calibration (concrete and asphalt)
- Concrete product certification

Qualitas employs over 750 professionals and technicians and provides its services in all of Quebec's regions through its vast network of specialized laboratories.
The geotechnical study, as it is detailed in the layout section of this FS, has helped Tenova and TEIC to conceive quality infrastructures by providing precise and reliable technical data obtained through advanced technologies in the field of soil investigation.
The complete geotechnical report made for PURE FONTE LTÉE project is part of this FS.

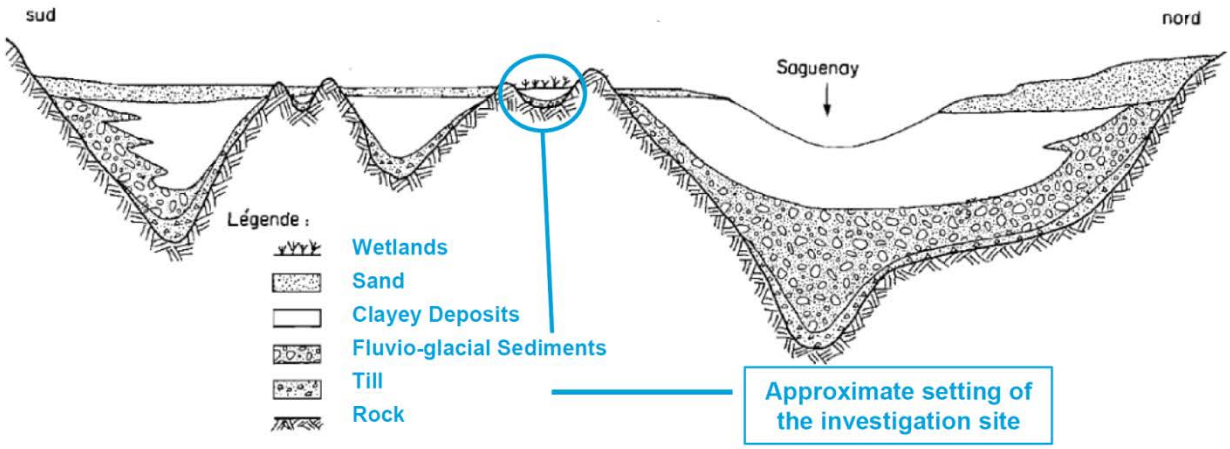

Figure 2.3-4.: Schematic section view across the Saguenay Graben [6]

REV.	DESCRIPTION	DATE	PROJ.	EXE	CHECK.	APPR.
2	ISSUED	4/4/18	-	SAG	KJS	MES
1	FOR REVIEW	7/31/16	-	SAG	KJS	MES
0	FOR REVIEW	6/9/16	-	SAG	KJS	MES

Pure Fonte Ltée

PURE FONTE LTÉE

PIG IRON PRODUCTION PLANT – FEASIBILITY STUDY
CUSTOMER Nº: 1821

tenova

TECHINT

TENOVA

TECHINT ENGINEERING & CONSTRUCTION

SECTION 2 – PARTNERS OF THE STUDY

CHAPTER 2.4

SANITARY & SURFACE WATER TREATMENT

ESC.: N/A

JOB: CD-335

REVISION 2

REVISION

CONTENTS

FIGURES AND REFERENCES

Chapter's references:

[1] Norda Stelo, "Impact Assessment and Fish Habitat Development and Compensation Program – Toulnustouc Hydroelectric Project," 2015. [Online]. Available: http://www.norda.com/en/realisation/compensation-toulnustouc-hydroelectric/. [Accessed 31 July 2016].

[2] Norda Stelo, "Environmental Management – Koniambo Mining Project," 2015. [Online]. Available: http://www.norda.com/en/realisation/environmental-management-koniambo/. [Accessed 31 July 2016].

[3] Norda Stelo, "Environmental Management – Raglan Project," 2015. [Online]. Available: http://www.norda.com/en/realisation/opportunity-raglan-project/. [Accessed 31 July 2016].

[4] Norda Stelo, "Environnemental And Social Impact Study For Renard Diamond Project," 2015. [Online]. Available: http://www.norda.com/en/realisation/environnemental-and-social-impact-study-for-renard-diamond-project/. [Accessed 31 July 2016].

2.4 Sanitary & surface water treatment (Norda Stelo)

The company Norda Stelo (NS) has been directly contracted by PURE FONTE LTÉE to perform two important parts of the FS not directly related to the industrial process of pig iron production:

- Sanitary water treatment
- Surface and rainstorm water treatment

These two topics, despite not being related to the equipment required for the project, are of extreme importance to comply with Quebec health and environment regulation. The reason why NS was chosen, besides its track record as a consulting company, is that NS was already familiar with the area of Port Saguenay, having performed the same activities for APS when the port facilities were built. So NS direct knowledge of the site has been considered essential.

Figure 2.4-1.: photo of the Toulnustouc Hydroelectric Project, Quebec, where NS performed the Impact Assessment and Fish Habitat Development and Compensation Program for HQ [1]

2.4.1 Company Profile

2.4.1.1 Overview

Founded in Quebec in 1963, NS is one of the largest construction engineering firms in Canada, with operations in 50 countries.

NS is an independent firm specializing in integrated projects. NS focus is on developing sustainable partnerships based on a relationship of trust. NS develops leading-edge expertise and form special teams to best meet each client's needs and every project's challenges.

NS commitments are on

- Ethics and integrity
- Health and Safety
- Quality
- Sustainable development
- Community relations

NS permanent employees are approx. 1,800

2.4.2 Roots and Heritage

2.4.2.1 History

NS was formerly known as Roche Ltd, Consulting Group.
In 1963, Charles-Eugène Rochette founded Charles-E. Rochette et associés in La Malbaie, in the Charlevoix region of Quebec. In the early days, the firm mainly offered engineering services. A few years later, Mr. Rochette joined forces with Marc Picard to found Picard, Rochette et associés. In order to ensure its expansion, the company was moved to Quebec City. With the addition of new associates, Rochette, Lajoie, Grondin, Normand, Rochefort et associés was established in 1965. A few years later, the 1970s marked the beginning of a growth period for Roche. Three new divisions were created: urban planning, transportation and environment. In 1977, the firm entered the international market with a first contract in the agricultural sector, in Africa. In the next few years, Roche opened several offices in Quebec — in Rimouski, on the Côte-Nord and in Thetford Mines —, as well as in New Brunswick.
Over time, Roche diversified its services by creating new areas of activity within the company or associating with already established firms. The company became Roche Ltd, Consulting Group in 1984. In 1991, it built its head office at 3075, chemin des Quatre-Bourgeois, in Quebec City, its present location. In 1996, Roche adopted a quality management system that meets ISO 9001 standards. In December 2015 Roche changed its name in Norda Stelo.

Figure 2.4-2.: photo of the Koniambo Mining Project in New Caledonia, where NS provided services for the environmental management [2]

2.4.3 NS Services

NS delivers services in the following fields:

- Commercial and multi-residential
- **Industrial**
- Institutional
- Transportation
- City services
- Construction

NS industrial sector is organized in the following areas:

- Energy
- Forestry
- Manufacturing
- **Mines and Metals**
- Oil and gas
- Processing

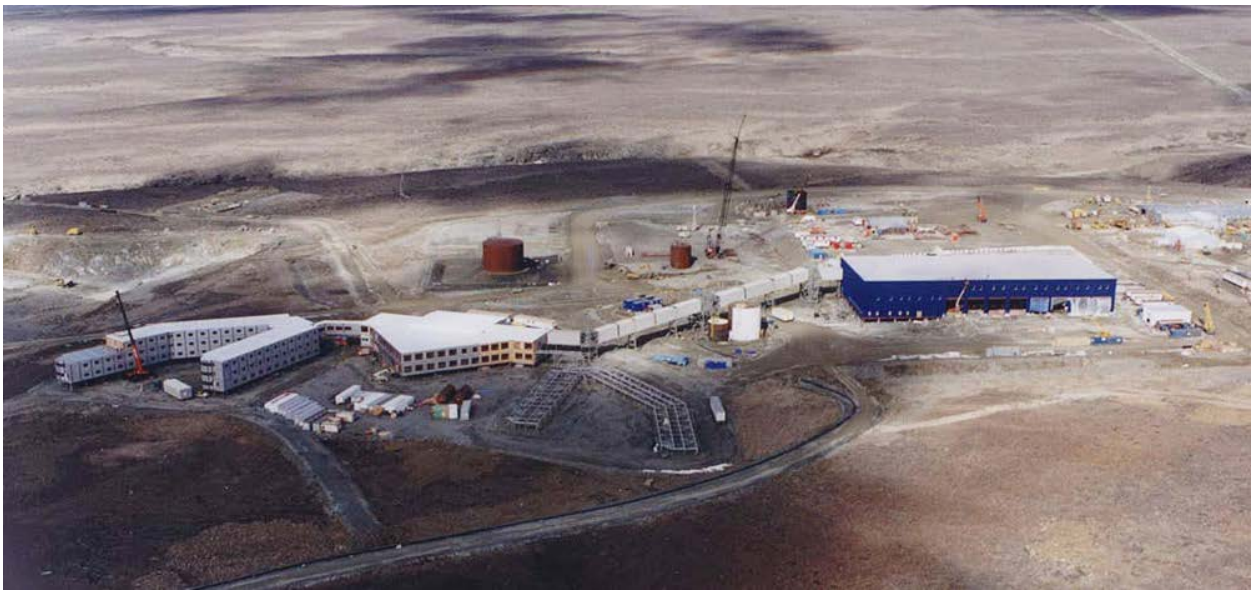

Figure 2.4-3.: photo of the Raglan Project in Falconbridge, Nothern Quebec, where NS performed the Environmental Management [3]

2.4.3.1 Mines and Metals

NS has the capacity to deliver all the services and expertise required throughout the life cycle of a mine and metals project from evaluation, development, construction and startup to operations, plant engineering. NS is especially active in the gold, base metals, rare earth metals, iron and industrial minerals sectors.

Included among the services NS deliver in mines and metals sector are:

- Evaluations of resources and reserves
- Mine planning and development
- Supervision of metallurgical testing
- Preparation of process flow diagrams
- Process optimization
- Equipment selection and sizing
- Plant engineering
- Opportunity and feasibility studies
- Due diligence
- Environment

Figure 2.4-4.: photo of the Renard Diamond Project in Baie-James in Northern Quebec, where NS developed the Environnemental And Social Impact Study [4]