



Purchase Order

2016-012 - FC W06 Hot Solvent

Three Streams Engineering

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2017/02/27 10:35:01AM

Purchase Order: 2016-012-TSE-4003 Propane Truck Unloading Pump Skid Fabrication

Supplier:
Pillar Fabricators
Suite 502, 550-11th Avenue SW, Calgary AB Canada T2R 1M7

Contact: Brett Fitterer
Telephone: 403-266-7070
Fax: 403-233-7802
E-mail: bfitterer@pillar.ca
Tax ID:

Buyer:
Cenovus FCCL Ltd.
500 Centre Street SE
P.O. Box 766
Calgary, AB T2P 0M5

Currency: CAD
Pay Terms: NET30
1st DWG Due: March 13, 2017
Ship Point: Edmonton, AB
Incoterm: FCA Edmonton, AB
AFE#: 16165217
Major/Minor: 8762-452

End Use: FC OFFSITE
JDE PO #: 2016-012-TSE-4003
Insp. Level: 3

CONFIRMING ORDER - DO NOT DUPLICATE

Total Price (All Taxes Extra): 382,196.43

Issue Date: February 27, 2017

This purchase order is issued to the seller subject to all conditions and instructions set forth herein and to the contents of the listed attachments

Attachments Listed In Order Of Precedence

Purchase Order Notes
Scope of Work Document
List of Technical Documents
Seller Drawing and Data Required (SDDR)
Drawing and Data Requirement Instructions
JI for Vendors - Data Book Requirements
Inspection Requirements
Expediting Requirements
Packing, Storage & Shipping Instructions
RFVCO/NCR Instructions and RFI Form
Specification Deviation Form (Typical)
Weld Procedure Summary
Supplier Inspection and Test Plan (ITP) (Typical)

All Communications To:

Buyer:
Sherry Ayres (403) 513-5873
E-mail: sherry.ayres@threestreams.com

Mail Invoices To:

See Purchase Order Notes

Send Drawings, Data, Manuals To:

Three Streams Engineering - Document Control
Suite 401, 1925 - 18th Avenue N.E.
Calgary, AB T2E 7T8
E-mail: tsedoccontrol@threestreams.com

Deliver Equipment, Materials To:

Expeditor to be contacted

Authorized Owner's Agent

Signature

Date

2017. 02.27

Printed Name

GARY BAGGA

Seller's Acceptance Of Order (Return Signed Copy)

One (1) copy of this order is to be duly signed and returned upon receipt. Retention for more than ten (10) working shall constitute acceptance of this order in its entirety.

Signature

Date

Printed Name



Purchase Order

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Three Streams Engineering

Issue Date : 2017 February,27

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Prices In CAD

Purchase Order: 2016-012-TSE-4003 Propane Truck Unloading Pump Skid Fabrication

Item	Equipment Tag #	Quantity	Unit	Description	Ship Date	CWP Number	Unit Price	Total Price
001	PK-9210	1.00	ea	Fabrication of Propane Truck Unloading Package as per attached scope of work Tag ID(s): PK-9210 Cost ID: 51 16165217-452EPGNRLMECH000800M	2017/05/23		65,534.10	65,534.10
002	PK-9250	1.00	ea	Fabrication of Propane Injection Pumps Package as per attached scope of work Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		279,994.12	279,994.12
003	PK-9250	1.00	ea	Price Adder for Level Gauge LG-9241 Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		1,222.63	1,222.63
004	PK-9250	1.00	ea	Price Adder for Pipe Coating 4 lines S-100 system Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		1,680.00	1,680.00
005	PK-9250	1.00	ea	Price Adder for Insulation on 4 lines including insulation blankets Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		7,182.00	7,182.00



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Issue Date : 2017 February,27

Prices In CAD

Purchase Order: 2016-012-TSE-4003 Propane Truck Unloading Pump Skid Fabrication

Item	Equipment Tag #	Quantity	Unit	Description	Ship Date	CWP Number	Unit Price	Total Price
006	PK-9250	1.00	ea	Price Adder for changes in spooling & structures including coupling for SP-Z931 Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		22,382.57	22,382.57
007	PK-9250	1.00	ea	Price Adder to change & addition of electrical cables Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		4,201.01	4,201.01
008	PK-9210	1.00	lot	Documentation as per attached SDDR Tag ID(s): PK-9210 Cost ID: 51 16165217-452EPGNRLMECH000800M	2017/05/23		0.00	0.00
009	PK-9250	1.00	lot	Documentation as per attached SDDR Tag ID(s): PK-9250 Cost ID: 48 16165217-452EPGNRLMECH000600M	2017/05/23		0.00	0.00
				Line Items Total:				382,196.43
				VAT / GST (5%)				19,109.82
				Provincial Tax				0.00
				Purchase Order Total:				401,306.25



Purchase Order Notes

2016-012-TSE-4003 Rev 0

This order shall be in accordance with MSSA # 209856

"If the MSSA referenced above is an MSSA with either EnCana FCCL Ltd. or Cenovus FCCL Ltd., this Purchase Order shall constitute agreement for Supplier to provide the goods or equipment or to perform the services as described herein fully in accordance with the MSSA.

If the MSSA referenced above is an MSSA with EnCana Oil & Gas Partnership, this Purchase Order shall constitute an agreement between Supplier and Cenovus FCCL Ltd., as Operator for FCCL Partnership ("Cenovus"), for Supplier to provide the goods or equipment, or to perform the services as described herein, fully in accordance with the terms and conditions as set out in the MSSA as at November 30, 2009, with Cenovus being substituted for any reference to EnCana Oil & Gas Partnership or EnCana Corporation, and EnCana Oil & Gas Partnership shall have no obligations to Supplier hereunder."

Purchase Order Inspection Level 3

Documentation Requirements:

Vendor Documentation as per the Seller Drawing and Data Required (SDDR) must be accompanied with a Document Transmittal List, listing all documents being submitted including reason for the submittal. Transmittal and all documentation to be sent to the following submittal address:

Three Streams Engineering
#401, 1925 - 18th Avenue N.E.
Calgary, AB T2E 7T8
Attn: Document Control
Email: tsedoccontrol@threestreams.com

To avoid potential delays in payment, please ensure that One (1) copy of the vendor documentation accompanies all shipments.

Fabrication Drawings

Vendor shall provide Owners Representative or Third Party Inspector(s)(TPI) with the latest revision of the Fabrication Drawings for inspection

Shipping Instructions:

All shipments require a Shipping Release Authorization form.
Please contact Keith Coish at (403) 513-5804 or email keith.coish@threestreams.com or cara.grant@threestreams.com for shipping instructions.

Packaging and Marking Additional Instructions:

Should (1) one tag consist of several components, these components **must**:

- a. Be assembled as one unit prior to shipment and be tagged accordingly
- OR
- b. All components must be bagged (boxed) and tagged as a complete individual unit. All such bags/boxes shall be clearly marked on the outside with the Tag and complete description of the product contained therein.

Invoicing:

Purchase Order prices are in Canadian Funds, which are fixed, firm and not subject to revision nor escalation or any adjustments due to currency fluctuations through delivery.

Any and all additional costs or deducts for any reason pertaining to this Purchase/Release Order, whether through the Request for Information (RFI) process or otherwise, must be approved in writing prior to the work being performed. If for any reason, there are additional costs or deducts associated with an RFI, then the RFI shall show the amount in question. If this is not possible at the time the RFI is submitted, then a revised RFI must be submitted with the additional costs or deducts for approval prior to any work being performed unless instructed otherwise. Cenovus will not be liable or responsible for any of these un-approved costs.

To avoid delays in payment, please ensure that the Purchase/Release Order Number is included in your invoice. In addition, no invoice will be approved for payment unless the vendor acknowledgement has been executed and returned. Invoicing must be submitted as noted in the above address and instruction.

INVOICING INSTRUCTIONS

Please submit all invoices electronically through the Open Invoice system. If you do not have an account, please contact eInvoicingOnboarding@cenovus.com to arrange setup and training.

Cenovus FCCL Ltd.
C/O Three Streams Engineering
Suite 401, 1925 – 18th Avenue N.E.
Calgary, AB, Canada T2E 7T8
Attn: TSE Project Invoicing

If you have urgent invoicing requirements prior to setup and training, please email your invoices directly to Cenovus FCCL Ltd at Accounts.payable@cenovus.com clearly indicating:

“Attention To: Three Streams Engineering” in the email body

Customer Name: Cenovus FCCL Ltd. As Operator for FCCL Partnership

Customer Site: Cenovus FCCL Ltd. As Operator for FCCL Partnership

Customer Department: Accounts Payable

To ensure prompt payment, invoices must include the following information:

Purchase/Release Order number, Item number, Quantity, Material description, Tag numbers (if any), Unit price and extension, Total invoice value, GST Registration Number (Canadian suppliers only), AFE# and cost codes.

All invoices will be paid net 30 days from receipt of a complete and accurate invoice from the Seller (not the date of the invoice). When more than one invoice is issued against an order, the final invoice shall be marked "Order Complete".

Terms of Payment: Progress:

Net 30 Days as follows:

- 40 % upon receipt of fabrication materials (structural and piping components)
- 50% upon Shipment or Readiness to Ship
- 10 % upon approval of Final Documentation per the Supplier Data and Drawing Requirements (SDDR) & the Vendor Databook Instructions

Cancellation Charges:

Per MSSA # 209856

Change Orders:

Any and all additional costs or deducts for any reason pertaining to this Purchase Order, whether through the Request for Information (RFI) process or otherwise, must be authorized and approved in writing with a Purchase Order revision prior to the work being performed unless instructed otherwise in writing.

If for any reason, there are cost or delivery impacts associated with an RFI, the RFI shall be submitted with a Change Order showing the impacts. The Change Order must be approved in writing prior to any work being performed unless instructed otherwise. Cenovus will not be liable or responsible for any of these un-approved costs.

Owner Supplied Materials & Material Receiving Reports (MRR'S)

Based on project scope requirements, Buyer may be supplying materials to Seller on a "free-issue" basis to be used in the construction with shop-fabricated items and/or modularized skids. These items may also be shipped to Seller to be shipped loose along with the shop fabricated items and/or modularized skids. Seller will be responsible for all aspects of material control of these materials, including but not

limited to, receipt, verification, handling, shipping, usage and reporting directly to Buyer or Buyer's representative.

Please be advised that free-issue materials will be supplied by Buyer for the duration of this Purchase/Release Order. Upon award of the Purchase/Release Order Seller will be provided with un-priced copies of Buyer's Purchase/Release Orders that cover the free-issue materials that will be directed to Seller for use on this Order. Upon receipt of a shipment of free-issue material from a supplier, Seller must notify the Buyer or Buyer's representative. The notification must detail the name of the supplier, the applicable Purchase/Release Order number, the materials received under the shipment and the state of the materials upon receipt. Seller must complete a Material Receiving Report (MRR) and attach copies of the supplier's packing slips and related shipping documents. The completed MRR and supporting documentation should be forwarded to Buyer or Buyer's representative on a weekly basis. In cases where Seller finds problems with free-issue material shipments, whether shortages, overages, damage or unsatisfactory materials, Sellers are expected to complete an UOS&D report. Such reports should be forwarded to Buyer or Buyer's representative as soon as possible following receipt of the material to permit follow-up with the material supplier. Buyer or Buyer's representative will be responsible to pursue repair or replacement of materials covered by the UOS&D report and advise Seller accordingly.



Scope of Work
For
**Propane Truck Unloading Package &
Propane Injection Pumps Package Fabrication**

Tag Nos. PK-9210 & PK-9250

Purchase Order No.: 2016-012-TSE-4003

2016-012 - FC W06 Hot Solvent

TSE Project # 2016-012

Issued for Purchase

Rev	Description	Date	Prepared By	Signature	Approved By	Signature
0	Issued for Purchase	Feb. 24, 2017	Mateen Ahmad		Yogesh Dua	



Note: Any changes to this document shall be marked with a revision triangle in the left-hand margin with all new text in *italics* and eliminated text ~~stroked out~~.

I:\CENOVUS\FOSTER CREEK OFFSITES\2016-012 - FC W06 Hot Solvent\05 Mechanical\5.2 Mechanical Equip (Sizing, Data Sheets, etc)\Propane Offloading & Propane Pump Skid Fab\SOW - Propane Offloading & Propane Pump Skid Fab. Rev 0.doc	Rev	Date	Originator	Page
	0	Feb 24, 2017	Mateen Ahmad	1 of 9



1.0 SCOPE OF WORK

Vendor will fabricate and supply one (1) Propane Truck Unloading Package (PK-9210) and one (1) Propane Injection Pumps Package (PK-9250).

Fabrication of structural skid, piping layout, platforms will be as per drawings provided with package

All work by the vendor shall be performed according to an approved quality control program. This includes documentation as per attached Seller Drawing & Data Requirements (SDDR).

2.0 SITE CONDITION AND UTILITIES

Location: W 1/2 15-70-4-W4M
Elevation: 670 – 673m ASL
Ambient Temp: -40°C/30°C (-40°F/86°F)

3.0 CENOVUS/TSE SUPPLIED MATERIAL

The following materials shall be supplied by Cenovus c/o TSE for incorporation into the work:

3.1 Propane Truck Unloading Package (PK-9210)

- i. Manual Valves NPS $\geq 2"$
- ii. All SP items except Gate Valve (SP-Z932 & SP-Z927)- see section 5.4
- iii. All in-line instrumentation
- iv. Local Control Panel LCP-9210
- v. Junction Box JBFG-9210
- vi. Junction Box JBDA-9210
- vii. Junction Box JBAC-9210
- viii. Vehicle Static Ground monitor, clamp and Cable unit

3.2 Propane Injection Pumps Package (PK-9250)

- i. Manual Valves NPS $\geq 2"$
- ii. All SP items except Bleed Rings (SP-Z933 & SP-Z938) – see section 5.4
- iii. All in-line instrumentation
- iv. Propane Booster Pumps (P-9230A/B)
- v. Propane Injection Pump (P-9240A/B) c/w Skid Mounted Accessories
- vi. VFD and soft starter panel MCC-9250
- vii. Remote IO panel IOP-9250
- viii. Contactor Panel CP-9250

4.0 VENDOR SUPPLIED MATERIAL

All supplied material shall be new and 100% traceable complete with MTRs, NDE records, etc. Approved Manufacturers List (AML) will be provided to vendor.



Following shall be supplied by vendor:

- i. All structural material including material required for the platforms, ladders, railings etc.
- ii. All manual valves smaller than 2"
- iii. All Pipe, Fittings, Flanges and Tubing
- iv. Level Gauge LG-9241
- v. Pipe insulation and cladding as per P&IDs and LDT
- vi. All required grounding and bonding
- vii. All wires, conduits, cable trays, cables, unistruts, fittings, seals, flexes etc. as required
- viii. All nameplates, wire tags, tie-wraps etc. as required
- ix. All other materials, tools and consumables required to complete the work.
- x. One (1) 2 X 1 1/4 CI 3000 Reducing Coupling and One (1) 1 1/4 XS Nipple for SP-Z931

5.0 FABRICATION AND PACKAGING

5.1 Skid

- i. Structural steel skids shall be fabricated in accordance with structural drawing and Cenovus specifications included here-in and design provided.
- ii. All grating and stair treads shall be galvanized.

Detailed information can be found within the provided drawings. The list of drawings and specifications can be found in the MR Package.

5.2 Lube Oil Collection Tank (T-9241)

- i. The lube oil collection tank with capacity of 0.23m³ shall be fabricated by vendor within the skid as per attached structural drawings.
- ii. The 6" oil drain inspection port shall be supplied by vendor (drawing is attached for reference).
- iii. 1/2" breather tubing with elbows (goose neck) will be installed on lube oil collection tank.
- iv. 1/2" cradle drain tubing from Propane Injection Pumps (P-9240A/B) to Lube Oil Collection.
- v. Tank bottom to be sloped as per structural drawings
- vi. Install two (2), 1/2" tubing will run from Lube Oil Collection Tank to skid edge up to the 1/2" full coupling. This includes drilling of two holes in structural steel (I section) for coupling.
- vii. Vendor to install level gauge (LG-9241) and drain as shown on structural drawings.
- viii. Level Gauge shall be supplied by vendor a sper Cenovus approved manufacturer list; however data sheet will be provided by TSE.
- ix. Tubing material will ASTM A269 TP316/316L, SMLS, 0.049" as per AAB spec.
- x. Vendor shall run all the tubing under skid, where possible in order to avoid any damage to tubing.
- xi. All tubing runs longer than 914 mm (36") shall be routed in aluminum or carbon steel raceway channel. The raceway supporting the tubing shall be supported vertically every 1 meter and horizontally every 2.5 meters and within 250 mm of tangents on a change of direction. Tubing with runs greater than 8 meters and control panel tubing shall be tagged at both ends.



5.3 Mechanical (Piping and Valves)

- i. Vendor shall perform all work in accordance with applicable Cenovus Specifications and follow industry practices.
- ii. Fabrication of pipe spools shall be as per attached isometric and general arrangement drawings provided with the packages. The isometrics define the Scope of Work. Fabrication dimensions shall be taken from the isometrics.
- iii. All piping, valves and fitting materials supplied by the vendor shall be 100% traceable with MTR, NDE records etc.
- iv. Fabricate and install all shoes as per Cenovus standard drawings.
- v. Piping will be registered with Alberta Boilers Safety Association (ABSA). Vendor to complete an ABSA AB83 form (Construction Data Report for Piping Systems) and AB81 form (Construction Completion Report) complete with stamped as built drawings for skid package. **Piping Registration will be by TSE.**
- vi. Support all piping entering and leaving the package at the skid edge. Each support at the skid edge shall include vertical, lateral and axial restraints.
- vii. Temporary support required for shipping will installed by vendor and painted with Red color for ease of identification. Bolted connections and clamps should be utilized wherever possible.

5.4 SP Items:

All the SP items within the Packages shall be supplied by TSE with exception following:

- Bleed Rings (SP-Z933) – Qty. 2
- Bleed Rings (SP-Z938) – Qty. 2
- Gate Valve (SP-Z932) - Qty.1
- Gate Valve (SP-Z927) - Qty. 1

Data Sheets have been included in this package for information. Vendor to provide SS tags for all supplied SP items.

5.5 Insulation

- i. Insulation and cladding of piping, valves, instrument etc. and installation will be provided by the vendor as per Cenovus Specification, Std. drawings, LDT and P&IDs.
- ii. Line # PR-BLB-3-9008-51H, PR-BLB-3-9009-51H, PR-BLB-3-9038-51H & PR-BLB-3-9039-51H require Cellular Glass insulation and insulation blankets on inline valves and basket strainer for these 4 lines as per specs and LDT.
- iii. Vendor to make sure that the insulation jacketing is designed and installed in a way to prevent water ingress, since piping is not going to be painted.



5.6 Painting and Coating

- i. Grating and stair treads shall be galvanized and stairs to be painted safety yellow, as per System S-900.
- ii. Only 4 lines Line # PR-BLB-3-9008-51H, PR-BLB-3-9009-51H, PR-BLB-9038-51H & PR-BLB-9039-51H require painting system S-100, as per LDT and Cenovus specifications.
- iii. No painting is required on the structural steel skids and supports, as per project decision.

5.7 Installation of Equipment/Package

- i. Following equipments will be free issued:
 - a. Propane Booster Pumps (P-9230A/B)
 - b. Propane Injection Pump (P-9240A/B) installed on a skid along with following accessories:
 - Lube Oil Day Tank (T-9240A/B)
 - Auxiliary Lubrication Pump (P-9241A/B)
 - Auxiliary Lubrication Filter (F-9240A/B)
 - Lube Oil Immersion Heater (EH-9242A/B)
- ii. Propane Booster Pump (P-9230A/B) and Propane Injection Pump (P-9240A/B) will be free issued to vendor with sub skids and these pumps sub skids will be mounted on main structural skid as per structural drawings and Cenovus specifications. TR-43-SPC-00-025-01- Skid Mounted Equipment
- iii. Hardware for installation of sub skids with main structural skid will be supplied by fabricator.
- iv. Rotating equipment piping installation shall be verified by an Alberta Certified Journeyman Millwright.
- v. Storage of Pump Sub –Skids shall be done as per TR-50-SPC-00-004-01- Jobsite Storage & Protection of Equipment
- vi. Refer to attached manufacturer Installation and Operation Manual

5.8 Instrumentation

- i. The Fabricator shall install all instruments in-line and off-line and control valves per TR-47-SPC-00-001-01, General Instrumentation Requirements, and TR-47-SPC-00-004-001, Instrumentation for Packaged Equipment, the manufacturers' recommendations, and applicable Cenovus Instrumentation Standard Installation drawings and specifications.
- ii. All instruments, with the exception of LG-9241, shall be supplied by Cenovus. The Fabricator shall be responsible for the receipt and safe storage of all instruments and for the installation of all in-line and off-line instruments, valves and PSV's. The Fabricator shall perform a visual inspection of each instrument confirming each instrument is not damaged prior to installation.
- iii. All non-inline instruments and associated components with in-line instruments such as tubing, fittings, etc., shall be initially installed by the Fabricator at their facility, and will be tested together with the entire assembled package. Subsequently, PSV's and all instrumentation including their associated components which may encroach upon shipping limits will be disassembled and shipped loose with the module to prevent shipping



- damage. Preparation of the instruments for shipment shall be in accordance with Cenovus Project Specification TR-47-SPC-00-004-001, Instrumentation for Packaged Equipment.
- iv. All instrument tubing and fittings shall be per TR-47-SPC-00-001-01, Sec. 14.0, General Instrumentation Requirements or applicable piping specification.
 - v. The Fabricator shall supply:
 - a. Stainless Steel instrument tags, where applicable.
 - b. Stainless steel and plated carbon steel pipe fittings 1" diameter and smaller.
 - c. 316 stainless tubing and tube fittings (i.e. Swagelok fittings - No substitutes).
 - d. All "Raceway" to be used for tubing installation support systems.
 - e. Any miscellaneous structural steel supports.
 - f. All instrument mounting supports/brackets.
 - g. All other materials not specifically designated as Owner and/or Vendor supplied.
 - vi. All materials shall be purchased in accordance with Approved Manufacturers List (AML).
 - vii. Items to be confirmed are:
 - a. Tagged 'in-line' instruments are in correct location as per the P&IDs and piping isometric drawings.
 - b. Tag Numbers
 - c. Manufacturer & Model Number
 - d. Serial Number - to be recorded and provided by Fabricator
 - e. CRN and End Connections
 - f. CSA Approval
 - viii. All instruments are direct mount where possible. Indicating instruments and those which are adjusted by operations personnel as part of their normal operating routine shall be adjacent to, and easily accessible from normal operating areas such as walkways, platforms, etc., where possible.
 - ix. No instrument installations shall extend into or block normal access routes to equipment or corridors designated for equipment removal or emergency escape routes.
 - x. All instruments, with the exception of those designed to mount directly into a pipe shall be rigidly mounted via a bracket or mounting plate.
 - xi. All instrument supports and mounting plates shall be fastened directly to permanent structural members. No process piping instrument shall be mounted on, or supported by handrails or ladder supports.
 - xii. Ensure valve actuators are oriented for easy operator access to service and operate. This may require rotation of the actuator according the valve and actuator manufacturers guidelines.
 - xiii. Where applicable, instrument displays are to be rotated for visibility as needed.

5.9 Electrical

The Vendor shall supply equipment, labour and services required to complete the work per CEC, Cenovus Project Specification, Standard Electrical Details and Standard BOM Schedules and other Data.

- i. Installation and wiring of Owner supplied equipment as per section 3.0 and drawings.
- ii. Ensure all equipment is properly secured and fastened to skid steel.
- iii. Supply, installation and wiring of the following equipment as per drawings:
 - a. Lighting distribution transformer XFM-9250
 - b. Lighting panel LP-9250



- c. Wireway
- iv. Supply and installation of lighting fixtures, Photocell, ESD pushbuttons and receptacles.
- v. Supply and install all cable trays, cable tray fittings, conduits and related materials to complete the cable trays / conduit system as detailed in the drawings. All cable trays shall be aluminum and rated for Class E loading. Where required, instrument type tray may be used to support end cables near their associated end devices. Use good trade practice to route conduits/trays in a manner that minimizes interference with site installed equipment, equipment removal and the need for additional structural supports.
- vi. Install cable and terminate all Fire/LEL detectors, strobes and horns in accordance with the drawings and standard installation details.
- vii. The vendor shall stencil the cable tray number onto each tray run. The tray numbers shall be 50mm high in black paint and shall follow the numbering as shown on the IFC Drawings.
- viii. Supply and installation of all cables, connectors and wires as per drawings.
- ix. All cable tags shall be affixed to their appropriate cables using stainless steel tie wraps, as opposed to stainless steel tie wire.
- x. Supply and installation of all grounding materials.
 - Grounding cable to be used shall be type R90 with FT-4 fire resistance rating that meets CEC requirement and are CSA approved.
- xi. The scope shall also include testing and commissioning assistance as requested by Cenovus. Vendor shall supply and install temporary power for testing, including but not limited to 480VAC/3 Phase/60 Hz generator set.
- xii. All electrical and instrumentation shall be CSA approved for the electrical area classification it shall be installed in. The skid's process area is zone 2 hazardous.

6.0 INSPECTION & HYDROSTATIC TESTING

- i. Vendor shall be responsible for coordinating third party inspection (provided by TSE/CVE) and testing of all work and materials as per Cenovus specifications and applicable codes
- ii. All hydrostatic and pneumatic testing shall be done as per TR-44-SPC-00-028-01 Piping Installation and Testing Rev. 7.
- iii. Vendor shall provide all required materials for hydro-testing including but not limited to blinds, blanks, gaskets, bolting, plugs etc.
- iv. If hydrostatic test is conducted at below the freezing temperature, a test fluid of 50/50 glycol-water (or other approved mixture by purchaser) shall be used.
- v. Perform pneumatic testing on Instrument air lines as per Line List.
- vi. Refer to section 5.7 of TR-44-SPC-00-028-01 – Piping Installation and Testing and AB 522 for detailed information on pneumatic testing.
- vii. Document all hydro/pneumatic testing with 1 hour charts, gauge calibration records, test certificate, maps of test locations and blinds/test limits.
- viii. As per section 5.2.1 (a) of TR Spec TR-44-SPC-00-028-01 Rev 7 "Piping Installation and Testing" **Piping Valves are to be tested as part of an assembly or subassembly in fabrication shop.**
- ix. The vendor shall not perform any major weld repairs and examination without prior approval from Cenovus c/o TSE.



7.0 TESTING OF INSTRUMENTATION AND CONTROLS

- i. Vendor to provide a Module Factory Acceptance Test (MFAT) of the completed skids to ensure that the components have been wired correctly. Vendor to provide 480VAC, 120/208VAC and 24VDC power, as required. This will include, but is not limited to the following:
 - a. Supply power to 480VAC power to the JB and function test end devices
 - b. Supply power to 120/208VAC Junction Boxes and function test end devices
 - c. Supply power to 24VDC discrete and analog JB for point-to-point test
 - d. LEL and H2S detectors do not have to be tested to prevent breaking the detector seals
- ii. The MFAT will be conducted by a TSE representative with the assistance of the package vendor. The vendor will be responsible for notifying engineering, projects and QA/QC representatives that the package is ready for testing. 10 working days' notice is required prior to MFAT test.

8.0 SUBMISSION OF TURNOVER DOCUMENTATION

Vendor shall be responsible for recording and supplying documentation covered in Seller Drawing & Data Requirements (SDDR) to TSE Document Control any exception to vendor submittal shall be noted in proposal.

9.0 VENDOR'S SUPPLIED SERVICES & RESPONSIBILITY

If there is uncertainty, vendor shall request clarification in writing from TSE. Vendor shall fill out and submit a **Request for Information (RFI)** form to TSE. Vendor shall keep a RFI log of all submittals and coordinate with TSE to set up a RFI numbering system.

All Requests for Information (RFI) or Approvals shall be sent to the TSE Project Engineer.

The RFI shall be the sole document employed for simple information requests and for any approval requests. See attached RFI form titled "Request for Information" and "Sample RFI Log" contained therein. RFI estimates shall include a detailed Bill of Materials complete with quantity, Unit of Measurement and Price.

10.0 DRAWINGS, CODES AND STANDARDS

10.1 General Technical Standards

Document Number	Document Title	Rev
ASME B31.3	Process Piping	Latest
ASME B16.5	Pipe Flanges and Flanged Fittings	Latest
ASME B16.11	Forged Fittings Socket Welded and Threaded	Latest
ASME B16.9	Factory-Made Wrought Butt-welding Fittings	Latest
N/A	Occupation Health and Safety Regulations	



10.2 QA/QC Documents

Document Number	Document Title	Rev
N/A	RFI Form (Request for Information)	
N/A	RFI Log	
N/A	Seller Drawing and Data Requirements (SDDR)	0
N/A	Inspection & Test Plan	
N/A	Inspection Requirements (Quality Surveillance Levels)	
N/A	Weld Procedure Summary (WPS)	
N/A	Shipping Release Form	

10.3 Cenovus Technical Specifications

Document Number	Document Title	Rev
	See list of technical documents on Material Requisition	

10.4 Cenovus Standard Drawings

Document Number	Document Title	Rev
	See list of technical documents on Material Requisition	

10.5 Drawing List (Isometrics)

Document Number	Document Title	Rev
	See list of technical documents on Material Requisition	

10.6 Line Designation Table (LDT)

Document Number	Document Title	Rev
	See list of technical documents on Material Requisition	



LIST OF TECHNICAL DOCUMENTS

Proj. No.: 2016-012
Req. No.: TSE-4003
Revision: 0

* Include each applicable technical specifications, waiver, and data sheet for each tag number.

Item	MR Rev.	Document Number	Doc. Rev.	Document Title	Comments
TR Specifications					
1	0	TR-43-SPC-00-019-01	8	External Coating & Galvanizing	
2	0	TR-43-SPC-00-021-02	8	Insulation	
3	0	TR-43-SPC-00-025-01	6	Skid Mounted Equipment	
4	0	TR-44-SPC-00-001-01	8	Piping Materials	
5	0	TR-44-SPC-00-001-01	3	Piping Class AAB	
6	0	TR-44-SPC-00-001-01	5	Piping Class ALB	Marked up
7	0	TR-44-SPC-00-001-01	4	Piping Class BLB	
8	0	TR-44-SPC-00-001-01	3	Piping Class DLB	Marked up
9	0	TR-44-SPC-00-002-01	5	Valves	
10	0	TR-44-SPC-00-002-01	5	Valve Tag B*-20L00	
11	0	TR-44-SPC-00-002-01	5	Valve Tag B*-20L05	Marked up
12	0	TR-44-SPC-00-002-01	6	Valve Tag G*-08L00	
13	0	TR-44-SPC-00-002-01	6	Valve Tag G*-08L10	Marked up
14	0	TR-44-SPC-00-002-01	4	Valve Tag G*-15L00	
15	0	TR-44-SPC-00-002-01	2	Valve Tag G*-15L10	
16	0	TR-44-SPC-00-015-01	1	Piping For Instruments	
17	0	TR-44-SPC-00-027-01	4	Shop Fabrication of Piping	
18	0	TR-44-SPC-00-028-01	7	Piping Installation and Testing	
19	0	TR-44-SPC-00-036-01	5	Welding	
20	0	TR-44-SPC-00-038-01	3	Bolt Torquing in Piping Flanged Joints	
21	0	TR-44-SPC-00-042-01	1	Methods for Correcting Misalignment in Piping	
22	0	TR-45-SPC-00-021-01	4	Structural Design Criteria	
23	0	TR-45-SPC-00-022-01	6	Fabrication of Steel Structures	
24	0	TR-45-SPC-00-023-01	4	Erection of Steel Structures	
25	0	TR-46-SPC-00-016-01	2	Electrical for Packaged Equipment	
26	0	TR-46-SPC-00-017-01	1	Electrical Installation Requirements For Field Construction	
27	0	TR-46-SPC-00-021-01	1	Inspection and Testing Requirements For Electrical Installations	
28	0	TR-46-SPC-00-029-01	2a	Wire and Cable	
29	0	TR-47-SPC-00-001-01	5	General Instrumentation Requirements	
30	0	TR-47-SPC-00-004-01	3	Instrumentation For Packaged Equipment	
31	0	TR-50-SPC-00-004-01	2	Jobsite Storage & Protection of Equipment	
32	0	TR-50-SPC-00-003-01	4	Preparation for Shipment & Storage	
33	0	TR-50-DX-00-001-01	3	Approved Manufacturers List (AML)	26 pages
34	0	SB-44-002	1	Shipping Covers for Flanges, Pipe Ends and Valves	

Item	MR Rev.	Document Number	Doc. Rev.	Document Title	Comments
35	0	SB-44-005	0	Clarification for STD Bolt Length and Thread Engagement	
36	0	SB-44-008	1	Safety Requirements for Valve Chain Operators	
37	0	SB-44-011	0	Leak Testing	
38	0	JI-02-025	1	Vendor Databook Requirement	
Standard Drawings					
39	0	TR-44-STD-A-03	2	Directional Anchor A-3 3" (75) & Under	
40	0	TR-44-STD-D-01-01	2	Dummy Legs D-1 For Non Vibrating Pipe 2" (50) Thru 24" (600)	
41	0	TR-44-STD-D-01-02	1	Dummy Legs D-1 For Non Vibrating Pipe 2" (50) Thru 24" (600)	
42	0	TR-44-STD-I-01	2	Hot Insulation Expansion Joint Detail	
43	0	TR-44-STD-I-03	2	90 and 45 Degree Insulation Termination Detail	
44	0	TR-44-STD-I-04	2	Hot Insulation Detail for Dummy Legs and Base Support	
45	0	TR-44-STD-1-11	1	Insulation Detail for Pipe without Shoe on Support	
46	0	TR-44-STD-L-01-01	2	Non Adjustable Base Support L-1	
47	0	TR-44-STD-L-01-02	1	Non Adjustable Base Support L-1	
48	0	TR-44-STD-C-01	1	Pipe Clamp Medium Duty C-1 6" (150) & Under	
49	0	TR-44-STD-TSP-19	1	Teflon Slide Plate TSP-19 Assembly for Base Plates	
50	0	TR-44-STD-G-11	1	U Bolts- Light Duty G-11 24" (600) & under	
51	0	TR-44-STD-C-18	1	U Bolts - Light Duty Clamp C-18 24" (600) & Under	
52	0	SS-01 (3")	0	Pipe Clamp With Spring Washer	
53	0	TR-46-STD-00-007-01	0	Thermal Recovery Electrical Symbol Legend Sheet 1	
54	0	TR-46-STD-00-007-02	0	Thermal Recovery Electrical Symbol Legend Sheet 2	
55	0	TR-46-STD-F-001-04	3	Ground Wire Tap Connection	
56	0	TR-46-STD-F-001-08	3	Structural Steel Grounding	
57	0	TR-46-STD-F-001-10	4	Electrical Enclosure Grounding	
58	0	TR-46-STD-F-001-14	4	Motor Grounding	
59	0	TR-46-STD-F-001-17	3	Cable Tray Grounding	
60	0	TR-46-STD-F-001-18	4	Cable Tray Expansion Joint Grounding	
61	0	TR-46-STD-F-001-24A	4	Magnetic Flow Meter Grounding	
62	0	TR-46-STD-F-001-25	0	Fastray Grounding	
63	0	TR-46-STD-F-002-15	1	Pendant Mounted Led Fixture (300mm or Less)	
64	0	TR-46-STD-F-002-19	1	Column Mounted Led Fixture Indoor/Outdoor	
65	0	TR-46-STD-F-002-21	1	Stanchion Mount Led Light Fixture	
66	0	TR-46-STD-F-003-01	5	Gas Detector Head	
67	0	TR-46-STD-F-003-04	5	Gas or H2S Detector Head	

Item	MR Rev.	Document Number	Doc. Rev.	Document Title	Comments
68	0	TR-46-STD-F-003-05	5	Fire Detector Head	
69	0	TR-46-STD-F-003-06	5	Instrument - Sparking Device Switches	
70	0	TR-46-STD-F-003-07	5	Instrument - Nonsparking Device Transmitters	
71	0	TR-46-STD-F-003-11A	5	Wall Mounted ESD Station	
72	0	TR-46-STD-F-003-11B	0	ESD Push Button Protection Shield	
73	0	TR-46-STD-F-003-11C	0	ESD Push Button Protection Shield	
74	0	TR-46-STD-F-003-14	5	Strobe Light Connection - One or Two Unit (Outdoor)	
75	0	TR-46-STD-F-005-02	5	Receptacle Hook-Up	
76	0	TR-46-STD-F-005-21	5	Vertical Cable Tray Installation	
77	0	TR-46-STD-F-005-22	3	Cable Tray Fixed Clamp & Guide Clamp	
78	0	TR-46-STD-F-005-26	4	Cable Tray - Cable Tray Installation Guidelines	
79	0	TR-46-STD-F-005-27	4	Cable Tray Support Location for Typical Fittings	
80	0	TR-46-STD-F-005-36	3	Warning Signs ARC Flash	
81	0	TR-47-STD-600-002-01	3	Instrument Mounting Stand Detail	
82	0	TR-47-STD-600-002-02	3	Instrument Raceway Detail	
83	0	TR-47-STD-600-020-03	2	Control Valve c/w I/P Transducer	
84	0	TR-47-STD-600-025-03	2	Control Valve - ESD c/w Solenoid Valve	
85	0	TR-47-STD-600-080-08	2	Turbine Flow Transmitter	
86	0	TR-47-STD-600-081-03	3	Pressure Transmitter	
87	0	TR-47-STD-600-081-12	2	Pressure Gauge Differential	
88	0	TR-47-STD-600-081-13	3	Pressure Gauge - Direct Mount	
89	0	TR-47-STD-600-084-02	2	Temperature Transmitter c/w Temperature Element	
90	0	TR-47-STD-600-084-04	3	Temperature Element Threaded Thermowell	
91	0	TR-47-STD-600-084-09	2	Temperature Gauge Flanged Thermowell	
Construction Drawings					
92	0	FC1-42-PID-W06-0012-001	0.A.E	P&ID - Propane Truck Unloading	
93	0	FC1-42-PID-W06-0015-001	0.A.E	P&ID - Propane Booster/Injection Pumps P-9230A/9240A	
94	0	FC1-42-PID-W06-0015-002	0.A.B	P&ID - Propane Booster/Injection Pumps P-9230B/9240B	
95	0	FC1-42-PID-W06-0015-003	0.A.A	P&ID - Propane Injection Pumps Accessories	
96	0	FC1-42-PID-W06-0015-004	0.A.A	P&ID - Propane Injection Pumps Accessories	
97	0	N/A	0.A.0	Isometric Drawings - CL1-PK-9210	11 drawings
98	0	N/A	0.A.0	Isometric Drawings - CL1-PK-9250	31 drawings
99	0	FC1-42-LDT-N00-0005-001	ZC	Line List- Issued for Bid	
100	0	As per Drawing Index	0.A.A	Electrical Drawings - Issued for Bid	
101	0	As per Drawing Index	0.A.A	Structural Drawings - Issued for Bid	

Item	MR Rev.	Document Number	Doc. Rev.	Document Title	Comments
102	0	FC1-44-SKT-N00-0001-001	0.A.A	Sketch for Unloading Skid (TM11)	
103	0	FC1-44-SK-N00-0001-002	0.A.A	Sketch for Pump Skid (TM12)	
Other Reference Drawings					
104	0	132222-1 Sht. 1 of 9	0	Simark Controls Propane Pumps Drive System (Master Drawing Index Sheet)	MCC-9250 for info.
105	0	132222-1 Sht. 2 of 9	0	Simark Controls Propane Pumps Drive System (Bill of Material)	
106	0	132222-1 Sht. 3 of 9	0	Simark Controls Propane Pumps Drive System (Mechanical Layout - M1)	
107	0	132222-1 Sht. 4 of 9	0	Simark Controls Propane Pumps Drive System (Mechanical Layout - M2)	
108	0	132222-1 Sht. 5 of 9	0	Simark Controls Propane Pumps Drive System (Terminal Rail Details - T1)	
109	0	132222-1 Sht. 6 of 9	0	Simark Controls Propane Pumps Drive System (Power Schematic - E1)	
110	0	132222-1 Sht. 7 of 9	0	Simark Controls Propane Pumps Drive System (VFD Control Schematic - E2)	
111	0	132222-1 Sht. 8 of 9	0	Simark Controls Propane Pumps Drive System (Softstarter Control Schematic - E3)	
112	0	132222-1 Sht. 9 of 9	0	Simark Controls Propane Pumps Drive System (FVNR & Communications - E4)	
113	0	FC1-46-PNL-TM11-0001-001	0.A.0	LCP-9210 Truck Unloading Station Control Panel Layout	CP, LCP and IOP for info.
114	0	FC1-46-PNL-TM11-0001-002	0.A.0	LCP-9210 Control Panel Wiring Diagram	
115	0	FC1-46-PNL-TM12-0001-001	0.A.0	CP-9250 Contractor Panel Layout	
116	0	FC1-47-PNL-TM12-0001-001	0.A.0	Remote IOP-9250 Panel Layout	
117	0	FC1-47-PNL-TM12-0001-002	0.A.0	Remote IOP-9250 Panel Layout	
118	0	FC1-47-PNL-TM12-0001-003	0.A.0	Remote IOP-9250 Bill of Material & Engraving Schedule	
119	0	FC1-47-WD-TM12-0001-003	0.A.0	Communication Wiring Diagram	
120	0	FC1-46-SCD-00-0002-002	38	Bill of Materials - Schedule	
121	0	FC1-46-SCD-00-002-04	12Z	Bill of Materials - Schedule	
122	0	DWG J12019MS-02	D	Propane Booster Pump (P-9230A/B)	
123	0	DWG J12019MS-08	D	Propane Booster Pump (P-9230A/B)	
124	0	DWG B7298-100-GA-001	2	Assembly drawing P-9240A/B 1 of 2	
125	0	DWG B7298-100-GA-002	2	Assembly drawing P-9240A/B 2 of 2	
126	0	DWG S-21002-F	A	Pulsation Stabilizer - SP-Z941	
127	0	DWG ST-7003-F_r0_cB	0	Pulsation Stabilizer - SP-Z937	
128		N/A	-	Threaded Inspection Port	Reference drawing
Reference Procedures and Catalogs					
129	0	INS FAB-PR-003	0	Storage Instructions for Reciprocating Pumps - P-9240A/B	
130	0	IOM B7298-T30M	2	Kerr Pump Corporation Service Manual - P-9240A/B	
131	0	MAN J12019MS-22a	B	Operating Manual For Centrifugal Pumps P-9230A/B	

Item	MR Rev.	Document Number	Doc. Rev.	Document Title	Comments
132	0	60733	E	Vehicle Static Grounding System	
133	0	67206	D	Ground Verification Clamp & Cable Unit	
134	0	CVE-ELEC-TA-10	1.0	Wire and Cables Through Conduit and TECK Seals	
135	0	CAT J12019MS-16_rB_cA	B	Propane Booster Pump (P-9230A/B) - Catalog Data	
Spec Waivers					
136	0	2014-462-SWR-005	0	Ball Valves on DLB Piping Class	
137	0	2014-462-SWR-006	0	Thermowell Connection Size	
138	0	2014-462-SWR-012	0	NPT X NPT Spring Loaded Ball Valves on ALB Line	
139	0	N/A	-	AML Waiver - Piston Check Valve	
Data Sheets					
140	0	SP-Z933	0	3" Bleed Ring data sheet	
141	0	SP-Z938	0	2" Bleed Ring data sheet	
142	0	SP-Z932	0	Gate Valve	
143	0	SP-Z927	0	Gate Valve	
144	0	LG-9241		Level Gauge	
Notes:					



SELLER DRAWING AND DATA REQUIREMENTS (SDDR) 2016-012 Propane Truck Unloading Package & Propane Injection Pumps Package Fabrication (Tag Nos. PK-9210 & PK-9250)	REV	DATE	DESCRIPTION	BY
	0	22-Feb-17	Issued for Purchase	MA

MR # 2016-012-TSE-4003

DOCUMENT DESCRIPTION	WITH	AFTER ORDER PLACEMENT						
	QUOTE	FOR APPROVAL ¹			CERTIFIED/AS BUILT/FINAL ²			
	QTY/TYPE	QTY/TYPE	WKS ³	DATE	QTY/TYPE	WKS ³	DATE	
DRAWINGS								
General Drawings and Diagrams								
Drawing Index								
Bill of Materials		1P			1P/1D/1M			
Civil Drawings								
Building / Architectural Drawings								
Structural Drawing Details (supplied by TSE)					1P/1D/1M			
Foundation / Skid Drawings (supplied by TSE)					1P/1D/1M			
P.Eng Stamped Building Schedules								
Support / Foundation Loading Diagrams								
Anchor Bolt Location & Drawings								
Electrical Drawings								
Electrical Equipment Layout Drawings								
Electrical Interconnection, Schematics and Wiring Diagrams								
Junction Box / Panel Layouts								
Motor Drawings / Diagrams								
Instrumentation Drawings								
Instrument Dimensional Drawings								
Mechanical Drawings								
General Arrangement Drawings								
Detail Fabrication / Shop Drawings								
Assembly / Erection Drawings								
Piping Spool Drawings (cut sheets if required)		1P			1P/1D/1M			
HVAC Schematic / Flow Diagram								
Process Drawings								
Process Flow Diagrams								
Piping and Instrument Diagrams								
DATA								
General and Miscellaneous Data								
Engineering Calculation Sheets								
Data Sheets - Mechanical/Noise/Instrumentation/Specialty etc (for vendor supplied items) - Preliminary by TSE		1P			1P/1D/1M			
Performance Curves								
Equipment Catalog Data								
Weight & Dimensions		1P			1P/1D/1M			
Lifting Study or Sketch as required		1P			1P/1D/1M			
Assembly / Disassembly Sizes & Weights Data								
Production Schedule		1P			1P/1D/1M			
Nameplate Photos								
Operating Instructions								
Maintenance, Lubrication / Fluid & Materials Requirements								
Priced Spare Parts for Start-up and 2 Years Operations								
Procedures, Reports and Certificates								
Quality Control Procedures					1P/1D/1M			
WPS, PQR and Weld Procedure Summary		1P			1P/1D/1M			
Shipping, Handling & Storage Procedures					1P/1D/1M			
Installation / Erection Procedure (shipped loose items)					1P/1D/1M			
Inspection Test Plan (ITP)		1P			1P/1D/1M			
CRN					1P/1D/1M			
NDE Maps					1P/1D/1M			
Non-Destructive Examination (NDE) Reports					1P/1D/1M			
WPS Log					1P/1D/1M			
Welder Log & Qualification					1P/1D/1M			
Weld Map					1P/1D/1M			
Material Test Reports (MTR's) or Mill Certificates ⁵					1P/1D/1M			
PWHT Report and Charts								
Hydrostatic Test Gauge Certificate					1P/1D/1M			
Hydrostatic Test Report / Certificate					1P/1D/1M			
Completed and Signed ITPs					1P/1D/1M			

SELLER DRAWING AND DATA REQUIREMENTS (SDDR) 2016-012 Propane Truck Unloading Package & Propane Injection Pumps Package Fabrication (Tag Nos. PK-9210 & PK-9250)	REV	DATE	DESCRIPTION	BY
	0	22-Feb-17	Issued for Purchase	MA

MIR # 2016-012-TSE-4003

DOCUMENT DESCRIPTION	WITH QUOTE	AFTER ORDER PLACEMENT					
		FOR APPROVAL ¹			CERTIFIED/AS BUILT/FINAL ²		
	QTY/TYPE	QTY/TYPE	WKS ³	DATE	QTY/TYPE	WKS ³	DATE
Painting, Coating and Lining Inspection Reports					1P/1D/1M		
MTR Map							
Bolt Torque Inspection Report					1P/1D/1M		
All Code Required Regulatory Forms (AB-83, etc)					1P/1D/1M		
Components Rating vs. Application Area Classification							
Non-Conformance Report (NCR) Log					1P/1D/1M		
CSA / Canadian & Alberta Electrical Code Approval					1P/1D/1M		
HAT / FAT/ Function Testing Procedure							
Deficiency Punch List / Inspection Release					1P/1D/1M		
RFIs & RFI Log					1P/1D/1M		
Any other Code Required documents							
Additional Reports and Certificates - Mechanical							
Running Performance Test Report							
NPSH Test Report							
Letter / Certificate of Material Compliance					1P/1D/1M		
Dismantle and Inspection after Test Report							
Report Carbon Equivalent Factor							
Noise Level Test Reports / Certificates							
Vibration Test Reports							
Dimensional Check Report					1P/1D/1M		
Shipping and Packing Report					1P/1D/1M		
Additional Reports & Certificates - Electrical							
Electrical Equipment List							
Function Test / Run Test / Motor Test Reports							
Megger Test Records					1P/1D/1M		
Motor Performance Curve							
Electrical Circuit Test Record					1P/1D/1M		
Shutdown Key							
Additional Reports & Certificates - Instrumentation							
Instrument Mechanical Run or Dynamic Test Records							
Instrument Index							
PSV Record							
Calibration Certificate							
VENDOR DATA BOOK⁴					1P		
MUD COPY⁵					1P/1H		
NOTES							
<p>1 All drawings "For Approval" must be approved by Three Streams. Three Streams will use the following codes listed below. If re-issue is required drawings must be re-issued in a timely manner from the vendor.</p> <p>Code A: Approved without exception. Proceed with fabrication and issue final drawings</p> <p>Code B: Approved except as marked. Proceed with Fabrication and re-issue drawings</p> <p>Code C: Not approved. Revise drawings as marked and re-issue for approval.</p> <p>Code D: Not required for review. Received for information</p> <p>2 All documents listed under "Certified/As Built/Final" to be supplied for approval by Three Streams prior to inclusion in final data book as per "4". Vendor to provide as-built stamped drawings for all purchaser supplied construction drawings.</p> <p>3 Vendor to provide/confirm weeks and committed dates.</p> <p>4 The vendor data book supplied to Three Streams is to contain all of the documents listed above under "Certified/As Built/Final" that are marked with "D". All documents must be Code A or Code D. Data book must be in the format specified.</p> <p>5 The Mud Copy which gets shipped with each equipment is in addition to the Vendor Data Book. The documents above marked with "M" are the minimum requirements for the Mud Copy. An electronic copy of the Mud Copy should be sent to Three Streams prior to shipment for approval c/w photo verification of inclusion. Any items not included in the Mud Copy must be noted as deficiency and approved before shipment. THE COVER SHEETS OF MUD BOOKS MUST CONTAIN THE CWP#, PO# and EQUIPMENT TAG#.</p> <p>6 MTRs for ship loose material shall be included in Mud Copy. MTRs of all other items shall be included in Vendor Data Book.</p> <p>7 Costs of dwgs and data to be included in quotation. Client reserves the right to withhold 10% of purchase price until dwgs and data are received.</p>							
LEGEND				ACCEPTANCE			
FORMAT FOR SUBMISSION		DATE CODES		Vendor acceptance of above document requirements and timelines			
H	Hardcopy	ARO	After Receipt of Order	Signature		Date	
E	Electronic Copy - Native (e.g..*.dwg)	AS	After Shipment				
P	Electronic Copy- PDF	BS	Before Shipments				
M	Copy to be included in Mud Copy - min reqmnts	WS	With Shipment				
D	Copy to be included in Vendor Data Book						

DRAWING & DATA REQUIREMENT INSTRUCTIONS

(In the event of an Order, the following will be applicable):

1. Supplier shall submit all drawing and data requirements as outlined in the attached Drawings & Data Requirement Form. This schedule of data requirements shall be fulfilled before rendering final invoices.
2. All documents must show equipment numbers, Purchase Order numbers, and Supplier's own title, drawing and revision numbers.
3. Supplier shall submit all drawings and data in English.
4. Dimensions, weights, and measures for drawings to be in SI Units.
5. All documents shall be submitted to:
Three Streams Engineering
Suite 401, 1925 – 18th Avenue N.E.
Calgary, Alberta T2E 7T8

Attention: Document Control
Email: tsedoccontrol@threestreams.com
6. One (1) field copy of all Record Data is to be shipped with the equipment. This shall include all documents as listed in the Seller's Drawing and Data Requirements (SDDR). The Supplier shall make every reasonable attempt to have all requested data included.
7. Drawings and data approval does not relieve Supplier of his responsibility to meet purchase order conditions relating to duty specifications, material design or construction, and delivery requirements.
8. Supplier shall submit a set of electronic files of the final "Certified Correct" Supplier data and other final Supplier document in addition to the regular submittal of Reproducible and hard copies.
9. Final Electronic data format, including drawings, shall be Acrobat file: pdf.
10. The Supplier will abide by the following notes when submitting drawings to the buyer:
 - All final submissions shall be Certified As-Built drawings and documentation.
 - All inserts and documents in the manuals by Suppliers shall be Certified and As-Built drawings, documents and information.
 - Final Drawings are to be certified and show, adjacent to the title block; customers purchase order number and manufacturers' serial number.

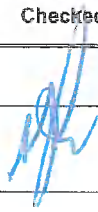
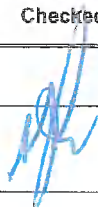



Document No. JI-02-020

Document Type: Job Instruction

Applicable to: CVE Purchase Orders

Job Instruction for Vendors - Data Book Requirements

Rev.	Date	Reason for Issue	Prepared By	Checked By	Approved By
0	2014-08-06	Incorporated for all Cenovus Projects	PMK		
1	2016-08-05	Updated corporate logos and references	MP		



JI FOR VENDORS – DATA BOOK REQUIREMENTS

Document No.
JI-02-020

Rev.1

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1.0 PURPOSE

The purpose of this JI is to provide instruction on the preparation and submittal of Vendor Data Books by the Vendor to TSE Document Control.

2.0 DEFINITIONS AND ACRONYMS

Code A	Approved without exception. Proceed with fabrication and issue final drawings.
Code B	Approved except as marked. Proceed with fabrication and reissue drawings.
Code C	Not approved. Revise drawings as marked and reissue for approval.
Code D	Not required for review. Received for information
TSE	Three Streams Engineering Engineering Division (Amec Foster Wheeler)

3.0 WHAT IS TO BE INCLUDED IN THE DATABOOKS

All documents listed in the SDDR must be included in the Vendor Data Book with acceptance Codes A and D only. All documents must be "Certified/As Built/Final". Refer to the "Vendor Documentation Flow Chart" for details of TSE/Vendor approval procedures.

4.0 FORMAT OF DATA BOOKS REQUIRED

The Vendor is required to submit ONE properly bookmarked electronic copy (single merged PDF) of the final Vendor Data Book to TSE Document Control through email or uploaded to the TSE FTP site for approval. The Vendor Data Book will then undergo a squad check review and will be returned to the Vendor with Coding listed above. The Vendor will make the required revisions and resubmit the Vendor Data Book if the squad check review is Code B or C. This process will be repeated until the final Vendor Data Book is Code A approved.

NOTE: A separate set of Vendor Data Books are required for EACH tagged piece of equipment, except for Bulk Items such as SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction). For instance, if the purchase order has 2 tags, P-2010 and P-2011, two separate Vendor Data Books should be provided for each tag; specifically, one Vendor Data Book PDF for P-2010 and one Vendor Data Book PDF for P-2011.

Bulk Items, SP Items and Instrumentation will have ONE DATA BOOK PER PO# (PDF). See **7.0 SPECIAL CASES** of this job instruction.



5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS

The Vendor Data Book will contain the following:

COVER PAGE

TABLE OF CONTENTS

Before submitting the final Vendor Data Book, Vendors shall submit a Table of Contents (PDF) formatted according to the five sections listed below. The Table of Contents will undergo a squad check review. Once the Table of Contents has been squad check reviewed as Code A (see **2.0 Definitions and Acronyms** of this job instruction), the final Vendor Data Book can be submitted.

SECTION 1: PURCHASE ORDER

This section shall contain:

1. The latest revision of the purchase order
2. The latest SDDR form from the purchase order

NOTE: If multiple POs are present (only applies to Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters, see **7.0 SPECIAL CASES** of this job instruction), they shall be sorted in ascending and numerical order.

SECTION 2: DATA SHEETS

This section shall consist of:

1. The Certified/As Built/Final Data Sheet

NOTE: For Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction) for which multiple tags are included in the data book, the data sheets are to be sorted in alphabetical and then numerical order. It is imperative that a separate data sheet be created for each Tag number assigned to equipment.

SECTION 3: AS BUILT DRAWINGS AND CALCULATIONS

This section shall contain ALL Certified/As Built/Final:

1. Drawings (Except for those pertaining to the quality control section)
 - a. Organized by type of drawing (i.e., Mechanical, Electrical, etc.), then by Tag number alphabetically, and then numerically
2. Calculations
 - a. Organized by type of calculation (i.e. Mechanical, Electrical, etc.), then by Tag number alphabetically, and then numerically.



SECTION 4: CATALOGUE DATA AND MANUALS

This section shall contain:

1. All catalogue data
2. All manuals
 - a. Manuals need to be separated with a cover sheet indicating:
 - i. Name of original equipment manufacturer
 - ii. Name of Vendor (Supplier), if different than that of manufacturer
 - iii. Title of the catalogue and/or manual
 - iv. Tag number(s) that the catalogue and/or manual is associated with (Example: Fisher-Instrument Supply regulators 67C Series Catalogue Data (FV-1315, FV-1316, FV-1320, FV-1485, HV-1310, TV-101)
3. All Spare Parts Lists
4. Long Term Storage Requirements

SECTION 5: QUALITY CONTROL DOCUMENTS

This section shall contain the following types of documentation:

- ABSA Data Reports
- Name Plates
- Inspection and Testing
- Welding Procedures
- Qualifications and Maps
- NDE Testing and Hydro-testing
- Material Records
- Travel Sheets
- Bill of Materials
- Packing Slip

Documents shall be separated with a colored cover sheet indicating the content of the documents (i.e. Test Reports, etc., matching the Table of Contents), as well as the tag number for each document.

6.0 ELECTRONIC COPY FORMAT

The Electronic Vendor Data Book (PDF) is to meet the following requirements:

1. One electronic copy is to be provided per Data Book that will contain ONE properly bookmarked PDF and named by Tag ID or PO Number (for Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction).
2. The electronic copy can be submitted as a PDF to TSE Document Control through email, CD, or uploaded to the TSE FTP site.



3. All pages must be rotated upright for reading.
4. Within Section 4 (Catalogue Data and Manuals) of the Vendor Data Book, each catalogue data and manual cover sheet must be bookmarked by Manufacturer, Title and Tag ID (if more than one tag is present). Example: Sulzer Pumps – Horizontal Multi-Stage Pumps.
5. Within Section 5 (Quality Control Documents) of the Vendor Data Book, the PDF will be bookmarked on each tab or cover page indicating the document content (i.e. MTR's, Test Reports, etc., matching the Index).
6. The electronic copy shall contain all of the information into a single merged properly bookmarked PDF per Tag ID or PO Number, as per the requirements above, with bookmarks referencing the five section names and contents within each section.
7. Data sheets must be bookmarked by Tag ID when more than one data sheet is present.
8. Drawings must be organized by type of drawing or calculation (i.e., Mechanical, Instrumentation, etc.), and then by Tag ID (if more than one tag is present).

7.0 SPECIAL CASES

7.1 PACKAGED EQUIPMENT

Packaged equipment contains multiple pieces of equipment that are assembled, or work together. As a general rule, various tag identification numbers and corresponding data will be included within the packages.

The following steps shall be taken by the Vendor to ensure proper turnover of "packaged equipment" data.

1. A Vendor Data Book (PDF) will be created for the whole "package". Each tag number will be bookmarked within the PDF file of the package Vendor Data Book.
2. A Vendor Data Book (PDF) will ALSO be created for EACH type of tagged equipment that is within the package and submitted per **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction. The exception to this will be Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction).



7.2 INSTRUMENTATION

For purchase orders containing Instrumentation only, the Vendor does not need to submit separate data books per tag number to TSE Document Control. The Vendor shall submit one data book (PDF) per purchase order with the same structure as described in **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction.

7.3 NON-TAGGED EQUIPMENT PURCHASE ORDERS

For purchase orders containing non-tagged equipment only (e.g., manual valves), the Vendor shall provide one data book per purchase order (PDF) with the same structure as described in **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction.

7.4 BULK ITEMS/SPECIALTY ITEMS (SP's) PURCHASE ORDERS

For purchase orders containing Specialty Items only (SP) and Bulk Items (which includes manual valves, pipes, fittings, and glycol heaters), the Vendor does not need to submit separate data books per Tag Number to TSE Document Control. The Vendor shall submit one data book per purchase order (PDF) with the same structure as described in **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction.

INSPECTION REQUIREMENTS

1.0 General

- 1.1 Inspection is the selective review, observation and evaluation of engineering, procurement, manufacturing operations, quality control systems and programs to determine the Seller's compliance with contractual quality requirements.
- 1.2 The following inspection classes are an integral part of this Purchase Order. The quality control systems and programs, to determine the Seller's compliance with contractual quality requirements, shall not relieve the Seller from any obligation to comply with the requirements of this Purchase Order.
- 1.3 The Seller's price shall take into account these Inspection Requirements.

2.0 Scope

- 2.1 When material and/or equipment (goods) covered by this Purchase Order are subject to shop inspections by the Buyer, DO NOT SHIP prior to release by the Buyer's Inspection Representative.
- 2.2 The Buyer's Inspection Representative shall have the right to witness tests and inspect the goods at Seller's plant(s) or Seller's sub-suppliers plant at any time during manufacture. Seller or Seller's Sub-suppliers shall provide access to, and copies of Quality Assurance Manuals, plans and records, controlled copies, if so requested.
- 2.3 The Seller shall include in any Order to a sub-supplier those specifications included with this Purchase Order, which governs the manufacturing or testing of the goods produced by each sub-supplier.
- 2.4 When in the Buyer's opinion an initial inspection visit will be beneficial in achieving a quality product, it will be indicated on the quality surveillance plan and, in such cases, fabrication is not to commence until this meeting is held. Seller's management personnel who are responsible for the quality requirements shall participate in the initial quality surveillance.
- 2.5 The Seller shall furnish the Buyer's Inspection Representative with unpriced copies of their Purchase Orders for plates, forgings, pressure containing parts and fabricated sub-assemblies during the first quality surveillance visit.
- 2.6 The Buyer's Inspection Representative, upon sufficient notice to Seller, shall be allowed access to Seller's sub-suppliers' quality control and quality verification records in order to review compliance to the specifications and applicable codes and/or standards.
- 2.7 Seller shall provide an Inspection and Test Plan detailing processes involved in the supply and manufacture of the equipment including methods of and procedures for verification. This shall include all major Sub Vendors. Each (ITP) shall include, as a minimum, all manufacturing functions, a list of specifications to be met, a description of tests to ensure compliance and identify who will perform verification of tests.
- 2.8 The Buyer shall have the right to conduct and carry out external audits for compliance with the approved Quality Program or Quality Plan.
- 2.9 Seller shall provide a safe working environment for Buyer's representative(s) and shall alert Buyer's representative to all known potential hazards.
- 2.10 Seller shall assure that the quality of the equipment/materials provided directly or indirectly are in complete accordance with the Purchase Order and its referenced specifications and all attachments and amendments thereto are met.

3.0 Responsibility

- 3.1 The responsibility to properly manufacture and thoroughly inspect the material and/or equipment rests solely with the Seller. This responsibility shall include material and/or equipment received from or fabricated by the Seller's sub-suppliers.
- 3.2 The fact that material or equipment may have been surveyed and released to ship by the Buyer's Inspection Representative does not relieve the Seller of the responsibility to supply material or equipment that meets all the requirements specified in the Purchase Order documents. Final inspection and acceptance will be at the jobsite.

4.0 Definitions

4.1 Quality Surveillance Plan

The quality surveillance plan (Item 6.0) reflects the minimum surveillance activities but in no way limits the activities that may be attended by the Buyer's Inspection Representative. The final witness and hold points will be established during the initial inspection.

4.2 Witness Points (Observations or Verification Points)

Verification points are defined as critical steps in manufacturing and testing where witnessing or verification to confirm compliance with the quality requirements is considered necessary. The Seller is obligated to advise the Buyer's Inspection Representative of witness point dates in advance. The Seller may proceed past a verification point providing permission to proceed is requested and obtained in writing from the Buyer's Inspection Representative.

4.3 Hold Points

Hold points are defined as critical steps in the manufacturing or testing where witnessing by the Buyer's Inspection Representative is mandatory. Fabrication or testing must not proceed past a hold point. The Seller is obligated to advise the Buyer's Inspection Representative of hold point dates in advance and in sufficient time to permit Buyer's Inspection Representative to attend on the required hold point date.

4.4 Inspection Levels

The Inspection Levels (page 3) reflect the minimum surveillance activities but in no way limits the activities that may be attended by the Buyer's Inspection Representative. The final witness and hold points will be established during the initial inspection.

To assist the Seller in understanding the Buyer's inspection level system, the following brief definitions are offered. The Buyer retains the right to change the level during the duration of the fabrication cycle.

5.0 Note:

The Inspection Company will be appointed by the Owner and/or Owner's Representative, and the Vendor advised.

6.0 Quality Surveillance Levels

☐ **Level 0 Quality Surveillance Not Required**

☐ **Level 1 Final Quality Surveillance**

- SCOPE:**
1. Final inspection upon completion of manufacture.
 2. Documentation review.
 3. Final Inspection Release
 4. Project Expediting

☐ **Level 2 Limited Scope Quality Surveillance**

- SCOPE:**
1. Approval of manufacturer's QC system prior to award
 2. Pre-inspection meeting
 3. Visits as necessary for inspection during manufacture
 4. Witness of hold points and final testing
 5. Documentation review
 6. Final inspection release.
 7. Project Expediting

☒ **Level 3 Full Scope Quality Surveillance**

- SCOPE:**
1. Approval of manufacturer's QC system prior to award
 2. Agreed Quality Plan prior to manufacture
 3. Pre-inspection meeting
 4. Frequent monitoring and inspection at discretion of Buyer and/or Representative during manufacture
 5. Witness of all testing
 6. Full documentation review
 7. Final inspection release.
 8. Project Expediting

☐ **Level 4 Resident Quality Surveillance**

- SCOPE:**
1. Approval of manufacturer's QC system prior to award
 2. Agreed Quality Plan prior to manufacture
 3. Pre-inspection meeting
 4. Continual monitoring and inspection during manufacture
 5. Witness of all testing
 6. Full documentation review
 7. Final inspection release.
 8. Project Expediting

EXPEDITING REQUIREMENTS

This Order and all Sellers' sub-orders for major equipment and material, including Seller furnished drawings and data, are subject to expediting action by Buyer and/or Owner. The seller shall grant free access to his plant or plants (including sub-supplier plants) to Buyers and/or Owner's Expediter for the purpose of establishing delivery dates.

In addition to, and without limiting the expediting and delivery requirements described in the General Conditions, the following requirements are applicable

- If requested, Seller shall furnish Buyer's Expediter with a complete and detailed bar chart schedule (or similar type) which identifies the scheduled start and completion dates for engineering activities, material procurement and receipt, fabrication, sub-assembly, final assembly, testing and preparation for shipment to meet the required shipment date specified in the Order. The detailed bar chart schedule shall be submitted to Buyer's Expediter no later than twenty one (21) days after award of a Purchase Order. In addition, Seller shall furnish a progress report every twenty-one (21) days thereafter in sufficient detail to allow a realistic evaluation of progress towards Order completion.
- Sellers sub-orders must include all applicable Buyer Specifications, Supplier Quality Surveillance requirements and expediting requirements and shall show sub-supplier's name, purchase order number, description of the material being purchased and promised shipment date. Unpriced Copies of Seller's major sub-orders shall be submitted to Buyer's Expediter no later than one (1) week after commitment by Seller.
- Drawings and other data requested by referenced specification and attachments to this order are to be submitted to:

Three Streams Engineering
Suite 401, 1925 – 18th Avenue N.E.
Calgary, Alberta T2E 7T8

Attention: Document Control
Email: tse.doccontrol@threestreams.com

- Seller shall notify Buyer's Expediter, in writing, of any actual or anticipated delays immediately upon their discovery. Such notice will include estimated period of delay, cause of delay and corrective actions being taken by Seller.
- Seven (7) working days prior to shipment, Seller shall notify TSE expediting contact to confirm/obtain final routing, carrier and destination instructions.

PACKING / STORAGE / SHIPPING & MARKING INSTRUCTIONS

1.0 GENERAL

- 1.1 Seller shall include but not be limited to the following guidelines for preservation, protection and packaging of materials and equipment. These guidelines are in place for the protection of the material and equipment from mechanical damage, freezing and atmospheric corrosion during transit, and to prevent damage due to rough handling and vibration.
- 1.2 It will be the responsibility of the Seller to provide Buyer's Agent with their standard Preservation Procedure as well as any Special Packaging and Storage Requirements to ensure full warranty protection as described in the Purchase Order.

2.0 PACKAGING / STORAGE GUIDELINES

- 2.1 The packaging will be done in such a manner as to prevent damage due to rough handling, condensation corrosion and vibration. Should fungus protection be required such treatment will not be applied to electrical contacts or current carrying metal surfaces.
- 2.2 All items shall be clear of debris, dirt and foreign matter (thoroughly clean inside and out) prior to shipment preparation, and as a minimum, all items whether shipped in boxes or affixed to pallets shall be waterproof.
- 2.3 The Seller shall ensure that loose shipped items or accessories that are removed from the main equipment or equipment that require field assembly, are placed in separate packages or bundles according to the categories listed in Paragraph 2.13 and then labeled indicating the Purchase Order number, name of the main machine to which the accessory belongs, name of the accessory, accessory (part) number and position number on the assembly drawings. These items must be clearly indicated on a packing slip attached to the bill of lading.
 - 2.3.1 Any instrumentation or other small attachments, subject to damage due to vibration or jarring, must be removed, sleeved in polyethylene and sealed or packaged in waterproof vapour barrier packages and clearly marked as to location to be reinstalled. All resulting openings must be sealed.
 - 2.3.2 Special tools shall be separately packaged, shipped, identified as per loose shipped accessories and marked as "Special Tools".
 - 2.3.3 Recommended spare parts shall be separately marked as "Commissioning spares" or "Operating spares" as specified by the Buyer. The Seller will also clearly identify the item or items and the equipment component which they are intended for.
- 2.4 Packaged /prefabricated (skid mounted) equipment will be required to have all components properly blocked and braced for shipment. All temporary blocking and bracing will be painted red for clear identification for removal upon installation at site. If some of the components extend beyond the package base, a special approval will be required from Buyer's representative. When no approval is given, the components must be disassembled, packaged separately and resulting openings protected and sealed.
 - 2.4.1 Control panels that are not attached to the skid will be affixed to either pallet or runners and securely covered with polyethylene.
 - 2.4.2 All gauges that are deemed stable for transport will have their glass face taped in an "X" manner.
 - 2.4.3 All bolted connections shall be properly tightened as per mechanical requirements prior to shipment.

- 2.4.4 The Seller shall ensure that all hinged openings are securely located or banded closed to prevent possible opening during shipping.
- 2.4.5 Items with exposed rubber parts or linings shall be wrapped with an opaque, air tight plastic cover secured with tape. Desiccant shall not be used to protect rubber products.
- 2.5 Equipment shall be bolted to the package (pallet) base whenever possible. Equipment not bolted to the base shall be protected and held in a fixed position by banding, chock blocks, bracing and packing material.
- 2.6 Valves that are strapped to pallets or shipped in boxes shall have ends /openings sealed to prevent moisture or foreign matter from entering, and all valves will be in the closed position and the wheel or handle removed and marked as to correspond with the reinstallation.
- 2.7 The packaging shall be done in such a manner as to prevent damage due to condensation corrosion:
 - 2.7.1 Desiccant shall be required in all types of protection and packaging when condensation or vapour diffusion across vapour barriers would create a condition in the interior of the package harmful to the contents. Desiccant shall be fully contained in bags (to prevent dispersion), securely fixed in place and easily removed. The package shall indicate that desiccants shall be checked weekly and changed as necessary.
 - 2.7.2 Internal surfaces subject to rusting shall be protected by vapour phase inhibitors, rust preventatives or by a suitable desiccant. After treatment, all openings must be plugged or otherwise sealed.
 - 2.7.3 All items shall be clean before application of any anti-corrosive material. Machined and bright surfaces shall be coated with an anti-corrosive material.
 - 2.7.4 Components with non-drainage crevices or chambers shall be covered and protected at all times from entrance of water and debris.
 - 2.7.5 Pump and compressor interiors shall be coated or flushed with an easily removable anti-corrosive material. Lube oil and auxiliary piping shall be flushed with a corrosive preventative material that is soluble in the fluid to be carried by the piping.
 - 2.7.6 Rust inhibitors shall be compatible with the normal charge of oil or easily removed by flushing when used on lubricated parts. Oil recommended for normal operation or a compatible substitute shall be used when filling or flushing.
- 2.8 In cases where the Seller is responsible to load equipment/materials as per the delivery /freight terms of the Purchase Order, the Seller shall ensure that items which are subject to damage by rubbing are separated by wooden strips. The Seller and Buyer's representative (when present) will ensure that padding is placed under chains that contact the materials. In all cases the Seller shall ensure that the transporter secures (chains down) the equipment at locations that will not cause undue stress and damage during transport (i.e. nozzles or flanged are not to be used).
- 2.9 When specified by Buyer, goods are to be tarped prior to transporter leaving Seller premises.
- 2.10 Sharp corners and small protuberances shall be protected against being knocked off during transport, loading and unloading.
- 2.11 Shipping saddles, cradles, bolsters, and chock blocks shall be contoured to the outside curvature of equipment and located so that local bending or damage of the equipment will not occur. Steel wrapper plates shall be used when necessary to distribute the load and protect the equipment.

2.12 Cylindrical equipment shall be mounted on shipping saddles. When possible, installation saddles on equipment should be used as shipping saddles.

2.13 Packing Categories

Main Piece(s) of Equipment
Equipment Accessories
Spare Parts
Special Tools
Tools and Spare Parts for One Year Operation

2.14 No release for shipment shall be given until written authorization to do so has been received from the Buyer.

3.0 SHIPPING INSTRUCTIONS

A copy of these instructions must be included and shall also apply to each of your Purchase Orders directed to sub-suppliers making shipment directly to the jobsite.

3.1 Unless otherwise agreed, pre-pay all freight charges to jobsite and invoice at cost as a separate item. Charges must be supported by a copy of the Carrier's documentation.

3.2 C.O.D. shipments will not be accepted and will be returned to the Seller with all associated costs to the Seller's account.

3.3 As a minimum, the Buyer's Project name, Purchase Order number, item number, equipment and tag number(s) must appear on all equipment, crates, containers, shipping papers and packing lists

3.4 The packing list must be attached in a visible waterproof envelop and affixed to the outside of each container with one (1) copy attached to the bill of lading. Packing list must clearly identify each item, indicating quantity of items shipped and quantity of items being back ordered.

3.5 At least five (5) working days prior to readiness of shipment, provide (via fax or email), the following information to the Buyer:

- Purchase Order Number
- Item number
- Quantity being shipped
- Number, size, gross weight of packages
- Method of transport
- Special arrangements required for handling
- Estimated time of arrival at destination.

3.6 On Purchase Orders where Buyer's right to Quality Surveillance is exercised, no shipment shall be made without the Buyer's Quality Surveillance Inspector's "Release to Ship".

3.7 On the day of shipment, forward to the Buyer (by fax) as per instructions on Purchase Order, the following documents, with the original copies forwarded via courier:

- Itemized Packing List and Weight List
- Material Safety Data Sheets for Hazardous Goods (if applicable)

4.0 LIFTING /HANDLING REQUIREMENTS

4.1 Packing shall be done in such a manner to enable cargo handling by forklift, cranes, slings, bogies, skids, or manual manipulation as size and weight permits. If site is remote, and if there is an absence of heavy lifting facilities at all points of transit, packing case size and weights shall be taken into consideration.

- 4.2 Should the Purchase Order equipment weigh two (2) or more than two (2) metric tons, the weight, center of gravity and hoisting position shall be marked with international trade transportation practice marks and illustrative marks on the two sides of each case so as to facilitate loading, unloading and handling.
- 4.3 In accordance with the characteristics and different requirements in loading, unloading and shipping different Purchase Order equipment the package shall be conspicuously marked with "Handle with Care", "Right Side Up", "Keep Dry", etc. and with appropriate international trade practice marks and illustrative marks.

5.0 SHIPPING IDENTIFICATION MARKS

- 5.1 Each case, box, crate, piece, etc. must be stenciled on two sides in clear, legible characters. On bundles the marks are to be "embossed on metal tags", which shall be wired securely to the bundle at the end and in the middle.
- 5.2 Indelible and ultraviolet resistant inks, paint and metal labels shall be used to preclude obliteration in any way of marks, shipping instructions and handling symbols.
- 5.3 Marks must be legible and shall not be less than thirty (30) mm in height.
- 5.4 Only those marks provided on the Purchase Order, plus any cautionary markings and special handling symbols will appear. In no instance will advertising or marks which indicate contents or other extraneous information appear. Refer to illustration for an example of marks.

Shipping marks are as follows (colour coding, if required):

Project: _____

P.O. Number: _____

Equipment Description: _____

Tag Number: _____

Gross/Net Weight (kg): _____

Dimensions (cm): _____

Case Number/Bale _____ of _____

Number:

6.0 EQUIPMENT TAGGING

- 6.1 Each item of equipment is to be furnished with either an aluminum or stainless steel name plate (as detailed in the RFQ), identified with the Purchase Order number, tag number and other data as required by the specifications and/or data sheets.
- 6.2 Any other tagged components (ie. Instruments, valves, etc) supplied with the equipment are to be furnished with a stainless steel tag, securely fastened and stamped with the Buyer's component tag number.

7.0 VALVE TAGGING

- 7.1 All valves shall be furnished with a stainless steel tag, securely fastened and stamped with the Cenovus tag number.

INSTRUCTIONS FOR RFIs, NCRs, AND COs

1.0 Introduction

This procedure describes how the Vendor shall request information, resolve a non-conformance, and/or submit a Change Order (CO) to TSE once the Purchase Order (PO) is awarded and acknowledged by the Vendor. This process shall be used for all POs where manufacturing or fabrication is required. The Vendor shall keep track of all Requests for Information (RFIs), Non-conformance Reports (NCRs), and COs. Sample CO and CO Summary forms are available upon request. Any cost associated with providing these services shall be borne by the Vendor. Any cost additions or deductions to the PO, whether through the RFI or NCR process or for another reason, must be authorized by a CO (i.e., PO revision) prior to performing the work. Any exceptions or instructions otherwise shall be acknowledged in writing by the Buyer (i.e., TSE's client). The buyer will not be liable or responsible for any un-approved costs.

2.0 Definitions

Request for Information (RFI)	A "request to clarify or proceed", where a product may not meet PO technical requirements or Specifications, or the requirements are ambiguous or conflicting; information is required.
Non-conformance Report (NCR)	A "request to except" a non-conforming product with a proposed disposition (e.g., accept as-is, repair/rework, reject/scrap, replace, rework, or other); agreement is required.

3.0 Request for Information (RFI)

The Vendor shall submit a RFI to the applicable TSE Project Coordinator or the specific email as defined by the Project Team using the form provided. The RFI should include a proposed resolution if applicable. TSE approval of an RFI is on a technical basis only. Any RFIs submitted without a proposed resolution, or with an unsuitable resolution, will be provided with an alternative resolution by TSE. If the RFI has a cost and/or delivery impact, then a CO shall accompany the RFI. The Vendor must obtain approval of the CO prior to performing the work. An RFI for non-conforming product will be returned with the request that it be submitted as an NCR.

4.0 Non-Conformance Report (NCR)

The Vendor shall submit a NCR to NCR@threestreams.com using their quality program form. The NCR should include a proposed disposition, as well as identify the root cause and preventative measures to be taken. TSE approval of an NCR is on a technical basis only. Any NCRs submitted without a proposed disposition, or with an unsuitable disposition, will be provided with an alternative disposition by TSE. If the Vendor does not issue an NCR, a NCR may be issued by TSE. If the NCR has a cost and/or delivery impact, then a CO shall accompany the NCR. The Vendor must obtain approval of the CO prior to performing the work.

5.0 Change Order (CO)

Only the Buyer's Project Engineer can approve cost and delivery changes by a CO. It is preferred that a CO includes more than one RFI or NCR if there are others. Any CO submitted with insufficient information will be returned for correction. Any work completed prior to the Buyer's approval of the CO may not be reimbursed. A CO will not be accepted if it is submitted after the work is completed. The Buyer will not be liable or responsible for any un-approved costs. The Buyer may approve the CO or advise that TSE provide the Vendor with an alternate resolution. If the Buyer rejects the CO, then further discussion may be required to establish a suitable resolution. If the Buyer approves the CO, the Vendor shall perform the work.

INSTRUCTIONS FOR RFIs, NCRs, AND COs

6.0 Additional RFI Instructions – Only for Piperack or Equipment Modules

These additional RFI instructions may be applied to major capital projects where deemed necessary, due to the anticipated number of RFIs to be issued for piperacks or equipment modules.

When a Contractor, Fabricator, or Vendor (CFV) submits an RFI for piperack or equipment modules, these additional instructions shall be followed, to ensure that all RFIs are logged, distributed, and answered in a timely manner. Each RFI shall be sequentially numbered and submitted using the following subject line format:

Format	Sequential RFI Number – CFV Name – CFV Reference Number
Example	RFI #001 – Module Fabricators Inc. – MFI #2014-JOB-0066

All CFV RFIs shall begin with RFI #001 and be numbered sequentially for any construction work packages (CWPs) that they receive (e.g., CWP #C00.003.2.4.01A has RFI's #001 – #003 and then CWP #C00.003.2.4.02A starts at RFI #004).

RFIs shall only be made to email specified above and shall not be copied to any other personnel (e.g., buyer or TSE). Any further distribution shall be made by TSE.

The CFV shall prepare and maintain a RFI log and record all their RFIs. A sample log is available upon request. A copy of the CFV RFI log shall be provided to the TSE Expeditor upon request. The RFI log is shall contain the following information as a minimum:

1. RFI Number
2. Date of Request
3. Construction Work Package (CWP) Number
4. Description of Information requested
5. Forwarded to
6. Date of Response.

All responses will be answered by "replying to all" in order to include everyone in the original and following emails.



Integrated Oil Division
SPECIFICATION WAIVER REQUEST (SWR) SHEET

Requestor Company:	Three Streams		Date:	
Requestor name:			SWR #:	
Project name:		Phase:	EPC Waiver #:	

Waiver Title: _____

Discipline	_____		
Specification #:	_____	Revision:	_____
Specification Title:	_____		
Spec. requirements:	_____		

Project Waiver:
Reasons for Waiver:

Does this request affect safety?	No	Explain:
Does this request affect schedule?	No	Explain:
Does this request affect quality?	No	Explain:
Does this request affect cost?	No	Explain:

EPC Approval	
Engineering Manager: (Name / Signature)	Date:
Comments:	

cenovus Approval	
Project Manager: (Name / Signature)	Date:
Comments:	
Facilities Integrity Group: (Name / Signature)	Date:
Comments:	

amec foster wheeler



Three Streams Engineering

Suite 401, 1925 – 18th Avenue N.E.
Calgary, Alberta, Canada, T2E 7T8
Ph.: (403) 536-5000 Fax: (403) 235-2909
www.threestreams.com

WELD PROCEDURE SUMMARY

Name of Client Site:	Supplier Name & Contact:
EP Company:	Supplier Registered QC Program Number:
QC Coordinator:	Supplier WPS Registration #
Site Contact:	Inspector Sign Off :

Pipe Grade/ Pipe Diameter/ Joint Type	"t" Range(s) to be welded	Code B31.3, Z662, ASME Sec VIII, Structural Steel	WPS # PQR #	Qualified "t" Range	Vendor Comments (item description)	EP QC Coordinator & inspector comments

- SUPPLIER IS TO COMPLETE AT RFQ STAGE AND RETURN TO EP QC COORDINATOR
- NO WELDING MAY PROCEED UNTIL THE THIRD PARTY INSPECTOR HAS APPROVED THE "WELD PROCEDURE SUMMARY".

