



## Purchase Order

2016-012 - FC W06 Hot Solvent

Three Streams Engineering

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2016/10/13 10:32:09AM

Purchase Order: 2016-012-TSE-4002 Propane Storage Bullet

<b>Supplier:</b> Bilton Welding and Manufacturing Ltd 5815 37 Street, Innisfail, AB T4G 1S8  <b>Contact:</b> Jamie Topsee <b>Telephone:</b> (403) 227-7799 <b>Fax:</b> (403) 227-7796 <b>E-mail:</b> jamie.topsee@bilton.ca <b>Tax ID:</b>	<b>CONFIRMING ORDER - DO NOT DUPLICATE</b>  Total Price (All Taxes Extra): 205,625.00 Issue Date: October 13, 2016  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	<b>All Communications To:</b> Procurement Manager: Tom Allen (403) 539-1717 E-mail: tom.allen@threestreams.com
	<b>Attachments Listed In Order Of Precedence</b>  Purchase Order Notes Scope of Work Document List of Technical Documents SDDR Form and Drawing & Data Requirements Inspection Requirements Expediting Requirements & Packing Instructions Shipping Covers for Flanges, Pipe & Valves #SB-44-002 Rev 1 RFI/CO/NCR Instructions and RFI Form Specification Deviation Form (Typical) Weld Summary & Inspection Test Plan (Typical)	<b>Mail Invoices To:</b> See Purchase Order Notes  <b>Send Drawings, Data, Manuals To:</b> Three Streams Engineering - Document Control Suite 401, 1925 - 18th Avenue N.E. Calgary, AB T2E 7T8 E-mail: tsedoccontrol@threestreams.com  <b>Deliver Equipment, Materials To:</b> Expeditor to be contacted
<b>Buyer:</b> Cenovus FCCL Ltd. 500 Centre Street SE P.O. Box 766 Calgary, AB T2P 0M5  <b>Currency:</b> CAD <b>Pay Terms:</b> SEE NOTES <b>1st DWG Due:</b> 27-Oct-16 <b>Ship Point:</b> Innisfail, AB <b>Incoterm:</b> FCA Innisfail, AB <b>AFE#:</b> 16165217 <b>Major/Minor:</b> 8762-452  <b>End Use:</b> FC OFFSITE <b>JDE PO #:</b> 2016-012-TSE-4002 <b>Insp. Level:</b> 2		

Authorized Owner's Agent

Signature

Date

2016.10.13

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 days shall constitute acceptance of this order in its entirety.

Signature

Date

Printed Name



## Purchase Order

2016-012 - FC W06 Hot Solvent

Three Streams Engineering

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Prices In CAD

Issue Date : 2016 October,13

### Purchase Order: 2016-012-TSE-4002 Propane Storage Bullet

Item	Equipment Tag #	Quantity	Unit	Description	Ship Date	CWP Number	Unit Price	Total Price
001	W06-V-9220	1.00	Ea	60,000 USWG Capacity Propane Storage Bullet, DP : 1750 kPag @ 46°C / -45°C  Tag ID(s): W06-V-9220  Cost ID: 44 16165217-452EPGNRLMECH000100M	2017/01/25	N/A	205,560.00	205,560.00
002	W06-V-9220	1.00	Ea	Discount offered by vendor for second Propane Storage Bullet same as N00-V-9220  Tag ID(s): W06-V-9220  Cost ID: 44 16165217-452EPGNRLMECH000100M	2016/10/25	N/A	-2,500.00	-2,500.00
003	W06-V-9220	1.00	Ea	Painting on Structural Steel, Handrails, Ladders, Stairways and Walkways  Tag ID(s): W06-V-9220  Cost ID: 44 16165217-452EPGNRLMECH000100M	2016/10/25	N/A	2,565.00	2,565.00
				<b>Line Items Total:</b>				<b>205,625.00</b>
				VAT / GST (5%)				10,281.25
				Provincial Tax				0.00
				<b>Purchase Order Total:</b>				<b>215,906.25</b>



## Purchase Order Notes

2016-012-TSE-4002 Rev 0

This order shall be in accordance with MSSA # 502970

Purchase Order Inspection Level 2

### 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](mailto: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 Curtis Sharp at (403) 776-6176 or email [curtis.sharp@threestreams.com](mailto:curtis.sharp@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 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 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](mailto:eInvoicingOnboarding@cenovus.com) to arrange setup and training.

Cenovus FCCL Ltd.  
C/O Three Streams Engineering  
Suite 401, 1925 – 18<sup>th</sup> 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](mailto: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 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:

- 10% upon submittal of Approval Drawings
- 25% upon receipt of Major Materials defined as Heads and Shells
- 55% upon Shipment or Readiness to Ship (whichever occurs first)
- 10% upon approval of Final Documentation per the Supplier Data and Drawing Requirements (SDDR) & the Vendor Databook Instructions

**Cancellation Charges:**

Per MSSA Agreement # 502970

**Change Orders:**

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 authorized and approved in writing with a Purchase/Release 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.




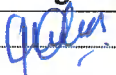
**SCOPE OF WORK**  
**FOR**  
**Propane Storage Bullet W06-V-9220**

**Requisition No: 2016-012-TSE-4002**

**FC W06-Hot Solvent**

**TSE Project # 2016-012**

**ISSUED FOR PURCHASE**

Rev	Description	Date	Prepared By	Signature	Approved By	Signature
0	Issued for Purchase	Oct 03, 2016	Asad Khan		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~~.



## 1.0 GENERAL SCOPE SUMMARY

This specification covers the design and fabrication of one (1) Propane Storage Bullet W06-V-9220 for installation at the Cenovus Foster Creek Offsites - FC W06 Hot Solvent

## 2.0 CODES AND STANDARDS

Minimum requirements shall be in accordance with applicable codes and governmental requirements. Specifically:

- ASME Sec VIII Division 1 Latest Edition
- ASME B31.3 Process Piping
- ASME B16.5 Pipe Flanges and Flanged Fittings
- Alberta Safety Codes Act
- Alberta Occupational Health and Safety Act (OH&S) General Regulations

## 3.0 SITE CONDITIONS AND UTILITIES

Pad Location:	10-19-70-4-W4M
Barometric Pressure:	93 kPa(a)
Seismic Data:	Sa(0.2)=0.10, Sa(0.5)=0.06, Sa(1.0) = 0.03, Sa(2.0)=0.01, PGA=0.04 (Cold Lake)
Ambient Temperature Summer Design: Winter Design:	+30 °C - 40 °C
Plant Elevation:	670-673m ASL
Ground Snow Load	Ss=1.7kPa, Sr=0.1kPa (Cold Lake)

## 4.0 TECHNICAL SPECIFICATIONS

### 4.1 General Requirements

- 4.1.1 The work shall include, but not be limited to the supply of materials, labour, equipment, and consumables that are required to supply the deliverables identified in this scope.
- 4.1.2 Vendor must read, understand and follow all applicable Cenovus specifications. All questions, relating to this document, technical drawings and any of Cenovus specifications, can be posed, in writing, via RFC (request for clarification). Directions are included within the purchase order documents.
- 4.1.3 Work shall meet or exceed all applicable Cenovus specifications.
- 4.1.4 In the event of a perceived conflict within these Technical Specifications, or between these Technical Specifications and other applicable Codes, Standards, and Regulations, Vendor shall contact Purchaser for a ruling in writing prior to submission of proposal.
- 4.1.5 All work not expressly called for in this requisition, but necessary for the complete and proper installation, maintenance and operation of the equipment, shall be supplied by the Vendor at no additional charge.



4.1.6 Work shall meet, or exceed, all applicable Cenovus specifications.

## **4.2 Mechanical Requirements**

4.2.1 Vendor shall supply propane storage bullet c/w saddles, lifting lugs, grounding lugs etc. (as per data sheet)

4.2.2 Vessel to be designed for partial vacuum as per API 2510.

4.2.3 Refer Vessel data sheet for process and mechanical design conditions and required nozzle connections.

4.2.4 All nozzles shall meet the requirements of Table 2: External Nozzle Loads of Cenovus Spec included in the package.

4.2.5 All material shall be according to ASME Boiler & Pressure Vessel Code Sec II Part A.

4.2.6 Lifting lugs calculations shall be supplied by vendor along with vessel calculations.

4.2.7 Lifting lug material shall be suitable for -45°C.

4.2.8 Lifting lug shall be MPI tested with results included in Manufacturers Record Book (MRB)

4.2.9 Hydrostatic test of the Propane Storage Bullet shall be performed in accordance with Cenovus specification TR-43-SPC-005-01 Rev 8, Unfired Pressure Vessels and ASME Sec VIII Div. 1 requirements and shall be held for minimum 1 hour.

4.2.10 Registration of Propane Storage Bullet design with ABSA as well as Canadian registration no. and A no. will be provided by vendor.

4.2.11 All flanges shall be covered prior to shipment as per Cenovus specification TR-50-SPC-00-003-01 Rev 4, Preparation for Shipment & Storage.

4.2.12 Test reports shall be sent at least 2 weeks before equipment shipment.

4.2.13 Vendor will complete Weld Map, Radiography Map, UT, MPI, VT and MTR Map and submit information.

## **4.3 Ladder & Platform**

4.3.1 Vendor to supply ladder and platform for access to PSV and level gauges.

4.3.2 Distance from grade to vessel base is approximately 1655 mm. Structural steel to raise vessel to this height, shall be supplied by others. Ladder from vendor to extend up to grade level.





#### **4.4 Painting**

- 4.4.1 Vessel shall not be painted as per Project Decision.
- 4.4.2 Structural Steel, Handrails, Ladders, Stairs and Walkways to be painted as per Cenovus Thermal Recovery Specification TR-43-SPC-00-019-01 Rev 8, External Coating and Galvanizing.

Handrails, ladders, stairs and walkways are to be painted safety yellow.

#### **4.5 Inspection and Testing**

- 4.5.1 Inspection will be carried out by the TSE/Cenovus representative per the enclosed Inspection Requirements document with this requisition and Vendor's ITP, approved by Buyer.
- 4.5.2 Vendor will arrange for an Inspection in accordance with applicable jurisdictions and Alberta government regulations, and a certificate to this effect will be provided by the Vendor.

#### **4.6 Spare Parts**

- 4.6.1 Vendor shall supply a list of all recommended spare parts and their prices for start-up/commissioning and 2 year of operation and any other spare parts deemed critical.

#### **4.7 Shipping**

- 4.7.1 Vendor shall prepare the equipment for shipping as per Cenovus spec TR-50-SPC-00-003-01 Rev 4, Preparation for Shipment & Storage.
- 4.7.2 Equipment shall be adequately prepared to provide against entry of dirt or water during shipment. All flanged openings must be provided with substantial wooden or gasketed metal closure securely fastened with bolts or clamps. All drains, vents and small piping connections shall be capped or plugged.
- 4.7.3 Crate and clearly tag all loose components.

#### **4.8 Guarantee**

- 4.8.1 Provide a material and workmanship guarantee for a minimum of 12 months from startup, but no longer than 18 months from delivery.

#### **4.9 Required Documentation**

- 4.9.1 All required documentation shall be submitted per attached Sellers Drawing and Document Requirements (SDDR) and additional documentation not specified in the SDDR but is included in the Vendor's Scope of Supply.
- 4.9.2 All Vendor generated drawings are to be submitted to the Purchaser for review before fabrication can proceed.



- 4.9.3 All dimensions, data and nameplates shall be in the SI System in accordance with the Canadian Metric Practice Guide and Supplementary Metric Practice Guide.
- 4.9.4 Format for submission of drawing, reports, certification or any other document shall be in pdf file via E-mail.

Proj. No.: 2016-012  
Req. No.: TSE-4002  
Revision: 0

[illegible]

Notes:

<div style="text-align: center;"> <b>Cenovus FCCL Ltd</b> </div> <div style="text-align: center; border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>DATA SHEET</b>  <b>HORIZONTAL VESSEL</b> </div> <div style="margin-top: 10px;"> PROJECT <b>FC W06 Hot Solvent</b>  LOCATION <b>L.S.D. 10-19-70-4-W4M</b>  SERVICE <b>Propane Storage Bullet</b> </div>	TAG NO. <b>W06-V-9220</b> PAGE <b>1</b> OF <b>3</b> SPECIFICATION NO. <b>TR-43-SPC-00-005-01 Rev 8</b> MANUFACTURER <b>Bilton Welding &amp; Manufacturing Ltd.</b> MODEL # <b>*</b> SERIAL # <b>*</b>
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DESIGN REQUIREMENTS

CODE <b>ASME VIII, DIV 1, Latest Edition</b> STAMP <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO COMMODITY IN VESSEL <b>Commercial Propane</b> DESIGN TEMPERATURE <b>-45/46</b> °C DESIGN PRESSURE <b>1750/-90 (Note 8)</b> kPag CORROSION ALLOWANCE SHELL <b>1.6</b> mm LOCATION <input type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OUTDOORS EARTHQUAKE ZONE <b>National Building Code (NBC)</b> IMPACT TESTS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO X-RAY - <b>RT-1</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO STRESS RELIEVE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO PHYS. & CHEM. TESTS <b>Hydrotest @ 2275 kPag</b>	OPERATING TEMPERATURE <b>-40/30</b> °C OPERATING PRESSURE <b>30.7 - 1158</b> kPag HEADS <b>1.6</b> mm HEAD TYPE <b>2:1 Ellipsoidal</b> SOUR SERVICE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO REGISTERED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO PROVINCE <b>AB</b>
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CONSTRUCTION REQUIREMENTS

DIMENSIONS INSIDE DIAMETER <b>3,658</b> mm SADDLE HEIGHT <b>*</b> mm SUPPORTS <input type="checkbox"/> SKIRT & BASE RING <input checked="" type="checkbox"/> SADDLE MATERIAL SHELL <b>SA-516-70N</b> HEADS <b>SA-516-70N</b> FLANGES <b>SA350-LF2</b> PIPE <b>SA333 Gr. 6</b> COUPLINGS <b>SA420-WPL6</b> GASKETS <b>316L SS Spiral Wound</b> BOLTS <b>SA193-B7M</b> NUTS <b>SA194-2HM</b> INTERNALs <b>SA-516-70N</b> DAVIT/HINGE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO LADDER <input checked="" type="checkbox"/> LADDER <input checked="" type="checkbox"/> CLIPS <input checked="" type="checkbox"/> SAFETY CAGE PLATFORMS (Note 6) <input checked="" type="checkbox"/> SIZE <b>1220 mm X 1829 mm</b> PAINTER TROLLEY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO LIFTING LUGS <input checked="" type="checkbox"/> QUANTITY <b>4</b> GROUND LUGS <input checked="" type="checkbox"/> QUANTITY <b>2</b> INSULATION SUPPORT RINGS <input type="checkbox"/> TYPE <b>N/A</b> INSULATION <input type="checkbox"/> TYPE <b>N/A</b> CLADDING <input type="checkbox"/> TYPE <b>N/A</b> FIREPROOFING <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO INLET BAFFLE <input type="checkbox"/> DEMISTER <input type="checkbox"/>	LENGTH (S/S) <b>20,727</b> mm MATERIAL <b>SA-516-70N</b> THICKNESS <b>25.4</b> mm THICKNESS <b>28.575</b> mm THICKNESS _____ mm THICKNESS _____ mm SHIPPING WEIGHT <b>*</b> kg HYDROTEST WEIGHT <b>*</b> kg
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PAINTING/COATING

	PAINT SYSTEM	SURFACE PREPARATION	PRIMER COAT	FINISH COAT	PRIMER DFT (mil)	FINISH DFT (mil)
EXTERIOR						
SHELL	N/A	N/A	N/A	N/A	N/A	N/A
HEADS	N/A	N/A	N/A	N/A	N/A	N/A
SADDLE	N/A	N/A	N/A	N/A	N/A	N/A
INTERIOR						
SHELL	N/A	N/A	N/A	N/A	N/A	N/A
HEADS	N/A	N/A	N/A	N/A	N/A	N/A
INTERNALs	N/A	N/A	N/A	N/A	N/A	N/A
NOZZLES ONLY	N/A	N/A	N/A	N/A	N/A	N/A
STRUCTURAL STEEL	S-100N	SSPC - SP6	note 7	note 7	note 7	note 7
(Platforms & ladders)	S-900	SSPC - SP6	note 7	note 7	note 7	note 7

REV	DESCRIPTION	DATE	BY	CHK'D	APP'D	REV	DESCRIPTION	DATE	BY	CHK'D	APP'D
0	Issued for Purchase	06-Oct-16	AK	HA/YD	EN						

## HORIZONTAL VESSEL

PROJECT	FC W06 Hot Solvent
LOCATION	L.S.D. 10-19-70-4-W4M
SERVICE	Propane Storage Bullet

## NOZZLE SCHEDULE

	ITEM	MARK	QTY.	SIZE	RATING	O.S. PROJ. (mm)	TYPE	REMARKS
11								
12								
13	INLET	N1	1	4	150#	Note 4	RFHB	
14	OUTLET	N2	1	4	150#	Note 4	RFHB	
15	PUMP SKID PSV RELIEF	N3	1	4	150#	Note 4	RFHB	
16	VAPOUR EQUALIZATION	N4	1	3	150#	Note 4	RFLWN	
17	PSV	N5	1	4	150#	Note 4	RFHB	
18	DRAIN	N6	1	3	150#	Note 4	RFLWN	
19	LEVEL TRANSMITTER	N7	1	2	300#	Note 4	RFWN	
20	PRESSURE GAUGE	N8	1	2	150#	Note 4	RFWN	
21	TEMPERATURE GAUGE	N9	1	2	150#	Note 4	RFWN	
22	VENT	N10	1	6	150#	Note 4	RFHB	
23	PUMPS BALANCE LINE	N11	1	2	150#	Note 4	RFWN	
24	LEVEL TRANSMITTER	N12A/B	2	2	150#	Note 4	RFWN	
25	SPARE	N13	1	4	150#	Note 4	RFHB	c/w Blind Flange, Studs, Nuts & Gaskets
26	SPARE	N14	1	3	150#	Note 4	RFLWN	c/w Blind Flange, Studs, Nuts & Gaskets
27	PUMP MINIMUM RECYCLE	N15	1	2	150#	Note 4	RFWN	
28	MANWAY	M1	1	24	150#	Note 4	RFHB	
29								
30								
31								
32								
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42								

1. \* vendor to provide/confirm information.
2. Grab bars shall be provided on the inside of manway.
3. Vessel CRN and A no. is to be provided by vendor.
4. All nozzles shall be designed for external nozzle loads as per TR-43-SPC-00-005-01 Rev 8 Unfired Pressure Vessel Table 2 and have projections as per Table 1 and add 26 mm to nozzle projections to make it same as N00-V-9220.
5. Material for flanges, fitting etc should be as per ALB Piping class.
6. Vendor to supply platform for access to PSV and level gauges.
7. External coating on structural steel including ladder and platform to be as per Table 2 of TR-43-SPC-00-019-01 Rev 8 External Coating and Galvanizing.
8. Vessel to be designed for partial vacuum condition as per API standard 2510 (4.3.a).
9. Static head needs to be limited to 80% with a specific gravity of 1.0. With full static head, the specific gravity for this design needs to be limited to 0.8.
10. Vendor to make sure that supporting clips, vessel saddles and/or any structural steel is designed in a way to avoid any water collection.

REV	DESCRIPTION	DATE	BY	CHK'D	APP'D	REV	DESCRIPTION	DATE	BY	CHK'D	APP'D
0	Issued for Purchase	06-Oct-16	AK	HAND	EN						

DATA SHEET

SPECIFICATION NO. **TR-43-SPC-00-005-01 Rev 8**

MANUFACTURER **Bilton Welding & Manufacturing Ltd.**

MODEL # **\***

SERIAL # **\***

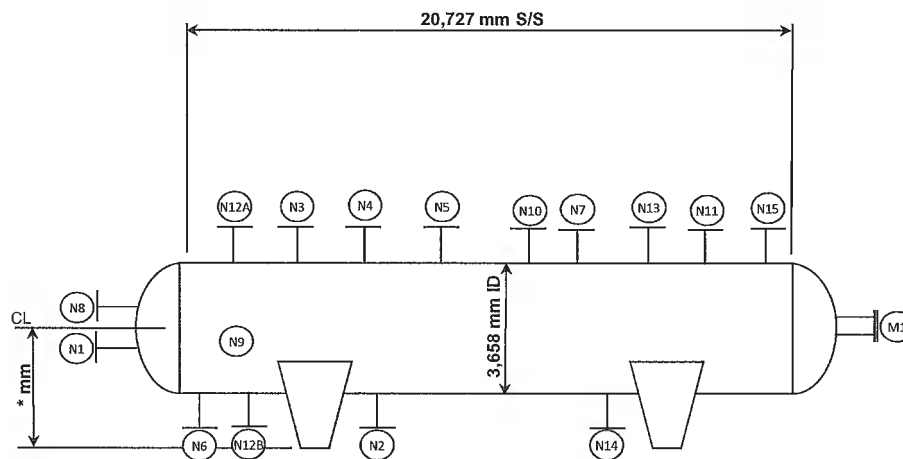
**HORIZONTAL VESSEL**

PROJECT **FC W06 Hot Solvent**

LOCATION **L.S.D. 10-19-70-4-W4M**

SERVICE **Propane Storage Bullet**

DIAGRAM



REV	DESCRIPTION	DATE	BY	CHK'D	APP'D	REV	DESCRIPTION	DATE	BY	CHK'D	APP'D
0	Issued for Purchase	06-Oct-16	AK	HA/YP	EN						
			NK	H	J						



SELLER DRAWING AND DATA REQUIREMENTS (SDDR) 2016-012 Propane Storage Bullet MR# 2016-012-TSE-4002	REV	DATE	DESCRIPTION	BY
	0	6-Oct-16	Issued for Purchase	AK

DOCUMENT DESCRIPTION	WITH QUOTE	AFTER ORDER PLACEMENT					
		FOR APPROVAL <sup>1</sup>			CERTIFIED/AS BUILT/FINAL <sup>2</sup>		
	QTY/TYPE	QTY/TYPE	WKS <sup>3</sup>	DATE	QTY/TYPE	WKS <sup>3</sup>	DATE
DRAWINGS							
General Drawings and Diagrams							
Drawing Index		1P	2		1P/1D/1M		
Bill of Materials		1P	2		1P/1D/1M		
Civil Drawings							
Building / Architectural Drawings							
Structural Drawing Details	1P	1P	2		1P/1D/1M		
Foundation / Skid Drawings							
P.Eng Stamped Building Schedules							
Support / Foundation Loading Diagrams							
Anchor Bolt Location & Drawings		1P	2		1P/1D/1M		
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	1P	1P	2		1P/1D/1M		
Detail Fabrication / Shop Drawings		1P	2		1P/1D/1M		
Assembly / Erection Drawings		1P	2		1P/1D/1M		
Piping Spool Drawings							
HVAC Schematic / Flow Diagram							
Process Drawings							
Process Flow Diagrams							
Piping and Instrument Diagrams							
DATA							
General and Miscellaneous Data							
Engineering Calculation Sheets		1P	2		1P/1D/1M		
Data Sheets - Mechanical/Noise/Instrumentation/Specialty etc	1P	1P	2		1P/1D/1M		
Performance Curves							
Equipment Catalog Data							
Weight & Dimensions	1P	1P	2		1P/1D/1M		
Lifting Study - Lifting Points only		1P	2		1P/1D/1M		
Assembly / Disassembly Sizes & Weights Data							
Production Schedule	1P	1P	1 - 2				
Nameplate Photos		1P	2		1P/1D/1M		
Operating Instructions							
Maintenance, Lubrication / Fluid & Materials Requirements							
Priced Spare Parts for Start-up and 2 Years Operations		1P	4		1P/1D/1M		
Procedures, Reports and Certificates							
Quality Control Procedures		1P	2		1P/1D/1M		
WPS, PQR and Weld Procedure Summary		1P	2		1P/1D/1M		
Shipping, Handling & Storage Procedures		1P	2		1P/1D/1M		
Installation / Erection Procedure		1P	2		1P/1D/1M		
Inspection Test Plan (ITP)		1P	2		1P/1D/1M		
CRN		1P	Yes		1P/1D/1M		
NDE Maps		1P	Yes		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 <sup>6</sup>					1P/1D/1M		
PWHT Report and Charts					1P/1D/1M		
Hydrostatic Test Gauge Certificate					1P/1D/1M		
Hydrostatic Test Report / Certificate					1P/1D/1M		
Completed and Signed ITPs		1P	Yes		1P/1D/1M		
Painting, Coating and Lining Inspection Reports		1P	Yes		1P/1D/1M		
MTR Map					1P/1D/1M		
Bolt Torque Inspection Report					1P/1D/1M		
All Code Required Regulatory Forms					1P/1D/1M		



SELLER DRAWING AND DATA REQUIREMENTS (SDDR)	REV	DATE	DESCRIPTION	BY
2016-012	0	6-Oct-16	Issued for Purchase	AK
Propane Storage Bullet				
MR# 2016-012-TSE-4002				

DOCUMENT DESCRIPTION	WITH QUOTE	AFTER ORDER PLACEMENT					
		FOR APPROVAL <sup>1</sup>			CERTIFIED/AS BUILT/FINAL <sup>2</sup>		
	QTY/TYPE	QTY/TYPE	WKS <sup>3</sup>	DATE	QTY/TYPE	WKS <sup>3</sup>	DATE
Components Rating vs. Application Area Classification							
Non-Conformance Report (NCR) Log					1P/1D/1M		
CSA / Canadian & Alberta Electrical Code Approval							
HAT / FAT/ Function Testing Procedure							
Deficiency Punch List / Inspection Release					1P/1D/1M		
RFIs & RFI Log					1P/1D/1M		
Any other Code Required documents					1P/1D/1M		
<b>Additional Reports and Certificates - Mechanical</b>							
Running Performance Test Report							
NPSH Test Report							
Letter / Certificate of Material Compliance							
Dismantle and Inspection after Test Report							
Report Carbon Equivalent Factor							
Noise Level Test Reports / Certificates							
Vibration Test Reports							
Dimensional Check Report							
Shipping and Packing Report					1P/1D/1M		
<b>Additional Reports &amp; Certificates - Electrical</b>							
Electrical Equipment List							
Function Test / Run Test / Motor Test Reports							
Megger Test Records							
Motor Performance Curve							
Electrical Circuit Test Record							
Shutdown Key							
<b>Additional Reports &amp; Certificates - Instrumentation</b>							
Instrument Mechanical Run or Dynamic Test Records							
Instrument Index							
PSV Record							
Calibration Certificate							
<b>VENDOR DATA BOOK<sup>4</sup> - One (1) Hard Copy only</b>					1P		
<b>MUD COPY<sup>5</sup></b>					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 – 18<sup>th</sup> Avenue N.E.  
Calgary, Alberta T2E 7T8  
  
Attention: Document Control  
Email: [tsedoccontrol@threestreams.com](mailto: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.

## **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 and shall be submitted 4 weeks prior to Fabrication. Seller's ITP shall incorporate all items listed in Section 1 " Drawing and Data Requirements. 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.
- 3.3 Where applicable, Electrical/Instrumentation (E/I) Inspections at fabrication shops, the Seller is responsible to notify the Buyer's Inspection Representative 5 days in advance of any hold points on the ITP for Alberta E/I Inspections. The Seller shall also notify the Buyer's Inspection Representative 10 days in advance for E/I Inspections outside the Province of Alberta. The Seller is to complete and submit the Cenovus Form No.: TR-80-FRM-00-100-01 to the appropriate Representatives shown on the form.

Note: A minimum of 48hrs is required for any changes to the submitted Inspection Notification.

### 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. For Electrical/Instrumentation Inspections, please see Section 3.3 above.

#### 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:**

Inspection company will be appointed by the Owner, 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 – 18<sup>th</sup> Avenue N.E.  
Calgary, Alberta T2E 7T8

Attention: Document Control  
Email: [tsedoccontrol@threestreams.com](mailto:tsedoccontrol@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.

	<b>Specs &amp; Materials Bulletin</b>	<b>Number:</b>	SB-44-002 Rev 1
		<b>Date:</b>	Feb. 19, 2013
	<b>Subject: Shipping Covers for Flanges, Pipe Ends, and Valves</b>	<b>Originator:</b>	Specs & Materials Group

#### Issue:

This Bulletin addresses the installation of protective covers on pipe flanges, pipe ends, and valves when shipped on a module or a ship loose load. Currently TR specifications call for plywood or steel covers with rubber gaskets to protect the flange faces during shipping. Of these, some specifications call for the covers to be bolted or just "fastened securely".

Recently, Nisku Mod Yard and Site received flange faces on piping spools protected with the duct tape which is against the TR specification requirements and also not acceptable. Removal of duct tape is time consuming due to its adhesive properties. In some cases, flange faces needed to be re-faced as duct tape doesn't provide adequate damage protection.

#### Specification Requirements:

Effective immediately, the specification requirements for the protection of pipe flanges, pipe ends, and valves during shipping shall be as follows:

##### Pipe Flanges:


1. Flange Cover Material: Plastic (preferable) or Wood acceptable
2. Cover Attachment: Plastic zip ties (Ty-Raps or equivalent) rated to -40°C
  - 2.1. For NPS 12 Flange and under: 4 Independent zip tie anchor points
  - 2.2. For NPS 14 and above:
    - i. Plastic cover – 4 Independent zip tie anchor points (or more)
    - ii. Wood Cover – 6 Independent zip tie anchor points
3. Tape and adhesives are not acceptable for cover attachments
4. No tape or adhesives are permitted directly on bare metal near flange or flange rim
5. Anti-corrosion agents shall not be applied on flange faces



**YES**



**NO**

	<b>Specs &amp; Materials Bulletin</b>	<b>Number:</b>	SB-44-002 Rev 1
		<b>Date:</b>	Feb. 19, 2013
	<b>Subject: Shipping Covers for Flanges, Pipe Ends, and Valves</b>	<b>Originator:</b>	Specs & Materials Group

#### Valves:

Small valves will continue to be bagged and secured with zip ties (Ty-Raps or equivalent). The excessive use of duct tape is NOT permitted to secure the bag in place. In any horizontal or hanging valve covered bags, the bag is required to have a hole to allow moisture to drain out/escape; this hole should be located at the lowest point of the bag. Large valves shall have their wheel handles banded to the valve body with at least two metal straps for shipping.



**YES**



**NO**

#### Plain Pipe Ends:

Plastic pipe caps must be used in all cases. If the cap fits loosely and must be secured, the use of one or two pieces of duct tape over the end may be used. Pipe ends larger than NPS 18 may be protected with plywood if plastic caps are not available; however, prior Cenovus approval is required. In this case, plywood shall be adequately secured to the pipe body.




**YES**



**YES**



**NO**

	<b>Specs &amp; Materials Bulletin</b>	<b>Number:</b>	SB-44-002 Rev 1
		<b>Date:</b>	Feb. 19, 2013
	<b>Subject: Shipping Covers for Flanges, Pipe Ends, and Valves</b>	<b>Originator:</b>	Specs & Materials Group

**Additional Notes:**

ADM Piping: Mated ADM Piping Flanges (valve to flange) shall continue to be shrink-wrapped to ensure nuts and studs do not fall off during transport due to their low torque values. This is a safety issue.

**Affected Specifications:**

1. All TR/CVE specifications which specify shipping requirements relating to flange face, valve, and pipe end protection will be affected by this bulletin. Refer to Shop Fabrication of Piping Specification, TR-44-SPC-00-027-01 Rev. 2 Section 10.0, Shipping and Preparation, as an example.
2. All Purchase Orders specifying flange face protection in Transportation and Handling requirements will be superseded by this bulletin.

**Contacts for Questions:**

Technical Services Group	Name	Phone	Email
Specifications & Materials	Gordana Mesar	403-766-3149	<a href="mailto:gordana.mesar@cenovus.com">gordana.mesar@cenovus.com</a>
	Amir Yasemi	403-766-8294	<a href="mailto:amir.yasemi@cenovus.com">amir.yasemi@cenovus.com</a>
Quality Assurance	Jose Rojas	780-979-5043	<a href="mailto:jose.rojas@cenovus.com">jose.rojas@cenovus.com</a>
	Muhammad Ishaq	403-766-3163	<a href="mailto:muhammad.ishaq@cenovus.com">muhammad.ishaq@cenovus.com</a>

Rev.#	Date	Description	Originator	Checked	Approved
0	Dec. 10, 2012	Issued for Implementation	C. McGeean	G. Mesar / A. Yasemi	V. Sizov
1	Feb. 19, 2013	Revised	P. Fahrni	M. Ishaq	V. Sizov

## **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](mailto: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 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**

<b>Requestor Company:</b>	Three Streams		<b>Date:</b>	
<b>Requestor name:</b>			<b>SWR #:</b>	
<b>Project name:</b>		<b>Phase:</b>	<b>EPC Waiver #:</b>	

**Waiver Title:** \_\_\_\_\_

<b>Discipline</b>	_____		
<b>Specification #:</b>	_____	<b>Revision:</b>	_____
<b>Specification Title:</b>	_____		
<b>Spec. requirements:</b>	_____		

<b>Project Waiver:</b>	_____
<b>Reasons for Waiver:</b>	_____

<b>Does this request affect safety?</b>	No	<b>Explain:</b>	_____
<b>Does this request affect schedule?</b>	No	<b>Explain:</b>	_____
<b>Does this request affect quality?</b>	No	<b>Explain:</b>	_____
<b>Does this request affect cost?</b>	No	<b>Explain:</b>	_____

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

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





amec foster wheeler

Three Streams Engineering

Suite 401, 1925 - 18<sup>th</sup> Avenue N.E.  
Calgary, Alberta, Canada, T2E 7T8  
Ph.: (403) 536-5000 Fax: (403) 235-2909  
[www.threestreams.com](http://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".

[illegible]