			FIREBAG PROGRAM – ENGINEERING	
			<b>MATERIAL REQUISITION SECTION 1 SCOPE OF SUPPLY</b>	
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

## SCOPE OF SUPPLY – Section 1

### 1.0 EQUIPMENT

- 1.1 Seller shall provide ~~a proposal~~ / services for the supply of materials, fabrication, manufacturing, assembly, inspection, testing, preparation of surfaces, painting, documentation and preparation for shipment of Equipment Package in accordance with Firebag Program Technical Standards and all other attachments in this Requisition. 1

Scope of Supply shall be as follows:

ITEM	QT	UOM	TAG	Description	
1	1	EA	115AT-80176	Sand Erosion Monitor	1
2	1	EA	115AT-80276	Sand Erosion Monitor	1
3	1	EA	115AT-80376	Sand Erosion Monitor	1
4	1	EA	115AT-80476	Sand Erosion Monitor	1
5	1	EA	115AT-80576	Sand Erosion Monitor	1
6	1	EA	115AT-80676	Sand Erosion Monitor	1
7	1	EA	115AT-80776	Sand Erosion Monitor	1
8	1	EA	115AT-80876	Sand Erosion Monitor	1


"UOM": Unit of Measurement

The proposal shall include a detailed scope of supply, itemized and total costs, proposed schedule, proposed documentation and drawings, and any and all other information required to clearly define the proposed work . All work shall be in accordance with the information provided in this Material Requisition and with the documents listed in Section 2, "List of Documents", of this Requisition package. 1

### 2.0 GENERAL NOTES

- 2.1 If Seller's interpretation suggests any conflict between any of the attached documents, Seller shall notify the Buyer, in writing, for a resolution before proceeding with any work. 1
- 2.2 Documentation shall be supplied per Section 1 – "Scope of Supply", Section 2 – "List of Documents", Section 3 – "Vendor Drawing and Data Requirements", Section 4 – "Quality Management Requirements", and Section 5 – "Spare Parts Requirements" of this Requisition. 1
- 2.3 Seller shall complete and submit each of the equipment datasheets (Suncor Datasheets) listed in Section 2 – "List of Documents". All Tag Numbers shall be Suncor Tag Numbers. 1
- 2.4 Seller shall complete the Seller's Document Index (SDI) in Section 3, and include this information with their bid submission. 1

UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION

			FIREBAG PROGRAM – ENGINEERING	
			<b>MATERIAL REQUISITION SECTION 1 SCOPE OF SUPPLY</b>	
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

2.5 Seller shall list any and all exceptions to the requirements in Section 1, and to the documents and drawings as listed in Section 2, 3 and 4 of this Requisition. 1

### 3.0 DESIGN NOTES

3.1 All electrical equipment shall be approved by a Canadian Accredited Certification Organization and bear the insignia of the approval organization and label of approval for the electric area classification of the intended installation area as specified on the instrument data sheet. Refer to Alberta Municipal Affairs, Electrical Standata LEG-ECR-2 for further information and a list of accredited organizations. (<http://www.municipalaffairs.gov.ab.ca/ss/electrical/330-LEG-ECR-2.pdf>).

All electric or electronic equipment shall be a CSA label of approval for the electric area classification of the intended installation area as specified on the instrument data sheet 1

3.2 Provide equipment suitable for the ambient and process conditions specified. Obsolete equipment or equipment schedule for immediate discontinuance shall not be provided. 1

3.3 Equip with two Stainless Steel tags for Sand Erosion Transmitter (AT) and two Stainless Steel tags for Sand Erosion Probe (AE) and locate so as not to impede installation or removal of the instrument from service. 1

3.4 Ensure that all pressure components are registered with a Canadian Registration Number (CRN) in accordance with the Alberta Boilers and Pressure Vessels Act and its regulations. Provide CRNs to Purchaser upon request. 1

3.5 All transmitters/probes shall suitable for ambient temperature of –45 °C to 35 °C without heat tracing. Seller shall present the test report or certification within the quotation proposal. 1

3.6 Provide testing and corresponding documentation to satisfy the following:

- Hydro Test Report (Probes assembled with Hollow Plug and Flange access fittings) 1

3.7 Positive Material Identification (PMI) report shall be included for all Hastelloy or higher alloy materials supplied. 1

3.8 The process liquid contains high chlorides. Flanges and all pipe fittings wetted parts shall not be Austenitic Stainless Steel. ASTM A105N carbon steel is the recommended material. 1


3.9 Calculation for vibration effects shall be provided for each probe. 1

3.10 All wetted parts shall be manufactured and tested as per NACE MR0175/ISO 15156. 1

### 4.0 OPTIONAL EQUIPMENT AND SERVICES

4.1 Seller shall provide: optional pricing for the following: 1

UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION

			FIREBAG PROGRAM – ENGINEERING	
			<b>MATERIAL REQUISITION SECTION 1 SCOPE OF SUPPLY</b>	
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

- a Special Tools List. 1
- b Spare Parts (see Spare Parts Requirements Form – MR Section 5). All Bidders, OEMs, Vendors and Suppliers are required to complete the required sections of this form and include it with their bid (documents) submissions as well as per the requirements of MR Section 3, Item Code N01. See Section 4.2 below for instructions. 1
- 4.2 Spare Parts Instructions: (see Spare Parts Requirements Form – MR Section 5). 1
- a. Seller shall provide spare parts information for all equipment in the MR based on a failure-mode driven Spare Parts plan which should include the criteria specified in the MR Section 5 Instruction tab, Section 6.0, as well as including maintenance significant spare parts and Seller recommended spare parts. The criteria are above and beyond spare parts "recommended" by the Seller. This is such that all scenario part information is available on file in the chance a replacement is required during Construction activities (C&SU, 2-Year Operation). It is the Seller's responsibility to identify all the spare parts required to mitigate all typical failure modes for all equipment types in the MR. If required, the Seller may consult the RE to identify all typical failure-modes associated with the equipment. For example: Typical failures for a Pump are: bearing seizing, seal leakage, impeller damage, coupling failure, etc., which are mostly outlined in the criteria in the instruction tab. 1
- b. Seller shall submit Spare Parts information using the MR Section 5 form for all Equipment Tags in the MR/PO. If a package includes associated components by other disciplines, example, a Mechanical package may contain associated Instrumentation and Electrical components, then the Seller shall provide Spare Parts information for those associated components even though specific tag numbers are not specified in the MR. Spare Parts Criteria for Mechanical, Instrumentation & Electrical tags are detailed in the MR Section 5 Instruction tab, Section 6.0 entitled Criteria. 1
- c. Seller shall complete all columns of the MR Section 5 form for each tag number (and associated tags/components), including the header rows containing Seller contact information, MR number, etc. Do not leave any applicable columns blank. Seller to submit completed MR5 form in excel format. Reference the MR Section 5 User Guide (tab in the form). 1
- d. For spare parts that are purchased with the MR/PO (Section 1), Seller shall also include the spare parts information for these purchased items in the MR Section 5 form submittal. 1

UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION

# MATERIAL REQUISITION

## SECTION 2

### LIST OF DOCUMENTS

Project Name:	Project No.:	File Location:
<b>FB WELL PAD 115</b>	<b>02-02304</b>	<b>07-15-04 MR-MAT</b>


MR No.: 02-02304-7.15.4-MR-J-47 MR Rev:

Equipment/Material:  
**SAND EROSION MONITOR**

MR REVISION HISTORY		
Rev	Date	Description
1	3-Jul-12	Issued For Quotation

[illegible]

UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION


			FIREBAG PROGRAM - ENGINEERING	
			<b>MATERIAL REQUISITION SECTION 2 LIST OF DOCUMENTS</b>	
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04 MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

Industrial Standards & Recommendations				
---	CSA C22.1	2009	Canadian Electrical Code	---
---	NACE MR0175 / ISO 15156	2003	Petroleum and natural gas industries— Materials for use in H2S-containing environments in oil and gas production	---

### General Notes

- Only documents revised are included with each MRQ/MRP Revision as indicated for Change Orders or Revisions and listed in Material Requisition – Section 2.
- All National/International/Regulatory Standards referenced in the above documents are not attached to this requisition. It is the responsibility of the Seller to possess, review and comply to these required Standards.
- An asterisk (\*) indicates that the document is already in the vendor's possession and not included with this MR. Vendor shall request any documents listed that it may be missing or superseding.

UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION

		FIREBAG PROGRAM - ENGINEERING	
		<b>MATERIAL REQUISITION</b> <b>SECTION 3</b> <b>VENDOR DRAWING AND DATA REQUIREMENTS (VDDR)</b>	
File Location:		MR No.:	MR Rev.:
07-15-04 MR-MAT		02-02304-7.15.4-MR-J-47	1
Date of Issue:	3-Jul-12		
Project Name:	FB WELL PAD 115		
Suncor Project No:	02-02304		
Equipment / Material:	Sand Erosion Monitor		

**VENDOR MUST COMPLY WITH THE FOLLOWING REQUIREMENTS AND NOTES**

**1.0** This Section defines the format for submittal of required Vendor\* Drawings and Data Documentation and summarizes the Vendor Document and Data Review process. \*For the purposes of this form, Vendor means "Seller."

**2.0 VENDOR DATA REQUIREMENT FORMS**

Provides a Vendor Drawing and Data Requirement Form with each inquiry for each category of equipment. These forms serve the following functions:

- Defines the Suncor requirements for Native (Electronic Files) and Hard Copy types, acceptable for document control and processing
- Defines the Suncor Item Codes for documents required
- Specifies the quantities of electronic and hard copies of documents to be submitted
- Defines the lead times, in weeks after commitment, required to satisfy each Project's Engineering and Construction Schedule
- Defines the Manufacturing Record Book (MRB) and Installation, Operation and Maintenance Manuals (IOM) requirements

**3.0 VENDOR DOCUMENTS, QUALITY AND TRANSMITTALS**

**3.1** All correspondence, data and drawings shall be in the English language. The units and dimensions shall be in SI Units. Pipe & Flange sizes shall be Imperial nominal (NPS) sizes, i.e., 2, 3, 4, etc.

**3.2** Documents requested for review shall be submitted in electronic PDF file format readable by Adobe Acrobat Version 7.0 (Text Searchable, if available). Final documents requested in electronic format shall be readable in their Native Software (please see list below) and shall not be write protected. All hardcopy drawings and documents must be clearly legible. Acceptable software includes the following:

<u>Item</u>	<u>Format</u>	<u>In Column</u> <u>'Suncor Req'd</u> <u>Native Doc</u> <u>Format'</u>
Drawings:	AutoCAD Version 2004	DWG
Text documents:	Microsoft Word 2002	DOC
Text documents:	Microsoft Excel 2002	XLS
Database Files:	Microsoft Access 2002	MDB

If the above cannot be provided, PDF files readable by Adobe Acrobat will be acceptable with Suncor's explicit approval.


**3.3** Manufacturer's Record Books (MRB) and Installation, Operation & Maintenance Manuals (IOM) shall be submitted c/w Index, in both hardcopy and electronic Adobe Acrobat format. Electronic copy shall contain all documents included in the hardcopy version. Electronic file shall be bookmarked such that each section identified in a table of contents shall be bookmarked to the corresponding section in the MRB / IOM. Vendor is responsible for scanning of all non-electronic documents for inclusion with other electronic files on a CD-ROM to be submitted with the Hardcopy MRB / IOM. Drawings included in hardcopy MRB / IOM shall be full size. For documents previously submitted for review, only As Built Certified Final and Suncor Approved Stamped Code 1 (for data not requiring As-Building) shall be included in MRB / IOM if applicable.

**3.4** Title blocks shall be located in lower right-hand corner.

**3.5** The following information shall appear on each Title Block or Cover Page of the Vendor's drawing(s) and data.

- Vendor Drawing, Title, Drawing Number, Revision Number and Revision Date (dd-mm-yy)
- Suncor Project and Purchase Order Numbers
- All applicable Item Number(s) or Tag Number(s) and Equipment Title(s)

**3.6** All revisions to drawings and data must be clearly annotated, noted and listed on the drawings, calculations, and other data in a revision list.

		FIREBAG PROGRAM - ENGINEERING	
		<b>MATERIAL REQUISITION</b> <b>SECTION 3</b> <b>VENDOR DRAWING AND DATA REQUIREMENTS (VDDR)</b>	
File Location:		MR No.:	MR Rev.:
<b>07-15-04_MR-MAT</b>		<b>02-02304-7.15.4-MR-J-47</b>	<b>1</b>
Date of Issue:	<b>3-Jul-12</b>		
Project Name:	<b>FB WELL PAD 115</b>		
Suncor Project No:	<b>02-02304</b>		
Equipment / Material:	<b>Sand Erosion Monitor</b>		

3.7 All drawings 11" x 17" and larger shall have a blank space approximately 4" x 6" in the lower right-hand corner above the Title Block for placing Suncor's Vendor Print and Review Stamps. All 8 1/2" x 11" documents shall have space for Suncor Stamps on the document cover sheet. Reference Para. 4.3 below for actual stamp sizes.

3.8 All electronic submittals shall be submitted through Elite or an agreed alternative. Notification that documentation has been uploaded shall be emailed to: SuncorPad115E.DocCtrl@Jacobs.com.

All hardcopy submittals shall be addressed to:

Suncor FB Pad 115, c/o Jacobs Canada Inc. 205 Quarry Park Blvd SE, Calgary, Alberta, Canada T2C 3E7.

\*Document Control shall confirm the Email & Mailing Address.


3.9 All drawings and data shall be sent with a Vendor Transmittal Letter to Document Control with copies to the Responsible Engineer and assigned Expeditor. This Transmittal shall clearly identify: Suncor's Purchase Order No., Equipment Tag No., Vendor Doc. No., Suncor Section 3 VDDR Item Code No. and Title / Description. If one document satisfies multiple VDDR Item Codes, they must be identified on the transmittal. For document resubmittals, the Transmittal must also include Suncor's Doc No. (VPXX-X-X). When drawings are transmitted as PDF files, all pages in the PDF file shall be of the same size to facilitate review and printing. Each drawing shall be transmitted in its own PDF file.


#### 4.0 VENDOR DOCUMENT REVIEW

4.1 Suncor's review of Vendor's documents shall not relieve the Vendor of responsibility for complying with all the terms, conditions and requirements of the purchase order and all attachments referenced herein.

4.2 Suncor reserves the right to comment on all documents requested from the Vendor.

4.3 Documents will be reviewed by Suncor for conformity with specifications, and scope of purchase order. Suncor's review status will be indicated on the **REVIEW STAMP** as follows:

	
<b>FIREBAG PROJECTS</b>	
<small>PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSES, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY THE SUPPLIER AND DOES NOT RELIEVE SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.</small>	
1.	<input type="checkbox"/> WORK MAY PROCEED.
2.	<input type="checkbox"/> REVISE & RESUBMIT. WORK MAY PROCEED SUBJECT TO INCORPORATION OF CHANGES INDICATED.
3.	<input type="checkbox"/> STOP WORK PER ATTACHED WRITTEN INSTRUCTIONS.
4.	<input type="checkbox"/> REVIEW NOT REQUIRED. WORK MAY PROCEED.
BY:	DATE:

	
<b>FIREBAG PROJECTS</b>	
Proj / PO #	_____
REV. #	_____
DWG # VP	_____
VP Item Code(s)	_____
Suncor TEID Code(s)	_____
EQUIP #	_____

4.4 Vendor shall review and approve drawings and data from Sub-Vendors and indicate their approval status, before submitting them to Suncor for review.

4.5 When documents are returned to Vendor, Suncor comments must be incorporated and documents resubmitted to Suncor within two (2) weeks unless otherwise specifically agreed to in writing by Suncor. Vendor disagreement with any of the comments shall be immediately communicated by e-mail to the Suncor Buyer, otherwise compliance with the comments shall be assumed.

4.6 Drawings shall be standard North American sizes, for example: 8.5 in. x 11 in., 11 in. x 17 in. Drawings larger than size D will not be accepted.

4.7 Vendor shall review the requested information in the VDDR and complete the attached Sellers Document Index (SDI) prior to Purchase Order award. The SDI shall be submitted to the Suncor Buyer electronically in the .XLS native file format. Upon award, the completed SDI will serve as the overall document submission schedule, superseding dates indicated in the VDDR. The Seller will be expedited to the dates indicated in the SDI.

4.8 All documents for review in Section 3 marked with an asterisk '\*' in the Item Code column must be Code 1 prior to proceeding with fabrication. All documents for review in Section 3 must be Code 1 prior to shipment.



FIREBAG PROGRAM - ENGINEERING

# **MATERIAL REQUISITION** **SECTION 3** **VENDOR DRAWING AND DATA** **REQUIREMENTS (VDDR)**

File Location:	MR No.:	MR Rev.:
07-15-04 MR-MAT	02-02304-7.15.4-MR-J-47	1
Date of Issue:	3-Jul-2012	
Project Name:	FB WELL PAD 115	
Suncor Project No:	02-02304	
Equipment / Material:	Sand Erosion Monitor	

## **DATA SUBMITTALS KEY/LEGEND**

X ARO = Weeks after receipt of order      X PTS = Weeks Prior to Shipment      Elect = Electronic File (Refer to Section 3.2 for electronic document requirements)  
X AS = Weeks after shipment      AC = As Completed

Format Example: 1/4ARO means 1 set to be supplied 4 weeks after Receipt of Order

Item Code	Document Description	Req. With Bid (Y/N)	Incl w/ MRB / IOM	Data Required After Commitment				Suncor Req'd Native Doc. Format	MR Rev.
				For Review		Final/As-Built			
				Elect (PDF)	Hard Copy	Elect (PDF + Native)	Hard Copy		
A	GENERAL DOCUMENTS								
A10	Quality Assurance Manual: Cover and Index	Y	MRB	1/3 ARO				PDF	1
A16	Product Catalog / Information	Y	IOM					PDF	1
A25*	Deviations: Scope & Technical	Y	MRB	1/3 ARO				PDF	1
J	INSTRUMENTS / CONTROL DOCUMENTS								
J05	Instrument Outline and Dimensional Drawings		IOM	1/4 ARO				PDF	1
J06*	Instrument Termination Details		IOM	1/4 ARO				PDF	1
J30	Frequency Ratio Calculations		IOM	1/4 ARO				PDF	1
J33	Instrument Configuration w/Unique Device ID (MODBUS data maps)		IOM	1/8 ARO				PDF	1
J39*	Instrument Data Sheets (Electronic Data Sheet Templates, Application Software & work instruction to be supplied to Vendor). All Instrument Data with Manufacturer's Model No., Description, Range, Scale & Settings	Y						PDF	1
J99	Manufacture's Certificate of Conformance		MRB					PDF	1
L	CERTIFICATES / QUALITY RECORDS / MANUALS								
L02	Installation, Operation & Maintenance Manuals (include all sub-vendors instruction manuals)				1/2 AS			PDF	1
L04	Manufacturing Record Book or Design Record Book (Suncor's requirements for MRB Content is Defined Within this Section 3)				1/2 AS			PDF	1
L07	NACE Certification 0103 / 0175		MRB					PDF	1
L08	CSA Approval for Electrical and Instrumentation		MRB					PDF	1
L18	NDE/VT: Quality Records Complete with Hydro Test-PMI (if applicable) reports		MRB					PDF	1
L28	Factory Tests - Certified Test Results		MRB					PDF	1
L85	Quality: Manufacturing Record Book Index		MRB	1/4 ARO				PDF	1
L97	CRN - Canadian Registration of Fittings per CSA B51 - Quality Record (CB41)		MRB					PDF	1
L111	Installation, Operation & Maintenance Manual Index		IOM	1/4 ARO				PDF	
N	SPARES								
N01	Recommended / Spare Parts Requirements - Combined List for Commissioning, 2 Year & Capital Spares (Submit: MR Sec. 5)	Y	IOM	1/8 ARO				XLS	1

UNCONTROLLED DOCUMENT WHEN PRINTED (7/5/2012) CONTROLLED DOCUMENT IN PROJECT LOCATION





FIREBAG PROGRAM - ENGINEERING

**MATERIAL REQUISITION  
SECTION 3  
SELLER'S DOCUMENT INDEX (SDI)**

File Location:

07-15-04\_MR-MAT

MR No.:

02-02304-7.15.4-MR-J-47

MR Rev.:

1

Date of Issue:

3-Jul-2012

Project Name:

FB WELL PAD 115

Suncor Project No:

02-02304

Equipment / Material:

Sand Erosion Monitor


	Seller's Document No.	Supplier / Sub-supplier Name	Title / Description	Item Code (s)	Tag #	Forecast Date
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ADD ADDITIONAL ROWS AS REQUIRED.

## Notes:

- 1 One SDI is required for each equipment tag. For identical equipment, only one SDI is required.
- 2 All item codes, from the VDDR, applicable to each Seller's document shall be listed in the SDI.
- 3 Seller shall list any item codes in the VDDR which are not applicable to the scope of work, in the SDI.
- 4 Forecast dates are planned first time submission dates by Seller.
- 5 The SDI shall be completed electronically in the .XLS native file format.

UNCONTROLLED DOCUMENT WHEN PRINTED (7/5/2012) CONTROLLED DOCUMENT IN PROJECT LOCATION

		FIREBAG PROGRAM – ENGINEERING		
		<b>MATERIAL REQUISITION SECTION 4 QUALITY MANAGEMENT REQUIREMENTS</b>		
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

## 1.0 QUALITY ASSURANCE

- 1.1 The Seller\* shall have in place a Quality Management Program that will ensure that the materials, services and equipment offered or supplied meet the requirements specified within this Requisition and its referenced documents. The Seller's Quality Management System shall be assessed by Suncor against ISO 9001 and API Q1/ISO TS 2900 Standards.

The Seller shall provide copies of formal current Certification/Registrations of their Quality Management System at their Bid Submission Stage as indicated within MR Section 3 – Item Code A10.


- 1.2 The Seller Quality Management Program\*\* must be approved by Suncor prior to commencement of work on the Order. Any request by the Seller for design changes, relaxations or acceptance of nonconformities shall be formally applied for in writing to Suncor. \*\*Reference: MR Section 3, Item Code A25.

## 2.0 CONTENT OF THE QUALITY PLAN

- 2.1 The Seller shall prepare a Contract Quality Plan and Inspection and Test Plan (ITP) specific to the scope of this MRP, which shall be submitted to Suncor within the time period specified in this MRQ/MRP, Section 3.
- 2.2 The format and issue of this Quality Plan and ITP shall be consistent with the document control elements of the Seller's Quality Management Manual, as a minimum. The Quality Plan shall be prepared in accordance with ISO 10005 and shall include the following:
- 2.2.1 Identification of the product, service and contract to which the plan is to be applied.
  - 2.2.3 Location of Primary and Sub-suppliers of equipment and Material(s), by production facility c/w a copy of their ISO 9001 Quality Management System: Registration Status and Certificate, or regulatory organization equivalent.
  - 2.2.4 Identification of the individuals (c/w title) responsible for controlling the activities defined in the Quality Plan, by production facility.
  - 2.2.5 Identification of the individuals (c/w title and contact information) with the authority to interface directly with Suncor.
  - 2.2.6 Identification of all subcontractors / technical services suppliers (c/w Scope of Supply).

Note:	*	=	Vendor / Supplier / Manufacturer
	**	=	Suncor will not release material / equipment to, or approve Third Party Services performed at a subcontractor of a Prime Seller* (Contract or Purchase Order Holder).


UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION
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		FIREBAG PROGRAM – ENGINEERING		
		<b>MATERIAL REQUISITION SECTION 4 QUALITY MANAGEMENT REQUIREMENTS</b>		
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

- 2.2.7 Quality Plans and ITP of all subcontractors / technical service suppliers.
- 2.2.8 All logically sequenced activities for the Scope of Supply and product required and references to the quality system procedures and work instructions, which will be applied to those activities.
- 2.2.9 Specific reference to, in each Quality Plan and ITP, all the quality system procedures and work instructions covering design assurance, production assembly, test and inspection, special processes, control of non-conforming product, handling, storage, packing, preservation, material traceability, certification, performance testing and delivery. Suncor will indicate if procedures, etc. are required for information or review, after Initial Assessment of this Seller Deliverable per MR Sections 3 and 4.
- 2.2.10 Test and inspection frequency and acceptance criteria including the upper and lower process control limits (where statistical process control is employed).
- (Note: Process control of chemical composition, dimensional parameters and test/ performance report data is generally based upon upper and lower control levels or specification levels.)
- 2.2.11 The location of each Seller's Inspection and Test Point in the processing sequence.
- 2.2.12 Points where the Seller\* has established witnessing or verification requirements in the processes of their suppliers, sub-vendors/subcontractors.
- 3.0 SELLER's RESPONSIBILITY FOR THIRD PARTY QUALITY MANAGEMENT**
- 3.1 The Seller/Supplier shall list all their Quality Management activities that will be provided by Third Parties as applicable to the Scope of Supply (MRQ/MRP Section 1).

Note:	*	=	Vendor / Supplier / Manufacturer
	**	=	Suncor will not release material / equipment to, or approve Third Party Services performed at a subcontractor of a Prime Seller* (Contract or Purchase Order Holder).

UNCONTROLLED DOCUMENT WHEN PRINTED (5-JUL-12) CONTROLLED DOCUMENT IN PROJECT LOCATION
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		FIREBAG PROGRAM – ENGINEERING		
		<b>MATERIAL REQUISITION</b> <b>SECTION 4</b> <b>QUALITY MANAGEMENT REQUIREMENTS</b>		
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

#### 4.0 SUNCOR SOURCE QUALITY SURVEILLANCE LEVELS

Suncor will conduct Quality Control / Assurance Activities on material / equipment and Technical Service Provisions of selected Items of Supply (Section 1).

Level 0: Receiving Inspection at final destination only.

Level 1: This level includes the Initial Visit and Final Visit, prior to release of material or equipment. The number of visits necessary will vary with the amount of material or equipment on order as well as the lot size the Seller\* presents for assessment.

Level 2: The visit level for Level 1 applies. Subsequent visits shall be made to assess quality at established witness and hold points. The numbers of visits necessary will vary with the amount of material or equipment on order as well as the lot size the Seller presents for assessment\*\* and frequency of witness and hold points as well as the number of visits for release of equipment required.  
\*\*

Level 3: The instructions for Level 2 apply; however, additional visits will be made periodically for the purpose of performing surveillance activities required by Suncor, the Quality and/or Inspection and Test Plan, or special instructions. If not established by the Quality and/or Inspection and Test Plan, the performance history of the Seller may be used to determine the frequency of visits. Suncor retains the right to modify their Source Surveillance levels of activities, at any time and with given formal notice.

For example, if during the early stages of the order, the Seller's personnel demonstrate comprehension of the requirements of the order and competence in performing required test and other quality-related functions, the frequency of witnessing operations may be reduced proportionately. Conversely, when, through surveillance, concerns are noted, the frequency of visits may be increased. Any changes in frequency from the Quality and/or Inspection and Test Plan require concurrence by the Project Quality and/or Expediting Contact(s). When specification requirements exceed recognized standards such as ASME, AWS, API, IEEE, etc., special consideration may be given by Suncor to increasing surveillance of these activities.

Level 4: This is a full time residency status for a specific assignment. Specific activities to be accomplished in residency status will be outlined in the MRP Quality and/or Inspection and Test Plan

When Level 4 Surveillance is specified, the Seller/Supplier shall provide suitable workstation facilities for the Suncor assigned Quality Surveillance Representative. The facilities shall include telephone, access to fax machine and a computer with access to internet for the purposes of Email communication.

Note:	*	=	Vendor / Supplier / Manufacturer
	**	=	Suncor will not release material / equipment to, or approve Third Party Services performed at a subcontractor of a Prime Seller* (Contract or Purchase Order Holder).

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**MATERIAL REQUISITION  
SECTION 4  
QUALITY MANAGEMENT REQUIREMENTS**

Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04 MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>	MR Rev.: <b>1</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>				

***(EPCM's Note: Modify as Required as Applicable for Project)***

Suncor/Jacobs Source Quality Surveillance Supervisor, Contact for Suncor – Firebag 3 Plus:

**Robert Angel – Firebag Program SQS Mgr.**

(403) 692-8454

*Telephone*

(403) 870-4244

*Cell*

(403) 255-1421

*Fax*

Robert.Angel@jacobs.com

*Email*

Criticality Rating Established:

**TBD**

Source Quality Surveillance Jacobs Inspection Plan Ref. No.:

**TBD**

Source Quality Surveillance Level Established:

**1**

**Notice to Sellers:**

Suncor will provide an initial “Inspection Plan” with each MRQ/MRP Package. This document will indicate our broad intent or minimum requirements with respect to typical Suncor Source Quality Surveillance activities that have been assessed as: “Critical-To-Quality” Key Performance Indicators.

Suncor will throughout the process of Vendor Document Review Activities indicate their specific intent on performing Source Quality Surveillance at Seller's, their Third Party Service Providers, or Sub-contractor's facilities. The Seller/Supplier\* should incorporate the Review, Inspect, Witness & Hold Points noted in this Section 4, into their initial submittal of the Inspection and Test Plan (ITP).

Suncor's Quality Surveillance Policy is to hold the Prime Seller accountable and responsible for performing Quality Management activities at their Third Party Service Providers and/or Sub-contractors.

Seller Quality Plans or Inspection and Test Plans that do not have specific prime Seller responsibilities for independent (of Suncor) Quality Surveillance at their suppliers; subcontractors will be assessed as deficient and non-compliant to this MRQ/MRP.

The Seller/Supplier shall provide Suncor with 10 working days advanced written notice of all Witness and Hold Points as noted on pages 5 and 6 of this Section 4 of the Material Requisition. The Seller/Supplier shall provide this notice by means of the “Supplier's Request for Quality Surveillance” form, attached to Section 4 of this Material Requisition, as Page 7.

The Seller/Supplier shall include in all Sub-orders, or Sub-contracts, notice of Suncor's intent to conduct Quality Surveillance activities at the Sub-supplier's, or Sub-contractor's facilities. The activities shall consist of confirmation of Status, Review of Documentation, Inspections, and attendance to Witness, and Hold Points.

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FIREBAG PROGRAM – ENGINEERING

**MATERIAL REQUISITION  
SECTION 4  
QUALITY MANAGEMENT REQUIREMENTS**Project Name:  
**FB WELL PAD 115**Project No.:  
**02-02304**File Location:  
**07-15-04\_MR-MAT**MR No.:  
**02-02304-7.15.4-MR-J-47**MR Rev.  
**1**Equipment/Material:  
**SAND EROSION MONITOR****Specific Equipment/Material:** Sand Erosion Monitor**Inspection Level:** 1**DOCUMENTATION:** In addition to the copies required in the MR Section 3, one copy of the documents marked (X) must be provided by the Seller to the Buyer's Quality Representative during source Quality Assessments.

Upon Buyer's Quality Representative's request, the Seller shall provide any documents listed in MR Section 3 (not marked below) during source Quality Assessments.

- |  |   |
|--|---|
| <input type="checkbox"/> ASME Code Report                            | <input type="checkbox"/> Performance Test Curves                  |
| <input checked="" type="checkbox"/> Mill and Material Test Reports   | <input type="checkbox"/> Nameplate Rubbings or Facsimile          |
| <input type="checkbox"/> Charpy Impact Test Reports                  | <input type="checkbox"/> Certificate of Compliance (Test Run)     |
| <input type="checkbox"/> Postweld Heat Treatment Records, and Charts | <input type="checkbox"/> Certificate of Compliance (Hydro Test)   |
| <input type="checkbox"/> Hardness Test Reports                       | <input type="checkbox"/> NDE Reports                              |
| <input checked="" type="checkbox"/> Hydrostatic Test Report          | <input type="checkbox"/> Sub-supplier's Inspection and Test Plans |
| <input type="checkbox"/> Seller/Supplier's Inspection and Test Plan  | <input type="checkbox"/>  |
| <input type="checkbox"/>   | <input type="checkbox"/>  |

**PROCEDURES:** The Procedures, Documents and Qualifications marked (X) are subject to review by Buyer prior to fabrication. Reference MR Section 3.

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> High Pot Test       | <input type="checkbox"/> Routine Electrical              | <input type="checkbox"/> Hydrostatic Test     |
| <input type="checkbox"/> Motor Test          | <input type="checkbox"/> Tube Rolling                    | <input type="checkbox"/> Noise Reduction Test |
| <input type="checkbox"/> Machining           | <input type="checkbox"/> Tube Cleaning and Installation  | <input type="checkbox"/> Performance Test     |
| <input type="checkbox"/> Welding             | <input type="checkbox"/> Quality Control & Testing       | <input type="checkbox"/> NDE Procedures       |
| <input type="checkbox"/> Welding Repair      | <input type="checkbox"/> Surface Preparation, Painting & | <input type="checkbox"/>                      |
| <input type="checkbox"/> Sub Supplier's ITP  | <input type="checkbox"/> Coating                         | <input type="checkbox"/>                      |
| <input type="checkbox"/> Seller/Supplier ITP | <input type="checkbox"/>                                 | <input type="checkbox"/>                      |
| <input type="checkbox"/>                     | <input type="checkbox"/>                                 | <input type="checkbox"/>                      |






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\*\* = Suncor will not release material / equipment to, or approve Third Party Services performed at a subcontractor of a Prime Seller\* (Contract or Purchase Order Holder).

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FIREBAG PROGRAM – ENGINEERING

# **MATERIAL REQUISITION SECTION 4 QUALITY MANAGEMENT REQUIREMENTS**

Project Name: **FB WELL PAD 115** Project No.: **02-02304**

File Location: **07-15-04\_MR-MAT** MR No.: **02-02304-7.15.4-MR-J-47** MR Rev. **1**

Equipment/Material:  
**SAND EROSION MONITOR**

## **INSPECTION CHECKLIST**

The following requirements shall be considered **INSPECTION POINTS**, monitoring and reporting on these items are required by Suncor.

- W / HP** Witness / Hold Point: Inspection or test for which the Buyer's representative is notified of the timing of the inspection or test and a hold is placed on the inspection or test until the Buyer or their representative is in attendance.
- O** Observe: Inspection or test where the Buyer's representative is notified of the timing of the inspection or test and the inspection or test is performed as scheduled, regardless of whether the Buyer or their representative is present.
- I** Inspect: Buyer's representative shall routinely inspect said activity. No delay in Seller's fabrication process shall be incurred due to said representative's schedule.
- RV** Review or Verify: Buyer's representative shall verify completeness and validate results of documents or exhibits pertaining to said activity. No delay in Seller's fabrication process shall be incurred due to said representative's schedule.
- RD** Record on Drawing.
- SD** Submit Supporting Quality Documentation.
- RN** Reference Note.

Pressure Tests	W/ HP	O	I	RV	RD	SD	RN	NDE	W/ HP	O	I	RV	RD	SD	RN
Hydrostatic Test								RT (Radiography)							
Pneumatic Test								LP (Liquid Penetrant)							
Proof Tests								MP (Magnetic Particle)							
Pop & Set Pressure Test								UT Ultrasonic Test (Manual)							
Back Seat Tests								TOFD Ultrasonic Test							
High Pressure Closure								Phased Array Ultrasonic Test							
Low Pressure Closure								Eddy Current Test							
Leak Test								Brinnell Hardness							
Static Seal (Inert Gas)								Ferrite/ PMI							
Materials	W/ HP	O	I	RV	RD	SD	RN	Other (Specify)	W/ HP	O	I	RV	RD	SD	RN
Flange Finish, Rating, & Gasket Face Condition				X				Piping – ABSA – AB83/AB83F							
Heat Treat Records								Repair Vessels – AB40							
Material Identification.															
Traceability Records															
Material Test Reports				X											
NDE MAP								<b>API Inspector Checklists</b>	<b>W/ HP</b>	<b>O</b>	<b>I</b>	<b>RV</b>	<b>RD</b>	<b>SD</b>	<b>RN</b>
Welder Traceability								Pumps – Centrifugal							
								Pumps – Reciprocating							
								Compressors – Centrifugal							
								Compressors - Reciprocating							
								Fired Heaters							

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# MATERIAL REQUISITION

## SECTION 4

### QUALITY MANAGEMENT REQUIREMENTS

Project Name:	Project No.:
<b>FB WELL PAD 115</b>	<b>02-02304</b>

File Location:  
**07-15-04 MR-MAT**

MR No.:  
02-02304-7.15.4-MR-J-47

MR Rev.  
1

Equipment/Material:  
**SAND EROSION MONITOR**

**INSPECTION CHECKLIST**      The following requirements shall be considered **INSPECTION POINTS**, monitoring and reporting on these items are required by Suncor.

<b>W / HP</b>	Witness / Hold Point: Inspection or test for which the Buyer's representative is notified of the timing of the inspection or test and a hold is placed on the inspection or test until the Buyer or their representative is in attendance.
<b>O</b>	Observe: Inspection or test where the Buyer's representative is notified of the timing of the inspection or test and the inspection or test is performed as scheduled, regardless of whether the Buyer or their representative is present.
<b>I</b>	Inspect: Buyer's representative shall routinely inspect said activity. No delay in Seller's fabrication process shall be incurred due to said representative's schedule.
<b>RV</b>	Review or Verify: Buyer's representative shall verify completeness and validate results of documents or exhibits pertaining to said activity. No delay in Seller's fabrication process shall be incurred due to said representative's schedule.
<b>RD</b>	Record on Drawing.
<b>SD</b>	Submit Supporting Quality Documentation.
<b>RN</b>	Reference Note.

[illegible]


### Engineering Reference Notes:

1. Instrument Tags are attached.
- 2.
- 3.

Note: \* = Vendor / Supplier / Manufacturer  
 \*\* = Suncor will not release material / equipment to, or approve Third Party Services performed at a subcontractor of a Prime Seller\* (Contract or Purchase Order Holder).

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		FIREBAG PROGRAM – ENGINEERING	
		<b>MATERIAL REQUISITION SECTION 4 QUALITY MANAGEMENT REQUIREMENTS</b>	
Project Name: <b>FB WELL PAD 115</b>	Project No.: <b>02-02304</b>	File Location: <b>07-15-04_MR-MAT</b>	MR No.: <b>02-02304-7.15.4-MR-J-47</b>
Equipment/Material: <b>SAND EROSION MONITOR</b>		MR Rev. <b>1</b>	

**SUPPLIER'S REQUEST FOR QUALITY SURVEILLANCE**

**ATTENDANCE TO WITNESS, OBSERVATION AND HOLD POINTS**


**Note:** Tentative notification shall be submitted **10 working** days prior to inspection/test activities for all witness/observation and hold points per approved ITP.

<b>SUNCOR PO NO:</b>	<b>PROJECT NAME:</b>	<b>PROJECT No:</b>
<b>INSPECTION NOTICE NO.:</b>		<b>INSPECTION NOTICE DATE:</b>

<b>PRIME SUPPLIER</b> (Name, Address, Contact Name & Number)	<b>SUB-SUPPLIER</b> (Name, Address, Contact Name & Number)	<b>EQUIPMENT TAG NO.(s)</b>
<b>Name:</b> <b>Address:</b>     <b>Contact Name:</b> <b>Phone:</b> <b>Fax:</b> <b>E-mail:</b>	<b>Name:</b> <b>Address:</b>     <b>Contact Name:</b> <b>Phone:</b> <b>Fax:</b> <b>E-mail:</b>	
<b>ITP Document No:</b>  <b>ITP Activity:</b>  <b>Date of activity:</b>  <b>Estimated start time of activity:</b>		
<input type="checkbox"/> <b>WITNESS POINT</b>	<input type="checkbox"/> <b>OBSERVATION</b>	<input type="checkbox"/> <b>HOLD POINT</b>

Note: \* = Vendor / Supplier / Manufacturer  
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<div></div>					FIREBAG PROGRAM - ENGINEERING		
					MATERIAL REQUISITION		
					SECTION 5		
					RECOMMENDED / SPARE PARTS REQUIREMENTS		
Project Name:	Suncor Project No.:	File Location:	MR No.:	MR Rev.:	MR Title:	PO No.:	Supplier's Document No.:
FB WELL PAD 115	02-02304	07-15-04_MR-MAT	02-02304-7.15.4-MR-J-47	1	Sand Erosion Monitor		

INSTRUCTIONS FOR SUBMISSION OF SPARE PARTS RECOMMENDATIONS

1.0 GENERAL INSTRUCTIONS & DEFINITIONS

1.1

Suppliers are to provide spare parts recommendations covering **Start-up & Commissioning** , **Two Year Operational** and **Capital Spares**, in accordance with the following instructions. The spare parts recommendation shall be initially included with the Suppliers' main equipment proposal (Also submitted for formal review/approval ARO per MR Section 3 requirements). Please refer to definitions of different categories of spare parts in notes 1.5, 1.6 and 1.7 below.

1.2

Spare parts recommendations have to be provided for all 'Spares Significant' tags within each package or major equipment, including the auxiliary equipment in the package. Suppliers should submit the Spare Parts Recommendations both as **Excel & PDF files** to the document control simultaneously with a transmittal note. The MR5 form must be submitted in Excel format, at minimum. Suppliers should fill in their **Complete Name, Address & Contact Info, Equipment & Auxilliary Tag nos., Supplier's Model & Serial Nos., Supplier's Document & Revision no., Sheet no.** and should fill in all the columns of the MR5 Excel spreadsheet. See USER GUIDE tab for assistance.

1.2.1

If any category of spare is not recommended, Suppliers shall specifically indicate **"NOT APPLICABLE"** in the corresponding page to indicate that they have reviewed the possible requirements spares for that category. *Please do not submit a blank spreadsheet. HOWEVER, please refer to the criteria for Spares Significant tags as indicated in Section 6.0 below. Spare part information shall be submitted for tags within this failure-mode driven spare parts plan whether 'recommended' by the vendor or not.*

1.3

The Responsible Engineer (RE) of the package from EPC would fill in the **Project Name, Suncor Project No., File Location, MR No., MR Rev., MR Date, and Buyer's Project no.** in every page of this spreadsheet before submitting to the Buyer for collecting spare parts data from the Supplier. **PO number** shall be added after award.

1.4

Suppliers should note the following instructions while filling in the spare parts recommendation forms:

1.4.1

In any purchase order, when a particular **tag number** represents a **unique equipment**, the Supplier shall provide the spare parts recommendation (Start-up & Commissioning, Two Year Operational and Capital Spares) for that specific unique equipment. For example, if there are **three different types** of heat exchangers in a single purchase order (which would have three tag numbers), Suppliers shall provide complete spare parts recommendations separately for every single **tag number** in the purchase order.

1.4.2

However, if in any purchase order, there are **two or more identical** equipment, Suppliers may provide complete spare parts recommendation of all the identical equipment in **one set of forms only** . For example, in a purchase order if there are five **identical** pumps for the same service, Suppliers shall provide complete spare parts information **only once** for all the five identical pumps and indicate all the tag numbers of identical pumps.

1.5

**Start-up & Commissioning Spares** are Supplier recommended consumables or low value items (less than \$10 K CDN) that are likely to be required during commissioning and start up of the plant. Unavailability of these spares can cause schedule delays during start ups.

1.6

**Two Year Operational Spares** consist of normal wear components that are recommended by the Supplier and reviewed by the Buyer for stocking for normal maintenance and wear of the components. These are generally medium to long lead (one to six months) items.

1.7

**Capital Spares** are those components which can cause severe impact on startup, operation or reliability if they are unavailable and fall into one of the following three categories: a) They individually cost more than \$500,000 CDN; **OR** b) They are critical engineered components, which are manufactured along with the original equipment to be supplied as spares; **OR** c) They are long lead items (more than 6 months) that might be required in the event that any equipment fails catastrophically or without warning. They are also called Insurance Spares to avoid unplanned downtime of the equipment. Other critical spares, **not falling into the above categories** , are to be categorized as **Two Year Operational Spares**.

2.0 TECHNICAL / COMMERCIAL INSTRUCTIONS

2.1

Spare parts recommendations from the Suppliers will be reviewed by the Spare Parts Coordinator and the Responsible Engineer (RE) (for compliance to tag criteria, and for general completeness), as well as the Buyer and Suncor (GP&D/MPI) for approval of the contents & quantity to be purchased. The Spare Parts Coordinator from EPC will co-ordinate with Suncor GP&D/MPI (Growth, Planning & Development) department internally. EPC Document Control shall be notified to route all Section 3 Spare Parts Vendor Data to the Spare Parts Coordinator for coordination of Code approval with the RE. RE to send a copy of the spare parts form received with the proposal to the Spare Parts Coordinator for record purposes.

2.2

**Unit prices for spare parts are to be fixed and firm**, not subject to escalation and open for acceptance **for a period of one (1) year** from the date of the original equipment purchase order. If cost is unavailable, Seller to provide estimated quantity (and indicate estimated) for planning purposes. Do not put "TBD" or leave the field blank in the form.

2.3

**Firm prices** shall be quoted based on delivery **FCA Supplier's works** and shall include, as a minimum:

2.3.1

Costs for inspection of spare parts at Supplier's workshop (not Sub-Supplier) by the Buyer, or their authorized inspector, but excluding inspector's cost.

2.3.2

All inspection necessary to satisfy jurisdictional or other authorized inspection registration for items where such inspections are required by the Technical Specifications, Codes, and Standards for the same parts of the main equipment.

2.3.3

Material Certificates as specified in the main equipment purchase order.

2.3.4

Test requirements and Test reports as specified in the main equipment purchase order.

2.3.5

Surface protection / painting in accordance with the requirements of the main equipment purchase order.

2.3.6

Supply of all documentation as specified in the main equipment purchase order.

2.3.7

All prices are to be quoted in **Canadian Dollars** for the currency of main equipment purchase order. In case the currency is not Canadian Dollars, suppliers would explicitly indicate the currency applicable.

2.3.8

Separate packaging and preservation of each part in a manner suitable for storage inside warehouse for a period of 1 year at the job site climate.

2.3.9

Boxing of the separate packages in cases, cartons and / or skids suitable for the method of transport specified in the Main equipment purchase order.

2.3.10

**Identification of each part with a Weather-proof Stainless Steel tag (Material-SS 304; Min. dimension- 100 mm x 50 mm x 0.25 mm thickness) as shown in this page.** The tag should provide clearly, as a minimum, all the details indicated in the sample of the tag. The tag need not necessarily be stainless steel, only that the details on the tags should remain intact and legible for beyond its shelf life.

3.0 DELIVERY

Delivery to be quoted in weeks after receipt of a purchase order. Suppliers are to consider **five business days** per week. If delivery is unavailable, Seller to provide estimated delivery (and indicate estimated) for planning purposes. Do not put "TBD" or leave the field blank in the form.

4.0 WARRANTY

Suppliers shall warrant that all quoted spare parts and supplies under any corresponding purchase order are in full conformity with the corresponding parts and items of the main equipment purchase order.

5.0 INSPECTION

The Buyer reserves the right to inspect spare parts before packing. In any event, Suppliers shall inspect all the spare parts at their shipping location before dispatch.

SPACE FOR STAMPS FROM BUYER'S DOCUMENT CONTROL

SAMPLE TAG FOR SPARE PARTS ( Weatherproof -100x50x0.25mm min.)

Supplier's Name

Suncor P.O. No.

P.O. Line Item No.

Part No.

Part Description

Main Equip. Name

Main Equip. Tag No.

Special Preservation (if any)

Suncor Stocking No.

Exhibit: File 100-2004-001-2.4.4.2 - FB-PEG-GP10-F07\_Rev\_11

Section 5 Spare Parts Requirements (FB-PEG-GP10-F07-11)

Uncontrolled Document when Printed (7/5/2012) Controlled Document in Suncor Project 100-2004-001 - 2-4-4-2

Page 1 of 4

7/5/2012

6.0 CRITERIA for SPARE PARTS SUBMITTAL

Vendor shall submit Spare Parts information using the MR Section 5 form (MR5), submitted in excel format for all Equipment Tags in the MR/PO. If a package includes associated components by other disciplines, example, a Mechanical package may contain associated Instrumentation and Electrical components, then the Vendor shall provide Spare Parts information for those associated components even though specific tag numbers are not specified in the MR. Spare Parts Criteria for Mechanical, Instrumentation & Electrical tags is detailed below.

6.1 Vendor shall provide spare parts information for all equipment in the MR based on a failure-mode driven Spare Parts plan which should include the criteria given below as well as including maintenance significant spare parts and vendor recommended spare parts. The 'Spares Significant' criteria is above and beyond spare parts "recommended" by the vendor. This is such that all scenario part information is available on file in the chance a replacement is required during Construction activities (C&SU, 2-Year Operation). It is the Vendor's responsibility to identify all the spare parts required to mitigate all typical failure modes for all equipment types in the MR. If required, the Vendor may consult the RE to identify all typical failure-modes associated with the equipment. For example: Typical failures for a Pump are bearing seizing, seal leakage, impeller damage, coupling failure, etc., which are mostly outlined in the criteria below.

6.1.1 Criteria for MECHANICAL TAGS

TYPE OF EQUIPMENT	SPARE PARTS/CONSUMABLES TO BE IDENTIFIED IN MR5
ROTATING EQUIPMENTS	All wear out parts like shafts, bearings, seals, couplings, impellers,gaskets etc Special tools
SHELL & TUBE EXCHANGERS	Special gaskets
PLATE HEAT EXCHANGERS	Special tools
AIR COOLED EXCHANGERS	Fan drives like belts, chain, gear boxes, couplings, fan bearings etc Special gaskets, access plug gaskets, if any.
FILTER VESSELS	Filter elements, cartridges, gaskets, o-rings etc.
PRESSURE VESSELS / STORAGE TANKS	Special gaskets if any. Any replenishable catalysts or media to be included, for e.g. dessicant in an air dryer.
CLARIFIERS	Gear box spares/complete gear units, impellers, shaft bearings etc. Hydraulic motors, pumps, valves , if applicable

Notes

1. These are general guidelines. Vendor shall include any additional spare parts as applicable for a particular type of equipment.
2. All manway gaskets and piping gaskets need not be included in the MR5, unless they are gaskets with special material for a particular application.
3. Static equipment that have only standard manway and piping gaskets, do not require MR5 submission.
4. If there are equipment types that are different from the above, Spare Parts shall be as recommended by the Vendor.
5. All rotating equipment must have model & serial number information completed in the MR5 form.

6.1.2 Criteria for ELECTRICAL TAGS

Maintenance significancy is based on the evaluation of different aspects such as equipment criticality, process application where equipment is installed, design redundancy, equipment/material availability from the market, equipment/material reliability and operating experience.

Maintenance significant equipment does not necessarily mean it requires spare parts and vice versa. For instance, motors generally are considered as maintenance significant equipment, but if there is a redundant motor installed they may not require any spare parts. Another example is that a lighting system may not require comprehensive maintenance, however, a few extra light bulbs are always in stock.

Electrical tags include those inside and outside mechanical packages (special motors, etc.), High Mast Lighting, electrical equipment associated with the Construction Power, MCC's, EHT, Cathodic Protection, etc. In general, **Electrical commodities that DO NOT require spare parts are as follows: CA - conduit, CB - Cable tray, CBI - Cable tray for instrumentation, CBP - Cable tray for electrical, CC - Communication cable, JB - Junction box, PB - Battery, PD - Busduct, PL - Distribution transformer (Dry type), PR - Resistor, SC - Power cable, TB - Terminal box, VEP - EHT Switch Rack, WC - Control cable, WR - Welding receptacle, PH has been used for electric heat tracing and electric heaters but electric heat tracing PH tags do not require spare parts and electric heaters do.**

6.1.3 Criteria for INSTRUMENTATION TAGS

As a minimum, Spare Parts Information is required for any Instrumentation or associated Instrumentation tags containing any of the following designations:

AT	FCV	LG	PCV	PT	TV
AXH	FG	LI	PDT	PV	VT
AXL	FT	LT	PDV	PVRV	XL
CE	FV	LV	PRV	TCV	XV
DT	HV	OG	PSE	TDV	YL
EPRV	KV	OT	PSV	TT	ZT
					ZV

Including the following for Control Systems components / tags:

AT	PT
FT	TB
KT	TE
LT	VT
PDT	XV
PJ	ZT

\*Vendor 'recommendations' are welcome for any other tag designations not shown above.

If there is no spare parts information available for an instrumentation tag, please complete the MR5 form (make/model/cost/delivery/etc.) for a "replacement of the full instrument" for tags meeting the criteria above.

6.1.4 Criteria for INFRASTRUCTURE TAGS

Example of Infrastructure tags are as follows, but not limited to: HVAC (tag designations RA, RH, RK), Cranes (T), Safety Showers (V), Overhead doors, Fire Alarms (with Honeywell), HVAC panels, etc. For equipment types not indicated, Infrastructure Spare Parts shall be as recommended by the Vendor.

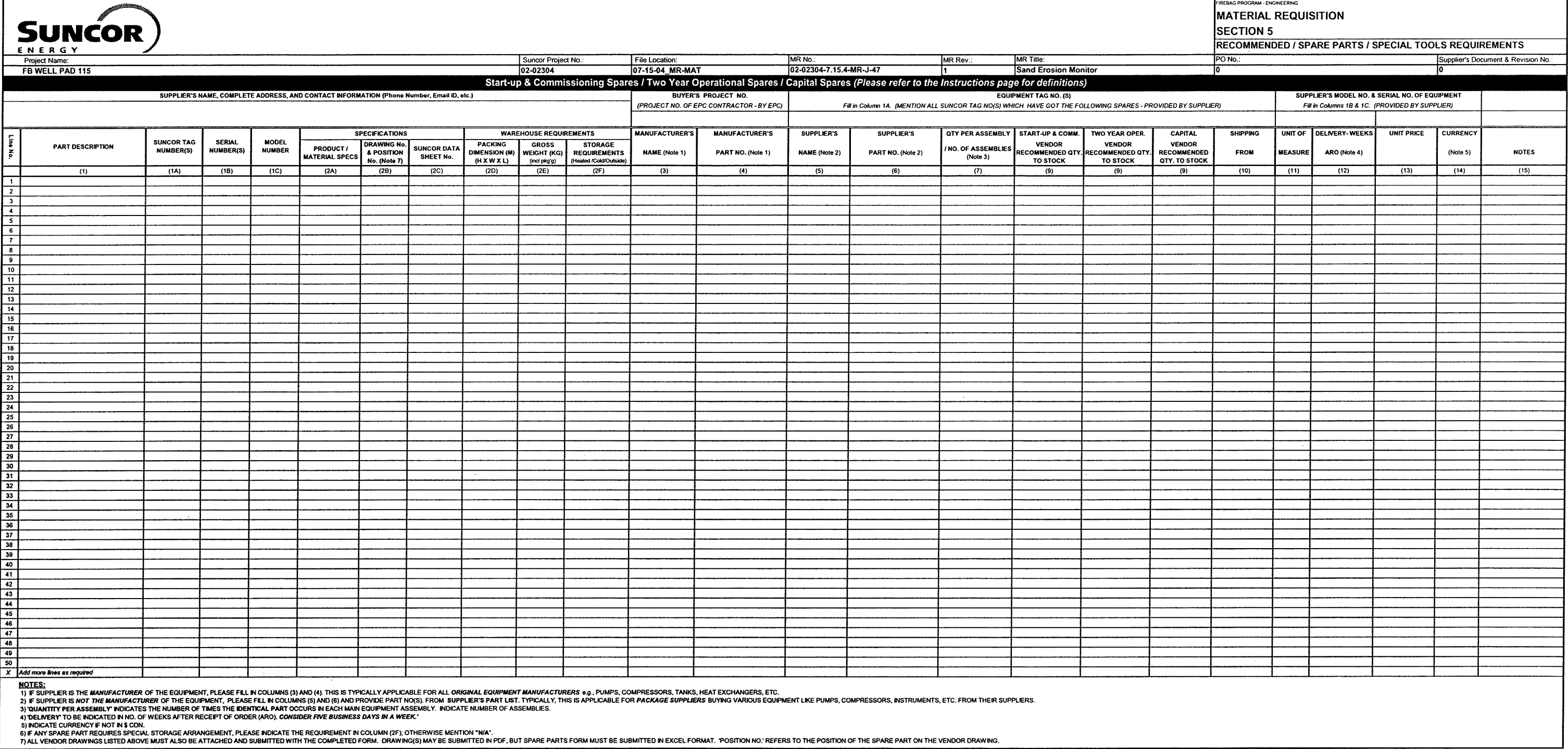
6.1.5 Criteria for PIPING SPECIALTY ITEM TAGS

TYPE OF EQUIPMENT	SPARE PARTS/CONSUMABLES TO BE IDENTIFIED IN MR5
Expansion Joints --	Complete Replacement
Swivel Joints /Rotary Joints--	O-rings, Ball Bearings, Seals, Gaskets- If Applicable
	Complete replacement
Valves(Gate / Globe / Ball etc)	
Temporary strainers	Complete Replacement
Pig Launchers / Receivers	Gaskets / O-Rings
Steam Traps	Complete Replacement
Pipe Fittings (Reducers, Tee, elbow, flanges etc)	Nothing Required

If there is no spare parts information available for a Piping Specialty Item tag, please complete the MR5 form (make/model/cost/delivery/etc.) for a "replacement of the full item" for tags meeting the criteria above.

Notes:

1. These are general guidelines; The above criteria is not limited to what is listed in the above table. Responsible Engineers shall include any additional spare parts as applicable for a particular type of equipment.
2. If there are equipment types that are different from the above, the Responsible Engineers shall seek MRS5s and vet the vendor recommendations.





USER GUIDE

FIREBAG PROGRAM - ENGINEERING  
MATERIAL REQUISITION  
SECTION 5  
RECOMMENDED / SPARE PARTS / SPECIAL TOOLS REQUIREMENTS

Project Name: FB WELL PAD 115			Suncor Project No.: 02-02304			File Location: 07-15-04 MR-MAT			MR No.: 02-02304-7.15.4-MR-J-47			MR Rev.: 1			MR Title: Sand Erosion Monitor			PO No.: 0			Supplier's Document & Revision No.: 0			
Start-up & Commissioning Spares / Two Year Operational Spares / Capital Spares (Please refer to the Instructions page for definitions)																								
SUPPLIER'S NAME, COMPLETE ADDRESS, AND CONTACT INFORMATION (Phone Number, Email ID, etc.)											BUYER'S PROJECT NO. (PROJECT NO. OF EPC CONTRACTOR - BY EPC)		EQUIPMENT TAG NO. (S) Fill in Column 1A. (MENTION ALL SUNCOR TAG NO(S) WHICH HAVE GOT THE FOLLOWING SPARES - PROVIDED BY SUPPLIER)						SUPPLIER'S MODEL NO. & SERIAL NO. OF EQUIPMENT Fill in Columns 1B & 1C. (PROVIDED BY SUPPLIER)					
Line No.	PART DESCRIPTION	SUNCOR TAG NUMBER(S)	SERIAL NUMBER(S)	MODEL NUMBER	PRODUCT / MATERIAL SPECS	DRAWING No. & POSITION No. (Note 7)	SUNCOR DATA SHEET No.	PACKING DIMENSION (M) (H X W X L)	GROSS WEIGHT (KG) (incl pkg/s)	STORAGE REQUIREMENTS (Heated /Cold/Outside)	MANUFACTURER'S NAME (Note 1)	MANUFACTURER'S PART NO. (Note 1)	SUPPLIER'S NAME (Note 2)	SUPPLIER'S PART NO. (Note 2)	QTY PER ASSEMBLY / NO. OF ASSEMBLIES (Note 3)	START-UP & COMM. VENDOR RECOMMENDED QTY. TO STOCK	TWO YEAR OPER. VENDOR RECOMMENDED QTY. TO STOCK	CAPITAL VENDOR RECOMMENDED QTY. TO STOCK	SHIPPING FROM	UNIT OF MEASURE	DELIVERY- WEEKS ARO (Note 4)	UNIT PRICE	CURRENCY (Note 5)	NOTES
1	(1)	(1A)	(1B)	(1C)	(2A)	(2B)	(2C)	(2D)	(2E)	(2F)	(3)	(4)	(5)	(6)	(7)	(9)	(9)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2																								
3																								
4																								
5	Be sure to include Contact information (phone number, email ID, etc.) along with Supplier's Name and complete address.				Example: For Motors- provide RPM, voltage, frame size, horse power, etc. For gaskets- provide material, thickness, etc.																			
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X	Add more lines as required																							
<b>NOTES:</b> 1) IF SUPPLIER IS THE <b>MANUFACTURER</b> OF THE EQUIPMENT, PLEASE FILL IN COLUMNS (3) AND (4). THIS IS TYPICALLY APPLICABLE FOR ALL <b>ORIGINAL EQUIPMENT MANUFACTURERS</b> e.g., PUMPS, COMPRESSORS, TANKS, HEAT EXCHANGERS, ETC. 2) IF SUPPLIER IS <b>NOT THE MANUFACTURER</b> OF THE EQUIPMENT, PLEASE FILL IN COLUMNS (5) AND (6) AND PROVIDE PART NO(S). FROM SUPPLIER'S PART LIST. TYPICALLY, THIS IS APPLICABLE FOR <b>PACKAGE SUPPLIERS</b> BUYING VARIOUS EQUIPMENT LIKE PUMPS, COMPRESSORS, INSTRUMENTS, ETC. FROM THEIR SUPPLIERS. 3) 'QUANTITY PER ASSEMBLY' INDICATES THE NUMBER OF TIMES THE IDENTICAL PART OCCURS IN EACH MAIN EQUIPMENT ASSEMBLY. INDICATE NUMBER OF ASSEMBLIES. 4) 'DELIVERY' TO BE INDICATED IN NO. OF WEEKS AFTER RECEIPT OF ORDER (ARO). <b>CONSIDER FIVE BUSINESS DAYS IN A WEEK.</b> 5) INDICATE CURRENCY IF NOT IN \$ CDN. 6) IF ANY SPARE PART REQUIRES SPECIAL STORAGE ARRANGEMENT, PLEASE INDICATE THE REQUIREMENT IN COLUMN (2F); OTHERWISE MENTION "N/A". 7) ALL VENDOR DRAWINGS LISTED ABOVE MUST ALSO BE ATTACHED AND SUBMITTED WITH THE COMPLETED FORM. DRAWING(S) MAY BE SUBMITTED IN PDF, BUT SPARE PARTS FORM MUST BE SUBMITTED IN EXCEL FORMAT. 'POSITION NO.' REFERS TO THE POSITION OF THE SPARE PART ON THE VENDOR DRAWING.																								