

IRP 24: Fracture Stimulation

A BRIEF REGARDING MAY 2015 DRAFT RELEASED FOR INDUSTRY REVIEW



IRP 24: Overview

- ▶ The fracture stimulation industry has rapidly matured in the past decade. Multi-well pads with multi-stage fracture operations are now the norm. Pressure to reduce pad sizes yet increase production potential has created congestion on the surface for workers and saturated downhole activity in a confined area.



IRP 24: Overview

- ▶ This Industry Recommended Practice presents a process and set of recommendations to thoroughly review, assess and develop controls to minimize risk, downhole and onsite, during fracture stimulation operations. It is the work of a group of fracture stimulation experts across Western Canada. Over 80 committee members representing 30 organizations including Operators, Service Companies and Regulators shared their expertise over three years to collaboratively develop this consensus-based document. It is the intention of the IRP 24 Committee that the process presented here be the baseline for fracture stimulation operations in Western Canada.



IRP 24: Development and Status

Dates	Activities
15-Jan-2012	IRP initiated
1-Oct-2012	First draft completed, industry review opened
15-Nov-2012	Industry review closed
Dec – Jan 2013	Nearly 300 comments reconciled
29-Jan-2013	Revised draft released for IRP 24 Committee feedback
26-Feb-2013	IRP 24 Committee feedback reconciled and approved
27-Feb-2013	Draft released to DACC for sanction approval
27-Mar-2013	DACC sanctioned IRP 24 “Interwellbore Communication”
Oct – Mar 2014	Development of Subject Well Integrity (SWI) and Surface Operations (SO) chapters
16-Apr-2014	IRP 24 Committee review closed for SWI and SO chapters
24-Mar-2015	Comments reconciled and IRP document blended
28-Apr-2015	DACC review and approved for Industry Review
15-May-2015	Document placed in new format
4-Jun-2015	Complete IRP #24 out for Industry Review
14-Sep-2015	Industry Review Ends

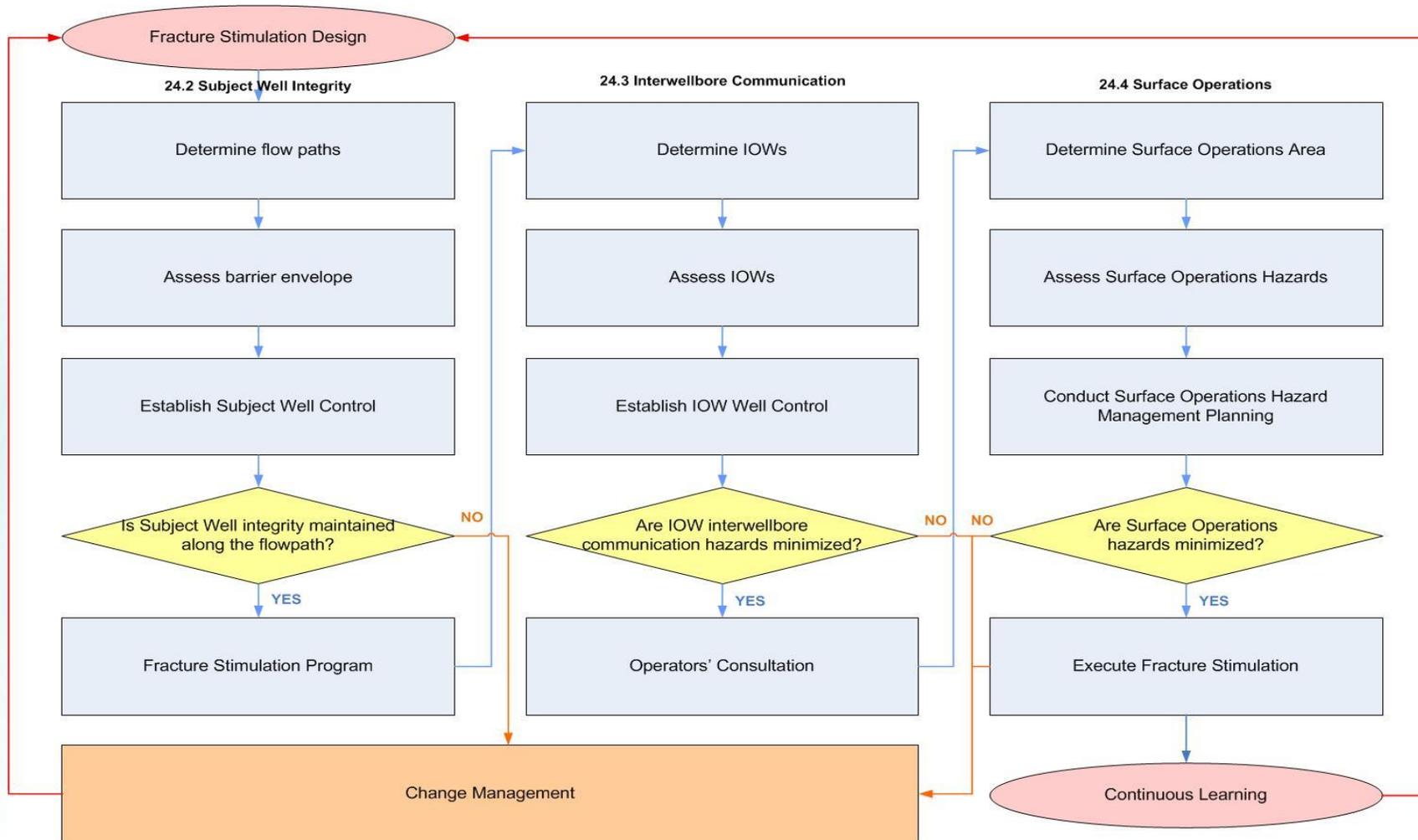


IRP 24: Structure

The document is structured around the *Fracture Stimulation Hazard Management Process (FSHMP)*. The FSHMP is intended to offer a general, high level, iterative planning process typical to most fracture stimulation operations. It was developed collaboratively by a diverse group in the IRP 24 Committee and its working groups. Operator-specific and Service Provider-specific processes may diverge from the FSHMP presented here.



FSHMP: Fracture Stimulation Hazard Management Process



IRP 24: Chapters

This Industry Recommended Practice is comprised of four chapters:

24.1 Fracture Stimulation Overview

24.2 Subject Well Integrity

24.3 Interwellbore Communication

24.4 Surface Operations

Chapters 24.2 – 24.4 expands the FSHMP specific to each chapter:

SWIHMP – Subject Well Integrity Hazard Management Process

ICHMP – Interwellbore Communication Hazard Management Process

SHMP – Surface Hazard Management Process



24.1 Fracture Stimulation Overview

The *Fracture Stimulation Overview* introduces the document and the risk-based approach carried throughout the chapters. It describes the interrelationships among the three topical chapters and highlights topics that ought to be considered as early in the planning process as possible.

Topics included:

- Approach
- Fracture Stimulation Hazard Management Process
- Hazard Register
- Planning Challenges



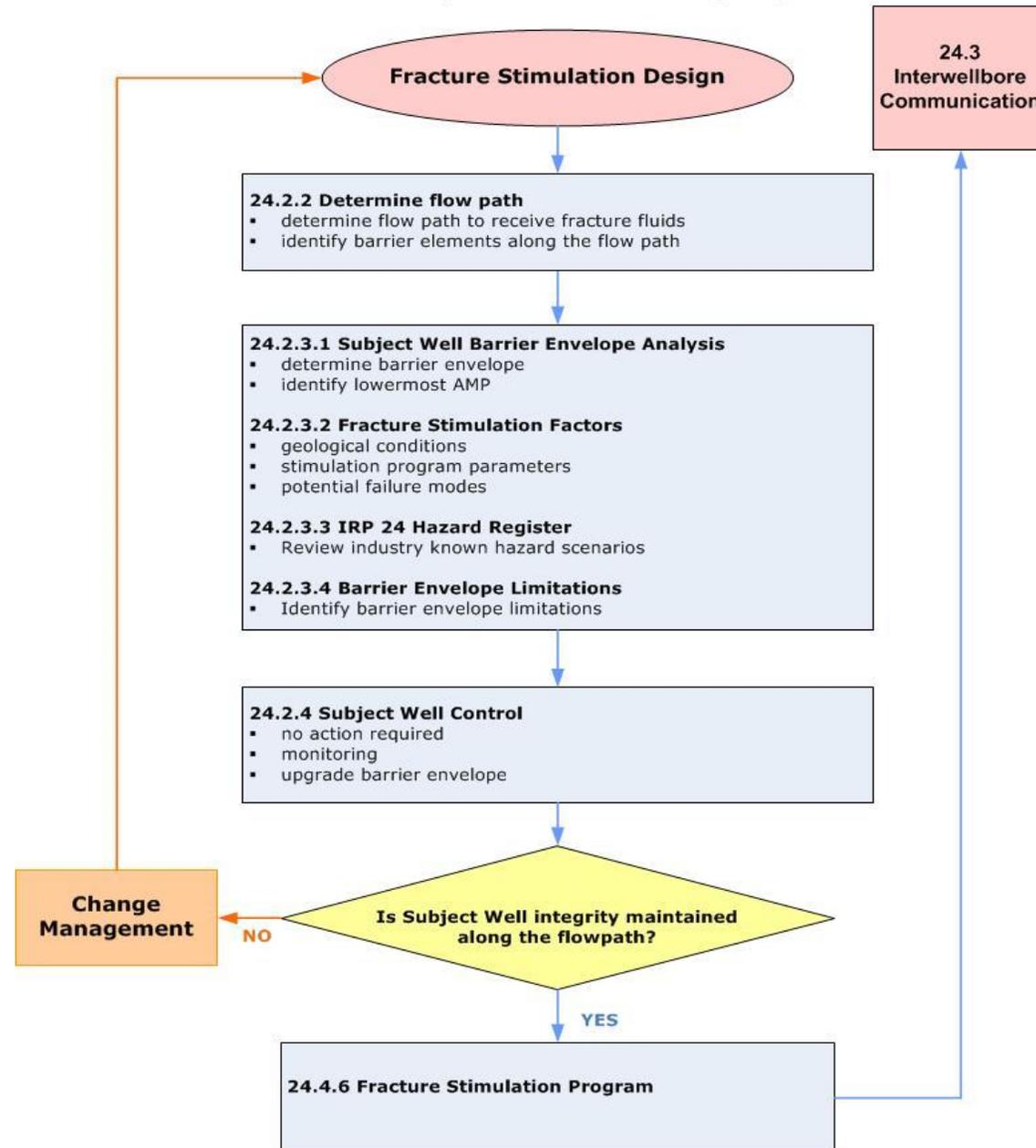
24.2 Subject Well Integrity

Subject Well Integrity considers downhole fracture stimulation concerns at the subject well for the fracture stimulation operation only. It does not explore fracture stimulation well design or discuss subject well integrity regarding well construction. It includes all downhole equipment up to the fracture treatment iron connection. This chapter offers an assessment methodology to iteratively analyze subject well integrity in order to determine subject well controls that support subject well containment during the fracturing operation.



24.2 Subject Well Integrity

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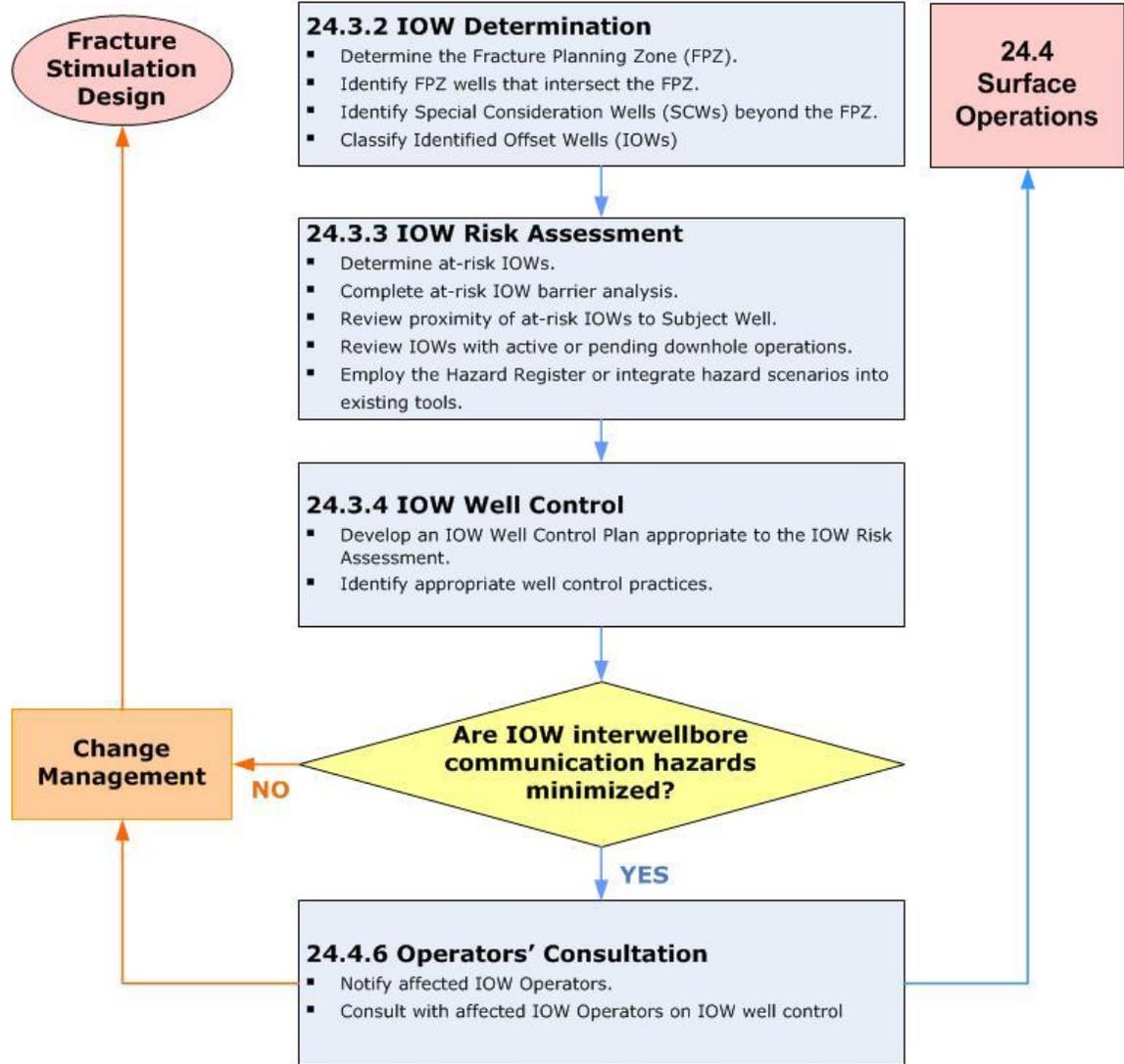
24.3 Interwellbore Communication

The discussion in *Interwellbore Communication* is intended to minimize the risk of well control events due to interwellbore communication between an offset energy well and a subject energy well as the result of fracture stimulation operations. This chapter presents a process to determine at-risk offset wells, complete a barrier envelope analysis and adapt well control planning appropriately.



24.3 Interwellbore Communication

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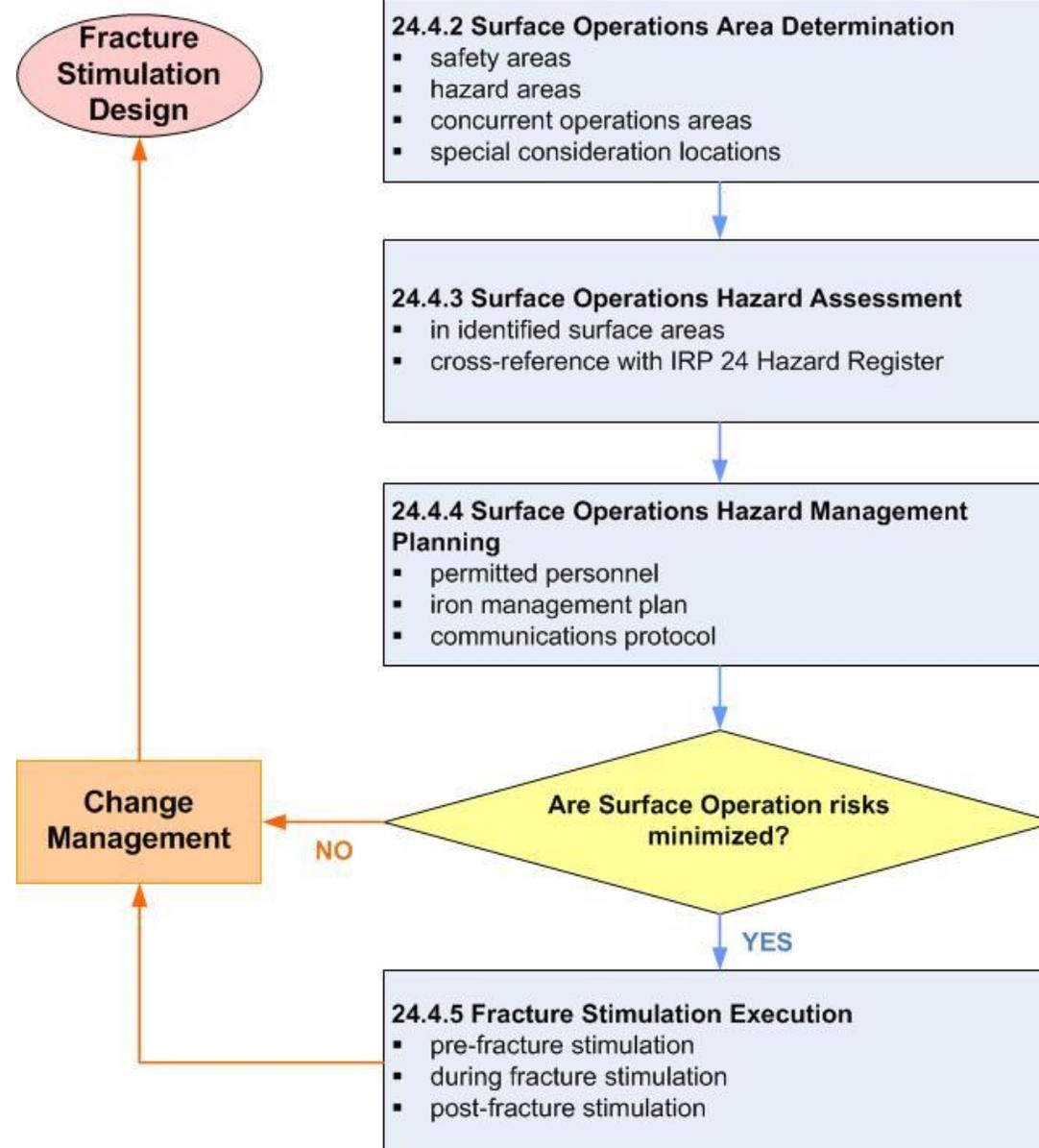
24.4 Surface Operations

The *Surface Operations* chapter initiates assessment at the fracture iron where the fracturing iron starts and *Subject Well Integrity Assessment* ends. This chapter determines safety areas, hazard areas, elevated hazard zones, concurrent operations and special considerations locations. It incorporates the hazard register to identify hazards and reviews considerations for hazard management planning and wellsite execution.



24.4 Surface Operations

24.4 Surface Operations



Industry Review

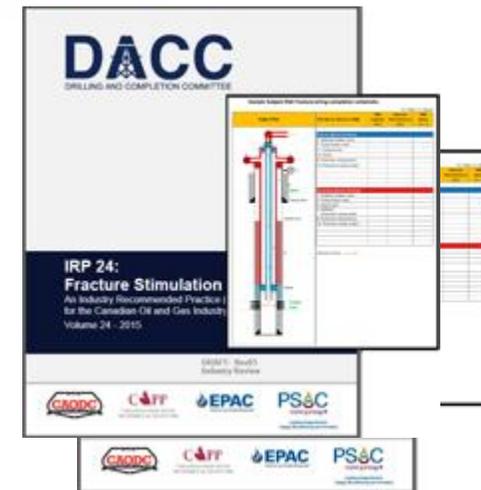
Draft IRP 24 Fracture Stimulation (May 2015) is now posted for a 90 day industry review. This IRP represents a completion of Interim IRP 24 Fracture Stimulation: Interwellbore Communication. IRP 24 now includes the following:

- Fracture Stimulation Overview (including the Fracture Stimulation Hazard Management Process)
- Subject Well Integrity
- Interwellbore Communication (reviewed and revised from Interim IRP 24)
- Surface Operations

The IRP 24 landing page will also include:

- A new IRP 24 Hazard Register
- Full instructions on providing your feedback to the IRP 24 committee

Please note that the deadline for feedback to the IRP 24 committee is **September 14, 2015**.



How to Comment

1. Download

<https://www.enform.ca/resources/detail/29/dacc-irp-volume-24-interim-fracture-stimulation-interwellbore-communications>
www.enform.ca → under Resources tab select Resources list → scroll to IRP 24.

- the draft document,
- hazard register,
- comment review process and
- comment log

2. Read the comment review process.

3. Begin your and note in the comment log.

4. Submit comment log to safety@enform.ca on or before **September 14, 2015**.

