



Well Control Emergency Response Preparedness

How Effective Preparedness Mitigates Well Control Incidents





Most Days Are Predictable

- In “our new normal” most days are pretty boring and that’s how they should be!
- Well Control Emergency Preparedness is no different and should be done before an incident and **NOT** during an incident.
- Although we can’t predict a blowout, you can prepare for one.



What does your organization have to respond to something like this?



STUDIO

**NEWS
BOOTH**

UNDERGROUND STORAGE WELL BLOWOUT
WHAT WAS DONE TO PREVENT THIS?



Sound Preparedness Speeds Up Response Timelines



Initial Response

1



Survey & Planning

2



Mobilization of Resources

3



Interim Response

4



Cap & Contain

5



Relief Well Ops

6

Blowouts Do Not “Just Happen”

Our post-response investigations reveal that over 90% of major well site catastrophes involve a chain of 7-11 separate contributing factors (or warning signs) before a catastrophe occurs.

Storage Well Uncontrolled Events are NO different!



Preparedness

What is preparedness?

- **Preparedness** is defined by DHS/FEMA as "a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response"

What you need/update:

- Plans
 - Blowout Contingency Plan, WCERP, et al
- Training
 - Well Control (for selected personnel)
 - Field Operator Training on well heads and downhole application
 - Well Control Emergency Response
- Exercises
 - Table Top
 - Functional

Well Control Response Incidents

Well Control Services	2015	2016	2017	2018	2019
Surface Blowout with Fire	3	3	2	2	4
Surface Blowout	12	17	33	36	31
Pressure Control	34	25	32	36	25
Others	37	48	59	74	108
TOTAL	86	93	126	148	166

Well Control Preparedness Numbers

Engineering Projects	2015	2016	2017	2018	2019
Response Plans & Exercises	47	39	65	81	102
Relief Well Projects	2	4	3	2	7
Consulting	30	23	22	18	23
Well Control Modeling	9	10	12	13	31
Relief Well Dynamic Kill Modeling	58	42	43	47	38
Engineering Analysis	69	33	49	51	52
Other Engineering Projects			40	9	21
TOTAL	215	151	234	220	275



Benefits of Readiness Planning

- Reduces Risks to:
 - Personnel
 - Property
 - Environment
 - The Company
- Establishes Lines of Authority and Assigns Responsibility
- Enhances Communication for More Informed Decision Making in a Timely Manner
- Provides a Written Reference in Times of Indecisiveness
- Minimizes or Eliminates Costly Time Delays
- Minimizes Environmental Impact
- Establishes Procedures for Tracking the Event
- Projects a Pro-Active Position to the Public



Be specific in your planning! Do your plans address the below?

- **Area-Specific Information and Logistics** - Additional information will be dependent on specific issues of location. Considerations may include the following:
 - Logistics
 - Water Management
 - Urban settings
 - Multi-well pads
 - Ingress-egress issues
 - Site safety considerations
 - Customs and Visas
 - Equipment availability
 - Customer driven content

Where we see common gaps in existing plans

- Area Information and Logistics
- Equipment and Services
- Data Acquisition forms
- Response Techniques and Equipment
- Site Safety Plan template
- Relief well drilling
- Public Information Talking Points on Well Control Activities
- Exclusion Zones and Reentry
- Voluntary Ignition
- Environmental Considerations
- H2S Operations
- Other appendices available depending on Site.



Does your organization know what a well control incident looks like

- **Intervention Action Plans** - General Action Plan that can be followed for well control incidents
 - Immediate Response Plan (first 24 Hrs.)
 - Interim Response Plan (Day 2-Completion)
 - Extended Term Response Planning

Training and Exercises

- If not us, please incorporate your well control provided in your organization's training and exercises.
- Promote preparedness by testing policies and plans and by training personnel
- Improve the coordination, integration, and interaction of a businesses or organization's policies, procedures, roles and responsibilities before, during, or after simulated events
- Test knowledge and measure it
- Don't be afraid to assume people know what they are looking at.
- Document and follow up!

Crawl....Walk....Run.....

Discussion-Based Exercises:

- These types of exercises can be used to familiarize players with, or develop new, plans, policies, agreements, and procedures
- Facilitators and/or presenters usually lead the discussion, keeping participants on track towards meeting exercise objectives.

Operations-Based Exercises:

- These exercises can be used to validate plans, policies, agreements, and procedures; clarify roles and responsibilities; and identify resource gaps.
- Operations-based exercises are characterized by actual reaction to an exercise scenario, such as initiating communications or mobilizing personnel and resources.

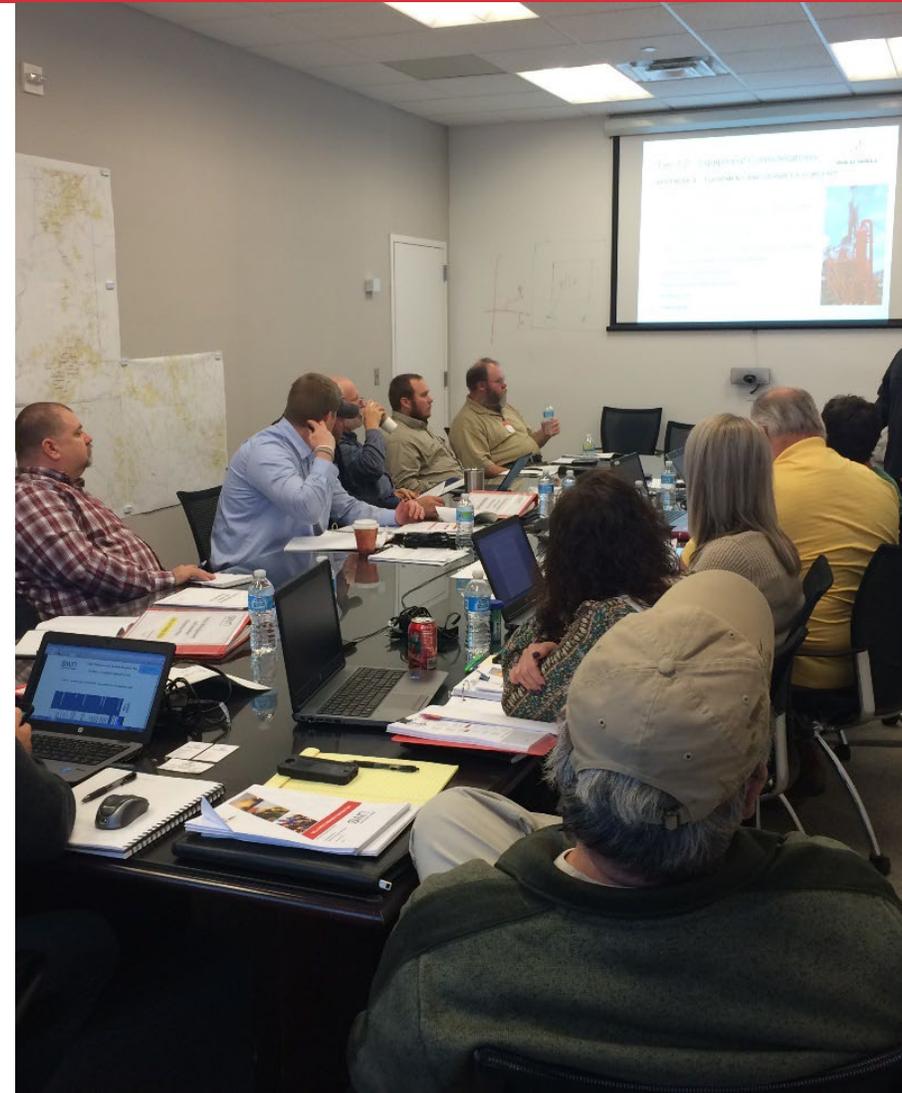
Breaking it down

Discussion-Based Exercises:

- Table Top Exercise
- Workshops

Operations-Based Exercises:

- Drills
- Functional Exercises
- Full-Scale Exercises



Are you including well control companies on your exercises?

- Table top exercises
 - Drill support (Unannounced and planned)
 - Functional exercises
 - Full Scale exercises
- Roles our team can fill
 - Players
 - Evaluators
 - Controllers
 - Facilitators
 - Simulators
 - Technical SME for Design Team
 - Source control coaches

Go Home and.....

- Think about your organization's preparedness program specific to **Well Control**
- Challenge the normal
- Integrate Well Control into your preparedness profile!
- Consider multiple scenarios of well control events and exercise them!
- Consider IADC Well Control Training for key individuals in your organization (first line of defense)
- Ensure that your team knows their responsibilities during an escalating well control event
- Don't figure it out on the "day of" most of this can be preplanned
- Pick up the phone and call!

It's up to you and your organization when to make the call for help

- Operators who call during the early stages of well control issues typically are able to mitigate the response
- But we'll take the call when we get it regardless
- It's up to you.....



Don't let this be your company.....Mitigate things!





Thanks!