Optimizing Engineer Workflow for Appraisal Drilling Environment

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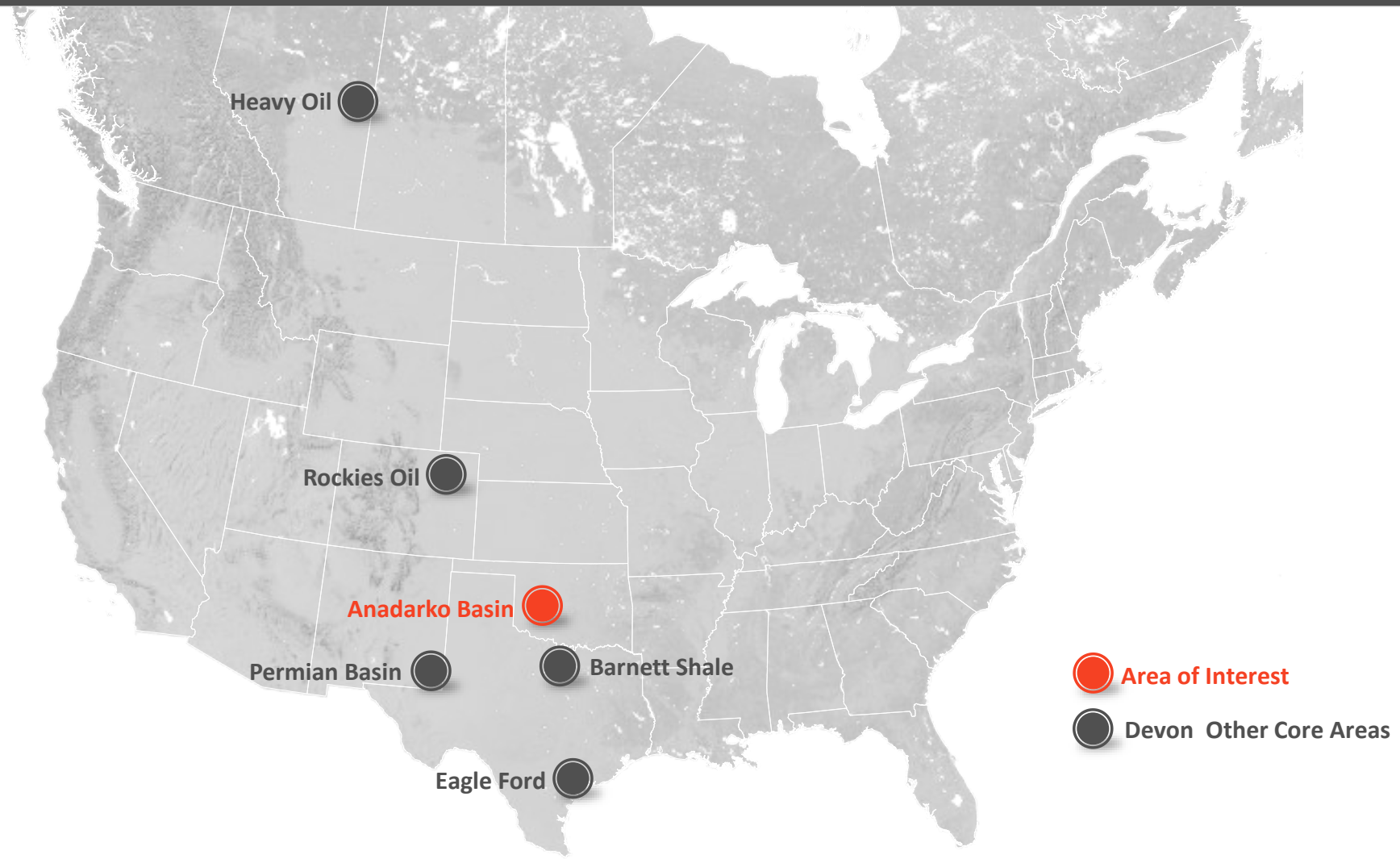
Agenda Overview

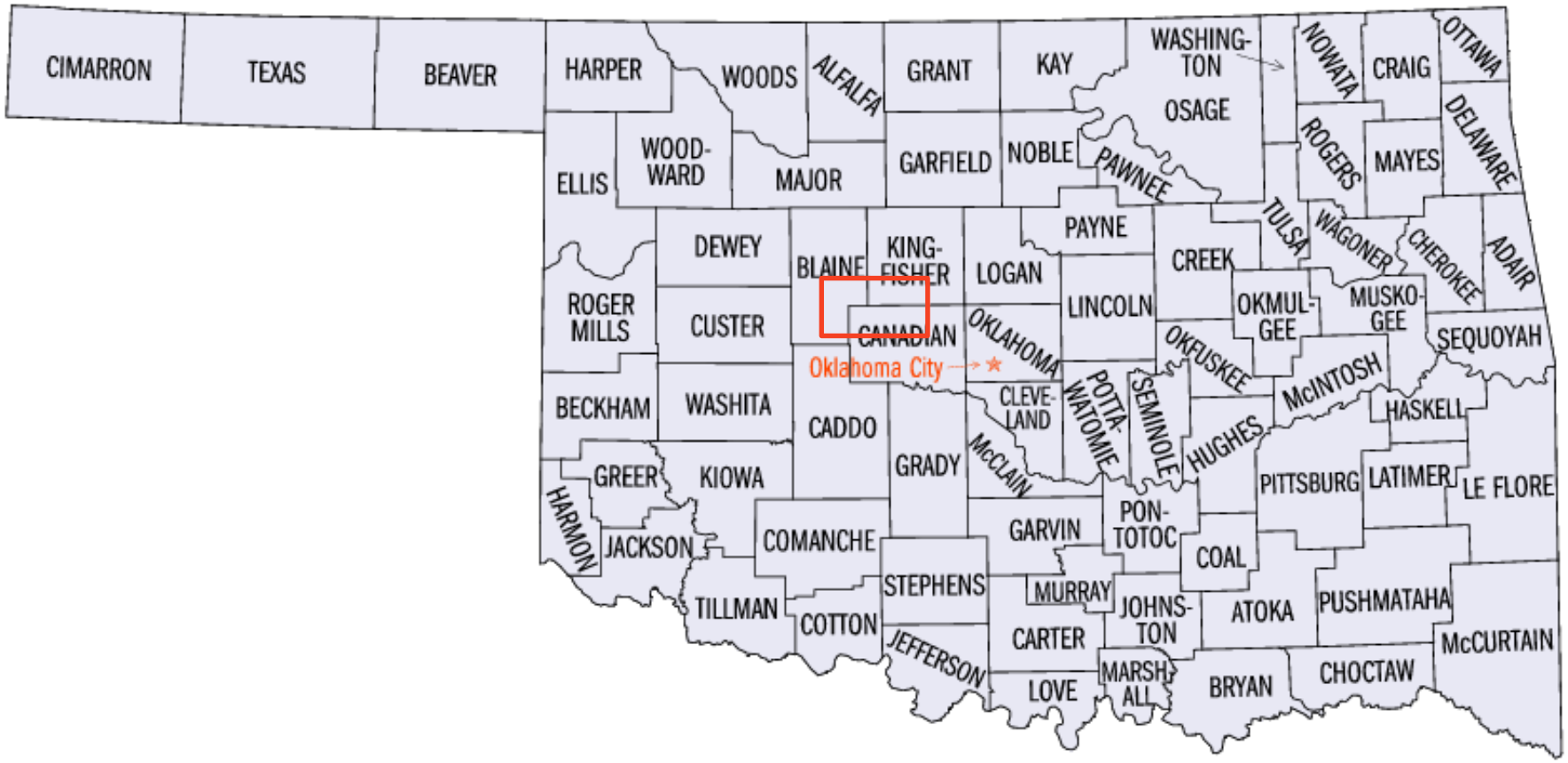
- Situational Overview
  - Strategy shift due to changing environment from 2015 to 2016
- Planning: Breaking Down Work Silos in Well Planning
- Execution: KPI Changes and Focus of Resources
- Closing: Capturing Lessons Learned for Future Development

Situational Overview

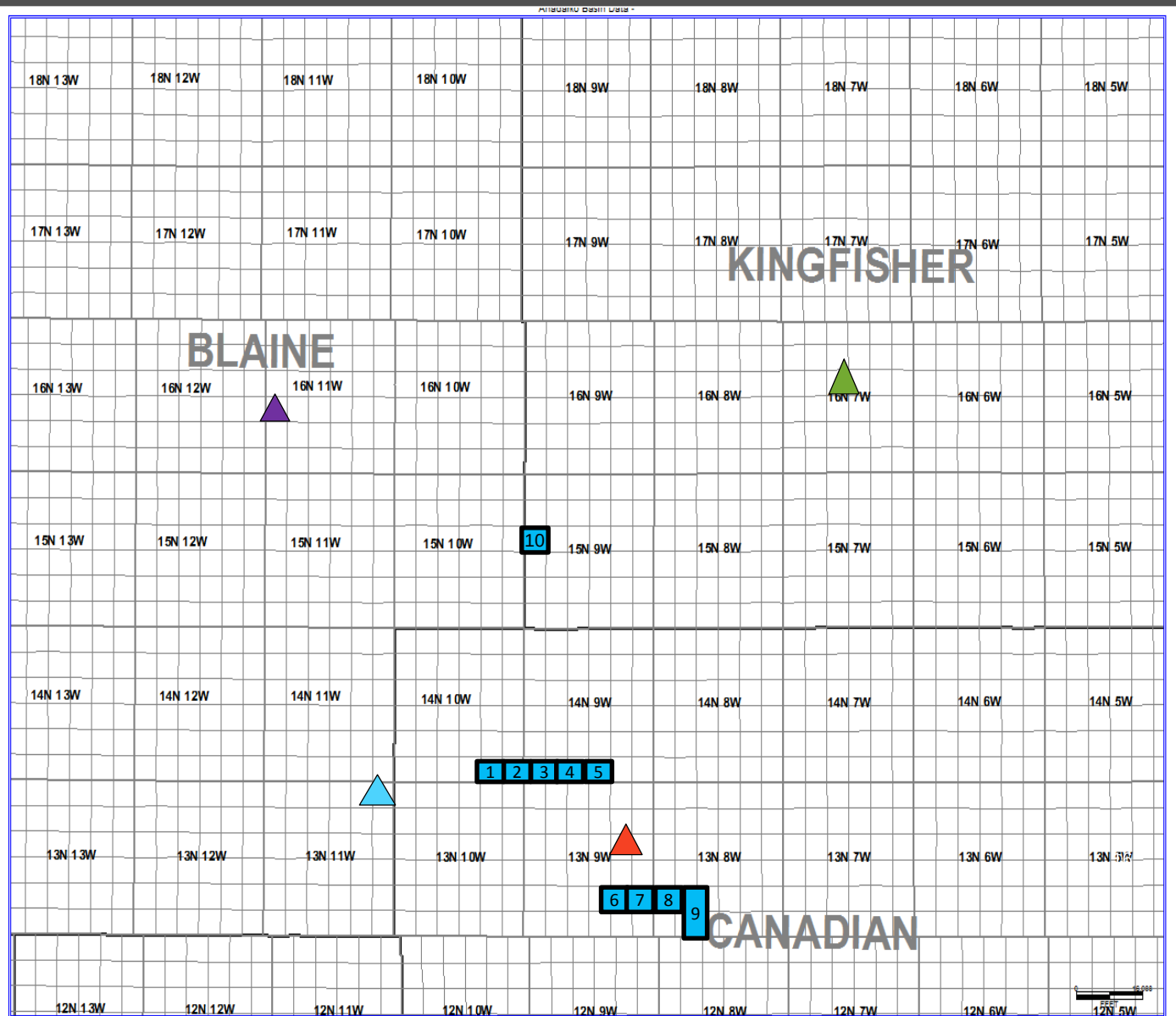
Situation Overview



Area of Operation



2015 Program Overview
Strategy: Development



- 10 Sections
- 69 Wells

Development Drilling Goal:

1. Drill Wells Fast and Faster
2. Drill wells Cheap and Cheaper

Woodford 2015 Roll-Up			
Well Count	**SPUD-TD**	**SPUD-RR**	**FE Thru RR**
64	23.61	27.41	$3,331,716

Meramec 2015 Roll-UP			
Well Count	**SPUD-TD**	**SPUD-RR**	**FE Thru RR**
5	17.15	20.90	$2,644,740

Key Terrain

Calumet Geary

Watonga

Kingfisher

2015 Development Environment

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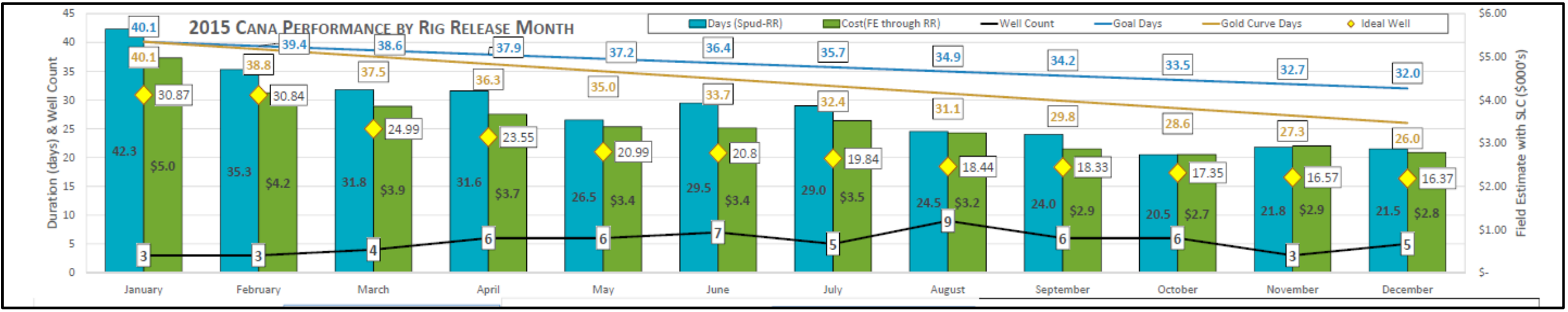
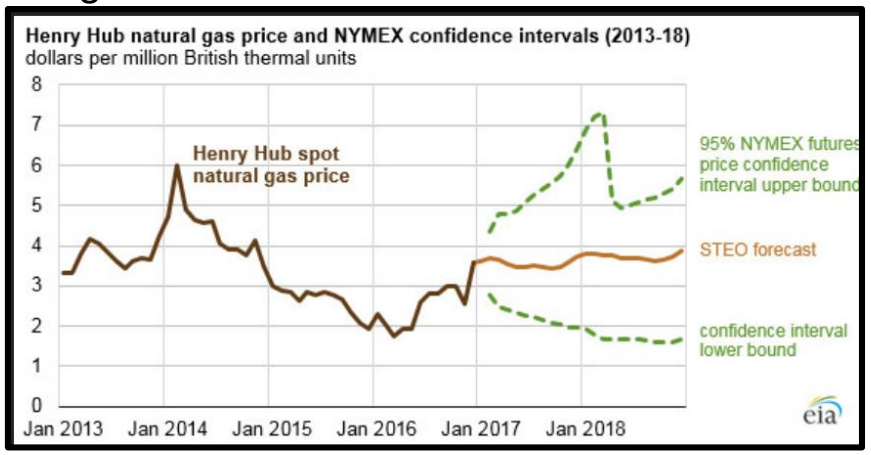
Development Keys to Success:

- Disciplined Project Management Approach to Operational Continuous Process Improvement
- Trials and pilots easy to manage due to pad drilling
- Successful operations and Lessons Learned can be immediately applied to next well
- Well after well a greater understanding of the Geology to get to the Reservoir and the Reservoir itself



2016 Program Dramatic Shift

- Continued depressed commodity price with hedging running out.

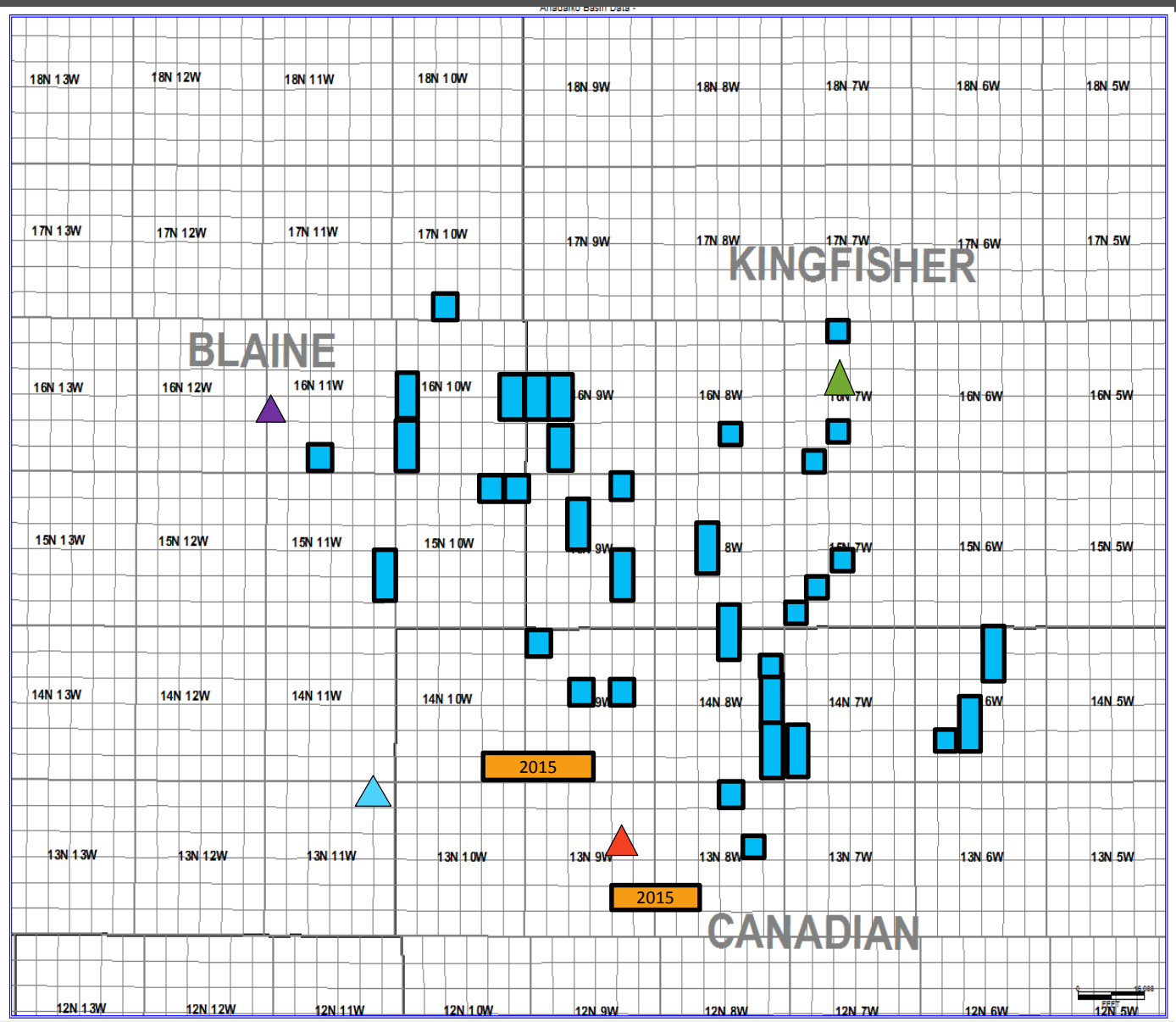


- Reduction in Rigs, Staff and Capital

	Rigs	Staff	Capital
2015	5	20	~600 Million
	↓	↓	↓
2016	2 Low / 5 end of year	13	~325 Million

- Great Opportunity with ~2Billion Dollar Acquisition of Felix Energy STACK acreage!

2016 Program Overview
Strategy: Appraisal



Appraisal Drilling Challenges:

1. One well per section on 35 different sections
2. Supporting Technical Team to Characterize Reservoir
3. Reservoir and Geology Complexity Across the Field

Goals Focus:

1. Technical Planning on every well due to unique well construction parameters
2. Successfully complete science
3. Capital Discipline

Key Terrain

- Calumet
- Geary
- Watonga
- Kingfisher

Planning: Breaking Down the Work Silos

2016 Program Overview
Technical Internal Review

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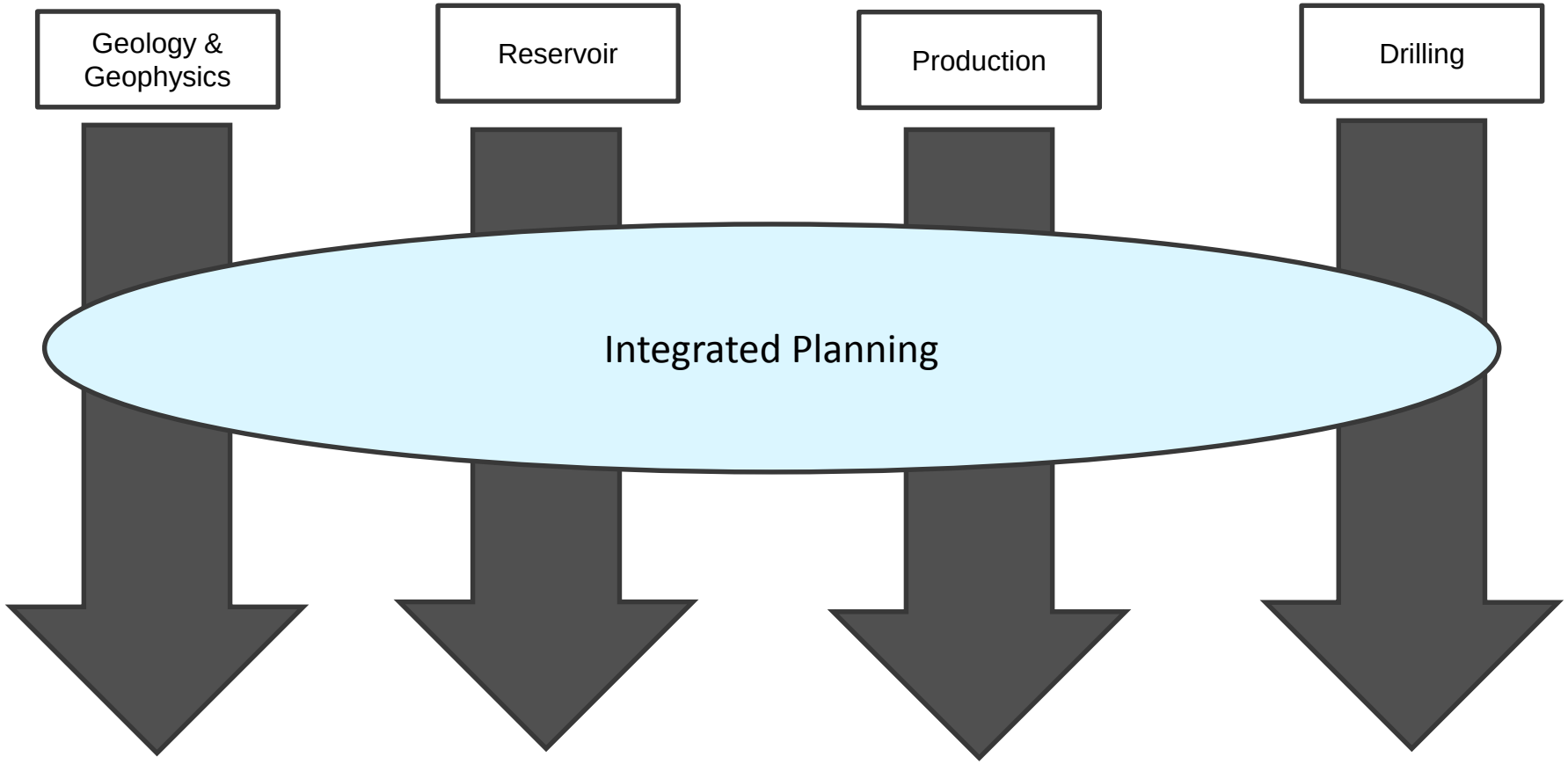
Natural Work Silos



2016 Program Overview
Technical Internal Review

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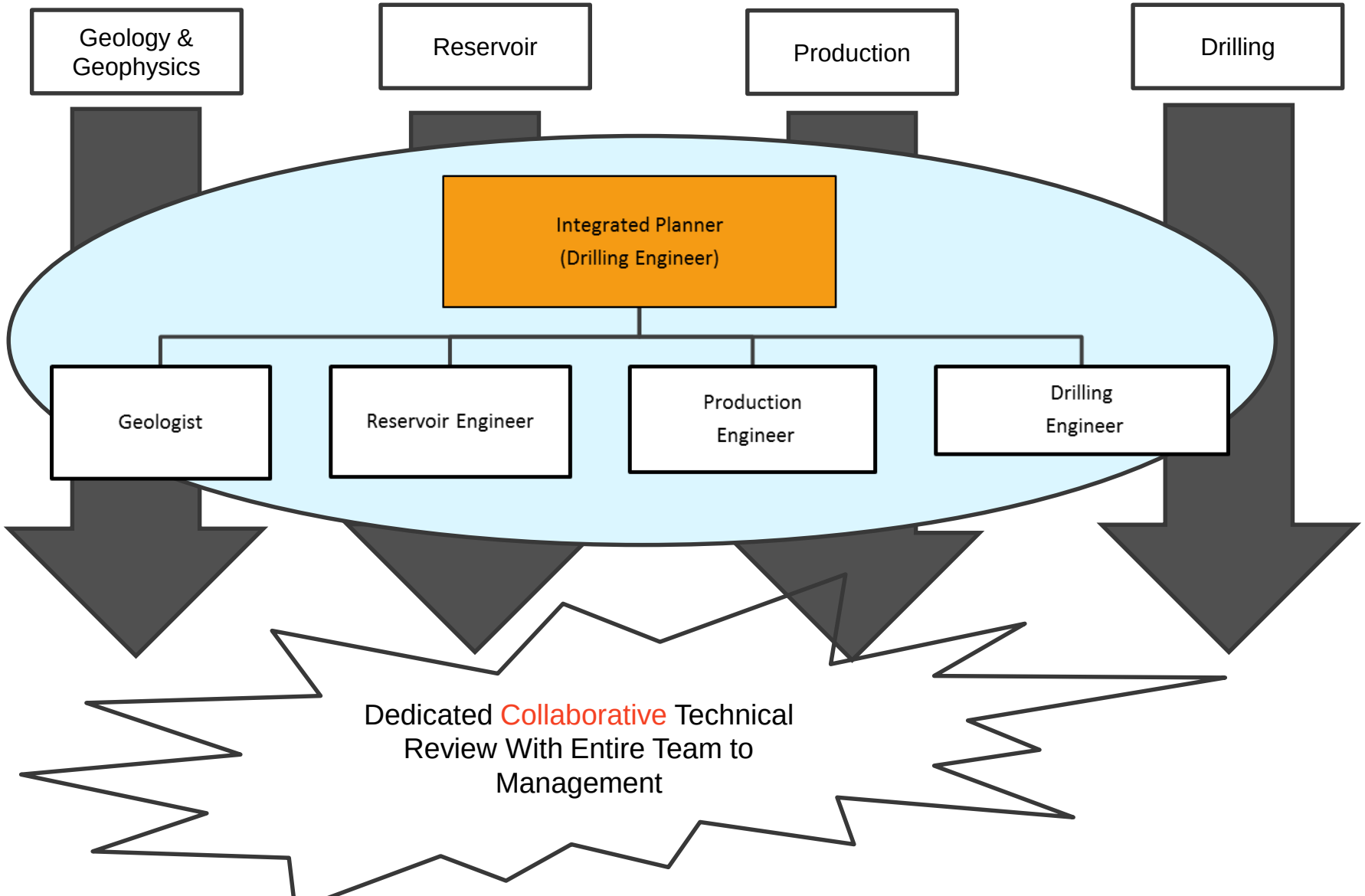
Natural Work Silos

Integrated Team Development

Technical Review



2016 Program Overview
Technical Internal Review

Key Takeaways:

- Technical Internal Review Process Led by Integrated Planner (Drilling Engineer)
- Ongoing – Each well in the appraisal phase will have a Technical Review
- Collaborative – Capture expertise of the group to ensure best design
- Team members are assigned to a specific well giving sense of ownership of well design to all Stakeholders
- Facilitates integrated, long-term planning for the wells life-cycle

- **Result:** 35 well program only 2 unplanned 1 Million dollar events, met success on all science after first well.

Execution: KPI Development & Resource Loading

2016 Program Overview
Strategy: Appraisal – We have to work differently!

- Goal Visualization

2016 Goals

Final

Well I.D.				Planning		Execution			Project Close-Out	
#	WellName	Target & Casing Design	Spud - RR	Internal Review	Pre-Spud (on site)	Science	2% Var Capital (FEvsAct)	Train Wreck (>$ 1.0M)	Lessons Learned RR+14 days	Top 11 FEvsAct RR+45
1	OLD RICKY'S RIDGE 31_30-14N-7W 1HX	Woodford B 3 String	25.15	Yes	Yes	Not Successful	0.96%	No	Yes	Yes
2	CHAMPAGNE 28-15N-7W 1H	Meremec 200 2 String	13.96	Yes	Yes	Successful	-0.66%	No	Yes	Yes
3	MARMOT 19_18-16N-10W 1HX	Meramec 300 3 String	45.81	Yes	Yes	Wireline Not Successful Thrubit @ TD Success	-5.04%	No	Yes	Yes
4	Blue Ox 31_30 16N-10W 1HX	Meramec 200 3 String	29.81	Yes	Yes	Successful	-2.07%	No	Yes	Yes
5	Simba 12 14N-8W 1H	Meramec 200 2 String	16.71	Yes	Yes	Successful	-6.01%	No	Yes	Yes

Focusing Resources:

1. Ensure we are planning the Well (technical Review) and Communicating the Plan to the Field (On-site Pre-Spud)
2. Identify Science that is needed and track success
3. Capital Discipline – With reduction in capital, ensure we are planning and tracking drilling cost accurately
4. Avoid unplanned Million Dollar Events - track and learn from experience
5. Close out the well construction after RR

Closing Out the Well:

Capturing Lessons Learned for Future Development

Lessons Learned For Future Development

- Capturing Lessons Learned….

  Challenges:

  1. **What** do I need to write down to ensure we are set up for success when we come back to develop section.

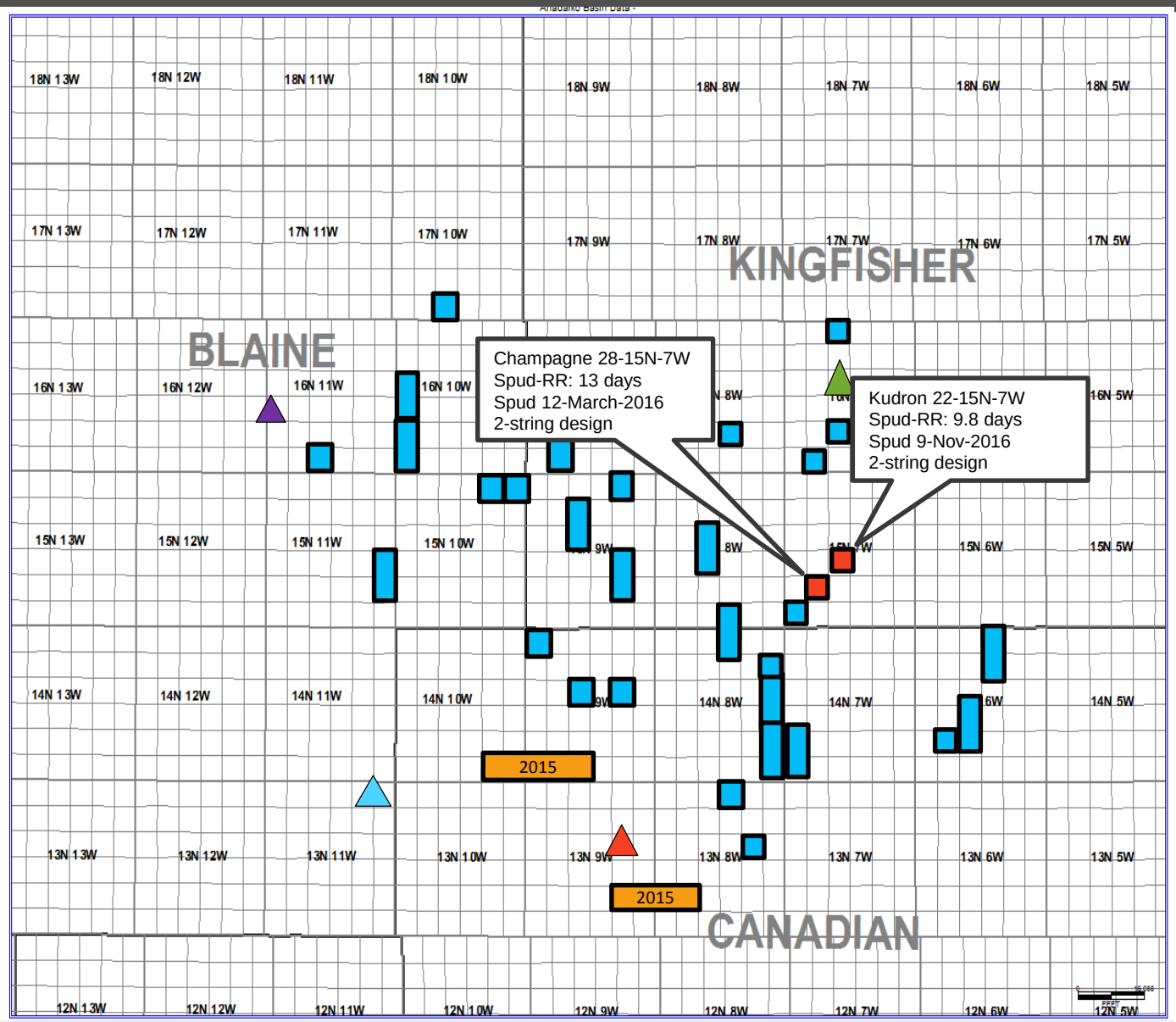
  2. **How** will it be stored in the best usable format.

  Solutions:

  1. What – Focused on details to ensure efficiency gains are not lost with time.

  2. How:
     - Lessons Learned briefed during DVD curve with group.
     - Lessons Learned inputted into data architecture
       - Allows the information to be queryable
       - Information is not lost with staff changes/time

2016 Program Overview
Lessons Learned Win



- 2 Different Rig Teams
- 9 months apart

Kudron took opportunities and risks learned from the Champagne in order to decrease days spud to rig release by 3 days.

Key Terrain

Calumet
Geary
Watonga
Kingfisher

Conclusion

- Integrated Planning allowed for optimized well plan resulting in limited issues drilling appraisal wells

- KPI shift from faster and cheaper to planning, science, capital discipline, and preparation for future development

- Lessons Learned are nested in the Data Architecture and focus on gained efficiencies for development

Thank you.