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## Two Opportunity Sets: Conventional Onshore US

February 28, 2018  
APPEX, London



## JV Opportunity Set, Onshore California

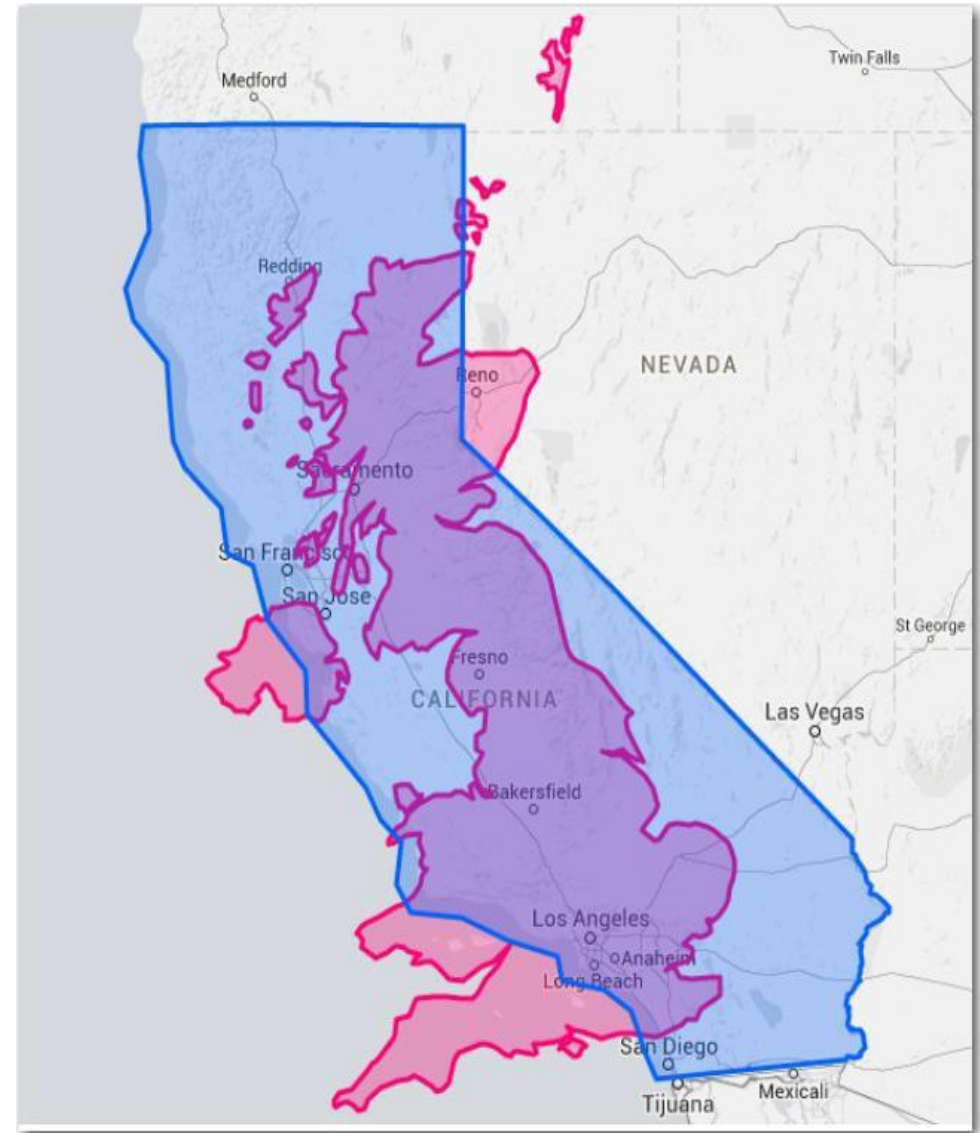
# California Energy & Economy Fast Facts

## Captive Market for Energy



### Large Petroleum Importer & Refiner

- Population: ~ 40 million people  
~1/2 in Greater Los Angeles area
- 6th largest economy in the world;  
GDP comparable to UK/France
- Fourth-largest oil producing state in the US; 450,000 BOEPD as of 2018
- State imports 60% of its oil and 90%+ of its natural gas
- Oil is priced near Brent level
- Natural gas priced at a 15% premium to Henry Hub

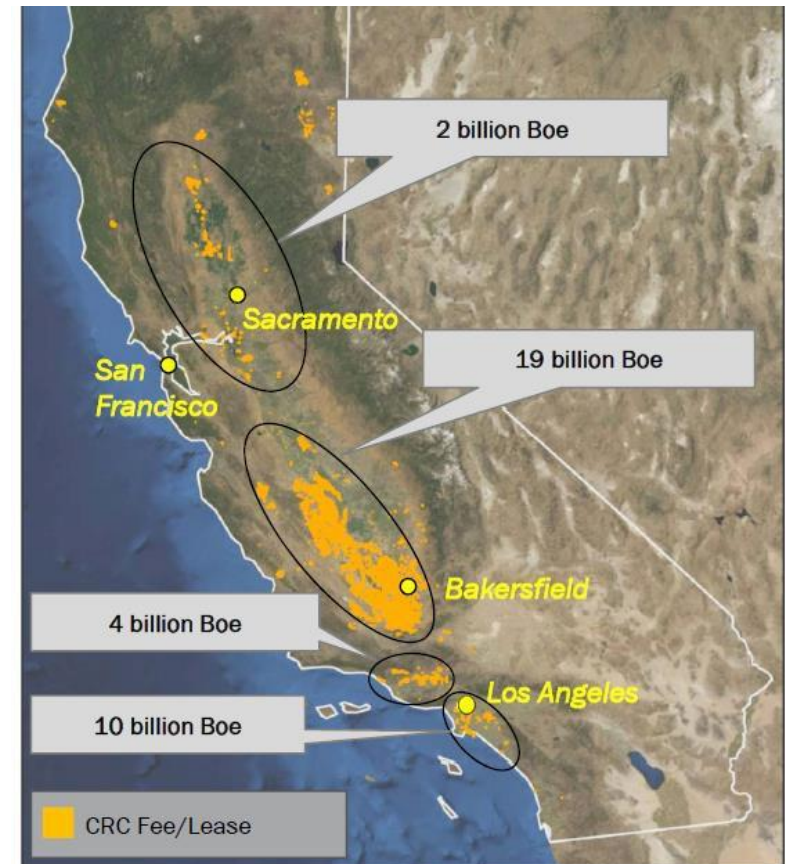


# Oil & Gas in California: Then & Now

## Significant Resource Base within a Developed Economy

### Four Major Basins; Still Underexplored

- 28 BBbl and 40 TCF produced to date
- Four multibillion barrel basins: Sacramento, Ventura, San Joaquin, and Los Angeles
- California has 5 of the largest 12 fields in the continental USA
- San Joaquin Basin alone has produced 20 BBbl and includes the largest oil producing county in the US (Kern Co.)
- California produced ~20% of the world's oil in 1920's
- L.A. basin notable as the richest in the world on basis of oil accumulation per cubic meter of sedimentary rock
- Certain fields feature over 20 producing zones
- Vast majority of wells have been drilled to shallow depths and deeper zones remain untested

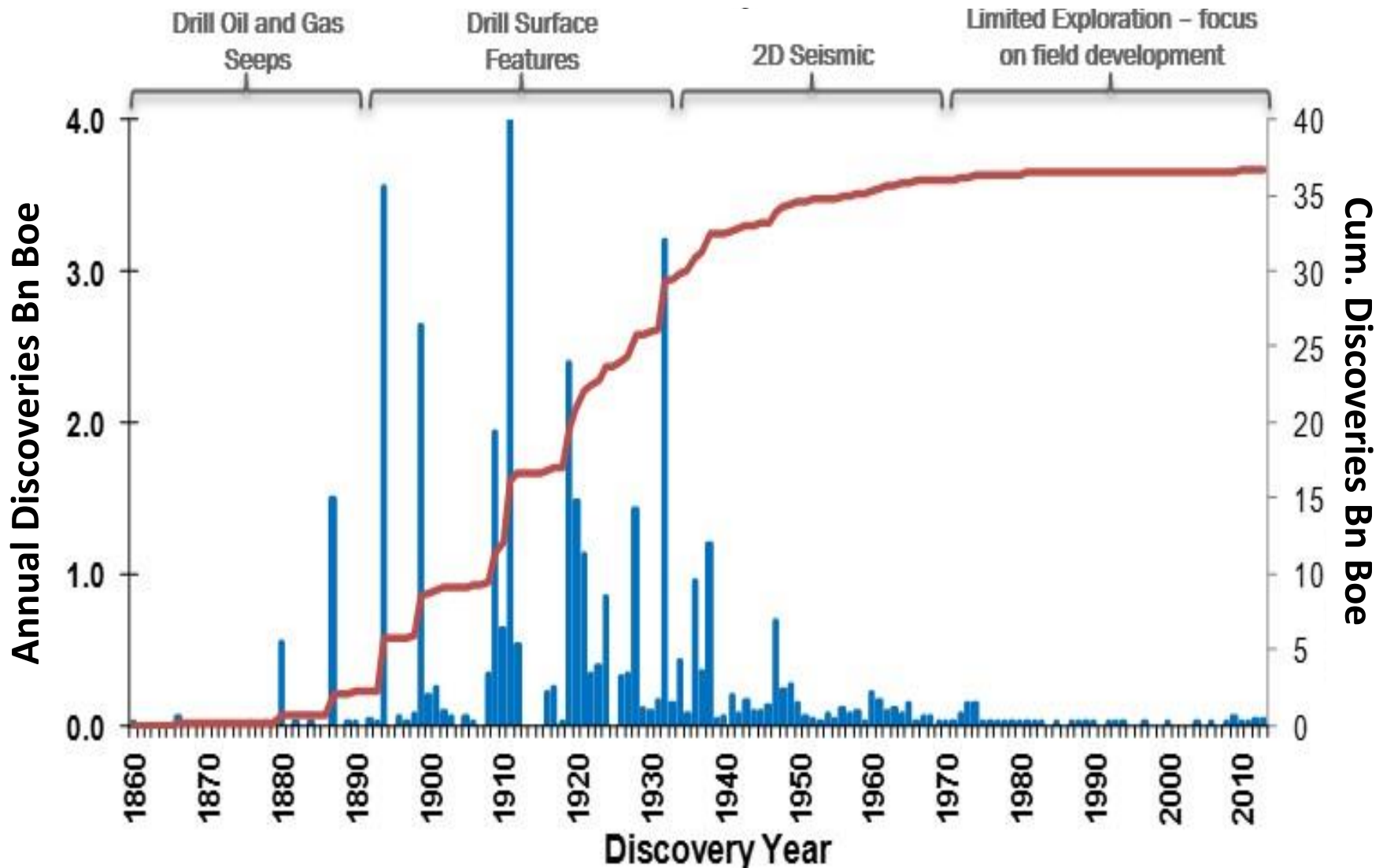


Huntington beach circa 1930's, source unknown

# California Exploration History & Current Trends



Golden State Has Seen Limited Recent Exploration Despite 3 Supermajors' Presence



# California vs. International



## Play Screening Comparison

	CALIFORNIA ONSHORE	OVERSEAS (NON-OECD) ONSHORE	OFFSHORE
Basin & Play Status	Mature	Frontier - Emerging	Frontier - Emerging
Resource Potential	Medium	Medium	High
Hydrocarbon Type	Oil	Oil & Gas	Oil & Gas
Commercial Success Rate	> 35%	20% <sup>1</sup>	
Cost To Condemn	Low ~\$5MM	Medium \$10-50MM	High >\$50MM
Time to 1 <sup>st</sup> Production	Immediate	3-10+ Years	
Proven Reserve Adds	Immediate	FID/1 <sup>st</sup> Production	
Access	Large, contiguous land position	Leased &/or held by Governments	
Above Ground Risk	Low	Medium - High	

<sup>1</sup>WoodMac Annual Exploration Benchmarking Study, September 2014



## CRC Company Overview - Opportunity Set Introduction



# Opportunity Overview



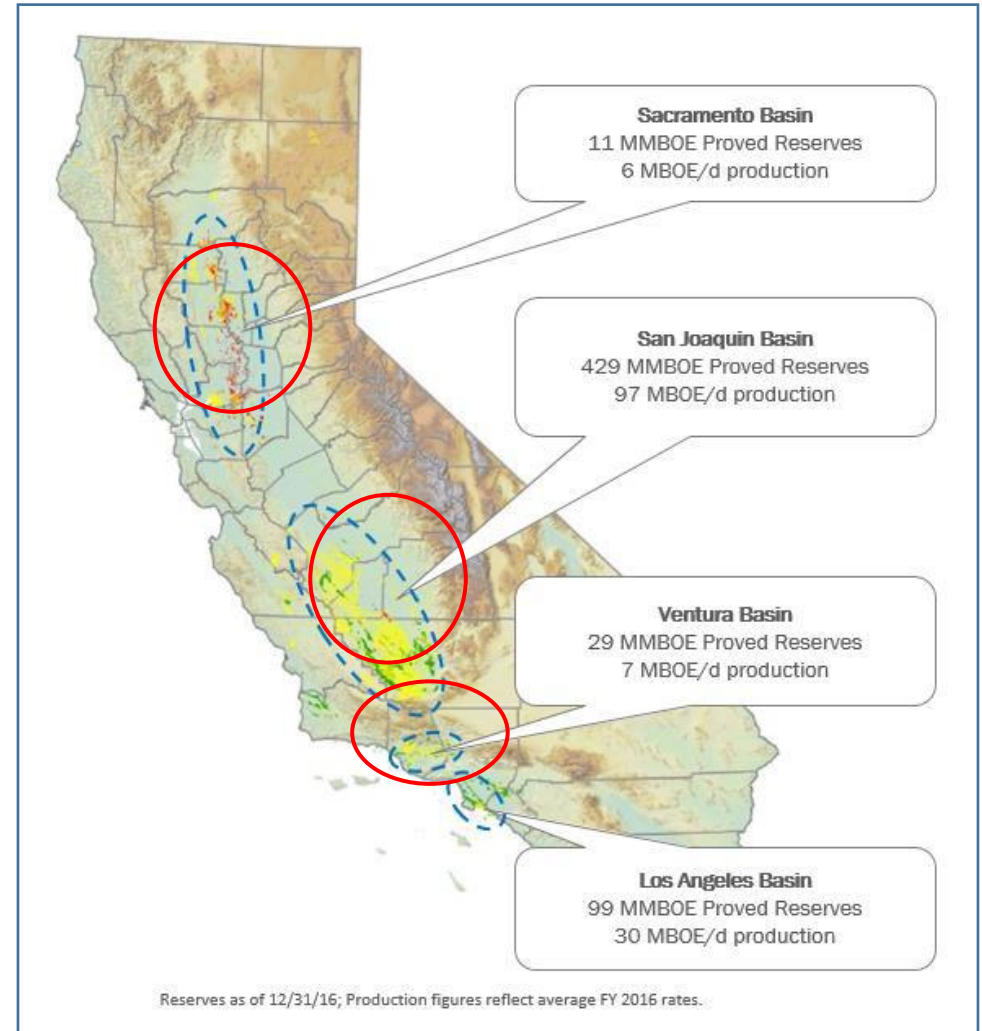
Scalable, Drill-Ready Opportunities with Balanced Risk Profile

## World-Class Resource Base

- NYSE-listed, focused independent
- Occidental Petroleum (OXY) spun off California business unit in Dec. 2014
- CRC operates 4 of 12 largest fields in the continental U.S.
- 568 MMBOE proved reserves
- 140,000 BOEPD production (77% liquids)

## JV Opportunity Summary

- Multi-year JV allows partner to:
  - Drill individual defined prospects
  - Pursue multi-basin exploration, with goal to build out a new core area
- Low risk conventional, near-field exploration prospects targeting proven reservoirs in producing play trends
- Opportunity to join ongoing, high-grade exploration program
- Partner can explore, identify and develop long-term play opportunities



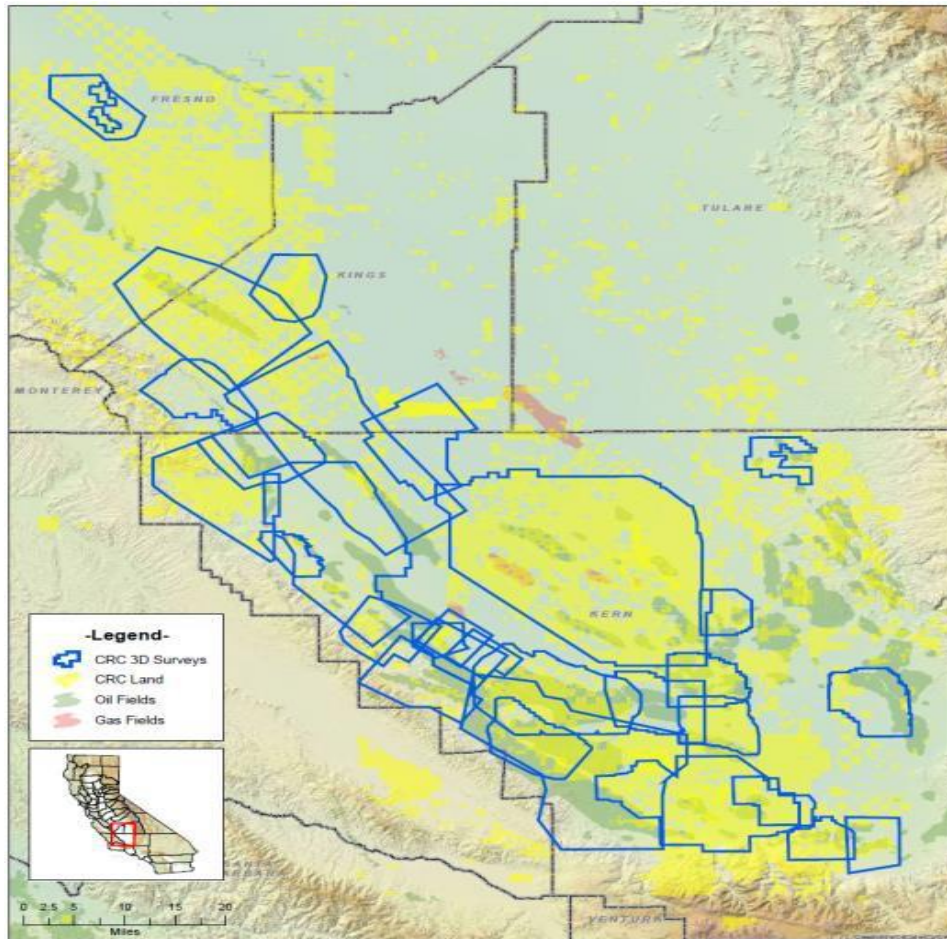


# CRC Competitive Advantage in California

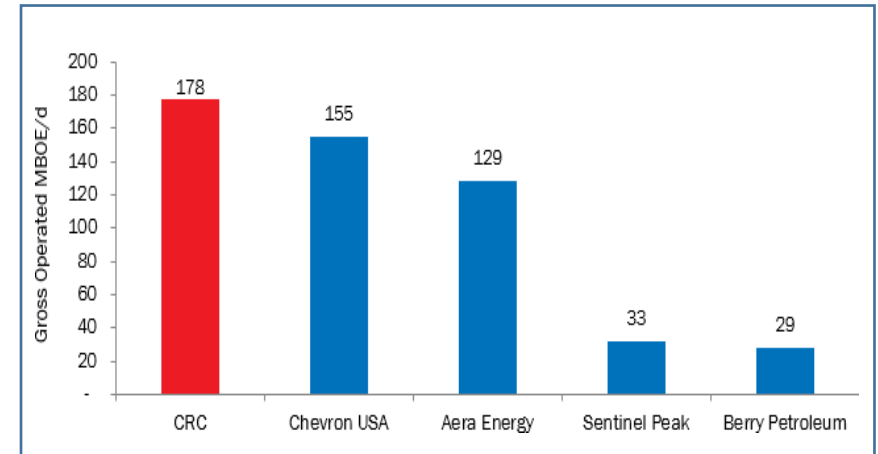


Controls 90% of 3D Seismic; Largest E&P Operator in State with Extensive Midstream

## CRC's 3D Coverage



## Top California Producers in 2016



**CRC-Operated Drill Island in Long Beach, California**

# CRC Exploration Portfolio

High-Reward; Low-Risk Conventional Drilling Inventory



## Drill-Ready Portfolio

**2 BBOE+**

Net Unrisked Resource Potential

**150+ Prospects**

In Proven Play Trends

**Near-Field**

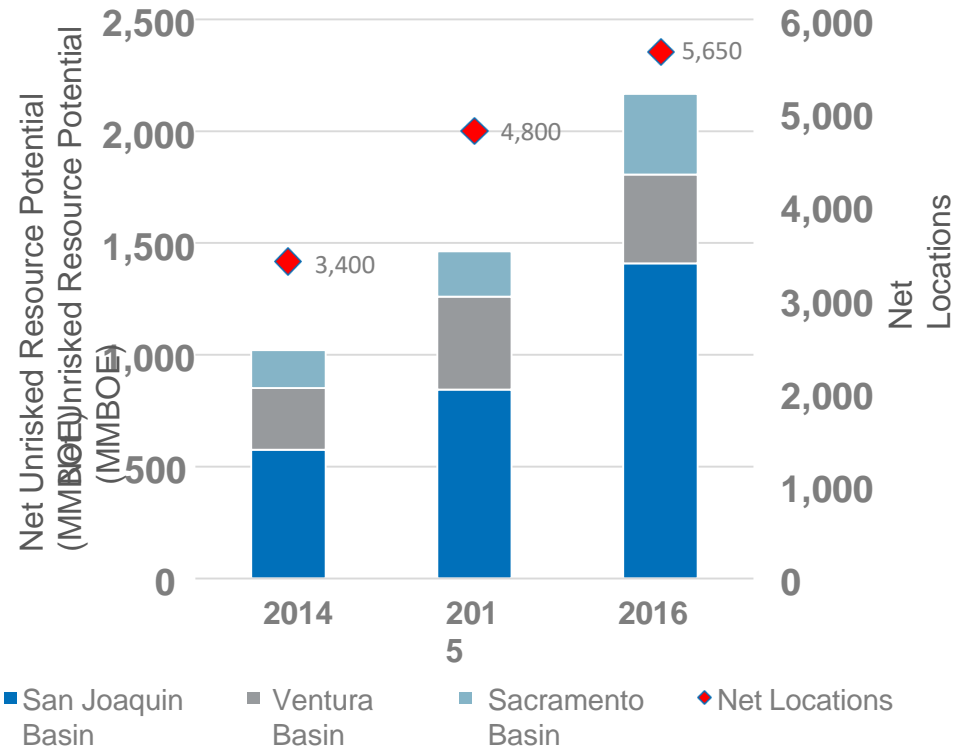
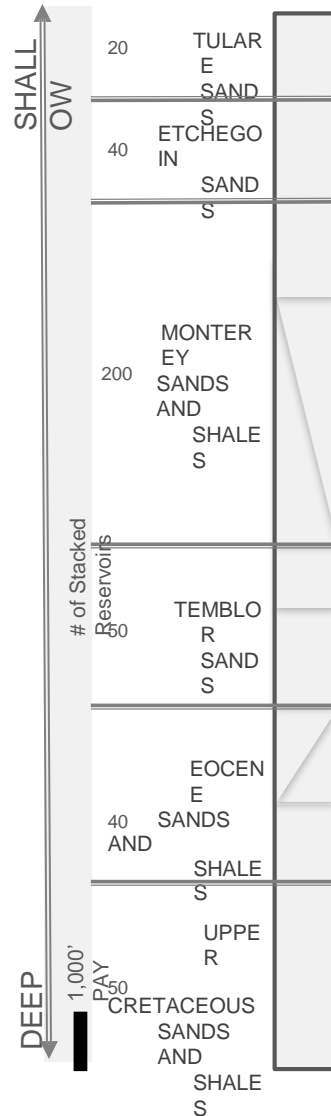
Close Proximity to CRC Infrastructure

**Both Oil & Gas**

Oil and Gas Prospects Provide Optionality

**20+ High-Grade Prospects**

Available for JV



Net resources and locations exclude development assets, some of which have been reclassified from exploration where they were reported in 2014.

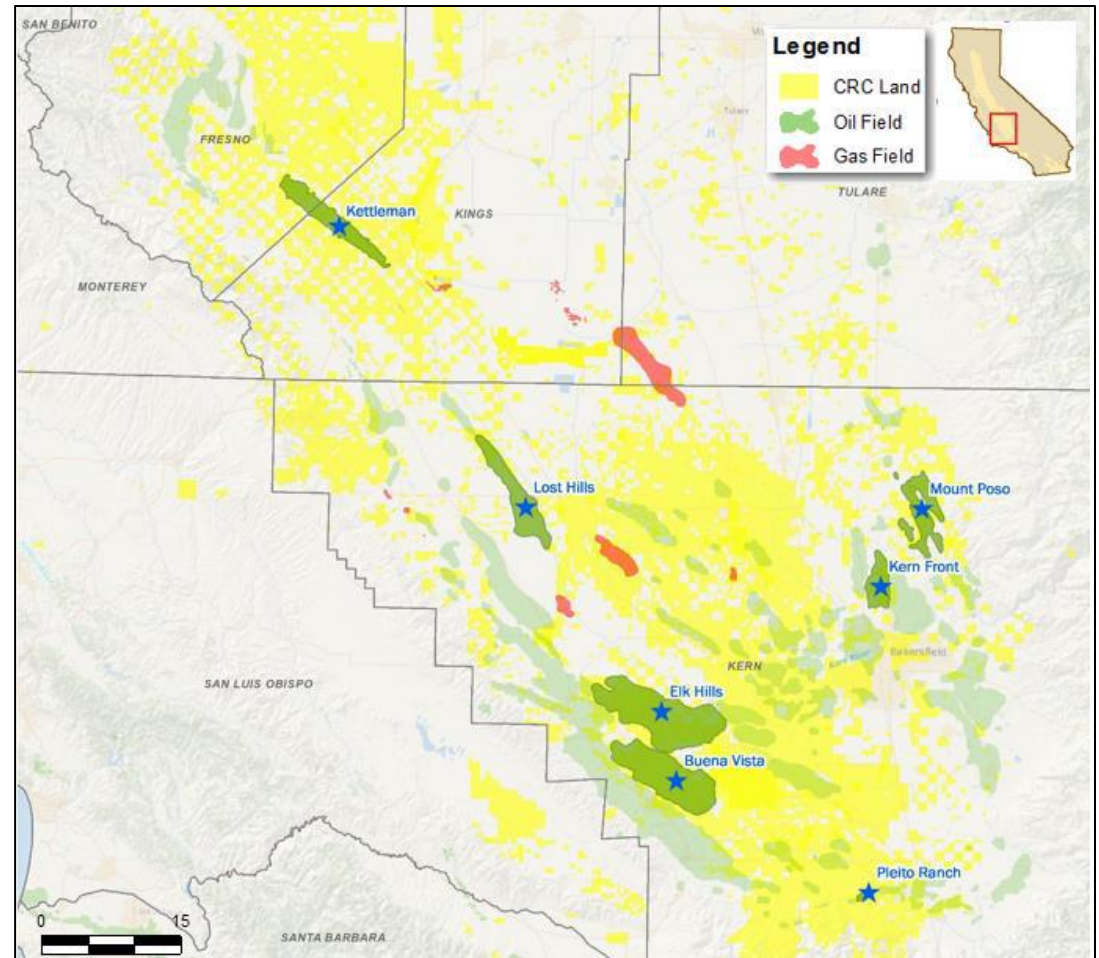
# San Joaquin Basin

## An American Super-Basin



### Example Prospect

- Proven reservoir, produced over 2BBoe across basin
- Stratigraphic trap defined on proprietary 3D seismic
- Within 6 miles of primary source kitchen with direct focus into trap
- 50-100+ MMBOE resource potential
- Direct analog to CRC Buena Vista Nose discovery with well production rates >1000 BOPD
- Within 3 miles of existing CRC infrastructure



**25 BBbl OOIP within CRC fields**



# Ventura Basin

Multibillion Barrel Basin With Minimal Recent Exploration



## Example Prospect

- Low risk field step out opportunity within CRC-operated field
- Targets proven reservoirs that have produced 120+MMBOE within field
- Play extension in undeveloped area of field, updip of lowest known oil
- 15-20MMBOE resource potential
- Significant operating infrastructure less than 1/2 mile from prospects



**High Growth Area: huge OOIP, low recovery factor & potential for high-IP wells**

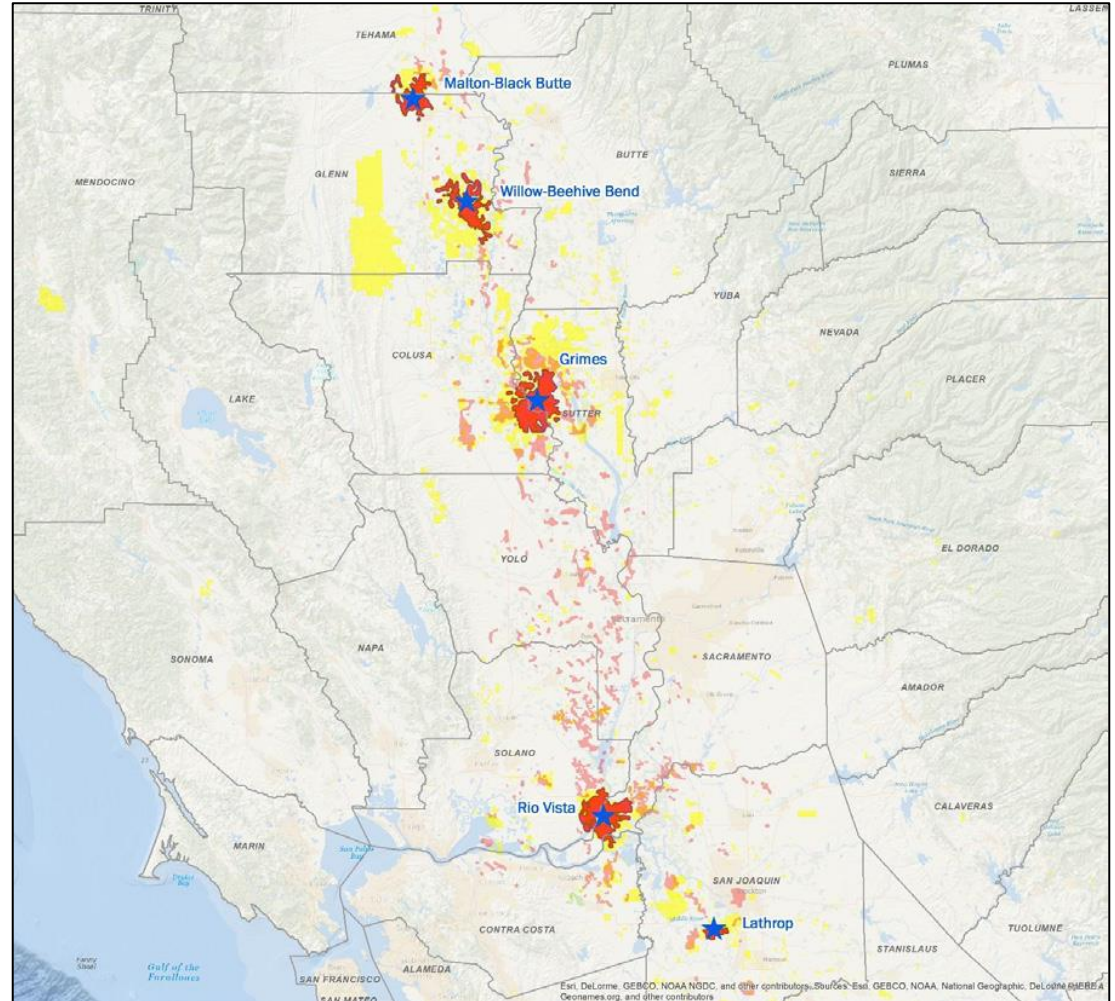
# Sacramento Basin

## High-Impact Gas Exploration in Captive Market



### Deep Gas Prospects

- Historical activity targeted seismic bright spots at ~6000 ft. or less
- Underexplored deep reservoir section
- 5-7 deep prospects close to CRC-operated infrastructure
- Structural traps on 3D seismic
- Direct access to source kitchen with shallow gas fields above prospects
- 200 Bcf to 1TCF resource per prospect
- Analogs to Dempsey discovery (late 2017) operated by Sacgasco



**California imports >90% of natural gas requirements**

# JV Opportunity Summary



Three-Year Drilling Program: \$4-6 Million Average Well Cost

## What Does a Partnership Look Like?

<b>Diverse Project Type</b> Hydrocarbon & risk	YEAR 1				YEAR 2				YEAR 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Play A</b>		<div>MANDALAY MONSTER</div>							<div>PELICAN DRAGON ALACRAN</div>			
<b>Play B</b>					<div>LYNX</div>					<div>YELLOW JACKET RED PANDA</div>		
<b>Play C</b>					<div>RHYTHM TERREBONNE GOLDINGS</div>			<div>DP</div>			<div>CELTIC FUGGLES MT VERNON</div>	
<b>Play D</b>		<div>HADDOCK FINBACK</div>	<div>GUARDFISH BLUEFISH</div>						<div>THRESHER SAILFISH</div>			
<b>Play E</b>		<div>BERRYESSA</div>			<div>SIX HANDS</div>				<div>RAGIN' TOAD</div>			

**Multi-phase commitment**  
Provides control for long term relationship

**Repeatability & running room**  
Multiple independent prospects in each play

**Immediate impact**  
Near term production, cash flow & resource/reserves

**DP + Decision Point**

GROSS CAPEX	PHASE 1	PHASE 2
	12 WELLS - \$60MM D&C	11 WELLS - \$64MM D&C



## Gulf Coast Conventional Onshore Portfolio

*“High Impact US Exploration is a viable contrarian strategy. The opportunity is now.”*



# Opportunity Introduction



## US Onshore Conventional Exploration as of 2018

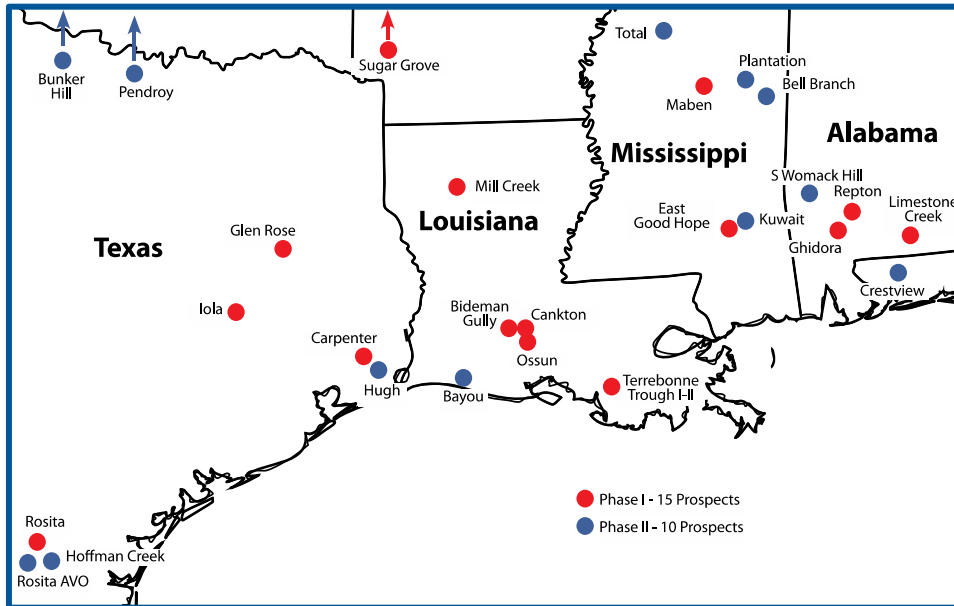
<b>Resource Plays</b>	<ul style="list-style-type: none"><li>▪ During the past 10 years, virtually all U.S. E&amp;P capital shifted to resource plays</li><li>▪ Onshore conventional exploration has almost been abandoned, leaving a tremendous capital vacuum to be filled</li><li>▪ Non-U.S. companies can be competitive in the onshore U.S. by pursuing conventional E&amp;P opportunities, whereas they will struggle to succeed in the major oil and gas resource plays</li></ul>
<b>Conventional Prospects Offer Greater Returns</b>	<ul style="list-style-type: none"><li>▪ Conventional exploration requires much less capital as compared to the large upfront expensive acreage positions followed by horizontal drilling and multi-stage fracking completions of resource plays</li><li>▪ Economics of successful conventional wells are far superior when bundled into a “Portfolio of Prospects” to spread the risk</li></ul>
<b>Recent Technological Advancements Have Improved Conventional Economics</b>	<ul style="list-style-type: none"><li>▪ Advancements in the quality of seismic data has resulted in the identification of previously-undetectable prospects in the conventional US</li><li>▪ Enhancements in drilling technology allow for wells to be drilled to greater depths, at higher temperatures and pressures</li><li>▪ Improved completion techniques significantly increase well-bore recovery</li></ul>

# Opportunity Overview



## Scalable, Drill-Ready Opportunities with Balanced Risk Profile

### Prospect Map



### Opportunity

- Drill high impact onshore conventional exploration in an industry focused on low return, unconventional drilling
- Targeting 5 TCF and 106 MMBO of potential reserves

### Highlights

- SKH has spent \$15 million USD of its own funds and now seeks \$150 million USD to test a solid portfolio of 15 conventional onshore prospects (Phase I)
- Prospect's P(s) varies from 25%-75%
- Risk-adjusted PV10 of \$4.6 B with a ROI >20:1
- On-trend with major analog oil and gas fields
- Near pipeline infrastructure, ~90 day hookups
- Single risk factor for each prospect (structure, reservoir, timing, or seal)
- A single vertical well will test each prospect
- A failed prospect does not condemn any other prospect
- Simple Completions
- No multistage fracking required
- A single discovery pays out the 15-well drilling portfolio

# Industry Partners

SKH Founded by Sigmund & Hatch in 1991



**Industry partners or buyers of prior projects and properties include some of the best names in the energy sector including:**

- ExxonMobil
- Marathon
- Total
- Chesapeake Energy
- Devon Energy
- Murphy Oil
- Noble Energy
- The Williams Companies
- Clayton Williams
- Square Mile
- Samson
- Encana
- Ballard
- West Bay
- Amoco
- Questar

**SKH is one of the largest generators of conventional oil & gas prospects in the Lower 48**



# Two-Phased Approach

15 Prospects with Balanced Risk



## Phase I

- SKH seeks \$150 million to test 15 prospects with a single vertical well each
- **5 TCF & 106 MMBO** potential reserves
- Risked-adjusted PV10 of \$4.6 billion with a ROI >20:1
- Success from any one of several prospects within the portfolio pays out the entire initial investment
- Individual prospect success rate is between 25%-75%

## Phase II

- 10 optional prospects
- Adds an additional 1 TCF and 50 MMBO

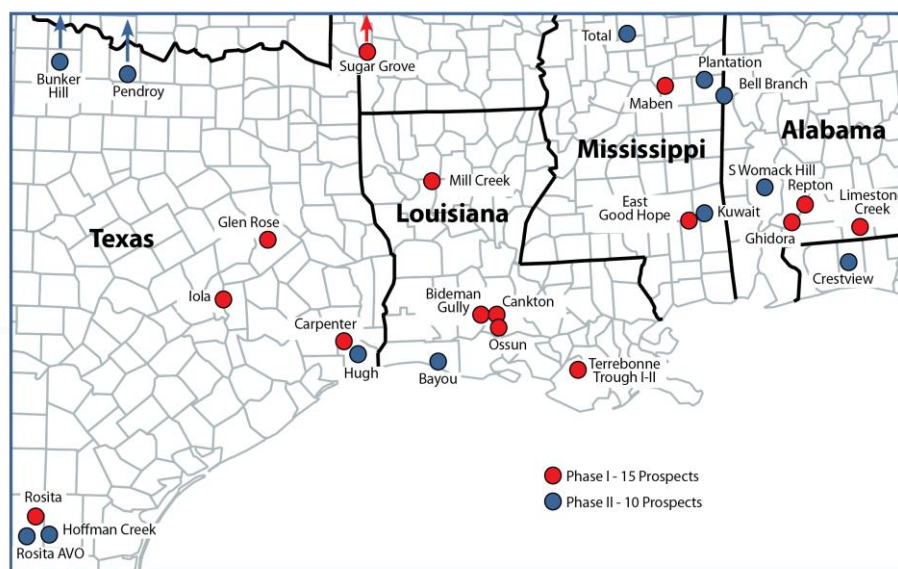


## High Impact Gulf Coast Exploration

### Prospects targeted to meet the following:

- Structural risk mitigated by the existence of four-way closures identified with 3-D seismic
- Seal has been tested or identified.
- Migration/timing risk is minimal

## Prospect Portfolio



# All Prospects Have An On-Trend Major Oil or Gas Field Analogue

Proven geology, geophysical signatures, and petroleum system

<u>Reserves</u>				<u>Ultimate Recovery</u>		
Phase I Prospects		Oil (MMBO)	Gas (Bcf)	Analog Field	Oil (MMBO)	Gas (BCF)
1	Repton (Alabama Up Dip Smackover)	6.0	6	Little Cedar Creek	25.0	25
2	Glen Rose (East Tex. Cretaceous)	24.7	74	Alabama Ferry	55.0	200
3	Ghidora (Norphlet Pinch Out)	5.0	5	Monroeville	6.0	5
4	Maben Extension (Black Warrior Ordovician)	-	15	Maben	-	110
5	Mill Creek (North La., Bossier)	-	300	Vernon	-	2,000
6	Iola (East Tex. Bossier)	-	450	Amoroso	-	1,500
7	Rosita (S. Tex. Wilcox)	-	25	Rosita East	-	400
8	Terrebonne TR I (South La., Bossier)	2.4	60	La Cantera	4.8	120
9	Terrebonne TR II (South Louisiana Rob L)	3.6	90	Turtle Bayou	17.0	250
10	Sugar Grove (Arkoma Arbuckle)	-	300	Wilburton Deep	-	400
11	Carpenter (Yegua Long Offset AVO Play)	2.0	20	Constitution	4.5	90
12	East Goodhope (MAFLA Eolian Norphlet)	-	1,467	Mary Ann	-	700
13	Limestone Creek (Up Dip Smackover)	5.6	6	Brooklyn	30.0	30
14	Bideman Gulley (SLA Eocene Above Salt)	12.8	640	Lineham Creek	11.0	546
15	Cankton (SLA Sub Salt Eocene)	44.0	1,468	Lomond	-	3,000
<b>Total:</b>		<b>106.1</b>	<b>4,926</b>	<b>Total:</b>	<b>153.3</b>	<b>9,376</b>

## The Eocene prospects have recently benefitted from:

- Advancements in onshore 3-D seismic processing allow the delineation of sub-salt structures
- Recent Advances in Full Wave Form Seismic interpretation to identify stratigraphic traps and analyze direct hydrocarbon indicators (Class II AVO's and Lambda-Mu Inversion Anomaly)
- Analogous producing fields have identified the existence of pay in the area (e.g. MMR & Chevron wells have identified Eocene sands further from source than SKH's position)

# PLS Energy Advisors Group



PLS offers the industry's most experienced A&D professionals in mid-market

## 235+ Years of Expertise

### Ronyld W. Wise

Founder & Managing Director

- 35+ Years Experience
- Incl. 6+ Years Oilfield Services
- B.S., Texas A&M University
- Lived In Canada For 2 Years
- Significant International M&A
- Houston

### Brian Lidsky

Managing Director

- 25+ Years of Experience
- Leads PLS M&A Analysis & Valuation Work
- MBA, Rice University
- B.S. Geology
- Houston

### Martin Buckley

Technical Leader, PLS Inc.

- 40+ years of experience
- A&D business past 25+ yrs
- MBA, University of Texas
- M.S. Engineering Management, Univ. of Alaska
- BS Geology, Mississippi State
- Houston

### Chase Morris

Managing Director – A&D

- 25+ years International Business Development
- 10+ years Experience
- BA University of Texas Arlington
- Dallas/Fort Worth

### David Kessler

Director - International

- 5+ years' global upstream transaction experience
- Visited PLS clients in over 35 countries since 2014
- Fluent in Arabic
- B.A. and M.A., Stanford University

## Project Execution

### Myron Boots, PE

Technical Leader, PLS Inc.

- 40+ years of Experience
- 25+ years A&D business
- Professional Registrations in Texas and Colorado
- BS Mechanical Engineering, University of North Dakota
- Houston

### Don McDonald

Managing Director – A&D

- 30+ Years Experience
- Financing and Divesting Oil & Gas Properties
- BBA Finance
- Miss. Accounting/CPA
- Denver

### Ross Benoche

Director – Sell-Side Services

- 10+ Years Experience
- 6+ Years Transactions Experience
- Manages PLS' Listings Database
- Houston

### Eric Thompson

Sr. A&D Associate

- ArcGIS, PHDWin, Aries, Valuations & Analytics
- M.Ed. Dallas Theological Seminary
- B.S. College of Biblical Studies
- Houston

### Richard Martin

Vice President – Divestments

- 17+ Years
- University of North Texas
- 6+ Years Wellspring Energy Partners
- 13 Years PLS Inc.
- Dallas/Fort Worth

## Technical Support

### Melwyn Oommen

Petroleum Engineer, MSc

- M.S. in Petroleum Engineering University of Houston
- B.S. Chemical Engineering Vellore Institute of Tech

### Drew Cochran

Petroleum Engineer

- M.S. in Global Energy Management University of Houston
- B.S. in Petroleum Engineering University of Oklahoma

### Amit Kardam

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- M.S. Petroleum Engineering University of Houston
- B.S. Petroleum Engineering IIT Dhanbad
- Houston

### Miranda Kennedy

A&D Coordinator

- 4+ Years Transactions Experience
- B.A. Texas A&M University
- Houston

### Blake Dornak

A&D Associate

- 2+ Years Experience
- A&D Advisory
- BBA Management University of Texas Arlington
- Houston