

# Financing a New, Full-Conversion Refinery During a Pandemic and Price Wars

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## Meridian Energy Group's Davis Refinery

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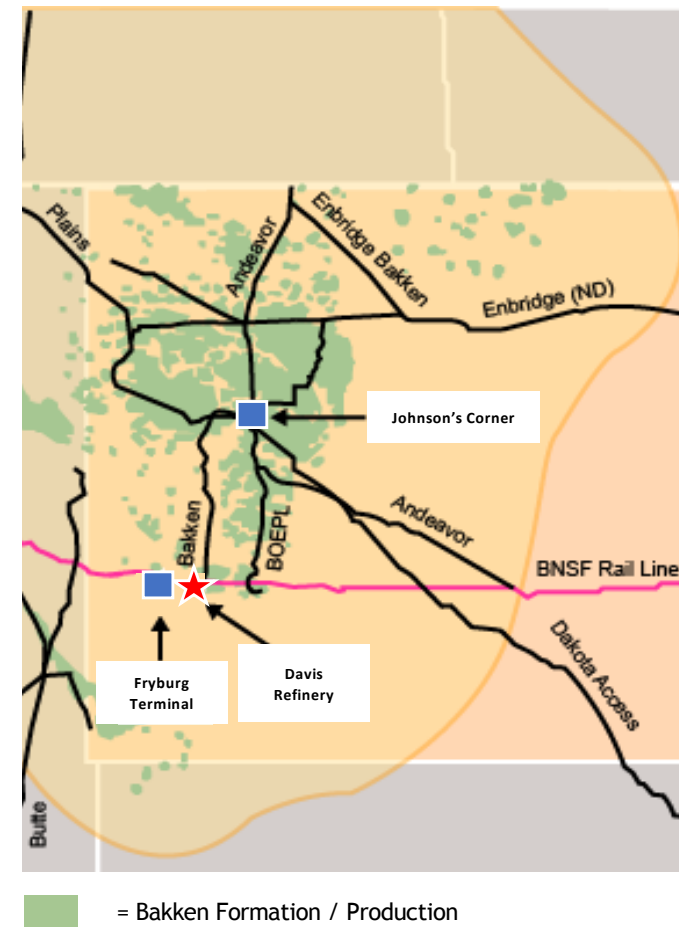
## Overview

- ❖ Davis will be a 49,500 bpd full-conversion crude oil refinery in Billings County, North Dakota, in the heart of the Bakken
- ❖ Davis received its final regulatory approval in June 2018 - the Permit to Construct from the North Dakota Department of Environmental Quality ("NDDEQ")
- ❖ Site Preparation for Davis began immediately upon award of the Permit to Construct, and rough grading of the site has been completed

### Davis Refinery Overview

<b>Location</b>	• Billings County, North Dakota						
<b>Capacity</b>	• 49,500 barrels per day ("bpd") of feedstock						
<b>COD</b>	• Q4 2023						
<b>Capital Cost</b>	• LSTK cost target being confirmed on an "open book" basis as part of FEED <sup>1</sup> process (74% complete). Total Owners Costs < \$1 BB						
<b>Production</b>	<ul style="list-style-type: none"> <li>• 750 MM gallons per year of refined products</li> </ul> <table border="1"> <tr> <td>52%</td> <td>42%</td> <td>6%</td> </tr> <tr> <td>Diesel</td> <td>Gasoline</td> <td>Residual NGLs / Other</td> </tr> </table>	52%	42%	6%	Diesel	Gasoline	Residual NGLs / Other
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Diesel	Gasoline	Residual NGLs / Other					
<b>Site</b>	<ul style="list-style-type: none"> <li>• 715 acres with advantaged access to low cost feedstock and refined product takeaway</li> <li>• Site secured through long-term option purchase agreements with land owners</li> </ul>						
<b>Permits Awarded - Shovel Ready</b>	<ul style="list-style-type: none"> <li>• All significant permits obtained including rezoning, conditional use and permit to construct (air and water permits)</li> <li>• FEED contractor (McDermott) is prepared to convert the LSTK prior to completion of full FEED</li> <li>• Principal terms of the EPC contract agreed upon, Meridian has option to use FEED results with another contractor</li> <li>• Grading and site preparation has already started</li> </ul>						
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Licenses and process books for licensed technologies by Axens USA</li> <li>• Open art process design by McDermott per the FEED contract</li> </ul>						
<b>Supply</b>	• Major Bakken producer will supply or arrange all crude oil requirements at pricing which is at or below the Bakken WTI discount						
<b>Offtake</b>	• All diesel and the majority of the gasoline will be sold to a major national distributor, with pricing optimized by choice of markets						

### Project Location



<sup>1</sup> FEED = Front End Engineering Design, which consists of sufficient detailed engineering, procurement and costing to allow (on an open-book basis) the definitive capital cost of Davis to be determined, in turn enabling the contract price to be established for the definitive Engineering, Procurement and Construction ("EPC") Agreement.

# Meridian Energy Group's Davis Refinery

## Starting With a Clean Sheet of Paper

- ❖ Target specific needs and opportunities
  - High-quality feedstock, available locally without significant processing or transportation, at a comparatively low price
  - Maximize yield of highest-value refined products for underserved markets
  - Take advantage of and improve local infrastructure
- ❖ Minimize regulatory and community resistance
  - Apply latest technologies to achieve Synthetic Minor Source status
  - Size for one-stop permitting
  - Early and extensive involvement of key constituencies
    - Regulators
    - Community
    - Listen and accommodate
- ❖ Capital Efficiency
  - Modularize
    - Ease of construction
    - Go to the best labor market
    - Minimize construction schedule
    - Minimize footprint
- ❖ Capital Efficiencies (Cont'd)
  - Modernize (latest and best)
  - Digitalize
  - Standardize
- ❖ Operating Efficiency
  - 5 year run time between major maintenance and catalyst replacement
  - Remote monitoring and operations capabilities
- ❖ Anticipate
  - Regulatory changes (Renewable Fuel Standard, IMO 2020, etc.)
  - Market movements
- ❖ Consider and manage risks from a financing perspective
  - Regulatory
  - Technology
  - Cost
  - Schedule
  - Operations/Safety/Environmental
  - Market/Commercial

# Meridian Energy Group's Davis Refinery

## PERMITTING - It Takes a Village

- ❖ Establishing Energy and Social Risk and Impact Management Systems and Plans
  - Meridian has adopted environmental and social risk management systems and plans at the corporate level, as well as separate, project level plans do deal with risks and impacts specific to the Davis project. Each adopts the principles set forth in the Equator Principles (2020). Key elements include:
    - Coverage of social impacts on all constituencies, as well as environmental impacts
    - Identification of the baseline environmental conditions in the communities in which we operate
    - Engagement of all stakeholders early, often and openly
    - Providing avenues for feedback and grievances that allow open expression of opinions without fear of reprisal or embarrassment
    - Where appropriate, independent expert review
    - Regular reports and transparency well beyond minimum legal requirements
- ❖ The Davis Process
  - Become a part of the community, publicly announce our intentions and put respected members of the community on our governing boards
  - Recognize the unique needs of the community
    - Theodore Roosevelt National Park
    - “Boom and bust” impacts from past activities
    - DAPL residual
- ❖ Establishing Energy and Social Risk and Impact Management Systems and Plans
  - Engage local agencies, officials and thought-leaders, regardless of jurisdiction/remedy
    - North Dakota Public Service Commission
    - Don't just seek to avoid impacts; provide beneficial opportunities
  - Go beyond what is required (e.g., no visibility to the Park, Synthetic Minor Source, etc.)
- ❖ The Results
  - Conditional Use Permit from Billings County
  - North Dakota Public Service Commission declines jurisdiction after public meetings
  - Permit to Construct (Air Permit) issues as a collaborate effort with/by the North Dakota Department of Health (now Department of Environmental Quality)
  - Robust record at agency level leads to swift confirmation at appellate level and minimizes likelihood of ND Supreme Court reversal
  - Industry-leading environmental footprint (see next slide)

# Meridian Energy Group's Davis Refinery

## PERMITTING - It Takes a Village (Cont'd)

### Environmental Advantage - A New Paradigm



Permitted air emissions from Davis are ~1/8 of industry standard refineries and ~1/6 of the next cleanest refinery, GHG < 1/2 domestic average



Designed to produce transportation fuels meeting or exceeding 2020 EPA specifications, including IMO compliant LSFO and renewable diesel



Facility generates valuable RINS, while most refineries purchase RINS, enhancing project economics



Facility utilizes clean-burning natural gas, which is typically flared or vented from area crude oil production



Facility equipped with comprehensive air and water quality and emissions control measures ensuring a clean operation



Davis utilizing City of Dickinson treated municipal waste water which would otherwise be disposed of, eliminates the need to tap the local aquifer



Full Refinery being permitted as a Synthetic Minor Source for air quality reducing development time and capital costs

### North America Refinery Emissions Comparison

Regulated Pollutant	Davis Refinery <sup>1</sup>	Industry Avg. Since 2006	Davis as % of Industry Avg. <sup>2</sup>
Compound	(TPY Per 1000 Bbls)		%
CO	1.44	6.56	22%
Pm	0.24	2.11	11%
Nox	0.71	4.08	17%
SO2	0.13	1.73	8%
VOC	1.12	1.60	80%

# Meridian Energy Group's Davis Refinery

## PROCESS SELECTION, FEED AND CONSTRUCTION - Teamwork and Open Book

- ❖ Process Selection and Design
  - All proprietary processes are provided by Axens, with whom we have worked with since 2016
  - Open Art processes from proven sources
  - Collaboration results in Synthetic Minor Source approach
- ❖ Front-End Engineering and Design “FEED”
  - Robust competition among leading contactors who would be credible turnkey EPC contractors willing to “own” the FEED and “wrap” Axens’ process guarantees
  - Negotiate critical terms of the EPC contract up front
    - Avoids disconnects during project financing
    - Forces contactor to identify risk-related costs and contingencies during the FEED process, rather than demanding a “risk premium” during EPC negotiations
  - Require that all contingencies be identified and justified on a line-item basis and reduced through rigorous design and procurement (No “black boxes”)
  - Assure that all work product is deliverable to and usable by Meridian and, if Meridian so elects, another EPC contractor.
- ❖ Turnkey EPC
  - Fully-vetted scope
    - Physical facilities and performance requirements
    - Division of responsibilities
- ❖ Full “wrap” of process guarantees
- ❖ Payment based on measurable completion milestones, not percentages
- ❖ Schedule is money, but don’t rely on liquidated damages exclusively. Require robust intermediate measurement and milestones. Force catch-up when milestones are not met. (Withholding is not enough)
- ❖ Limits on liability are appropriate, but they should not apply if the contactor has not met a specific minimum standard of substantial performance. This should not be an abandonment parachute.

# Meridian Energy Group's Davis Refinery

## PROJECT FINANCING - Risk Identification and Mitigation, Capital Efficiency and Long-Term Partnerships

- ❖ Pure limited-recourse financing is unusual for greenfield refineries in the United States
  - Large, vertically-integrated oil and gas companies can finance from cash flows or corporate finance
  - If the sponsor is not vertically integrated, it is necessary to deal with volatility of pricing for feedstock and refined products through some sort of tolling structure. These seldom leave much margin.
- ❖ Meridian is a small, relatively new company. For it, project financing is a requirement.
  - Although its management is very experienced, the company has a limited track record
  - Funding for development has been raised through as-needed private placements (~ \$50 million to date). There is no “backer” to provide sponsor guarantees.
- ❖ How to get it done
  - During final design, procurement and construction (the pre-revenue phase)
    - A strong, creditworthy FEED/EPC Contractor (McDermott)
    - A well-structured turnkey EPC contract which cleanly allocates appropriate risks to the contractor, so that the financiers are comfortable with step-in rights with respect to pre-revenue risks
      - Completion within budget and on schedule
      - Technical performance (including for third-party processes)
    - Experienced financial advisors (CIBC and Morgan Stanley) to provide structural and commercial precedent and input and arrange necessary credit support
  - After the Commercial Operation Date
    - Protect the Crack Spread
      - Synthetic Tolling
        - Long-term contract for feedstock supply, with a major, creditworthy producer/marketer
          - Required to provide at Bakken Differential discount to WTI
          - Strong incentives to arrange supply at lower pricing
        - Long-term offtake agreement with an experienced, creditworthy distributor/marketer
          - All sales in accordance with market indices proven to consistently be at a substantial premium to WTI
          - Market optionality. Interests of Meridian and offtaker are aligned to seek highest-value markets
        - Crude supplier and offtaker able to work directly with each other with respect to credit risk and other issues
      - From Crack Spread to Profitability
        - Substantial advantage in capital efficiency (See “Clean Sheet of Paper”)
        - Consistent, high-quality feedstock
        - Use every barrel of crude to produce a high-value product
        - State-of-the-art facility configuration and controls to minimize operating costs

## Meridian Energy Group's Davis Refinery

### PROJECT FINANCING - Risk Identification and Mitigation, Capital Efficiency and Long-Term Partnerships (Cont'd)

- ❖ The Effects of recent extreme imbalance in supply of feedstock and demand for refined products
  - Problems
    - Many investors on the sideline. Those still active are extremely cautious
    - Working remotely is not optimum, especially when it is new to many participants
      - Time consuming
      - There is no substitute for getting in a room together
  - Benefits (believe it or not)
    - Davis' commercial operation date is late 2023. Back to "normal" (perhaps a new normal)
    - Investors and lenders with "dry powder" and a downstream appetite have few other good alternatives
    - The current situation is accelerating long overdue structural adjustments in the refining industry. Closing of marginal facilities will benefit overall supply/demand balance.
- ❖ Do it again... and again
  - Working together with major counterparties to share lessons learned so that we can work together on future projects
    - Process acquisition and design
    - Environmental/local contracting
    - FEED/EPC
    - Logistics
    - Feedstock
    - Offtake
    - Financing
    - Operation