

Like Sand Through the Hourglass



Sand As Commodity in Texas

2014

- "Wisconsin White" = 75%
- "Brady Brown"
- \$63 per ton

2017

- "Summer of Sand"
- Hi-Crush Opens Kermit Facility
- Others follow

2020

- Wisconsin White = 34%
- "Winkler White"
- \$20 per ton

Playing in the Sand – Major Companies in Texas



High Roller Sand

Hi-Crush

Atlas Sand

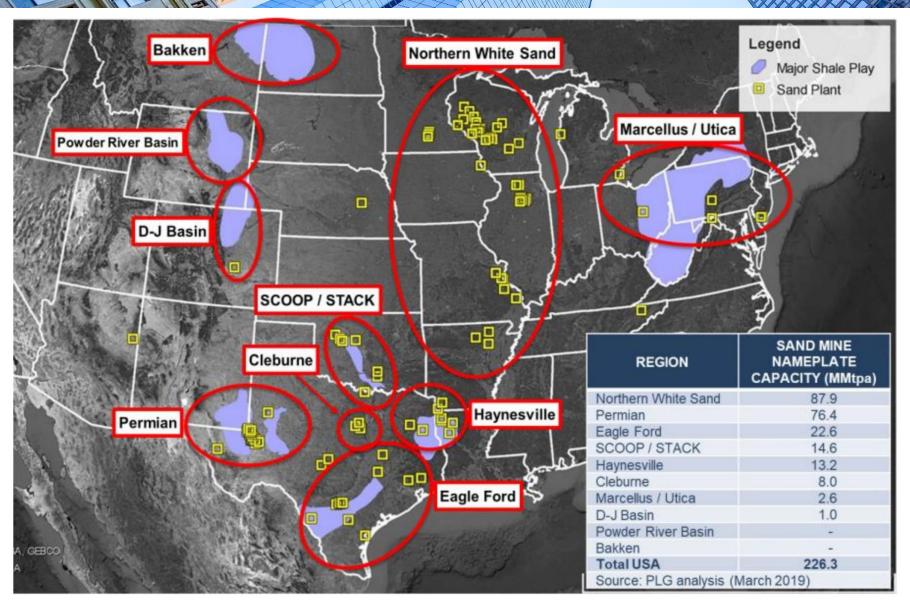
US Silica

Monarch Silica

Black Mountain Sand

Sand Mines Across USA



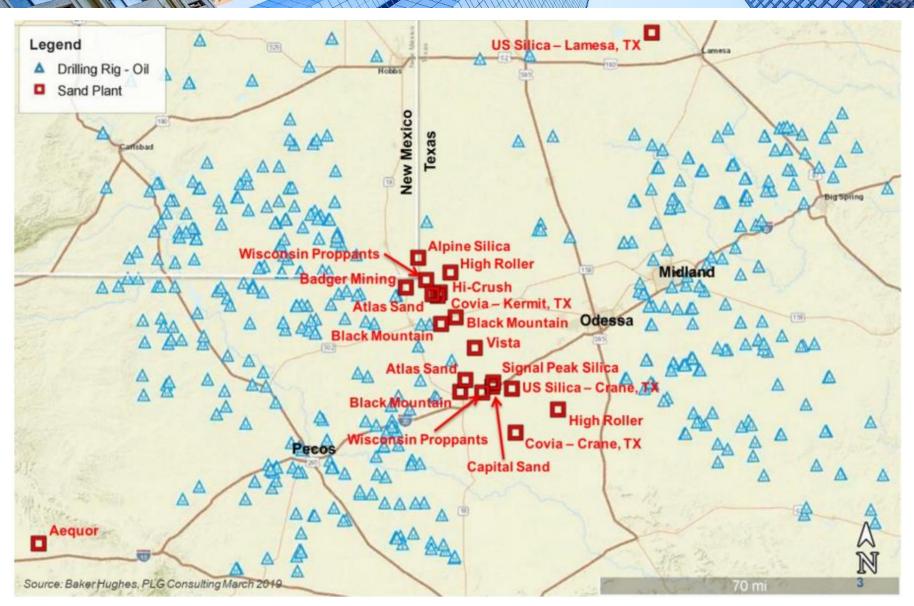


U.S. Shale and Tight-sand Plays and Sand Mines

Used with permission from <u>PLG Consulting</u>

Sand Mines Across Permian Basin





Permian-area Sand Mines and Drilling Rigs

Used with permission from <u>PLG Consulting</u>

The Frac Sand Chain



Leasing Mining Processing Storage Trucking

Processing Sand



Step 1: Wet Plant

- Washed to remove silt, debris, and clay
- Sand Slurry is then put through a series of screens and separators
- · Placed in stockpile where excess water is drained and (hopefully) recycled

Step 2: Dry Plant

Dried and Screened

Step 3: Storage

Placed in Silos for pick-up

Acquiring, Divesting, Leasing



- Sand Mining Lease
 - Sand Company leases tract to mine sand in exchange for bonus and royalty.
- General Acquisition or Divestiture of Sand through Sand Supply Contract (Long/Short Term)
 - Sand Company promises to provide X amount of sand for X period.
- Unique Structures for Acquisition or Divestiture of Sand
 - Sand Company "A" partially sells assets to/agrees to jointly operate mine with Sand Company "B".

Sand Mining Lease – Preliminary Agreements



- Coring Agreement with Option to Lease or Inspection Period
 - Coring Agreement: A license to take core samples on a tract of land
 - Inspection Period: Part of lease "term" allowing lessee to take core samples
 - May also include right to conduct soil tests, engineering studies, and environmental studies
 - Primary or Principal Term kicks in after "election to proceed"



Granting Clause

- Magic Words: "demise, lease, and let" the property for...
- Purpose: the sole purpose of "exploring for, producing, developing, mining, extracting, storing, and removing sand"
- Ingress/Egress: along with the right of ingress and egress from, over, and across the property



- Other Substances Clause
 - "In the event that Lessee should discover through its mining operations for Frac Sand other substances ("Other Substances") on the Leased Premises of commercial value...
 - said Other Substances shall be segregated from the Frac Sand at no cost to Lessor, remain on the Leased Premises, and are hereby reserved to and remain the property of Lessor.]



- Processing Operations Clause
 - Prohibits milling, refining, finishing or processing Frac Sand on the Leased Premises. [Lessor]
 - Affirmatively Establishes "Processing Area" and ability to do so. [Lessee]



• Term

- Primary or Principal Term and Secondary Term
- Number of Years + "so long thereafter as Mining Operations are conducted on the Leased Premises."
- Mining Operations are defined as the mining, extraction, or transportation of Frac Sand from the Leased Premises to the Processing Facility.
- Sunset Clause: All operations cease 20 years from effective date.



- Bonus and Royalty
 - Bonus Varies Greatly
 - Royalty
 - Percentage of Gross Monthly Revenue (i.e, 7.75%) or Price Per Ton Sold (i.e., \$2.25) whichever is higher
 - Annual or Monthly Minimum Royalty
 - Arms-Length transaction concerns (like in OGMLs) curtailed by Price Per Ton payment



Records

- Maintain records of:
 - all Frac Sand mined, removed, shipped and sold from the Leased Premises;
 - trucks transporting Frac Sand extracted from the Leased Premises showing the date, truck number or other identification, trucking company, number of loads hauled on the date, and tons of each load; and
 - life of mine plan (LOMP).
 - Provide monthly report and annual changes to LOMP



Development

- Agrees to slope all surface pits and excavations in a manner consistent with good mining practice
- Fence pits
- Dispose of all tailings/mining waste off premises



- Duty to Market
 - Duty to take all steps commercially reasonable and necessary to process the Frac Sand from the Leased Premises into a commercially marketable condition
- Express Contractual Lien
 - Frac Sand extracted from the Leased Premises
 - All proceeds from the Sale of Frac Sand
 - All fixtures and improvements



- Surface Priority
 - Dominant Estate Clause [Lessee]
 - Contractually agree that estate created by the sand mining lease is the dominant estate
 - Priority Rights Clause [Lessor]
 - Reserve specific rights and their priority
 - Right to grant easements including pipelines, electric lines, water lines, and sewer lines that do not substantially interfere with Mining Operations



Reclamation

- Remember:
 - Mining and reclamation of sand and gravel pits are not regulated by SMRD at RRC.
 - If there is a surface-water discharge or point-source air discharge, may be regulated by the TCEQ.
- Reclamation obligations need to be specific
- Natural Resource Conservation Service practice standards
- Soil, Re-Vegetation, and Contour



Recitals

- Supplier in business of providing industrial sands and aggregates
- Customer in business of [performing various oilfield services or exploring for and producing oil, gas, and other minerals]
- Customer wishes to purchase and Supplier wishes to sell [crystalline silica (quartz) sand or industrial sand and aggregates] ("Product") meeting the specifications and on the terms and conditions set forth herein

• Term

- One to two year Initial Term with automatic renewal for Renewal Term unless cancelled on 90 days written notice
- Price (per ton)



- Required Tonnage
 - During each Contract Year, Supplier will sell and Customer will purchase _____ tons of Product
 - Utilize Purchase Orders with 30 days notice
 - Customer shall not require more than _____ tons of Product for any given month during a contract year
- Order Shortfall Provision
 - Requires annual payment in the event Customer does not purchase Required Tonnage
- Supply Shortfall Provision
 - Requires Supplier cure any shortfall w/in 30 days of end of month



- Risk of Loss and Delivery
 - FOB to Pick-Up Location (the Plant)
 - Trucks or Railcars (covered hopper railcars not to exceed 44 feet)
- Disclaimer of Warranty
 - No warranties, express or implied, regarding the Product or its fitness for any particular purpose, other than that the Product will meet or exceed the applicable Specifications.
- Non-Conformity of Product
- <u>Demurrage</u>



- Specifications
 - ISO 13503-2 Sets forth best practices to be followed in testing crush resistance of proppants
 - Mesh
 - Refers to particle size
 - Number of openings in one US inch of mesh screen
 - As the number describing the mesh size increases, the size of the particles decreases
 - Higher numbers equal finer material
 - Example: 40/70 Mesh (between .4 and .2 millimeters) or 100-Mesh (smaller than .149 millimeters)



Silica Warning

• "Supplier's products contain respirable crystalline silica, which is considered by some sources to be a cause of cancer. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked by some sources with other diseases. During transportation, use, clean-up or handling, follow all NIOSH and MSHA procedures and recommended practices, including wearing properly-fitted, NIOSH-approved or MSHA-approved air supplied protective equipment in accordance with applicable government regulations and manufacturer instructions. For further information, please refer to the appropriate Material Safety Data Sheet, a copy of which is available from the Supplier upon request. Customer hereby accepts all responsibility to maintain a safe work environment, warn, notify, train and provide all necessary and appropriate NIOSH/MSHAapproved protective equipment to all Persons handling or in the presence of Supplier's products, including the Product, and to enforce the requirement that NIOSH/MSHA-approved protective equipment be used when handling all such products."

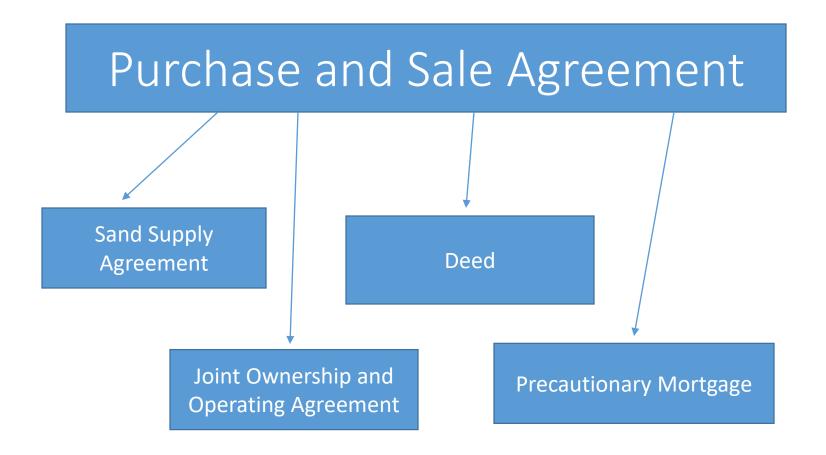
Unique Structures



- Large Transactions \$250MM>
- Operator is acquiring all or substantially all sand that plant may produce for long period of time
- Customer acquires fee interest in sand, and as sand is supplied, interest reverts to supplier
- Structured almost entirely to protect against supplier bankruptcy concerns

Unique Structures





Unique Structures – PSA



- Purchase and Sale Agreement is relatively simple
- Basic reps and warranties, governs timing and execution of SSA, JOA,
 Deed, and Mortgage

Unique Structures – Deed



- Conveys Undivided Interest in Sand Reserves and Water
- Sand Reserves include silica sand and sandstone between the surface and 500 feet below the surface
- Requires yearly reconveyance of undivided interest (i.e., millionth of a percent for each ton of sand delivered under SSA)
- Waives right to partition in kind, mine sand, enter upon land for any reason until default under SSA
- Concern is that bankruptcy court views as "disguised financing transaction"

Unique Structures – JOA



- Governs aspects of joint ownership of property not set forth in deed
 - Waives right to partition by sale forever
 - Waives claim to sand supplied to third-parties or proceeds thereof during term of SSA
 - Waives claim to Sand Plant
 - Terminates when SSA obligations are fulfilled

Unique Structures – Precautionary Mortgage



- "Backwords Mortgage" or "Quitclaim Lien"
 - Falls into place if Deed set aside as disguised financing transaction
 - Grants Customer a security interest in Sand Reserves
 - Lien proportionately reduced with each re-conveyance
 - Requires UCC filings

Takeaways



- Sand will only become more important to the oil and gas world
- Highly technical commodity based upon a highly volatile commodity
- "Cowboy" deal world
- Good deal takes corporate, real estate, oil and gas, and bankruptcy lawyers
- Fundamental real property law is key

Questions?



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