

DUNES OF KERMIT FRACKING SAND OPPORTUNITY



FORMER DUNES OF KERMIT FRACKING SAND OPPORTUNITY

This site, in the heart of the former Dunes of Kermit, is one of the most well known fracking reservoirs in the Permian Basin.

SITE DETAILS

Acres	Approx. 2,970
Location	Near SH 115 and FM 874
City	Kermit, Texas
County	Winkler
Current Ownership	Three Amigos Property
Estimated Quantity	Est. 200Mil Tons

Sale Price: \$45,000,000

For Additional Information Contact HW Kirk 214-842-1390

**See Exhibits for reservoir study.*

CONFIDENTIAL

CURRENT PLANTS AND INVESTORS

CURRENT PLANTS	BACKED BY	SIZE/PRODUCTION
<i>(entered since July 2017)</i>		
Hi-Crush Partners	PUBLIC: HCLP	3 MIL TONS/YEAR
Badger	PRIVATE- FAMILY OWNED (WI)	3 MIL TONS/YEAR
Atlas	BLACKGOLD CAPITAL MANAGEMENT	4 MIL TONS/YEAR
**High Roller	CSL CAPITAL MANAGEMENT	4MIL TONS/YEAR
Alpine	PRIVATE	3 MIL TONS/YEAR
Black Mountain	NATURAL GAS PARTNERS (DALLAS)	5MIL TONS/YEAR W/ 2 PLANTS
*Covia	PUBLIC: CVIA	3MIL TONS/YEAR

**The newco by merger of U.S. Silica Holdings and Emerge Energy Services*

***The original High Roller Sand Kermit 1218 plant was sold to Wisconsin Proppants in mid-2018 and our transition obligations were fulfilled at year end.*

****5,000 AC 100+ years of sand production (325mm+ tons of resource identified).*

Together the above players will mine and ship approximately 22Mil tons of sand this year to shale drillers in the Permian Basin, the hottest oil patch on Earth. It is a staggering sum of sand, equal to almost a quarter of total U.S. supply. And within a couple years, industry experts say, the figure could climb to over 50 million tons.

CONFIDENTIAL

HOW AND WHY

The West Texas sand isn't nearly as big or as sturdy. And it's oddly shaped too -- more like a jelly bean than a marble. So for years, it was ignored. (No one was even interested in it for use in other industries, like cement or microchips.) But then, in the summer of 2014, the price of oil plunged. Suddenly, cost-cutting was all the rage. And there was no cheaper place to pump shale oil than in the Permian.

As drillers piled into the region, they began to wonder if they really needed to have sand shipped from Wisconsin, some 1,300 miles away by rail when this "stuff" was all around them. Shipping costs from Wisconsin is about \$90/Ton of sand. That's triple the \$25/Ton or so it costs to truck in the Texas sand.

THE IMPACT

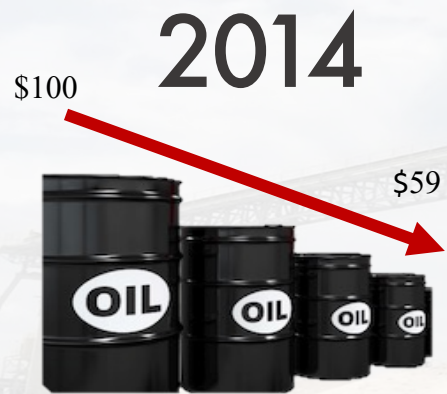
SAVINGS

Up to \$500,000 savings per well
when using in-basin frac sand!

OPPORTUNITY

2018 Haul Production Value
=\$2B

WHY THE SHIFT TO THE PERMIAN?



Cheaper to Drill in
Permian



SAVINGS

Up to \$500,000 savings per
well when using in-basin
frac sand!

WHY THE SHIFT TO IN-BASIN SAND?



Changing Technology

- Shift to slickwater frac designs

Structural Cost Transformation

- Potential savings of up to \$500,000 PER WELL
- \$3.5 Billion in savings per year in the Permian¹

In-Basin Delivered Cost Advantage

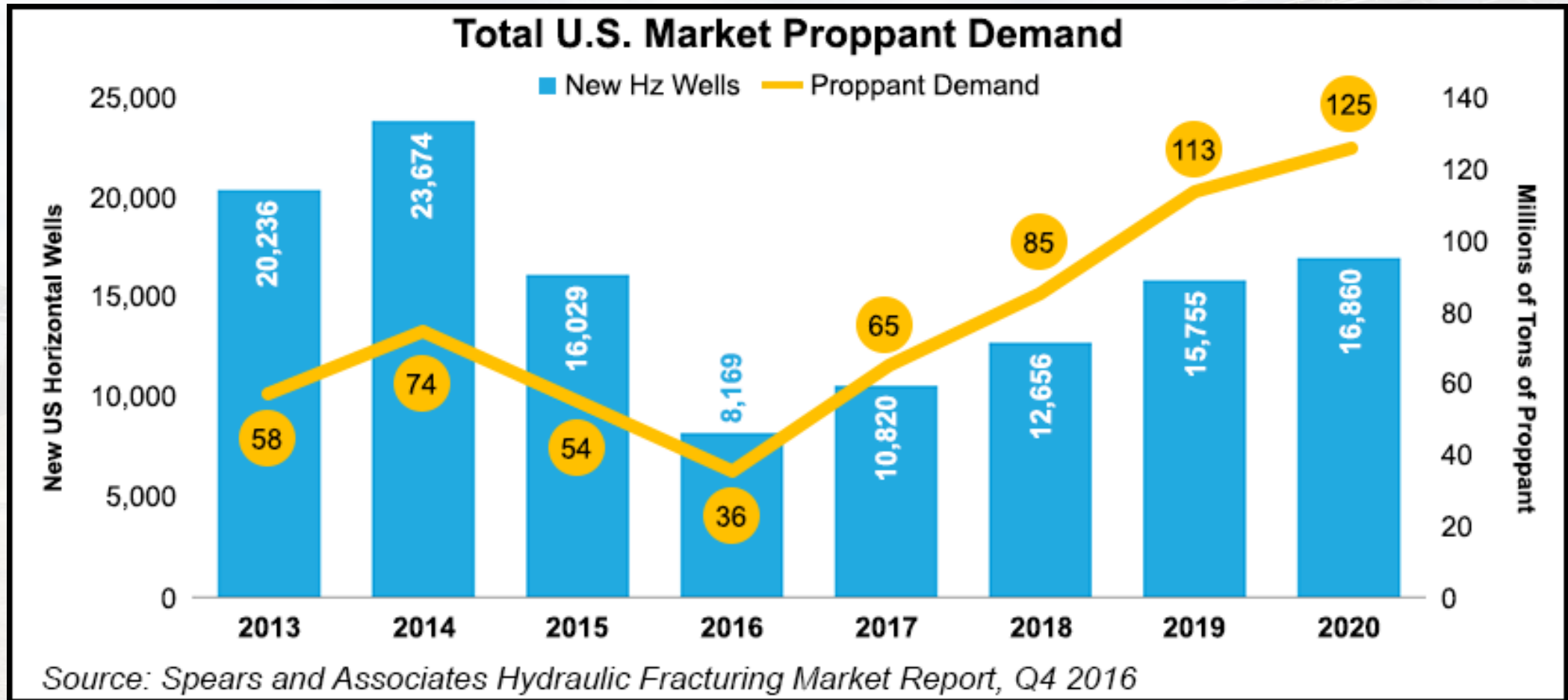
- 50% savings over cost of Northern White

Simplified Logistics

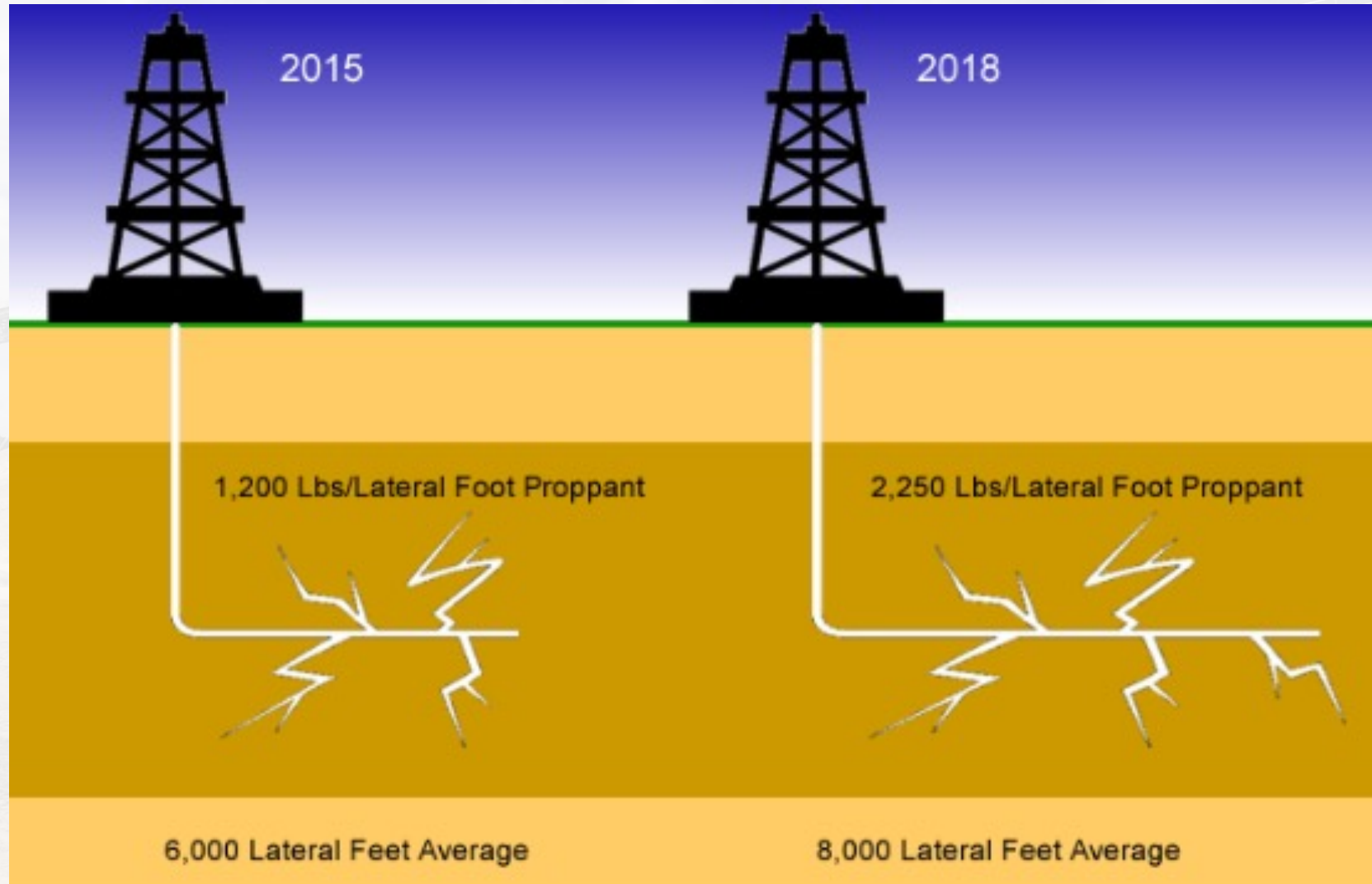
- Shorter supply chain (~1,200 miles to <~200)
- Turnkey delivery available from mine to wellsite

¹ Economic Impact Study, Infill Thinking, January 3, 2018

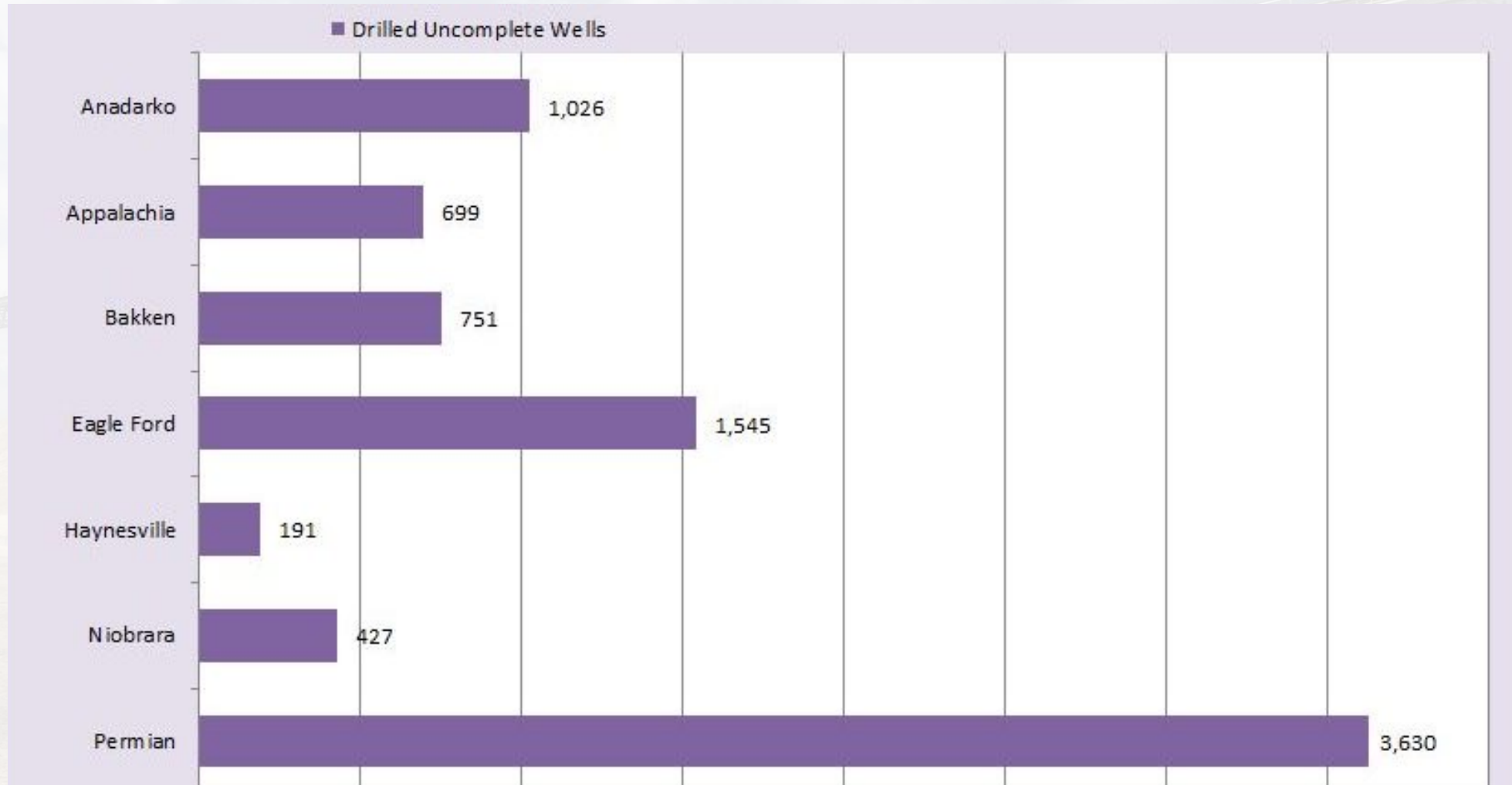
FRAC SAND DEMAND PROJECTIONS



PERMIAN FRAC SAND PERSPECTIVE ON SINGLE WELL DEMAND

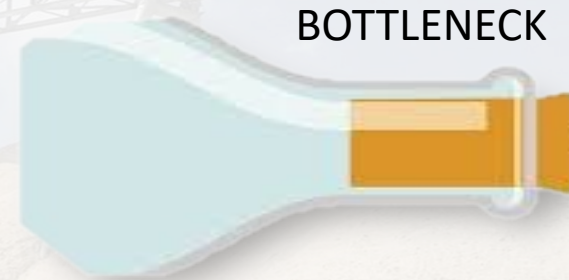


FUTURE DEMAND WILL CHANGE



PERIAN BASIN -PIPELINE PERSPECTIVE

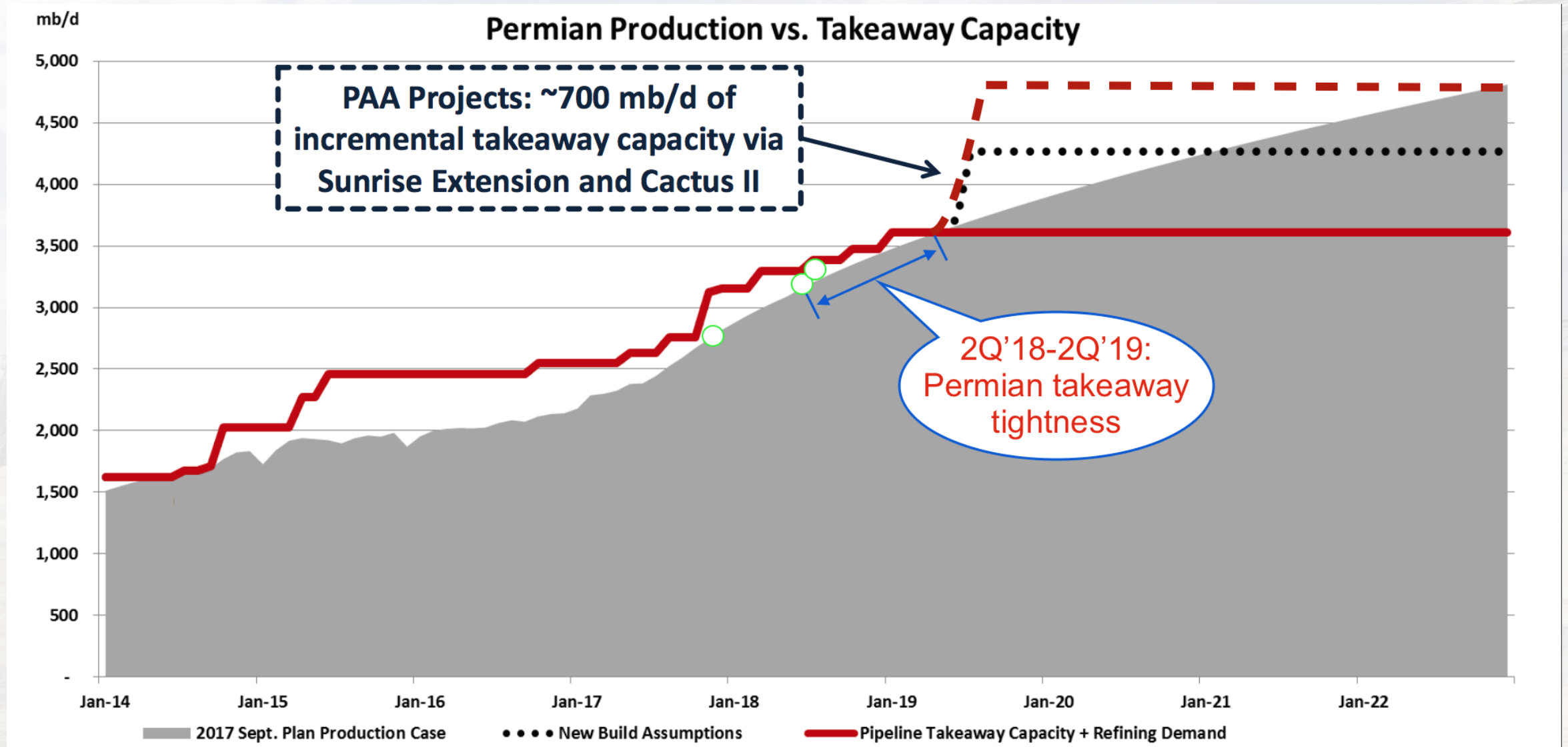
Pipeline Infrastructure Challenge
Daily Capacity 3.1 Mil B/day
Daily Production 3.4 Mil B/day



This bottleneck has stunted the growth of crude production as well as frac sand demand. However, that is about to change.

THERE ARE ENOUGH PIPELINE PROJECTS CURRENTLY UNDERWAY AND ON THE DRAWING BOARD TO POTENTIALLY MORE THAN DOUBLE THE CRUDE OIL TAKEAWAY CAPACITY OF THE PERMIAN BASIN.

PERMIAN BASIN -PIPELINE PERSPECTIVE



PERIAN BASIN -PIPELINE PERSPECTIVE

Permian Basin Crude Oil Pipeline Projects

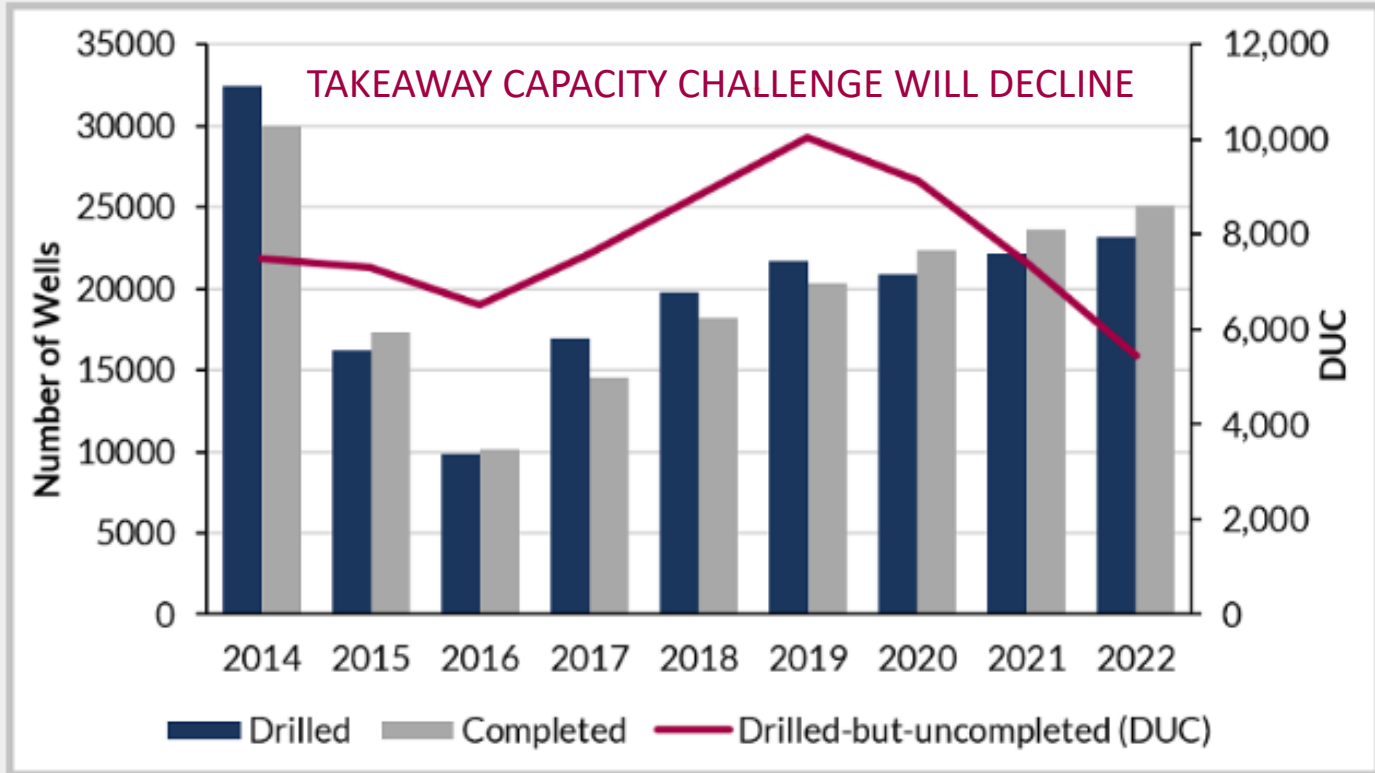
Companies	Pipeline	Capacity	In-Service Date
Plains All American Pipeline LP	Sunrise Expansion	200,000	Q4 2018
Plains All American Pipeline LP, Magellan Midstream Partners LP, OMERS Infrastructure	BridgeTex Expansion	40,000	Early 2019
Epic Midstream Holdings LP	Epic	590,000	Late 2019
Plains All American Pipeline LP, Wester Gas Partners LP	Cactus II	525,000	Q3 2019
Phillips 66 Partners LP, Andeavor	Gray Oak	700,000	Q4 2019
Energy Transfer Partners LP	N/A	600,000	2020
Plains All American Pipeline LP, Exxon Mobile Corp.	N/A	> 1,000,000	N/A
As of September, 2018			
N/A = Not Available			
Sources: S&P Global			

PERMIAN BASIN- TRENDS

Typical Permian Wells

- 10,000-foot lateral requires about 12,500 tons of frac sand — *enough sand to fill more than 500 large sand trucks.*
- **7,500 foot lateral** and **11 million** pounds of frac sand

Activity levels in the Permian Basin have been more balanced ever since production overtook takeaway capacity last year. “That issue will be mostly solved by late 2019,” said Jang, as new oil and gas pipelines come on stream with combined capacities of 1.4 million B/D and 4 bcf/D.



Source: Energent, Westwood Global Energy Group.

PERMIAN BASIN- TRENDS

Sourcing Change

- There is an increase in E&Ps managing their frac sand supply chain.
- Traditionally, responsibility was on the integrated oilfield services companies or pressure-pumping specialists that E&Ps contract with to provide completion-related services.
- In the past two or three years, E&Ps want more control to enhance reliability, maximize efficiency and minimize costs.
- Increasing number of E&Ps were taking to become more involved in sand procurement.

The Frac Sand Industry Going Forward

Recent trends have shown that Permian Basin:

1. Wells have gotten longer with more proppant used per lateral foot.
2. Record numbers of DUC wells needing sand for completion, points to a continued rise in frac sand demand.
3. New pipelines in the works, potentially doubling the takeaway capacity in the Permian.

Add it all up, and the numbers look very positive for frac sand demand in the Permian Basin and a new production boom is on the horizon.

Q1 2019 Sand Financials

“Industry muddling along with overcapacity, 40/70 sand prices firming”

By Joel Schneyer (Managing Director Oilfield Minerals – Capstone Headwaters) May 21, 2019

Not all sand is the same....

20/40 and 30/50, which remains difficult to place and in many cases is viewed as a waste product today.

40/70, commands a premium and some mines are having some difficulty producing enough to meet demand.

Pricing for NWS 40/70 firmed up by end of quarter to the low-to-mid 30's per ton mine gate pricing with 100 mesh a few dollars less. 40/70 pricing held up pretty well for In-Basin Permian sand, but we are seeing continued pricing pressure on In-Basin Permian 100 mesh.

PERMIAN BASIN FUTRE PERSPECTIVE

Forbes Dec. 2018

63,422 views | Dec 27, 2018, 10:01am

Why The Permian Basin May Become The World's Most Productive Oil Field

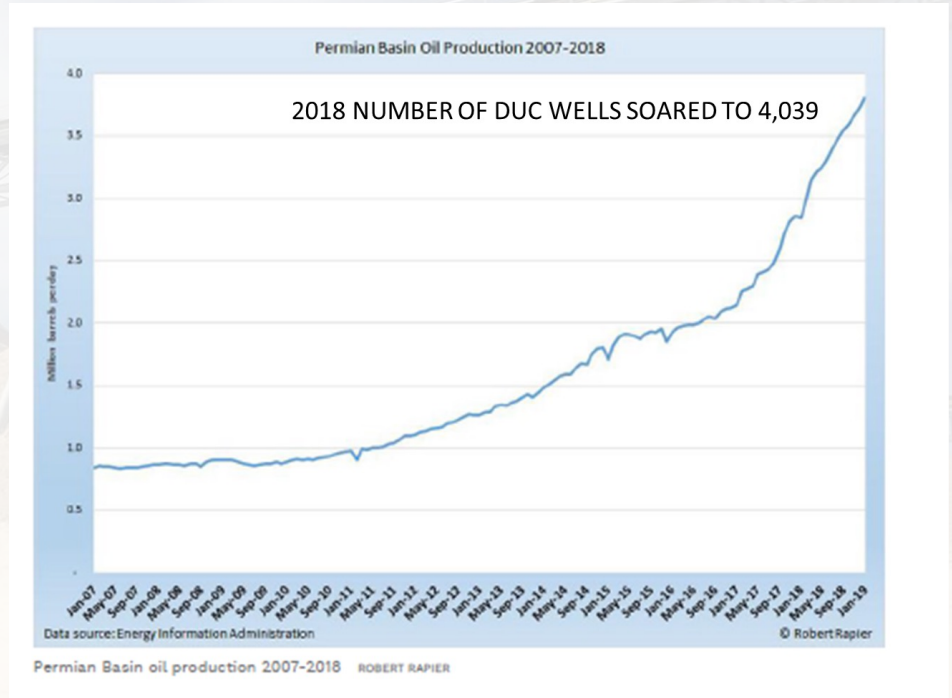


Robert Rapier
Energy

Forbes April 2019

27,086 views | Apr 5, 2019, 08:00am

The Permian Basin Is Now The World's Top Oil Producer



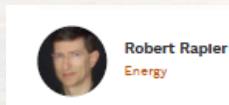
Many people will tell you that the production rate of Saudi Arabia's Ghawar oil field, which has yielded 5 million barrels of petroleum per day for decades, will never be surpassed. In fact, no other oil field has ever come close to topping the production rate of Ghawar, and up until recently I would have agreed its production would never be topped.....

PERMIAN BASIN FUTRE PERSPECTIVE

Forbes Dec. 2018

But...in December 2018

- Permian Basin production 3.8 million BPD
- #2 in world oil field production
- Up 3 million BPD since 2000 due to fracking
- Not even completing all wells drilled
- Soaring inventory of drilled but uncompleted (DUC) oil wells.
- Oil producers have drilled an average of 5,316 wells per year in the Permian over
- the past five years, but have only completed an average of 4,620 wells per year.
- USGS new estimated mean of undiscovered, technically recoverable resources in the Permian basin are 46.3
- billion barrels of oil



Robert Rapier has over 25 years of experience in the energy industry as an engineer and an investor. Follow him on Twitter [@rrapier](#) or at [Investing Daily](#).

Forbes April 2019

- Saudi Aramco -- the national oil company of Saudi Arabia and the world's largest oil company -- lifted a veil of secrecy - 2018 production 3.8million BPD.
- So, it is quite possible that Ghawar is simply not operating at full capacity.
- The Energy Information Administration reports that the Permian Basin is now producing 4.2 million BPD.
- Marks the first time in decades that Ghawar wasn't the top-producing oil field in the world.

PERMIAN IS KEY FOR GROWTH

Exxon Mobil's Permian Focus

- ✓ Oct. 2017 ExxonMobil Acquires Crude Oil Terminal to Serve Growing Permian Basin Production
- ✓ Establishes ExxonMobil as key midstream provider in the rapidly growing Permian Basin
- ✓ Permitted for 100,000 BPD of throughput with the ability to expand
- ✓ Provides transportation and storage options for Permian Basin producers
- ✓ Plans to spend more than \$2 billion on transportation infrastructure to support its Permian operations, including expanding its Acquired Crude Oil Terminal in Wink, Texas.
- ✓ Also in 2017, acquired the Permian acreage of Fort Worth's prominent Bass family to more than double its Permian acreage holdings paying over \$6Bil.
- ✓ March 5, 2019 **ExxonMobil** announced it will produce 1 million BPD from the Permian by 2024, while **Chevron** is targeting 900,000 BPD over the next five years.

PERMIAN IS KEY FOR GROWTH

ExxonMobil's

First quarter Permian Basin output climbed 36,000 boe/d from 4Q 2018 to 226,000 boe/d, and ExxonMobil revised its Permian growth expectations to more than 1 million boe/d "as early as 2024," the company said.

"The size of the company's resource base in the Permian is approximately 10 billion oil-equivalent barrels and is likely to grow further as analysis and development activities continue," the company said.

This acquisition marks ExxonMobil's first terminal in the Permian Basin to be anchored by the corporation's newly acquired Delaware Basin acreage, previously announced in January.

WHITE OAK MATERIALS SYNOPSIS PERMIAN BASIN KERMIT TEXAS

This is a proposal to purchase the 3 Amigos acreage that encompasses the existing sand production adjacent to property currently held by High Roller, Hi Crush, Atlas, Covia, Badger etc.

This particular property which is approximately 2,970 acres with existing cores show currently over 300 million tons of high quality frack sand that will enable us for over 50 years production in the heart of the "giant" Permian oil and gas play.

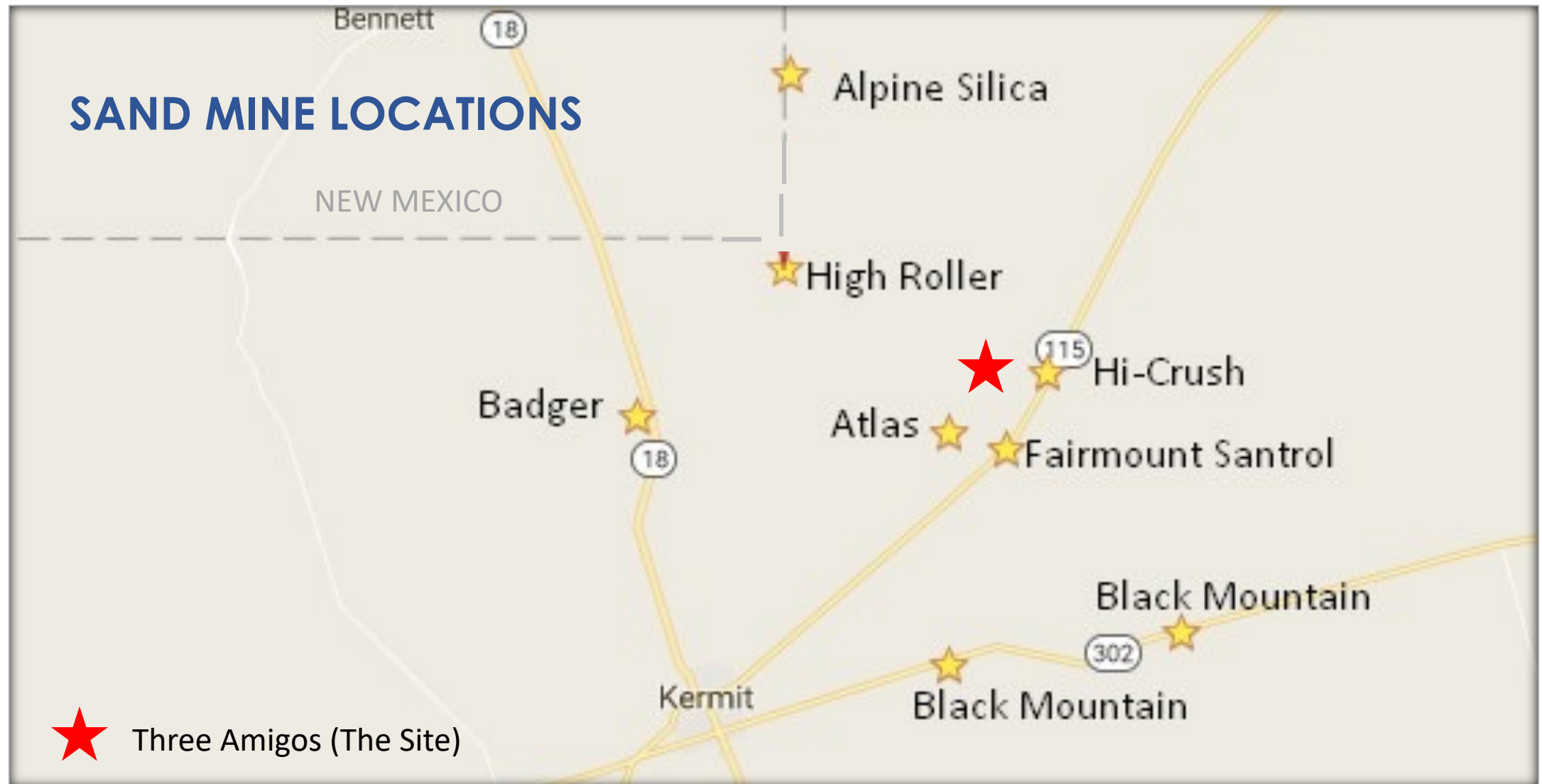
This acquisition will facilitate 3 separate plants that can produce annually 4 million tons each which would constitute the premier facility in the basin. White Oak Materials along with its associates are working on developing the first plant that should start production by September 2019. This first venture will produce annually 2 million tons of frack sand. The plant is being designed to increase production after only 6 months to increase production to 4 million tons. We should see that increase no later than mid September of 2020.

Water is being purchased and piped to the facility directly which will provide for 2 benefits for the opportunity:

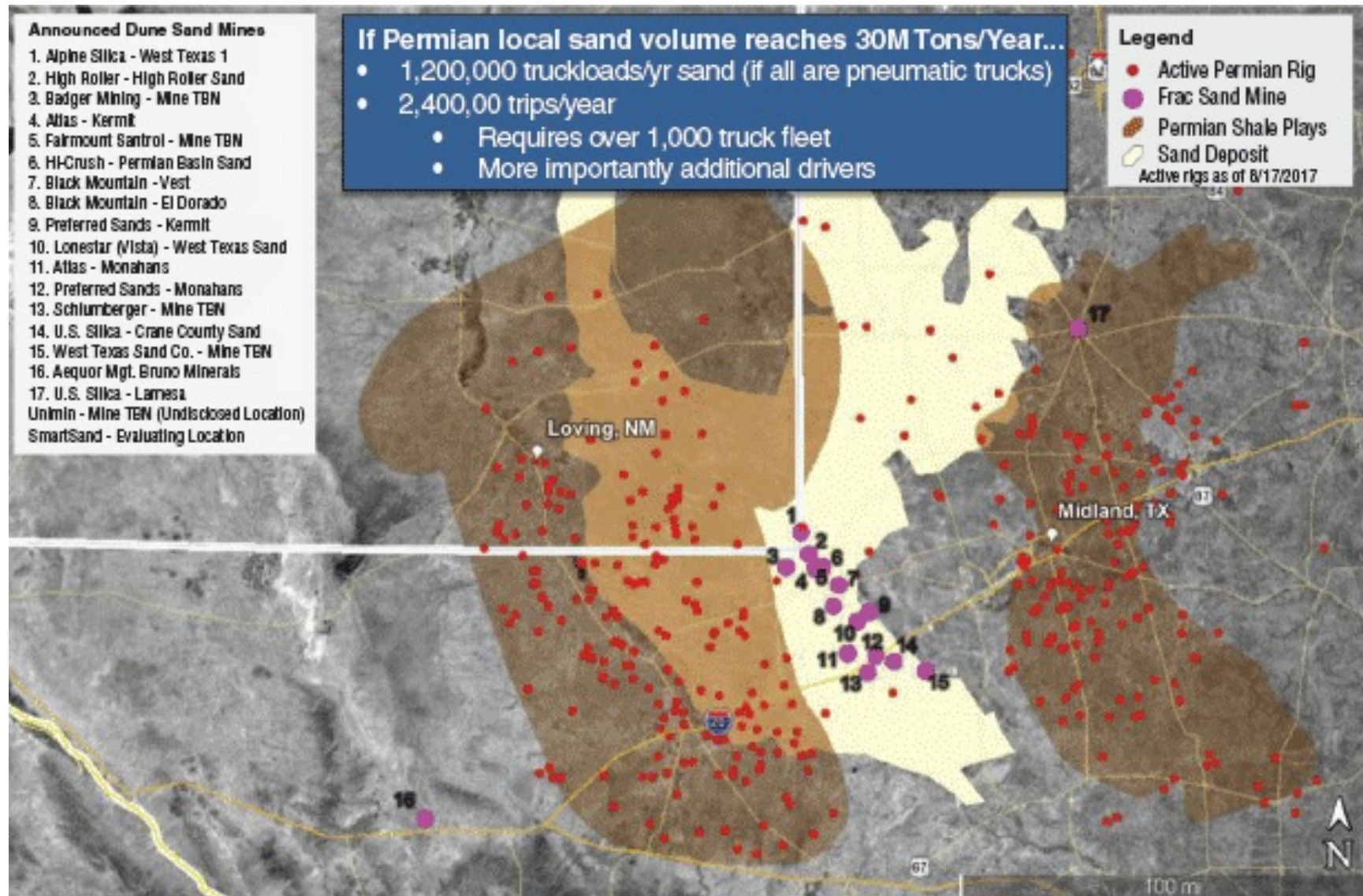
1. The ability to sell water directly
2. The ability to sell the products of the 3 sand plants
 - Annual production estimated at 12million tons

White Oak Materials, is currently in negotiations on sand contracts to purchase all of the sand production the first plant will produce over the next 3-5 years. Current Market Value of each plant is \$350 million dollars. The production and construction teams are assembled and look to start the first plant mid July 2019.

SAND MINE LOCATIONS



PERMIAN SAND MINES



OPERATING COST ESTIMATE PER TON

This is an estimate on a worst condition basis and developed by two of the leading experts that have built and operated existing plants.

<u>Operation</u>	<u>Cost</u>
Sand Royalty	Not applicable
Water	\$0.10 included
Drying	\$2.80
Mining (to plant)	\$1.50
Washing	\$1.95
Fuel	\$1.50
Sand to Dryer	\$1.00
Load Out/Labor	<u>\$3.00</u>
Total	\$11.85/ton
After permanent electrical hook up fuel cost drops \$1.00	
New Cost	\$10.85/ton

ARTICLES

[Dunes of Kermit Sold](#) 3/2016

[Hi-Crush Partners LP \(NYSE: HCLP\) 1,200- acre acquisition of former Dunes at Kermit. 3-16/2017](#)

[Atlas Sand Opening Kermit Frac Sand Facility](#) 7/2018

[The New Texas Gold Rush: Buying Sand for Fracking](#) WSJ 9/2017

[High Roller Sand – Will This Young Buck Become a Trophy?](#) InfillThinking 9/2017

[Worthless Just Two Years Ago, West Texas Sand Now Brings in Billions](#) Bloomberg 7/2018

[Hi-Crush Converts from MLP to conventional C-Corp The Motley Fool](#) 1/2019

[Central Texas Sand Mines Shuttering](#) 11/2018

[Covia Holdings Corp CVIA Q3 Earnings Call](#) Motley Fool 11/2018

[Covia Sheds Light on the New Look Frack Sand Industry](#) Seeking Alpha 11/2018

Note: The above links will take you directly to the article.

DISCLAIMER

This information has been obtained from sources believed reliable. We have not verified it and make no guarantee, warranty or representation about it. Any projections, opinions, assumptions or estimates used are for example only and do not represent the current or future performance of the project. You and your advisors should conduct a careful, independent investigation of the property to determine to your satisfaction the suitability of the project for your needs.

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ARTICLES

Yesterday's Fire-Sale Prices Have Become Today's Leading Edge Rates...

What would have been considered fire-sale prices a year ago have become today's leading edge spot rates in the Permian Basin.

We talked with multiple sand miners last week who told us they have picked a level they won't sell below. We think that breakpoint for some producers trying to be disciplined is about \$20/ton.

We think a reasonable range for Permian market sand prices today is \$17-\$24.

That said, we heard of at least one mine selling 100-mesh FOB mine near Monahans for \$10/ton. And we know that several others have been undisciplined and dipped down into the \$12-\$15/ton range on 100 mesh for "flash sales" – a handful of aggressive sellers are leading the way down to the bottom, which is applying lots of pressure on mines already running at sub-optimal utilization rates.

Some mines seem to be trying to just clear out their 100-mesh (even if it goes for a loss) hoping to make up the margin with higher volumes of 40/70 (which is still commanding a decent premium).

ENGINEERING REPORTS & RESERVES



Building a Better World
for All of Us®

MEMORANDUM

TO: Tony Underwood
FROM: Darrell Reed PG
DATE: July 28, 2017
RE: Three Amigos Property - Sand Resource Assessment
SEH No. 142571 14.00

SEH has performed a resource quantity calculation from sand sample sieve results received from 20 soil borings performed on the approximate 3,800 acre Three Amigos property, Winkler Co., Texas (site). The sieve results were reviewed using a pay cut off criteria of a minimum 80% cumulative retained on the No. 140 sieve. A cutoff criteria of 60% cumulative retained on the 70 mesh and 50% cumulative retained on the 50 mesh were also used to analyze the sieve results for the presence of coarser sand fractions.

Net pay calculations were performed for the 30/50, 40/70 and 70/140 ("100 mesh") sand fractions. Net pay contour maps were generated and acreages between contour lines calculated using GIS methods. Resource quantities for each sand fraction were calculated and tabulated. A discussion of each sand fraction analysis follows:

ENGINEERING REPORTS & RESERVES

Three Amigos Property - Sand Resource Assessment
July 28, 2017

30/50 sand fraction:

- Minor quantity of sand fraction on site compared to 40/70 and 40/140 fraction quantities.
- Maximum of 11 feet net pay sand indicated.
- Net Pay map indicates a general net pay thickness increase from the southeast to northwest area of the site.
- The thinnest net pay quantity is located in the southeast area of the site.
- Total sand resources over 3,768 acres = **59,877,576 tons.**

40/70 sand fraction:

- Considerable quantity of sand fraction present on the site.
- Maximum of 42 feet net pay sand indicated.
- Net Pay map indicates a general net pay thickness increase from the southeast to northwest area of the site.
- A thin net pay quantity is located in the southeast area of the site.
- Total sand resources over 3,768 acres = **196,849,818 tons.**

70/140 sand fraction:

- Considerable quantity of sand fraction present on site.
- Maximum of 44 feet net pay sand indicated.
- Net Pay map indicates a general net pay thickness increase from the southeast to northwest area of the site.
- A thin net pay quantity is located in the southeast area of the site.
- Total sand resources over 3,768 acres = **187,003,080 tons.**

ENGINEERING REPORTS & RESERVES

Three Amigos Property - Sand Resource Assessment
July 28, 2017
Page 2

Total Sand fraction resource quantities for the Three Amigos site are summarized below:

<u>Fraction</u>	<u>Net Sand Resource (ton)</u>	
40/70	196,849,818	
70/140	187,003,080	
Total Quantity (40/140)	383,852,898	tons
30/50 Fraction Only = 59,877,576 tons		

A considerable sand resource quantity exists at the site. Additional laboratory sand parameter testing details are not provided or discussed in this memo.

If you have any questions regarding the contents of this memo, please contact me at 715.720.6222.

Daniel R. Reed

DRR/dr/
Enc.

c: Jack Mitchell, Wisconsin Proppants, LLC

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ENGINEERING REPORTS & RESERVES

Table 2 - "Three Amigos - Sand Resource Calculation"
30/50 Fraction
Winkler County, Texas

Date: 6/20/17

<u>Property</u>	<u>Contour Line</u>	<u>Ave Net Pay</u>	<u>Acres</u>	<u>Area</u>	<u>Est. Inf. Sand</u>	<u>Cubic yard to ton</u>	<u>Net Sand</u>
<u>Three Amigos</u>		<u>(feet)</u>	<u>(between contours)</u>	<u>(sq. ft)</u>	<u>Resource</u>	<u>conversion</u>	<u>Resource (ton)</u>
30/50 fraction	10+	10	348	15,158,880.00	5,614,400.00	1.35	7,579,440
30/50 fraction	8 -10	9	913	39,770,280.00	13,256,760.00	1.35	17,896,626
30/50 fraction	6-8	7	1817	79,148,520.00	20,519,986.67	1.35	27,701,982
30/50 fraction	4-6	5	503	21,910,680.00	4,057,533.33	1.35	5,477,670
30/50 fraction	0-4	3	187	8,145,720.00	905,080.00	1.35	1,221,858
		Total	3,768	164,134,080	44,353,760		59,877,576 tons

Notes: Net Sand Resource = Total Net sand quantity on sand only passing 30 mesh and retained on 50 mesh
Based on: Others sieve results , USGS topo maps,
using a min. sand resource cutoff of 80% cumulative retained on No. 140 standard mesh sieve
assumption that resource meets API Spec for frac sand, no property, or utility setbacks.



ENGINEERING REPORTS & RESERVES

Table 2 - "Three Amigos - Sand Resource Calculation"
40/70 Fraction
Winkler County, Texas

Date: 6/20/17

<u>Property</u>	<u>Contour Line</u>	<u>Ave Net Pay</u>	<u>Acres</u>	<u>Area</u>	<u>Est. Inf. Sand Resource</u>	<u>Cubic yard to ton conversion</u>	<u>Net Sand Resource (ton)</u>	
<u>El Dorado</u>		<u>(feet)</u>	<u>(between contours)</u>	<u>(sq. ft)</u>	<u>(cy)</u>			
40/70 fraction	40+	42	123	5,357,880.00	8,334,480.00	1.35	11,251,548	
40/70 fraction	30 - 40	35	590	25,700,400.00	33,315,333.33	1.35	44,975,700	
40/70 fraction	20 - 30	25	2,000	87,120,000.00	80,666,666.67	1.35	108,900,000	
40/70 fraction	10 - 20	15	929	40,467,240.00	22,481,800.00	1.35	30,350,430	
40/70 fraction	0 - 10	5	126	5,488,560.00	1,016,400.00	1.35	1,372,140	
		Total	3,768	164,134,080	145,814,680		196,849,818	tons

Notes:

Net Sand Resource = Total Net sand quantity on sand only passing 40 mesh and retained on 70 mesh
Based on: Others sieve results, USGS topo maps,
using a min. sand resource cutoff of 80% cumulative retained on No. 140 standard mesh sieve
assumption that resource meets API Spec for frac sand, no property, or utility setbacks.



ENGINEERING REPORTS & RESERVES

Table 2 - "Three Amigos - Sand Resource Calculation"
70/140 Fraction
Winkler County, Texas

Date: 6/20/17

<u>Property</u>	<u>Contour Line</u>	<u>Ave Net Pay</u>	<u>Acres</u>	<u>Area</u>	<u>Est. Inf. Sand Resource</u>	<u>Cubic yard to ton conversion</u>	<u>Net Sand Resource (ton)</u>	<u>Comments</u>
<u>Three Amigos</u>		<u>(feet)</u>	<u>(between contours)</u>	<u>(sq. ft)</u>	<u>(cy)</u>			
70/140 fraction	40+	40	158	6,882,480.00	10,196,266.67	1.35	13,764,960	
70/140 fraction	30 - 40	35	402	17,511,120.00	22,699,600.00	1.35	30,644,460	
70/140 fraction	20 - 30	25	1901	82,807,560.00	76,673,666.67	1.35	103,509,450	
70/140 fraction	10 - 20	15	1141	49,701,960.00	27,612,200.00	1.35	37,276,470	
70/140 fraction	0-10	5	166	7,230,960.00	1,339,066.67	1.35	1,807,740	
		Total	3,768	164,134,080	138,520,800		187,003,080	tons

Net Sand Resource = Total Net sand quantity on sand only passing 70 mesh and retained on 140 mesh
 Based on: Others sieve results, USGS topo maps,
 using a min. sand resource cutoff of 80% cumulative retained on No. 140 standard mesh sieve
 assumption that resource meets API Spec for frac sand, no property, or utility setbacks.



ENGINEERING REPORTS & RESERVES

**Table 3 - "Three Amigos - Sand Resource Quantity Summary"
Winkler County, Texas**

Date: 6/20/17

<u>Fraction</u>	<u>Net Sand Resource (ton)</u>	
40/70 Fraction	196,849,818	
70/140 Fraction	187,003,080	
Total Quantity (40/140)	383,852,898	tons
30/50 Fraction	59,740,362	tons

Based on: Others sieve results , USGS topo maps,
using a min. sand resource cutoff of 80% cumulative retained on No. 140 standard mesh sieve
assumption that resource meets API Spec for frac sand



ENGINEERING REPORTS & RESERVES

Table 1. *Stout Saxenale*
Three-Angled Forest, Madison County[illegible]

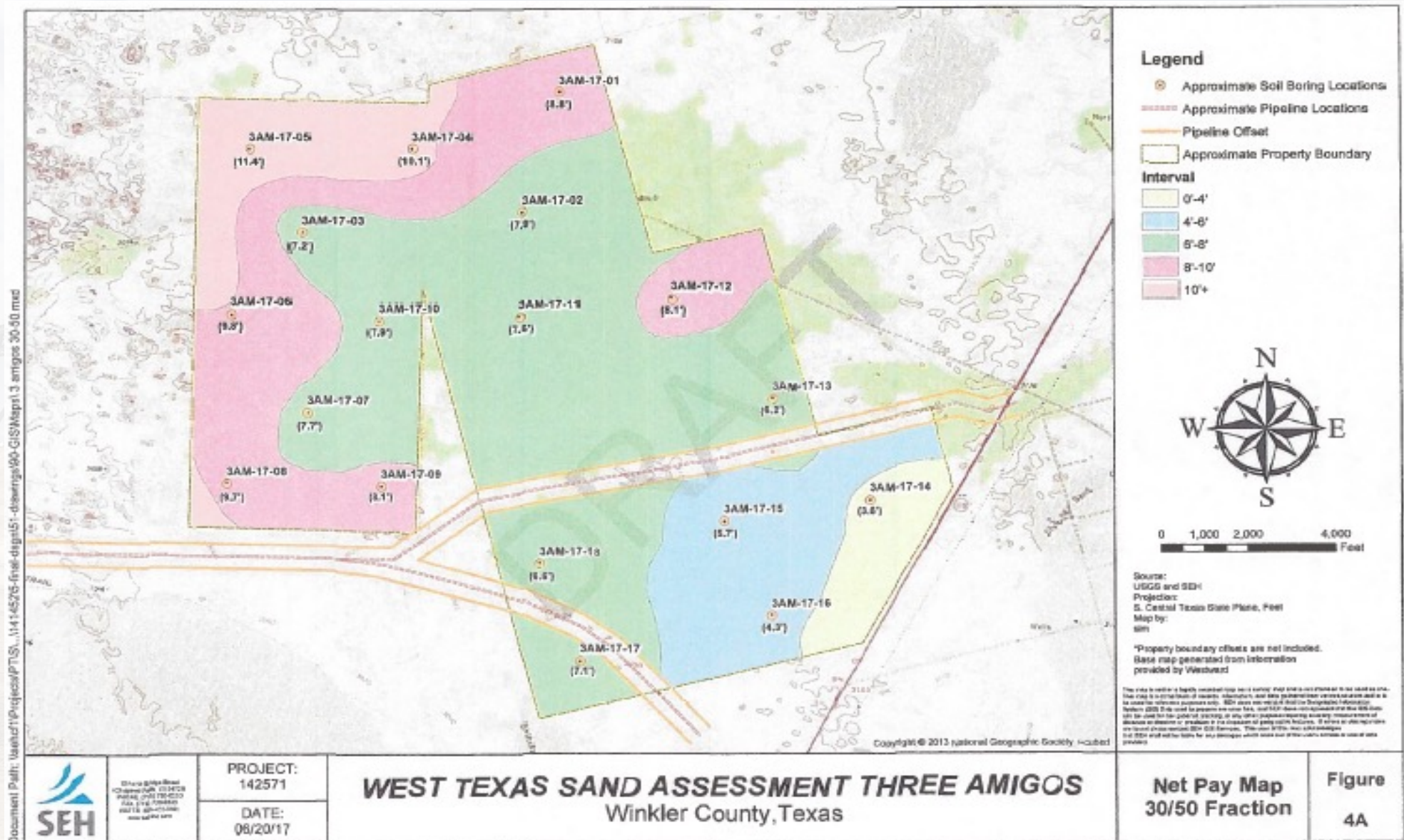
Transport and Telecommunications Services

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Project	Mod/Type	16	20	25	30	35	40	45	50	55	60	65	70	75	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	720	740	760	780	800	820	840	860	880	900	920	940	960	980	1000	1020	1040	1060	1080	1100	1120	1140	1160	1180	1200	1220	1240	1260	1280	1300	1320	1340	1360	1380	1400	1420	1440	1460	1480	1500	1520	1540	1560	1580	1600	1620	1640	1660	1680	1700	1720	1740	1760	1780	1800	1820	1840	1860	1880	1900	1920	1940	1960	1980	2000	2020	2040	2060	2080	2100	2120	2140	2160	2180	2200	2220	2240	2260	2280	2300	2320	2340	2360	2380	2400	2420	2440	2460	2480	2500	2520	2540	2560	2580	2600	2620	2640	2660	2680	2700	2720	2740	2760	2780	2800	2820	2840	2860	2880	2900	2920	2940	2960	2980	3000	3020	3040	3060	3080	3100	3120	3140	3160	3180	3200	3220	3240	3260	3280	3300	3320	3340	3360	3380	3400	3420	3440	3460	3480	3500	3520	3540	3560	3580	3600	3620	3640	3660	3680	3700	3720	3740	3760	3780	3800	3820	3840	3860	3880	3900	3920	3940	3960	3980	4000	4020	4040	4060	4080	4100	4120	4140	4160	4180	4200	4220	4240	4260	4280	4300	4320	4340	4360	4380	4400	4420	4440	4460	4480	4500	4520	4540	4560	4580	4600	4620	4640	4660	4680	4700	4720	4740	4760	4780	4800	4820	4840	4860	4880	4900	4920	4940	4960	4980	5000	5020	5040	5060	5080	5100	5120	5140	5160	5180	5200	5220	5240	5260	5280	5300	5320	5340	5360	5380	5400	5420	5440	5460	5480	5500	5520	5540	5560	5580	5600	5620	5640	5660	5680	5700	5720	5740	5760	5780	5800	5820	5840	5860	5880	5900	5920	5940	5960	5980	6000	6020	6040	6060	6080	6100	6120	6140	6160	6180	6200	6220	6240	6260	6280	6300	6320	6340	6360	6380	6400	6420	6440	6460	6480	6500	6520	6540	6560	6580	6600	6620	6640	6660	6680	6700	6720	6740	6760	6780	6800	6820	6840	6860	6880	6900	6920	6940	6960	6980	7000	7020	7040	7060	7080	7100	7120	7140	7160	7180	7200	7220	7240	7260	7280	7300	7320	7340	7360	7380	7400	7420	7440	7460	7480	7500	7520	7540	7560	7580	7600	7620	7640	7660	7680	7700	7720	7740	7760	7780	7800	7820	7840	7860	7880	7900	7920	7940	7960	7980	8000	8020	8040	8060	8080	8100	8120	8140	8160	8180	8200	8220	8240	8260	8280	8300	8320	8340	8360	8380	8400	8420	8440	8460	8480	8500	8520	8540	8560	8580	8600	8620	8640	8660	8680	8700	8720	8740	8760	8780	8800	8820	8840	8860	8880	8900	8920	8940	8960	8980	9000	9020	9040	9060	9080	9100	9120	9140	9160	9180	9200	9220	9240	9260	9280	9300	9320	9340	9360	9380	9400	9420	9440	9460	9480	9500	9520	9540	9560	9580	9600	9620	9640	9660	9680	9700	9720	9740	9760	9780	9800	9820	9840	9860	9880	9900	9920	9940	9960	9980	10000	10020	10040	10060	10080	10100	10120	10140	10160	10180	10200	10220	10240	10260	10280	10300	10320	10340	10360	10380	10400	10420	10440	10460	10480	10500	10520	10540	10560	10580	10600	10620	10640	10660	10680	10700	10720	10740	10760	10780	10800	10820	10840	10860	10880	10900	10920	10940	10960	10980	11000	11020	11040	11060	11080	11100	11120	11140	11160	11180	11200	11220	11240	11260	11280	11300	11320	11340	11360	11380	11400	11420	11440	11460	11480	11500	11520	11540	11560	11580	11600	11620	11640	11660	11680	11700	11720	11740	11760	11780	11800	11820	11840	11860	11880	11900	11920	11940	11960	11980	12000	12020	12040	12060	12080	12100	12120	12140	12160	12180	12200	12220	12240	12260	12280	12300	12320	12340	12360	12380	12400	12420	12440	12460	12480	12500	12520	12540	12560	12580	12600	12620	12640	12660	12680	12700	12720	12740	12760	12780	12800	12820	12840	12860	12880	12900	12920	12940	12960	12980	13000	13020	13040	13060	13080	13100	13120	13140	13160	13180	13200	13220	13240	13260	13280	13300	13320	13340	13360	13380	13400	13420	13440	13460	13480	13500	13520	13540	13560	13580	13600	13620	13640	13660	13680	13700	13720	13740	13760	13780	13800	13820	13840	13860	13880	13900	13920	13940	13960	13980	14000	14020	14040	14060	14080	14100	14120	14140	14160	14180	14200	14220	14240	14260	14280	14300	14320	14340	14360	14380	14400	14420	14440	14460	14480	14500	14520	14540	14560	14580	14600	14620	14640	14660	14680	14700	14720	14740	14760	14780	14800	14820	14840	14860	14880	14900	14920	14940	14960	14980	15000	15020	15040	15060	15080	15100	15120	15140	15160	15180	15200	15220	15240	15260	15280	15300	15320	15340	15360	15380	15400	15420	15440	15460	15480	15500	15520	15540	15560	15580	15600	15620	15640	15660	15680	15700	15720	15740	15760	15780	15800	15820	15840	15860	15880	15900	15920	15940	15960	15980	16000	16020	16040	16060	16080	16100	16120	16140	16160	16180	16200	16220	16240	16260	16280	16300	16320	16340	16360	16380	16400	16420	16440	16460	16480	16500	16520	16540	16560	16580	16600	16620	16640	16660	16680	16700	16720	16740	16760	16780	16800	16820	16840	16860	16880	16900	16920	16940	16960	16980	17000	17020	17040	17060	17080	17100	17120	17140	17160	17180	17200	17220	17240	17260	17280	17300	17320	17340	17360	17380	17400	17420	17440	17460	17480	17500	17520	17540	17560	17580	17600	17620	17640	17660	17680	17700	17720	17740	17760	17780	17800	17820	17840	17860	17880	17900	17920	17940	17960	17980	18000	18020	18040	18060	18080	18100	18120	18140	18160	18180	18200	18220	18240	18260	18280	18300	18320	18340	183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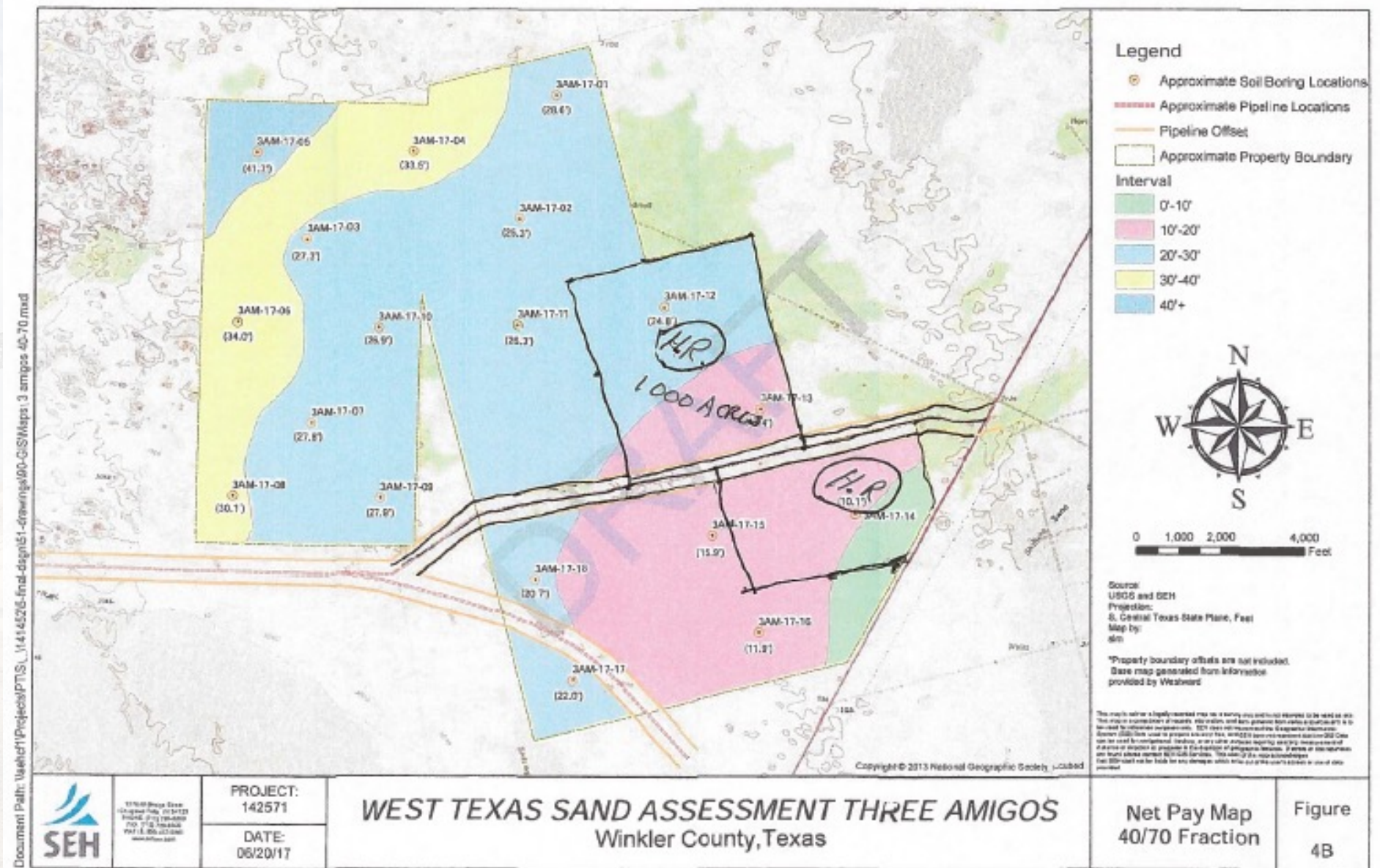
additional analysis is performed using cutoff of minimum COG cumulative retained on No. 70 mesh and minimum COG-cumulative retained on No. 50-mesh

12.5 - energia nel processo di polimerizzazione

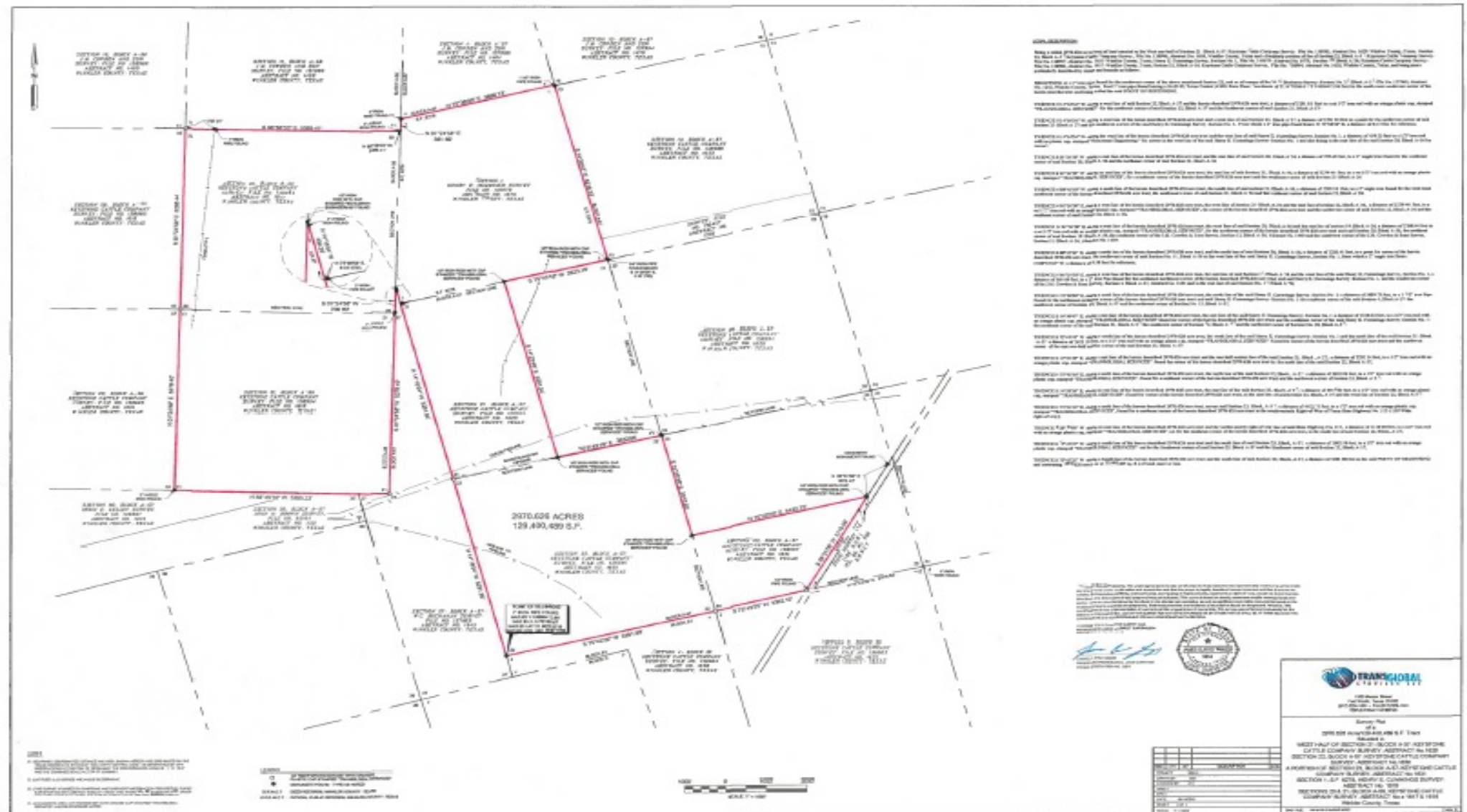
ENGINEERING REPORTS & RESERVES



ENGINEERING REPORTS & RESERVES



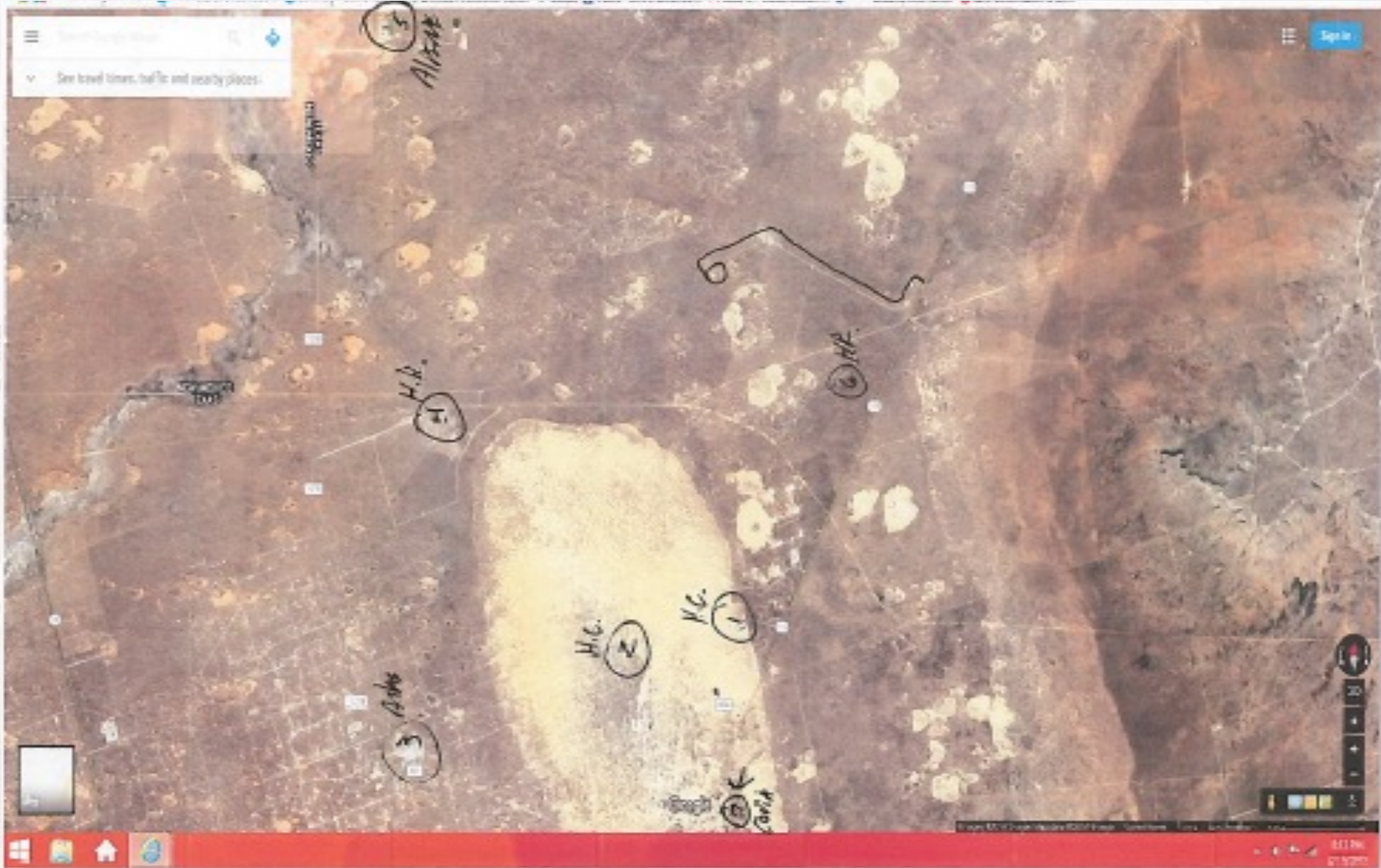
ENGINEERING REPORTS & RESERVES



ENGINEERING REPORTS & RESERVES


ANDREWS

NEW MEXICO




KERMIT

EQUIPMENT





Your SOLUTION for fine material processing




Super Cutter Hydro-Cyclone

The AZFAB Super Cutter Hydro-Cyclone uses centrifugal force alone to separate material by size and density. The centrifugal action inside the steel fabricated body forces material to separate with heavy particles falling to the bottom while the fine light material is pulled through the overflow.


- All steel construction
- No moving parts
- Vertical cylinder with a conical bottom section
- Internal lining of 1/2" thick 40 durometer natural rubber
- Operates with 8-10 psi inlet pressure
- Enhanced Rindy Super Cutters are available to provide finer cuts in the material
- Five different sizes of Super Cutters (pallons per minutes per hour)
 - 400/30
 - 600/70
 - 1200/90
 - 2000/150
 - 3000/225
- Operate anywhere from 0-100% of rated feed tons per hour



LinkedIn

Scan with
Smart Phone



MADE IN THE USA



Super Cutter Hydro-Cyclone





Specifications

Model	"A"	"B"	"C"	"D"	GPM Feed	TPH Feed	Mesh Cut
400/30	165	84	44 1/2	16 1/2	400	30	250
400/30 Ext Cone	190	114 1/4	74 5/8	16 1/2	400	30	300
600/70	199 3/4	118	66 1/4	24	600	70	220
600/70 Ext Cone	218 3/4	142 5/8	88 7/8	24	600	70	275
1200/90	220	142 3/4	75 1/2	26 5/8	1200	90	200
1200/90 Ext Cone	239 3/4	163 3/4	76 1/4	26 5/8	1200	90	270
2000/150	248 3/4	176 1/2	87 1/2	33	2000	150	175
2000/150 Ext Body	227 3/4	155	87 1/2	33	2000	150	200
3000/225	264 1/2	189 3/4	96 3/4	37	3000	225	140

EQUIPMENT

**SWECO**
A Business Unit of M-I L.L.C.

**Mi SWACO**
A Schlumberger Company

September 5, 2018

Jeff Flood
Concrete Mobility
1207 Cardinal Avenue N.
Glencoe, MN 55336

Quote #06062018Rev 1


Dear Jeff, Joe:


Thank you for allowing SWECO the opportunity to provide an equipment proposal for Concrete Machinery. Below you will find our proposal for a **SWECO Model AGS-26512 ATLAS Gyrotory Sifter**.

Based upon our understanding of your application, we are pleased to offer the following:

Material to be screened:	Sand
Bulk density:	100 lbs/cu yd
Maximum product temperature:	200-250°F
Maximum plant production:	200 TPH
Maximum desired feed rate per screener:	50 – 60 TPH
Moisture content:	<0.5%
Mesh:	46 TBC / 64 TBC
API fractions:	40/70 and 100 mesh



**SWECO**
We Put Technology In Motion™

**Mi SWACO**
Sweco, A Business Unit of M-I L.L.C.




Illustration photo

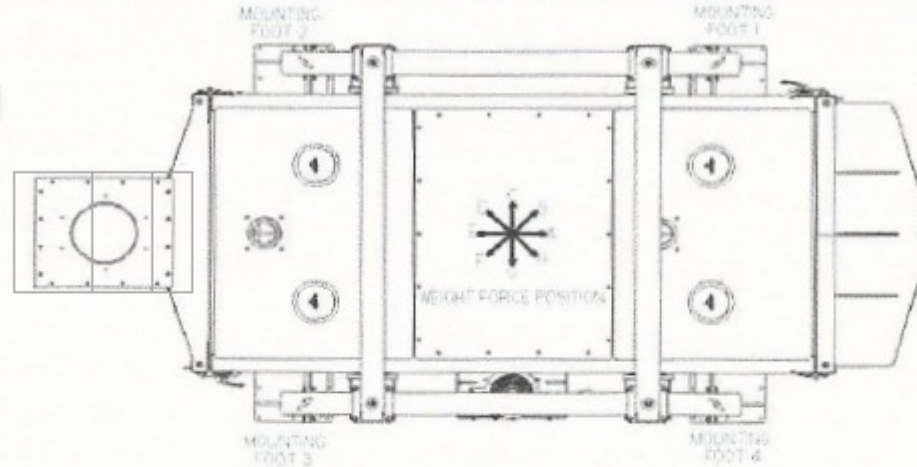
ITEM 1:

SWECO Model AGS-26512, 6 Way Feed Splitter, Twelve Deck ATLAS Gyrotory Sifter, 5.5' x 12', A/R lined construction, complete with the following:

- A two screen configuration, total of 400 ft² of screening area per mesh. Total of 800 ft².
- Eccentric-weight drive system including sheaves, drive belt and guard, and maintenance-free bearing. The dynamically balanced design eliminates the need for an expensive transmission or gearbox.
- **Quick-change screen design** with access from either end of the sifter. Screens can be inspected or changed without removing the dust cover or ball tray. In multi-deck units, each screen or ball deck can be independently removed or replaced without disturbing the cover or screens / ball decks at other levels.
- Mild steel floor-mounted support stands; no "optional" cables or suspension structures are required (hanging mount option is also available). The sifter is shipped assembled and ready for installation.
- Stainless steel woven wire screens manufactured in house by SWECO. They are of one-piece design, **require no clips**, and are tensioned in place for long-term high-efficiency operation.
- Mild steel ball deck installed below each screen for self-cleaning action. Ball decks can be removed from either end of the sifter but do not have to be removed when changing screens. They are supplied in sections sized to allow manual handling when removal is required.
- 1011R, 1200 RPM, 1HP, foot-mounted motor located on the side of the sifter for easy access.
- Welded mild steel drive, heavy-duty tubular frame with lifting lugs, and screen basket.
- Contact parts (chucker liner, cover, inlet, inlet spreader, tension rails, and discharge assembly) fabricated from A/R steel and painted. Ball decks and tension rails are not painted. Non-contact parts are painted mild steel. SWECO's standard paint is a **high-quality industrial epoxy, baked blue**.
- Gaskets and seals are silicone.

EQUIPMENT

This is an image



WEIGHT FORCE POSITION		STAND STATIC - DYNAMIC LOAD AT NORMAL OPERATING LOAD																
		MOUNTING FOOT 1				MOUNTING FOOT 2				MOUNTING FOOT 3				MOUNTING FOOT 4				STAND STATIC LOAD NORMAL OPERATING (LBS)
Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft lbs)	Dir.	Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft lbs)	Dir.	Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft lbs)	Dir.	Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft lbs)	Dir.			
A	5569.8	299.0	1108.2	→	5558.9	267.6	2731.9	→	5746.5	281.0	2993.0	→	6121.0	321.6	3249.9	→	MOUNTING FOOT 1	
B	5971.4	801.1	1129.0	→	5658.7	279.8	2901.2	→	5645.0	288.9	2899.3	→	6001.4	300.5	3128.4	→		5790.0
C	5518.7	296.0	1023.3	→	5757.4	268.1	2955.5	→	5717.5	284.0	2952.1	→	5864.7	292.2	3017.3	→	MOUNTING FOOT 2	
D	5790.0	287.7	1090.5	↖	5880.2	291.2	3348.3	↖	5866.8	282.3	3038.0	↖	5822.0	287.1	2954.6	↖		7633.7
E	5760.1	279.3	873.5	↖	5736.6	291.1	3528.6	↖	5988.2	301.6	3155.7	↖	5895.8	289.2	3055.2	↖	MOUNTING FOOT 3	
F	5688.6	279.3	2851.8	↖	5698.7	279.8	2968.2	↖	6042.7	305.6	3271.3	↖	6005.8	300.5	3113.6	↖		5866.3
G	5851.3	279.8	2904.6	↖	5526.0	277.5	2823.0	↖	6005.0	300.6	3124.6	↖	6101.1	308.8	3209.9	↖	MOUNTING FOOT 4	
H	5795.0	287.7	2290.9	↖	5477.3	266.5	2770.2	↖	5856.3	272.8	3038.3	↖	5190.8	313.8	3242.6	↖		6005.1
MAX	5971.4	801.1	3119.8		5640.1	291.2	3508.2		6042.7	305.6	3271.3		6184.8	313.8	3262.8			23358.4

NOTE: ALL VERTICAL LOADS ARE DOWN INTO THE PAGE

STAND STATIC + DYNAMIC LOAD AT OVERLOAD (MACHINE FULLY PLUGGED WITH PRODUCT)																			
WEIGHT FORCE POSITION	MOUNTING FOOT 1					MOUNTING FOOT 2					MOUNTING FOOT 3					STAND STATIC LOAD			
	Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft- lbs)	Dir.		Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft- lbs)	Dir.		Vertical Force (lbs)	Horizontal Force (lbs)	Torque (ft- lbs)	Dir.		NORMAL OPERATIONS (LBS)			
A	30719.9	299.0	3108.2	↖		30217.0	298.0	2751.5	↖		11142.2	281.0	2921.0	↖		MOUNTING FOOT 1			
B	30780.0	301.1	3129.8	↖		30336.9	299.0	2860.2	↖		11207.0	280.9	2969.0	↖		MOUNTING FOOT 2			
C	30728.1	298.0	3017.1	↗		30249.6	298.1	2880.5	↗		10613.4	280.3	2852.1	↗		MOUNTING FOOT 3			
D	30599.0	287.7	2980.9	↖		30242.2	291.2	3048.2	↖		10152.2	279.9	3018.4	↖		MOUNTING FOOT 4			
E	30478.5	278.4	2873.5	↖		30056.7	281.1	3026.6	↖		10872.4	268.8	3135.7	↖		MOUNTING FOOT 5			
F	30410.9	278.3	2810.9	↖		30036.9	279.8	2909.2	↖		10913.0	268.6	3172.3	↖		MOUNTING FOOT 6			
G	30460.7	279.4	2904.4	↖		30139.2	277.5	3023.0	↖		10890.8	268.0	3124.5	↖		MOUNTING FOOT 7			
H	30550.6	287.7	2980.9	↖		30155.5	266.5	2770.2	↖		10752.1	262.3	3038.5	↖		MOUNTING FOOT 8			
MAX	30780.0	301.1	3129.8			30518.2	291.2	3048.2			10913.5	266.6	3177.3			42714.9			
NOTE: ALL VERTICAL LOADS ARE DOWN INTO THE PAGE																			

EQUIPMENT



Your SOLUTION for fine material processing




Quad Attrition Mill

AZFAB QUAD Attrition Mills were designed to scrub sand particles against one another in order to liberate ultra fine materials. Once the ultra fines are liberated they can easily be rinsed away resulting in a noticeable improvement of material permeability.

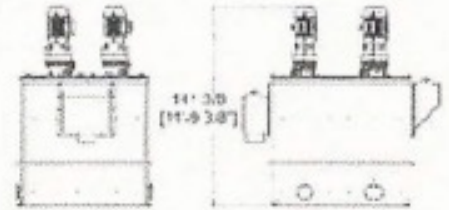
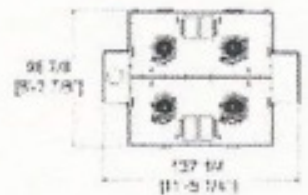
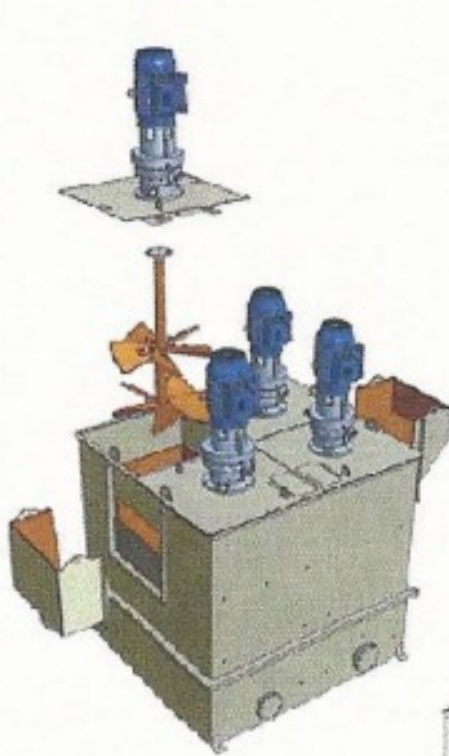
The AZFAB Attrition Mill design was planned with our customer's needs in mind.

- Process 300 TPH
- Maximize retention time to allow for best possible scrub
- Easily serviceable modules to maximize uptime
- Modular paddle shaft design with replaceable paddles
- Replaceable internal rubber coated wear liners
- Self contained auto lubricating gear boxes
- Top mounted inspection ports






Quad Attrition Mill



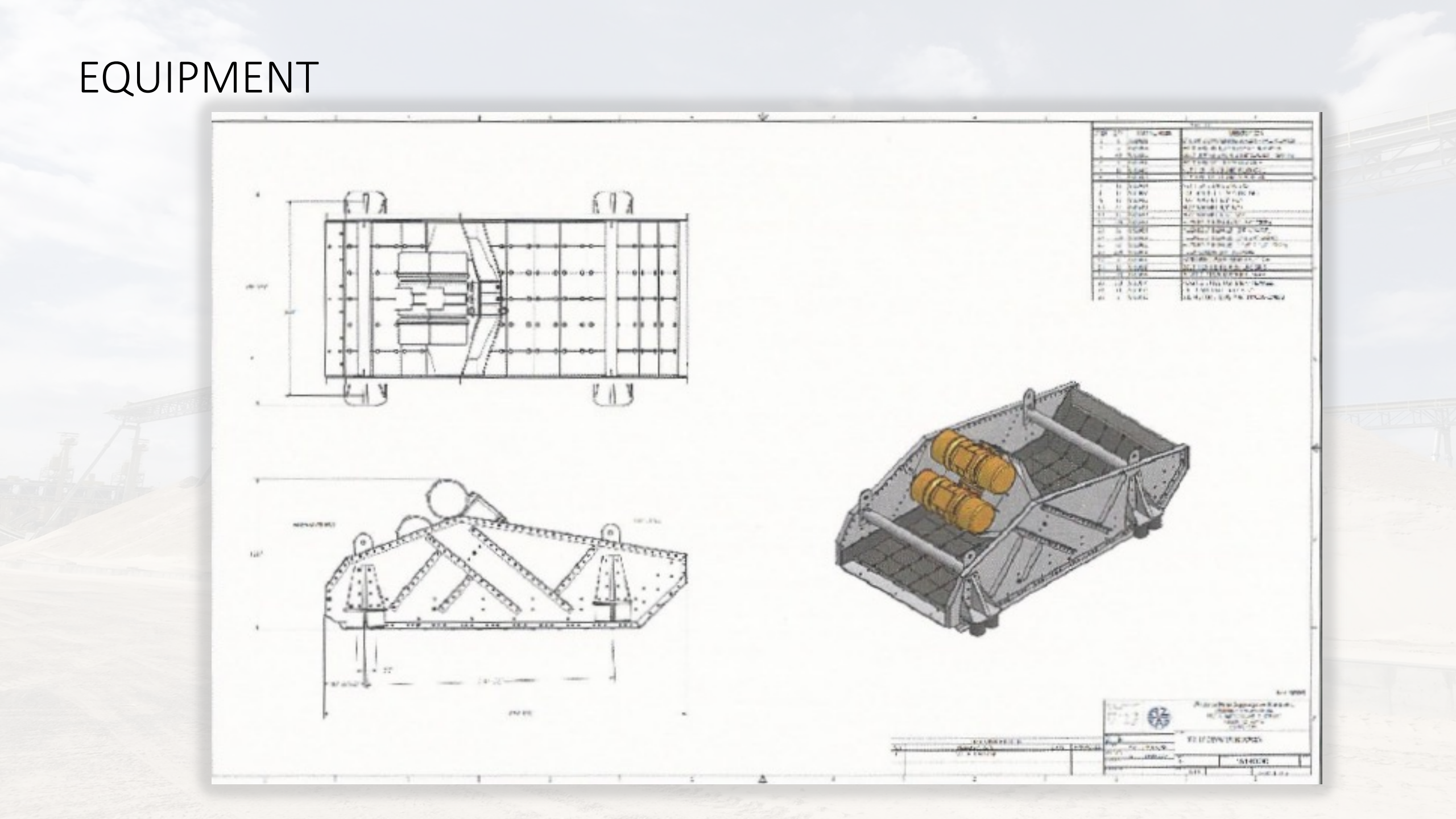
Specifications

300 TPH
4 SHAFT WITH MOTOR / PLANETARY DRIVES
REPLACEABLE PADDLES

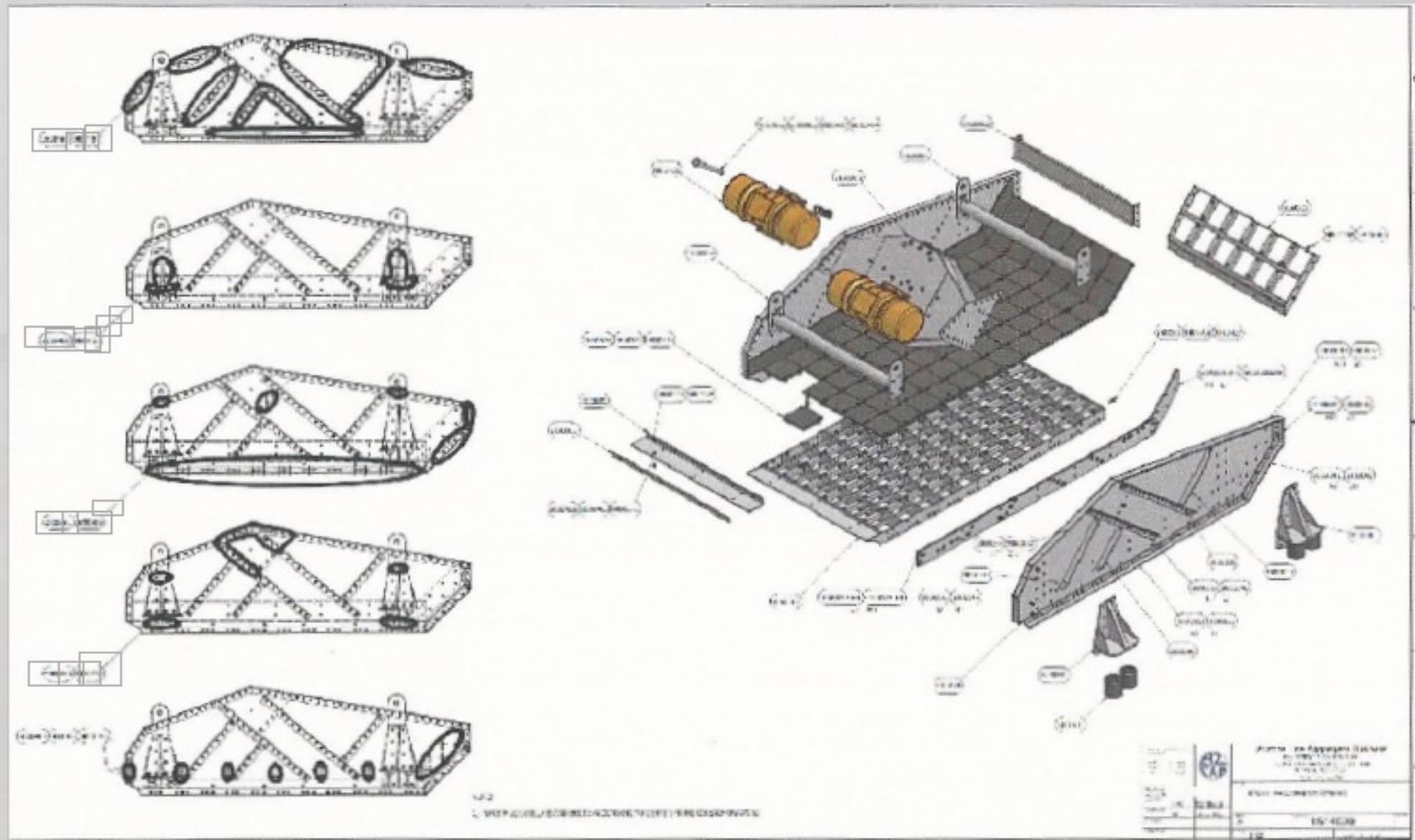


MADE IN THE USA

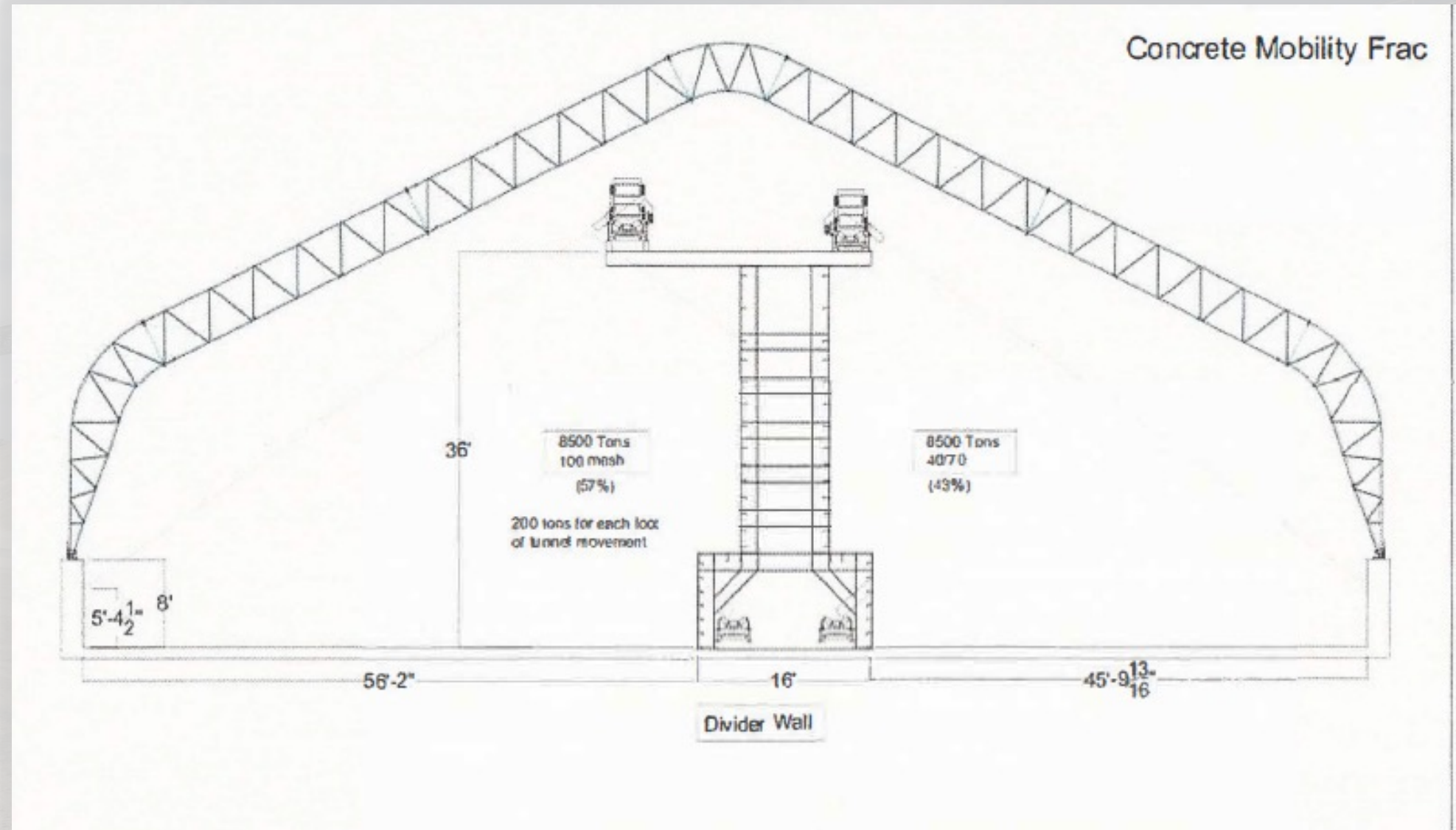
EQUIPMENT



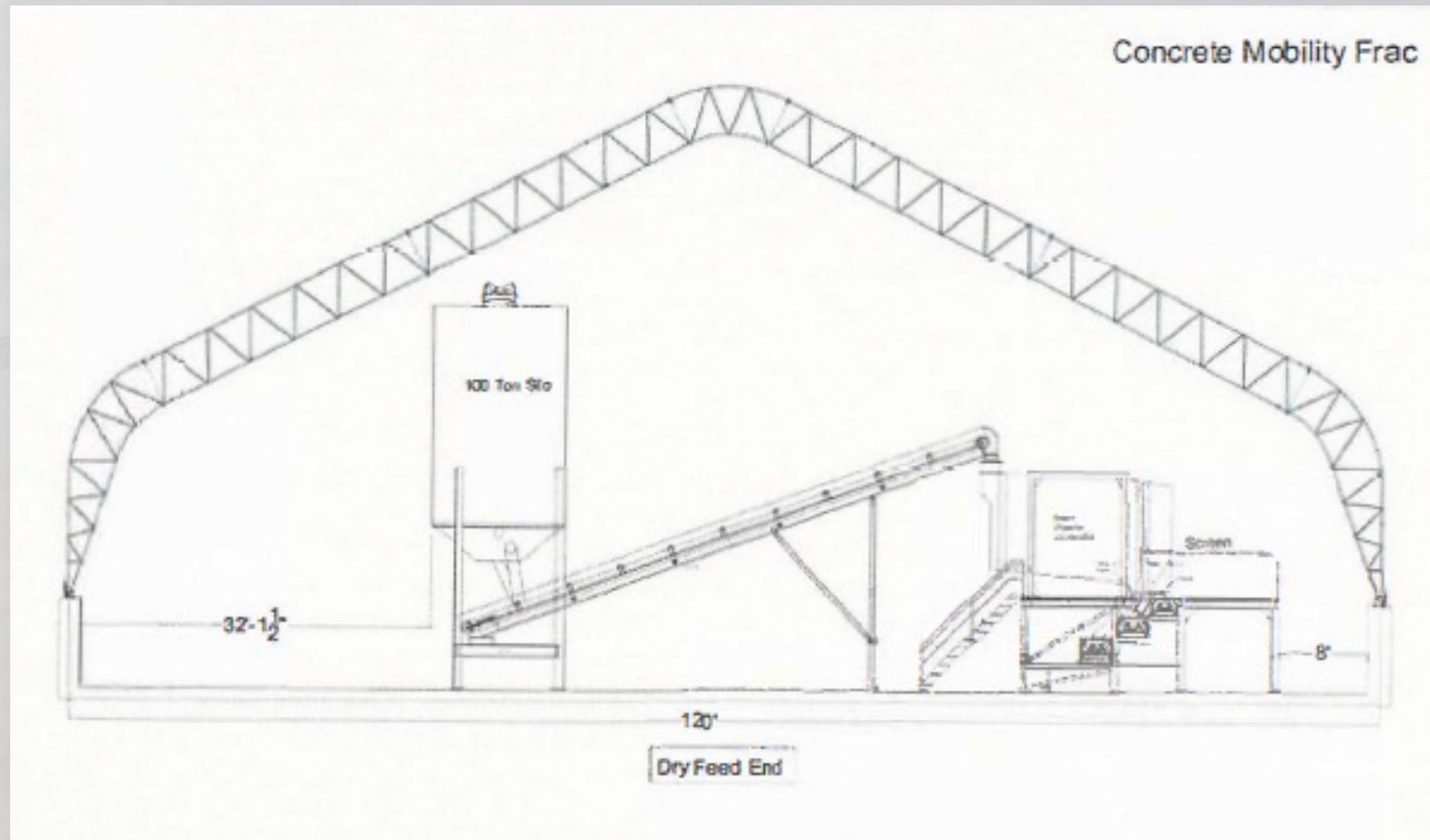
EQUIPMENT



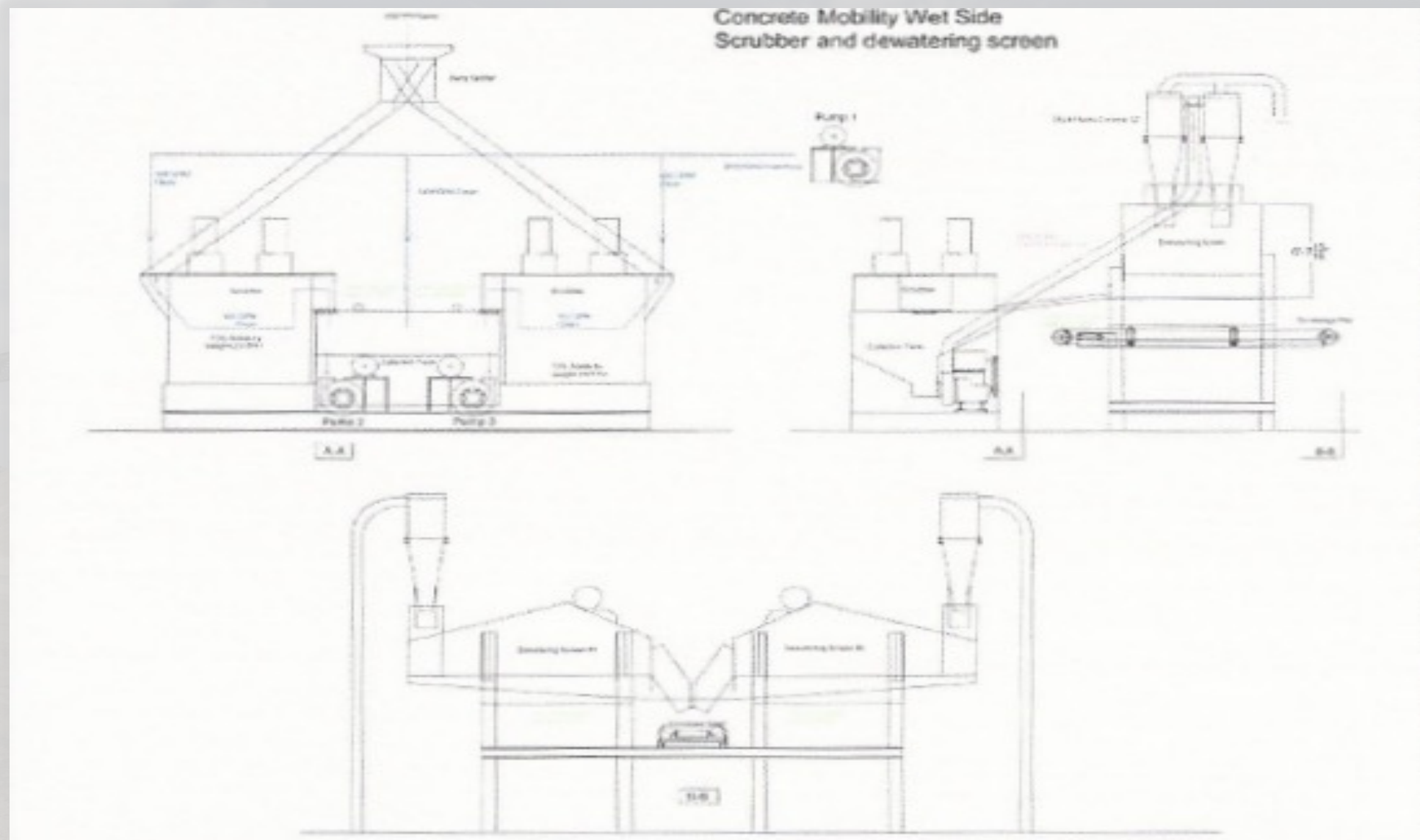
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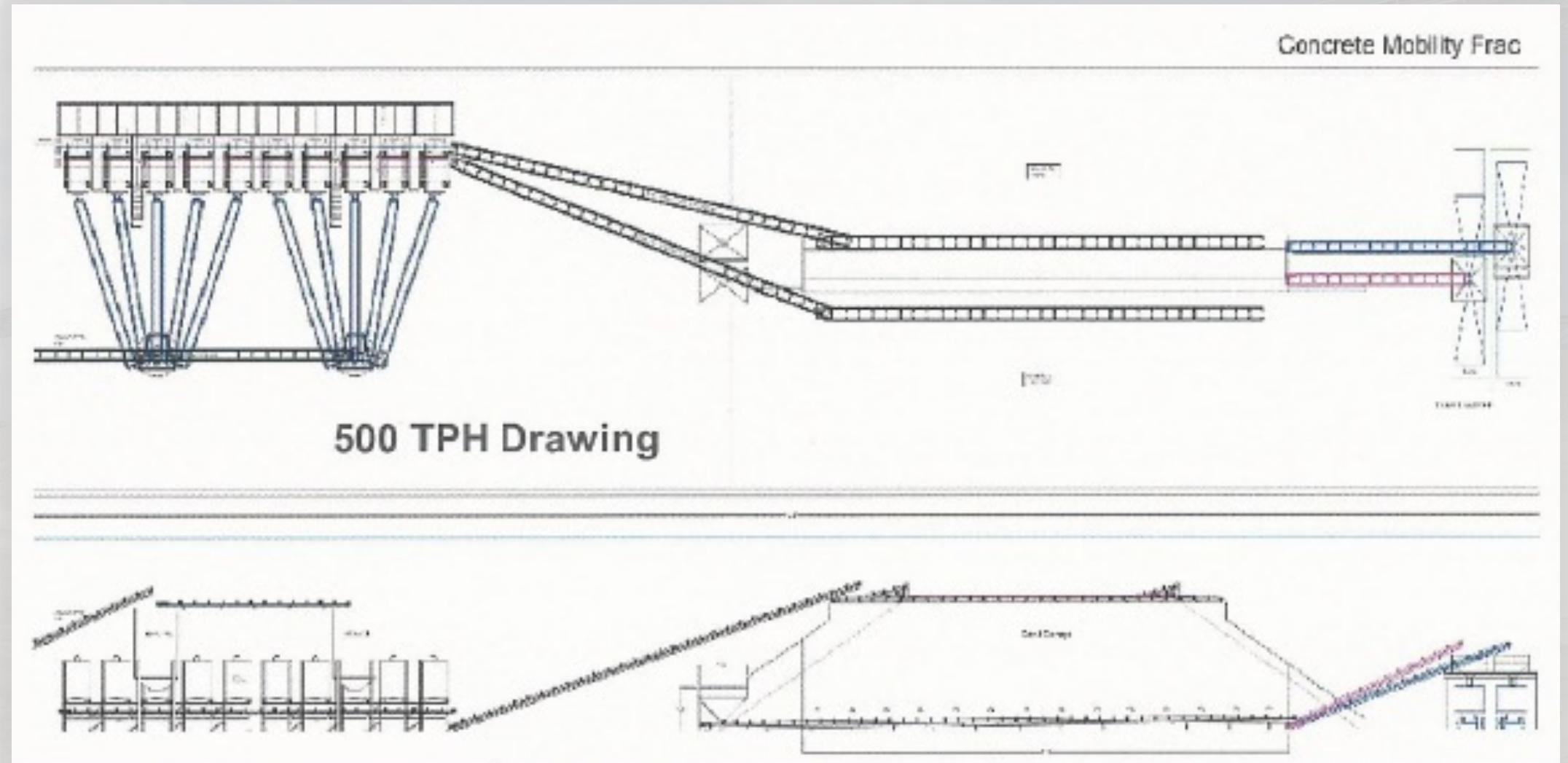
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EQUIPMENT



EQUIPMENT





THANK YOU

Any and all questions can be forwarded and answered by the
managing member HW Kirk 214-842-1390.