

TDA PROCESSING

RRFB DISCUSSION
HALIFAX, NOVA SCOTIA
FEBRUARY 20, 2009


by

TERRY GRAY
TAG RESOURCE RECOVERY

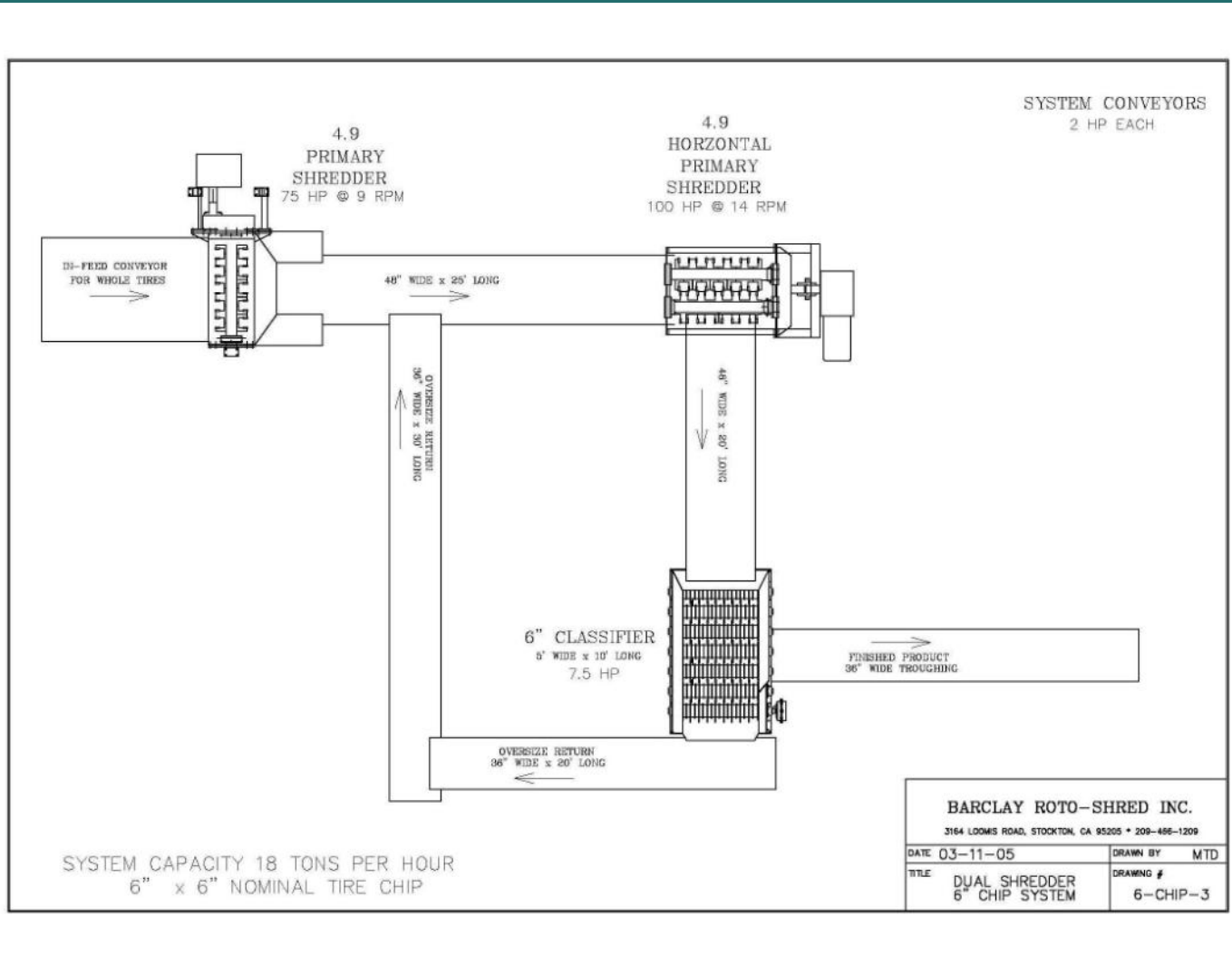




FOCUS

- ◆ PROCESS/EQUIPMENT
 - ◆ STORAGE
 - ◆ INFRASTRUCTURE
- 
- A stylized silhouette of a mountain range in a darker teal color, located at the bottom right corner of the slide.

PROCESS-2 SHREDDERS



SYSTEM COMPONENTS

- ◆ SHREDDER(S)
- ◆ CLASSIFIER
- ◆ CONVEYORS
- ◆ POWER SUPPLY

SHREDDER TYPES

- ◆ PRIMARY
- ◆ REPLACABLE KNIFE (SINGLE AND DOUBLE STACKED)
- ◆ HOOK SHEAR (SINGLE, DOUBLE AND TRIPLE STACKED)

BARCLAY PRIMARY SHREDDER



BARCLAY CLOSE-UP



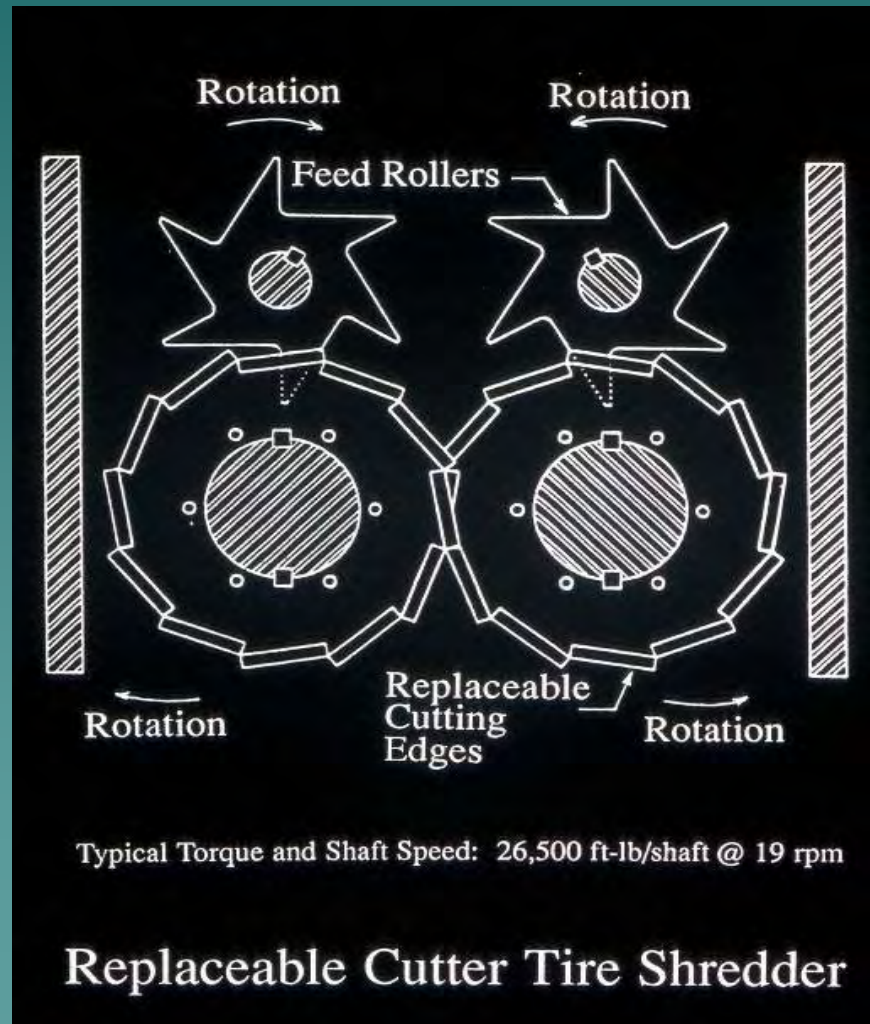
SINGLE BARCLAY



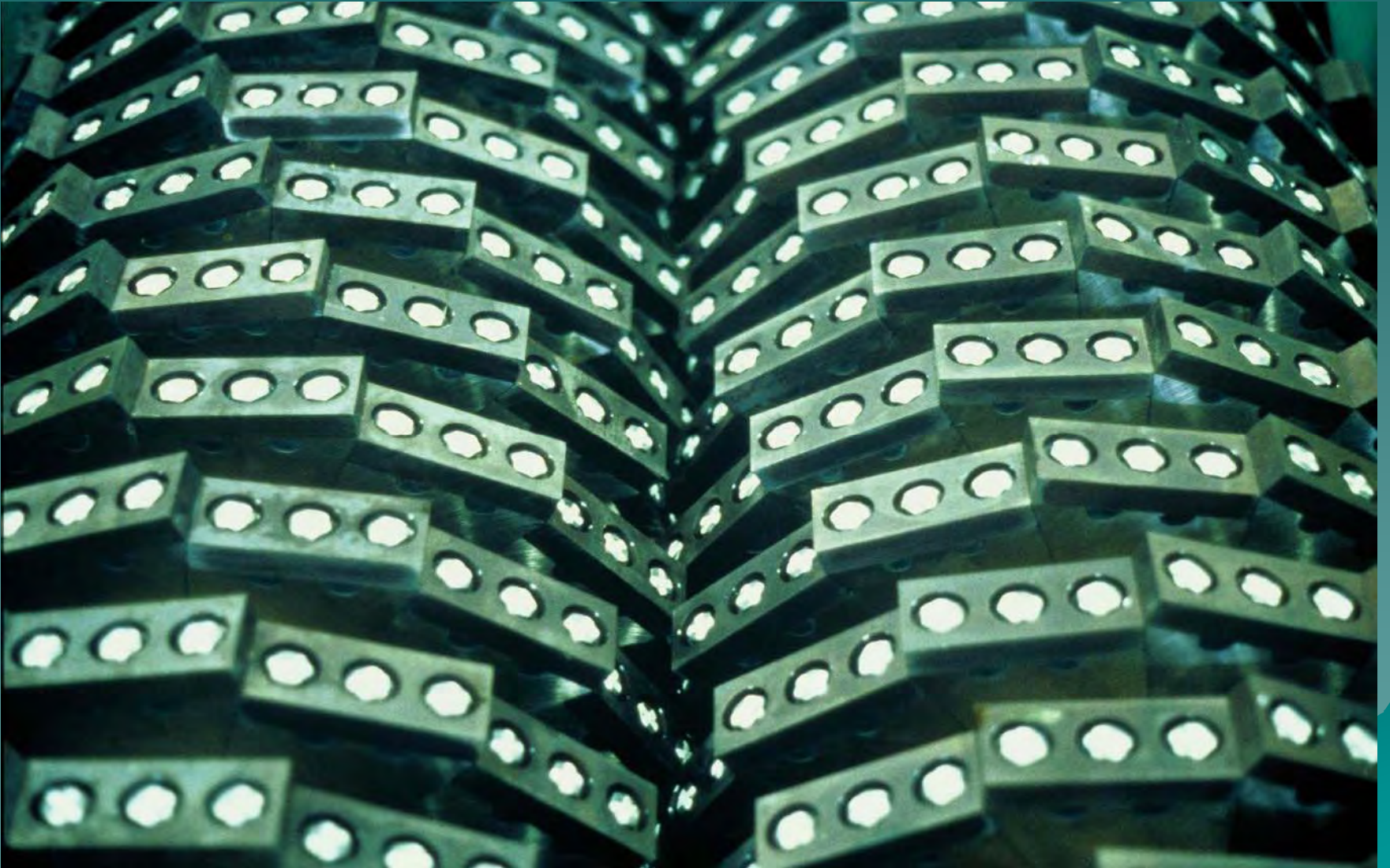
VERTICAL BARCLAY



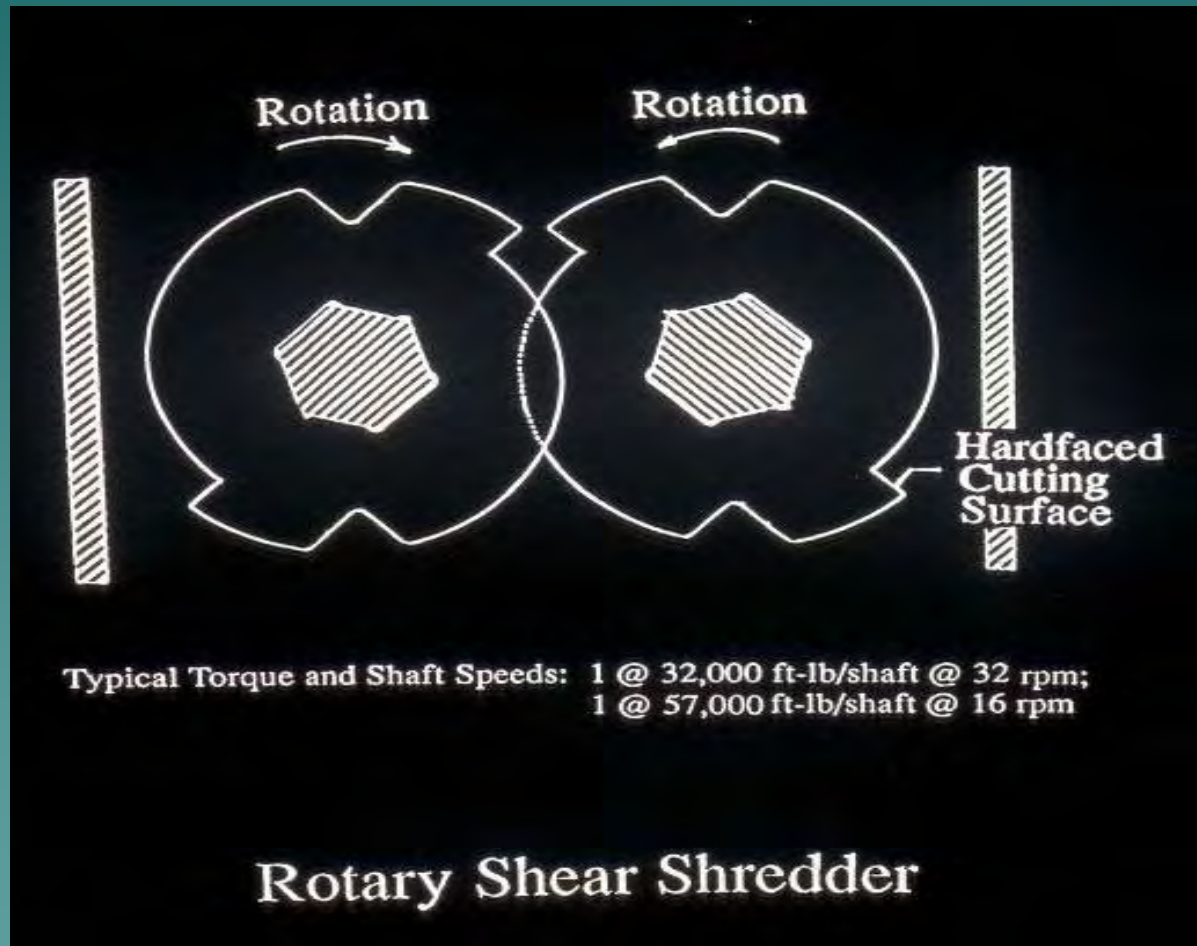
REPLACEABLE KNIFE SHREDDER



CM SHREDDER



HOOK SHEAR SHREDDER



SINGLE STACK HOOK SHEAR



DOUBLE STACK HOOK SHEAR





CLASSIFIERS

- ◆ DISC SCREEN
- ◆ TROMMEL
- ◆ SLOTTED SCREEN


DISC SCREEN



DISC SCREEN RECYCLE



STORAGE CONSIDERATIONS

- ◆ SEASONAL MARKET
 - ◆ STOCKPILE AUTO-IGNITION
 - ◆ MINIMIZE FIRE PROBABILITY
 - ◆ CONTROL MAGNITUDE AND IMPACT
- 
- A decorative graphic in the bottom right corner of the slide, consisting of a silhouette of a mountain range in a teal color that matches the background.

STOCKPILE AUTO-IGNITION

- ◆ PUBLIC EXAMPLES – TWO WASHINGTON ROADS
- ◆ >30 OTHER EXAMPLES
- ◆ PRIMARILY PROCESSING/
STOCKPILE SITES

COMMON CHARACTERISTICS

- ◆ COMPACTED PILES > 12 FEET DEEP
- ◆ MOISTURE
- ◆ CONTRIBUTING FACTORS
 - WIRE
 - RUBBER FINES
 - SPILLED OIL, FUEL
 - FERTILIZER


MECHANISMS

- ◆ AEROBIC/ANAEROBIC REACTIONS
- ◆ WIRE OXIDATION
- ◆ FINES - >170 DEGREES
- ◆ PYROLYSIS – GAS GENERATION
- ◆ FLAMMABILITY ENVELOP
- ◆ EXTERNAL SPREAD

STOCKPILE REQUIREMENTS

- ◆ NO COMPACTION
 - STACK FROM GROUND
 - MAXIMUM 10-12 FEET DEEP
- ◆ NO TRASH (WIRE, FINES, FLUFF)
- ◆ NO ORGANIC MATERIALS
- ◆ GOOD WATER DRAINAGE

DECREASE FIRE PROBABILITY

- ◆ CLEAR PERIMETER – 50 FEET
 - ◆ PERIMETER FENCE/GATES
 - ◆ LIGHTING?
 - ◆ SECURITY?
- 
- A stylized silhouette of a mountain range in a teal color, located in the bottom right corner of the slide.

CONTROL MAGNITUDE

- ◆ MAXIMUM PILE SIZE
 - 50 FT X 150 X 10
 - HOLDS 80,000 PTE
- ◆ STABILIZED FIRE LANES
 - 50 FEET WIDE BETWEEN ALL PILES
- ◆ STABILIZED ACCESS/EGRESS
- ◆ WATER STORAGE POND
- ◆ PERIMETER BERM

EXAMPLE SITE



DESIREABLE SITE CHARACTERISTICS

- ◆ SIZE
 - 3-5 ACRE WORKING AREA
 - 5-6 ACRE STORAGE
- ◆ BUILDING- 5,000-10,000 SQ FT
- ◆ POWER AVAILABILITY
- ◆ HIGHWAY ACCESS
- ◆ GOOD ON-SITE TRAFFIC FLOW PLAN

SOME LESS OBVIOUS COST FACTORS

- ◆ MAINTENANCE- ALWAYS MORE
- ◆ NON-SHREDDING EQUIPMENT
- ◆ MANPOWER – QUALITY, SKILL
- ◆ STAFF – DISPATCH, CLERICAL, ACCOUNTING, LEGAL, SALES, TECHNICAL
- ◆ OVERHEAD – TAXES, INSURANCE, EMPLOYMENT COSTS

CAPITAL COST – TYPE B TDA (HYPOTHETICAL \$US)

COMPONENT	RANGE (\$US)
SHREDDER	\$ 230,000 – 500,000
CLASSIFIER	\$ 45,000 - 200,000
RECYCLE CONV	\$ 35,000 - 70,000
DISCH CONV	\$ 50,000 - 100,000
TRANSPORT	\$ 5,000 - 20,000
INSTALLATION	\$ 75,000 - 100,000
SPARE PARTS	\$ 30,000 - 75,000
SUBTOTAL	\$ 470,000 – 1,065,000

ADDITIONAL EQUIPMENT (HYPOTHETICAL \$US)

FRONT END LOADER	\$30,000-100,000
EXTRA BOBCAT	\$15,000- 25,000
ELECTRICAL SUPPLY	\$10,000- 50,000
TRUCK/TRAILER	\$15,000-100,000
SUBTOTAL	\$70,000 – 275,000
TOTAL	\$540,000–1,340,000

ADDITIONAL SCENARIO

2 ND SHREDDER	\$200,000-500,000
CLASSIFIER	\$ 45,000-220,000
CONVEYORS	\$ 35,000- 70,000
INSTALLATION	\$ 35,000- 60,000
 SUBTOTAL	 \$ 315,000 – 850,000

ECONOMIC SENSITIVITY

ANNUAL TIRE VOLUME

250,000 500,000 1,000,000

TYPE B	+225%	+70%	BASELINE
TYPE A	+348%	+138%	+40%
NOM 1"	+387%	+166%	+62%

CONTACT INFORMATION

- ◆ TERRY GRAY
- ◆ TAG RESOURCE RECOVERY
- ◆ HOUSTON, TX

- ◆ tagray@flash.net

- ◆ 281-463-7552