Modern Methane Drainage Strategies

REI Drilling
Directional Underground

A Subsidiary of Resource Enterprises, Inc.

Resource Enterprises, Inc.

Western Region
345 East, 4500 South, Suite 300
Salt Lake City, UT 84107

877 838-0534

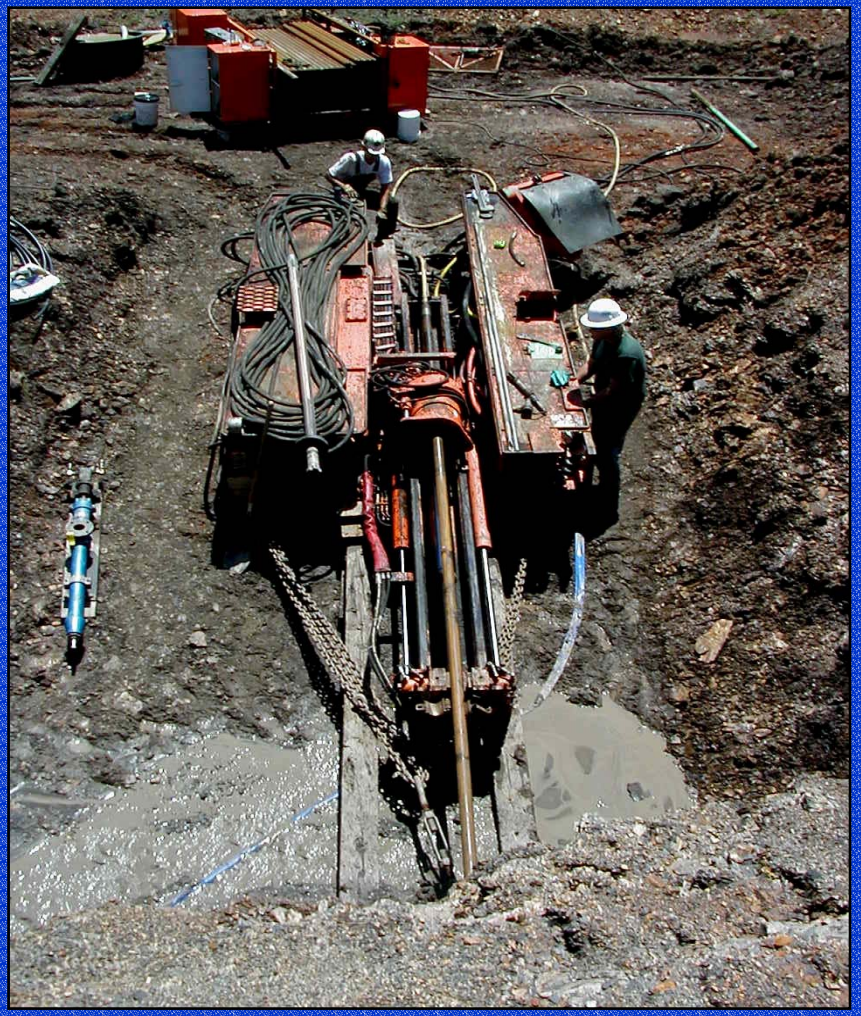
Eastern Region
2519 White Hall Road
Crozet, VA 22932

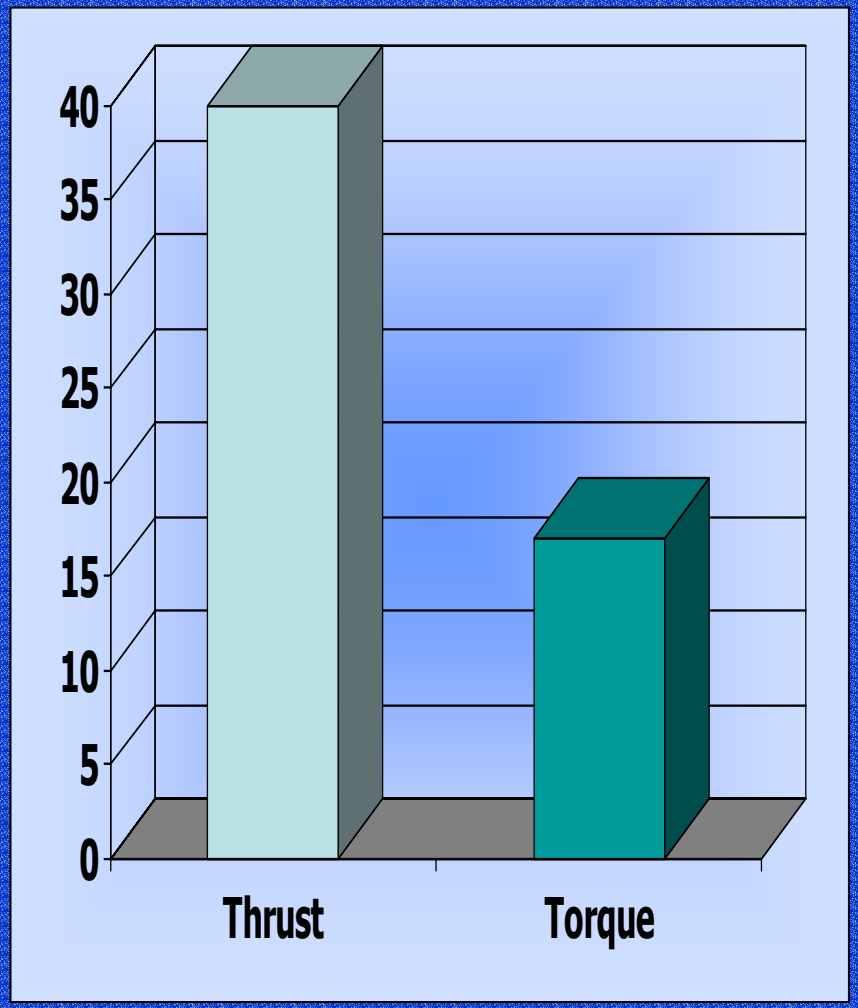
Contents

- **Modern Directional Drilling Technology**
  - High Capacity Drills
  - High Performance Water Pumps
  - High Torque Downhole Motors
  - High Penetration Bits
  - Precision Survey Tools / Integration with ACAD
- **Impact on Methane Drainage Applications**
  - Precision Placement
  - Ultra Long Boreholes
  - High Capacity Horizontal Gob Boreholes

REI Drilling
Directional Underground

High Capacity Directional Drills

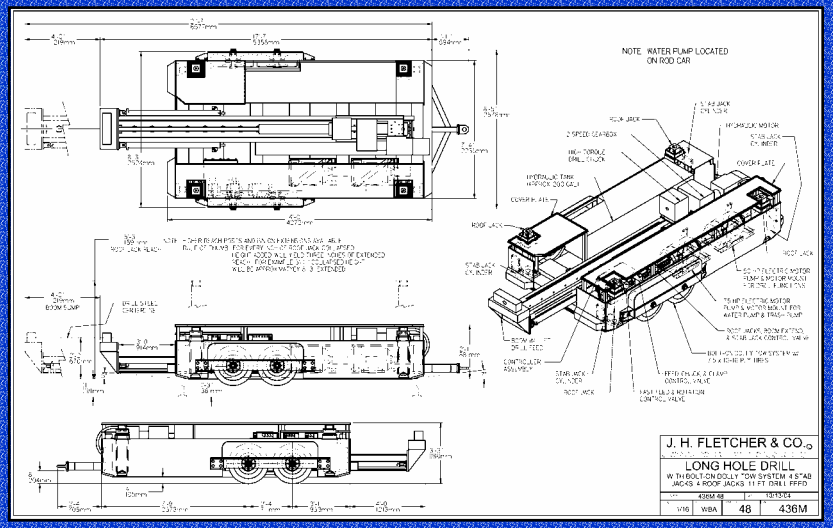


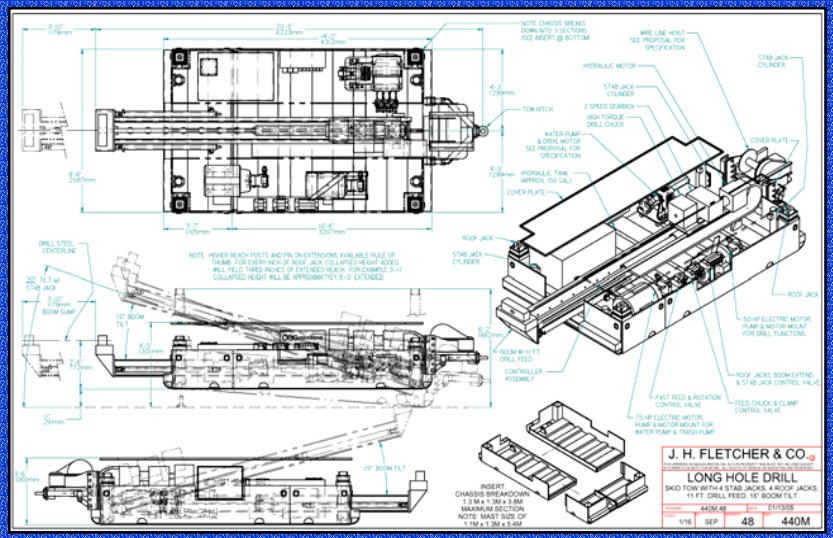


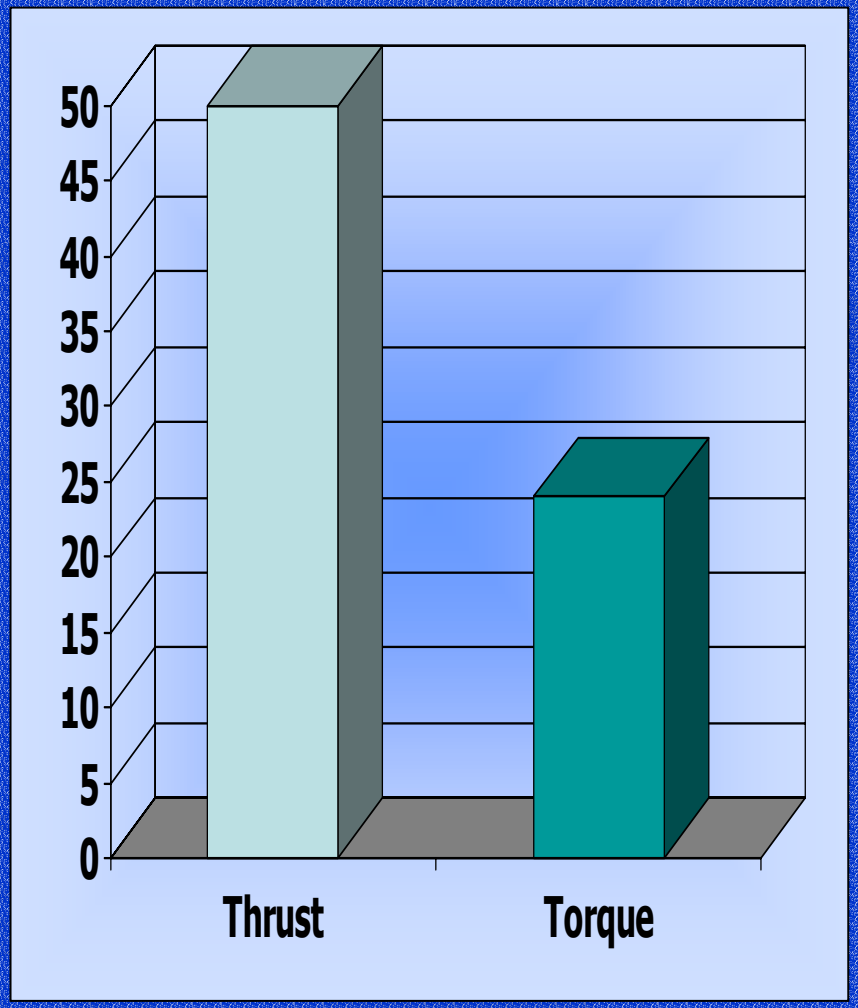
2000…

REI Drilling
Directional Underground

High Capacity Directional Drills



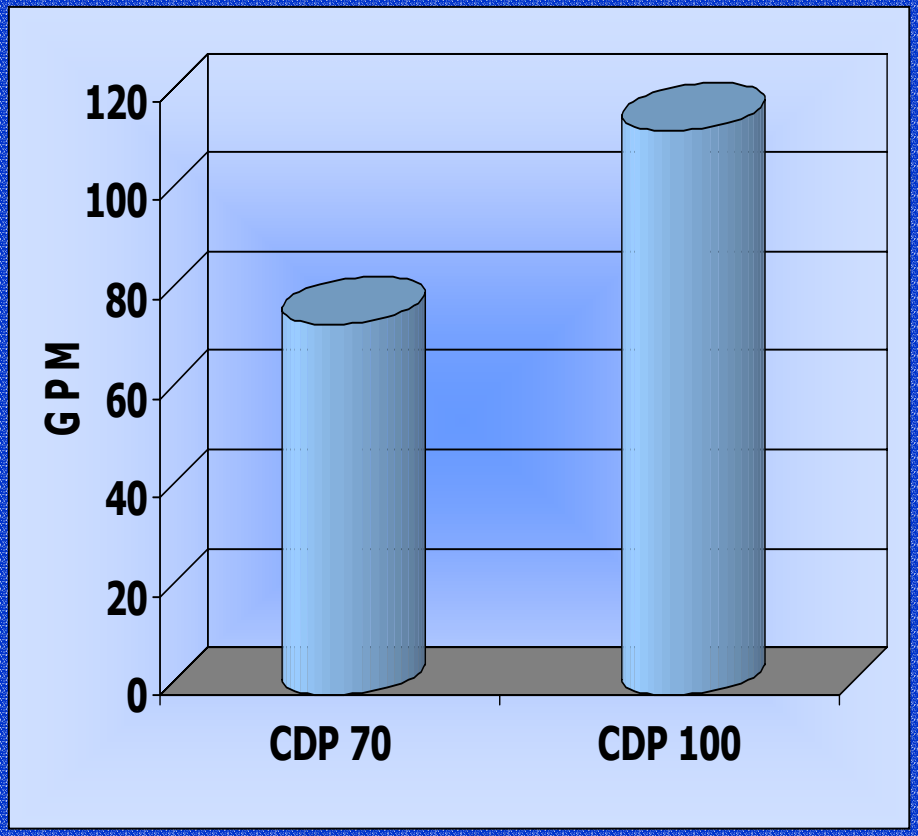


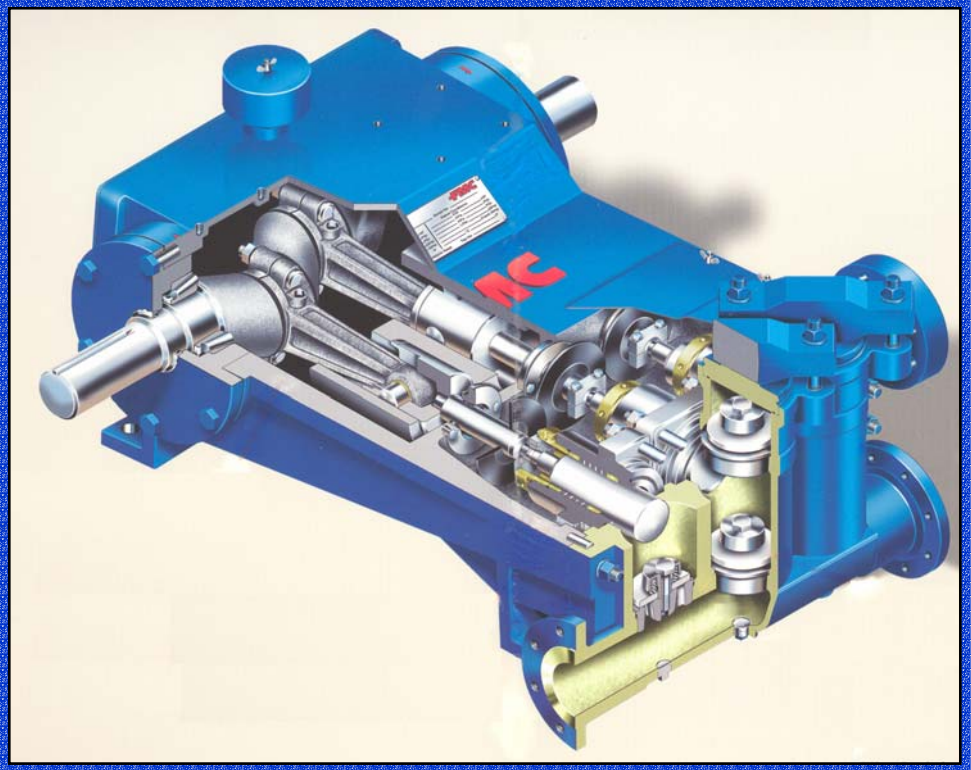


...2005

REI Drilling
Directional Underground

Water Power

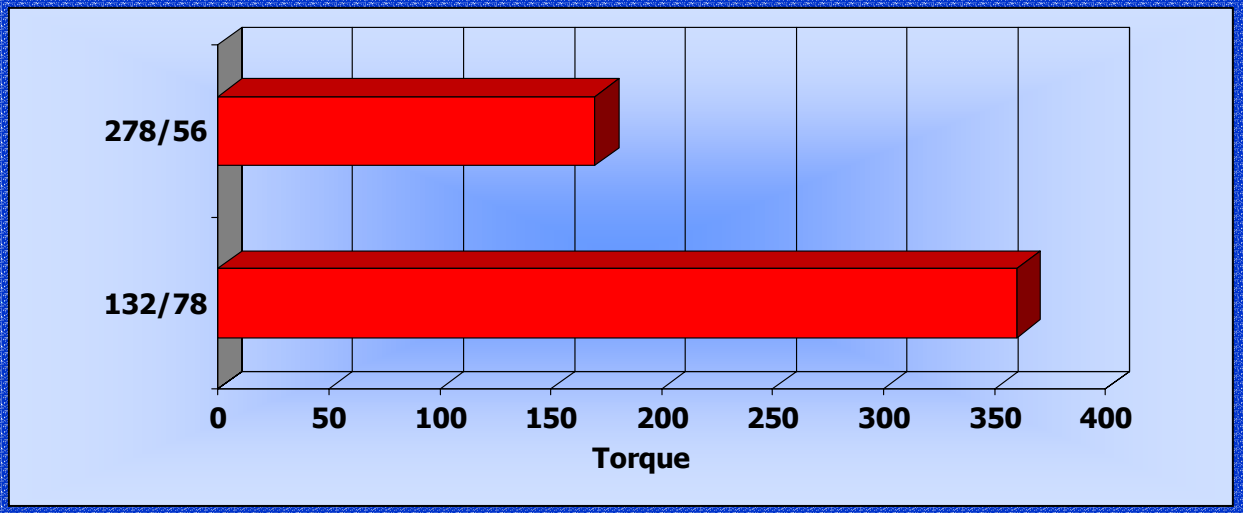




REI Drilling
Directional Underground

Downhole Motors

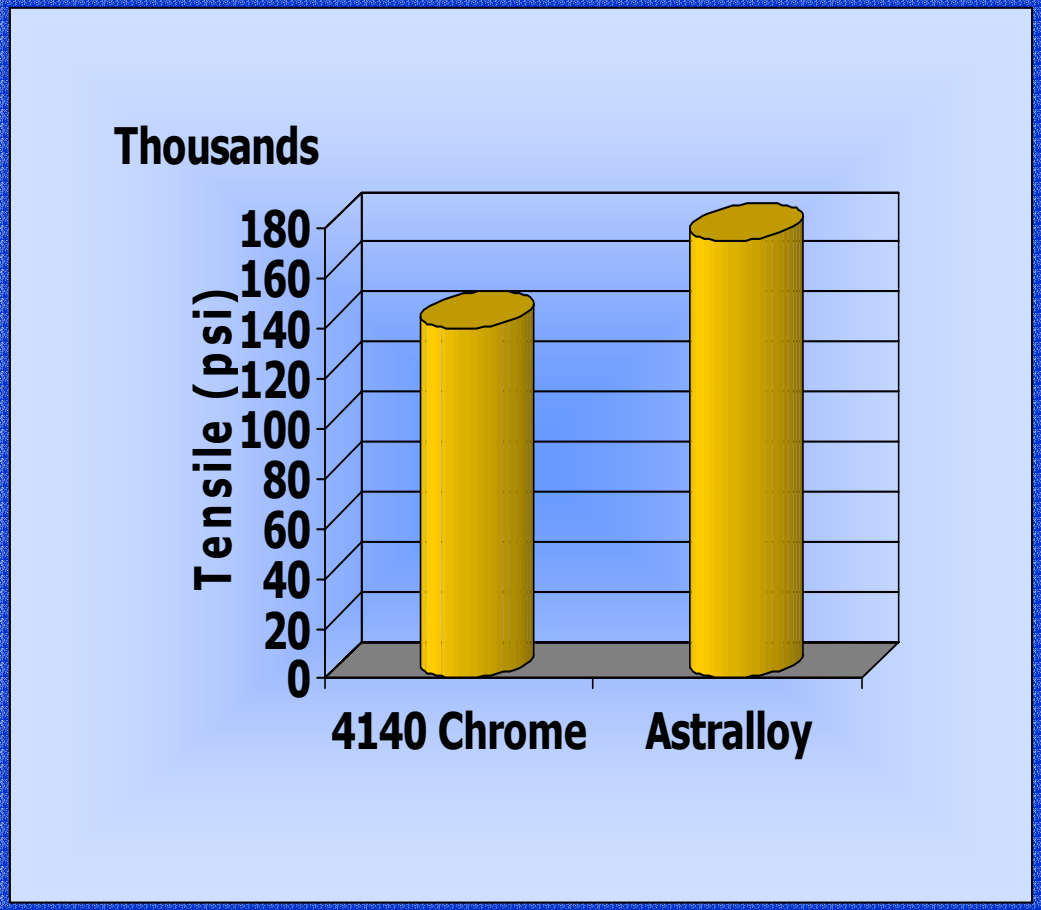
- **Performance:**



REI Drilling
Directional Underground

Downhole Motors

- **Transmission:**
  - **Power-Pac**



REI Drilling
Directional Underground

Bits

- PDC Stratapax

- PDC Power

REI Drilling
Directional Underground

Survey Tools

- 3 Axis Mag/Accell
- Plus Sensors

- DDM MECCA
- DGS
- AutoCAD

REI Drilling
Directional Underground

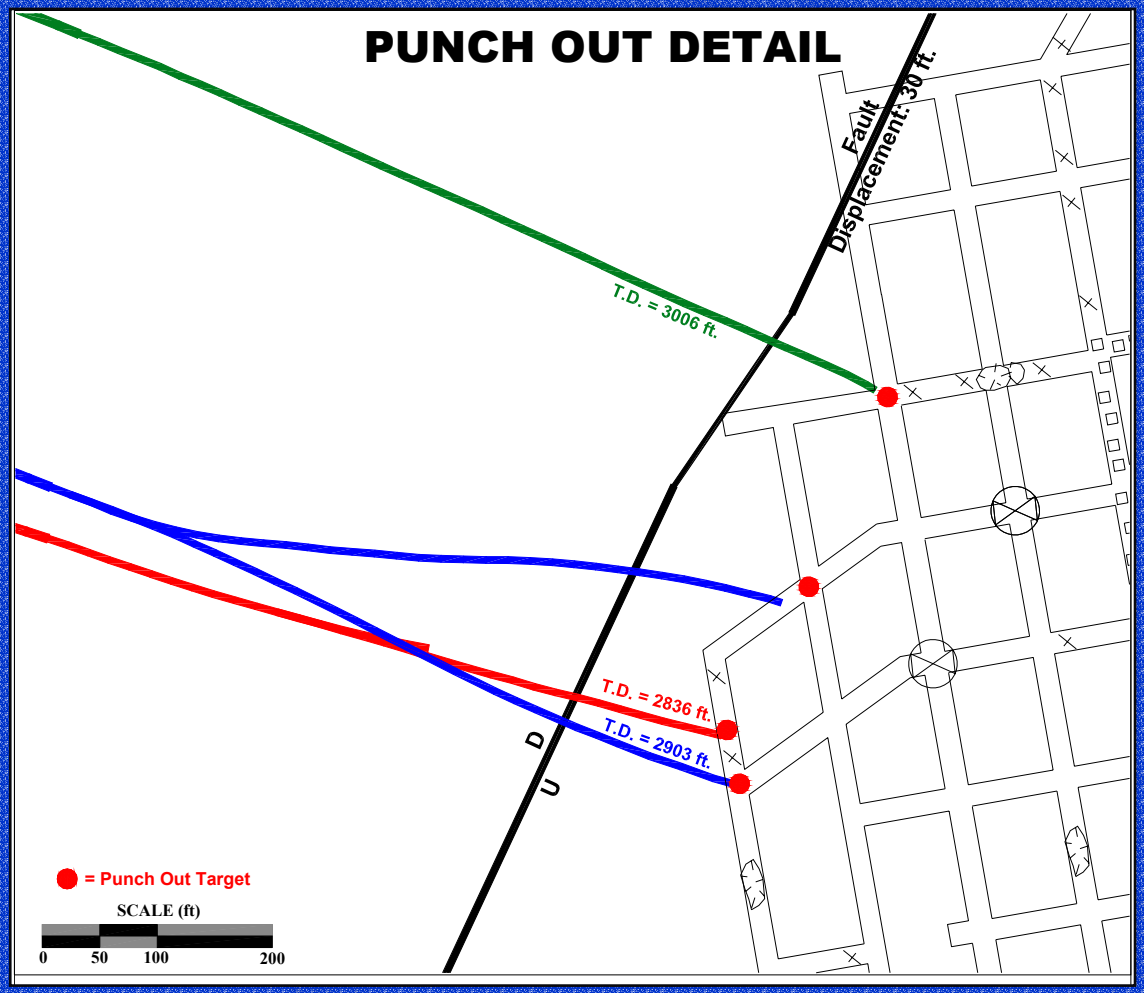
Resulting Impact

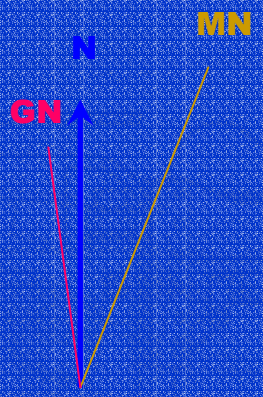
- Precision Placement
- Ultra Long Boreholes
- High Capacity Horizontal Gob Boreholes

REI Drilling
Directional Underground

Precision Placement

- ***Verified by Mine Interception:***

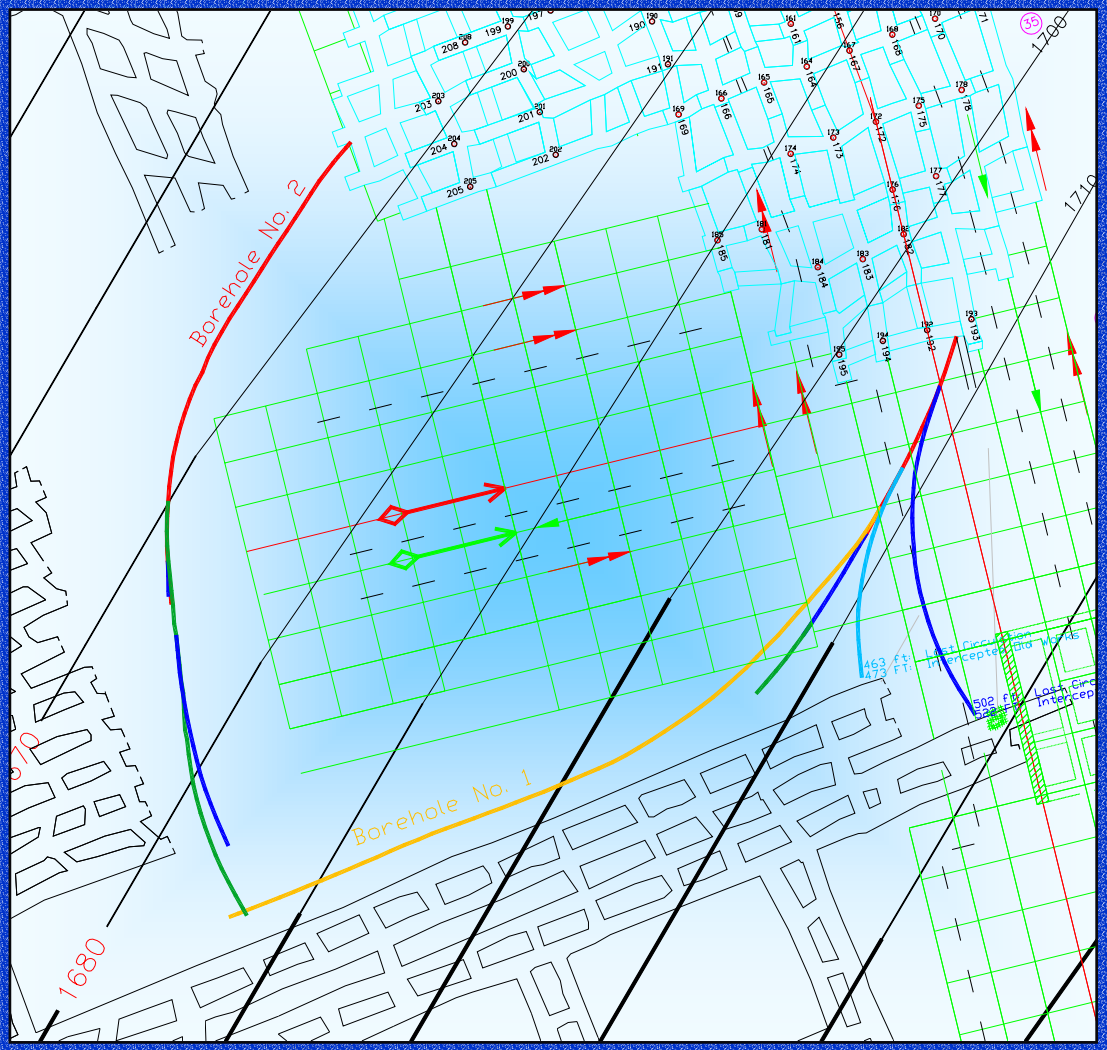




REI Drilling
Directional Underground

Precision Placement

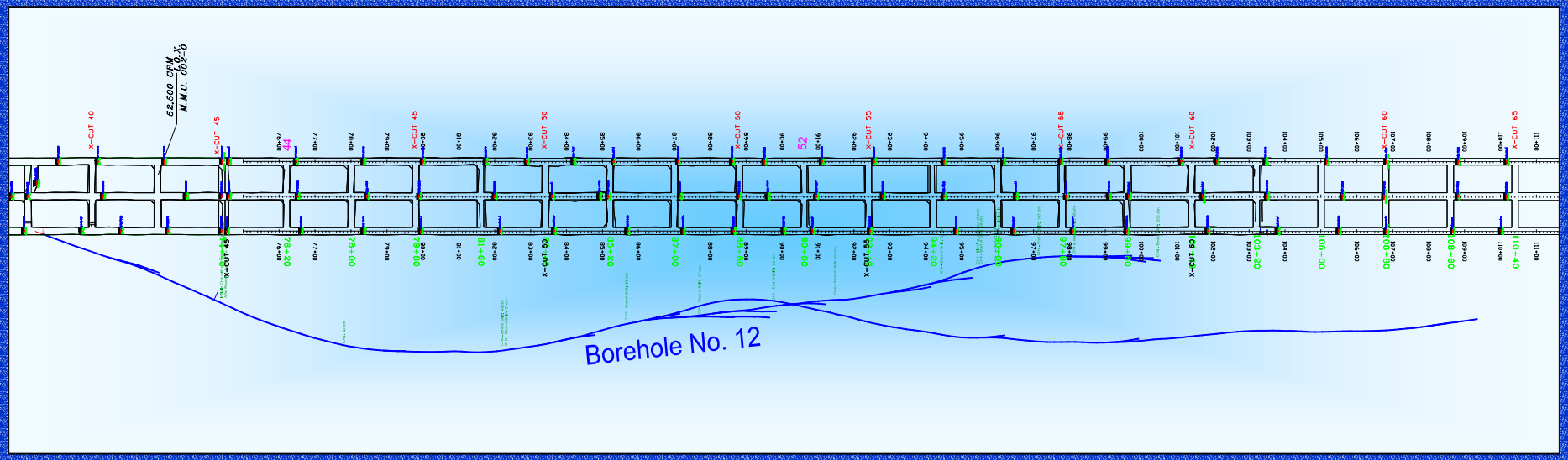
- ***Verified by Intercepting Boreholes:***

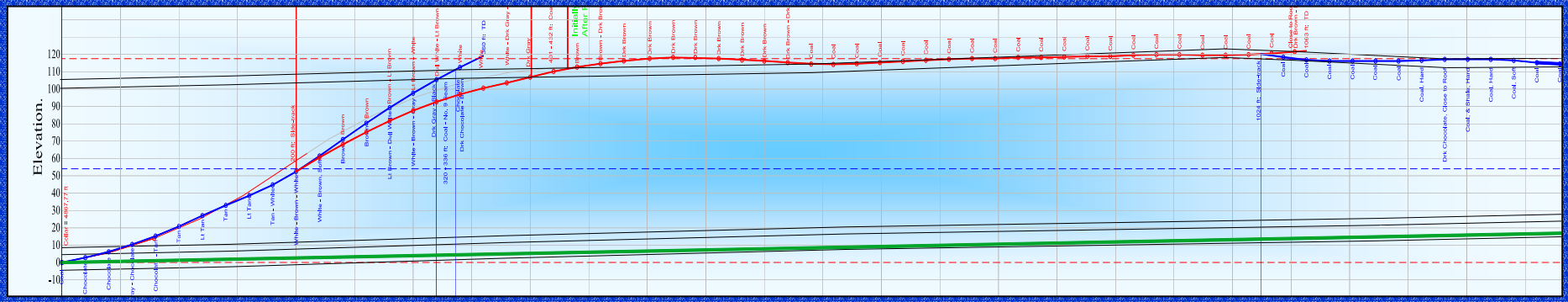


REI Drilling
Directional Underground

Precision Placement

- **To Develop Dual Purpose Drainage Boreholes:**

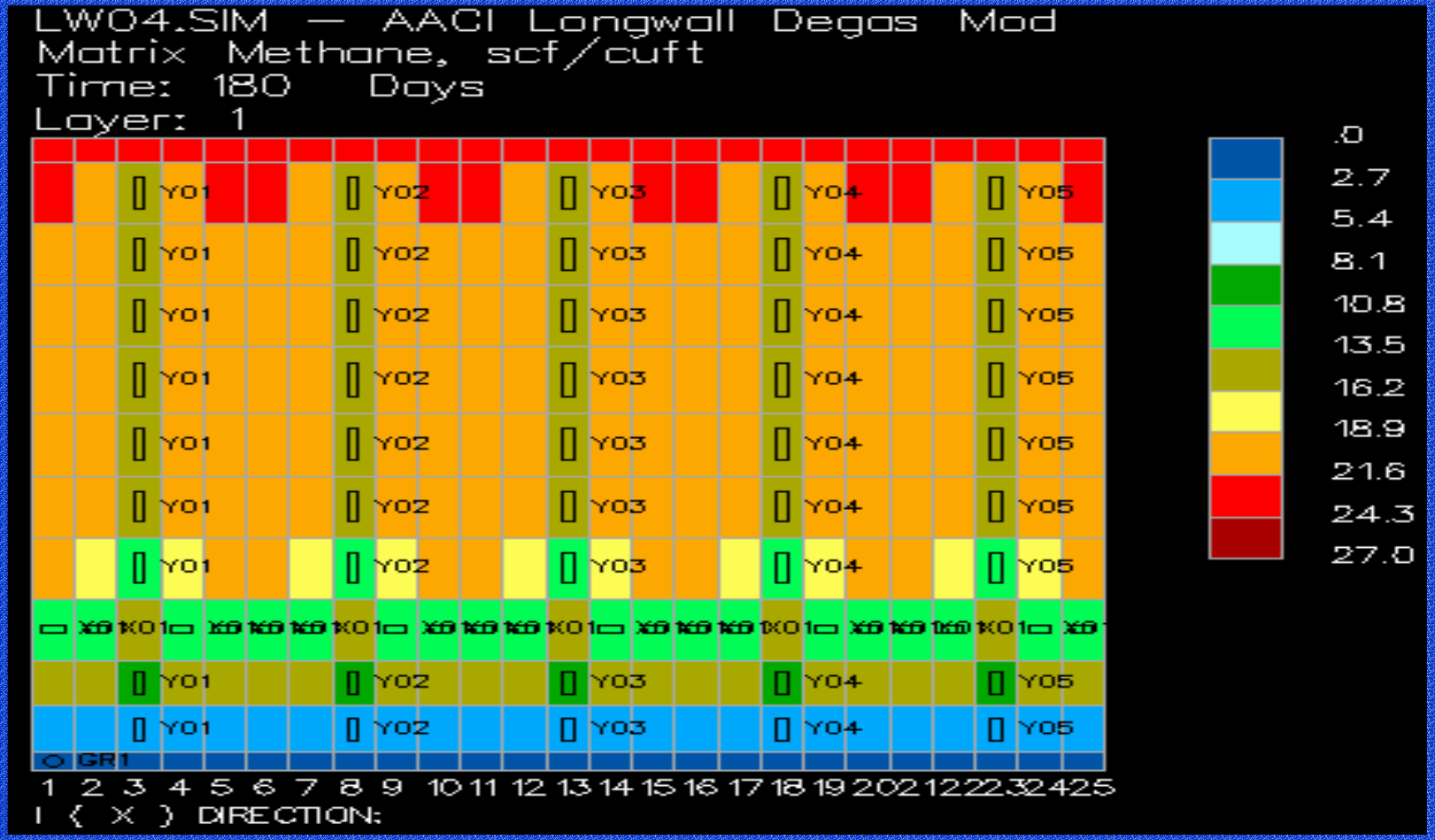




REI Drilling
Directional Underground

Precision Placement

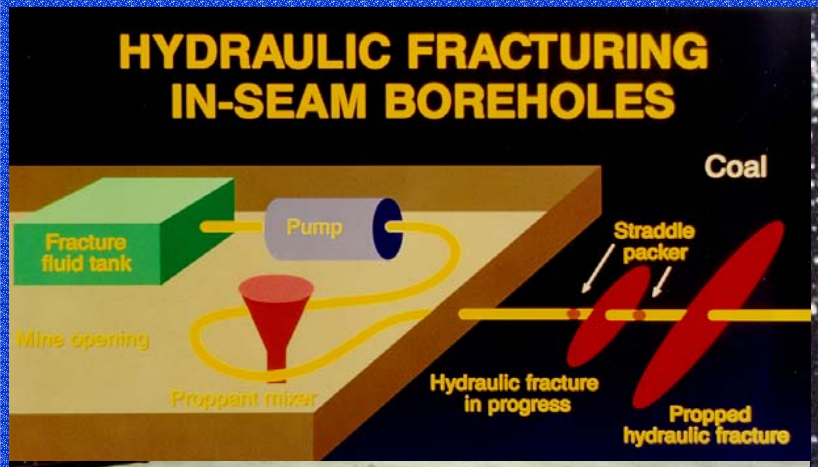
- ***To Closely Space In-Seam Boreholes in Tight Coals:***



REI Drilling
Directional Underground

Precision Placement

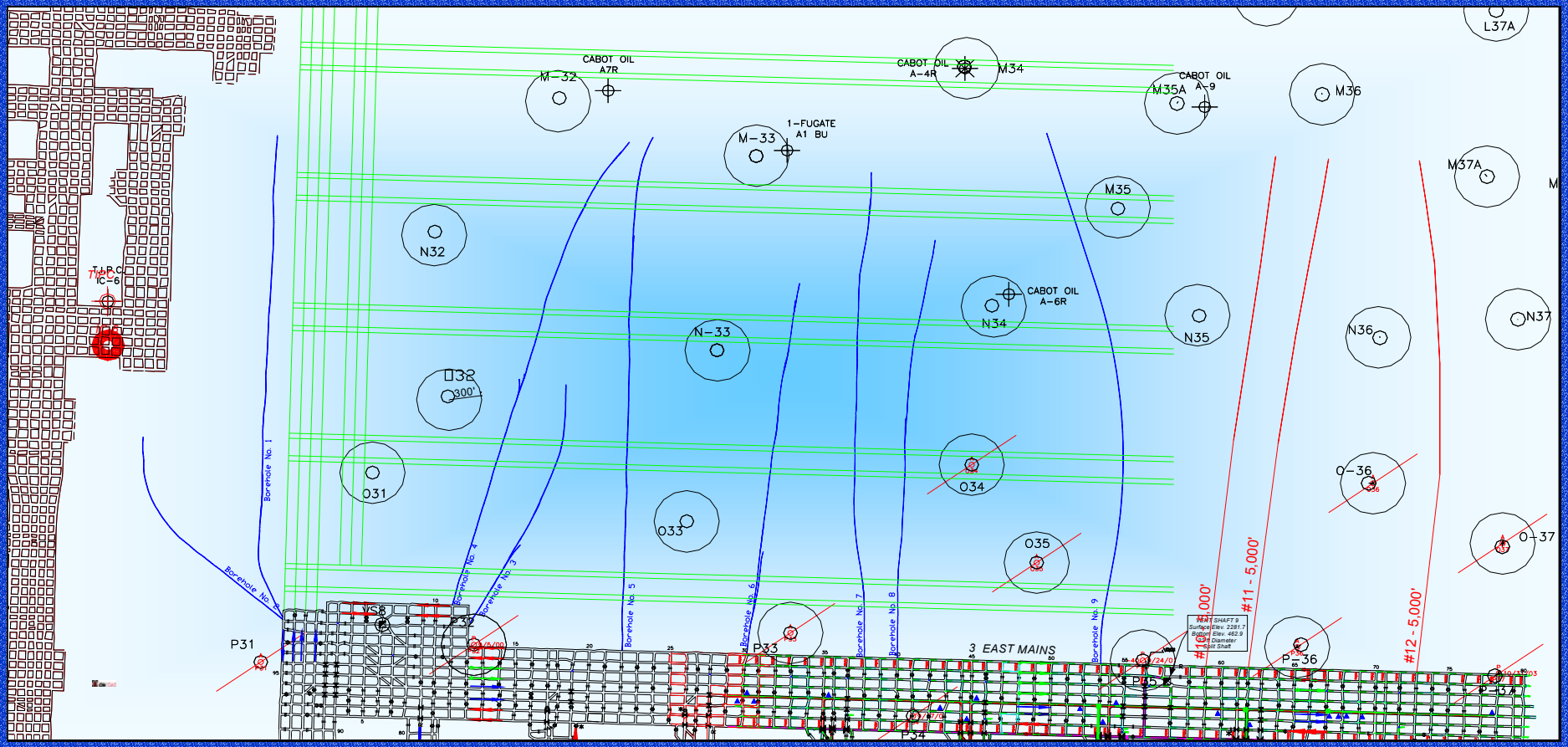
- ***Of In-Seam Boreholes for Subsequent Hydraulic Fracturing:***



REI Drilling
Directional Underground

Precision Placement

- **To Negotiate Complementary Frac Wells:**



REI Drilling
Directional Underground

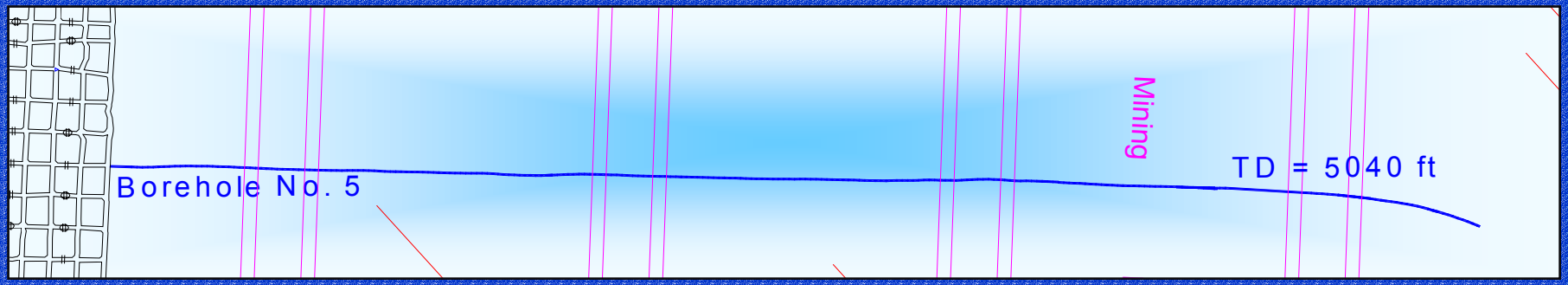
Resulting Impact

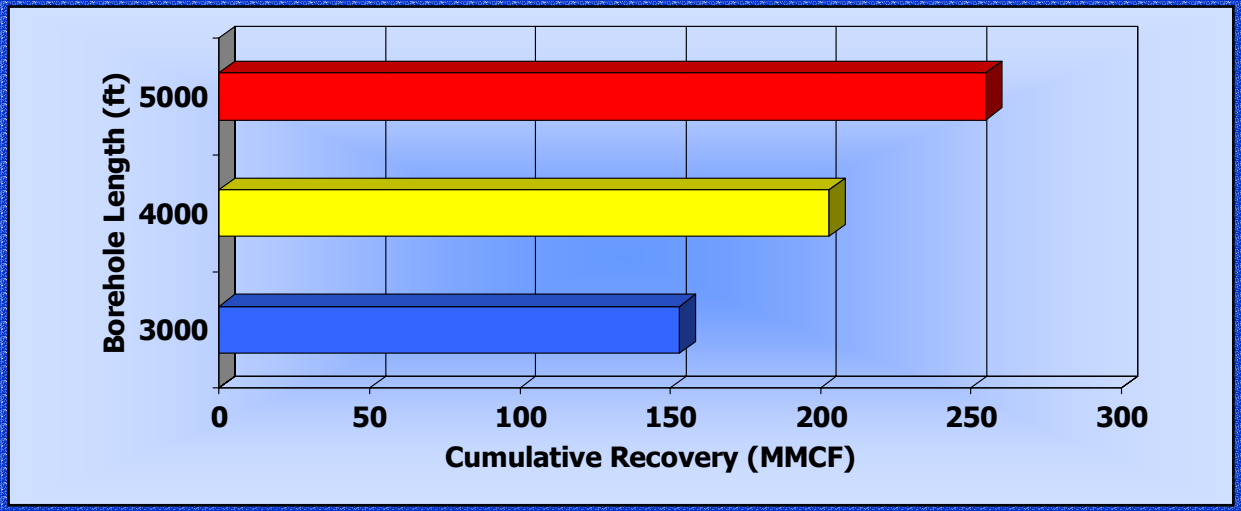
- Precision Placement
- Ultra Long Boreholes
- High Capacity Horizontal Gob Boreholes

REI Drilling
Directional Underground

Ultra Long Boreholes

- **To Drain Gas Significantly in Advance of Mining:**





REI Drilling
Directional Underground

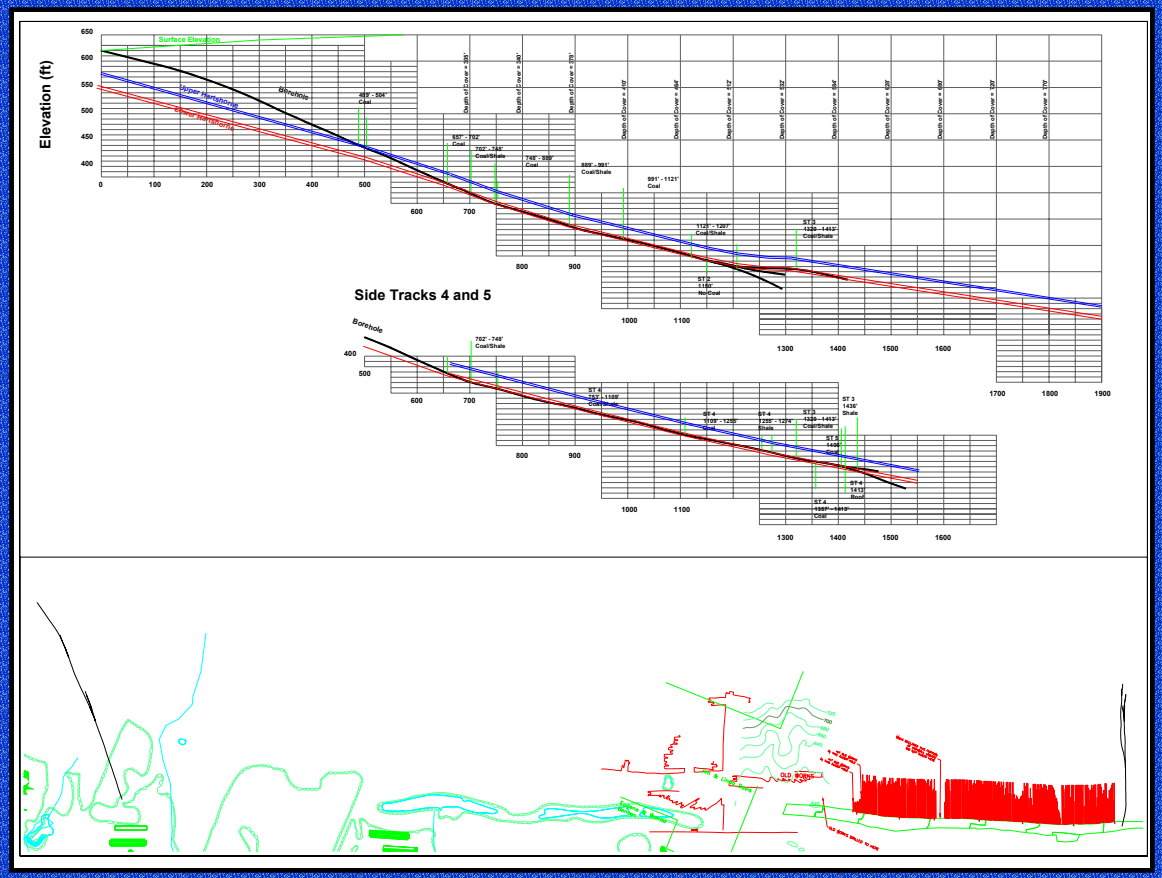
Ultra Long Boreholes

- ***To Drain Large Virgin Reserves in Advance of Mining:***

REI Drilling
Directional Underground

Ultra Long Boreholes

- ***To Access Large Reserves in Advance of Mining from Surface:***



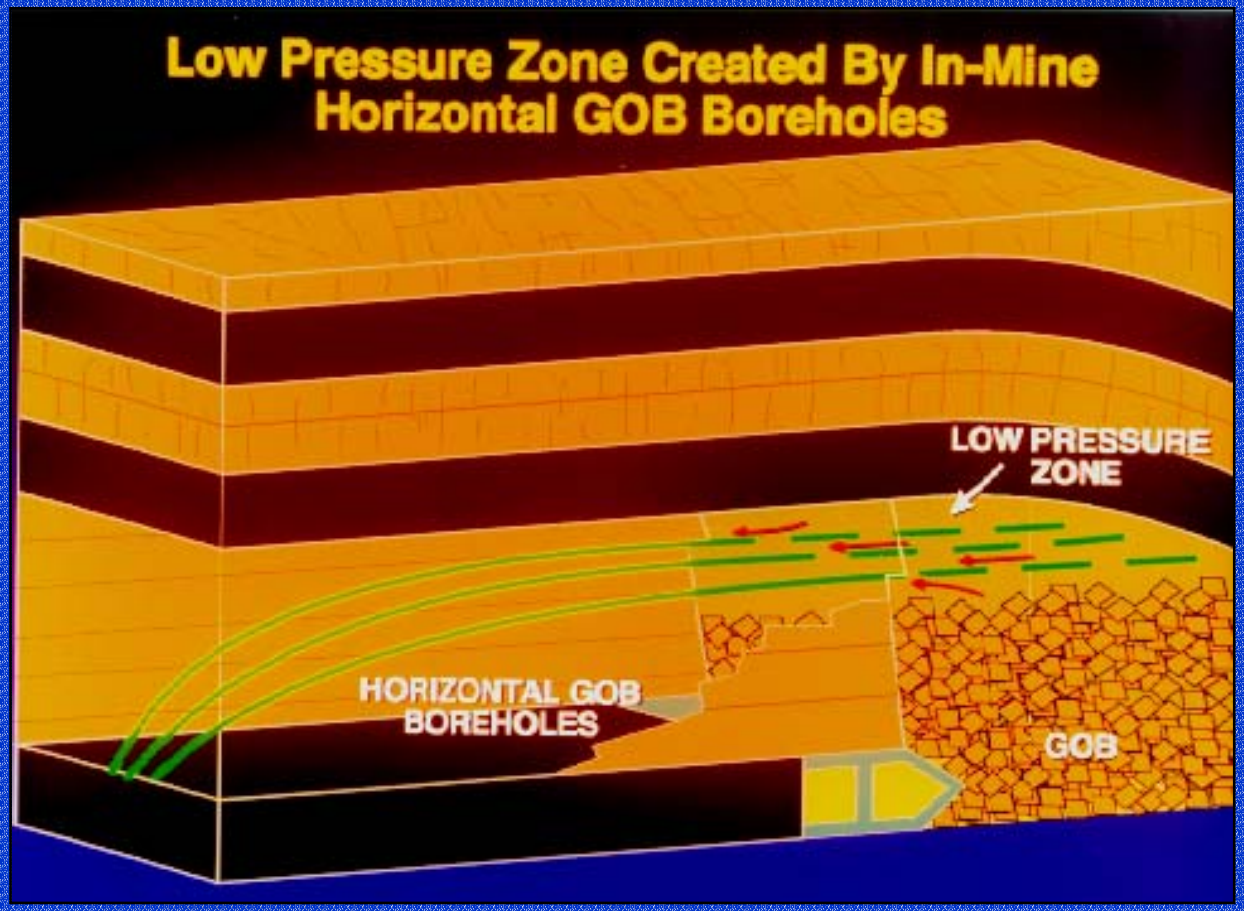
REI Drilling
Directional Underground

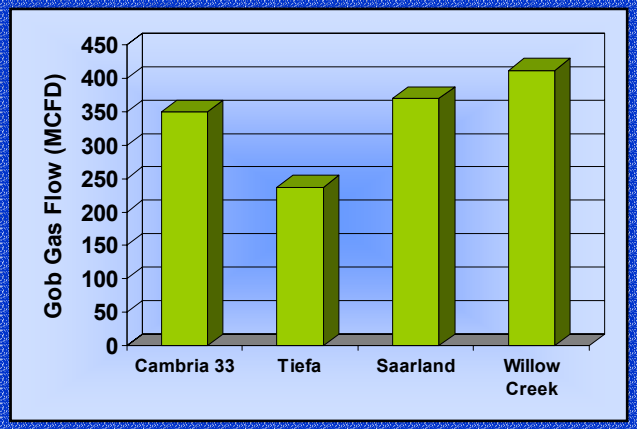
Resulting Impact

- Precision Placement
- Ultra Long Boreholes
- High Capacity Horizontal Gob Boreholes

REI Drilling
Directional Underground

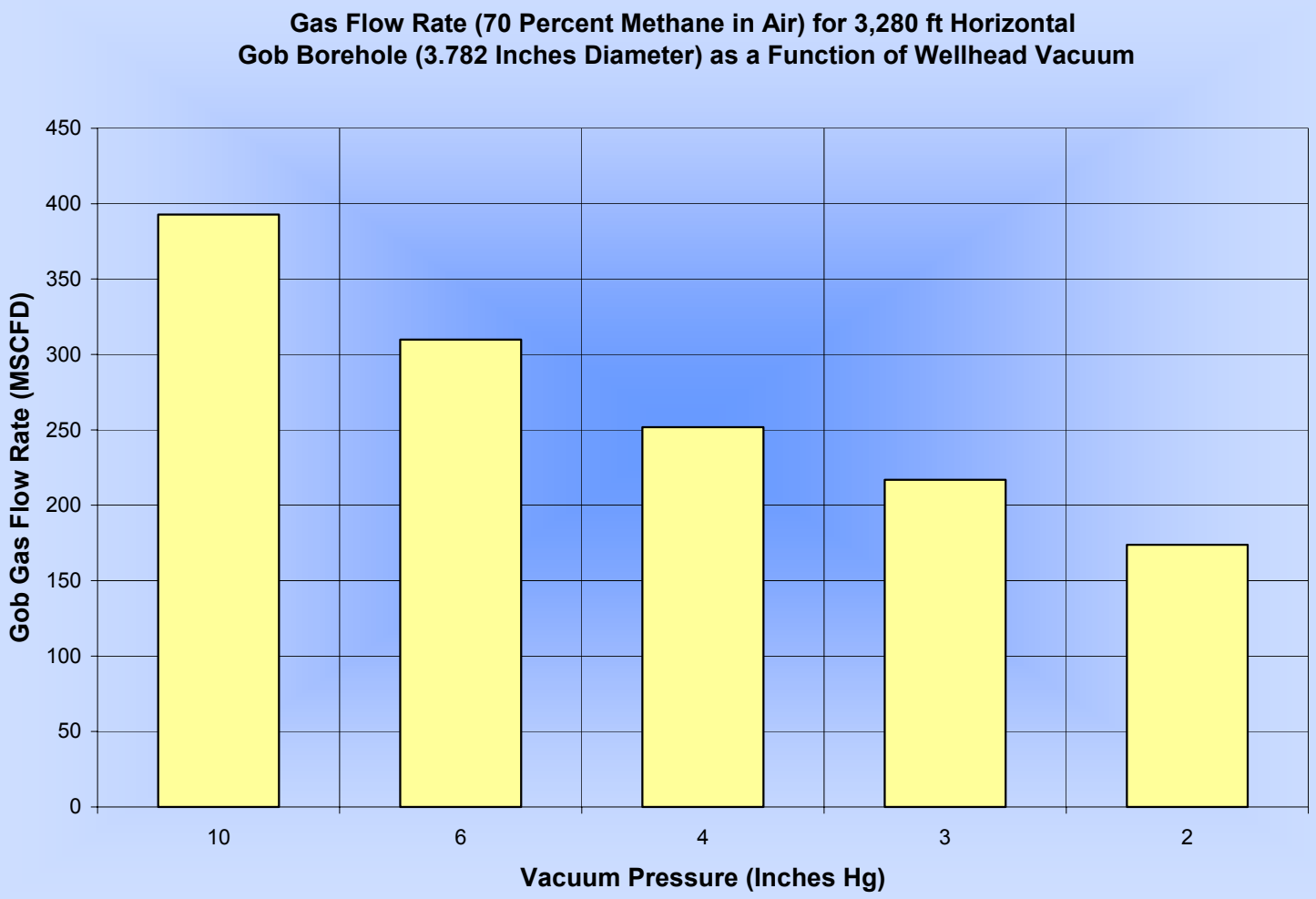
High Capacity Horizontal Gob Boreholes





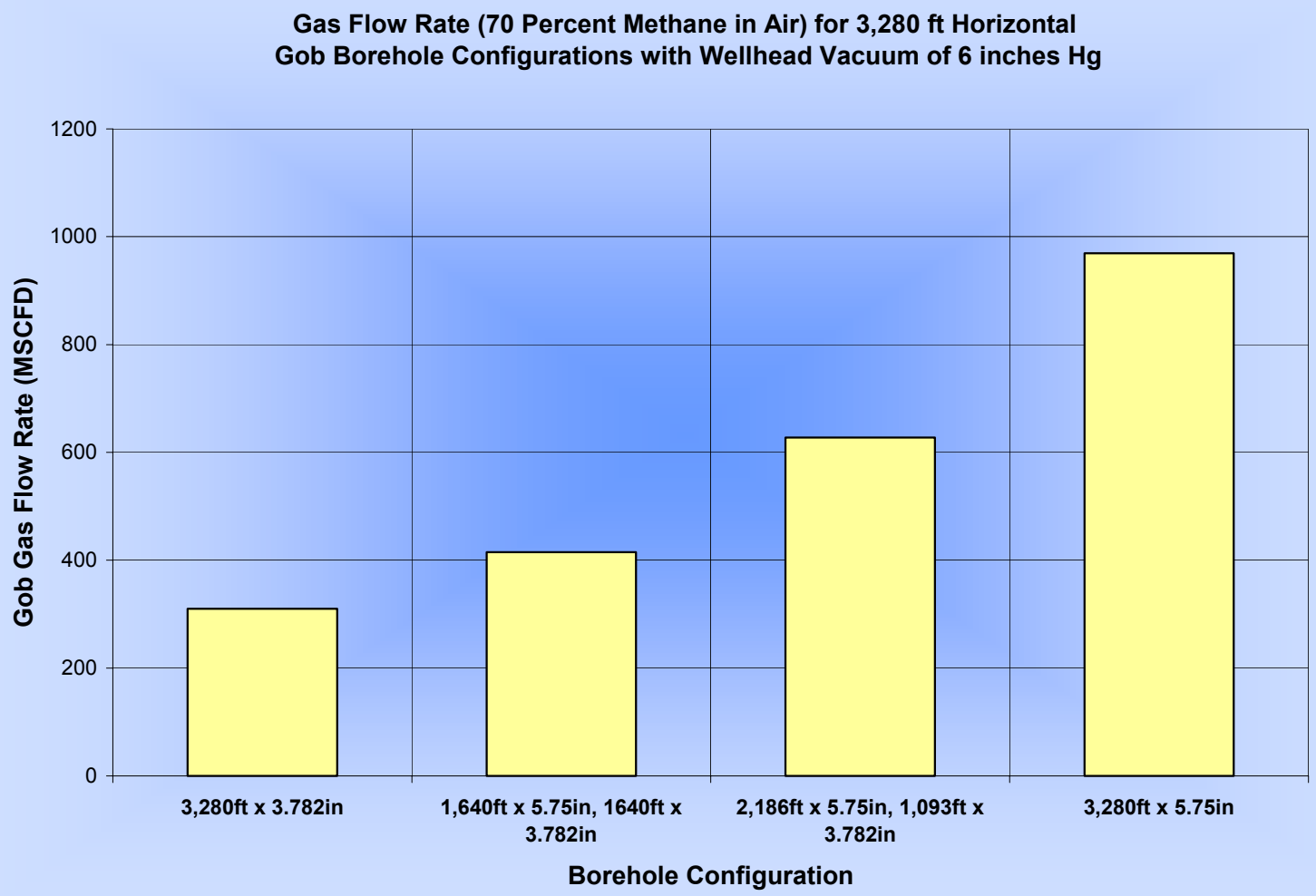
REI Drilling
Directional Underground

High Capacity Horizontal Gob Boreholes



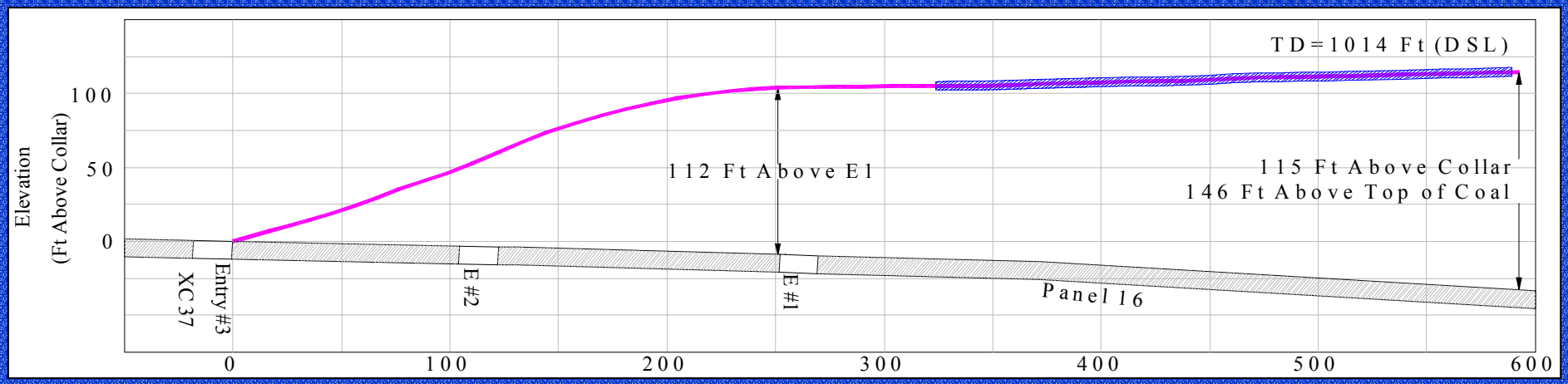
REI Drilling
Directional Underground

High Capacity Horizontal Gob Boreholes



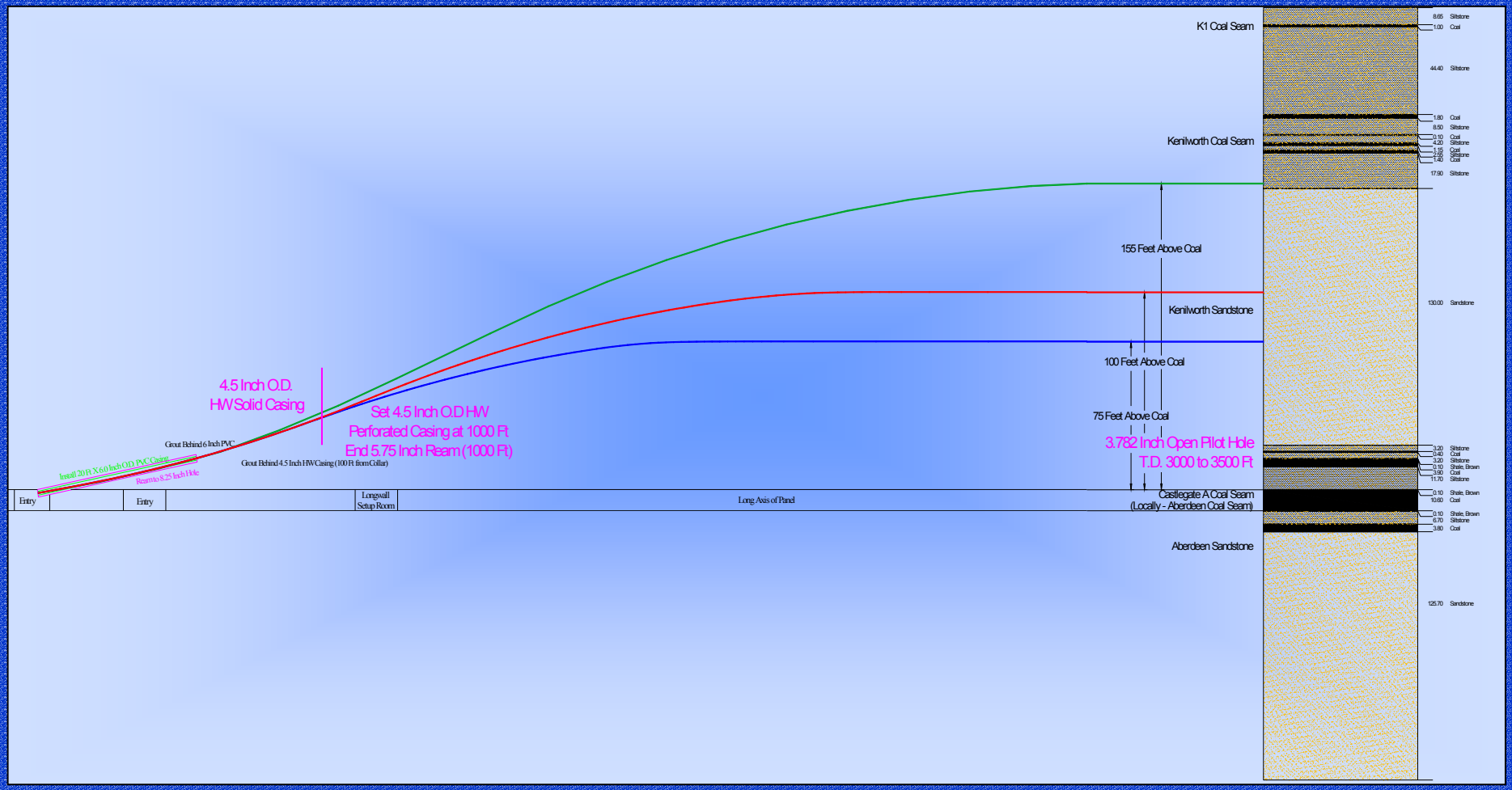
REI Drilling
Directional Underground

High Capacity Horizontal Gob Boreholes



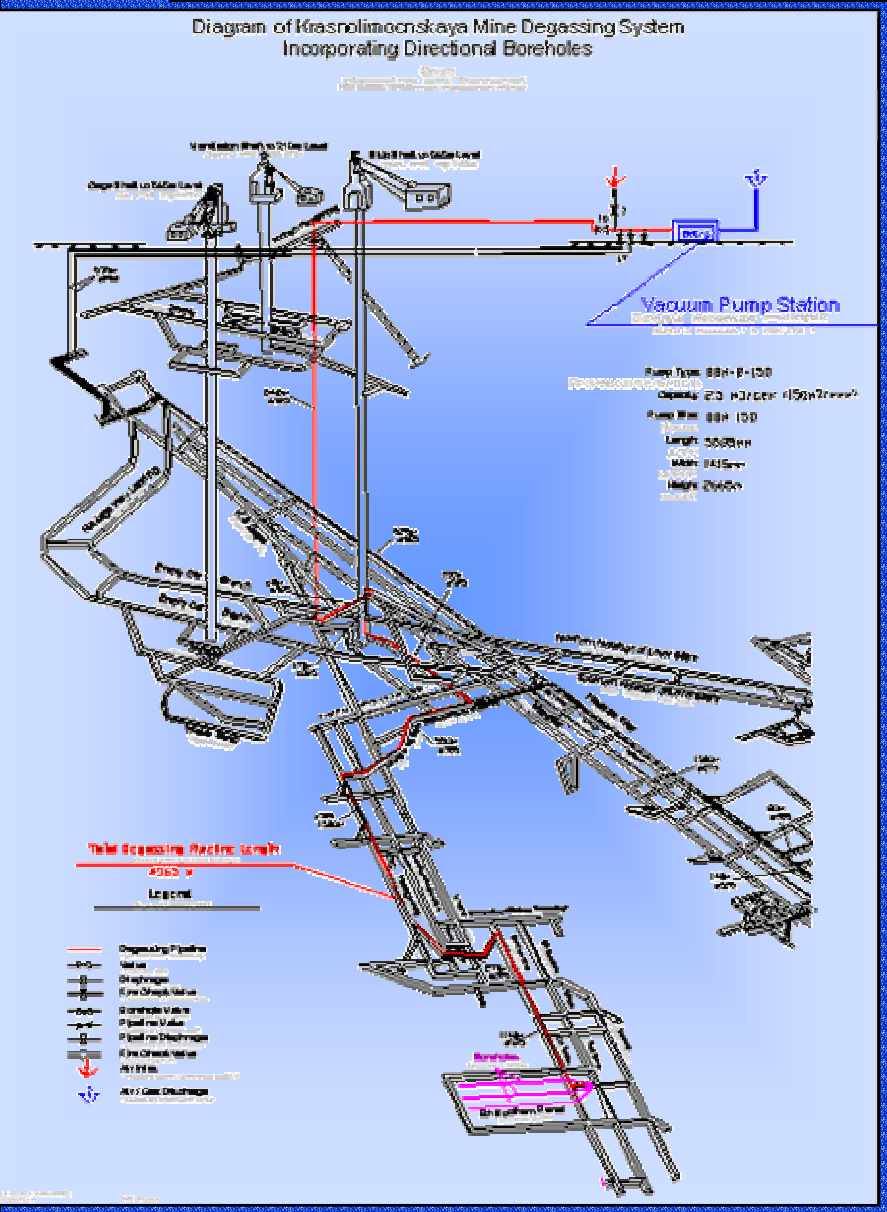
REI Drilling
Directional Underground

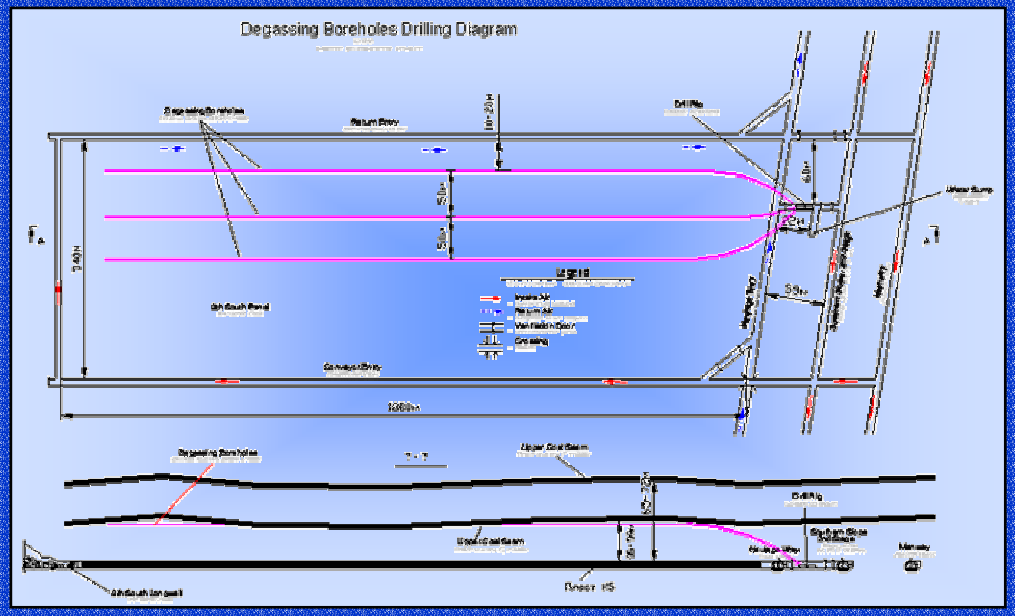
High Capacity Horizontal Gob Boreholes



REI Drilling
Directional Underground

High Capacity Horizontal Gob Boreholes





REI Drilling
Directional Underground

WE'RE JUST A BIT BETTER.

(and a bit less expensive, too)

After nearly a quarter of a century of tackling some of the toughest directional underground drilling jobs in the world, it's fair to say we're a bit better at what we do.

PERSEVERANCE

Just ask our coal mining customers who demand REI's unique blend of science and perseverance – the combination it takes to grind through the hardest jobs.

Despite having some of the best state of the art equipment in the world, it's our people who make a powerful difference. With more than 25 years of experience, we have the people and the track record to seamlessly integrate into your operation.

50,000 POUNDS OF THRUST

REI is adding a new 50,000# thrust LHD machine to our existing fleet of six drills. This will give us the ability to handle an even wider spectrum of projects and conditions.

DIRECTIONAL DRILLING

Our mining customers use REI to directionally drill and explore for old mine workings and geologic anomalies, and steer long holes in coal seams and adjacent strata for methane drainage. Even boreholes drilled to target adjacent workings, including overlying mines for water drainage or transfer are no problem. So whatever your needs, call us today to learn more about our better pricing and innovative approaches for your project.

You'll see why we're a bit better than most.

REI Drilling The source for your directional drilling needs

REI Western Region
345 East 4500 South, Suite 300
Salt Lake City, UT USA 84107
(801) 270-2141

REI Eastern Region
2519 White Hall Road
Crozet, VA USA 22932
(434) 823-2065

Toll-free (877) 838-0534
www.reidrilling.com

REI Drilling
Directional Underground