International Paper

MINERAL RESOURCES
Houston, Texas

Geopressure/Geothermal Resource Opportunities
International Paper has acquired minerals primarily as land & timber acquisitions have occurred over the past 105+ years. Within the Forest Products sector, IP has been a leader in the minerals business. (Oil & Gas, coal, coalbed methane, geothermal, industrial minerals, aggregates, metals, etc).

1975 IP acquired General Crude Oil Company, an Oil, Gas & Minerals Company formed in 1926 located in Houston, TX. Purpose was to acquire a business entity with professional minerals management staff.

IP Mineral Resources has operated under various names over the years (GCO Minerals, IP Petroleum, IP Petroleum & Minerals).

IP has controlled over 16.5 Million acres of mineral estate historically.

IP is poised to capitalize on retained high value mineral estate.
> 3.5 MM AC of Geothermal Mineral Estate

- 715,000 AC: Identified as Areas of Interest
- 435,400 AC: Actively Promoting (Prospects)
- 55,000 AC: Proven Resource

Focus Regions

- Northwest Geothermal
- AR-LA Geopressured Geothermal
- Texas Coastal Geopressured Geothermal
33 Geothermal Areas of Interest Identified
18 Geothermal Prospects

*Information available at booth*
Development Focus

Northwest Geothermal Resources

1. Existing interest and development
2. Effective existing implementations
3. Current production
4. Established Opportunity
5. Reduced exploration risk
> 3.5 MM AC of Geothermal Mineral Estate

- 715,000 AC: Identified as Areas of Interest
- 435,400 AC: Actively Promoting (Prospects)
- 55,000 AC: Proven Resource
Development Focus

Southwest Geopressured Geothermal Resources

- Multiple energy sources (geothermal & entrained gas)
- Multiple revenue streams
- Hospitable political environment
- Private resource ownership
- Deregulation/competition
- Transmission accessibility
- Local Industry sales
- Permitting

Pleasant Bayou 1MW Plant
Brazoria Prospect

Pleasant Bayou #2

- Produced 1988-1992
- 16,465 ft
- 9800 psi
- 302° F (BH)
- 272° F (WH)
- Salinity: 127,000 ppm TDS
- Gas/Brine Ratio: 24 scf/stb
- Max Flow Rate: 25,000 BPD
- Methane: 85 (mol%)
- CO2: 10 (mol%)
- Other Gases: 5 (mol%)
- Porosity: 19%
- Permeability: 200 mD
- Plugged at various depths
- Numerous wells in area at depth
- Close proximity to electric transmission
- Close proximity to pipeline transport
Brazoria Prospect

Cumulative Cash Flow ($US)

Program Year

Millions

Cumulative Cash Flow

Disc (10%) Cum Cash

Brazoria Prospect

Cash Flow

$0 $5 $10 $15 $20 $25 $30

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Prospect Development

- Temperature Composition
- Permeability Heat Flow

- Proximity Analysis
- Identify Viable Regions

- Identify Contiguous Tracts

- Analyze Geologic Characteristics

- Location Depth Status Production E-logs

- Mineral Estate Current Activity Historical Leases Royalty Interest

- Parks Pipelines Transmission Industry Easements

- SMU USGS DOE Industry Data Exploration Activity
What does the Southwest offer?

- Multiple energy sources
  - Entrained gases
  - Thermal properties
  - Mechanical properties
- Multiple revenue streams
- Re-completion potential
- Compliant resource owners

Maximize ROI

- Gas sales
- Generation enhancement
- Heat
- Local loop heating
- Brine
- Metals
- Direct sales
- Reinforce injection
- Generation
- Psi
What we look for...

- Partnership
- Viable business models
- Geotechnical data sharing
- Aggressive resource development
- Solid financial commitments
How we structure deals...

1. Under Confidentiality Agmt
2. Option Agreement
   (Data Sharing or Payment for Exclusivity)
3. Lease Agreement Variations
   a. Annual Per AC Lease Payment
   b. Modest Drilling Bonus
   c. Committed, Aggressive Exploration
   d. Limited Term
4. Royalty on Production
5. Passive JV Role
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Geothermal
Northwest Geothermal Prospects

A total of 9 geothermal prospects in the northwest identified as potential producers of geothermal resources. Accounting for 530,000 gross mineral acres of geothermal estate, International Paper is providing attractive opportunities for electric generation using this renewable energy resource.