Brackish Groundwater National Desalination Research Facility (BGNDRF)

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BGNDRF Facility Manager
The BGNDRF Complex

- Evaporation Ponds
- Renewable Energy Applications Area
- Outdoor Test Pads
- Central Research Building
- Agricultural Research Area
- Large Scale Test Area
- Storage Tanks
- Well 1
- Well 2
- Well 3
- Well 4
BGNDRF’s Focus

1. Concentrate Management
2. Renewable Energy/Desalination Hybrids
3. Produced Water Desalination Technologies
4. Small Scale Systems
5. Public Outreach and Education
BGNDRF’s Niche in Technology Progression

- Concept (Desk)
- Experimentation (Laboratory)
- Development (Proof/Pilot Test)
- Maturation (Demonstration)
- Usage (Water Plant)

Size

Time
BGNDRF Clients

- Government Agencies
- Universities
- Private Sector
## General Service Levels

<table>
<thead>
<tr>
<th>Service Level</th>
<th>Category</th>
<th>Goal</th>
<th>Client's Role</th>
<th>Reclamation's Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fully Developed Process and Equipment</td>
<td>Performance Verification</td>
<td>Provide staff to monitor and operate the system.</td>
<td>Connect equipment to BGNDRF system.</td>
</tr>
<tr>
<td>2</td>
<td>Performance Verification</td>
<td>Performance Verification</td>
<td>Hire Reclamation staff for all aspects of testing, analysis and reporting.</td>
<td>Develop test plan, perform testing, analyze data and report results.</td>
</tr>
<tr>
<td>3</td>
<td>Certified Claims for Technology</td>
<td>Certified Claims for Technology</td>
<td>Client supplies equipment and claim to be certified.</td>
<td>Work with NSF Intl and EPA oversight to develop a test plan and serve as the testing organization.</td>
</tr>
<tr>
<td>4</td>
<td>Research and Development</td>
<td>Evolve an Idea to a Marketable Product</td>
<td>Client supplies resources for Reclamation experts to work cooperatively with client.</td>
<td>Work cooperatively with the client</td>
</tr>
</tbody>
</table>
## BGNDRF Fee Schedule

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Price</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 3 Engineer/Scientist</td>
<td>976</td>
<td>$/Staff Day</td>
</tr>
<tr>
<td>Level 2 Engineer/Scientist</td>
<td>800</td>
<td>$/Staff Day</td>
</tr>
<tr>
<td>Level 1 Technicians</td>
<td>592</td>
<td>$/Staff Day</td>
</tr>
<tr>
<td>Interior Bay Rental</td>
<td>250</td>
<td>$/week</td>
</tr>
<tr>
<td>Exterior Bay Rental</td>
<td>400</td>
<td>$/week</td>
</tr>
<tr>
<td>Power</td>
<td>0.15</td>
<td>$/kWh</td>
</tr>
<tr>
<td>Water, RO Permeate (Set up fees vary) +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-site groundwater</td>
<td>10</td>
<td>$/kgal</td>
</tr>
<tr>
<td>Imported (Depends on source)</td>
<td>2</td>
<td>$/kgal</td>
</tr>
<tr>
<td>ETV Testing Coordination with NSF</td>
<td>~$100,000</td>
<td>Per report</td>
</tr>
<tr>
<td>International</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potable Water</td>
<td>TBD</td>
<td></td>
</tr>
</tbody>
</table>

Water quality analysis available for staff time charge: conductivity, pH, ORP, Temperature, Colorimetric analyses, Particle counts, Turbidity, Silt Density Index
General Process for New Client

• Initial Inquiry
• Tour of the Facility
• Complete Facility Use Forms (6 ea; 3 hrs)
• Safety Orientation (2 hrs)
• Commence Work at BGNDRF
Reclamation Staff

- Assist with connecting client’s equipment to power and water.
- Provide occasional assistance with troubleshooting, equipment monitoring, equipment operations etc.
Capacitive Deionization

UTEP and Voltea
Reverse Osmosis (Patented Control)

Water Standard; Houston, TX
Zero Discharge Desalination (ZDD)
Solar Distillation

KII Inc. Suns River Solar Still
The Desal Prize
450 Third Graders
Major Challenge for Success

• Client Utilization of the Facility
Major Challenge for Success

• Client Utilization of the Facility

• Why is Client Utilization a Problem?
  • Funding
  • Lack of Awareness of BGNDRF’s Existence
  • Lack of Awareness of BGNDRF’s Business Model
  • Cumbersome Slow Bureaucracy
Keys to Success

• Federal Long Term Plan for Funding R&D

• Robust Marketing
  – Newsletter
  – Exhibition Booths
  – “Can Do” Attitude
  – No Bad Experiences

• Customer Friendly Philosophy
  – 24 hr/day; 7 days/week
  – Currently Waiving Fees
  – Local Technicians

• Broadening the Appeal
Questions

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http://hiddenunseen.blogspot.com/2012/04/top-9-unusual-deserts.html