Use of “Next” Generation Programs to Inventory Methane and Carbon Dioxide Emissions

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Why Look at Methane and CO$_2$ Emissions?

- STAR Program Saves 176 BCF of Gas
- Gas Prices Stabilizing at $4- $6/ MCF
- CO$_2$ Optimization Saves Fuel; Increases Efficiencies
- International GHG Pressures
- Improve Public Relations
A Brief History...

- 1992 - UN Adopts Climate Change Framework. 1997 becomes Kyoto Protocol
- 1992 – EPA Forms Gas STAR to Reduce Methane Emissions
- 1996 – PanCanadian Conducts Company Wide GHG Inventory
- 1998 – Texaco Inventories GHG; to be used as a planning tool
... and Finally

- **2000** – BP Amoco Inventories GHG; Announces reductions and internal exchange program
- **2001** – API Publishes GHG Inventory Standards
- **2003** – “Next” Generation Inventory Programs Available
Setting up a Methane and CO₂ Program

1. Goals and Objectives
2. Scope
3. Management and Operating Group Support
4. Costs and Rewards
5. Technical Approach
   A. Accuracy and Reliability of Data
   B. Consistency of Data
   C. Methodology of Calculations
6. Selection of Inventory Programs
Early Emission Inventory Programs

- “In-house” spreadsheets
- User developed
- Standardized calculations not used
- Limited in ability to handle vast quantities of data
- Results not always comparable
- Attempts to modify “criteria” programs
WANTED!!
Standardized Calculations

- Industry desires standardized techniques
- API develops “Compendium of Greenhouse Gas Emissions and Estimation Methodologies for the Oil and Gas Industry”
Second Generation Programs

- Spreadsheet or database platform
- Use standardized calculations
- Spreadsheet programs still limited by platform
- Database programs web-enabled
“Wish List” for “Next” Generation Programs

- Standardized Calculations
- Handle thousands of data points
- Monthly, quarterly or yearly input
- “Web” Feel
- Easy to use by field and engineering staffs
- Easy to understand reports
- Adapted to inter or intra-net
GHG Plus +: Meeting the “Next” Generation Requirements

- Uses API Calculations
- Database platform; Unlimited data input
- Time interval determined by user
- “Web” look and feel
- Built in help and program documentation
- Easy to use input screens
- Customizable reports
- Can be placed on intra or inter-nets
GHG PLUS+ Entry Screen

Contek LLC

GHG PLUS+

Easiest and Most Accurate Way to Calculate Greenhouse Gas Emission

Step 1: Enter Facility Identification Information

Step 2: Enter Facility Equipment and Energy Use Information

Step 3: View and Print Reports

Program Help and Documentation

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Easy to Understand Icons

Built in Help and Documentation

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Facility Input Screen

Facility Information Input Form

- Property Code/Name: Butane
- Year: 2003
- Heaters: Butane Heaters
- Enter Type of Fuel: Butane
- Select Gas Analysis if Known: No Sample

Method 1: Fuel Quantity and Composition Known
- Fuel Quantity: 10000

Method 2: For Gas fired Equipment Only Where No Meter is Present: Leave “Fuel Quantity” = 0, and Enter the Following:
- Duty, Absorbed Heat Rating, Percent Fired During Time Period
  - Heater 1: 0 BTU/HR, 0%
  - Heater 2: 0 BTU/HR, 0%
  - Heater 3: 0 BTU/HR, 0%
  - Heater 4: 0 BTU/HR, 0%
  - Heater 5: 0 BTU/HR, 0%

Easy to use tabs
User Selected Methods
Built in Explanations
Easy to Customize Reports and Graphs

Reports
- Electricity
- Engines
- Misc
- Fugitives
- Dehydration Units
- Flares
- Heaters

Summaries and Graphs
- Loading
- Maintenance
- Mobile
- Pneumatic
- Tank Venting
- Amino Units

By Property
- By Year
- All Data
- Summation of all Data
- GHG Summation
- Graph of Total

Return
## Built in Help and Documentation

### Help and Program Documentation

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<thead>
<tr>
<th>Heaters</th>
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### Information from the API

API Synopsis in Adobe Acrobat

[Return Home](#)  [Return to Input Form](#)
## Greenhouse Gas Reports

**Information About the Property**

- **Property Name**: ARCO "AB4" 1
- **Quarter**: 1
- **Year**: 2002
- **Completed By**: ALTON CALLIHAM
- **Property Code**: 622105000

### Production and Well Information

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</table>

### Compressor Data

- **Number of Compressors**
- **Compressors Thrown**
- **Diesel Fuel Used**

### Treaters

- **Treaters Total No**
- **Treaters Burner Rating BTU/HR**
- **Treaters % Run Time**

### FWKOS

- **FWKOS Total No**
- **FWKOS Burner Rating BTU/HR**
- **FWKOS % Run Time**

### Other Lease Equipment

- **Separators, Etc Total No**
- **Oil Tanks, Number**
Using GHG PLUS+ to Advance Your Reporting to the Next Level

- GHG PLUS+ is the “Next” generation program developed for the oil and gas industry
- Can be easily customized for your operations and reporting criteria
- User friendly
- “Web” look and feel to user
- Flexible for your ever changing property portfolio
- Reports can be changed or modified as needed
- No proprietary platforms; uses well known Microsoft Access platform
- Can be web-enabled