# **Offshore Petroleum and Natural Gas Production**

Instructions for Calculating Emissions Using the Draft 2011 Gulfwide Emissions Inventory

> Prepared by: Eastern Research Group, Inc. 1600 Perimeter Park Drive Morrisville, NC 27560

> > Prepared for:

Bureau of Ocean Energy Management Gulf of Mexico OCS Region U.S. Department of Interior

#### TABLE OF CONTENTS

| Section  | Page No. |
|--|----------|
| Introduction   | 1        |
| Section 1. General Instructions for Users Familiar with Microsoft Access               |          |
| Section 2. Detailed Step-by-Step Instructions for Users Not Familiar with Microsoft Ac | cess 4   |
| Section 3. Instructions for Calculating Emissions from Multiple Complexes              |          |

#### LIST OF TABLES

| Tables                                      | Page No. |
|---|----------|
| Table 1. Gulfwide Inventory Equipment Types |          |

### Introduction

This guidance document provides instructions for extracting emissions from the Bureau of Ocean Energy Management's (BOEM's) Draft 2011 Gulfwide Emission Inventory. The 2011 emission inventory was prepared using equipment and activity data submitted by offshore platform operators using the 2011 Gulfwide Offshore Activities Data System (GOADS-2011). Carbon dioxide equivalents (CO<sub>2</sub>e) are used as the example pollutant in this document. Estimates for other pollutants can be extracted using other pollutant codes (CH4, CO2, CO, N2O, NOX, PM25-PRI, PM10-PRI, SO2, VOC, etc.).

The instructions in this document can be used to calculate combustion and non-combustion emissions. Combustion sources include boilers/heaters/burners, engines, and turbines. Non-combustion sources are: amine units, flares, fugitives, glycol dehydrators, losses from flashing, mud degassing, pneumatic pumps, pressure level controllers, storage tanks, and vents.

### Section 1. General Instructions for Users Familiar with Microsoft Access

This section contains instructions for calculating  $CO_2e$  emissions by equipment type from the 2011 Gulfwide Emission Inventory for users who are already familiar with Microsoft Access. Detailed instructions with illustrations begin on page 4.

- 1. Download the Draft 2011 Gulfwide Emission Inventory from the Bureau of Ocean Energy Management (BOEM) website: <u>http://www.boem.gov/2011-Gulfwide-Emission-Inventory/</u>
- 2. The inventory file will download as a zipped Microsoft Access database. Extract the Microsoft Access database, 2011\_GOADS\_Draft\_20140226.accdb, to your computer.
- 3. Open the 2011\_GOADS\_Draft\_20140226.accdb file in Microsoft Access. You should see a list of 8 tables: tblPointCE, tblPointEM, tblPointEP, tblPointER, tblPointEU, tblPointPE, tblPointSI, and tblPointTR.
- 4. tblPointSI contains identifying information for each platform. The sixth field is labeled "BOEM-COMPLEX\_ID." You will need to use BOEM Complex ID in the query to calculate CO<sub>2</sub>e emissions. The other fields in tblPointSI contain descriptive information that you can use to ensure you know the correct BOEM Complex ID to use in your query.
- 5. Create a query using the following fields from tblPointEM (no other tables are needed to calculate emissions):
  - a. BOEM-COMPLEX\_ID Enter your BOEM Complex ID in the Criteria row of the query design grid.
  - b. BOEM-EQUIP\_TYPE This field contains three characters that identify the type of equipment associated with the emissions or a description of the minor source platform type that is associated with the emissions. For your reference, Table 1 presents equipment types and abbreviations.
  - c. strPollutantCode Enter "CO2E" in the Criteria row of the design grid.
  - d. dblEmissionNumericValue
  - e. strEmissionUnitNumerator

Group by these fields, and change the Total row of the design grid from "Group By" to "Sum" under the dblEmissionNumericValue field.

6. The results show the total CO<sub>2</sub>e emissions for each equipment type at the specified complex. The CO<sub>2</sub>e emissions are in English tons, not metric tons. To convert to metric tons, multiply the emission values by 0.90718.

| Equipment Type            | Abbreviation       |
|---------------------------|--------------------|
| Boiler                    | BOI                |
| Diesel or Gasoline        |                    |
| Engine                    | DIE                |
| Drilling Rig              | DRI                |
| Natural Gas Engine        | NGE                |
| Natural Gas, Diesel, or   |                    |
| Dual-Fuel Turbine         | NGT                |
| Drilling Rig              | DRI                |
| Amine Unit                | AMI                |
| Flare                     | FLA                |
| Fugitives                 | FUG                |
| Glycol Dehydrator         | GLY                |
| Losses from Flashing      | LOS                |
| Mud Degassing             | MUD                |
| Pneumatic Pump            | PNE                |
| Pressure Level Controller | PRE                |
| Storage Tank              | STO                |
| Vent                      | VEN                |
| Wellhead Protector        | Wellhead Protector |
| Caisson                   | Caisson            |
| Living Quarters           | Living Quarters    |
| Other                     | Other              |

 Table 1. Gulfwide Inventory Equipment Types

# Section 2. Detailed Step-by-Step Instructions for Users Not Familiar with Microsoft Access

- 1. Download the Draft 2011 Gulfwide Emission Inventory from the Bureau of Ocean Energy Management (BOEM) website: <u>http://www.boem.gov/2011-Gulfwide-Emission-Inventory/</u>
- 2. The inventory file will download as a zipped Microsoft Access database. Extract the Microsoft Access database, 2011\_GOADS\_Draft\_20140226.accdb, to your computer.
- 3. Open the 2011\_GOADS\_Draft\_20140226.accdb file in Microsoft Access. You should see a list of 8 tables in the Navigation Pane as shown below. You can expand or collapse the Navigation Pane itself or the lists of Access Objects on the Navigation Pane by clicking the double arrows:



4. Double click tblPointSI to open that table. tblPointSI contains identifying information for each platform. The sixth field is labeled "BOEM-COMPLEX\_ID." You will need to use the BOEM Complex ID in the query to calculate CO<sub>2</sub>e emissions. The other fields in tblPointSI contain descriptive information that you can use to ensure you know the correct BOEM Complex ID to use in your query. To close tblPointSI, click the small "x" near the top right corner of tblPointSI. To scroll to the right or left to view additional fields, use the scroll bar at the bottom of tblPointSI. To scroll up or down to view additional rows, use the scroll bar on the right side of tblPointSI.

| Home<br>Paste<br>Wy Clipboard | Cre | ate External D<br>Calibri<br>B Z U<br>A - 2 - 1<br>For | ata Database Tools Datasheet<br>・11 ・<br>事業<br>引用・<br>れての<br>Rich Text | Refresh<br>All + X<br>Records | otals<br>pelling<br>Aore * | €<br>V V V<br>itter V Find V V<br>& Filter Find V V |
|-------------------------------|-----|--|--|-------------------------------|----------------------------|---|
| Acces • «                     |     |  | strStateEacilityIdentifier   | BOEM-COMPLEX ID               | BOEM-STRUE                 | BOEM-NAML - Eacility Rec                            |
| thIPoint/F                    |     | 25   | 182-1  | 183                           | 1                          | A-Hoover Spar                                       |
|                               |     | 857  | 2008-1   | 2008                          | 1                          | A-Perdido   |
| t DIPOINTEM                   |     | A17  | 1322-1   | 1322                          | 1                          | B   |
| tblPointEP                    |     | A19  | 10146-1  | 10146                         | 1                          | В   |
| tblPointER                    |     | A-21   | 10563-1  | 10563                         | 1                          | A   |
| tblPointEU                    | -   | A-21   | 28043-1  | 28043                         | 1                          | В   |
| tblPointPE                    |     | A47  | 10203-2  | 10203                         | 2                          | В   |
| thiPointSI                    |     | A76  | 2049-1   | 2049                          | 1                          | С   |
|                               |     | A105   | 10071-1  | 10071                         | 1                          | A   |
|                               |     | A105   | 10572-1  | 10572                         | 1                          | В   |
|                               |     | A133   | 10075-1  | 10075                         | 1                          | Α   |
|                               |     | A133   | 10249-1  | 10249                         | 1                          | В   |
|                               |     | A133   | 10249-2  | 10249                         | 2                          | C-AUX   |
|                               |     | A133   | 10461-1  | 10461                         | 1                          | D   |
|                               |     | 375  | 10520-1  | 10520                         | 1                          | Α   |
|                               |     | 375  | 28003-1  | 28003                         | 1                          | 3   |
|                               |     | 376  | 10521-1  | 10521                         | 1                          | A   |
|                               |     | 376  | 10521-2  | 10521                         | 2                          | A-AUX 🗸   |
|                               | Re  | cord: 14 - 1 of 25                                     | 44 🕨 🕅 🙀 🕅 No Filter Search  |                               |                            | +   |
| atasheet View                 |     |  |  | K                             |                            | Num Lock 🔲 🔀 🖽 🔛 🚒                                  |

Scroll left or right

- х 🚽 ing -😢 - 🎎 🦹 🛪 🗙 🗧 2011\_GOADS\_Draft\_20140226 : Database (Access 2007) - Microsoft Access Ga Home Create External Data Database Tools 0 🛄 Table 🖳 Form 1 🗄 Labels 2222222 Table Templates 🔡 Split Form Blank Report Table Form Report Report Query Query Macro 🔚 Multiple Items 📑 Design Report Wizard Design III SharePoint Lists \* Design Wizard Design Tables Forms Reports Other All Acces... 💌 « \$ Tables tblPointCE tblPointEM tblPointEP tblPointER tblPointEU tblPointPE tblPointSI tblPointTR Ready Num Lock
- 5. Click the Create tab (circled in red below):

6. Click "Query Design" (circled in red below):



7. A query will open with a "Show Table" pop-up box as shown below. Click "tblPointEM" once to highlight that table, then click the "Add" button:

| C   | - 🥵 🌾           | × = 2011_GC                                   | ADS_Draft_20   | 140226 : Database (Access 2                      | 007) - Microso   | oft Access                         |          | 0 XX    |
|---|-----------------|---|----------------|--|------------------|------------------------------------|----------|---------|
| Home  | Create          | External Data                                 | Database Tool  | 5  |                  |                                    |          | ۲       |
| Table Table Templates Table SharePoint Lists Tables | Table<br>Design | Form<br>Split Form<br>Multiple Items<br>Forms | Form<br>Design | Labels Labels Blank Report Report Report Reports | Report<br>Design | Jery Query<br>zard Design<br>Other | Macro    |         |
| All Acces 👻 «                                       | Quer            | y1  | _              |  |                  | 0 00                               |          | ×       |
| Tables  |                 |   | Show           | Table  |                  | 8 23                               |          | <b></b> |
| tblPointCE  |                 |   | Tabl           | es Queries Both                                  |                  |                                    |          |         |
| tbIPointEM  |                 |   |                |  |                  |                                    | 1        |         |
| tblPointEP  |                 |   | tblP           | ?ointCE<br>?ointEM                               |                  |                                    |          |         |
| tbIPointER  |                 |   | tblP           | PointEP  |                  |                                    |          |         |
| tbIPointEU  |                 |   | tblP           | PointEU  |                  |                                    |          |         |
| tbIPointPE  |                 |   | tblF           | PointSI  |                  |                                    |          |         |
| tblPointSI  |                 |   |                | OINTER   |                  |                                    |          |         |
| tblPointTR  |                 |   |                |  |                  |                                    |          |         |
|   |                 |   |                |  |                  |                                    |          |         |
|   | •               |   |                |  | Add              | Close                              |          | •       |
|   | Fiel            | d:  |                |  |                  | _                                  |          |         |
| Ready   |                 |   |                |  | (                |                                    | Num Lock | SQL 🔛 🛒 |

If the "Show Table" pop-up box does not automatically appear, click the "Show Table" icon (shown by the red arrow below) to open the pop-up box. Then follow the steps above to select tblPointEM and add it to query window.

| C  | × 🕵 🕅  | × =   |                                | Query Tools | 2011_GOADS_I                                | Draft_20140226 : D |                   |
|--|--|---|--------------------------------|-------------|---|--------------------|-------------------|
| Home   | Create E                                     | External Data 👘 Data  | base Tools                     | Design      |   |                    | ۲                 |
| SQL  |  | Hand Content of the second se | Columns<br>Columns<br>I: All – | Totals      | Property Sheet<br>Table Names<br>Parameters |                    |                   |
| All Acces 🔍 «  | Query1                                       | (00) 00   | - P                            | <u>,</u>    |   |                    | ×                 |
| Tables     *       tblPointCE     tblPointEM       tblPointEP     tblPointER       tblPointEU     tblPointEU | 4  |   |                                |             | ••  |                    | ▲<br>[]]]<br>►    |
| tblPointPE   | Field:                                       |   |                                |             |   |                    |                   |
| tblPointTR   | Table:<br>Sort:<br>Show:<br>Criteria:<br>or: |   |                                |             |   |                    |                   |
| Ready  |  |   |                                |             |   | Nu                 | ım Lock 🛛 🔽 🔛 ,;; |

8. You should now see tblPointEM in the background of your query window as shown below. Click the "Close" button in the "Show Table" pop-up box (circled in red below):



9. You can adjust your query window to enlarge the area shown around tblPointEM or to enlarge the area shown for the grid in the bottom half of the window by moving the cursor between these two panes until it looks like the shape circled in red below. When the cursor matches the shape below, click and drag (holding down the left mouse button) up or down to change the size of the panes.



10. You can also adjust the size of tblPointEM by moving the cursor over the lower right corner until it looks like a diagonal arrow (circled in red below). Click and drag (holding down the left mouse button) to adjust the size of tblPointEM.



11. You can adjust the width of the columns in the grid by moving the cursor between two columns until it looks like the shape circled in red below. When the cursor matches the shape below, click and drag (holding down the left mouse button) left or right to change the width of the column.



12. Double click "BOEM-COMPLEX\_ID" in the tblPointEM box. You will then see the field "BOEM-COMPLEX\_ID" in the grid as shown below.



13. Type the BOEM Complex ID in the Criteria row of the grid as shown in the example below. In this example, we will use BOEM Complex ID 20398.



14. Double click "BOEM-EQUIP\_TYPE" in the tblPointEM box. You will then see the field "BOEM-EQUIP\_TYPE in the grid as shown below.



15. Next double click "strPollutantCode" in the tblPointEM box. The field "strPollutantCode" will then appear in the grid. In the Criteria row under "strPollutantCode", type "CO2E" as shown below.



16. Double click dblEmissionNumericValue and then double click strEmissionUnitNumerator to bring these two fields into the grid. Then click the Group By icon in the Show/Hide section under the Design tab (shown by the red arrow below).

| ) 🖬 🤊 -   | (° - 🤹 🕅  | <b>X</b> =    |   | Query Tools     | 2011_GOADS_Draft_20140                      | 226 : Database (Acce |               |  |  |  |
|-----------|---|---------------|---|-----------------|---|----------------------|---------------|--|--|--|
| Home      | Create  | External Data | a Database Tools                                    | Design          |   |                      | ۲             |  |  |  |
| ew Run    | ■ 2 00 1 00 | Show<br>Table | 불 Insert Columns<br>媒 Delete Columns<br>Return: All | Totals          | Property Sheet<br>Table Names<br>Parameters |                      |               |  |  |  |
| Results   | Query Type  |               | Query Setup   | Sho             | ow/Hide                                     |                      |               |  |  |  |
| Query1    |   |               |   |                 |   |                      | ×             |  |  |  |
| tb        | tblPointEM         IngEndDate         BOEM-MONTH         intStartTime         intEndTime         strBlankfield2         dblEmissionNumericValue         strEmissionUnitNumerator  |               |   |                 |   |                      |               |  |  |  |
|           |   |               |   |                 |   |                      |               |  |  |  |
| Field:    | BOEM-COMP   | LEX_ID B      | OEM-EQUIP_TYPE                                      | trPollutantCode | dblEmissionNumericVa                        | lue strEmissionUnit  | Numerator     |  |  |  |
| Total:    | Croup By  | tt            |   |                 | Crown By                                    | Croup By             |               |  |  |  |
| Sort      | Group by  | 6             | noup by   | Stoup by        | Group by                                    | Group by             |               |  |  |  |
| Show:     |   |               | <b>V</b>  | <b>V</b>        |   | 7                    |               |  |  |  |
| Criteria: | "20398" "C  |               | CO2E  |                 |   |                      |               |  |  |  |
| or:       | 4   |               |   |                 |   |                      | • •           |  |  |  |
| dy        |   |               |   |                 | (   | Caps Lock Num Lock   | 🗉 🤀 🖞 SQL 🕌 🤢 |  |  |  |

17. Click in the cell with the words "Group By" under the field dblEmissionNumericValue (fourth column from the left in this example) to get a drop down list as shown. Select "Sum" from the drop down list.

| <b>C</b> .   | ) 🖬 🤊 -   | C - 🕵 😿           | X =           |   | Query Tool     | 2011_GOADS_D   | raft_20140226 : Da | tabase (Acce 🗆 🗆          | ×     |
|--------------|---|-------------------|---------------|---|----------------|----------------|--------------------|---------------------------|-------|
|              | Home  | Create E          | External Data | Database Tools                                  | Design         |                |                    |                           | 0     |
| Vie          | ew Run  |                   | Show<br>Table | Delete Columns<br>Delete Columns<br>Return: All | Totals         | Property Sheet |                    |                           |       |
| >>           | Ouerv1  |                   |               | ,   |                | ,              |                    |                           | ×     |
| igation Pane | Very1     X       tblPointEM     IngEndDate       BOEM-MONTH     IntStartTime       intStartTime     IntStartTime       strBlanktield2     dblEmissionNumericValue       strEmissionUnitNumerator     V |                   |               |   |                |                |                    |                           |       |
| Nav          | Field:  | BOEM-COMPLE       | EX ID BOI     |   | strPollutantCo | de dblEmission | NumericValue       | strEmission InitNumerator |       |
|              | Table:  | tblPointEM        | tblF          | ointEM  | tblPointEM     | tblPointEM     |                    | tblPointEM                |       |
|              | Total:  | Group By          | Gro           | up By   | Group By       | Group By       | -                  | Group By                  |       |
|              | Sort:   | Sort:             |               |   | Group By       |                |                    |                           |       |
|              | Criteria:   | Criteria: "20398" |               | "CO2E"  | Avg            |                | ✓                  |                           |       |
|              | or  | 20000             |               |   | COLL           | Min            |                    |                           |       |
|              |   | ◀                 |               |   |                | Max            |                    |                           | •     |
| Rea          | dv  |                   |               |   |                | StDev          |                    | Num Lock 🔲 🕮 🚳            | SOL . |
|              |   |                   |               |   |                |                |                    |                           |       |

18. If you have not already done so, you may want to save your query at this point. Click the Save icon (blue disk) or click the Microsoft Office button, go to Save As, and then Save Object As. A box will appear with a place for you to name the query. After you have typed a name for this query, click OK.



19. Now you are ready to run the query. Click the Run icon under the Results section of the Design tab (circled in red below).

|            |  | ) - (* - 🎭   | ¥ X) =  | 2011_GOAD  | S_Draft_20         | Query Too                               | ls                                   |               |                         |  |
|------------|--|--|---|--|--------------------|---|--------------------------------------|---------------|-------------------------|--|
|            | TIOIN  | e Create   | External [  | Data Data  | abase Tools        | Design                                  |                                      |               | ۲                       |  |
| Vie        | ew Run   |  | D<br>Show<br>Table  | i Insert<br>↓ Delete<br>↓ Insert<br>↓ Delete<br>↓ Return | Columns<br>Columns | Totals                                  | Property Sheet                       |               |                         |  |
|            | Results Query lype Query Setup Snow/Hide   |  |   |  |                    |   |                                      |               |                         |  |
| »          | 001  | Calculate CO2  | Emissions for   | 20398  |                    |   |                                      |               | ×                       |  |
| ttion Pane |  | tblPointEM<br>IngEnd<br>BOEM-I<br>intStart<br>intEndT<br>strBland<br>dblEmis<br>strEmiss | Date<br>MONTH<br>Time<br>ime<br>cfield2<br>sionNumericV<br>sionUnitNume | /alue<br>rator ↓   |                    |   |                                      |               |                         |  |
| viga       | ▲ []   |  |   |  |                    |   |                                      |               | •                       |  |
| Nav        | Field: BOEM-COMPLEX_ID E<br>Table: tblPointEM t<br>Total: Group By C<br>Sort: Show: V<br>Criteria: or: 1 |  |   | BOEM-EQU<br>tblPointEM<br>Group By                       | IP_TYPE :          | strPollutantCo<br>blPointEM<br>Group By | ode dblEmission<br>tblPointEM<br>Sum | nNumericValue | strEm<br>tbIPoi<br>Grou |  |
| Read       | dy   |  |   |  |                    |   | Nu                                   | m Lock 🔲 🄀 🕮  | , SQL 🕌 🔐               |  |

20. The results of the example query are shown below. The results show the total  $CO_2e$  emissions for each equipment type at complex 20398. The  $CO_2e$  emissions are in English tons, not metric tons. To convert to metric tons, multiply the emission values by 0.90718.

For your reference, Table 1 (presented in Section 1) presents equipment types and abbreviations.

| ( | 📭 🔄 🤊 - 😢 - 🎭 🜾 🗙 🔻 2011_GOADS_Draft_20140226 : Database (Access 2007) - Micr |        |               |  |                  |               |   |         |              |     |  |  |
|---|---|--------|---------------|--|------------------|---------------|---|---------|--------------|-----|--|--|
|   | _   | Ho     | me Crea       | te External Dat                          | a Database To    | ols           |   |         | (            | 0   |  |  |
|   | Vie   | N P    | aste          | Calibri<br>B Z U = =<br>A · 2 · H · Eant | 11 ▼             |               | $ \begin{array}{c} \blacksquare \\ Records \\ \bullet \end{array} \begin{array}{c} A \downarrow \\ F \\ \hline Cort \\ Cort \\ \hline \end{array} $ | ilter   | Find<br>Find |     |  |  |
| × | >   | 00 🗊   | 1 Calculate C | O2 Emissions for 20                      | 398              | Rich Text     |   | or mer  | )            | <   |  |  |
| F |   | BO     | EM-COMI -     | BOEM-EQUII -                             | strPollutant +   | SumOfdblEn -  | strEmissionl +  |         |              |     |  |  |
|   |   | 203    | 98            | DIE                                      | CO2E             | 51.2715875177 | TON   |         |              |     |  |  |
|   |   | 203    | 98            | FUG                                      | CO2E             | 9189.07260310 | TON   |         |              |     |  |  |
|   |   | 203    | 98            | NGT                                      | CO2E             | 26561.3235673 | TON   |         |              |     |  |  |
|   |   | 203    | 98            | VEN                                      | CO2E             | 5923.49996526 | TON   |         |              | _   |  |  |
|   |   |        |               |  |                  |               |   |         |              | _   |  |  |
|   | a   |        |               |  |                  |               |   |         |              | _   |  |  |
|   | 5   |        |               |  |                  |               |   |         |              | _   |  |  |
|   | gati  |        |               |  |                  |               |   |         |              | _   |  |  |
|   |   |        |               |  |                  |               |   |         |              | -   |  |  |
| Ľ | -   |        |               |  |                  |               |   |         |              |     |  |  |
|   |   |        |               |  |                  |               |   |         |              |     |  |  |
| L |   |        |               |  |                  |               |   |         |              |     |  |  |
|   |   |        |               |  |                  |               |   |         |              |     |  |  |
|   |   |        |               |  |                  |               |   |         |              |     |  |  |
| L |   | Record | I             |  | No Filter Search | 1             |   |         |              |     |  |  |
| R | ead   | У      |               |  |                  |               | N   | IM LOCK | 🖽 🖽 🖽 sqt 🛣  | .:: |  |  |

21. The example complex 20398 has three platforms or Structure IDs in the 2011 Gulfwide inventory. In order to see the emissions associated with each individual platform, you can go into the design view of the query you created and add the BOEM-STRUCTURE\_ID field. To open a query in design view, you can either click the Design View icon from the query results screen or from the navigation pane:





If you want to open your existing query in design view from the Navigation Pane, rightclick the desired query, and then select Design View. If you double click the query, it will open to the results screen. 22. From the design view of the query, double click BOEM-STRUCTURE\_ID to bring this field into the grid. Alternatively, you can click and hold the left mouse button on the BOEM-STRUCTURE\_ID field name in the tblPointEM box to drag and drop the field into the grid in the column of your choice. If you drop the field on top of another field already included in the grid, the corresponding fields will shift to the right. Then run the query again.

| F    |         |                  | ₹ 2011            | _GOADS_Draft_2 | 0 Query Tool | s                 |                       |
|------|---------|------------------|-------------------|----------------|--------------|-------------------|-----------------------|
|      | Home    | e Create         | External Data     | Database Too   | ls Design    |                   | 0                     |
|      | T 🚩     | 0 🛃 🗐            | · += "            | Insert Columns | 5            | Property Sheet    |                       |
| Vie  | 🖽 🔸     | 👬 🛄 🌒            | Show              | Delete Columns | Totals       | Table Names       |                       |
| -    | i itali | +? 🗙 🖉           | Table 🔝 📴         | Return: All    | -            | [?] Parameters    |                       |
|      | Results | Query Type       | Qu                | Jery Setup     | 5            | how/Hide          |                       |
| >>   | 001     | Calculate CO2 Em | issions for 20398 |                |              |                   | ×                     |
|      | ſ       | ALLD - LADA      |                   |                |              |                   | ▲<br> =               |
|      |         | tblPointEM       |                   |                |              |                   |                       |
|      |         | strRecordT       | vpe               |                |              |                   |                       |
|      |         | 💡 strStateCo     | untyFIPs          |                |              |                   |                       |
|      |         | BOEM-ARE         | A                 |                |              |                   |                       |
| o l  |         | BOEM-BLC         | MPANY NUMBER      |                |              |                   |                       |
| Pan  |         | BOEM-COM         | MPANY             | -              |              |                   |                       |
| Б.   | ◀ []    |                  |                   |                |              |                   | •                     |
| gati |         |                  | 1                 | ¥              |              |                   |                       |
| avi  | Fie     | Id: BOEM-COMP    | PLEX_ID BOEM-     | STRUCTURE_ID   | BOEM-EQUIP_  | TYPE strPollutant | Code dblEmissionNun   |
| Z    | Tot     | al: Group By     | Group             | tem<br>Bv      | Group By     | Group By          | Sum                   |
|      | So      | rt:              | oreap .           | - ,            | croup by     | croup by          | 2411                  |
|      | Sho     | w: 🔽             |                   | <b>V</b>       | <b>V</b>     | V                 |                       |
|      | or:     |                  |                   |                |              | COZE              |                       |
|      |         |                  |                   |                |              |                   | <b>•</b>              |
|      |         | . ▲              |                   |                |              |                   |                       |
| Form | View    |                  |                   |                |              | Nu                | um Lock 🔲 🔀 🕮 sou 🛃 🤢 |

|      | 📭 🕼 🔊 - 🍋 🦓 🌾 🗙 🔻 2011_GOADS_Draft_20140226 : Database (Access 2007) - Micros |                  |  |                  |                 |                        |                      |  |  |  |  |
|------|---|------------------|--|------------------|-----------------|------------------------|----------------------|--|--|--|--|
|      | 2   | Home Create      | e External Dat                               | a Database To    | ols             |                        | ۲                    |  |  |  |  |
| Vie  | ew<br>ew  | Paste            | alibri<br>B I U ≡ ≣<br>A → 2 → 1 ⊞ →<br>Font | ▼ 11 ▼           | E E E PT →      | Records                | Find<br>Find<br>Find |  |  |  |  |
| »    |   | 001 Calculate CO | 2 Emissions for 20                           | 398              |                 |                        | ×                    |  |  |  |  |
|      |   | BOEM-COMI -      | BOEM-STRU( -                                 | BOEM-EQUII -     | strPollutant( + | SumOfdblEmissic - strE | missionl 👻           |  |  |  |  |
|      |   | 20398            | 1  | DIE              | CO2E            | 1.58391432624113 TO    | N                    |  |  |  |  |
|      |   | 20398            | 2  | DIE              | CO2E            | 43.153820141844 TO     | N                    |  |  |  |  |
|      |   | 20398            | 2  | FUG              | CO2E            | 7482.47336809177 TO    | N                    |  |  |  |  |
|      |   | 20398            | 3  | DIE              | CO2E            | 6.53385304964539 TO    | N                    |  |  |  |  |
|      |   | 20398            | 3  | FUG              | CO2E            | 1706.59923501273 TO    | N                    |  |  |  |  |
| ane  |   | 20398            | 3  | NGT              | CO2E            | 26561.3235673496 TO    | N                    |  |  |  |  |
| Ē    |   | 20398            | 3  | VEN              | CO2E            | 5923.49996525741 TO    | N                    |  |  |  |  |
| atio |   |                  |  |                  |                 |                        |                      |  |  |  |  |
| vig  |   |                  |  |                  |                 |                        |                      |  |  |  |  |
| Ra   | _   |                  |  |                  |                 |                        |                      |  |  |  |  |
|      |   |                  |  |                  |                 |                        |                      |  |  |  |  |
|      | -   |                  |  |                  |                 |                        |                      |  |  |  |  |
|      |   |                  |  |                  |                 |                        |                      |  |  |  |  |
|      |   |                  |  |                  |                 |                        |                      |  |  |  |  |
|      | Re  | cord: I 1 of 7   |  | No Filter Search |                 |                        |                      |  |  |  |  |
| Dat  | ashe  | et View          |  |                  |                 | Num Lock               | 🛅 🔀 🖞 SQL 🗶 🛒        |  |  |  |  |

Results including the BOEM-STRUCTURE\_ID field:

## **Section 3. Instructions for Calculating Emissions from Multiple Complexes**

- 1. If you want to calculate the emissions for additional complexes, you can go into the design view of the query you created, change the BOEM Complex ID, and run the query again.
- 2. If you want to save a separate query for each complex, you can create another query following the steps from Section 1 or Section 2 above, and save it under a different name. Alternatively, you can copy and paste the original query and simply revise the BOEM Complex ID in the design view of the new query:

| □ □ = 2011_GOADS_Draft_20140226 : Database □ □ = |                           |  |  |  |  |  |  |  |
|--|---------------------------|--|--|--|--|--|--|--|
| Home Create                                      | External Data Database T  | ools   |  |  |  |  |  |  |
| View<br>Views                                    | U E E E R<br>Font         | ich<br>xt → Records<br>↓ Filter ↓<br>Sort & Filter |  |  |  |  |  |  |
| All Access Objects                               |                           |  |  |  |  |  |  |  |
| Tables ×   |                           |  |  |  |  |  |  |  |
| Queries ×  |                           |  |  |  |  |  |  |  |
| 001 Calculate CO2 Emiss                          | 001 Calculate CO2 Emissi  |  |  |  |  |  |  |  |
|  | Design View               |  |  |  |  |  |  |  |
|  | Export                    | →  |  |  |  |  |  |  |
|  | Collect and Update Data v | ria E-mail   |  |  |  |  |  |  |
|  | Rename                    |  |  |  |  |  |  |  |
|  | Hide in this Group        |  |  |  |  |  |  |  |
|  | Delete                    |  |  |  |  |  |  |  |
|  | V CA                      |  |  |  |  |  |  |  |
|  | a cu <u>r</u>             |  |  |  |  |  |  |  |
| Dearth   | <u>с</u> ору              | Num to de  |  |  |  |  |  |  |
| кеаду  | Paste Paste               | Num Lock ;;;                                       |  |  |  |  |  |  |

Right click on the query name from the Navigation Pane and select Copy.

| 📭 🔄 🔊 - 🍋 - 🌺 🐨 🗙 🗧 2011_GOADS_Draft_20140226 : Database 💷 💷 🔀  |
|---|
| Home Create External Data Database Tools  |
| Nome     Create     External Data     Database rooms       View     Clipboard     Image: Clipboard     Image: Clipboard       Views     Paste As     Image: Clipboard     Filter       Views     Clipboard     Paste As     Image: Clipboard       All Access Objects     Query Name:     Ot Calculate CO2e Emissions for 20471       Queries     OK     Cancel |
|   |

Right click anywhere in the white space of the Navigation Pane and select Paste. Enter a name for the new query and click OK. Then go into the design view of the new query and change the BOEM Complex ID. After you revise the BOEM Complex ID, save the query again.

3. If you want to calculate the emissions for several complexes at one time, you can enter multiple BOEM Complex ID's in your query using either method shown below. Leave the words "Group By" in the Total row for BOEM-COMPLEX\_ID and make sure that the box is checked in the Show row. If you were to instead select "Where" in the total row or uncheck the box in the Show row, the query results would show the combined total emissions for all of the listed Complex IDs.



| <b>C.</b> ,                                     | ) 🖬 🤊  | - (° - 🥵 🕅 🗙 =   |   | Query Tools 2011                           | _GOADS_Draft_20                          |  |  |
|---|--|--|---|--|--|--|--|
| Home Create External Data Database Tools Design |  |  |   |  |  |  |  |
| Vie<br>Viev                                     | w Past                                       | B I U E E E<br>A · D · H · L<br>Dard G Font  |   | E PT - Ext                                 | A↓<br>Z↓<br>Filter ▼<br>Sort & Filter    | ab<br>ac<br>ind<br>crind<br>crind      |  |
| »   | O02 Calculate CO2e Emissions for 20471     X |  |   |  |  |  |  |
| i Pane  |  | tbIPointEM<br>*<br>strRecordType<br>\$<br>strStateCountyFIPs<br>BOEM-AREA<br>BOEM-BLOCK<br>BOEM-COMPANY NUMBER<br>BOEM-COMPANY |   |  |  |  |  |
| tion  |  |  |   |  |  |  |  |
| Navigé  | Field<br>Tabl<br>Tota<br>Sor<br>Shov         | d: BOEM-COMPLEX_ID<br>e: tblPointEM<br>ll: Group By<br>t:<br>v:  | BOEM-EQUIP_TYPE<br>tblPointEM<br>Group By | strPollutantCode<br>tbIPointEM<br>Group By | dblEmissionNumericV<br>tblPointEM<br>Sum | strEmissionL<br>tblPointEM<br>Group By |  |
|   | Criteri<br>o                                 | a: "20398"<br>r: "20971"<br>"28043"  |   | "CO2E"<br>"CO2E"<br>"CO2E"                 |  |  |  |
|   |  | ▲  |   |  | 1  | •                                      |  |
| Ready Num Lock                                  |  |  |   |  |  |  |  |