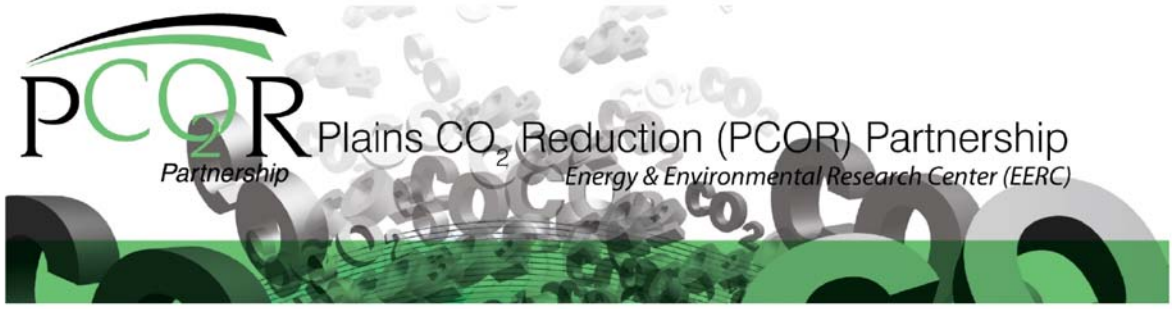

PLAINS CO_2 REDUCTION (PCOR) PARTNERSHIP PHASE III – REVIEW OF SOURCE ATTRIBUTES

Deliverable D1

(for the period October 1, 2007, through September 30, 2009)

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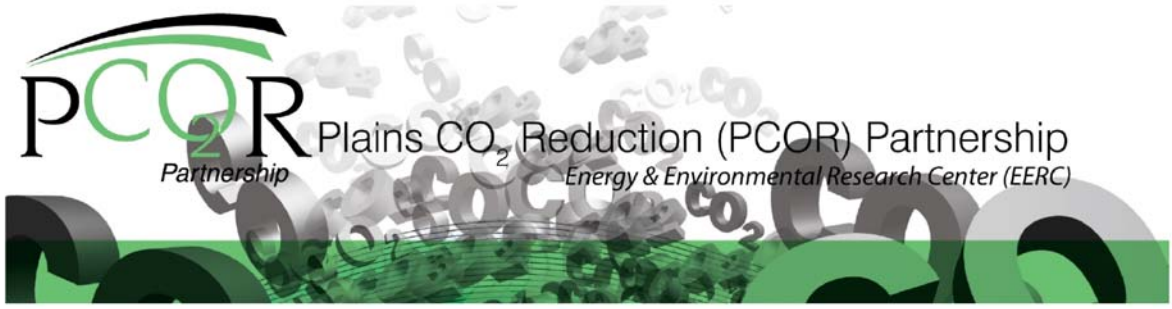

PLAINS CO_2 REDUCTION (PCOR) PARTNERSHIP PHASE III DELIVERABLE D1 – REVIEW OF SOURCE ATTRIBUTES

INTRODUCTION

Because of the high cost associated with pipeline construction and other infrastructure considerations, having accurate location information is essential for conducting CO_2 sink–source matching scenarios that incorporate transportation routing estimates. If sources of interest plot on the opposite sides of rivers or cities or are wrongly situated beyond a threshold distance from prospective enhanced oil recovery operations, sink–source scenario modeling may omit valid possibilities. As part of an effort to periodically review and update the attribute data for existing stationary CO_2 sources in the Plains CO_2 Reduction (PCOR) Partnership region, research personnel at the Energy & Environmental Research Center have recently completed a source location verification investigation.

APPROACH

The objective of this task was to verify the reported latitude/longitude location of each CO_2 source in the current PCOR Partnership database. The original location information was obtained from federal, state, and provincial sources (e.g., the U.S. Environmental Protection Agency, Environment Canada).

To meet this objective and ensure that the location information originally obtained from various public data sets was indeed valid, workstudy students were assigned the task of verifying the latitude/longitude values of each source facility plotted on an appropriate feature in an aerial photograph through the use of online global mapping applications, such as Google Earth. If the plotted location on the Web application was nowhere near a facility, the students were instructed to search a relatively local area. If, again, no facility could be found in the area, further online research was conducted to determine where the facility was located.

RESULTS

This effort resulted in the repositioning of 755 locations. Of these modified locations, 525 were shifted by more than 0.5 kilometers, the minimum offset distance that we considered to be significant. Table 1 provides a summary of the number of sources that were relocated and the magnitude of the repositioning.

If, in the process of tracking down the location of a specific source, additional sources came to light, the new data were added to the database. If the same process revealed that a source was no longer in operation, it was then removed from the database. In the course of this exercise, 17 additional CO_2 sources were added to the data set, and 22 sources were removed. Through this source location verification process, the total number of inventoried sources in the PCOR Partnership region changed from 1545 to 1540. Although there was a slight loss in the number of sources, the total annual CO_2 output increased by 0.04% to 585,784,043 tons.

The process of moving this latest data set to the PCOR Partnership Decision Support System (DSS, ©2007 EERC Foundation) in currently under way. When this process is complete, the new locations and sources will be reflected via the online GIS systems on the PCOR Partnership DSS and U.S. Department of Energy's national portal.

Table 1. Magnitude and Frequency of CO_2 Source Relocations

Relocation Distance, km	Number of Sources
0.5–2	116
2–10	132
10–15	45
15–20	35
20–25	28
25–30	20
30–35	5
35–40	7
40–45	5
45–50	2
50–100	29
100–150	28
150–200	21
200–250	16
250–300	14
300–350	16
350–400	6
Total Number of Sources Relocated by a Distance >0.5 km	525