



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 28 2007

REPLY TO THE ATTENTION OF:
(AR-18J)

Richard Nelson, Field Supervisor
Rock Island Illinois Field Office
United States Fish and Wildlife Service
4469 48th Avenue Court
Rock Island, Illinois 61201

Dear Mr. Nelson:

Pursuant to Section 7 of the Endangered Species Act (ESA), (87 Stat. 884, as amended; 16 U.S. C. 1531 et seq.), the United States Environmental Protection Agency (U.S. EPA) has reviewed the biological information and analysis related to a Prevention of Significant Deterioration (PSD) permit for the ConocoPhillips Company – Wood River Products Terminal (ConocoPhillips) located in Roxana, Illinois to determine what impact there may be to any threatened or endangered species in the area around the proposed facility. The purpose of this letter is to seek concurrence from the United States Fish and Wildlife Service (U.S. FWS) on our determination that the proposed project is not likely to adversely affect any federally listed species in relation to the proposed air quality permit for this facility.

The parties utilized the informal consultation process as specified in the “Endangered Species Consultation Handbook, procedures for conducting consultation and conference activities under Section 7 of the Endangered Species Act, (March 1998 final),” by the U.S. FWS and National Marine Fisheries Service. The U.S. EPA prepared this biological evaluation following the guidance provided in the ESA consultation handbook, as well as the recommended content suggested in the ESA regulations found in 50 CFR Part 402.12(f). As part of developing the biological evaluation, U.S. EPA prepared a document, “Recommended Scope of Analysis for Endangered Species Evaluation ConocoPhillips Wood River Refinery – CORE Project,” dated December 8, 2006, which described the general topics of need, species of concern, effects analysis, and literature search, needed in the biological assessment. ConocoPhillips provided a document dated April 17, 2007, which contained the project impact analysis (Enclosure 1). A subsequent document transmitted via e-mail on May 24, 2007, provided additional information concerning dioxin emissions (Enclosure 2).

Project Description

The Coker and Refinery Expansion (CORE) Project entails installing facilities to increase both the total crude processing and percentage of heavier crude at the Wood River Refinery in order to increase the supply of petroleum products to the Upper Midwest. In

order to handle the increased product throughput, ConocoPhillips is also proposing certain changes at the Wood River Products Terminal. The following are the key elements of the project:

- New delayed coking unit and associated coker units to convert vacuum residue to clean products and conversion feeds which will enable the processing of higher volumes of heavy crude;
- Metallurgical upgrades and other equipment revisions of Distilling Unit 1 (DU-1) and the addition of a new Vacuum Flasher (VF5) to handle the high acid, high sulfur heavy crudes;
- Restart the idled Distilling Unit 2 Lube Crude (DU-2 LC) column to provide additional crude unit processing capacity;
- Metallurgical upgrades and other equipment revisions of Fluid Catalytic Cracking Unit 1 (FCCU 1) and Fluid Catalytic Cracking Unit 2 (FCCU 2) to handle the higher acid charge and change in the unit yields, and installation of new wet gas scrubbers (WGS) and selective catalytic reduction (SCR) systems on the flue gas from these units;
- Restart the Distilling West Catalytic Cracking Unit (FCCU 3) and associated equipment to allow for the processing of the additional gas oil
- New hydrogen plant;
- Restart of Lube Vacuum Fractionation Column as a Hydrocracker Post-Fractionator (HCF);
- Restart of Catalytic Feed Hydrotreater as an Ultra Low Sulfur Diesel Hydrotreater (ULD-2);
- Additional sulfur processing capacity;
- Additional amine treating and sour water stripping;
- Modifications to the wastewater treatment plant;
- One new gasoline tank;
- Two new ethanol tanks;
- Two new distillate oil tanks;
- Expansion of the existing truck loading rack.

Increases in criteria pollutants potentially resulting from the project are as follows:

Particulate Matter (PM)	329.2 tons per year
Particulate Matter less than 10 microns in aerodynamic diameter (PM10)	226.7 tons per year
Nitrogen Oxides (NOx)	996.2 tons per year
Sulfur Dioxide (SO ₂)	1548.3 tons per year
Carbon Monoxide (CO)	1062.9 tons per year
Volatile Organic Compounds (VOC)	383.0 tons per year

The project may also result in the release of several VOC and PM Hazardous Air Pollutants (HAPs) which include arsenic, chromium, cobalt, 2,3,7,8-tetrachlorodibenzo-p-dioxin, lead, manganese, nickel, benzene and hexane.

Action Area

The Wood River Refinery is located in the City of Roxana in Madison County, Illinois. The Mississippi River is to the west of the facility. The action area includes three kilometers surrounding the facility which is predominantly commercial/industrial, residential, and agricultural.

List of Species

There are four listed species potentially occurring in Macon County. These species include:

- Indiana bat (*Myotis sodalists*);
- Bald eagle (*Haliaeetus leucocephalus*);
- Gray bat (*Myotis grisecens*);
- Eastern prairie fringed orchid (*Platanthera leucophaea*); and
- Prairie bush clover (*Lespedeza leptostachya*);
- Decurrent false aster (*Boltonia decurrens*);
- Pallid sturgeon (*Scaphirhynchus albus*).

After review of the land use/land cover data and consultation with U.S. FWS, U.S. EPA has concluded that the only species potentially affected by the project are the Indiana bat, the bald eagle, the gray bat, the decurrent false aster, and the pallid sturgeon. There is not suitable habitat for the eastern prairie fringed orchid nor the prairie bush clover in the action area.

Summary of Analysis

Trinity Consultants performed modeling for emissions associated with the planned project. As recommended by U.S. EPA, Trinity Consultants followed the procedures outlined in Chapter 3 of the U.S. EPA, Office of Solid Waste, November 1999, draft document "Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities," (SLERA protocol) to estimate the soil, water and sediment concentrations of the chemicals of potential concern (COPCs) associated with this project. The AERMOD model was used to estimate deposition fluxes used to calculate the media concentration rather than ISCST3 as suggested in the SLERA protocol as AERMOD replaced ISCST3 as U.S. EPA's required air dispersion model on December 9, 2006. While the SLERA protocol was developed to assist in assessing risk from hazardous waste combustion facilities, the models and calculations presented in Chapter 3 of the document are not specific to hazardous waste combustors. Chapter 3 simply provides an explanation of available models and calculation methodology for determining ambient air concentrations, deposition rates and media concentrations resulting from sources of air pollution. A detailed explanation of the modeling performed by Trinity Consultants is found in the "General Modeling Assumptions" section of Enclosure 1.

ESA Effects Analysis

Model results for most COPCs are provided in appendices D and F of enclosure 1. A discussion of 2,3,7,8-tetrachlorodibenzo-p-dioxin is included as Enclosure 2. In determining the benchmarks to be used in this analysis, Trinity Consultants considered values from the U.S. EPA Region 5's, Resource Conservation and Recovery Act Ecological Screening Levels (<http://www.epa.gov/RCRIS-Region-5/ca/ESL.pdf>), the U.S. EPA Ecological Soil Screening Levels (<http://www.epa.gov/ecotox/ecoss1>), and the Alaska Department of Environmental Conservation's "User's Guide for Risk-Based Screening in Alaskan Ecological Risk Assessment." The Alaska Department of Environmental Conservation document was used to establish the benchmark for manganese and hexane. The most conservative value from these resources was used for the evaluation.

Criteria Pollutants

Ozone: The project will result in a small increase in VOC emissions of 383 tons per year. At the current time, U.S. EPA is unaware of any reliable means to assess ozone changes through "point source" modeling. Although point source screening models have been developed, they have not been consistently applied with success for source changes of this small magnitude. Such screening models were developed for much larger VOC and NO_x sources and/or emissions changes. Urban scale photochemical ozone models, such as the Urban Airshed Model, could be employed to assess the ambient impact of emission increases as well as emission decreases resulting from the implementation of emissions control programs. Past experience, however, with such models indicates that a VOC change of 383 tons per year would not produce a predicted change in ozone concentrations. The Urban Airshed Model, for example, has been shown to be relatively insensitive to changes in VOC emissions. Past modeling results considering VOC emissions changes on the order of hundreds to several thousand tons per year of VOC in major urban areas have shown only modest decreases in predicted peak ozone concentrations. Therefore, it is concluded that such models would likely show a zero ozone change for a VOC increase of 383 tons per year. Stated another way, based on the best available tools and information that exist today, one would not expect any measurable change in ambient ozone concentrations due to the Project's projected worst case VOC emissions increase of 383 tons per year. Additionally, the facility will be required to obtain offsets at a ratio of 1.15:1 in order to meet the nonattainment permitting provisions. Based on this information, U.S. EPA concludes the project will have no measurable effect, if not no effect, on the endangered species with respect to ozone. At a minimum, the project is not likely to adversely effect the endangered species as no measurable change in ozone will result from the project.

SO₂: The project will result in an increase in SO₂ of 1548.3 tons/year. The effects of gaseous emissions, other than NO_x, is outside the scope of this Section 7 consultation..

NO_x: The project is estimated to result in an 992.6 ton/year increase in NO_x emissions. Nitrogen deposition is a concern for the plant species that may occur in the vicinity of

this facility. Modeling estimates this project will add 0.0933 g/m²/yr of nitrogen to the existing background concentration of 0.71 g/m²/yr. Based on a recent search of scientific literature performed in the evaluation for an expansion at ExxonMobil, it is likely that the appropriate benchmark for these is somewhere between 0.5 and 1.0 g/m²/yr. The additional 0.0933 g/m²/yr resulting from this project would be about 1.3% of existing background. Additionally, on March 10, 2005, U.S. EPA finalized the Clean Air Interstate Rule (CAIR) which calls for NO_x and SO₂ reductions from 2003 baseline levels for the eastern United States. CAIR will require a 70,018 ton reduction in NO_x emissions in Illinois from the baseline of 146,248 tons by 2009. The statewide NO_x budget in 2015 will be 63,525. While these levels are for the entire State of Illinois, we would still expect a substantial reduction in background at the receptor locations. Based on the small contribution from this project in comparison to background and the anticipated decreases in nitrogen as a result of CAIR, we conclude that the increases in nitrogen deposition from the proposed project will not likely adversely affect the threatened and endangered species.

PM/PM10: The project will result in an increase in PM emissions of 329.2 tons per year, of which 226.7 tons per year consist of PM10. The portion of PM/PM10 emissions of concern for the potentially affected species would be HAP component.

Lead: A small increase of lead emissions is projected for this project. The analysis shows a potential concern when the sum of project contribution and background is compared to the benchmark value for soil and sediment water. For both soil and sediment, the background concentration of lead exceeds the selected benchmark; however, the lower bioavailability of geological background lead in soil and sediment mitigates this concern. The estimated contribution of the project alone is 0.05% of the soil benchmark and less than one thousandth of a percent for sediment. Due to the small contribution of the project in comparison to background, U.S. EPA finds that the project is not likely to adversely impact a species of concern with respect to emissions of lead.

CO: The project is estimated to result in an increase of 1062.9 tons/year of CO. The effects of gaseous emissions, other than NO_x, is outside the scope of this Section 7 consultation..

Hazardous Air Pollutants

Arsenic: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmarks for soil and sediment. For both soil and sediment background levels alone exceeded the benchmark. Project contributions are estimated to be about 0.01% of background for soil and less than one thousandth of a percent of background for sediment. The project impacts are insignificant in comparison to existing background. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Beryllium, Cadmium, Mercury and Selenium: Modeling predicted a concentration resulting from the project of zero µg/kg. Based upon the modeling results, it would not

likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Chromium: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmark for soil. Background levels alone exceeded the benchmark. Project contributions are estimated to be about 0.03% of background. The project impacts are insignificant in comparison to existing background. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Cobalt: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmark for soil. Background levels alone exceeded the benchmark. Project contributions are estimated to be about 0.04% of background. The project impacts are insignificant in comparison to existing background. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Manganese: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmarks for soil, water and sediment. For all media background levels alone exceeded the benchmark. Project contributions are estimated to be about 0.001% of background for soil and less than one thousandth of a percent of background for both water and sediment. The project impacts are insignificant in comparison to existing background. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Nickel: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmarks for soil and sediment. For both soil and sediment background levels alone exceeded the benchmark. Project contributions are estimated to be about 0.24% of background for soil and less than one thousandth of a percent of background for sediment. The project impacts are insignificant in comparison to existing background. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Benzene: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmark for soil. Background levels alone exceeded the benchmark. Project contributions are estimated to be about 0.03% of background. Background data was not available for sediment and the project contribution is less than one thousandth of a percent of the benchmark. The project impacts are insignificant in comparison to existing background for soil and the benchmark for sediment. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

Hexane: The analysis provided by Trinity Consultants shows that the project concentration added to background will exceed the selected benchmark for water. Background levels alone exceeded the benchmark. Project contributions are estimated to

be less than one thousandth of a percent of background for water. Background data was not available for sediment and the project contribution is less than one thousandth of a percent of the benchmark. The project impacts are insignificant in comparison to existing background for water and the benchmark for sediment. It would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

2,3,7,8-Tetrachlorodibenzo-p-Dioxin: Based on the analysis provided in the Trinity Consultants supplemental report (Enclosure 2), U.S. EPA finds that it would not likely be possible to measure or detect any negative response to an endangered species in response to the project contribution.

ESA Determination

After reviewing the analysis provided by Trinity Consultants, the HAPs with the greatest potential for adverse impact would include arsenic, chromium, cobalt, manganese, nickel, benzene, and hexane. However, due to the conservative assumptions made and the small contribution of these contaminants in comparison to existing background conditions or benchmarks, U.S. EPA has concluded that it would not likely be possible to measure or detect an adverse response as a result of the proposed project. The criteria pollutants with the greatest potential for adverse impact would be lead and NOx. Based upon the small contribution of the project in comparison to background for both pollutants and on the anticipated statewide reductions resulting from CAIR, U.S. EPA has concluded that emissions of lead and NOx will not likely result in an adverse impact on an endangered species.

Considering this analysis in its entirety, U.S. EPA concludes that the proposed construction and operation of this facility may affect, but is not likely to adversely affect, any of the threatened and endangered species. U.S. EPA respectfully requests U.S. FWS concurrence on this determination.

Sincerely yours,



Pamela Blakley, Chief
Air Permits Section

Enclosures

cc: Laurel Kroak, IEPA