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

APR 17 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 Continental Tire North America, Inc. (Continental) Mount Vernon, Illinois, facility 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 assessment 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 assessment, Trinity Consultants prepared documents discussing the results of ambient modeling on June 20, 2006, and deposition modeling on September 21, 2006. These documents are included as Enclosure 1 and Enclosure 2.

Project Description

The expansion project at Continental Tire will include:

- The addition of three new mixers and capacity increases at three existing mixers,
- A rotor upgrade on four existing finish mixers,
- The addition of one extruder, two tire uniformity machines and one whitewall/sidewall buffer, and

- Introduction of silica rubber compounds that require the use of a coupling agent that will result in ethanol emissions as a reaction byproduct.

Action Area

U.S. EPA considered the area within a 3 kilometer (km) radius of the facility as the action area. The maximum concentration for pollutants of concern was well within the 3 km radius of the facility. U.S. EPA would anticipate that the majority of pollutants in the stack emissions would deposit from ambient air within this distance.

List of Species

There are four species potentially occurring in Jefferson County, Illinois.

1. Indiana Bat (*Myotis sodalist*): The Indiana bat hibernates in caves and mines, and forage in small stream corridors with well developed riparian woods and upland forests.

2. Bald Eagle (*Haliaeetus leucocephalus*): Nesting bald eagles are associated almost exclusively with lakes, rivers, or sea coasts. The majority or wintering eagles are found near open water.

3. Eastern Prairie Fringed Orchid (*Platanthera leucophaea*): Occur in mesic to wet prairies.

4. Prairie Bush Clover (*Lespedeza leptostachya*): Occur in dry to mesic prairies with gravelly soil.

U.S. EPA has concluded based upon the land use/land cover data for the area that only the Indiana bat will potentially be affected by this project. Enclosure 3 provides satellite images as well as land use/land cover and wetland maps for the area surrounding the facility.

Summary of Analysis

Trinity Consultants performed air dispersion and deposition modeling for the five pollutants of concern identified for this project: nickel, lead, cobalt, chromium, and cadmium. The ISCST3 model was used. While the project will result in an increase in volatile organic compounds which may include some additional hazardous air pollutants, the volatile hazardous air pollutants emitted in any significant amount from this facility are highly volatile and not likely to partition to either soil or water; therefore, only the particulate matter hazardous air pollutants were considered in this evaluation. The methodology for calculating soil concentrations in Chapter 3 of the draft Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, EPA530-D-99-001A, August 1999 provides useful guidelines that represent currently accepted procedures was used to predict the impact of the project.

ESA Effects Analysis

U.S. EPA has determined that the main exposure pathway for the Indiana bat would be from soil and terrestrial insects. The mapping done in conjunction with this analysis does show a small order stream in an agricultural landscape. U.S. EPA finds that the pathway of highest exposure would be the soil pathway for the following reasons, all of which reduce the net effect of exposure through water or sediment:

- The stream is a headwater stream that may be dry part of the year.
- The sediments in this type of stream area are expected to be in a state of flux because they are either buried with clean fill or re-transported further downstream.
- The water retention time would be low in a flowing system.
- The bioaccumulation factor used for the soil model is based upon invertebrates that have a higher potential to accumulate heavy metals than stream aquatic emergent insects.

The U.S. EPA has developed Eco-Soil Screening Levels (Eco-SSLs) for cadmium, chromium, cobalt and lead (www.epa.gov/ecotox/ecossl/). The Eco-SSLs for mammalian ground insectivores were used to determine the impact on the Indiana bat for these pollutants. For nickel, the U.S. EPA Region 5's Resource Conservation and Recovery Act Ecological Screening Levels for soil were used as the benchmark.

The following table provides a comparison of the project contribution, existing background, and the screening level benchmark for each of the five pollutants considered in the evaluation. Actual background data is not available for this area, and background values were taken from a statewide survey of soils for areas outside metropolitan statistical areas (http://www.ilga.gov/commission/jcar/admincode/035/03500742ZZ9996agR.html).

	Background (mg/kg)	Project Contribution (Over 100 Years) (mg/kg)	Benchmark (mg/kg)	Background + Project Contribution (mg/kg)	Hazard Quotient (Background + Project/ Benchmark)
Cadmium	0.50	0.00592	0.36	0.50592	1.41
Chromium	13.0	0.0324	34	13.0324	0.38
Cobalt	8.9	0.00769	230	8.90769	0.04
Lead	20.9	0.15	56	21.05	0.38
Nickel	13.0	0.11	13.6	13.11	0.96

The only pollutant with a hazard quotient greater than 1 was cadmium. The project emissions are approximately 1.2% of the background which is in excess of the screening level benchmark. The project contribution is approximately 1.6% of the screening level benchmark. Additionally, the actual impact of the project could be mitigated by a foraging area use factor and bioavailability. The bioaccumulation of the naturally occurring cadmium is expected to be less than the bioaccumulation potential of the enriched cadmium. The area in the vicinity of the project is not suitable habitat for Indiana bat maternity roosts, and the assessment area would only represent a portion of a bats foraging use area. Based on this information, U.S. EPA finds that 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.

ESA Determination

Four of the five pollutants potentially impacting the Indiana bat were found to be below the screening level benchmark when considering the project contribution plus background levels. The project contribution of the fifth pollutant, cadmium, would not be measurable in the current background.

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

Pamela Blakley, Chief
Air Permits Section

Enclosures

cc: Laurel Kroack, IEPA

Enclosures

1. Letter dated June 20, 2006
2. Letter dated September 21, 2006
3. Facility maps

Trinity Consultants

VIA E-MAIL

June 20, 2006

Mr. Chris Romaine
Illinois Environmental Protection Agency
Permit Section, Bureau of Air
1021 North Grand Avenue East
Springfield, Il 62794-9276

RE: ESA Modeling Results

Dear Mr. Romaine:

Per your recent request, atmospheric dispersion modeling has been performed to supplement the information originally provided in Continental Tire North America, Inc's (Continental's) application for a Prevention of Significant Deterioration (PSD) permit. Five metals have been identified by Region V of the Environmental Protection Agency (EPA) as a concern with respect to the Endangered Species Act (ESA). Trinity Consultants (Trinity) has performed this air dispersion modeling to supply additional information on metal concentrations expected from Continental's expansion project. This letter addresses both assumptions made for the dispersion modeling analysis as well as results from that analysis.

MODELING ASSUMPTIONS

UTM Coordinate System

In all modeling analysis input and output data files, the locations of emission sources, structures, and receptors are represented in the Universal Transverse Mercator (UTM) coordinate system. The Mt. Vernon area of south-central Illinois is located in UTM Zone 16. The northwest corner of the Continental property is located near UTM coordinates 334.500 km East and 4,240.200 km North. All building, tank, emission point, and fence line locations for Continental are converted to equivalent UTM coordinates. All UTM location information was input into the model using consistent datum system (i.e., NAD83).

Sources Modeled

Emission points that were considered in the analysis were all new emission units as well as all existing emission units that will be modified as a result of the expansion project. The modeled emission rate for the new sources was the potential emission rate for each source. The modeled emission rate for the modified sources included the potential incremental increase attributable to the modification.

Industrial Source Complex Short-Term (ISCST3) Model

The latest version (dated 02035) of the Industrial Source Complex Short-Term Version 3 (ISCST3) model was used to estimate maximum ground-level concentrations of each metal due to emissions from the expansion project. Modeling with ISCST3 was performed using the regulatory default option, which includes stack heights adjusted for stack-tip downwash, buoyancy-induced dispersion, final plume rise, and a calm processing feature. Regulatory default values for wind profile exponents and vertical potential temperature gradients were used since no representative on-site meteorological data were available. Direction-specific building dimensions were used for both the Schulman-Scire and the Huber-Snyder downwash algorithms.

No off-site receptors (receptors outside the facility fenceline) were identified by ISCST3 as being in a cavity region, therefore the ISCST3-Plume Rise Model Enhancements (ISC-PRIME) model were not used to predict ground-level concentrations.

Land Use and Selection of Dispersion Option

The land-use analysis was based on the Auer Classification Typing Scheme. Based on the land use map in Figure 1, most of the land within 3-km of the facility is cropland and pasture. Therefore, the majority of the area surrounding the plant is not considered to be urban, so rural dispersion coefficients were utilized in the modeling analysis.

Terrain

The base elevation of the facility is approximately 440 feet above mean sea level as determined from the 7.5 minute United States Geological Survey (USGS) maps for the site (Mount Vernon, Illinois). Terrain elevations in the area of the facility are relatively flat. Terrain elevations were input into the air quality model using Digital Elevation Model (DEM) data for the facility and surrounding area.

Receptor Grids

Per the Illinois Environmental Protection Agency's (IEPA's) request[1] the grids were defined as follows:

1) a grid consisting of evenly-spaced receptors 25 m apart placed along the facility fenceline;
2) a grid containing 25-meter spaced receptors along the facility property line; and
3) a grid containing 25-meter spaced receptors extending 1 km from the fenceline.

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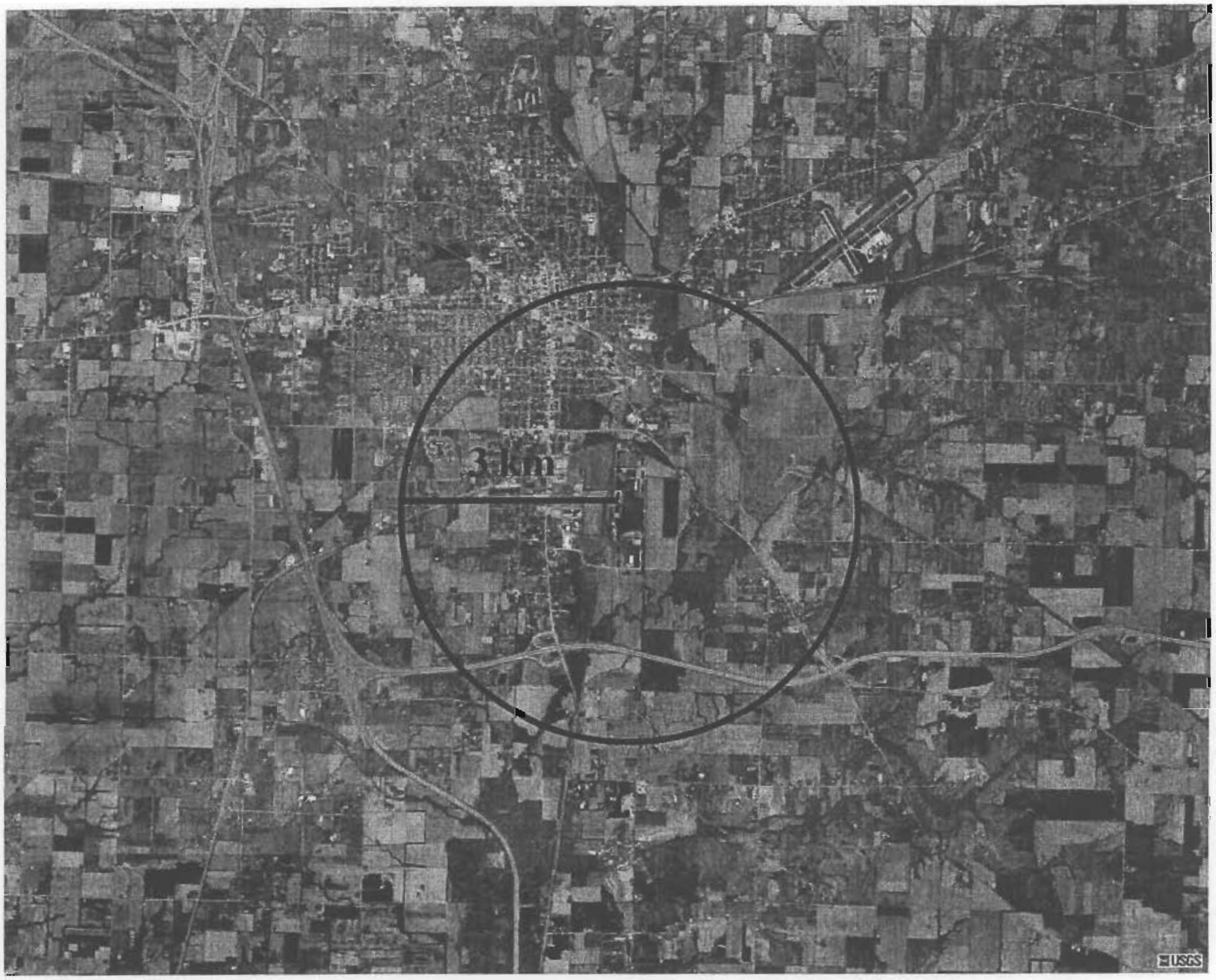
[1] June 16, 2006 telephone conversation between Mr. Chris Romaine of the IEPA and Mr. Bill Roth-Evans of Trinity.

FIGURE 1 - LAND USE MAP



Meteorological Data

The air dispersion modeling analysis was performed using 1990 through 1994 preprocessed meteorological data based on surface observations made at the Evansville Regional, IN (KEVV) station and upper air observations made at Paducah, KY (PAH). The St. Louis/Lambert Airport Surface Station (KSTL) and the Evansville Regional Surface Station are equidistant from the facility, however, due to the rural versus urban nature of the two stations, Evansville was chosen as more representative of the facility being modeled.

MODELING RESULTS

The concentrations obtained using ISCST3 are an order of magnitude lower than those previously modeled by the IEPA using SCREEN3. The maximum annual average concentrations for each receptor grid using the ISCST3 model for each of the five metals of concern are provided in Table 1. Please note that these are the highest concentrations from the five years of meteorological data that were modeled.

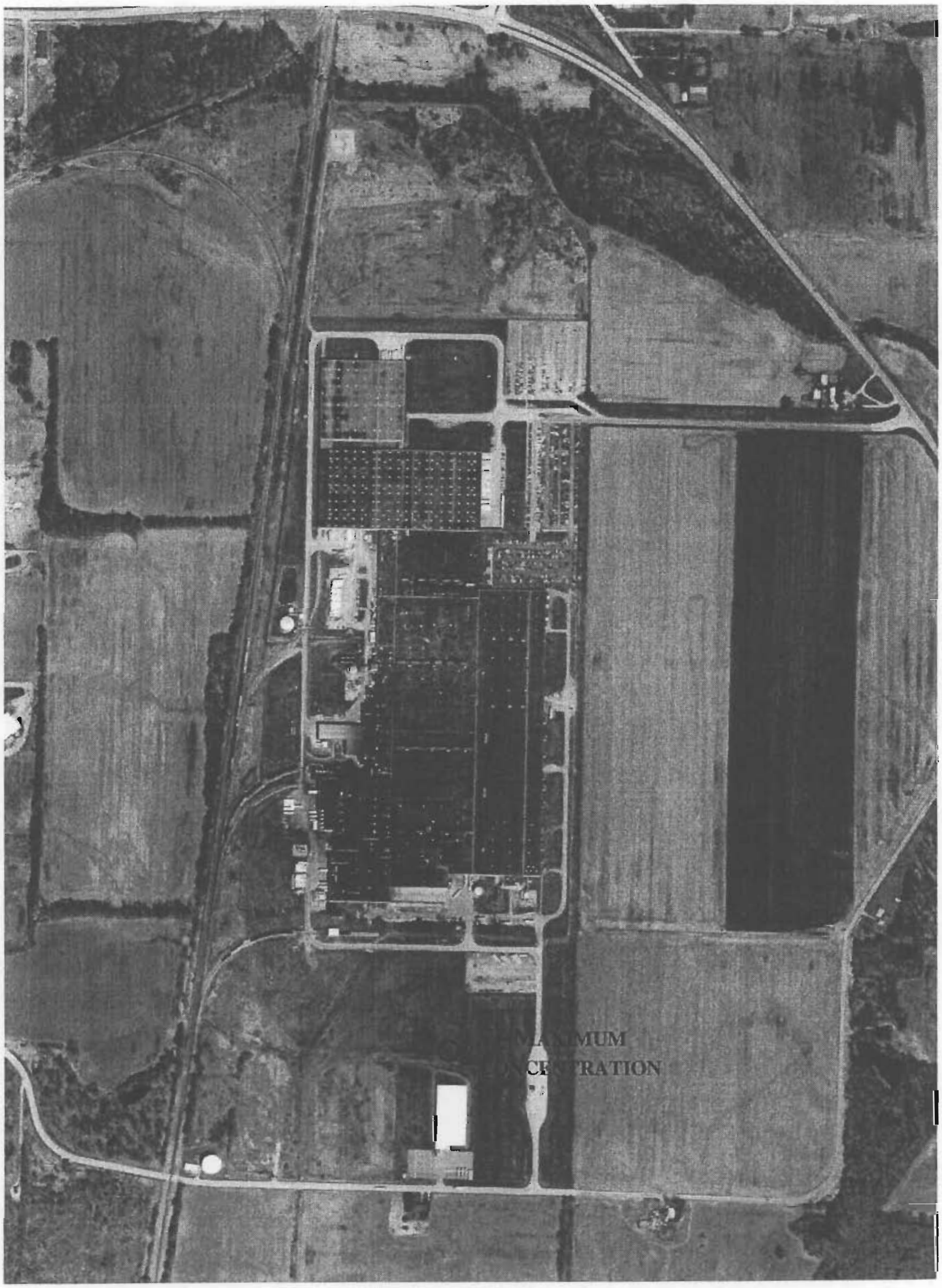
TABLE 1 – ANNUAL AVERAGE CONCENTRATION

	Maximum Annual Concentration (μg/m^3)
Annual 1st highest at fenceline	
Nickel	0.00270
Lead	0.00050
Cobalt	0.00010
Chromium	0.00229
Cadmium	0.00022
Annual 1st highest at property line	
Nickel	0.00274
Lead	0.00044
Cobalt	0.00010
Chromium	0.00231
Cadmium	0.00019
Annual 1st highest 1 km from fence line	
Nickel	0.00045
Lead	0.00008
Cobalt	0.00001
Chromium	0.00035
Cadmium	0.00003

Figure 2 shows the approximate location of the maximum concentrations[2] for both the fenceline and property line modeling. These points are not identical, but are very close to one another. Please note that this figure does not show the location of the highest modeled value for the one-kilometer out scenario in order to more clearly show the type of land use in the immediate area.

[2] Locations are based on modeling for nickel, which showed the highest emission rate for all of the metals.

FIGURE 2 – APPROXIMATE LOCATION FOR MAXIMUM CONCENTRATION OF NICKEL



Continental appreciates the prompt evaluation of these results. It is vital that every effort be made to conclude the ESA consultation as soon as possible in order to maintain the viability of the proposed project. If you have any questions regarding this modeling, please contact either Kristine Davies or Bill Roth-Evans at (636) 386-9500. Mr. Keith Pearson of Continental can be reached at (618) 246-2450.

Sincerely,

TRINITY CONSULTANTS

Bill Roth-Evans

Bill Roth-Evans
Principal Consultant

Trinity Consultants

VIA E-MAIL

September 21, 2006

Mr. Keith Pearson
Manager of Environmental Affairs
Continental Tire North America, Inc.
11525 N. Illinois Hwy 142
Mt. Vernon, Il 62864

RE: Endangered Species Act Deposition Modeling Results and Discussion

Dear Mr. Pearson:

Pursuant to Section 1.4.a of the Prevention of Significant Deterioration (PSD) permit that the Illinois Environmental Protection Agency (IEPA) issued on June 23, 2006 to Continental Tire North America, Inc.'s (Continental's) facility in Mount Vernon, Illinois, deposition modeling has been performed to supplement the information originally provided in Continental's PSD permit application. Five metals were identified by Region V of the United States Environmental Protection Agency (EPA) as a concern with respect to the Endangered Species Act (ESA). Trinity Consultants (Trinity) provided the deposition modeling files to Matt Will of the IEPA in an email dated August 22, 2006. This purpose of this letter is to provide an evaluation of the results of the deposition modeling and calculation of soil concentrations of heavy metals from Continental's expansion project.

BACKGROUND AND REFERENCE INFORMATION USED IN ANALYSIS

Rachel Rineheart of EPA Region V provided a recommended scope of analysis to follow in order to conduct the deposition modeling as well as the evaluation of the results obtained from the model. A copy of the recommended scope is included in Attachment A to this letter. The majority of the procedures and information used both for the deposition modeling and the follow-up evaluation closely followed the *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*.[1] Although this protocol was designed specifically for Hazardous Waste Combustion facilities, it has broad applicability in conducting modeling and evaluating chemical effects on species of concern.

EMISSION RATES OF CHEMICALS OF POTENTIAL CONCERN (COPC'S)

Based on the recommended scope of analysis provided by EPA Region V, the COPC's from the Continental expansion project included heavy metals and dioxins. Since it is not anticipated that any dioxins or dioxin-like compounds will be emitted from the expansion project, these COPC's

[1] Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Volume 1, U.S. EPA Office of Solid Waste, August 1999 (EPA 530-D-99-001A).

will not be further discussed. Continental does not have any stack test data for heavy metals. Therefore, emission rates for the five metals of concern were calculated using values from AP-42 Section 4.12 (Manufacture of Rubber Products). It should be noted that stack test data for particulate matter (PM) emissions from other Continental facilities indicate that the AP-42 factors significantly overestimated actual PM emissions. Given that heavy metals are a subset of PM, these emissions may also be drastically overestimated. In addition, the five heavy metals are not intentionally added by Continental during the tire manufacturing process, but may be present as trace components of raw materials.

GENERAL MODELING ASSUMPTIONS [2]

UTM Coordinate System

In all modeling analysis input and output data files, the locations of emission sources, structures, and receptors are represented in the Universal Transverse Mercator (UTM) coordinate system. The Mt. Vernon area of south-central Illinois is located in UTM Zone 16. The northwest corner of the Continental property is located near UTM coordinates 334.500 km East and 4,240.200 km North. All building, tank, emission point, and fence line locations for Continental are converted to equivalent UTM coordinates. All UTM location information was input into the model using consistent datum system (i.e., NAD83).

Sources Modeled

Emission points that were considered in the analysis were all new emission units as well as all existing emission units that will be modified as a result of the expansion project. The modeled emission rate for the new sources was the potential emission rate for each source. The modeled emission rate for the modified sources included the potential incremental increase attributable to the modification.

Industrial Source Complex Short-Term (ISCST3) Model

The latest version (dated 02035) of the Industrial Source Complex Short-Term Version 3 (ISCST3) model was used to estimate maximum ground-level concentrations of each metal due to emissions from the expansion project. Modeling with ISCST3 was performed using the regulatory default option, which includes stack heights adjusted for stack-tip downwash, buoyancy-induced dispersion, final plume rise, and a calm processing feature. Regulatory default values for wind profile exponents and vertical potential temperature gradients were used since no representative on-site meteorological data were available. Direction-specific building dimensions were used for both the Schulman-Scire and the Huber-Snyder downwash algorithms.

No off-site receptors (receptors outside the facility fenceline) were identified by ISCST3 as being in a cavity region, therefore the ISCST3-Plume Rise Model Enhancements (ISC-PRIME) model was not used to predict ground-level concentrations.

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[2]Please note that this information is identical to that provided in the letter dated June 20, 2006 from Mr. Bill Roth-Evans of Trinity to Mr. Chris Romaine of the IEPA for the initial air dispersion modeling.

Land Use and Selection of Dispersion Option

The land-use analysis was based on the Auer Classification Typing Scheme. Based on the land use map in Figure 1, most of the land within 3-km of the facility is cropland and pasture. Therefore, the majority of the area surrounding the plant is not considered to be urban, so rural dispersion coefficients were utilized in the modeling analysis.

Terrain

The base elevation of the facility is approximately 440 feet above mean sea level as determined from the 7.5 minute United States Geological Survey (USGS) maps for the site (Mount Vernon, Illinois). Terrain elevations in the area of the facility are relatively flat. Terrain elevations were input into the air quality model using Digital Elevation Model (DEM) data for the facility and surrounding area.

Receptor Grids

Per the IEPA's request,[3] the grids were defined as follows:

1) a grid consisting of evenly-spaced receptors 25 meters apart placed along the facility fenceline;
2) a grid containing 25-meter spaced receptors along the facility property line; and
3) a grid containing 25-meter spaced receptors extending 1 km from the fenceline.

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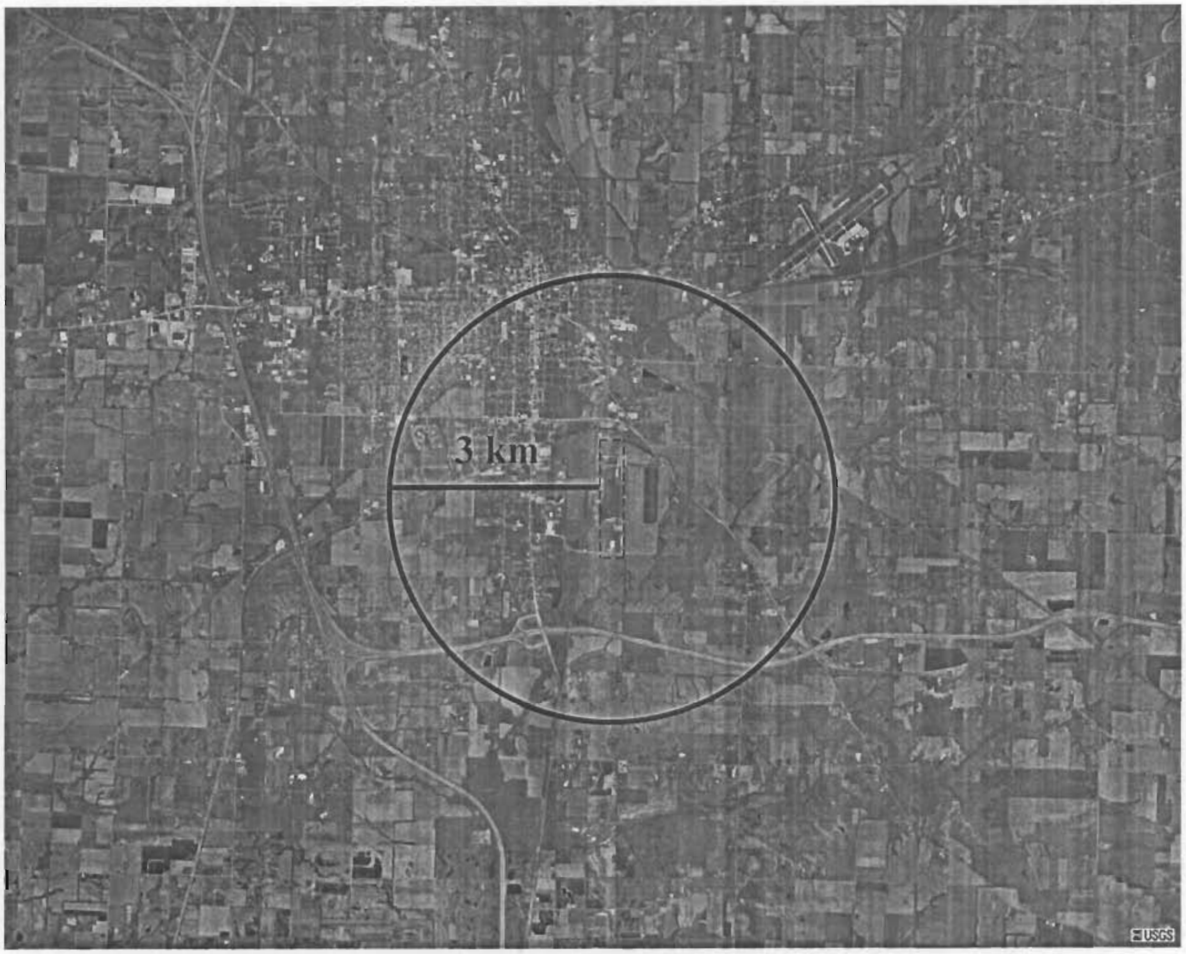
[3] June 16, 2006 telephone conversation between Mr. Chris Romaine of the IEPA and Mr. Bill Roth-Evans of Trinity.

FIGURE 1 - LAND USE MAP



Meteorological Data

The air dispersion modeling analysis was performed using 1990 through 1994 preprocessed meteorological data based on surface observations made at the Evansville Regional, IN (KEVV) station and upper air observations made at Paducah, KY (PAH). The St. Louis/Lambert Airport Surface Station (KSTL) and the Evansville Regional Surface Station are equidistant from the facility. Due to the rural versus urban nature of the two stations, Evansville was chosen as more representative of the facility being modeled.

ADDITIONAL INFORMATION RELATED TO DEPOSITION MODELING[4]

Two sets of models were run for different particle size distributions. The first set of models was run assuming that the particles were on the larger end of the assumed ranges. This gave the most conservative overall concentrations, however, it was noted that these larger particles tended to drop out at the fenceline or shortly beyond the fenceline. Since it is unlikely that either of the species of concern would be located near the fenceline of the plant, an additional set of models was run with small particle sizes to investigate whether the smaller particles would travel farther from the facility and increase concentrations near areas where the species of concern might be located (i.e., the area may have more appropriate habitat). Both sets of models were run with wet depletion and dry depletion.

Scavenging Coefficients

Default values for liquid scavenging coefficients for PM_{10} were used for all five metals. These data were obtained from the ISCST3 User's Guide. The frozen scavenging coefficients were assumed to be one-third of the liquid scavenging coefficients based on guidance from the ISCST3 User's Guide.

Particle Size Distribution and Particle Density

Particulate from the mixers was assumed to be coarse particle carbon black. The size distribution for carbon black was obtained from AP-42 Section 6.1. Particulate from the grinders and buffers was estimated based on AP-42 Appendix B for mechanically generated particles. Manufacturer's data for the collection efficiency of each particle size were used for emissions from the cyclone. The cumulative mass fraction was calculated using the procedure in Figure B.2-2 of AP-42 Appendix B.2. Particulate data from the extruders were not available. Therefore, it was assumed that all particulate from the extruder was either PM_{10} or $PM_{2.5}$, depending on the modeling exercise (see the explanation in the first comment). The particle density for each metal was assumed to be that of the pure metal (i.e., not a metallic compound).

Additional Receptor Locations

Four additional discrete receptors were added to the original receptor grid used for the air dispersion modeling. The first two receptors were placed at the treed areas east and north of the facility and the other two were placed at two locations on the creek south of the facility. Please see Figure 2 for locations of additional receptors.

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[4] Please note that, with the exception of the additional receptors, this information is identical to that which was provided along with the deposition modeling files in an email dated August 22, 2006 from Ms. Kristine Davies of Trinity to Mr. Matt Will of the IEPA. The updated modeling files that include the new target receptors will be supplied to Mr. Matt Will on September 21, 2006.

FIGURE 2 – LOCATIONS OF ADDITIONAL RECEPTORS USED IN DEPOSITION MODEL

LIST OF SPECIES OF CONCERN

The following species were identified by EPA Region V as being species of concern with respect to the Continental expansion project:

Bald Eagle (Haliaeetus leucocephalus) – The Bald Eagle is on the list of threatened species. Habitat includes tall trees near larger bodies of water (e.g., lakes, rivers, seacoasts). No known populations occur near the facility.

Indiana Bat (Myotis sodalis) – The Indiana Bat is on the list of endangered species. Habitat includes caves and trees. No known populations occur in Jefferson County.

SOIL CONCENTRATION CALCULATION METHODOLOGY

Soil concentrations were calculated using the methodology outlined in Section 3.11 and Appendix B of the SLERA protocol. Chemical specific data for cadmium, hexavalent chromium, lead, and nickel were obtained from Appendix A of the protocol. Since no data were available for cobalt, chemical data for the most similar metal (i.e., nickel) were used. All recommended default values listed in Appendix B were used in determining soil concentrations. A summary of the calculations performed for determining soil concentrations is included in Attachment B of this letter.

BACKGROUND CONCENTRATION AND ECOLOGICAL SCREENING LEVELS (ESL'S)

According to the recommended scope of analysis provided by EPA Region V, background levels should be added to deposition concentrations related to the project. The total should then be compared to the appropriate ESL. Table 1 shows background concentrations that were used in the analysis. The ESL's are based on EPA Region V's Resource Conservation and Recovery Act (RCRA) Corrective Action program and are shown in Table 2.

TABLE 1. HEAVY METAL BACKGROUND CONCENTRATIONS (SOIL)

Chemical Name	Counties Outside Metropolitan Statistical Areas (mg/kg)
Cadmium	0.50
Chromium	13.0
Cobalt	8.9
Lead	20.9
Nickel	13.0

*Illinois Administrative Code (IAC) Section 742 Appendix A, Table G

TABLE 2. HEAVY METAL ECOLOGICAL SCREENING LEVELS (SOIL)

Chemical Name	Ecological Screening Level – Soil (µg/kg)
Cadmium	2.22
Chromium	400
Cobalt	140
Lead	53.7
Nickel	1.36×10^4

RESULTS

As shown in Tables 1 and 2 above, the background concentrations of each metal exceeded the ESL in all cases. As a result, the increased soil concentrations from the project could not be added to the background and then compared to the ESL. Therefore, increases in heavy metal concentrations in the soil due to the expansion project at Continental were compared directly to background concentrations. The highest concentration of each metal at the four receptors of concern as well as the comparison to background levels is included in Table 3. Indirect effects on the species of concern due to the ingestion of plants and animals that may accumulate the pollutants has not been addressed due to the negligible increases in background concentration over a facility operating lifetime of 100 years.

TABLE 3. INCREASE IN SOIL CONCENTRATION DUE TO CONTINENTAL EXPANSION PROJECT

Chemical Name	Increase in Soil Concentration Over 100 Years (mg/kg)	Increase in Background Over 100 Years[1]
Cadmium	5.92×10^{-3}	1.18%
Chromium	3.24×10^{-2}	0.25%
Cobalt	7.69×10^{-3}	0.09%
Lead	1.50×10^{-1}	0.72%
Nickel	1.10×10^{-1}	0.85%

[1]Default value of 100 years from Appendix B of the SLERA protocol was used for operating lifetime of process.

If you have any questions regarding this modeling or ESA analysis, please contact either Kristine Davies or Bill Roth-Evans at (636) 386-9500.

Sincerely,

TRINITY CONSULTANTS

Bill Roth-Evans
Principal Consultant

ATTACHMENT A

EPA REGION V'S RECOMMENDED SCOPE OF ANALYSIS

Recommended Scope of Analysis for Continental Tire North America, Inc.
Modification for Endangered Species Evaluation
July 20, 2006

Purpose of analysis:

The analysis is intended to determine whether the proposed modifications to the Continental Tire North America, Inc. (Continental Tire) facility located in Mount Vernon, Illinois are likely to directly or indirectly adversely affect federally listed species. This recommended scope of analysis or roadmap recommends using USEPA's ecological risk assessment process to inform the decision points in section 7 of the Endangered Species Act. USEPA's draft Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities (EPA 530-D-99-001A) provides useful guidance for this analysis. Although this guidance was designed to assess the impact of hazardous waste combustion facilities it's use is appropriate in this case as we are dealing with many of the same types of chemicals.

Overall, the evaluation should focus on increased emissions from the facility. To complete this analysis we need an understanding of the background concentrations and deposition patterns. The anticipated emissions from permitted but not yet operational facilities should be included in background. The anticipated concentration in air or deposition at sites supporting listed species should be compared against NOEL (No observed effects level) benchmarks thought to be protective of the appropriate group. The evaluation should look at the incremental addition in the context of background concentrations.

Benchmarks:

The anticipated concentration in air or deposition at sites supporting listed species should be compared against NOEL (No observed effects level) benchmarks thought to be protective of the appropriate group (e.g., plants and animals). Where more than one benchmark can be found the most conservative value should be used, unless an explanation is given to justify a less conservative benchmark. When there is no commonly accepted benchmark, there should be a search of the scientific literature for relevant toxicity information to provide a basis for risk assessment for the species of concern.

Modeling protocol:

Modeling should follow the guidance provided in Chapter 3 of USEPA's SLERA protocol. The modeling should show air concentrations and deposition rates for all pollutants. The air emissions resulting from the project should be modeled at the facility level, not on a unit basis. Total impacts should be evaluated looking at the combined effects of the vapor phase, particle phase and particle-bound phase of pollutants. ISCST3 is an acceptable model for this analysis.

Background Levels:

Existing soil contamination will be considered in the effects analysis as part of the background.

Suite of pollutants to consider:

The assessment should cover all hazardous air pollutants (metals and dioxin) emitted from the facility. The information provided in the PSD application for this modification is sufficient to address the potential impacts from the criteria pollutant increases resulting from this project.

Types of impact to consider:

1) The indirect effects to animals from ingestion of plants and invertebrates that have accumulated these pollutants.
2) For compounds that may accumulate, evaluate estimated total deposition over life of project. These concentrations should be compared against benchmarks.

Listed Species:

The Indiana Bat and the Bald Eagle potentially occur within a short distance of the facility.

ATTACHMENT B

SOIL CONCENTRATION CALCULATIONS SUMMARY

Table B-1
Continental Tire Expansion Project - Calculation of Soil Concentration Due to Deposition of Cadmium

ks		2.25E-01	yr-1	COPC soil loss constant due to all processes
ksg		0	yr-1	COPC loss due to biotic and abiotic degradation (Table A-2-35 of SLERA protocol)
kse		0	yr-1	COPC loss constant due to soil erosion (default value from Table B-1-2 of SLERA protocol)
ksr		2.25E-01	yr-1	COPC loss due to surface runoff
	RO	25.4	cm	Average annual surface runoff (USGS)
	θ_{sw}	0.2	mL/cm^3	Soil volumetric water content (default value from Table B-1-4 of SLERA protocol)
	Z_s	1	cm	Conservatively assume non-tilled soil (Table B-1-1 of SLERA protocol)
	Kd_s	75	mL/g	Soil-water partition coefficient (use Kd_s at neutral pH from Table A-2-35 of SLERA protocol since most soil in area is used for farming)
	BD	1.5	g/cm^3	Soil bulk density (default from Table B-1-1 of SLERA protocol)
ksl		-1.26E-16	yr-1	COPC loss due to leaching
	P	101.6	cm/yr	Average annual precipitation (NOAA)
	I	0	cm/yr	Average annual irrigation (assumed)
	E_v	76.2	cm/yr	Average annual evapotranspiration (USGS)
ksv		0	yr-1	COPC loss constant due to volatization (since H=0, equation equals zero)
Q		2.00E-05	g/m^2/yr	Highest Target Receptor Total Annual Deposition from Model
tD		100	yr	Time period over which deposition occurs (default value from Table B-1-1 of SLERA protocol)
Ds		1.33E-03	mg/kg soil/yr	Deposition per m^3 of soil
Cs		5.92E-03	mg/kg soil	Highest soil concentration from project (at year 100)
		5.92	µg/kg soil	
		0.50	mg/kg soil	Background concentration (IAC Section 742 Appendix A for Counties Outside MSAs)
		1.18%		Project concentration percent of background

Table B-2

Continental Tire Expansion Project - Calculation of Soil Concentration Due to Deposition of Chromium

ks		0.89	yr-1	COPC soil loss constant due to all processes
ksg		0	yr-1	COPC loss due to biotic and abiotic degradation (Table A-2-53 of SLERA protocol)
kse		0	yr-1	COPC loss constant due to soil erosion (default value from Table B-1-2 of SLERA protocol)
ksr		0.89	yr-1	COPC loss due to surface runoff
	RO	25.4	cm	Average annual surface runoff (USGS)
	θ_{sw}	0.2	mL/cm^3	Soil volumetric water content (default value from Table B-1-4 of SLERA protocol)
	Z_s	1	cm	Conservatively assume non-tilled soil (Table B-1-1 of SLERA protocol)
	Kd_s	1.90E+01	mL/g	Soil-water partition coefficient (use Kd_s at neutral pH from Table A-2-53 of SLERA protocol since most soil in area is used for farming)
	BD	1.5	g/cm^3	Soil bulk density (default from Table B-1-1 of SLERA protocol)
ksl		-4.95E-16	yr-1	COPC loss due to leaching
	P	101.6	cm/yr	Average annual precipitation (NOAA)
	I	0	cm/yr	Average annual irrigation (assumed)
	E_v	76.2	cm/yr	Average annual evapotranspiration (USGS)
ksv		0	yr-1	COPC loss constant due to volatization (since H=0, equation equals zero)
Q		4.30E-04	$g/m^2/yr$	Highest Target Receptor Total Annual Deposition from Model
tD		100	yr	Time period over which deposition occurs (default value from Table B-1-1 of SLERA protocol)
Ds		2.87E-02	mg/kg soil/yr	Deposition per m^3 of soil
Cs		3.24E-02	mg/kg soil	Highest soil concentration from project (at year 100)
		32.39	µg/kg soil	

Table B-3

Continental Tire Expansion Project - Calculation of Soil Concentration Due to Deposition of Cobalt

ks		0.26	yr-1	COPC soil loss constant due to all processes
ksg		0	yr-1	COPC loss due to biotic and abiotic degradation (Assume same value as for other metals)
kse		0	yr-1	COPC loss constant due to soil erosion (default value from Table B-1-2 of SLERA protocol)
ksr		0.26	yr-1	COPC loss due to surface runoff
	RO	25.4	cm	Average annual surface runoff (USGS)
	θ_{sw}	0.2	mL/cm^3	Soil volumetric water content (default value from Table B-1-4 of SLERA protocol)
	Z_s	1	cm	Conservatively assume non-tilled soil (Table B-1-1 of SLERA protocol)
	Kd_s	65	mL/g	Soil-water partition coefficient (no information provided for cobalt in SLERA protocol, use Ni coefficient since it is most similar to Cobalt)
	BD	1.5	g/cm^3	Soil bulk density (default from Table B-1-1 of SLERA protocol)
ksl		-1.45E-16	yr-1	COPC loss due to leaching
	P	101.6	cm/yr	Average annual precipitation (NOAA)
	I	0	cm/yr	Average annual irrigation (assumed)
	E_v	76.2	cm/yr	Average annual evapotranspiration (USGS)
ksv		0	yr-1	COPC loss constant due to volatization (since H=0, equation equals zero)
Q		3.00E-05	g/m^2/yr	Highest Target Receptor Total Annual Deposition from Model
tD		100	yr	Time period over which deposition occurs (default value from Table B-1-1 of SLERA protocol)
Ds		2.00E-03	mg/kg soil/yr	Deposition per m^3 of soil
Cs		7.69E-03	mg/kg soil	Highest soil concentration from project (at year 100)
		7.69	µg/kg soil	

Table B-4

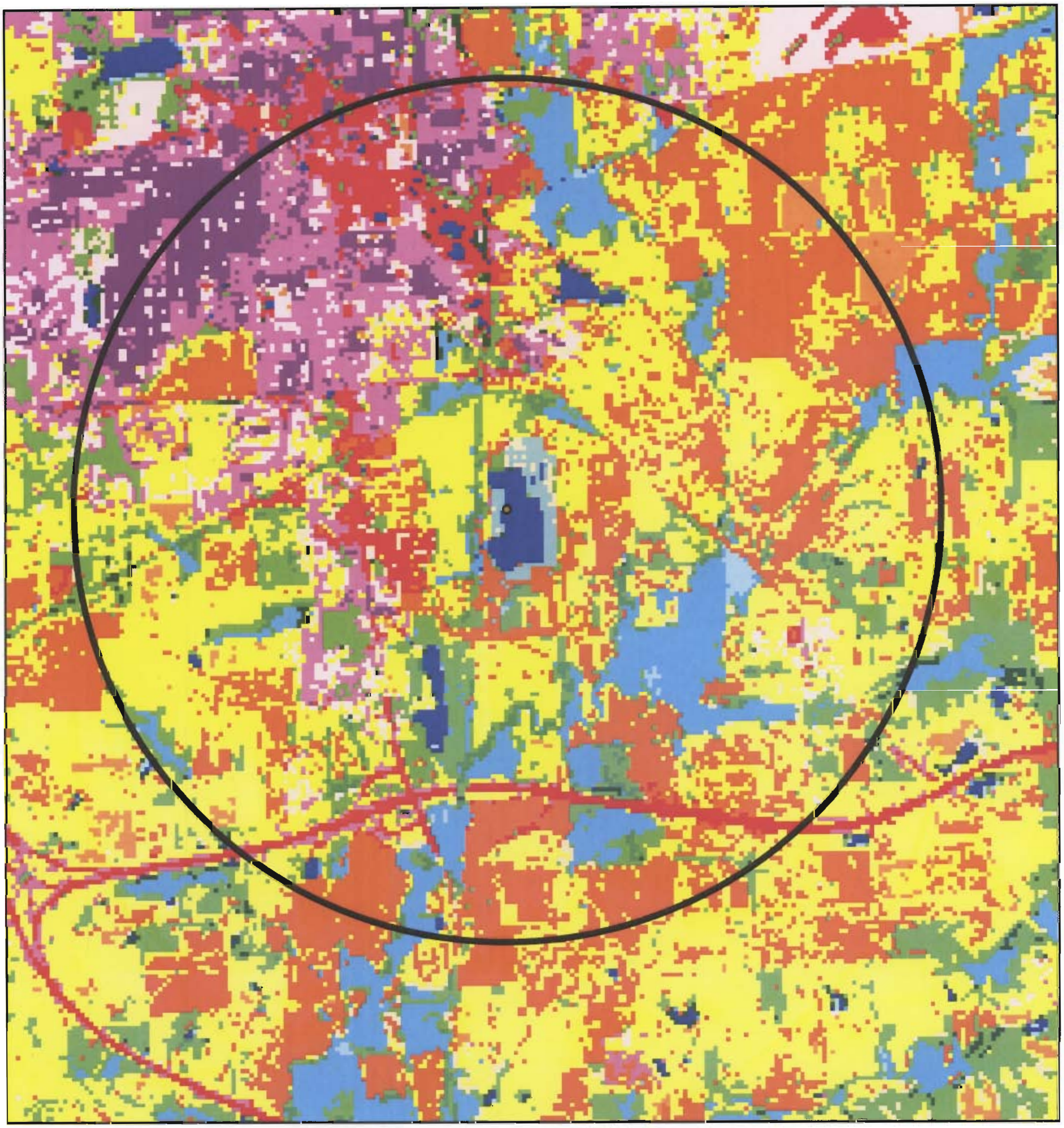
Continental Tire Expansion Project - Calculation of Soil Concentration Due to Deposition of Lead

ks		0.02	yr-1	COPC soil loss constant due to all processes
ksg		0	yr-1	COPC loss due to biotic and abiotic degradation (Table A-2-128 of SLERA protocol)
kse		0	yr-1	COPC loss constant due to soil erosion (default value from Table B-1-2 of SLERA protocol)
ksr		0.02	yr-1	COPC loss due to surface runoff
	RO	25.4	cm	Average annual surface runoff (USGS)
	θ_{sw}	0.2	mL/cm^3	Soil volumetric water content (default value from Table B-1-4 of SLERA protocol)
	Z_s	1	cm	Conservatively assume non-tilled soil (Table B-1-1 of SLERA protocol)
	Kd_s	900	mL/g	Soil-water partition coefficient (from Table A-2-128 of SLERA protocol)
	BD	1.5	g/cm^3	Soil bulk density (default from Table B-1-1 of SLERA protocol)
ksl		-1.05E-17	yr-1	COPC loss due to leaching
	P	101.6	cm/yr	Average annual precipitation (NOAA)
	I	0	cm/yr	Average annual irrigation (assumed)
	E_v	76.2	cm/yr	Average annual evapotranspiration (USGS)
ksv		0	yr-1	COPC loss constant due to volatization (since H=0, equation equals zero)
Q		5.00E-05	$g/m^2/yr$	Highest Target Receptor Total Annual Deposition from Model
tD		100	yr	Time period over which deposition occurs (default value from Table B-1-1 of SLERA protocol)
Ds		3.33E-03	mg/kg soil/yr	Deposition per m^3 of soil
Cs		1.50E-01	mg/kg soil	Highest soil concentration from project (at year 100)
		150.19	μg/kg soil	

Table B-5

Continental Tire Expansion Project - Calculation of Soil Concentration Due to Deposition of Nickel

ks		0.26	yr-1	COPC soil loss constant due to all processes
ksg		0	yr-1	COPC loss due to biotic and abiotic degradation (Table A-2-35 of SLERA protocol)
kse		0	yr-1	COPC loss constant due to soil erosion (default value from Table B-1-2 of SLERA protocol)
ksr		0.26	yr-1	COPC loss due to surface runoff
	RO	25.4	cm	Average annual surface runoff (USGS)
	θ_{sw}	0.2	mL/cm^3	Soil volumetric water content (default value from Table B-1-4 of SLERA protocol)
	Z_s	1	cm	Conservatively assume non-tilled soil (Table B-1-1 of SLERA protocol)
	Kd_s	65	mL/g	Soil-water partition coefficient (use Kd_s at neutral pH from Table A-2-145 of SLERA protocol since most soil in area is used for farming)
	BD	1.5	g/cm^3	Soil bulk density (default from Table B-1-1 of SLERA protocol)
ksl		-1.45E-16	yr-1	COPC loss due to leaching
	P	101.6	cm/yr	Average annual precipitation (NOAA)
	I	0	cm/yr	Average annual irrigation (assumed)
	E_v	76.2	cm/yr	Average annual evapotranspiration (USGS)
ksv		0	yr-1	COPC loss constant due to volatization (since H=0, equation equals zero)
Q		4.30E-04	$g/m^2/yr$	Highest Target Receptor Total Annual Deposition from Model
tD		100	yr	Time period over which deposition occurs (default value from Table B-1-1 of SLERA protocol)
Ds		2.87E-02	mg/kg soil/	Deposition per m^3 of soil
Cs		1.10E-01	mg/kg soil	Highest soil concentration from project (at year 100)
		110.27	µg/kg soil	

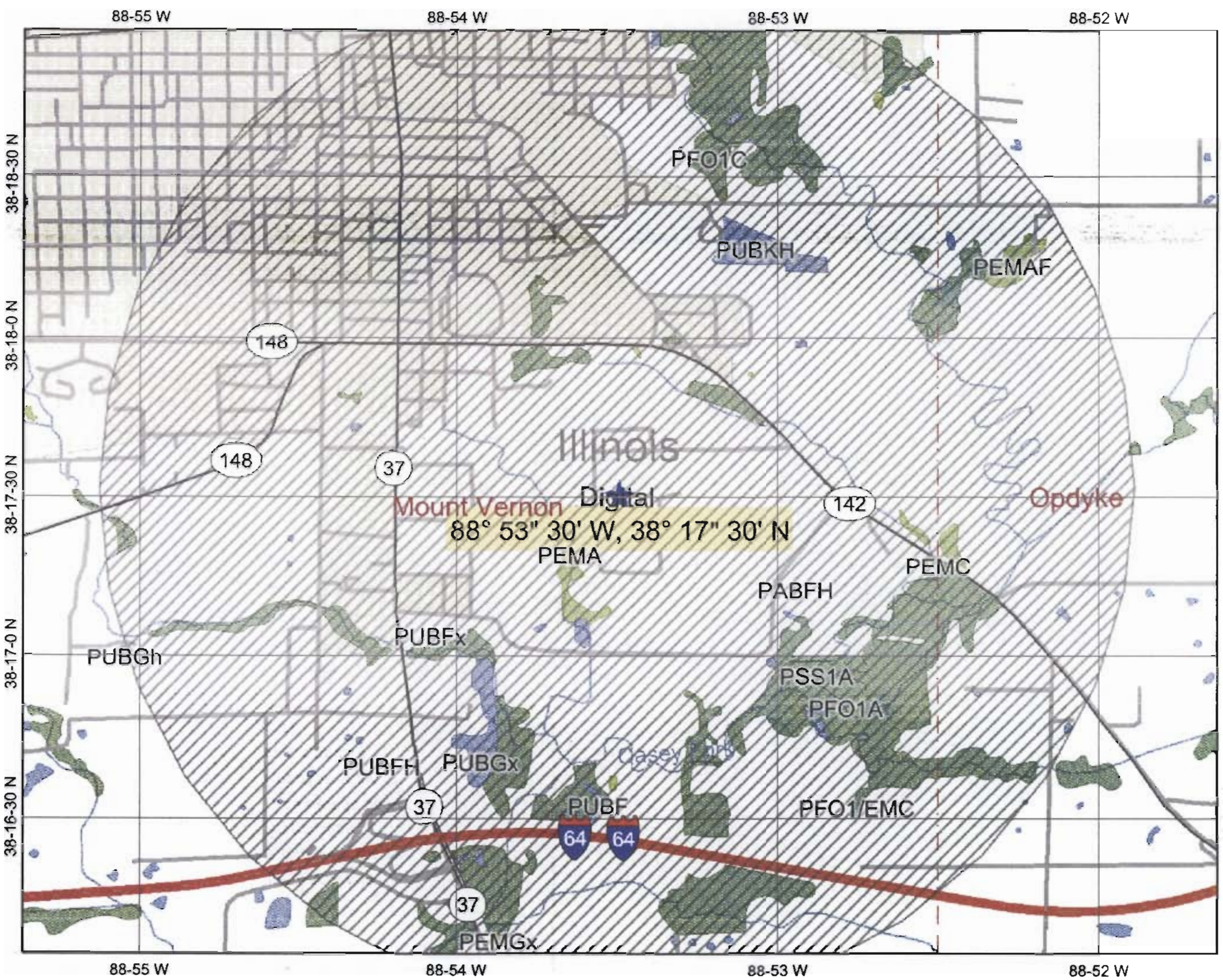


1992 Landuse/Landcover

Land Cover Class

- No Data
- Open Water
- Low Intensity Residential
- High Intensity Residential
- Commercial/Industrial/Transportation
- Bare Rock/Sand/Clay
- Quarries/Strip Mines/Gravel Pits
- Transitional
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrubland
- Orchards/Vineyards/Other
- Grasslands/Herbaceous
- Pasture/Hay
- Row Crops
- Small Grains
- Urban/Recreational Grasses
- Woody Wetlands
- Emergent Herbaceous Wetlands

USFWS NWI Wetlands



Map center: 38° 17' 31" N, 88° 53' 30" W

Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- Urban Areas 300K
- States 100K
- South America
- North America

Scale: 1:49,783

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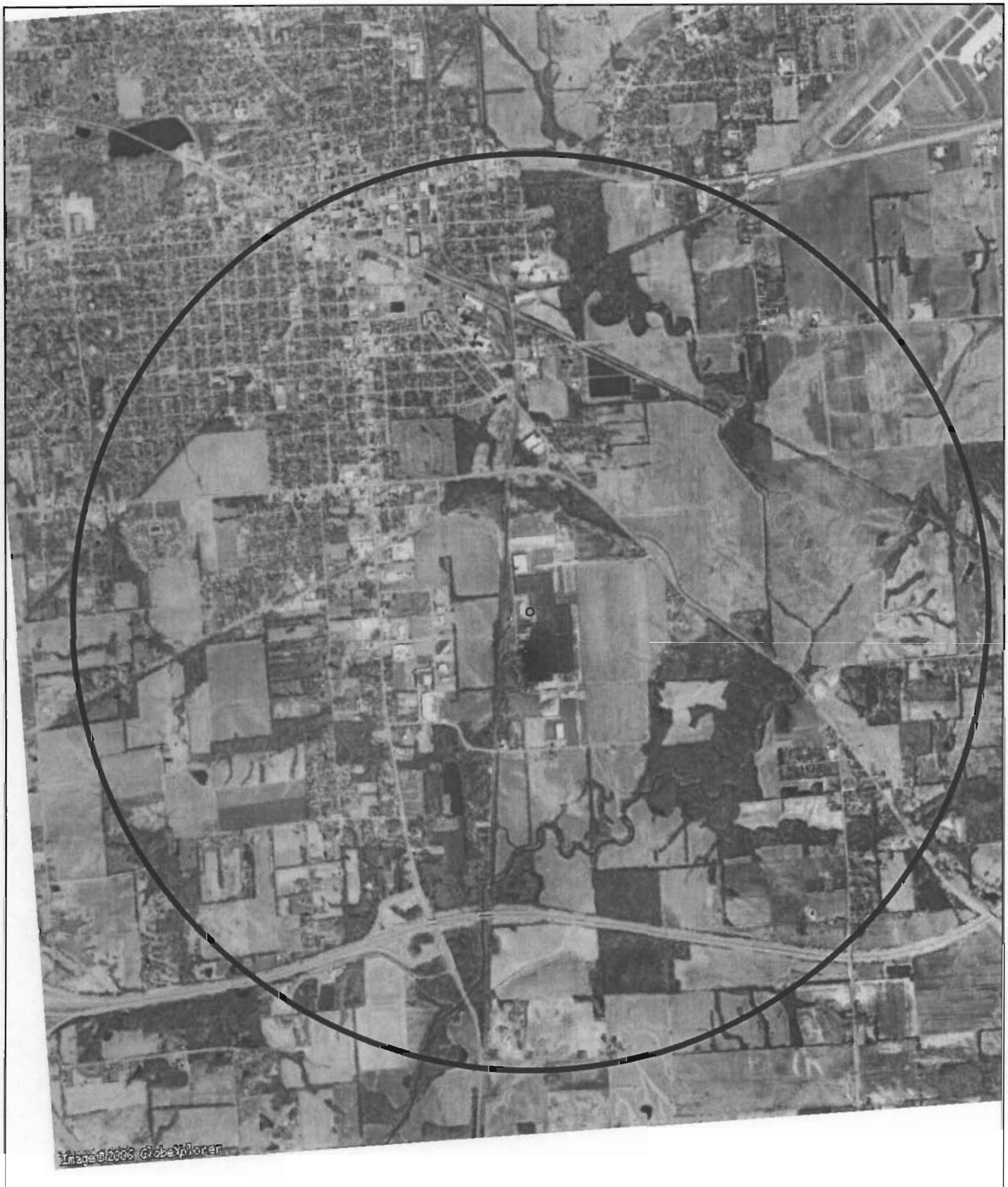

Rachel - An image from 2005

Chom