BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:	)	
	)	
WATER QUALITY STANDARDS AND	)	
EFFLUENT LIMITATIONS FOR THE	)	R08-09
CHICAGO AREA WATERWAY SYSTEM	)	(Rulemaking - Water)
AND LOWER DES PLAINES RIVER	)	
PROPOSED AMENDMENTS TO 35 ILL.	)	
ADM. CODE 301, 302, 303 AND 304	)	

NOTICE OF FILING

To: See Attached Service List

Please take notice that on January 18, 2008, we electronically filed with the Office of the Clerk of the Illinois Pollution Control Board the attached QUESTIONS SUBMITTED ON BEHALF OF LEMONT REFINERY OF CITGO PETROLEUM CORPORATION, a copy of which is served upon you.

CITGO PETROLEUM CORPORATION, and PDV MIDWEST, LLC, Petitioners

By: _____
One of Its Attorneys

Jeffrey C. Fort
Ariel J. Tesher
Sonnenschein Nath & Rosenthal LLP
7800 Sears Tower
233 S. Wacker Drive
Chicago, IL 60606-6404

BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:	)	
	)	
WATER QUALITY STANDARDS AND	)	
EFFLUENT LIMITATIONS FOR THE	)	R08-09
CHICAGO AREA WATERWAY SYSTEM	)	(Rulemaking - Water)
AND LOWER DES PLAINES RIVER	)	
PROPOSED AMENDMENTS TO 35 ILL.	)	
ADM. CODE 301, 302, 303 AND 304	)	

QUESTIONS SUBMITTED ON BEHALF OF LEMONT REFINERY OF CITGO PETROLEUM CORPORATION

These questions are submitted for response by Agency witness[es] at the forthcoming hearings in this proceeding. They address proposed changes which could adversely affect the Lemont Refinery. These questions go beyond the pre-filed testimony of the Agency; these questions which are based on the Petition and supporting exhibits are presented first, followed by detailed questions to the Agency witnesses.

The subject matter of these questions is divided into four principal parts: (1) questions going to the timing and completeness of the proposal; (2) questions going to the relationship [or lack thereof] between the uses proposed by the Agency for the Chicago Sanitary and Ship Canal, and downstream segments such as the Brandon Pool, and the water quality standards for those waterways; (3) questions going to the bases for the proposed chloride, temperature and bacteria standards for the Chicago Sanitary and Ship Canal; and (4) questions going to the lack of information on technical feasibility and economic reasonableness for proposing to apply the proposed water quality standards, and in particular, to the discharge from the Lemont Refinery.

It is requested that the Agency provide answers to the specific questions posed, and not provide a "general" statement which is not specifically responsive to these questions. The Lemont Refinery reserves its right to conduct follow-up questioning of the Agency witnesses and requests the Hearing Officer to allow that to occur in an orderly manner, rather than "waiting until the end" to clarify or engage in follow-up questioning. We respectfully suggest that the record will be more orderly and easier to review if this approach is followed.

I. Questions Relating to the Timeliness and Completeness of the Proposal

1. This proposal is a very significant undertaking that will have serious economic implications on existing discharges and also retard any growth potential within the drainage basin. The UAA Reports recommend numerous additional studies and evaluations. There is no conclusion that the aquatic biota will be better after the expenditure or that recreational use will increase, despite the billions of dollars anticipated being expended by just MWRDGC and Midwest Generation. This leads to two fundamental questions:

a. Why not complete those studies before adopting the revised water quality standards?

b. Why not prioritize the streams, and undertake the changes one at a time? If one accepts that the MWRDGC does not have unlimited resources, then shouldn't they focus on those projects that will have the greatest return on investment first? Besides convenience to the Illinois EPA and the U.S. EPA's desire to eliminate the *Secondary Contact* designation, there is no reason to combine all of these waterways in a single rule making proceedings. To expect the MWRDGC to expend so much money on disinfection, including on CSO points, with no basis that this will actually result in fewer water borne diseases is questionable use of our society's resources. As the results of the on-going epidemiologic study are not yet available, why change the disinfection requirement now?

2. Did the Agency consider taking the reaches that have the highest water quality/recreational use potential - Upper North Shore Channel, Lower North Shore Channel, Upper North Branch Chicago River, Grand Calumet, Lake Calumet, Little Calumet East, and Little Calumet West - and focusing on these water bodies for the next decade? Would not such an approach be a much better use of society's money, and have the potential to really make a difference.

3. Pages 1-18 of the Chicago Waterway UAA Report recommends that the feasibility of wet-weather exclusions in the water quality standards be undertaken. Shouldn't this be done before adopting standards that will result in the waterways being identified as impaired? Couldn't this be extended to periods of snow melts, as well?

4. The TARP program will be completed in 2016. Until we see what the impact of the completed TARP project will be on bacteria and dissolved oxygen, why adopt water quality standards that have not been shown to be achievable during wet weather?

5. What implications will adoption of all of these standards, where known violations will occur, have on the growth projections in the region?

6. Did the Agency consider an implementation period, such as 10 to 20 years for adoption of the standards that are known will not be achieved?

7. Has the Agency considered deferring those parts of the proposal for which further studies or information are clearly needed, even expected, and proceeding with the aspects of the proposal which are complete and not controversial?

Questions to Prefiled Testimony of Rob Suluski

8. In what areas or training do you consider yourself an "expert"?

9. In what areas are you being proffered by the Agency as an "expert" for purposes of this proceeding?

10. You indicate that you were the project manager for the CAWS UAA (Page 2). What was your involvement in the lower Des Plaines River UAA? Why were they combined? When did you first become involved with the Lower Des Plaines River UAA?

11. Are you familiar with any deaths that have occurred due to small boats being swamped by wake from barge traffic, in the waters presently known as "secondary contact waters"? Are you aware of any human health effects due to the existing conditions in the "secondary contact waters?"

12. Are you aware of whether U.S. EPA even considered the unique circumstances of the Chicago waterway system (sometimes known as one of the seven modern engineering marvels of the world) in developing the UAA regulation?

13. The UAA criteria adopted by U.S. EPA does not appear to be justified for being applied to a man-made waterway such as the Chicago Sanitary and Ship Canal ("CSSC"). Did EPA even consider, when adopting the UAA rule, how it addressed a major engineering structure such as the diversion of water from Lake Michigan and routing the wastewater from millions of people and hundreds of businesses down a single stream such as the CSSC?

14. Has the UAA rule been updated to include considerations such as Homeland Security issues as they apply to the CSSC?

15. How does the UAA rule, if at all, take into account the safety issues associated with the need for road salting and other safety related measures for the Chicago region and their impact on the CSSC?

16. Was the Coast Guard consulted with respect to the recreational boating prospects?

17. How does the UAA rule, if at all, take into account the problems of invasive species approaching the CSSC and Lake Michigan?

18. How does the proposed rule differ from the last proposal circulated to the public? Why was it changed?

II. Questions Going to the Recommended Uses for the CSSC and the Accompanying Proposed Revised Water Quality Standards

The Agency finds, and recommends to the Board, that the CSSC from its confluence with the Calumet-Sag Channel to its confluence with the Des Plaines River, and the Lower Des Plaines River from its confluence with the CSSC to the Brandon Road Lock and Dam, should be categorized as a "Non-Recreational Use" water which precludes primary contact, incidental contact and non-contact recreation due to physical or flow conditions or other restrictions. [Statement of Reasons, page 42]. The Agency also recommends grouping the CSSC and the Lower Des Plaines River, from its confluence with the CSSC to the Brandon Road Lock and Dam, as being part of a category called Chicago Area Waterway System and Brandon Pool Aquatic Life Use B waters. [Id. pages 46-47.] Based on these findings and recommendation, what is the justification for the following:

1. What is the basis for "tak[ing] directly from the parallel provisions in . . . Section 302.208" requirements to adopt "Acute Standards", "Chronic Standards" and "Human Health Standards" and including them in a new 302.407? [Id. page 62]

2. In light of the uses of the CSSC and Brandon Pool "Use B" waters, what basis is there to propose to apply the general use standards to these stream segments?

3. In light of these uses, what is the basis for the Agency to recommend that "the language is not intended to make a substantive change in the way the regulatory language [for the general use waters] is interpreted and applied." [Id. page 63]

4. In light of these uses, what is the basis for the proposal to adopt general use water quality standards for each of the following parameters: arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, total residual chlorine, zinc, benzene, ethylbenzene, toluene and xylene? Please specify as to each.

5. In light of the following statement, why are the chemicals listed in the preceding question even being considered for any change? ["Toxic metals do not appear to be a toxicity problem with the exception of cadmium ... (just upstream of the Brandon Road Lock and Dam) depositional zone" Id, page 67]?

6. In light of the lack of fishing from the CSSC and the Brandon Pool, as reflected in the "Use B" findings, what is the basis for limiting Mercury and Benzene based on "fish consumption" and establishing the standard as "exactly the same as the existing General Use standard." Id. pages 72-73.

7. The proposal does not contain clear guidance on which fish species are to be used to derive the discharge criteria. The Statement of Reasons cites several trout and salmon species which are not native to Illinois and certainly are not found in the CSSC or the Brandon Pool [pages 66 and 71]. Why are these species referenced and what is the actual proposed criteria to be followed for discharges to the CSSC?

8. In light of the uses for the CSSC and the Brandon Pool "Use B" waters, what is the basis for recommending that each of the general use water quality standards for chloride, iron, silver, selenium and sulfates be applied to "Use B" waters?

9. In light of the Agency recommendation that the D.O. for the CSSC and Brandon Pool "Use B" waters allow a daily minimum of 3.5 mg/l and a 7-Day Mean of Daily minima of 4.0 mg/l, [Id. page 60, Table 1] what is the basis for recommending "general use" water quality standards for other parameters for dischargers to the CSSC and Brandon Pool? Will these D.O. levels have an affect on the limited aquatic life in the CSSC and Brandon Pool before any affect from the other pollutants for which water quality standards are proposed?

10. The Statement of Reasons states that "it is not uncommon for the system [the water levels in the CSSC in these stream reaches] to fluctuate 4 to 6 feet in level over a 48-hour storm related period." Id. page 49. With respect to this statement:

   a. What stress does this change in water levels put on aquatic life?

b. How do the adverse affects from this fluctuation compare against any documented or promised benefits of adopting the proposed water quality standards in the CSSC and Brandon Pool "Use B" waters?

c. Were any of the U.S. EPA water quality criteria [Gold Book, etc] developed using waters that had the turbulence and physical limitations that the CSSC and Brandon Pool "Use B" waters have?

d. If there are benefits from applying more stringent water quality standards [even if not needed to attain the designated uses], will improving water quality standards increase the likelihood of invasive species migrating toward Lake Michigan up through the CSSC? If not, why not? If so, what steps are needed to protect Lake Michigan?

11. The Statement of Reasons also states that the "Use B waters" have a "very poor to poor habitat attributes", and that "such conditions are irreversible, in combination with other factors, prevent Use B waters from maintaining a biological condition that meets the Clean Water Act's Aquatic Life goal." Id page 50. In light of these findings:

a. Were any of the U.S. EPA water quality criteria [Gold Book, etc] developed using waters that had the limited habitat and physical limitations that the CSSC and Brandon Pool "Use B" waters have?

b. What assurances can the Agency provide that if the foregoing "general use" water quality standards are adopted that there would be any change in aquatic life in the CSSC and Brandon Pool "Use B" waters? Please describe in detail any benefits or increase in aquatic life the Agency can predict would occur by adopting the general use water quality standards to the CSSC and Brandon Pool.

c. What assurances can the Agency provide that if the "subpart F" criteria were applied to industrial discharges to the CSSC and the Brandon Pool, that there would be any difference in aquatic life in the CSSC and Brandon Pool "Use B" waters? If so, please describe in detail and quantify the environmental benefit.

12. IEPA Attachment R is a report prepared by Edward T. Rankin. Is the Agency moving for the introduction to this as an exhibit?

a. Does the Agency intend to bring Mr. Rankin to testimony for the next round of hearings?

b. With respect to this report, does the Agency agree with Mr. Rankin's assessment that the CSSC has a habitat that is rated as "poor"? (See Table 1 and accompanying text).

c. Does the Agency agree with Mr. Rankin's statement, "this is above the influence of any additional chemical stressors, discharges, overflow or urban runoff events."?

d. Does the Agency agree with Mr. Rankin's statement, "watersheds with very degraded habitat are less able to support aquatic life consistent with the highest aquatic life uses."?

e. Does the Agency agree with Mr. Rankin's statement, "habitat in the CSSC range from poor to very poor"?

f. If so, why is the Agency tightening the water quality standards in the CSSC?

g. Does the Agency agree with Mr. Rankin's assertion that "barge traffic on the CSSC . . . can add important limiting influence" to the physical habitat that he observed.?

h. Given the importance under the UAA approach of documenting the actual uses, why is Mr. Rankin not being included as a witness?

13. Does Attachment S have any data in it on the CSSC?

Questions to Testimony of Rob Suluski

14. At Page 9 of your testimony, you state that the contractor for the CAWS UAA concluded "that while water quality in CAWS was, for the most part, meeting Illinois General Use Water Quality Standards, none of the water bodies could achieve Clean Water Act goals due to limitations described in the six UAA factors." Doesn't the Agency conclude that factors preclude the CSSC (among others) from obtaining the Clean Water Act goals? Are not these factors "irreversible"?

15. If these factors are irreversible, then why is the Agency proposing to make the water quality standards in the CSSC more stringent at all? Why make CSSC standards more stringent than the standards for General Use Waters?

16. Why didn't the Agency simply remove CSSC from this proposal and focus those places where the UAA criteria would indicate that better water quality standards would improve potential uses?

17. As to the "non-recreational use" waters, are the statements at the top of Page 13 of your prefiled testimony correct when you filed the testimony? Still true today?

18. If so, given that these waters (which include the CSSC) have "very poor to poor habitat" and those conditions are "irreversible", why are you proposing to make the existing water quality standards (other than dissolved oxygen) more stringent? Why is the Agency proposing to make those standards for chemical and temperature discharges more stringent than General Use Standards? Why are you adding requirements for ZIDs, including applying acute and chronic calculated criteria?

Questions on Prefiled Testimony of Roy Smogor

19. In what areas or training do you consider yourself an "expert"?

20. In what areas are you being proffered by the Agency as an "expert" for purposes of this proceeding?

21. At the bottom of Page 6 and continuing to the top of Page 7 of your prefiled testimony, you make the following statement "Illinois EPA is not proposing standards to protect early life stages of fish because these waters do not have the potential to consistently support such early life stages." Is it correct that this statement was made with respect to justifying dissolved oxygen standards?

22. Why isn't the same consideration applied to the other parameters for which revised water quality standards are being proposed for the CSSC? Why isn't this same principle applied to chlorides? To any of the other contaminants?

23. Why is the Agency proposing to adopt "General Use Water Quality standards" for these Use B Waters?

Questions on Prefiled Testimony to Scott Twait

24. In what areas or training do you consider yourself an "expert"?

25. In what areas are you being proffered by the Agency as an "expert" for purposes of this proceeding?

26. With respect to your statement that U.S. EPA's National Criteria documents or information . . . was significantly lacking for . . . temperature and bacteria. (Testimony - Page 2). In light of the lack of U.S. EPA guidance, why did IEPA believe it necessary to proposed new standards for temperature and bacteria?

27. Do you have any information on aquatic life use designations in the CAWS in Lower Des Plaines River other than the information presented in the UAA consultant reports (Exhibits 1 and 2)?

28. Do you have any information on water quality standards necessary "to protect aquatic life use designations" other than those included in the statement of reasons for any one of the following chemicals: chloride, total dissolved solids, pH, chromium and total hexavalent, cyanide, total residual chlorine, arsenic, chromium trivalent, silver, aquatic life standards for mercury, cadmium, in the CSSC (Pre-filed testimony, pages 5 - 9).

29. Do you have any information that the habitat characteristics of the CSSC as presented in the testimony of Mr. Suluski is incomplete or in error?

30. Do you disagree with the statements in Mr. Suluski's testimony that the Use B Waters have very poor to poor habitat attributes? Do you disagree that such conditions are irreversible? Do you agree such conditions prevent these waters "from maintaining biological condition that meets the Clean Water Act Aquatic Life goal? (Page 17 of Mr. Suluski's testimony).

31. If there are periodic excursions of the cadmium water quality standard, does that mean that all dischargers will have effluent limits on cadmium set at the water quality standard? If so, what is the economic implications of this?

32. The recalculation for copper is to be determined by what method?

III. Questions Relating to Proposed Standards for Chlorides

In light of the uses for the CSSC and the Brandon Pool:

1. What is the basis to propose any chloride standard based on "general use" waters?

2. Was the Agency aware that levels of chlorides in the CSSC already exceed 500 mg/l during snow-melt conditions? If so, then what is the technical feasibility and economic reasonableness of controls to achieve the proposed standard?

3. Other than snow melt run-off, who are the sources of chlorides in the CSSC and Brandon Pool "Use B' waters which would cause chloride levels to exceed the proposed 500 mg/l standard?

4. What is the effect on mixing zones of industrial dischargers if the 500 mg/l standard for chlorides were to be adopted?

5. What is the effect on ZIDs of industrial dischargers if the 500 mg/l standard for chlorides were to be adopted?

6. What is the technical feasibility of controlling chloride run-off from snow-melt and surface transportation?

7. What is the cost of controlling chloride form snow-melt and surface transportation safety?

8. Has the Agency considered whether the U.S. EPA criteria are intended for general use waters, not for limited use waters such as CSSC and Brandon Pool "Use B Waters."?

9. Does the CSSC and Brandon Pool have uses and aquatic life potential that would allow them to achieve the conditions upon which the U.S. EPA criteria recommendations for chlorides were made?

10. For chlorides, will the Agency impose a 500 mg/l on all NPDES permits, because of seasonal exceedences due to highway de-icing? Will mixing zones for all discharges of chlorides greater than 500 mg/l be eliminated on waterways with documented chloride exceedences? Which dischargers to the CSSC would be affected?

11. If chloride levels exceed 500 mg/l, what is the formula to calculate sulfates?

12. Has the Agency evaluated the cost and effect of its proposed chloride water quality standard on any dischargers? If not, why not?

13. No discussion on chlorides is presented in the UAA, and the Agency's proposal does not address the impact the chloride water quality standard will have on the region. Will the adoption of this standard result in no new road construction because of the impaired water designation?

14. Will the chloride standard result in more traffic accidents/fatalities in the region due to the requirement to reduce salt usage during inclement weather? Shouldn't Best Management Practices be implemented before adopting standards that may not be achievable?

15. 2005 data shows chloride levels, during the winter months, elevated above the proposed 500 mg/l water quality standard at the Lockport Forebay location. This concurs with CITGO's data. How will chloride levels above 500 mg/l impact CITGO's discharge when CITGO is not the source of the elevated chlorides?

16. What will be the upstream location that CITGO uses to determine if the chlorides are above the 500 mg/l, which in turn determines the water quality standard for sulfate?

17. How will sampling and analytical turnaround of chlorides affect dischargers that apply mixing zones for sulfate?

18. Will dischargers of sulfates need to monitor the chloride levels everyday during periods of snowmelt to determine compliance with water quality standards?

Question to Rob Suluski

19. How did IEPA decide that the major water quality constraints are temperature and DO? What about chlorides? (Page 13).

Question on the pre-filed testimony of Scott Twait

20. If the IEPA anticipates chloride violations, what consequence do they foresee? Is it realistic to expect the chlorides in these waterways will attain a 500 mg/l chloride level over the next twenty years?

21. What is the Agency's strategy for achieving a 500 mg/l chloride standard in the CSSC?

22. How does the Agency plan to deal with overlapping mixing zones with respect to chlorides?

IV. Questions Relating to Proposed Rule for Temperature

1. Where thermal violations exist, does this mean the Agency will impose effluent thermal limits at the water quality standards for all dischargers? Will mixing zones for all thermal discharges to waterways that have thermal exceedences be eliminated?

2. With respect to temperature, why is the Agency proposing a "period average" temperature for the CSSC?

3. Has the Agency considered that biological treatment facilities need to provide heat in the winter months to achieve nitrification? Is the Agency proposing that such plants now need "cooling towers"?

4. In light of the uses of the CSSC [as the Agency found and noted above], what is the basis - and the technical feasibility and economic reasonableness - for including a "period average" temperature as a water quality standard?

5. In light of the poor biological conditions [as the Agency found and noted above], what it the basis - and the technical feasibility and economic reasonableness - for including the proposed temperature standard?

6. In light of the uses and poor biological conditions, what is the basis for the proposal to impose a temperature standard for the CSSC which is more stringent than for general use standards?

7. With respect to the "representative aquatic species" [Id. page 81], which are those? Which have been found in the CSSC or Brandon Pool? When, where and how many? Why are they "believed ... [to be] representative" of the CSSC and Brandon Pool? In what manner?

8. What type of outreach to the existing industrial and municipal dischargers was involved in assembling economic data?

9. Attachment GG, Table 3 lists the long-term and short-term survival temperatures for June 16 - September 15 based on modeling. How were the proposed temperature standards, September 16 - June 15, derived from this data? Was the derivation based on scientific findings?

10. Was Table 3 data field verified or was only modeling used?

11. Does the Agency have any plan for achieving the proposed temperature conditions other than the possible shut down of a Midwest Generation plant?

12. Are the proposed temperature standards attainable given the current uses of the CSSC and Brandon Pool?

13. What investigations has the Agency done for the technical feasibility for the concept of "period average" for the non-summer months?

14. What investigations has the Agency done for changing the percentage of time excursions can occur? What is the basis for choosing "two percent excursion hours"?

15. Beyond what the Agency has suggested for Midwest Generation, what is the technical feasibility and economic reasonableness for any discharger, to meet the proposed temperature standards?

16. What is the basis for selecting a temperature proposal which is 100% protective, and then adding a "safety factor"?

17. How will the Agency handle overlapping mixing zones in applying the thermal standard?

Questions on Prefiled Testimony to Chris Yoder

18. In what areas or training do you consider yourself an "expert"?

19. In what areas are you being proffered by the Agency as an "expert" for purposes of this proceeding?

20. Do you consider yourself an expert compliance measures to meet the water quality standards identified in your report?

21. Can you explain the methodology you employed? What water body was used to develop the methodology? Are there similarities to the subject waters? If so, what are they? Are there distinguishing characteristics to the subject water bodies? If so, what are they?

22. Does the method require any presumptions? If so, what are they? Did you collect any field data in arriving at the original method? If so, is it available? Where?

23. Did you collect any field data from the subject waters? If so, what data and is that data also available?

24. If the original temperature criteria dates back to 1970 and hasn't been updated, would it be useful to review it and employ modern knowledge and technology to determine whether it is obsolete?

25. What thermal effects literature was used? What is the procedure used to calculate the thresholds for the various fish species? Who developed the procedure? Has it been reviewed or discussed in peer review? If so, where?

26. Having developed this methodology in the 70's, have you employed any studies to demonstrate the accuracy of this model? Are you currently collecting data to demonstrate the accuracy of this model?

27. You refer to over 500 literature references, is there a list compiled of these references and available for public review? With all the literature reviewed, how was conflicting data negotiated? Did you consider any particular data or literature more authoritative than others? If so, which?

28. Do you undertake the field characterization activities, or is that done under the direction of your colleague, Dr. Rankin?

29. How many years of experience do you have since your graduation with a master in zoology? Have you ever testified in a judicial proceeding as an "expert"?

30. Is the methodology recommended in your report and outlined in your testimony a methodology that has been accepted by U.S. EPA as a national criteria for temperature?

31. Do you understand a technical justification or basis for the proposed temperature standard from Illinois EPA providing that water temperature in Use B Waters that during the winter months the water months the temperature cannot exceed 56.3 °F in January? 55.6 °F in February? 59.2 °F in March?

32. Are you familiar at all with the proposed section 302.408(a) and (c)? Do you know whether the biological treatment plants would produce an effluent that cold during the winter months? Biological treatment plant with nitrification would produce an effluent that cold during these winter months?

33. Did you develop the "potential RAS lists for three designated use options"? (Testimony - Page 9). Where is that list published? Is that list included in the proposed rule? Has any other peer reviewed reports that support the use of either species for "secondary contact waters"?

34. Are the "represented aquatic species for the secondary contact list" actually found in the Chicago Sanitary and Ship Canal? In any Illinois secondary contact waters?

35. What is the basis for using period averages that ensure "100% long term survival all representative species"? Would this be true with species with a very poor to poor habitat?

36. Would this be still true if water levels could fluctuate 2 to 4 feet in a manner of 24 hours? Do you have any experience with these kinds of fluctuations? Do you have any experience with "very poor to poor habitat" as it relates to temperature?

Questions on pre-filed testimony of Rob Suluski

37. How do the QHEI assessments compare with historical Habitat Assessments by EA? Why wasn't the historical data collected by EA utilized?

38. What modeling was undertaken to determine the increase in DO from aeration? What are current levels and what are the objectives? How were the objectives determined?

39. Are there other options to flow augmentation? Are there other areas to employ flow augmentation? Why these points? What modeling has been performed to estimate impact?

40. What temperature outflow would be sufficient? What impact would the changed effluent have on the water temperature? What modeling was employed? Is temperature reductions required at all five Midwest Generation locations? What other impacts to the environment result from the effluent change? Did the Agency evaluate the impact evaporative cooling would have on PM2.5 particulates air quality?

41. Where are the supporting data/studies referred therein? What changes occurred in DO levels with aeration rates and flow changes? Have the supplemental aeration systems resulted in DO attainment under wet weather conditions? Under low flow conditions?

42. The control technologies require permitting – is IEPA prepared to issue permits for cooling towers described herein? What is the cost for the cooling systems described? What

would be the total temperature impact of a cooling process to the waterway temperature at each location?

Questions on pre-filed testimony of Scott Twait

43. Has IEPA commissioned any of the own studies on temperature? What differences and similarities are there been the studied waters and the subject waters? Are the existing temperature variances similar to those of the studied waters?

44. Did the independent expert have any prior dealing with the U.S. EPA? Did/does the independent expert have any reasonable expectations of future U.S. EPA contracts? Would the results of this study impact the likelihood of those future dealings?

45. Did the IEPA or its Contractor review and utilize the extensive data collected by EA over the past twenty years for Midwest Generation?

46. Has the Yoder paper been peer reviewed or otherwise confirmed?

47. How were the locations chosen for thermal sampling? What are they near? What frequency were samples taken? What was the basis for assuming the Route 83 location was representative of "background" temperatures? Was depth and activity considered in choosing the "background" location?

48. How were the expected higher temperatures used? And if these waters are expected to be unnaturally high, then is it possible to truly have a "background" locale?

49. Other than designating the various locations as the "background" temperature, how were they used? Where the background locales selected before or after sampling began, and by whom? Does the need to alter Yoder's report suggest his study to be inapplicable to these waters?

50. Why did the Agency not study the affected waters specifically and prepare a report of recommendation unique for these waters?

51. Even without the modifications to Yoder's plans, doesn't the Agency plan to recommend cooling processes? If so, doesn't this further suggest that a clearer and specific investigation of these waters is warranted? Furthermore, would modeling or experimenting on a section of the river provide better data to determine whether such drastic measures are warranted, or would even produce the intended results?

52. Was all the data used over the 6 year period, or were outliers eliminated? If so, what criteria was adopted to determine outliers?

53. Why were 75th percentile and daily maximum data used? If this choice was a diversion from the Yoder model, doesn't this further distinguish his study from the subject waters?

54. If multiple models are being blended, how the Agency assure stakeholders that the expenses required to meet IEPA recommendations will produce the intended results?

55. Was a modeling done, specific to these waters, based on the temperature data, geographical characteristics, flow rates and intended changes to demonstrate the Agency could achieve its goals? If so, what changes did the modeling forecast?

56. Since the Agency admits the proposed thermal standards to be more stringent, has any experimentation or modeling been done to show the changes resulting from the tighter standards? If so, what differences have been demonstrated?

57. When you say fish can tolerate short term elevations in temperature, what qualifies as short term and what limitations of elevation? Is there differences based on fish type? Are there seasonal differences?

58. How did the Agency determine the proposed excursion limitations? Were they arbitrarily selected between current standards, or based on scientific data? If data, what studies?

59. Since the Agency acknowledges that thermal water quality standards were quite challenging, would it be prudent to further investigate and model before spending considerable amounts to attempt to change thermal characteristics which may or may not succeed and may or may not bring about the intended results?

V. Questions Relating to the Proposed Rules for Bacteria

We expect others, such as MWRDGC, to take the lead on this topic and we defer to their questions. However, several of these questions relate to the same use and water quality standards issues affecting the Lemont refinery and the Chicago Sanitary and Ship Canal.

1. The UAA, Pages 1-18 also recommends disinfection of CSOs. Would not this require large tanks of sodium hypochlorite at each CSO, and a large holding tank for disinfection? Where is the cost impact?

2. What is the land use where these CSOs are located? Would the ones in residential areas be inconsistent with existing land use?

3. How much energy would be required to produce this sodium hypochlorite and the carbon dioxide that will be emitted?

Questions on Prefiled Testimony of Rob Suluski

4. Is wastewater disinfection economically reasonable? Was re-growth of the fecal coliform in the water bodies evaluated? What modeling has been now to predict necessary disinfection required?

5. How effective is UV disinfection on viruses? Has UV been used on facilities as large as the MWRDGC's treatment plants?

Questions on Prefiled Testimony of Scott Twait

6. What criteria documents and literature were reviewed for your testimony? If this literature was reviewed, presumably authoritative and absent consideration of temperature and bacteria, what did you based the presumption that temperature and/or bacteria were relevant?

7. What is the most current federal criteria reference standard?

8. If there is no reliable data, how is the Agency justifying its proposal to require additional disinfection to discharged wastewater? Is there any scientific data establishing any positive results from this additional expenditure?

9. What specifically is the Agency attempting to accomplish by requiring additional disinfection? Is there any other jurisdiction that has similar requirements and historical data?

VI. Consideration of section 27(a) factors to any discharger other than MWRDGC or Midwest Generation

Questions to Mr. Suluski

1. The final paragraph of your testimony (Page 20 of the prefiled testimony) references the economic reasonableness of the rulemaking proposals. There is no reference here or in any exhibit to the economic reasonableness of any of the Agency's proposals that they would apply to CITGO Petroleum Corporation and its Lemont Refinery. Is there any that you can point out in the testimony? Any in the prefiled exhibits in support of the petition? Anything in the petition?

2. Why has the Agency not included any evidence, either in its Statement of Reasons or its proposed testimony relating to technical feasibility or economic reasonableness of the proposed changes for discharges to the CSSC and Brandon Pool, other than Midwest Generation? [see Statement of Reasons, pages 99-100].

3. Although the Agency states that "the Lower Des Plaines and CSSC in particular receive discharges from a large number of significant industrial facilities" [Id page 103], what is the technical feasibility and economic reasonableness of the proposed changes for those sources? For industrial sources other than Midwest Generation?

4. Other than some information on Midwest Generation and the Metropolitan Water Reclamation District of Greater Chicago, has the Agency developed any information relating to technical feasibilities or economic reasonableness on any of the discharges posted in Exhibit TT?

5. How will the dischargers to CSSC be affected by the proposed water quality standards? By the proposed rule 302.407 and 302.410?

6. If "water quality standards" are generally being met, and given the "poor to very poor" habitat of the CSSC, which is due to "irreversible conditions," what is the justification, in terms of technical feasibility and economic reasonableness, for requiring ZID analysis such as proposed in 302.410?

7. Has the Agency considered the effects of applying proposed rule 302.407 and 302.410 to dischargers to the CSSC? What data has been collected?

8. What are the means by which the Lemont Refinery could meet each of the proposed water quality standards for its discharge to the CSSC? What are the technical feasibility and cost of those controls?

9. If snow melt conditions cause the CSSC to exceed the proposed water quality standards, will the Agency prohibit the use of mixing zones by the Lemont Refinery?

CITGO reserves the right to ask follow-up questions to these and to the responses provided by the Agency.

Respectfully submitted,

CITGO PETROLEUM CORPORATION, and
PDV MIDWEST REFINING, L.L.C., Petitioners

By: _____
One of Its Attorneys

January 18, 2008

Jeffrey C. Fort
Ariel J. Tesher
Sonnenschein Nath & Rosenthal LLP
7800 Sears Tower
233 South Wacker Drive
Chicago, IL 60606-6404

14659510

SERVICE LIST R08-09

Dorothy Gunn Marie Tipsord Illinois Pollution Control Board 100 West Randolph St Suite 11-500 Chicago, IL 60601	Dennis Duffield City of Joliet 921 E. Washington St Joliet, IL 60431
Frederick Feldman Ronald Hill Louis Kollias Margaret Conway Metropolitan Water Reclamation District 100 East Erie St Chicago, IL 60611	Keith Harley Elizabeth Schenkier Chicago Legal Clinic, Inc. 205 West Monroe Street 4th Floor Chicago, IL 60606
Richard Kissel Roy Harsch DrinkerBiddle 191 N. Wacker Dr. - Suite 3700 Chicago, IL 60606-1698	Frederick Keady Vermillion Coal Company 1979 Johns Drive Glenview, IL 60025
Claire Manning Brown Hay & Stephens LLP 700 First Mercantile Bank Bldg 205 S. Fifth St Springfield, IL 62705-2459	Fred Hubbard 16 West Madison Danville, IL 61834
Deborah Williams Stefanie Diers Illinois EPA 1021 North Grand Avenue Springfield, IL 62794-9276	Georgia Vlahos Naval Training Center 2601A Paul Jones St Great Lakes, IL 60088-2845
Katherine Hodge Monica Rios Hodge Dwyer Zeman 3150 Roland Avenue Springfield, IL 62705-57776	W.C. Blanton Blackwell Sanders LLP 4801 Main St Suite 1000 Kansas City, MO 64112
Charles Wesselhoft James Harrington Ross & Hardies 150 N. Michigan Ave Chicago, IL 60601-7567	Kay Anderson American Bottoms One American Bottoms Road Sauget, IL 62201
Robert VanGyseghe City of Geneva 1800 South St Geneva, IL 60134-2203	Jack Darin Sierra Club 70 E. Lake St Suite 1500 Chicago, IL 60601-7447

Jerry Paulsen Cindy Skrukrud McHenry County Defenders 132 Cass Street Woodstock, IL 60098	Bob Carter Bloomington Normal Water Reclamation PO Box 3307 Bloomington, IL 61702-3307
Matthew Dunn Office of the Attorney General Environmental Bureau North 69 West Washington Street Suite 1800 Chicago, IL 60602	Tom Muth Fox Metro Water Reclamation District 682 State Route 31 Oswego, IL 60543
Albert Ettinger Freeman Freeman & Salzman 401 N. Michigan Ave Chicago, IL 60611	Kenneth Liss Andrews Environmental Engineering 3300 Ginger Creek Drive Springfield, IL 62711
Thomas Granto Bernard Sawyer Metropolitan Water Reclamation District 6001 W. Pershing Rd Cicero, IL 60650-4112	Albert Ettinger Jessica Dexter Environmental Law & Policy Center 35 E. Wacker Suite 1300 Chicago, IL 60601
Lisa Frede Chemical Industry Council of Illinois 2250 E. Devon Ave Suite 239 Des Plaines, IL 60018-4509	Vicky McKinley Evanston Environmental Board 223 Grey Avenue Evanston, IL 60202
Fredric Andes Erika Powers Barnes & Thornburg 1 North Wacker Dr - Suite 4400 Chicago, IL 60606	Marc Miller Office of Lt. Governor Pat Quinn Room 214 State House Springfield, IL 62706
James Daugherty Thorn Creek Basin Sanitary District 700 West End Avenue Chicago Heights, IL 60411	Susan Franzetti Franzetti Law Firm PC 10 S. LaSalle St Suite 3600 Chicago, IL 60603
Sharon Neal Commonwealth Edison 125 South Clark Street Chicago, IL 60603	Dr. Thomas Murphy 2325 N. Clinton St Chicago, IL 60614
Tracy Elzemeyer American Water Company 727 Craig Road St. Louis, MO 63141	Beth Steinhorn 2021 Timberbrook Springfield, IL 62702
Margaret Howard Hedinger Law Office 2601 South Fifth Street Springfield, IL 62703	Ann Alexander Natural Resources Defense Council 101 N. Wacker Dr - Suite 609 Chicago, IL 60606

Traci Barkley Prairie Rivers Networks 1902 Fox Drive Suite 6 Champaign, IL 61820	Cathy Hudzik City of Chicago Mayor's Office of Intergovernmental Affairs 121 N. LaSalle Street City Hall - Room 406 Chicago, IL 60602
James Huff Huff & Huff, Inc. 915 Harger Road Suite 330 Oak Brook, IL 60523	Cathy Hudzik City of Chicago Mayor's Office of Intergovernmental Affairs 121 N. LaSalle Street City Hall - Room 406 Chicago, IL 60602
Irwin Polls Ecological Monitoring and Assessment 3206 Maple Leaf Drive Glenview, IL 60025	Kevin Desharnais Thomas Dimond Thomas Skinner Mayer, Brown LLP 71 South Wacker Drive Chicago, IL 60606-4637

CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that I have served upon the individuals named on the attached Notice of Filing true and correct copies of the **QUESTIONS SUBMITTED ON BEHALF OF LEMONT REFINERY OF CITGO PETROLEUM CORPORATION** via Standard by First Class Mail, postage prepaid, on January 18, 2008.