BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:	)	
	)	
PROPOSED ADJUSTED STANDARD FOR	)	
AMMONIA NITROGEN DISCHARGE LEVELS	)	AS 08-08
APPLICABLE TO CITGO PETROLEUM	)	(Adjusted Standard - Water)
CORPORATION AND PDV MIDWEST	)	
REFINING, L.L.C., PETITIONERS	)	

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Please take notice that on October 24, 2008, we filed electronically with the Office of the Clerk of the Illinois Pollution Control Board the attached Post-Hearing Reply Brief in Support of an Adjusted Standard, a copy of which is served upon you.

CITGO PETROLEUM CORPORATION, and
PDV MIDWEST, LLC, Petitioners

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POST-HEARING REPLY BRIEF IN SUPPORT OF AN ADJUSTED STANDARD

The Post-Hearing Brief of the Agency provides no factual or other information to contradict the testimony and evidence submitted by Petitioners. In this Reply Brief, CITGO Petroleum Corporation and PDV Midwest Refining, (hereinafter, "Petitioner" or "the Refinery") will point out the misstatements of fact and errors in analysis contained in the Agency brief. Further, the Agency did not respond in any constructive manner to the proposed conditions of the adjusted standard.

ARGUMENT: THE AGENCY'S BASIS FOR RECOMMENDING DENIAL IS SPECIOUS, AND BASED ON A MIS-READING OF THE REGULATORY HISTORY AND THE RECORD.

I. THE AGENCY'S ACCOUNT OF LEMONT REFINERY'S PAST REGULATORY HISTORY IS INCORRECT.

The Agency's response brief opens with a purported history of the Refinery's previous regulatory matters. While the Board did grant variances in the early years of Illinois' ammonia-nitrogen rule, such variances were for 1-2 year periods. (*Compare* Agency Post-Hearing [Response] Brief at ¶3). These variances were intended for the Refinery to gather sufficient data about its operations in advance of a site-specific regulatory change. (See *Union Oil Company of California v. IEPA*, R82-87, Opinion and Order of the Board, October 5, 1982 at p.3). Once the

Refinery had produced a body of data regarding its operations and capabilities, the Board approved three site-specific rulemakings, beginning with R84-13, approved on March 19, 1987. The Agency is simply wrong to claim that the 1987 Order set out ammonia nitrogen limits of 26.0 mg/L (daily maximum) and 9.4 mg/L (monthly average). That rulemaking, R84-13, required compliances with Best Available Technology (BAT) levels, on a pounds-per-day basis. There was no concentration limit imposed. When the Board renewed the Refinery's site-specific rule in R93-8, only then did it impose concentration limits. Five years later, in R98-14, the Board also extended the previous site-specific rule for an additional ten years with no substantive changes to the rule and no reduction in the allowed concentration limits. As the sunset period approached last year, it was clear that the Refinery could not meet the 3/6 mg/L limitation on a consistent basis, so the Refinery attempted to begin a dialog with the Agency about lowering the allowable discharge in the site-specific rule. The Agency, however, requested that the Refinery pursue an Adjusted Standard, and we cooperated with that request. (See examination of Brigitte Postel, Hearing of Aug. 20, 2008, p.0030, lines 8-21).[1] During meetings with the Agency, the Agency asked a few questions but never stated they would oppose the Refinery obtaining relief from 304.122 (b). And since the filing of this Petition, the Agency has declined to engage in any discussion of technical measures to comply or reduce the ammonia nitrogen discharge limits.

The Agency claims that Petitioner owes certain obligations under the "Board's Order of December 17, 2008." (See Agency Post-Hearing [Response] Brief at ¶14-17). This is clearly a factual misstatement. There simply are no such obligations since December 17, 2008 has yet to pass. It is Petitioner's best guess that the Agency intended to refer to the Order in R98-14, issued on December 17, 1998.

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[1] As only one hearing was ultimately conducted, all further citations to the hearing will simply state the witness' name, the page number, and the lines referenced.

Nevertheless, there is nothing in the 1998 Order to support the Agency's assertion. The Agency claims, with bold-faced font, that the sunset provision was intended to "end[] the temporary limits." (See Agency Post-Hearing [Response] Brief at ¶14). This assertion is in contradiction to the clear language in the Board's 1998 decision, which states "the Board included a sunset provision in subparagraph (g) ... [to] encourage PDV to take advantage of new technology and to continually explore methods of lowering its ammonia-nitrogen discharge during the pendency of the site-specific rule." (See *In the Matter of Petition of PDV Midwest Refining, L.L.C for a Site-Specific Rulemaking Amendment to 35 Ill. Adm. Code 304.213*, R98-14, Opinion and Order of the Board, December 17, 1998, at p.3). As in all previous orders, the Board's sunset provisions required Petitioner to check-in with the Board and continually strive to improve its effluent quality. Nowhere did the Board say "this is the last one". Nowhere in the record of the 1998 rulemaking did the Agency argue "this is it".

The Board's intention was well placed. Petitioner has expended tens of millions of dollars and undertaken several major projects in order to reduce its discharges of ammonia nitrogen. (See Postel, p.0039, line 20, to p.0043, line 2). As a result of these expenditures, Petitioner is proposing a reduction in the daily limit of 59 percent and in the monthly limit of 27 percent. (See Postel, p.0038, lines 9-20). The sunset provision in R84-13 did not preclude the Board's Order in R93-8. The sunset provision in R93-8 did not preclude an even longer-lasting Order in R98-14. In the case at hand, Petitioner has already proposed a sunset provision for this Adjusted Standard which provides only half the time granted by the Board in R98-14, its most recent ruling on the matter. Petitioner's proposed Adjusted Standard also calls for the steepest reductions ever in the Refinery's effluent limits.

Not only is the Agency's rhetoric misplaced, the current environmental conditions are even more supportive of there being an adjusted standard for the Refinery. The Use Attainability

Analysis ("UAA") proceeding has demonstrated that the Ship Canal has a poor habitat, and the Agency has testified that the Ship Canal qualifies for several exceptions to the general use attainability demonstration. (See Huff, p.0056, line 7, to p.0057, line 24). The Ship Canal is, without question, an "effluent dominated" water body; - the presence of ammonia nitrogen levels in the refinery intake is one proof of that. *Id.* But as to ammonia nitrogen, the Agency's proposed ammonia nitrogen water quality standard in the UAA is being met - so there appears to be no environmental justification for any further reductions in ammonia nitrogen discharges from the Refinery. (See Huff, p.0188, lines 1-18). Indeed, the very reason for imposing the 3/6 mg/L standard was based on the technical feasibility for municipal wastewater plants. The improved nitrification from the Metropolitan Water Reclamation District of Greater Chicago plants (which can control ammonia at a marginal cost 60 to 200 times cheaper than can be done at the Refinery) has achieved the environmental result the Board sought in adopting 35 Ill. Adm. Code § 304.122(b).

There is then no environmental basis for denying the adjusted standard as requested by the Refinery.

II. THE AGENCY'S ASSERTION OF TECHNICAL FEASIBILITY IS UNSUPPORTED BY ANY EVIDENCE.

The Agency inaccurately asserts that the Refinery can currently comply with 35 Ill. Adm. Code § 304.122(b). If it could, we would not have brought this proceeding. The Agency is arguing that the Refinery should bear the risk of non-compliance with 304.122(b) even though there is no evidence that such can be done on a consistent basis. (Recall that the proposed effluent limits are based on U.S. EPA guidance using existing effluent data.) The Agency's assertions are made with the attempt to confuse, with out-of-context quotations from Petitioner's experts, and outright misstatements of fact.

The Agency quotes Robert Stein out of context. As the Agency well knows, while all the Illinois refineries utilize similar wastewater treatment *technologies*, they do not all utilize similar *air control methods*, *complete* on-site wastewater treatment, or identical configurations of wastewater treatment technologies. The Agency would have the Board believe that all refineries in the State of Illinois have identical wastewater influents, treatment methods, histories, and procedures. However, as noted in the uncontested testimony at the hearing, very real differences exist between the various Illinois refineries that significantly impact their resulting effluent streams.

a) ExxonMobil had not yet added its purge treatment unit discharge to its general wastewater treatment. This will add a substantial new wastewater stream. Given the sensitivities of nitrification techniques, it is quite possible that it will fail to achieve nitrification 100% of the time. (See Stein, p.0137, lines 7-14 and p.0244, lines 12-17; Huff, p.0210, line 15 through p.0211, line 1).

b) Marathon does not discharge all of its ammonia-nitrogen bearing waste stream through its wastewater treatment facilities. As admitted by the Agency witness at the hearing, "they have been hauling some offsite out of state." (See LeCrone, p.0233, lines 8-9). The Agency noted that CITGO had put in extra treatment specifically for ammonia coming from their similar purge treatment, and that the CITGO outfall, unlike the Marathon outfall, accounts for the totality of its effluent. (See LeCrone, p.0234, lines 2-10). In contrast, Marathon uses groundwater (not an effluent-dominated surface water source like the Ship Canal), has warmer weather (hence more conducive to nitrification occurring), and avoids discharging its scrubber effluents to its wastewater treatment system,

c) The Conoco-Phillips refinery does not meet the 3/6 mg/L limits set out in 35 Ill. Adm. Code § 304.122(b). (See LeCrone, 2008, p.0225, lines 19-20). The Agency even admits as much in its Post-Hearing Response Brief. (See Agency Post-Hearing [Response] Brief at ¶21). Curiously, despite its acknowledgement that Conoco-Phillips does not meet this standard, the Agency falsely continues to assert that "***three out of four*** refineries in the State of Illinois have demonstrated that the goals and expectations of Section 304.122(b) can be met and are technically feasible." (See Agency Post-Hearing [Response] Brief at ¶18) (emphasis added). With Conoco-Phillips both not meeting the standard and not even subject to its requirements, Petitioner is at a loss to understand or explain the Agency's contradictory assertion.

Indeed, there is no refinery in Illinois which has yet ***demonstrated an ability to meet consistently*** the 3/6 mg/L standard with a wastewater stream that includes the wet gas scrubber discharge like the CITGO Refinery. Marathon hauls that waste stream to another discharge location - apparently out of state. Conoco-Phillips does not achieve that level of nitrification and has "most of the time" performance like CITGO[2]. ExxonMobil might be able to meet this standard, though the testimony is that there is a substantial risk it will not do so. And the Agency did not testify that ExxonMobil would comply on a consistent basis. We have no opinion on ExxonMobil's choice to take the risk it is taking; but the CITGO Refinery should not be forced into taking that same risk in light of the efforts it has made and continues to make.

Petitioner has devoted substantial resources to reducing its ammonia discharge. It is proposing drastic cuts in its ammonia-nitrogen effluent. At the hearing and in its pre-filed

[2] As explained by Mr. Stein at the hearing, biological nitrification either works or fails to work--there is no such thing as partial or halfway nitrification in such processes. (See Stein, p.0190, line 21, through p.0191, line 9).

testimony, Petitioner explained that, while it can ***almost always*** meet the rigorous 3/6 mg/L standards of 35 Ill. Adm. Code § 304.122(b), it does not have sufficiently stable nitrification to guarantee compliance with such a standard 100% of the time. (See Stein, p.0133, lines 7-20, p.0137, lines 7-14, p.0244, lines 12-17; Huff, 2008, p.0210, line 15 through p.0211, line 1). Remarkably, the Agency has noted both Petitioner's generally superb effluent levels and its irregular upsets that prevent what would otherwise be 100% compliance with 35 Ill. Adm. Code § 304.122(b). It notes that the Refinery's effluent fell "well within" the 3/6 mg/L limits for "21 of the last 25 months" *except* for April-August of 2007. (See Agency Post-Hearing [Response] Brief at ¶19(c)). The Agency's conclusion precisely re-states the facts presented by Petitioner and its experts: the Refinery does an excellent job of controlling its effluent but it has as-of-yet-uncontrollable periods of upset that prevent continuous compliance. In its Post-Hearing Brief, Petitioner proposed a compliance plan to address these periods of upset. (See Petitioner's Post-Hearing Brief, Attachment C, paragraph k). Unfortunately, the Agency chose not to address this plan in its reply brief.

Petitioner believes that the terms of its proposed adjusted standard provide a sound basis for moving forward. As requested by Mr. Rao at the hearing, we are suggesting very specific measures for further investigation and reporting of those results to the Agency. (See Rao, Postel, p.0212, line 15 through p.0214, line 16.; Attachment C to Petitioners' Post-Hearing Brief). Further, since most of the issues involving lack of nitrification (and hence elevated ammonia levels) relate to upset conditions, a special condition in the refinery's NPDES permit may be the long-term solution to these issues. Indeed, another discharger to the Illinois River has such a condition in its NPDES permit. (See Stein, p.0254, lines 7-19). Hence, we have proposed a condition to the Adjusted Standard that would allow for that transition to occur.

III. DETENTION TIME IN THE AERATION BASINS NOT A SOLUTION IN ASSURING COMPLIANCE

The Agency's Post Hearing Brief advances the concept of hydraulic detention time as a solution. We find this astonishing for two reasons: first, nowhere in the Agency Recommendation or in the hearing did the Agency put forth testimony or evidence that increased detention time in the aeration basins would be a viable improvement for the Refinery. Second, in response to a question from the Board, Mr. Stein and Mr. Huff both testified as to why increased detention time in the aeration basins would not solve the issues faced by the CITGO Refinery. The treatment processes for ammonia nitrogen are more complex.

The Agency falsely claims that Robert Stein, Petitioner's expert, agrees with their attitude towards detention time. (See Agency Post-Hearing [Response] Brief at ¶23). In fact, as the Agency notes in the following paragraph, Mr. Stein finds detention time not to equate to better performance. (See Agency Post-Hearing [Response] Brief at ¶24; Stein, 2008, p.0138, lines 11-22). Moreover, as Mr. Stein later states, increased detention time may actually harm nitrification because it also leads to greater cooling. (See Stein, p.0253, line 8, through p. 0254, line 22).

The Agency then criticizes Mr. Stein for his inability to compare food-to-microorganism ratios due to lack of data. (See Agency Post-Hearing [Response] Brief at ¶25). However, these data, as noted at the hearing, are not publicly available information. (See Stein, p.0202, lines 14-16). In fact, as noted by the Agency's attorney, it may be a violation of trade secrets to provide such information. (See Boltz, p.0204, lines 4-5). Eventually, regarding who has access to this private data for comparison sake, the Agency admitted, "We probably do. We haven't looked for it or evaluated it yet." (See LeCrone, p.0204, lines 15-19). The Agency has known for months that Mr. Stein viewed the food-to-microorganism criteria as the key parameter. (See Petition at ¶44), yet declined to make that information available to Petitioner or its consultants.

Ultimately, the Agency may be the only body with access to private cross-refinery data on the food-to-microorganism ratio. While it failed to even locate the relevant data, its counsel criticizes Petitioner for its inability to conduct an impossible analysis.

This attitude is not going to improve the environment. As suggested in the Petition, the Refinery proposes to continue taking cost-effective measures to reduce its ammonia discharge beyond the extensive improvements it has made in just the last 10 years, a $45 million investment. (See, Postel, p.0040, line 3). The Refinery will provide an additional two million gallons of wastewater storage capacity to provide capacity to control upset conditions when they are known to be occurring. A construction permit for the additional wastewater storage capacity would be submitted within 3 months of the Board adopting this adjusted standard. (See Attachment C to Petitioners' Post-Hearing Brief, paragraph (i)). Further, the Lemont Refinery will continue to participate in research efforts in improving solids handling from desalter operations, and it will provide an annual report to the Agency on the technologies researched and potential application to the Refinery. (See *Id.* paragraph (j); see generally Postel, pp. 0212-0214). The Refinery is also willing to work with the Agency on appropriate upset or malfunction conditions.

CONCLUSION

As noted in Petitioner's Post-Hearing Brief, it has addressed every element of the requirements for an Adjusted Standard as set out in 35 Ill. Admin. Code §104.406. It has also met its burden of proof as set out in §104.426 (referencing 415 ILCS 5/27(a).) Attachments A and B to Petitioner's Post-Hearing Brief contain element-by-element indices to the portions of the Petition and the hearing testimony that contain the applicable information satisfying §104.406 and §104.426 (referencing 415 ILCS 5/27(a)).

In its Post-Hearing [Response] Brief, the Agency misconstrues and misstates the Refinery's regulatory history, falsely claims that other Illinois refineries achieve nitrification under the same rigorous air and water protections implemented at Petitioner's Refinery, and complains that Petitioner's experts failed to conduct an analysis that necessitated data only the Agency possesses. None of those arguments present a cognizable reason to deny the regulatory relief that Petitioner has so thoroughly demonstrated it deserves.

As we stated at the opening of the hearing, the issue is that the Refinery cannot guarantee performance to meet the 3/6 mg/L standard consistently, or all the time. Biological nitrification is a difficult treatment process that is easily upset. When a change occurs in the treatment process, for any one of many reasons, it takes an extended amount of time to recover. Petitioner has made the necessary showing that it is entitled to relief and to the requested adjusted standard.

WHEREFORE, Petitioner requests that the Board grant this adjusted standard, as revised in Attachment C to its Post-Hearing Brief.

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

By: _____

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CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that he has served upon the individuals named on the attached Notice of Filing true and correct copies of the Post-Hearing Reply Brief in Support of an Adjusted Standard by electronic service and First Class Mail, postage prepaid, on October 24, 2008.