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UNITED STATES OF AMERICA
BEFORE THE ENVIRONMENTAL PROTECTION AGENCY

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Petition to EPA Administrator Carol Browner
for Objections Under the Clean Air Act
and Complaint of Discrimination
under Title VI of the Civil Rights Act

IIR-98-R9

In re: Significant Revision No. 1000547)
to Air Quality Control Permit)
No. M191365P1-99 for Arizona Portland)
Cement Company,)
Issued by the Arizona Department)
of Environmental Quality)

I. INTRODUCTION

This is a petition pursuant to 40 CFR 70.8(d) alleging violations of the Clean Air Act and rules thereunder, and a complaint of discrimination under Title VI of the Civil Rights Act alleging that people of color and of low income will be disproportionately harmed, as a consequence of the action of the Arizona Department of Environmental Quality approving a revised air quality control permit authorizing the expansion of the Arizona Portland Cement (APC) operations in Rillito, Arizona.

II. PETITIONERS/COMPLAINANTS

Petitioners/complainants include the United Paperworkers International Union, which represents 120 workers at the Arizona Portland Cement facility, and (b) (6) - Privacy an African-American resident of Rillito, Arizona (hereafter, the petitioners). The union membership contains about 40% people of color, and several members of the union reside in Marana, which is near to the APC facility. The Union has a health and safety program which includes efforts to recognize and address environmental concerns. Petitioners commented on the proposed permit revision at a public hearing held July 6, at the Marana Junior High School, Marana, Arizona.

Petitioners have also filed an appeal to the Arizona Air Pollution Control Board pursuant to A.R.S. § 49-428.A.

III. CLEAN AIR ACT VIOLATIONS

A. Pursuant to 40 CFR 70.8(d), the petitioners hereby petition the EPA Administrator for objections to the Arizona Department of Environmental Quality (ADEQ) permit revision to Air Quality Control Permit No-M191365P1-99 for Arizona Portland Cement Company ("APC").

B. The permit authorizes APC to make modifications which will cause a net emissions increase of nitrogen oxides which will exceed 40 tons per year without requiring new source review, in violation of state and federal law. The estimated emission factors per ton of clinker after the modifications upon which the permit is based are not supported by adequate evidence for either Kiln 4 or Kilns 1,2,and 3. Because the emissions increase estimated for nitrogen oxides due to the modifications s underestimated, the potential for a significant increase in ambient levels of nitrogen oxides at the Saguaro National Park (SNP) was likewise underestimated. The levels of clinker production allowed under the permit will cause an increase in nitrogen oxides levels at the boundary of the Park of more than 1.0 ug/m^3 on a 24-hour basis, yet the facility was not required to undergo new source review in violation of federal and state law. In addition, the modeling by APC of the emissions impacts of the modifications on the Park also underestimated the impact because the model did not account for the complex terrain in the area and did not use adequate representative meteorological data. See additional discussion of nitrogen oxide issues, Attachment I.

C. APC's projected increased emissions of SO_2 are based on historical data for emission factors from Kiln 4. The historical emission factors were multiplied by the projected increase in clinker production to determine the increase in SO_2 emissions. However, these historical emission factors are for Kiln 4 prior to the RIMOD III modifications. It is not apparent that these emission factors will remain the same after the modifications to Kiln 4 are complete. Until this is demonstrated, APC should have used EPA's AP-42 emission factors to

predict the SO_2 emission increase. If the AP-42 emission factor of 1.1 lbs SO_2 per ton of clinker for a preheater/precalciner kiln is used, SO_2 emissions would increase by 685.4 tpy during Phase I, with an additional increase during Phase II of 302.5 tpy. This would be a total increase in SO_2 emissions of 987.9 tpy. This would be far in excess of the 40 tpy significant emission rate threshold that would trigger a new source review for SO_2.

D. The permit violates state and federal law because it credits APC with estimated reductions in PM and PM 10 emissions reductions which are neither quantifiable nor enforceable as a practical matter. This is an area which is classified as nonattainment for particulates, primarily as a result of the permitted facility. Yet the permit does not even detail the measures which are to be taken to reduce dust emissions from unpaved roads and quarry roads. In their calculations methodology, APC references *Control of Open Fugitive Dust Sources* (EPA-450/3-88-008), which states that a 50 percent control efficiency can be achieved by watering or use of chemical dust suppressants. But the draft permit relies on dust control efficiencies of 85 percent without a reference or basis that would indicate this higher dust control efficiency is achievable. The appropriate technical guideline, 5th edition of AP-42 indicates it would be possible to achieve efficiencies greater than 50 percent by using a chemical dust suppressant, such as a petroleum resin, but it does not indicate that this could be achieved by water application alone. The draft permit contains an equation to determine water application intensity for suppression of dust emissions. The equation relies on parameters for which only APC can provide values , including average hourly daytime traffic and time between applications. Without this information it is not possible to evaluate if water application will be feasible as a means of dust suppression. In a proper permitting procedure, APC would need to submit their dust control plans for public and agency review for both Phase I and II, using this equation, before the permit revision could be issued. The plan would need to address all unpaved roads on the site, and include frequency of application, the expected traffic on each road, and the volume of water that must be used during each application. Until APC can demonstrate, rather than make an unsubstantiated claim, that they can achieve the projected dust control efficiency, they should not have been

issued this permit revision. The permit also does not limit the use of blasting materials and therefore does not effectively limit blasting. The projections of reductions in particulate matter and PM 10 in the permit are unlawful, and thus it must be assumed as a matter of law that the modifications authorized by the permit will cause the facility to increase its net emissions of particulate matter by more than 25 tons per year and/or PM 10 by more than 15 tons per year without requiring new source review, in violation of state and federal law.

E. The permit violates state and federal law by crediting the portland cement plant facility with purported reductions in emissions from the quarry when the cement plant and quarry are not the same stationary source. When properly viewed as separate sources, the net emissions increases for particulate matter, PM1 0 and nitrogen oxides would all be significant for the portland cement plant, and new source review should have been required.

F. The permit authorizes opacity emissions of up to 40% from processes and other points in the facility which are greater than those allowed under standards of performance for existing portland cement plans in state and federal law. It authorizes opacity emissions which exceed the 20% limits in state rules, and the 10% limits in 40 CFR 60.62(c) New Source Performance Standard, in violation of both state and federal law.

G. ADEQ violated federal and state law by issuing the permit despite receiving a written objection from EPA that the agency needed a full 45 day formal review period for the permit prior to its issuance. EPA specifically objected that it was not given a full 45 day period to object, and that the source would not be able to increase production as authorized under the permit while staying within its permitted limits.

H. The permit requires the use of continuous opacity and continuous emissions monitors, but it then fails to specify that excess emissions measured by the monitors are "excess emissions" as defined in the permit for compliance purposes. Excess emissions measured by the monitors would not be considered permit violations. The permit thus authorizes the facility to exceed emissions limits except during a scheduled performance test.

IV. CIVIL RIGHTS VIOLATIONS

A. The Arizona Portland Cement facility expansion proposed poses a disproportionate risk of harm to human health among people of color and low income living nearby. This discrimination is contrary to the Equal Protection Clause of the Fourteenth Amendment to the United States Constitution, Title VI of the Civil Rights Act of 1964, Presidential Executive Order 12898 on Environmental Justice and EPA Regulations providing for nondiscrimination in programs receiving federal financial assistance, 40 C.F.R. Part 7B.

B. The facility which will emit the unlawful levels of pollutants as described in section III is in a community of color. Within one mile of the facility, the residential population is 57.4% people of color, which includes 24.7% Hispanic, 23.8% black and 9% American Indian/Eskimo/Aleutian. See table. It is also a predominantly low income community of which approximately 75% are elderly and retired. This low income, elderly, minority population is a sensitive population for which extra care and attention to emission levels is critically important. Many of the residents have skin and respiratory problems which they believe are due to the pollution from the APC facility -- the types of symptoms caused and aggravated by the pollutants at issue in this matter.

Summary of Population
within One Mile of the Arizona Portland Cement Facility

Population by Origin	Total	Percentage	Comparison with US/DC Population
White	95	42.6%	75.6%
Black	53	23.8%	11.8%
AmInd/Esk/Ale	20	9.0%	.7%
Asian/PacIslnds	0	0	2.8%
Other	0	0	.1%
Hispanic	55	24.7%	9.0%
Total People of Color	128	54.7%	24.4%

Source: Environmental Protection Agency's Geographic Information Query System.

C. The manner of the permitting and notice utilized, despite apparent compliance with technical requirements to publish a legal notice, has had the effect of fast-tracking this facility through the permitting process and to deny key participants adequate opportunity to prepare for the hearing and to comment so as to protect public health and the environment. For instance, at the hearing held in July, Gertha Brown-Hurd, President of the Rillito Community Council – a key local civic organization speaking to issues of low income people of color in the community – testified that her organization had just heard about the hearing that day. Meeting the technical requirements for posting of legal notices does not satisfy the need for participation in a low income community of color to ensure sufficient notice to protect their interests, and especially the interests of the most vulnerable populations affected by facilities such as these. For instance, it takes longer in a low income community to find the resources needed to acquire technical review of a complex permit such as this one. This made it impracticable to engage in a more detailed critique of the permit during the hearing.[1]

D. This permit apparently is one of the first to be given such a fast track treatment in the state of Arizona. The fast tracking of this permit was accompanied by dubious technical machinations, including the overly optimistic assumptions regarding pollution control and pollutant dispersion that are highlighted above. In the absence of fast tracking of the permit, and in a white middle class community which could bring sufficient technical expertise to bear to review this matter, it is unlikely these issues with serious environmental health implications would have slipped by. Even the Environmental Protection Agency was denied its formal 45 day comment period rendering the agency itself unable to serve as an adequate watchdog on behalf of the community, and leaving the array of permit deficiencies which we have identified in this petition and complaint. As a result, the community will face disparate impact due to being a low income community of color. This is

[1]While all of the issues raised in the present petition were raised during the permitting process, to the extent that this petition provides increased specificity, we request the Administrator to find that the lack of direct notice to community residents is a basis for finding it impractical to have specified petitioners objections at greater specificity under 40 CFR 70.8(d).

exactly the type of discriminatory impact of environmental standards, permitting and enforcement which is barred by Title VI of the Civil Rights Act and intended to be addressed by the EPA's Environmental Justice program and the President's Executive Order on Environmental Justice.

V. RELIEF REQUESTED

Petitioners respectfully request that the Administrator grant them the following relief:

That the Administrator immediately enter an order staying the effectiveness of the permit revision based on the agency's prior objections;

That the Administrator issue new objections to the permit for the reasons stated herein, and immediately enter an order staying the effectiveness of the permit revision based on those objections;

That the Administrator enter a decision to modify, terminate, or revoke the permit issued by the Arizona Department of Environmental Quality;

That this matter be referred for investigation to the EPA Office of Civil Rights and that compliance be achieved through the denial of the revised facility permit or that the discriminatory impact be avoided by additional controls on the pollution; and

That the Administrator take other appropriate action to halt discriminatory action by the Arizona Department of Environmental Quality in the issuance of this and other permits.

Respectfully Submitted,

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ON BEHALF OF THE PETITIONERS

Attachment A
Consultant's Technical Review of Nitrogen Oxide Issues
Carpenter Environmental Associates

Carpenter Environmental Associates, Inc. has reviewed the air permit revision, permit application and supporting material for the Arizona Portland Cement Co. (APCC) facility in Rillito, Arizona. Our comments regarding nitrogen oxides follow.

APC included in its permit voluntary caps for NOx of 39 tpy. By staying below the cap, APC would be below the federal New Source Review (NSR) significance levels for these pollutants. The significance levels are 40 tpy for NOx. The increase in these pollutants will come from two sources, additional blasting due to increased mining activities in their quarry and additional clinker production. According to the permit application, the additional blasting will result in increases of 11.58 tpy of NOx emission. Therefore, additional clinker production must be limited so that NOx emissions from Kilns 1-4 must be less than 27.42 tpy in order to remain under the permitted levels. APC projects that after the completion of RIMOD III, Kilns 1-3 will produce 492,750 tons of clinker per year, and Kiln 4 will produce 1,807,250 tons of clinker per year.

The ability of APC to remain below the NSR significance levels for NOx will depend on the ability of the facility to attain the emission factors used to calculate the NOx emissions from Kilns 1-4. Petitioners utilized three different sets of emission factors to determine if APC can stay below these levels. These were 5th Edition AP-42 emission factors for Portland Cement Manufacture, published by the EPA; projected emission factors for Kilns 1-4 at the APC facility included in the Responsiveness Summary; published by the State of Arizona, and historical emission factors for Kilns 1-3 which were included in the calculations methodology section of the APC permit application. Historical emission factors were not provided for Kiln 4, so in this case the projected emission factors for Kiln 4 were used. However, APC's projected emission factors for Kiln 4 were based on its Mojave facility, where APC reported that the NOx emission factor for a kiln similar to Kiln 4 was 4.1 to 4.5. In contrast in their permit application they utilized a projected emission factor for Kiln 4 of 4.1, the low end of the range, to calculate NOx emissions, without justification. However, petitioners used an emission factor of 4.3 because it is reasonable to use the average value instead of the low value in the range listed for the Mojave facility kiln. In every case analyzed, the increase in NOx emissions from Kilns 1-4 was above the allowable 27.42 tpy listed in the permit application. In the worst case, using historical emission factors for Kilns 1-3 and projected emission factors for Kiln 4, NOx emissions would increase by nearly 1,880 tpy. In the best case, using projected emission factors for Kilns 1-4, NOx emissions would increase by 148 tpy. The only instance in which NOx emissions would not increase above 27.42 tpy from Kilns 1-4 is if an emission factor of 4.1 is used for Kiln 4. APC has not demonstrated that this low emission factor would be representative of emissions from Kiln 4, since they report that their test data indicated that the emission factor for the Mojave facility is between 4.1 and 4.5. APC offers no justification that the use of the low end of the range for the Mojave kiln is warranted to calculate emissions from Kiln 4.

Furthermore, an emission factor of 4.1 is lower than the emission factor published by EPA in AP-42. According to the Introduction to the 5th edition of AP-42, data from source-specific emissions tests or continuous emission monitors are usually preferred for estimating a source's emissions because those data provide the best representation of the tested source's emissions. However, these results are applicable only to the conditions existing at the time of the testing or monitoring. The emission factors listed by APC in its permit application of 5.6 pounds of NOx per ton of clinker for Kilns 1-3 and 4.1 pounds of NOx per ton of clinker for Kiln 4 are based on source-specific testing performed not at the Rillito facility but at Mojave, California. Unless the kilns at the Rillito site operate under identical conditions to those of the kilns at the Mojave facility, it cannot be assumed that identical emission factors will be achieved.

Until APC can demonstrate through source-specific testing or continuous emission monitoring what the actual emission factors will be for Kilns 1-3 and Kiln 4, their production of clinker should be limited, so

that by using AP-42 emission factors of 6.0 pounds of NOx per ton of clinker for Kilns 1-3 and 4.2 pounds of NOx per ton of clinker for Kiln 4 their increase in NOx emissions will remain below the limits specified in their permit. Failing that, APC cannot meet the test to be classified as a synthetic minor.

Upon completion of the RIMOD III modifications, if APC is allowed to increase its clinker productions to the levels indicated on their permit application, it seems highly unlikely that the increase in NOx emission will remain below 40 tpy. If APC desires to increase its clinker production to this level, they should be allowed to do so only after satisfying all the requirements of a federal New Source Review. If APC wishes to be a synthetic minor and avoid New Source Review, they would need to lower their projected increase in clinker production to a level that will not cause an increase in NOx emissions above NSR thresholds.

EPA guidance recommends using a refined complex terrain model if a violation of a controlling increment is indicated by using any of the preferred screening techniques. As described herein, APC's model indicates exceedance of the maximum ambient 24-hour impact in the SNP for both SO_2 and NO_x. For this reason, APC's air impact analysis should be based on a complex terrain model. The ISC3 model used by APC defines complex terrain as terrain where the receptor elevation is above the release height of the source. The APC permit application lists the ground elevation of the facility as 2,060 feet above mean sea level. The highest stack elevation is listed as 120 feet above ground for emission point H4-DC1. The surrounding terrain reaches elevations in excess of 2400 feet (approximately 1 mile from the source), and as high as 3400 feet at Panther Peak (approximately 4 miles from the source). This meets the ISC3 model's definition of complex terrain. The ISC Short Term Model (ISCST3) allows the user to specify complex terrain, as it incorporates the COMPLEX1 screening model. However, the modeling performed by APC does not appear to account for complex terrain. This may introduce a serious flaw in the model results. According to EPA guidance, when estimating air quality credits due to source shut down or emissions reductions, negative emissions could be entered into the model as part of the calculations. APC's methodology for calculating emissions increases includes emissions reductions from several sources, including Kilns 1-3, improved dust control on unpaved roads, and additional paving of unpaved areas. Much of the contemporaneous net emissions increase estimates are based on emissions reductions. It is not stated in APC's assumptions that any steps were taken to correct for the potential inaccuracies associated with this which may result in the model underestimating the impacts due to the RIMOD III modifications because of overestimating air quality credits.

In addition the APC air impact analysis was conducted using one year of on-site measurements collected between January 1, 1989 and December 31, 1989. These measurements included 10-meter wind speed, wind direction, and temperature. Upper air measurements were collected from the National Weather Service (NWS) airport site in Tucson, AZ. It is not reasonable to assume that one year of meteorological data is sufficient to ensure that worst case conditions are represented in the model results. EPA recommends that five years of representative meteorological data should be used when estimating concentrations with an air quality model, with consecutive years from the most recent, readily available 5-year period preferred (40 CFR 51 Appendix W: Guideline on Air Quality Models). Failure to follow EPA's recommendation to use representative meteorological data necessarily compromises the utility of the model, as it is possible that the data used does not reflect worst case conditions for the Rillito, AZ site.

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NOTICE OF SERVICE

The accompanying petition and complaint to EPA Administrator Carol Browner in regard to Arizona Portland Cement was sent via first class mail to the following individuals.

Sanford Lewis
October 6, 1998

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