**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

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| **METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO,** | ) | |
| **Petitioner,** | ) | |
| **v.** | ) | **PCB No. _____** **(Variance – Water)** |
| **ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,** | ) | |
| **Respondent.** | ) | |

**PETITION FOR VARIANCE FROM CHLORIDES STANDARDS**

The Metropolitan Water Reclamation District ("MWRD"), by its attorneys, Barnes & Thornburg LLP, and pursuant to Section 35(a) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/35(a), and Part 104 of Title 35 of the Illinois Administrative Code, 35 Ill. Admin. Code § 104.100 *et seq.*, hereby petitions the Illinois Pollution Control Board ("Board") for a variance authorizing discharges from its O'Brien, Calumet, Stickney and Lemont wastewater treatment plants ("Plants") and from the Combined Sewer Overflow ("CSO") outfalls into the Chicago Area Waterways System ("CAWS") pursuant to the terms and conditions outlined in this Petition for Variance ("Petition").

In Docket 2008-009, the Board has been engaged in an extensive rulemaking process regarding designated uses, effluent limitations and water quality standards for the CAWS. Subdocket D has involved the setting of water quality standards for the protection of aquatic life. The Board has now adopted final aquatic life water quality standards for the CAWS, effective July 1, 2015. (39 Ill. Reg. 9388, 9423, 9433 (July 10, 2015)) Included in that rulemaking are new standards for chlorides.

During the rulemaking, it was noted that most reaches of the CAWS are not currently meeting the new chlorides standards. Regulated parties pointed out that effluent limits based on the new standards may be difficult or impossible to meet, and the costs of installing technological controls at their facilities would be enormous. Therefore, it was requested that the Board provide a delay in the application of the new standards, so stakeholders could convene and develop options for addressing these concerns while making progress in reducing chloride levels in the CAWS. The Board granted this request, specifying that the new chlorides standards would not apply until July 1, 2018.

IEPA has asked the MWRD, due to its role as a significant stakeholder on CAWS issues, to convene and lead a work group to address chloride issues during the 3-year time period provided by the Board. An initial stakeholder meeting was held on January 27, 2015, and the next meeting will be held on August 4, 2015.[1] The District is committed to working closely with IEPA and the other stakeholders to move that process forward. The goals would be that before the end of the 3-year period provided by the Board, the stakeholders will have developed, and begun implementing, a set of best management practices (BMPs) for addressing chloride issues, and will have taken action to develop and propose, for adoption by the Board, appropriate mechanisms to address compliance issues, possibly including a water quality variance.

The MWRD appreciates the Board's willingness to provide that 3-year time period before compliance with the new chloride standards is required. However, some confusion has arisen regarding the legal character of that delay in the compliance requirement. As the Board is aware (and has noted recently in this rulemaking), applicable statutes provide that if a party wants to obtain a stay of the effectiveness of a Board rule, then that party must apply for a variance (or adjusted standard, which is not relevant here) within 20 days of the effective date of the rule. In

[1] Documents regarding those meetings are included in Exhibit 1.

the current situation, it is not entirely clear whether the "effective date" of the new chloride standards is July 1, 2015 or July 1, 2018. The new standards clearly do not apply until 2018. However, the full CAWS rule, as adopted in the Illinois Register, specifies that the effective date is July 1, 2015. And, the chloride provision does not clearly state otherwise. Therefore, for these purposes, we believe that the effective date is 2015, and that in order to obtain a stay, a variance application must be filed by July 21, 2015.

We understand that as the Board adopted the CAWS rule, the new chloride standards do not apply to the CAWS reaches, and may not be implemented in the MWRD's permits, until after July 1, 2018. Therefore, the MWRD does not need a variance to take effect until after that date, and it does not need a stay of the standards to take effect until after that date. And hopefully, by that date, the work group will have completed its efforts successfully, including by securing a variance or other relief mechanism to address compliance concerns. However, it is not guaranteed that the entire work group process, and the variance (or other relief) process will be completed by then, including US EPA approval of any variance.

Therefore, there is a risk that after the 3-year period has passed, the chloride standards will become effective, and compliance with those standards will be required, without any final mechanism being in place to address the compliance concerns. If that happens, the MWRD could be faced with substantial compliance and liability issues. It could be subject to penalties for not meeting standards that, based on currently available information, may be impossible to meet, and which, at a minimum, could require installation of extensive new controls, at potential costs in the billions of dollars, over a period of multiple years. To avoid that result, the MWRD is submitting this request for a variance, within the timeframe provided for obtaining a stay of the chloride standards.

It is important to note that other regulated parties located on the CAWS will face similar risks as described here for the MWRD. Therefore, the Board should consider issuing a variance and stay of the chloride standards that applies to all dischargers into the CAWS, to ensure that the dischargers are not unfairly penalized if the chloride work group process has not been completed by the end of the 3-year compliance period. In addition, since the CAWS waterways ultimately flow into the Lower Des Plaines River (LDPR), the Board should extend the variance and stay to the LDPR and to all dischargers into the LDPR. This relief would only be needed on an interim basis, since once the work group has completed its work, we would expect that a full suite of BMPs would have been developed, and implementation begun, and a permanent regulatory mechanism – whether a variance or some other device – would have been developed, applied for, and obtained, with all required approvals. At that point, the permanent regulatory structure would replace the temporary variance and stay. This process would ensure that while on the pathway toward ultimate resolution of the chloride issue, improvements in discharge levels would be made, while undue compliance risks and unnecessary costs would be avoided. If the Board determines that it cannot grant this relief to all dischargers to the CAWS and the LDPR, then it should, at a minimum, issue variances to the MWRD, based on this petition, and to all other dischargers to the CAWS or the LDPR that submit appropriate variance petitions.

Each element required by the Illinois regulation governing variance petition contents is set forth in italics and the required information provided below.

## A. Requirements from Which a Variance Is Sought

***A statement describing the regulation, requirement, or order of the Board from which a variance is sought. If variance from a regulation is sought, the statement must include the Illinois Administrative Code citation to the regulation as well as the effective date of that regulation. If variance from a requirement or order of the Board is sought, the statement must include the citation to that requirement or order of the Board promulgating that requirement, including docket number;***

As noted above, the Board has adopted new aquatic life standards for the CAWS, including for chlorides. These standards were adopted by an Opinion and Order of the Board in Docket R2008-09, Subdocket D, dated June 18, 2015. The final rules appeared in the Illinois Register on July 10, 2015 (30 Ill. Reg. 9388, 9423, 9433). The chlorides standards, which are in 35 IAC 302.407(g)(2) and (g)(3), are not currently met on a consistent basis and cannot be met on a consistent basis during the term of the variance that is being requested here by the MWRD.

The O'Brien Water Reclamation Plant discharges to the North Shore Channel, the Calumet Water Reclamation Plant discharges to the Little Calumet River, and the Stickney and Lemont Water Reclamation Plants discharge to the Chicago Sanitary and Ship Canal. Each Plant is operating with an NPDES permit, which requires MWRD to not cause or contribute to violations of water quality standards, including those established in the R2008-09 rulemaking.

Therefore, it is necessary for MWRD to be issued a five-year variance for each Permit in the form suggested in this Petition in order to avoid the imposition of an arbitrary or unreasonable hardship on the MWRD.

**B. Activity of the MWRD**

***A complete and concise description of the nature of petitioner's activity that is the subject of the proposed variance, including:***

***1) The location of, and area affected by, the petitioner's activity;***

The facility name and address for the "O'Brien" treatment plant is:

MWRDGC O'Brien Water Reclamation Plant
3500 West Howard Street
Skokie, Illinois 60076

The facility name and address for the "Stickney" treatment plant is:

MWRDGC Stickney Water Reclamation Plant
6001 West Pershing Road
Cicero, Illinois 60804

The facility name and address for the "Calumet" treatment plant is:

MWRDGC Calumet Water Reclamation Plant
400 East 130th Street
Chicago, Illinois 60628

The facility name for the "Lemont" treatment plant is:

MWRDGC Lemont Water Reclamation Plant
13 Stephen Street
Lemont, Illinois 60439

In addition, the permits also cover discharges from CSO outfalls operated by MWRD described in more detail below. The area affected by the MWRD's activities is the CAWS, which includes each of the receiving waters which are identified below.

***2) The location of points of discharge, and, as applicable, the identification of the receiving waterway or land, or, if known, the location of the nearest air monitoring station maintained by the Agency;***

The O'Brien plant's point of discharge is the 001 Water Reclamation Plant Outfall and the receiving water is the North Shore Channel. The nearest air monitoring station is unknown and not relevant for the requested variance. In addition, the plant's Permit authorizes the following Combined Sewer discharges:

| **Discharge Number** | **Location** | **Receiving Water** |
|---|---|---|
| 101 | Sheridan Road | North Shore Channel |
| 102 | Green Bay Road | North Shore Channel |
| 103 | Emerson Street | North Shore Channel |
| 104 | Lake Street | North Shore Channel |
| 105 | Howard Street | North Shore Channel |
| 106 | Morse Avenue | North Shore Channel |
| 107 | North Branch Pumping Station | North Branch of Chicago River |

| | | |
|---|---|---|
| 109 | Rand Road | Des Plaines River |
| 110 | Niles Center Outlet Sewer – Oakton Street | North Shore Channel |

The Stickney plant's point of discharge is the 001 Water Reclamation Plant Main Outfall and the receiving water is the Chicago Sanitary and Ship Canal. The nearest air monitoring station is unknown and not relevant for the requested variance. In addition, the plant's Permit authorizes the following Combined Sewer discharges:[2]

| **Discharge Number** | **Location** | **Receiving Water** |
|---|---|---|
| 131 | Devon Avenue | Des Plaines River |
| 132 | Northwest Tollway | Des Plaines River |
| 133 | Foster Avenue | Des Plaines River |
| 134 | North Avenue | Des Plaines River |
| 135 | Chicago Avenue | Des Plaines River |
| 136 | Roosevelt Road | Des Plaines River |
| 142 | 38th and Racine Avenue | S. Fork of S. Branch of Chicago River |
| 143 | Laramie Avenue | Chicago San. and Ship Canal |
| 144 | Lombard Avenue | Chicago San. and Ship Canal |
| 145 | East Avenue | Chicago San. and Ship Canal |
| 146 | 13A Pump Station | Chicago San. and Ship Canal |
| 147 | 67th Street | Chicago San. and Ship Canal |
| 148 | 75th Street | Chicago San. and Ship Canal |

[2] The Permit also authorizes discharges, under specified circumstances, from emergency high level bypass Outfalls 002, 003 and 004.

| | | |
|---|---|---|
| 149 | Tri-State Tollway | Chicago San. and Ship Canal |
| 150 | Westchester Pump Station | Addison Creek |

The Calumet plant's point of discharge is the 001 Water Reclamation Plant Outfall and the receiving water is the Little Calumet River. The nearest air monitoring station is unknown and not relevant for the requested variance. In addition, the plant's Permit authorizes the following Combined Sewer discharges:[3]

| **Discharge Number** | **Location** | **Receiving Water** |
|---|---|---|
| 004 | WRP TARP Bypass (Bulkheaded) | Little Calumet River |
| 006 | Calumet 18H Inverted Syphon | Calumet Sag Channel |
| 007 | Calumet 20B Interceptor | Calumet Sag Channel |
| 010 | Glenwood Pump Station | Deer Creek |
| 151 | 94th Place | Calumet River |
| 152 | 122nd Street Pump Station | Calumet River |
| 153 | Edbrook Avenue | Little Calumet River |
| 154 | Throop Street | Calumet Sag Channel |
| 156 | Francisco Avenue | Calumet Sag Channel |
| 157 | Central Park | Calumet Sag Channel |
| 158 | Pulaski Road | Calumet Sag Channel |
| 160 | Ridgeland Avenue | Calumet Sag Channel |
| 163 | Sacramento | Calumet Sag Channel |

[3] The Permit also authorizes discharges, under specified circumstances, from emergency high level bypass Outfalls 002 and 003.

The Lemont plant's points of discharge are the 001 Water Reclamation Plant Outfall and the 002 Wet Weather Treatment Outfall. The receiving water is the Chicago Sanitary and Ship Canal. The nearest air monitoring station is unknown and not relevant for the requested variance. In addition, the plant's Permit authorizes Combined Sewer discharges from Outfall 002, which discharges to the Chicago Sanitary and Ship Canal.

***3) An identification, including docket number, of any prior variance issued to the petitioner and, if known, the petitioner's predecessors, concerning similar relief;***

There have been no variances issued to the MWRD concerning similar relief.

***4) An identification, including number, of the environmental permits held by petitioner for the activity which may be affected by grant of variance;***

The following permits held by MWRD would be affected by the grant of the requested variances:

O'Brien:

NPDES Permit No. IL0028088[4]
Issue Date: January 22, 2002
Effective Date: March 1, 2002
Expiration Date: February 28, 2007

Stickney:

NPDES Permit No. IL0028053
Issue Date: December 23, 2013
Effective Date: January 1, 2014
Expiration Date: December 31, 2018

Calumet:

NPDES Permit No. IL0028061[5]
Issue Date: January 22, 2002
Effective Date: March 1, 2002
Expiration Date: February 28, 2007

[4] The subsequently issued permit was remanded by the Pollution Control Board on December 18, 2014 and has not yet been reissued.
[5] The subsequently issued permit was remanded by the Pollution Control Board on December 18, 2014 and has not yet been reissued.

Lemont:

NPDES Permit No. IL0028070
Issue Date: January 25, 2008
Effective date: February 1, 2008
Modification Date: March 21, 2008
Expiration Date: January 31, 2013

***5) The number of persons employed by the petitioner's facility at issue and the age of that facility;***

The MWRD has a total of approximately 1862 employees.

O'Brien began operations in 1928, and has 189 employees.

Stickney began operations on the west side portion of the plant in 1930. The southwest portion of the plant was placed into service in 1939. The plant has 637 employees.

Calumet began operations in 1922, and has 259 employees.

Lemont begin operations in 1961, and has 3 employees.

***6) The nature and amount of the materials used in the process or activity for which the variance is sought and a full description of the particular process or activity in which the materials are used;***

The Plants are wastewater treatment facilities for the treatment of municipal sewage. The associated CSO outfalls provide relief from local flooding during heavy wet weather events due to finite pumping and hydraulic capacity of the collection system and treatment plants. The Permits (attached hereto as Exhibits 2, 3, 4 and 5) provide details concerning each Plant's processes and authorized discharges as well as the discharge limits that will be affected by the requested variances.

***7) A description of the relevant pollution control equipment already in use; and***

O'Brien: Treatment consists of screening, grit removal, sedimentation, activated sludge and final settling. Sludge generated during the wastewater treatment processes is pumped to

Stickney for further treatment. O'Brien treats domestic wastewater for part of the City of Chicago, Evanston, Skokie, Glenview, and other surrounding municipalities.

Stickney: Treatment consists of both primary and secondary treatment. Primary treatment is divided between two sets of processes, with flow entering on the "West Side" and the "Southwest Side." The West Side treats through screenings, skimming tanks, and Imhoff tanks, with grit flowing through channels and sludge going directly to digesters. The Southwest Side treats via screenings, aerated grit tanks, and preliminary gravity settling tanks. Grit is dewatered and preliminary sludge is screened and concentrated before digestion. All flow then goes through a common secondary system of four-pass aeration tanks and final settling clarifiers. Sludge is anaerobically digested and then dewatered and aged for land application and other beneficial reuse. Stickney treats domestic and industrial wastewater for Berwyn, a portion of Chicago, Cicero, Des Plaines, Maywood, Melrose Park, Oak Park, Park Ridge and 38 other cities.

Calumet: Treatment consists of screening, grit removal, primary settling, activated sludge, final settling, and sludge handling facilities. Calumet treats domestic wastewater for part of the City of Chicago, Calumet City, Oak Lawn, Tinley Park and other surrounding municipalities.

Lemont: Treatment consists of screening, grit removal, primary settling, activated sludge, and final settling. Sludge generated during the wastewater treatment process is concentrated and trucked to either the Stickney or Calumet treatment plants. Lemont treats domestic wastewater for the Village of Lemont.

*8) The nature and amount of emissions, discharges or releases of the constituent in question currently generated by the petitioner's activity;*

The discharges for each Plant and CSO Outfall are described in the respective permit applications and permits which are attached hereto as Exhibits 2-9. Exhibit 10 shows the level of chlorides in the discharges from the O'Brien, Calumet and Stickney Plants from December 2014 through April 2015. (Chlorides data has not been collected for the Lemont Plant or for the CSO Outfalls.) Exhibit 11 shows the number and percent of times, during the period from 2004 through 2013, that chlorides discharge levels at the O'Brien and Stickney plants exceeded the chlorides standards that have now been adopted.

## C. Compliance with the Regulation Cannot Be Achieved by the Compliance Date

***Data describing the nature and extent of the present or anticipated failure to meet the regulation, requirement, or order of the Board from which variance is sought and facts that support petitioner's argument that compliance with the regulation, requirement, or order of the Board was not or cannot be achieved by any required compliance date;***

Results from sampling for chloride levels in the CAWS during the period 2010 through 2014 (Exhibit 12) indicate that many of the reaches do not consistently meet the new winter standards. This will result in stringent effluent limits being imposed on the MWRD's Plants that discharge to those waters. Data for the District's effluents show that the Plants do not currently meet the levels allowed by the standards on a consistent basis. As indicated in Exhibit 11, effluents from the O'Brien and Stickney plants would have exceeded those standards a total of 27 times during the period 2004 through 2013 (counting only days on which samples were taken). Looking at more recent data, from the winter of 2014-2015 (Exhibit 10), the O'Brien plant would have exceeded the standards 16% of the time; Calumet would have exceeded 5% of the time; and Stickney (subject to different standards, since it is located on the Chicago Sanitary and Ship Canal) would have exceeded 4% of the time for the acute standard and 7% for the chronic standard. Data have not been collected at the Lemont Plant (chloride sampling of that

effluent will begin shortly), but the effluent levels of chloride will likely be similar to those exhibited at the other Plants, and given that Lemont is, like Stickney, located on the Chicago Sanitary and Ship Canal, its exceedance rate would probably be similar to that seen at Stickney.

There are, in essence, only two ways that chloride levels in the MWRD's effluents be reduced: applying end-of-pipe controls, or reducing chloride inputs into the sewer system that sends wastewater to the Plants for treatment. As to end-of-pipe controls, that would likely involve installation of reverse osmosis (RO) units at each of the Plants. There are several problems with use of RO in this situation. First, the MWRD's Plants are very large, and treat an enormous amount of flow. The Stickney Plant is among the very largest in the world (with a design average flow of over 1.2 billion gallons per day), and the O'Brien and Calumet Plants are also very large, with design average flows of 333 million and 354 million gallons per day, respectively. We are aware of no situation in which RO has been applied to a wastewater flow of that size. The systems would require a large amount of land – likely more than is available on the urban-located sites of the District's Plants. Moreover, even if an RO system that large is feasible, the costs would be tremendous. Data on other RO installations show costs ranging between $4 million and $18 million per 1 million gallons a day (mgd).[6] Applying that cost range to the total flow from the District's Plants (2.324 billion gallons a day) results in an overall cost estimate of between $8 billion and $42 billion, which would impose an unbearable financial burden on the MWRD and its taxpayers.[7] Adding to that burden would be the high energy requirements for RO facilities, which would impose large operational costs – and would increase

[6] Examples are as follows: (1) a drinking water project for Western Springs, IL, to treat 1.7 mgd, cost $6, 627,820 ; (2) a plant for Tampa Bay, FL, to treat 24 mgd, cost $110 million ; (3) a plant for San Diego County, to treat 54 mgd, cost $1 billion . (Supporting documents are attached as Exhibits 13-15.)

[7] These costs do not include the costs for disposal of the brine that results from RO, which can be extremely high. Water ReUse Association Desalination Committee, *Seawater Desalination Costs White Paper* (September 2011, Revised January 2012) (attached as Exhibit 16).

the carbon footprint of the MWRD significantly, thereby creating environmental problems rather than reducing them. Beyond all of those issues, there is timing: design, installation and commencing operation of such large RO systems would take many years – well beyond the 3 years currently provided in the rules. For all of those reasons, applying RO controls to the MWRD's effluents, to meet the new chloride standards, is not an option that be applied, whether now or in 3 years, when the standards become applicable.

The other compliance option for the MWRD (and for other dischargers as well) would be to reduce the level of chlorides coming into the MWRD's sewer system. This would be done primarily through implementation of practices that reduce use of road salt during the winter, including, where appropriate, substitution of other materials to address ice and snow on the roads. A number of communities in the Northern U.S and Canada have been researching and applying these types of practices to address chloride water quality concerns.[8] The effectiveness of these practices in reducing chloride loadings to waterways, and in reducing ambient chloride levels in those waterways, has varied significantly across the range of communities and programs.[9] There are many factors that will affect the success of these programs, and in order to be effective, a program needs to be developed on a watershed-specific basis, taking into account the unique factors that are present in that situation – including consideration of any public safety issues that could result from reducing use of road salt for deicing operations. Even with such a tailored program, there is often a significant lag time between implementation of the program

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[8] See, for example, Kilgore, Gharabaghi, Perera, *Ecological benefit of the road salt code of practice* (2013); Transportation Association of Canada, *Syntheses of Best Practices – Road Salt Management, Chapter 11 – Successes in Road Salt Management: Case Studies* (April 2013); DuPage River Salt Creek Workgroup/CDM, *Chloride Usage Education and Reduction Program Study: Final Report* (Aug. 16, 2007); New Hampshire Department of Environmental Services, *Chloride Reduction Implementation Plan for Dinsmore Brook Watershed, Windham, NH* (attached as Exhibits 17-20).

[9] See Stone, Emelko, Marsalek, Price, Rudolph,Saini, Tighe, *Assessing the Efficacy of Current Road Salt Management Programs* (July 26, 2010), for University of Waterloo and National Water Research Institute (attached as Exhibit 21).

and seeing a significant improvement in water quality,[10] so it is critical to include, as a component of the program, an adaptive management element, so that as results are seen (or not seen), the program can be adjusted to improve the long-term situation.

The right mix of chlorides BMPs for the CAWS can, obviously, not be determined right now, immediately after the new standards have been adopted. It will take significant time and effort, involving the regulatory agencies and other stakeholders, to review relevant data, assess various options, and come to a consensus as to the proper measures that should be applied – and as to the schedule for implementation. That work will be the primary function of the Work Group that the MWRD, at the request of IEPA, is currently convening, with its next meeting scheduled for a few weeks from now – August 4, 2015. The materials provided to the participants in the first Work Group meeting (attached in Exhibit 1) make it clear that development of an effective suite of BMPs for the CAWS is the main goal of the Work Group. That BMP program will then be the foundation for a legally and scientifically sound regulatory compliance structure for chlorides in the CAWS. Whether that turns out to be some kind of "group" or "waterbody" variance, or individual variances for specific dischargers that are all based on a common program, or some other type of mechanism, will be determined by the group, in consultation with the regulatory agencies. The goal will be to get all of this work – the development of the BMP program, as well as the creation and regulatory approval of the compliance structure - complete before July 1, 2018, when the new chlorides standards will become legally applicable. That way, there will be a seamless transition between the 3-year "work period" and the later "compliance period." Measures to reduce chloride loadings will be

[10] Meals, Dressing, Davenport, *Lag Time in Water Quality Response to Best Management Practices: A Review*, J. Environ. Qual. 39:85-96 (2010) (attached as Exhibit 22).

developed, then implemented, then assessed for effectiveness so that necessary adjustments can be made.

## D. Efforts Necessary to Achieve Immediate Compliance

***A description of the efforts that would be necessary for the petitioner to achieve immediate compliance with the regulation, requirement, or Board order at issue. All possible compliance alternatives, with the corresponding costs for each alternative, must be set forth and discussed. The discussion of compliance alternatives must include the availability of alternate methods of compliance, the extent that the methods were studied, and the comparative factors leading to the selection of the control program proposed for compliance. The discussion of the costs of immediate compliance may include the overall capital costs and the annualized capital and operating costs;***

The efforts that would be needed for the MWRD to achieve immediate compliance with the new chloride standards (and the efforts needed to achieve compliance in 3 years) are discussed above, along with the related compliance costs.

## E. Arbitrary or Unreasonable Hardship

***Facts that set forth the reasons the petitioner believes that immediate compliance with the regulation, requirement, or order of the Board would impose an arbitrary or unreasonable hardship;***

As explained above, immediate compliance with the new chlorides standards is simply not possible. Currently, the new standards are not being attained on a consistent basis in the CAWS or in the effluents from the MWRD's Plants. Neither end-of-pipe controls (such as RO) nor an effective BMP program could be implemented immediately (even if they did not present the cost and other practical challenges discussed above). Imposition of RO, on any time schedule, would be so costly as to impose an arbitrary and unreasonable hardship. An effective BMP program, developed over the next 3 years by the Work Group, may be able to bring about compliance with the new chlorides standards (although the extent to which it would result in compliance is still to be determined), but there is simply no way to make that determination until the full BMP program is developed. Therefore, at this time, there is no method available to bring

about compliance with the new chlorides standards that would not create an arbitrary and unreasonable hardship.

## F. Compliance Plan and Suggested Conditions

***A detailed description of the compliance plan, including:***

***1) A discussion of the proposed equipment or proposed method of control to be undertaken to achieve full compliance with the regulation, requirement, or order of the Board;***

As stated above, there is no equipment or method of control available that the MWRD can undertake to achieve full compliance with the new chlorides standards. Over the next 3 years (and longer if necessary), the MWRD will continue to work with IEPA and other stakeholders, as the convener and leader of the CAWS chloride Work Group. During this process, the MWRD will facilitate the Work Group's efforts to develop an effective BMP program to reduce chloride loadings to the CAWS, as well as to develop, and secure regulatory adoption and approval of, a compliance mechanism to address chloride issues as presented in NPDES permits for dischargers to the CAWS. During this time period, the MWRD would provide periodic reports to the Board as to the status of the Work Group's discussions. At the conclusion of the Work Group's efforts, the MWRD (likely with other stakeholders) would provide a final report to the Board, including recommendations and any proposed changes to regulations that are necessary in order to implement the recommendations.

***2) A time schedule for the implementation of all phases of the control program from initiation of design to program completion; and***

As stated above, the MWRD would convene and lead the CAWS chlorides Work Group, for the next 3 years (and longer if necessary), in its efforts to address chlorides issues in the CAWS. Periodic status reports would be filed with the Board, and a final report would be filed at the conclusion of the Work Group's efforts.

*3) The estimated costs involved for each phase and the total cost to achieve compliance;*

The costs to the MWRD of convening and leading the Work Group efforts have not been estimated. As stated above, the cost of installing RO systems to control chlorides (if feasible) could amount to between $8 and $42 billion. The cost of an effective BMP program for the CAWS area has not yet been estimated; that will be one of the issues that the Work Group will address over the next 3 years.

## G. Environmental Impact

*A description of the environmental impact of the petitioner's activity including:*

*1) The nature and amount of emissions, discharges, or releases of the constituent in question if the requested variance is granted, compared to that which would result if immediate compliance is required;*

Immediate compliance with the new chloride standards is not possible. Even installation of RO systems (if feasible) would take many years, and could cost between $8 and $42 billion. Moreover, the additional energy needs to run the additional equipment would increase the MWRD's carbon footprint, thereby possibly causing adverse environmental impacts. In contrast, we do not believe that current discharges of chlorides from the MWRD's Plants cause any significant adverse environmental impacts, as compared to the situation that would result if the Plants were discharging at the levels provided in the new standards.

*2) The qualitative and quantitative description of the impact of petitioner's activity on human health and the environment if the requested variance is granted, compared to the impact of petitioner's activity if immediate compliance is required. Cross-media impacts, if any, must be discussed; and*

See response to item 1 above.

*3) A statement of the measures to be undertaken during the period of the variance to minimize the impact of the discharge of contaminants on human, plant, and animal life in the affected area, including the numerical interim discharge limitations that can be achieved during the period of the variance;*

The interim measures that would be taken during the period of the variance to address chloride issues are described above.

**H. Citation to Supporting Documents or Legal Authorities**

***Citation to supporting documents or legal authorities whenever they are used as a basis for the petition. Relevant portions of the documents and legal authorities other than Board decisions, reported state and federal court decisions, or state and federal regulations and statutes must be appended to the petition;***

Relevant portions of supporting documents and legal authorities are cited throughout this document, with Exhibit numbers, and are appended.

**I. Copies of Permits**

***If the requested variance involves an existing permit or a pending permit application, a copy of the material portion of the permit or permit application must be appended to the petition;***

The relevant permits and permit applications are appended as Exhibits 2-9.

**J. Suggested Conditions of the Variance**

***Any conditions petitioner suggests for the requested variance;***

Over the next 3 years (and longer if necessary), the MWRD will continue to work with IEPA and other stakeholders, as the convener and leader of the CAWS chloride Work Group. During this process, the MWRD will facilitate the Work Group's efforts to develop an effective BMP program to reduce chloride loadings to the CAWS, as well as to develop, and secure regulatory adoption and approval of, a compliance mechanism to address chloride issues as presented in NPDES permits for dischargers to the CAWS. During this time period, the MWRD will provide periodic reports to the Board as to the status of the Work Group's discussions. At the conclusion of the Work Group's efforts, the MWRD (with other stakeholders if possible) will

provide a final report to the Board, including recommendations and any proposed changes to regulations that are necessary in order to implement the recommendations.

## K. Beginning and End Dates of the Variance

***A proposed beginning and ending date for the variance. If the petitioner requests that the term of the variance begin on any date other than the date on which the Board takes final action on the petition, a detailed explanation and justification for the alternative beginning date;***

The proposed beginning date for the variance for each Plant would be the date that the Permit for that Plant is modified to include the variance. The term for the variance would be for a maximum of five years, ending no later than the effective date of any regulatory changes that are adopted by the Board to address chloride issues in the CAWS, after submittal of the final report of the CAWS chlorides Work Group, but in any event no later than the expiration date of the applicable Permit.

## L. Consistency with Federal Law

***A discussion of consistency with federal law, including an analysis of applicable federal law and facts that may be necessary to show compliance with federal law as set forth in Section 104.208 of this Part;***

Under Title IX of the Act (415 ILCS 5/35-38), the Board is responsible for granting variances when a petitioner demonstrates that immediate compliance with the Board regulation(s) would impose an "arbitrary or unreasonable hardship" on the petitioner. 415 ILCS 5/35(a). The Board may grant a variance, however, only to the extent consistent with applicable federal law. *Id.*

Section 104.28(b) of the Board rules states the following with regard to consistency with federal law for all petitions for variances from the Board's water pollution regulations:

> All petitions for variances from Title III of the Act, from 35 Ill. Adm. Code Subtitle C, Ch. I "Water Pollution", or from water pollution related requirements of any other Title of the Act or Chapter of the Board's regulations, must indicate whether the

> Board may grant the relief consistent with the Clean Water Act (CWA) (33 USC 1251 et seq.), USEPA effluent guidelines and standards, any other federal regulations, or any area-wide waste treatment management plan approved by the Administrator of USEPA pursuant to Section 208 of the CWA (33 USC 1288).

The requested variances in this matter will be consistent with federal law. More specifically, the variance must meet one or more of the conditions in 40. C.F.R. § 131.10(g) which provides:

> States may remove a designated use which is not an existing use, as defined in Sec. 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:
>
> (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
>
> (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
>
> (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
>
> (4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
>
> (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
>
> (6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

Under the circumstances here, there are natural conditions, man-caused conditions, hydrologic modifications, and physical conditions as to the CAWS that will prevent attainment

of the use during the time period covered by this variance. Therefore, the variance would be justified pursuant to 131.10(g)(2), (g)(3),(g)(4) and (g)(5).

**M. Affidavit**

***An affidavit verifying any facts submitted in the petition; and***

Affidavits from Dr. Thomas C. Granato and Manju Sharma are attached as Exhibit 23 and 24.

**N. Request for Hearing**

***A statement requesting or denying that a hearing should be held in this matter.***

The MWRD requests that a hearing be held in this matter.

Dated: July 21, 2015

**METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO**

By: _____
One of Its Attorneys

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