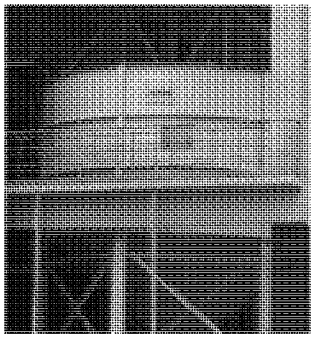
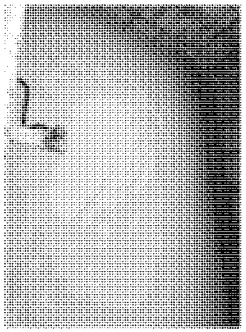
# Changxing FGD Project Operation

OASYS WATER

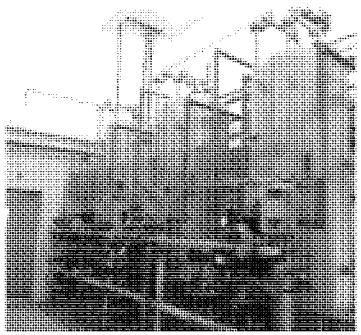
## Pretreatment



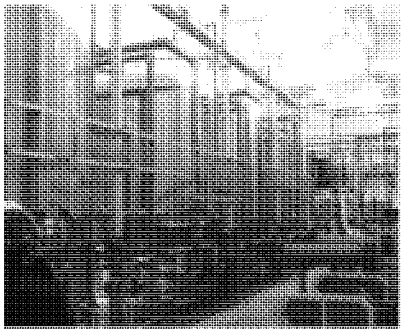
Solids Contacting Clarifier



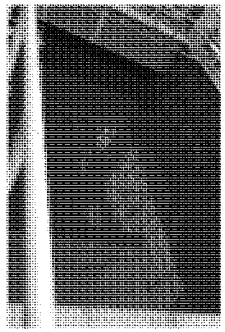
Filter Press Feed



Multi-media Filtration

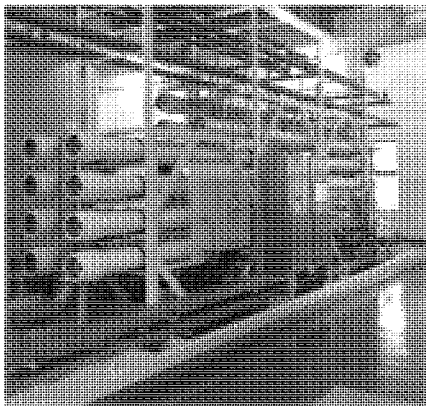


WAC Ion Exchange

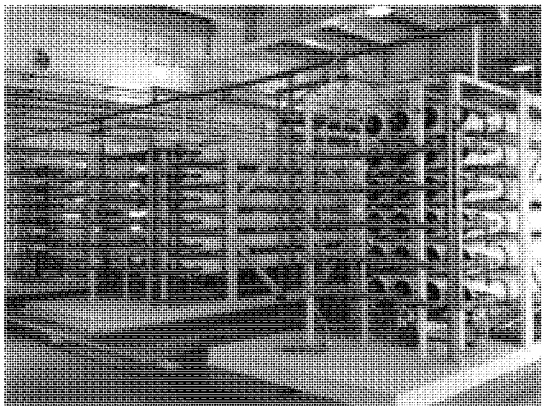


Pre-Concentrating RO Feed

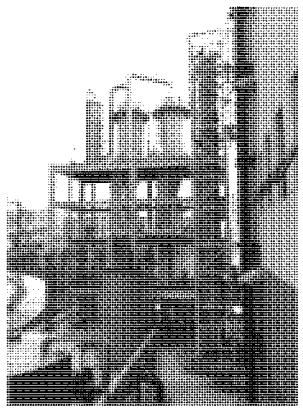
## MBC & Crystallizer



Pre-Concentrating RO



Oasys FO Trains



Draw Solution Recovery (R) & Crystallizer (L)

ZLD Salts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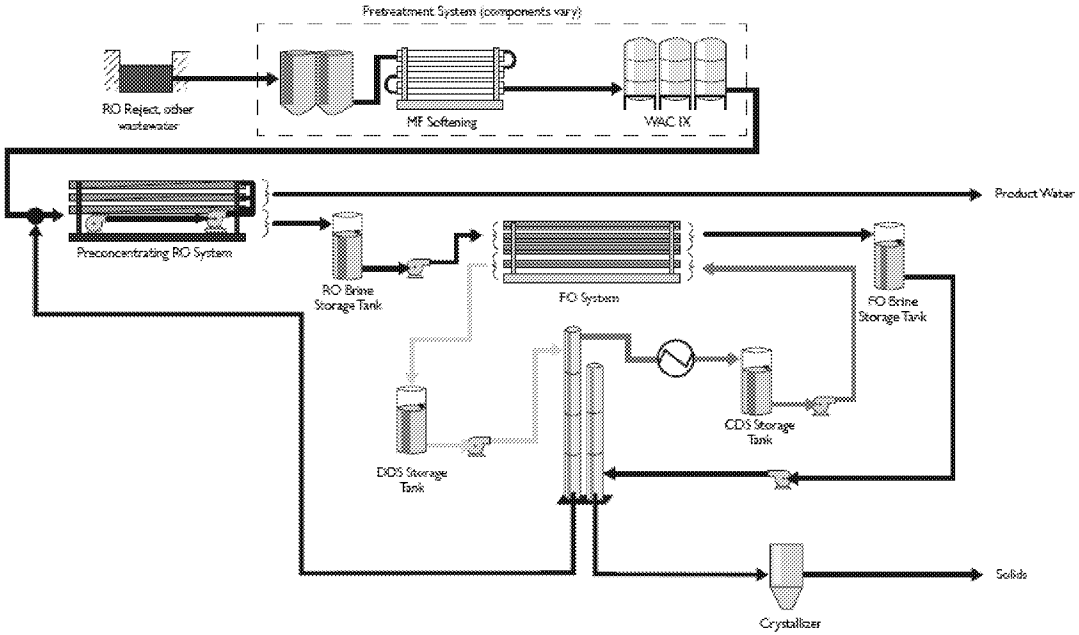
# Yangmei Taihua CTX ZLD Project

## First BOT ZLD Project in China

- Industrial scale project in central China treating combined process streams to ZLD in a coal-to-chemical (CTX) complex
- Beijing Woteer and Oasys partner on pretreatment, MBC, crystallizer system design and deployment
  - Project is structured as Build – Operate –Transfer (BOT)
  - Commissioning Q2 and Q3 2017
- Process design includes
  - 1,200 $m^3/d$ overall capacity
  - Pretreatment including Tubular MF + WAC IX softening
  - MBC operating at 93% recovery
  - 82 $m^3/d$ crystallizer





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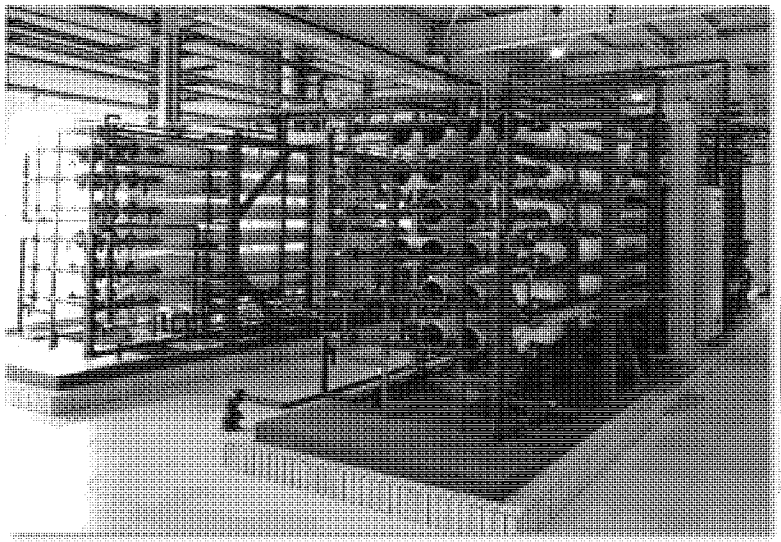
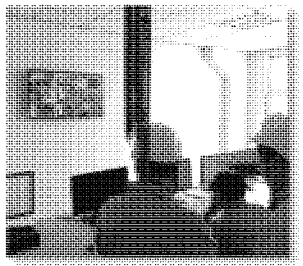
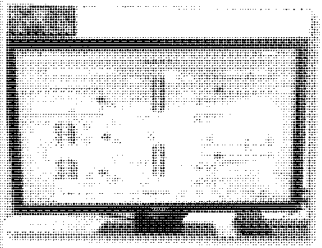
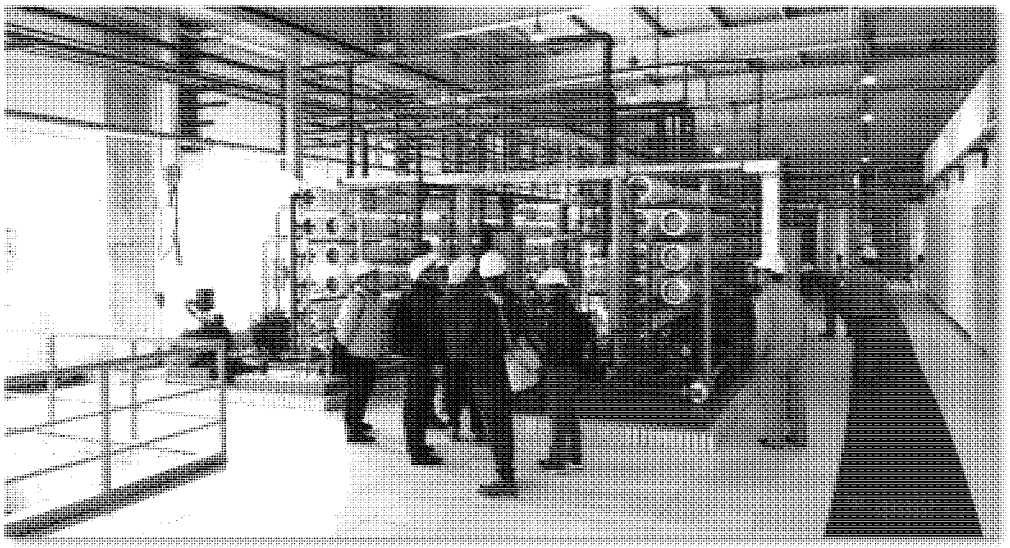
# Yangmei Taihua CTX ZLD Project

## First BOT ZLD Project in China







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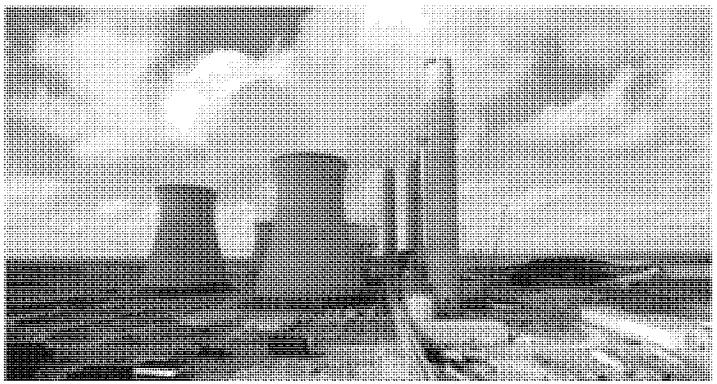
# MBC Demonstration for US Power

## FGD wastewater treatment & US EPA ELG compliance

- Oasys deployed on site at the Electric Power Research Institute (EPRI) Water Research Center located at Georgia Power's Plant Bowen Power Station, co-managed by Southern Company, EPRI, and Southern Research Institute
- Demonstration of ClearFlo-MBC technology for FGD wastewater treatment and ELG compliance
- Two months of run time, including 24x7 campaigns to verify performance, reliability, and safety
- Funding members receive full report and joint publication of results to others in US Power

Oasys MBC Pilot System



Georgia Power's Plant Bowen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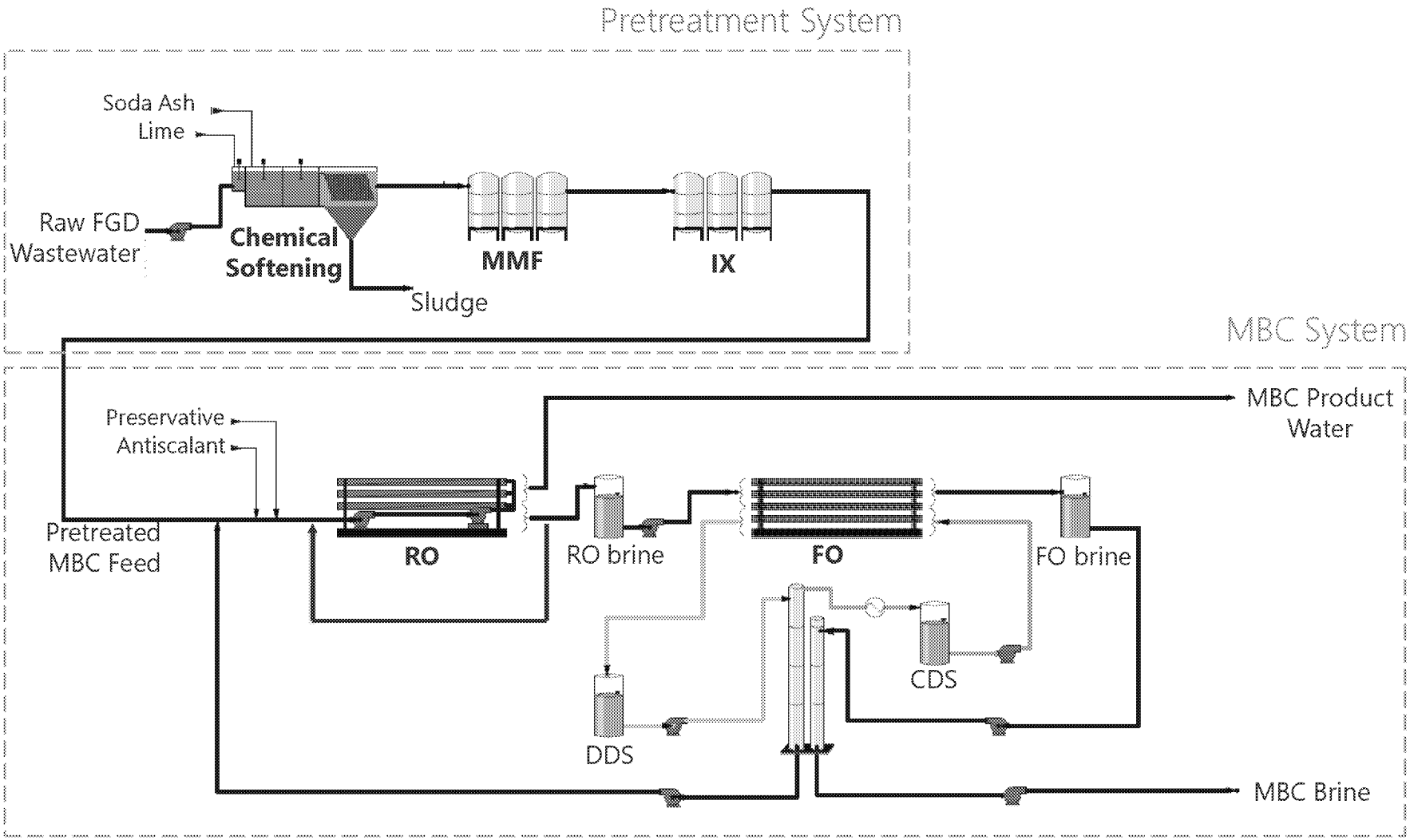
# End-to-End Treatment Process

## Designed to demonstrate the Oasys commercial approach





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# Wastewater Design Window

## Understanding variability enables a solid design

| Parameter | Unit | Design Window | Operation |
|---|---|---|---|
| Raw FGD Water Flow | gpm | 2 – 6 | 6 – 9 |
| Total Dissolved Solids | ppm | 10,000 – 30,000 | 12,000 – 20,000 |
| Sodium | ppm | 1,200 – 4,100 | 50 – 1,000 |
| Chloride | ppm | 5,400 – 16,500 | 4,000 – 10,000 |
| Sulfate | ppm | 1,000 – 1,800 | 500 – 1,200 |
| Calcium | ppm | 2,100 – 5,300 | 2,400 – 3,300 |
| Magnesium | ppm | 200 – 800 | 300 – 1,000 |
| Arsenic | ppb | 4 – 6 | <5 – 30 |
| Mercury | ppt | 5,000 – 150,000 | 1,500 – 6,500 |
| Selenium | ppb | 300 – 1,900 | 26 – 110 |
| Nitrate-Nitrite | ppm-N | 11 – 73 | <1 - 20 |


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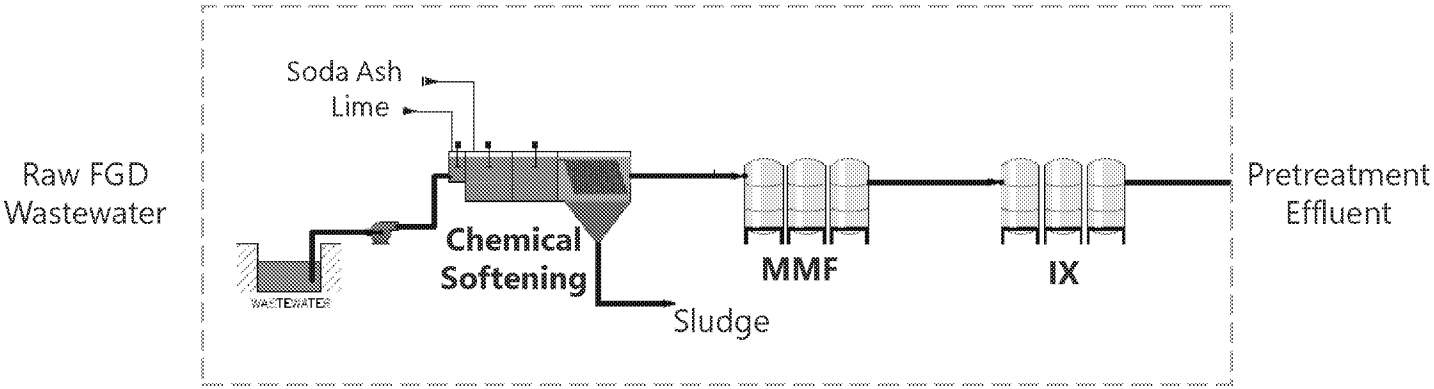
# Snapshot of Pretreatment Performance




| | Raw FGD Wastewater | MMF Effluent | Pretreatment Effluent | Pretreatment Sludge |
|---|---|---|---|---|
| Flow, gpm | 8 | 6.5 | 6.5 | 1.5 |
| TDS, mg/L | 13,308 | 15,900 | 15,292 | NA |
| Sulfate, mg/L | 1,094 | 1,034 | 1,070 | 1,051 |
| Ca, mg/L | 2,875 | ND (<11) | ND (<11) | 8,210 |
| Mg, mg/L | 620 | 14 | 7 | 1,789 |
| Hardness, mg/L- $CaCO_3$ | 9,739 | 85 | 56 | NA |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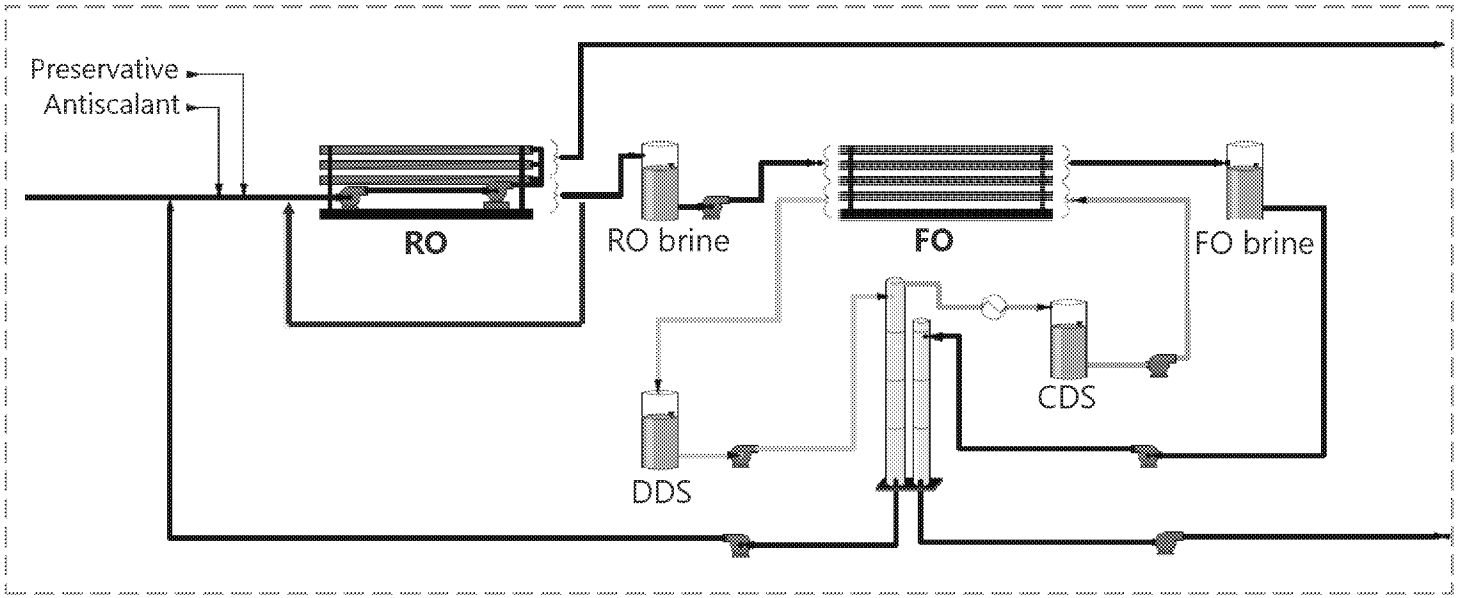
# Snapshot of MBC Performance




| | MBC Feed | MBC Brine | MBC Product |
|---|---|---|---|
| Flow, gpm | 4.75 | 0.35 | 4.40 |
| TDS, mg/L | 14,600 | 235,000 | <250 |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# Proven ELG Compliance

## MBC demonstrated to achieve compliance with ELG Existing Source, Voluntary Incentive Program and New Source limits for metals and nitrate-nitrite

| | | Existing Sources | | Voluntary Incentive & New Sources | | Raw FGD Water | MBC Feed Water | MBC Product Water |
|---|---|---|---|---|---|---|---|---|
| Analyte | Units | 30-Day Average | Daily Max | 30-Day Average | Daily Max | Data Based on Oasys Demonstration Pilot | | |
| Arsenic | ppb | 8 | 11 | - | 4 | 33 | 29 | ND (<5) |
| Mercury | ppt | 356 | 788 | 24 | 39 | 2,920 | ND (<200) | ND (<200) |
| Selenium | ppb | 12 | 23 | - | 5 | 313 | 250 | 3.4 |
| Nitrate-Nitrite | ppm-N | 4.4 | 17 | - | - | 15 | 13 | 0.9 |
| TDS* | ppm | - | - | 24 | 50 | 13,300 | 14,600 | <250 |
| Boron | ppm | - | - | - | - | 187 | 159 | 4.4 |

*TDS for Voluntary Incentives Program & New Source Regulation can easily be achieved with a second pass RO, which is included in the MBC commercial design, but not the pilot unit


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# Summary of US Power Demonstration

- Oasys ClearFlo-MBC System successfully demonstrated for treatment of FGD wastewater at Plant Bowen in Georgia in Fall 2016
- Pretreatment with chemical precipitation softening, MMF, and IX polishing to reduce hardness, metals, silica, and solids
- 300+ total hours of continuous operation, with no cleanings
- 90-95% of raw water recovered as product for reuse or discharge, brines produced up to 300,000 mg/L
- Product water proven to be in compliance with the new EPA Effluent Limitation Guidelines (ELGs) for coal power sources

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# Key Takeaway:
## Oasys is Gaining Momentum in Multiple Geographies and Applications

- Oasys FO is…
  - An innovative approach to treating the most difficult waters
  - A reliable alternative to thermal evaporators for industrial applications
  - Viable and commercial with multiple operating installations worldwide
    - Power Generation, Oil & Gas, Chemical Manufacturing

- Oasys has demonstrated a viable cost point and performance envelope for brine concentration & ZLD applications

- Oasys technologies are commercial, proven, economical, and ready to deliver customer solutions to difficult water challenges


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Think Forward. Think Oasys.


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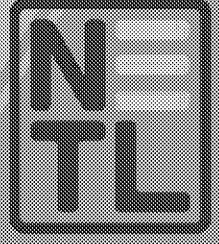
# Status of Effluent Limitation Guidelines for Coal-Fired Power Plants and Associated NETL Systems Analyses

Daniel Gingerich, Eric Grol, Meagan Mauter

May 11, 2018




NATIONAL ENERGY TECHNOLOGY LABORATORY

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Status of Effluent Limitation Guidelines for Coal-Fired Power Plants and Associated NETL Systems Analyses


## Author List:

### Carnegie Mellon University

*Dr. Daniel Gingerich, Dr. Meagan Mauter*

### NETL

*Eric Grol*

### Energy Process Analysis Team (EPAT)


The authors wish to acknowledge the excellent guidance, contributions, and cooperation of the NETL staff, particularly Travis Shultz and Marc Turner.

Status of Effluent Limitation Guidelines for Coal-Fired Power Plants and Associated NETL Systems Analyses

## 1. Purpose

The purpose of this white paper is to provide a description of the regulatory landscape related to wastewater use for new and existing coal-fired power plants (CFPP), characterize the key issues (such as technology limitations) associated with these regulations, present an overview of the related work currently underway in SEA, and offer suggestions for future water R&D opportunities.

## 2. Background

The growth of wastewater volume production in recent years associated with CFPP is largely due to the deployment of wet FGD systems in response to the 1990 Clean Air Act Amendments. Under Clean Air Act regulations promulgated by the EPA, CFPP are required to install air pollution control devices (APCDs) to treat combustion gasses by removing air pollutants (e.g. sulfur dioxide, nitrous oxides, particulate matter, mercury) before discharge to the atmosphere. Conventional APCDs include selective catalytic reduction (SCR, for $NO_x$ removal), activated carbon injection (ACI, for Hg removal), electrostatic precipitators or baghouse filters (for particulate removal), dry sorbent injection (for $SO_3$ control) and flue gas desulfurization systems (FGD, for $SO_2$ removal). Several of these systems frequently use water to move solid end products of APCDs to a holding pond or treatment system (e.g. fly ash sluice water from a particulate matter control system) or in the control process (e.g. water used to form a slurry in a FGD system). Trace elements contained within the coal fuel feedstock partition within the various plant streams, including APCD process water streams. Three of the six wastewater streams regulated under the 2015 Effluent Limitation Guidelines (ELGs) (FGD wastewater, flue gas mercury control wastewater, and fly ash sluice water) are produced in these

conventional APCDs at CFPPs (the other streams being boiler ash handling wastewater, combustion residual leachate wastewater, and gasification wastewater).

For compliance with $SO_2$ standards, many CFPPs have installed FGD systems, with the majority of plants using wet FGD technology (e.g. spray scrubbers, tray scrubbers) due to the higher $SO_2$ removal observed in wet systems (>90%) compared to dry systems (50-90%, depending on the reagent used). In the majority of wet FGD systems $SO_2$ is removed by contacting flue gas with a limestone slurry in a full forced oxidation mode creating a wastewater-saturated gypsum in the process. This wastewater also contains trace elements (e.g. selenium, arsenic, or mercury) in the particulate and dissolved forms that have been absorbed into the scrubbing liquor. This scrubbing liquor is recycled through the FGD system until the chloride concentrations pose a corrosion risk for the FGD unit. Chloride concentrations have typically been maintained at less than 20,000 mg/L based on absorber material selection (a process economics trade-off) via a slip stream that is diverted for treatment, though systems can be run to maintain chloride concentrations as high as 40,000 mg/L.

## 3. Effluent Limitation Guidelines (ELGs) Status

EPA finalized a rule[1], on September 30, 2015, that revises the effluent limitations guidelines and standards for discharges from CFPPs. The final rule sets federal limits on toxic metals that CFPPs are allowed to discharge in wastewater streams originating from flue gas desulfurization, fly ash handling, bottom ash handling, flue gas mercury control, coal combustion residual leachate, and gasification of fuels such as coal and petroleum coke. The rule updates

[1] https://www.epa.gov/eg/steam-electric-power-generating-effluent-guidelines-2015-final-rule

will be enforced through the National Pollutant Discharge Elmination System as part of the facility permitting process. Specific compliance deadline is at the discretion of the permitting authority but should be as soon as possible, beginning November 1, 2018 but no later than December 31, 2023. The emission limits for regulated pollutants from new and existing combustion and gasification sources are shown in Table 1.

Table 1 – ELG Discharge Limits for New Combustion and Gasification Sources

| Stream | Standard (New Sources) | New Source Performance Standard/Pretreatment Standard for New Sources (NSPS/PSNS) | Standard (Existing Sources) | Best Available Technology/Pretreatment Standard for Existing Sources |
|---|---|---|---|---|
| Fly ash transport water | Zero liquid discharge (ZLD) | Dry handling | ZLD | Dry handling |
| Bottom ash transport water | ZLD | Dry handling/closed loop | ZLD | Dry handling/closed loop |
| Flue gas mercury control transport water | ZLD | Dry handling | ZLD | Dry handling |
| Coal combustion residual leachate | Arsenic, 5.98 µg/L<br>Mercury, 159 ng/L | Chemical Precipitation | TSS, 100 mg/L | Impoundment |
| Wet FGD wastewater | Arsenic, 4.0 µg/L<br>Mercury, 17.8 ng/L<br>Selenium, 5.0 µg/L<br>Total dissolved solids (TDS), 14.9 mg/L | Evaporation | Arsenic, 5.98 µg/L<br>Mercury, 159 ng/L<br>Selenium, 7.5 µg/L<br>Nitrate/Nitrite, 1.3 mg/L<br>**OR**<br>Voluntary incentive program[2] (same as new source numerical standard) | Chemical Precipitation, Biological Treatment |
| Gasification wastewater | Arsenic, 4.0 µg/L<br>Mercury, 1.08 ng/L<br>Selenium, 147 µg/L<br>TDS, 15.2 mg/L | Evaporation | Arsenic, 4.0 µg/L<br>Mercury, 1.08 ng/L<br>Selenium, 147 µg/L<br>TDS, 15.2 mg/L | Evaporation |
| | | | | |

[2] As part of the best available technology (BAT) for existing sources, the 2015 final rule establishes a voluntary incentives program that provides more time (until December 31, 2023) for plants to implement new BAT requirements, if they adopt additional process changes and controls that achieve limitations on mercury, arsenic, selenium, and TDS in FGD wastewater, based on evaporation technology. The voluntary incentive emission standard for FGD wastewater from existing sources is equivalent to the FGD wastewater emission limits applicable to new sources.

The rule encourages (but does not require) existing plants to commit to meeting even more stringent limits for pollutants in the flue gas desulfurization wastewater, plus a limit on total dissolved solids, based on evaporation technology, by giving them until the end of 2023 to meet the more stringent limits. In the 2015 final rule, this is referred to as the voluntary incentives program.

In a new final rule[3] issued in September 2017, EPA announced it would conduct a rulemaking to evaluate and possibly revise best available technology (BAT) effluent limitations and pretreatment standards only as they pertain to bottom ash transport water and FGD wastewater streams for existing sources. To avoid unnecessary costs that facilities may incur in making changes, the agency postponed compliance dates for those requirements for two years. The agency estimated that it would take about three years to propose and finalize revised effluent limitations guidelines and standards, suggesting it could issue a new rule in the fall of 2020. The final rule postponing compliance dates is "intended only as a relatively short-term measure until EPA completes the next rulemaking, and EPA anticipates that the next rulemaking will necessarily address compliance dates in some fashion." All other requirements, as issued in the September, 2015 rule, remain in force. However, through NPDES enforcement, more stringent discharge rules could be imposed based on receiving water concerns.

Compliance with the ELGs is expected to be a costly endeavor for CFPPs. For existing facilities, complying with the minimum requirements set by the ELGs is expected to cost $480

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[3] https://www.federalregister.gov/documents/2017/09/18/2017-19821/postponement-of-certain-compliance-dates-for-the-effluent-limitations-guidelines-and-standards-for

million annually[4], with FGD wastewater treatment costing an estimated $110 million annually[5]. EPA found that requiring ZLD systems for FGD wastewater treatment at existing and new facilities would be prohibitively expensive for many utilities; therefore, there is a critical need to develop alternative FGD wastewater treatment technologies that are low-cost with low chemical and electricity consumption.

## 4. Effluent Limitation Guideline Challenges and Opportunities

The standards for new and existing coal units (shown in Table 1) represents a clear push by EPA toward zero discharge or dry handling systems for bottom ash handling, fly ash handling, and flue gas mercury control systems. These systems have been widely deployed and the technology is well-established, therefore barriers to implementation are likely limited to compliance cost, relative to the remaining useful life of the unit. Likewise, coal combustion residual leachate standards, which are standards applicable to the ash impoundment, are based on technologies such as liners and monitoring that are already well-established. The emission standard of most concern to the industry is that for wet FGD wastewater streams, in particular, selenium.

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[4] U.S. Environmental Protection Agency Benefit and Cost Analysis for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category; U.S. Environmental Protection Agency: Washington, D.C., 2015.

5 Gingerich, D. B.; Sun, X.; Behrer, A. P.; Azevedo, I. M. L.; Mauter, M. S., Spatially resolved air-water emissions tradeoffs improve regulatory impact analyses for electricity generation. Proceedings of the National Academy of Science 2017, 1862–1867

EPA identified chemical precipitation/biological treatment as best available technology for existing CFPPs to remove metals. Using lime, organosulfide, and ferric chloride, these precipitants raise the pH of the wastewater and form insoluble precipitants that settle out of the wastewater system. While 85% of pollutant removal in the BAT treatment train occurs in the chemical precipitation process, the more environmentally toxic compounds that are regulated under the ELGs (mercury, arsenic, and selenium) are poorly removed. Metals removal in chemical precipitation can be increased with a microfiltration pretreatment step. However, selenium removal requires additional treatment.

In anaerobic biological treatment processes utilizing a fixed bed reactor design, microorganisms attached to an activated carbon substrate reduce the oxidized, more soluble forms of selenate and selenite to elemental selenium. This elemental selenium is attached to the microorganisms and the activated carbon bed until the bed is emptied and the activated carbon replaced. The activated carbon provides additional removal potential through adsorption. These biological treatment processes are very sensitive to changes in the oxidation-reduction potential (ORP), with an optimal ORP for selenium removal occurring between -300 mV and -150 mV. Process management to maintain this range is critical to the successful operation of anaerobic treatment processes and care must be taken in the operation of the entire FGD system and wastewater treatment train to reduce the presence of oxidants.

Selenium removal in FGD wastewater treatment systems has posed a significant challenge to CFPPs using the BATs identified by the EPA. Removing selenium using biological systems relies on microorganisms that are sensitive to co-contaminants in FGD wastewater, most notably chlorides. The ABMet system (which was the treatment technology used at the two coal units that served as the basis for the FGD wastewater standard in the final ELG rule) is designed

to handle chloride levels less than 25,000 mg/L; however, FGD wastewater can reach chloride levels of up to 40,000 mg/L. Microorganisms may also be impacted by high levels of nitrites/nitrates, variable contaminant loading, and variable hydraulic loading further reducing their ability to reduce selenium concentrations.

Following the announcement of the proposed ELGs, the electricity industry raised several concerns about the technology EPA identified as the Best Available Technology (BAT) for existing sources (chemical precipitation and biological treatment):

- Installations of chemical precipitation and biological treatment systems after promulgation of the ELGs have shown inconsistent arsenic and selenium removal for a variety of FGD wastewaters.
- While the EPA provided schedule incentives to achieve ZLD and recover process water from FGD wastewater, the economics of current ZLD technologies have not proven to be attractive enough in most cases.
- Uncertainties around the drivers of CFPP early retirements and the costs for technologies make it difficult to understand the necessary lifespans for FGD wastewater treatment systems and balance capital and operating expenses to minimize CFPP compliance costs.[6]

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[6] The most significant factor in selecting treatment technologies for existing units is likely to be cost (both capital and operating). The decision to retrofit for ELG compliance, or retire, is probably driven by a combination of compliance cost, and remaining useful life of the unit. From a utility perspective, an environmental compliance retrofit is likely viewed as a capital expenditure that yields no return (unlike an efficiency improvement, which also requires a capital expense, but yields savings in fuel cost). Therefore, it is desirable to "spread" the compliance cost over as many operating years as possible. For this reason, the existing coal units that are the likeliest candidates for retrofit are the largest, youngest ones.

- The shift in power generation in favor of intermittent renewable sources has resulted in many remaining coal facilities operating in a more cyclical manner. The large changes in wastewater flowrates (with subsequent changes in water quality) that follow from fluctuations in electricity generation led the Electric Power Research Institute (EPRI) to identify an "immediate need" to study the impacts of CFPP flexible operation on wastewater treatment systems[7].
- Continuous monitoring of the regulated constituents in FGD wastewater down to the levels required by this rule may still require further demonstration.

## 5. Relevant Systems Engineering and Analysis (SEA) Work to Date

SEA analysis efforts to date have focused only on new coal units burning bituminous coal, in support of the Energy Process Analysis Team's 2018 update to the Cost and Performance Baseline for Fossil Energy Plants, Volume 1: Bituminous Coal and Natural Gas to Electricity (Revision 4). The wastewater streams targeted by the ELG rule, and their treatment in the aforementioned SEA work, are shown in Table 2.

[7] Electric Power Research Institute Conditions Impacting Treatment of Wet Flue Gas Desulfurization Wastewater; Electric Power Research Instutute: Palo Alto, CA, 2017.

Table 2 – ELG Rule Stream and Treatment Summary for New Combustion and Gasification Sources

| Stream | NETL Design Basis and Analysis Assumption(s) | Treatment Technology |
|---|---|---|
| Fly ash transport water | Dry handling | N/A |
| Bottom ash transport water | Dry handling | N/A |
| Flue gas mercury control transport water | Dry handling | N/A |
| Wet FGD wastewater | Wet FGD blowdown to control Cl levels (20,000 ppm) | Spray dryer evaporator |
| Coal combustion residual leachate | Ash transported offsite | N/A |
| Gasification wastewater | All process water[8] recycled internally, only stream of concern is gasification wastewater | Brine concentrator / crystallizer |

The ELG treatment technology for new pulverized coal (PC) units represented in upcoming NETL studies is a spray dryer evaporator. This was determined to be a compliance technology capable of meeting a ZLD standard for wet FGD wastewater streams. While this goes beyond the strict new source standards for FGD wastewater, it was shown to be cost effective using a technology familiar to many power generators and provides a "future proof" solution to FGD wastewater treatment. In addition, this strategy is in commercial use at a minimum of two domestic supercritical PC units (Cliffside 6 and Iatan 2), and since spray dryer absorbers for $SO_2$ control are widely used already (dry FGD), buy-in and acceptance from the industry is assumed to be high.

[8] Covered gasification-related process streams include sour/grey water, steam stripper wastewater, sulfur recovery blowdown, slag handling, halogen removal, organic removal, and fly ash handling wastewater

It is also worth noting that wet FGD technology is not the only way to meet $SO_2$ emission limits. Dry scrubbers, which are based on a lime slurry and minimal water use, are essentially a zero-liquid discharge technology since there is no wastewater purge stream as in a wet scrubber. NETL's Cost and Performance Baseline for Fossil Energy Plants, Volume 3: Low Rank Coal and Natural Gas to Electricity reports are based on low-sulfur subbituminous coal[9], and utilize dry scrubbers to meet $SO_2$ emission limits required of new coal sources. Due to limitations imposed by the Best Available Control Technology (BACT) air permitting process, the likely $SO_2$ removal technology is expected to be wet FGD, except in limited instances where dry FGD is deemed appropriate. Approximately 84% of the installed, scrubbed domestic coal capacity is equipped with wet scrubbers (the remainder with dry scrubbers)[10].

## 6. CFPP R&D/Analysis Opportunities (Emphasis on SEA Work)

i. Characterizing Metals Speciation in FGD Wastewater as a Function of Coal Type

EPA has announced its intent to revisit the FGD wastewater emission standard for existing coal units[11]. This emission limit has been the cause of significant compliance concern for the industry. In discussing the expected revision, EPA

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[9] Wet scrubbers can achieve higher $SO_2$ removal than dry scrubbers. In general, dry FGD can achieve approximately 50-80% $SO_2$ removal (depending on S level in coal), while wet FGD can achieve in excess of 95% $SO_2$ removal. Dry FGD is typically limited to applications burning low-S coal.

[10] Ventyx database, accessed 11-2-17; includes all coal units with nameplate capacity greater than 200 MW

[11] https://www.federalregister.gov/documents/2017/09/18/2017-19821/postponement-of-certain-compliance-dates-for-the-effluent-limitations-guidelines-and-standards-for

may have telegraphed its desire to have different emission standards based on coal type (referred to as "subcategorization"). The original, 2015 version of the ELG rule applied the same FGD wastewater effluent limit to all plants, regardless of coal type. The EPA Administrator specifically mentioned lack of emissions data for plants burning different coal types in announcing the intent to revisit the rule[12].

EPA based the ELG emission standards on the performance of General Electric ABMet systems installed at G.G. Allen and Belews Creek. Unfortunately, these facilities burn similar coals, operate their air pollution controls in a similar fashion, and produce FGD wastewater with less than 10,000 mg/L of chlorides. As a result, industry has questioned the validity of basing regulations on two very similar systems as selenium removal in biological systems is sensitive to changes in TDS, temperature, and nitrate/nitrite levels.

In addition to coal type, air pollution control devices also significantly impact the speciation of trace elements and their concentration in wastewaters. Research conducted under DOE's mercury control program in the late 1990's and early

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[12] *"On Wednesday, Pruitt said in a statement that the new rule postponing the ELG compliance dates by two years "resets the clock for certain portions of the agency's effluent guidelines for power plants, providing relief from the existing regulatory deadlines while the agency revisits some of the rule's requirements."*

*"EPA intends to fully evaluate all of the issues raised in the petitions, including concerns about: cost and impacts to steam electric facilities, public availability of information on which the rule is based, lack of data for plants that burn certain types of coal, and validity of certain pollutant data used in EPA's 2015 Rule analysis.""*

2000's included characterizing Hg emissions as a function of coal type, and installed pollution control equipment. For example, this characterization work helped establish that those bituminous coal-fired power plants equipped with a fabric filter and spray dryer absorber would have a different stack Hg emission rate than other, similar bituminous coal units equipped with an electrostatic precipitator and wet FGD. Similar variations also occurred in coal plants burning subbituminous and lignite, with different pollution control systems. This characterization work helped develop the understanding of how mercury behaved across different pollution control devices (for example, how Hg can become oxidized across SCR and is more easily capture in wet FGD systems, or the degree to which Hg is bound up by unburned carbon in fly ash, and can be removed across fabric filters[13]). Since it is known that heavy metals concentrations in FGD wastewater are similarly variable, performing this metals characterization work in power plant effluent water streams (similar to the approach of DOE's mercury control program) could help inform technology developers about the performance requirements needed to meet emissions stadards set by federal effluent limitation guidelines.

Measuring trace element concentrations throughout power plants to understand the influence of air pollution control devices in trace elements partitioning across solid, liquid, and air phases is a fruitful area of research. However, these studies have typically not accounted for trace element speciation, limiting their ability to

[13] "Mercury Control: for Coal-Derived Gas Streams," First Edition, Edited by Granite, et. al., 2015

inform water treatment decisions where understanding speciation is critical. Furthermore, the conclusions of power plants trace element studies are often limited to the power plant where the analysis took place due to the large variability observed within power plants and their APCDs. Future research in this area should focus on increasing data collection and data standardization activities at coal-fired power plants for a variety of trace elements at intermediate points in the plant (for both base loading and cyclic operation), not just in the exhaust or coal combustion residuals leaving the plant, and translating the results of these sampling efforts into open-source, generalizable models to improve upon models built by academics and industry. As these models mature, they should become useful for identifying CFPPs at a risk for non-compliance with environmental regulations and assessing the required performance of treatment technologies.

ii. Assessing Applicability Limitations for Zero Liquid Discharge Spray Drying Evaporation

Although a spray dryer evaporator was determined to be an appropriate compliance technology for new PC units burning NETL-specification bituminous coal and operating at the stipulated FGD chloride levels, the technology selection may change based on coal- and plant-specific circumstances. Chloride levels are maintained in the scrubber by a continuous purge stream[14], and it is this wet FGD purge stream that is subject to the wastewater emission standards in the ELG rule.

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[14] In NETL's Bituminous Baseline series, chloride levels are controlled to 20,000 ppm in wet FGD scrubbing liquor.

Wet FGD wastewater stream flow rate (gallons per minute) is a strong function of chlorine content in the coal. Chloride concentration in the wet FGD scrubbing liquor is closely monitored to protect absorber vessel materials of construction. Chloride levels that are too high can result in corrosion of vessel walls and other internals. Alloys or lined absorber walls, which can tolerate higher chloride levels in the scrubbing liquor, are available but add cost to a wet FGD project. The benefit of more chloride-resistant materials of construction would be a smaller purge stream, and lower wastewater treatment costs.

A spray dryer evaporator uses a slipstream of combustion exhaust gas as a heat source to evaporate this wet FGD wastewater purge stream; however, since a portion of the flue gas typically used for boiler air inlet preheating is being diverted for use in the spray dryer evaporator, this technology results in a slight heat rate increase for the plant. For high Cl coals, the flue gas volume needed to evaporate the higher-volume FGD wastewater purge stream may be sufficiently large to outweigh the cost savings realized by spray dryer evaporator technology. This assessment of technology feasibility as a function of coal type has not been completed to date, but is anticipated for future study.

iii. Evaluation of Performance/Cost Impacts of Baseline & Advanced FGD Wastewater Treatment Technologies

Advanced FGD wastewater technologies including, but not limited to, membrane distillation or reverse osmosis systems may be too costly for widespread deployment. Understanding the major cost components for these technologies,

relative to BAT technologies, and characterizing potential areas for performance improvement and cost reduction, could identify future research opportunities.

Message

**From**: Elizabeth Gentile [Elizabeth.Gentile@erg.com]
**Sent**: 3/15/2018 6:03:39 PM
**To**: Jordan, Ronald [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b7b8e2766b3e4f29a86a3893d65023ff-RJordan]
**CC**: Elizabeth Gentile [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user3340e206]; Teresa Medley [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userb4e0e945]
**Subject**: Steam Electric - Project File Index
**Attachments**: SE Project File Index_031518.pdf; Draft Record Section Outline for 2019 Proposal_2017.11.17.docx

Ron:

Attached, please find the draft project file index for the steam electric reconsideration.

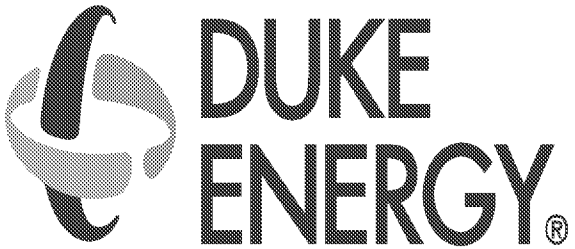
The records included in this index represent:

- Post-2015 Rule Docket Files (records uploaded to the docket in support of the reconsideration, in Record Sections 20-25)
- Post-2015 Rule Files Uploaded after 8/25/2017 (records uploaded to the project file since the last delivery of the index on 8/25/2017, in Record Sections 20-25)
- 2019 Proposal Files Uploaded after 8/25/2017 (records uploaded to the project file since the last delivery of the index on 8/25/2017, in Record Sections 26-34)

At this point in time, we didn't mark any new project file submissions as "docket" as we'd like to discuss with you the specific files we should be flagging for the docket. I've also attached our latest draft of the record section outline for your reference.

Thanks,
Liz

Elizabeth A. Gentile
Environmental Engineer
Eastern Research Group, Inc.
14555 Avion Parkway, Suite 200
Chantilly, VA 20151
elizabeth.gentile@erg.com
Phone: 484-364-4481



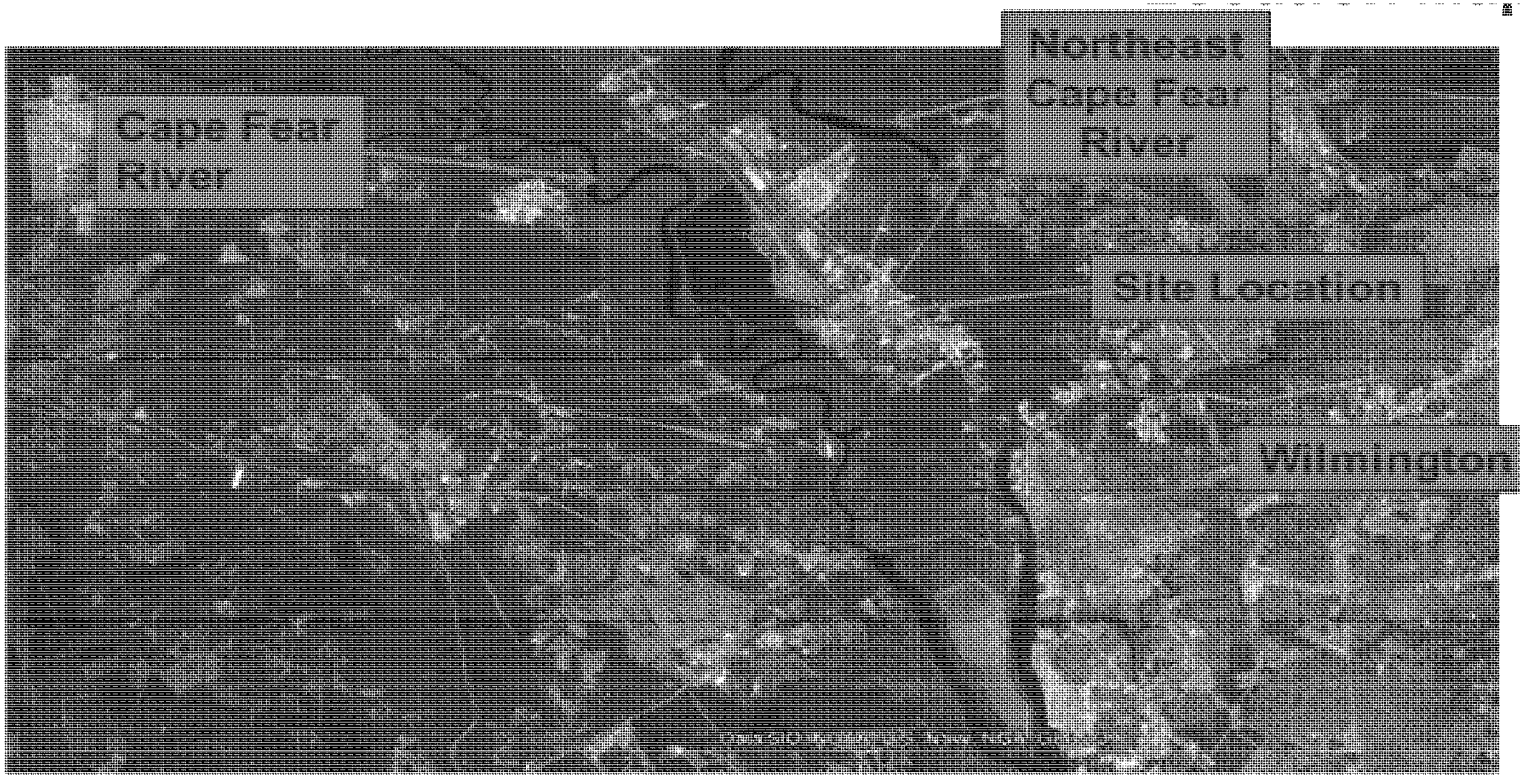

# Sutton

**EPA Site Visit**

December 12, 2017

DUKE ENERGY.

# L.V. SUTTON ASH BASIN CLOSURE



DUKE ENERGY.

# Summer 2014

# Fall 2016

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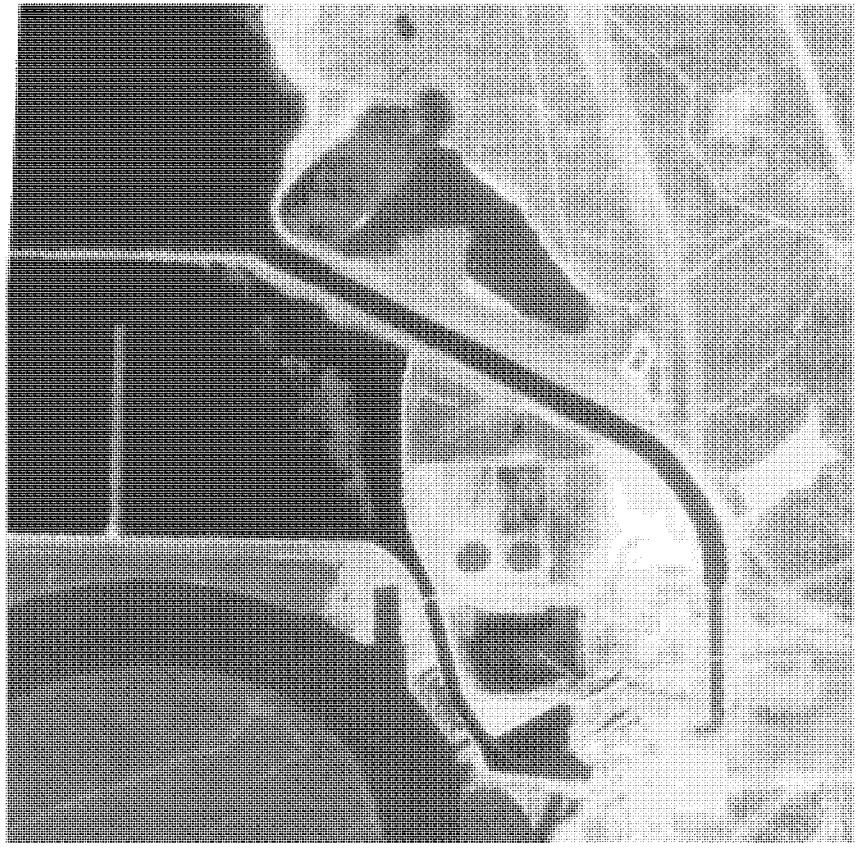
# L.V. SUTTON ASH BASIN CLOSURE

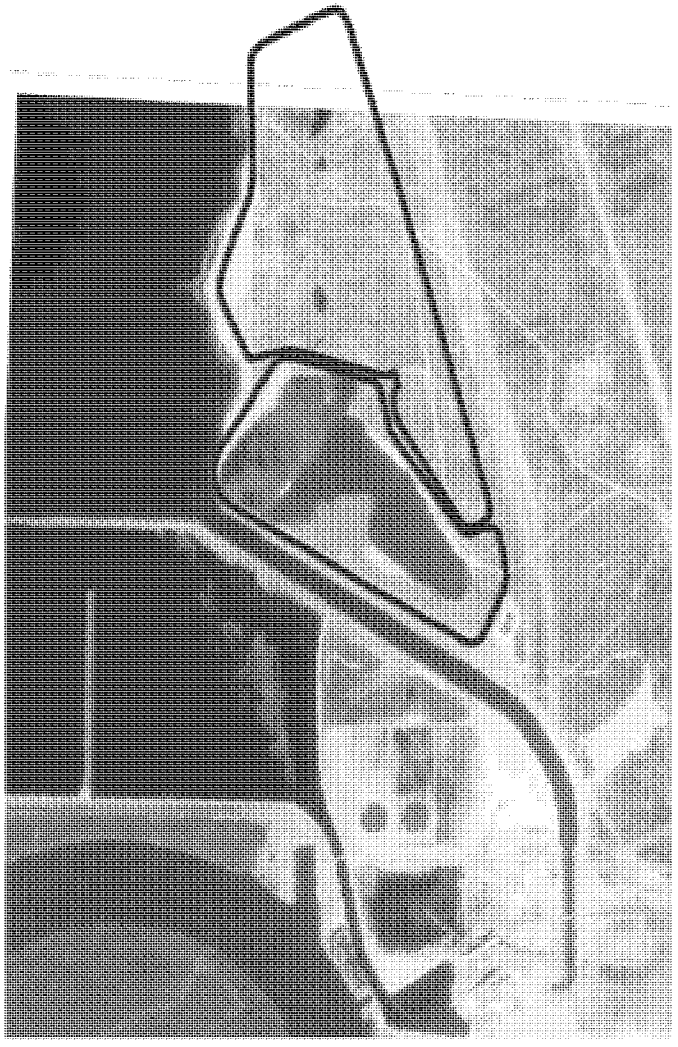
## SUTTON HISTORY

DUKE ENERGY.

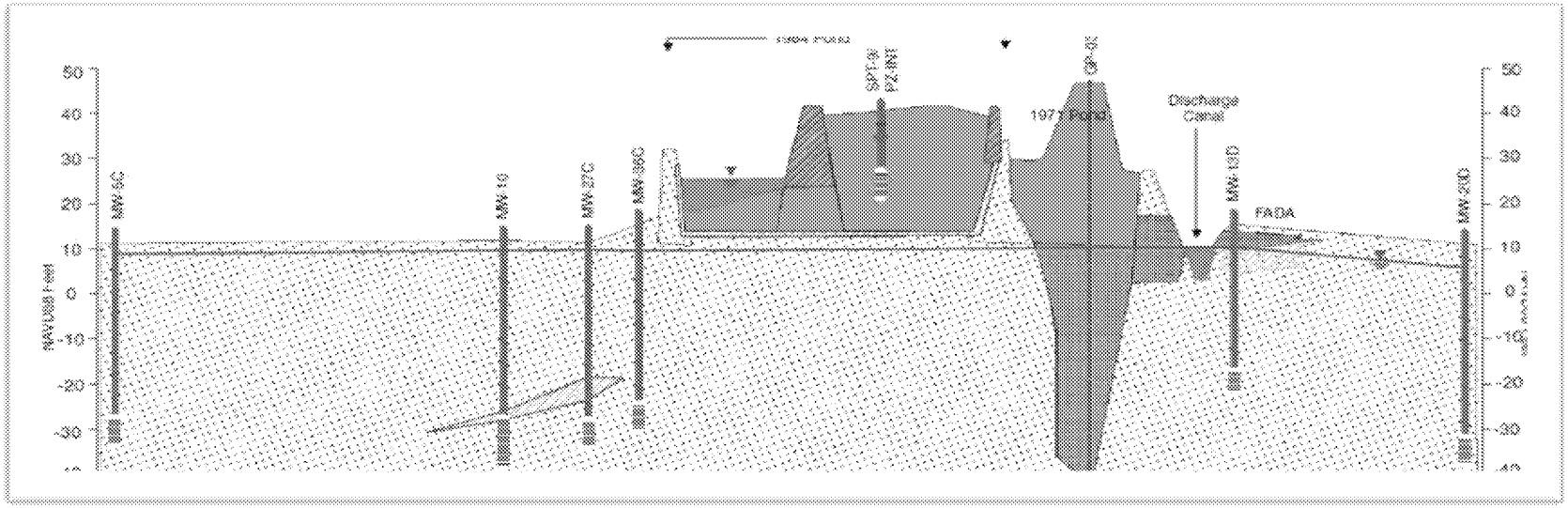
# L.V. SUTTON ASH BASIN CLOSURE

## SUTTON HISTORY

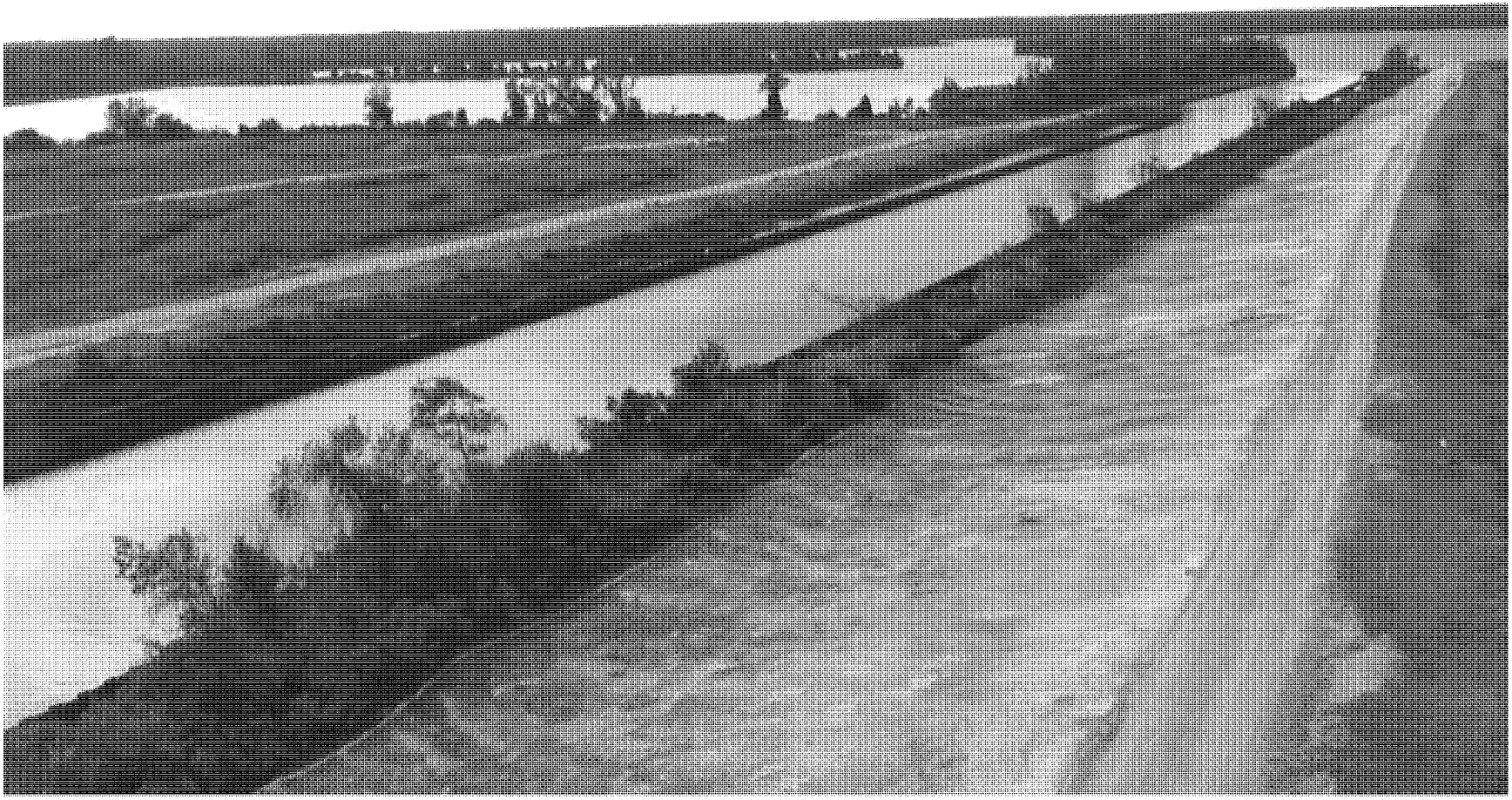




# Challenges- Excavation Logistics



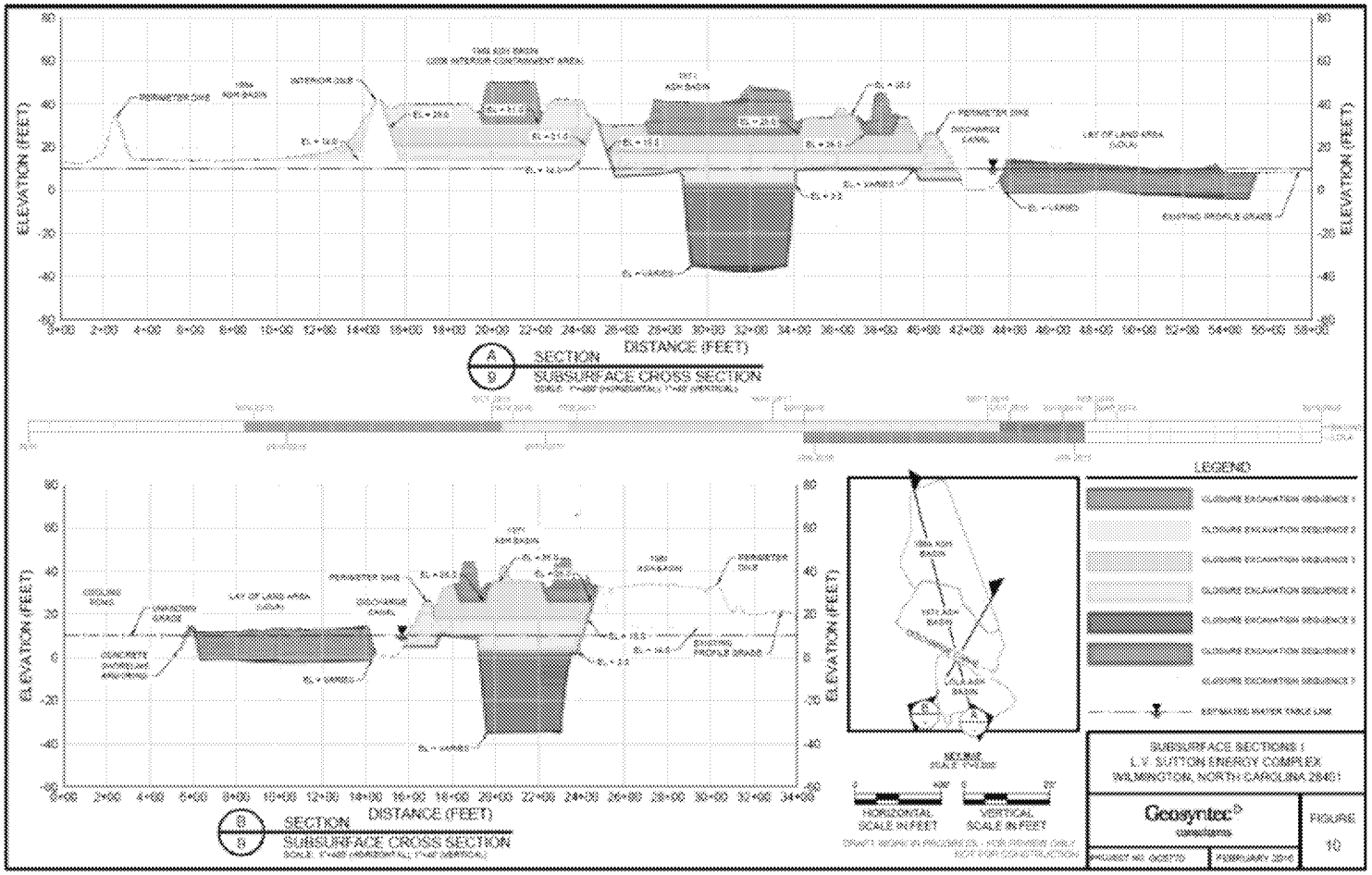
# 71 Dike and Canal



DUKE ENERGY

# L.V. SUTTON ASH BASIN CLOSURE

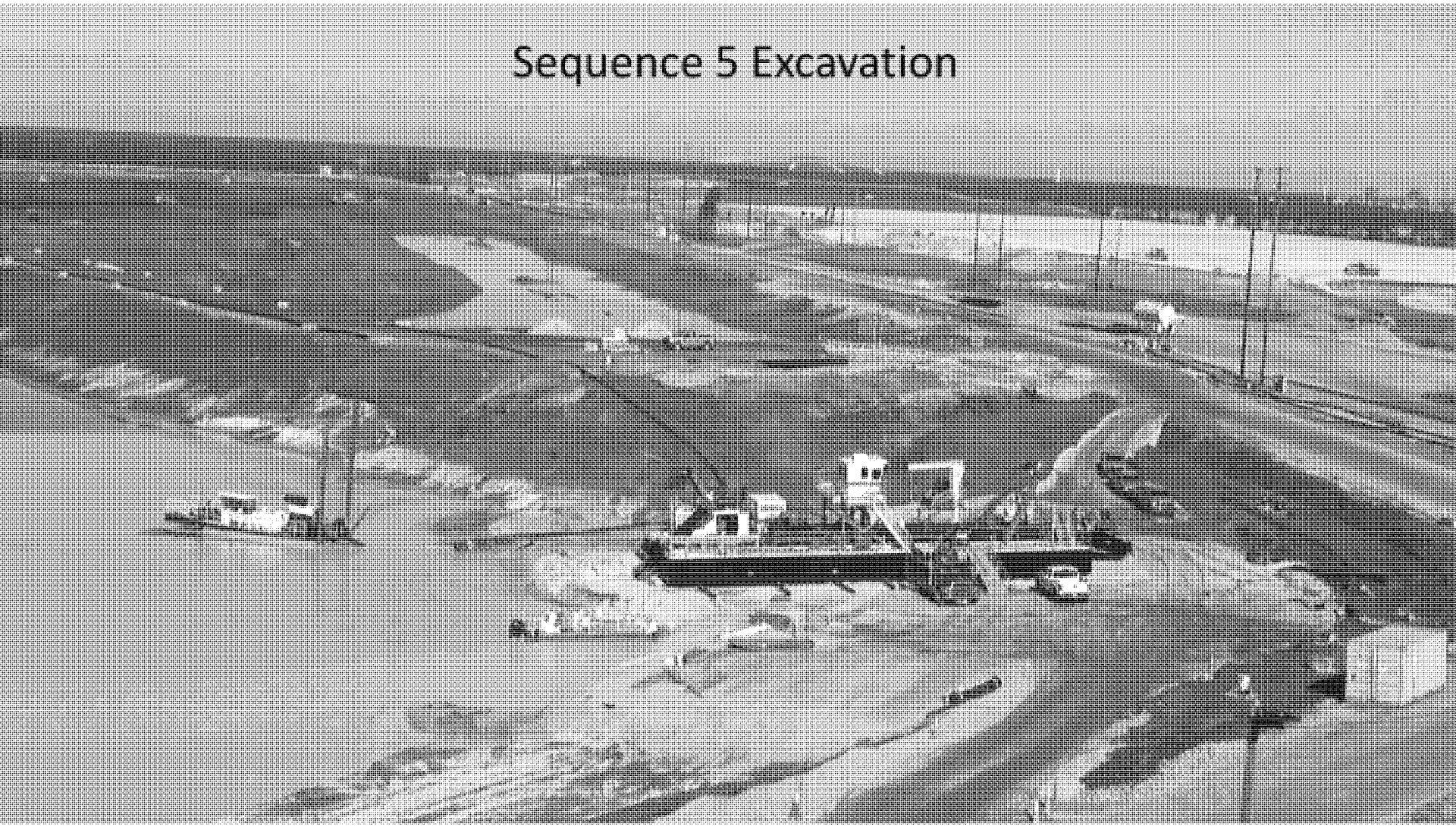
## SCOPE EXCAVATION



Rail Operations Fall 2016

# 71 Basin Sequence 3 & 4 Excavation

# Sequence 5 Excavation



# Landfill Footprint

DUKE ENERGY

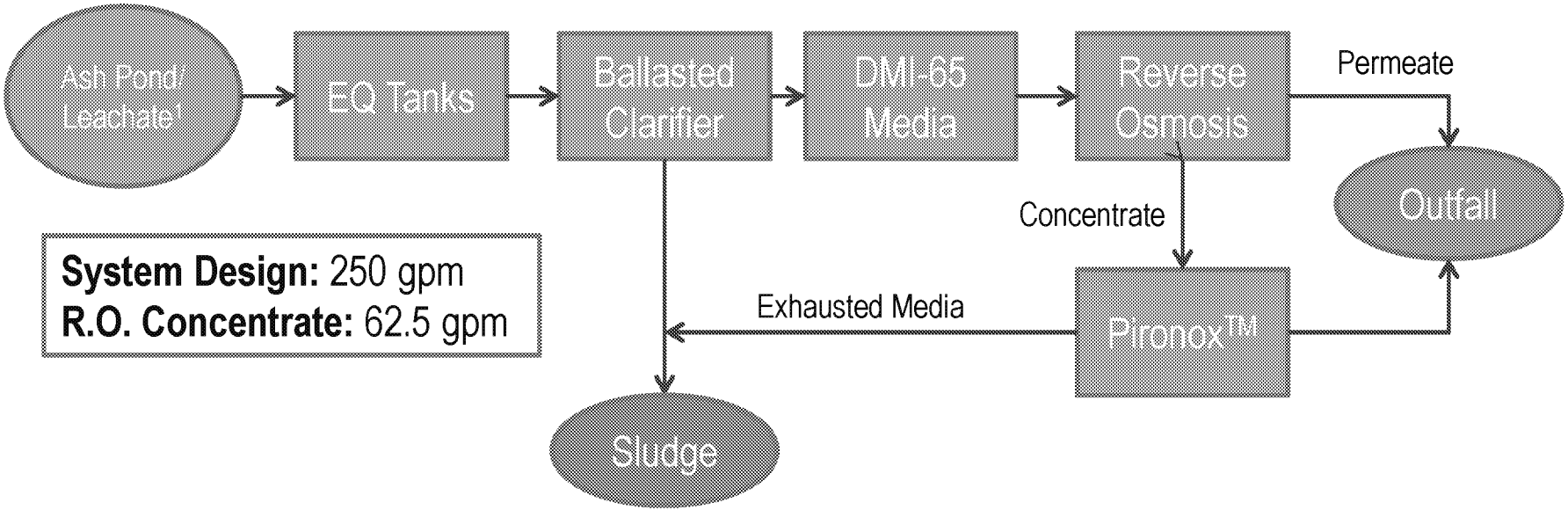
# L.V. SUTTON ASH BASIN CLOSURE

# Duke Energy

Sutton – Pironox

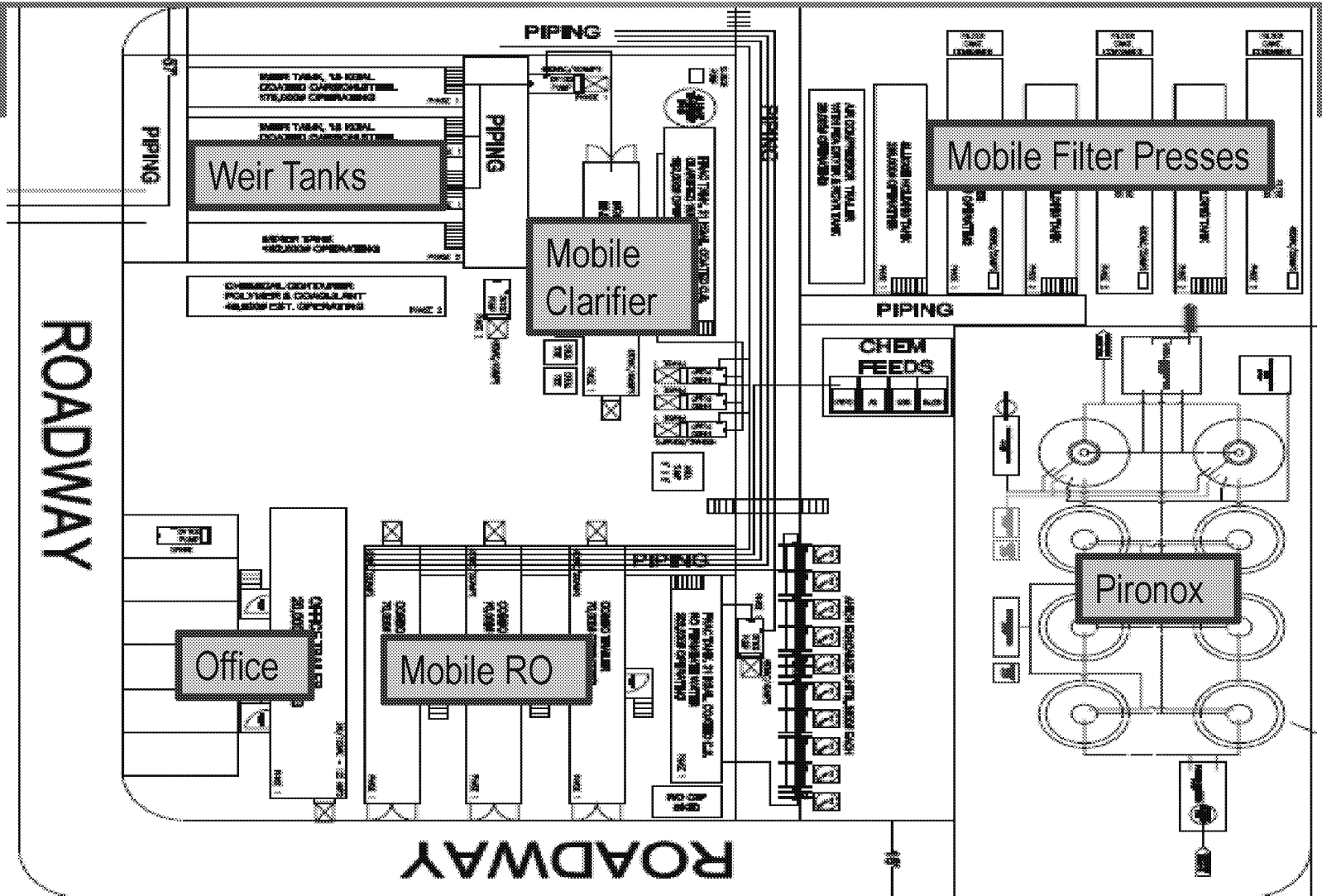
DUKE ENERGY.

# Sutton Ash Basin Treatment Overview




1- Sutton Steam Station does not have a FGD system that produces a waste stream.

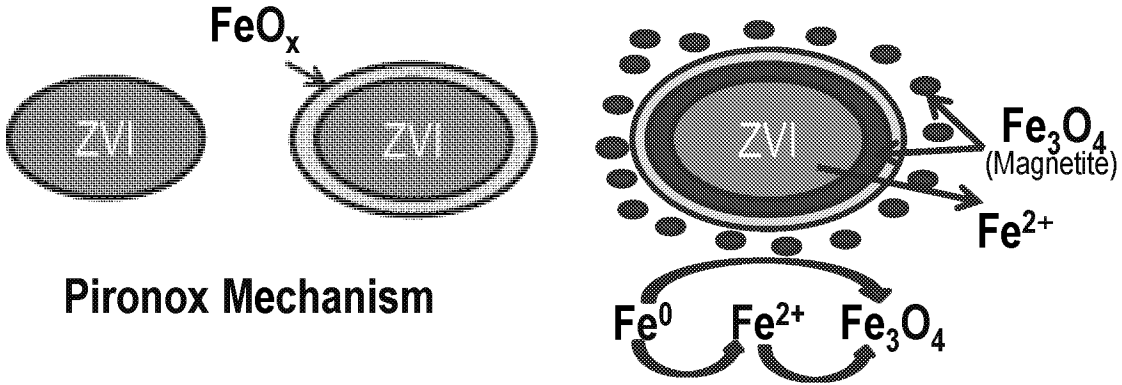
# Sutton Ash Basin Dewatering


PIPING
Weir Tanks
PIPING
Mobile Clarifier
Mobile Filter Presses
PIPING
CHEM FEEDS
ROADWAY
Pironox
Office
Mobile RO
PIPING
ROADWAY

- **Pironox** - Evoqua's Advanced Media System
  - Selenium, mercury, and other heavy metals
  - Came online October 2017 to comply with NPDES permit limits for selenium
- **Reactive Media**: Zero Valent Iron (ZVI)
  - Elemental/Pure iron that through conditioning results in a magnetite formation on the surface of the ZVI media, eliminating passivation. Passivation is iron rust which results in loss of media reactivity.

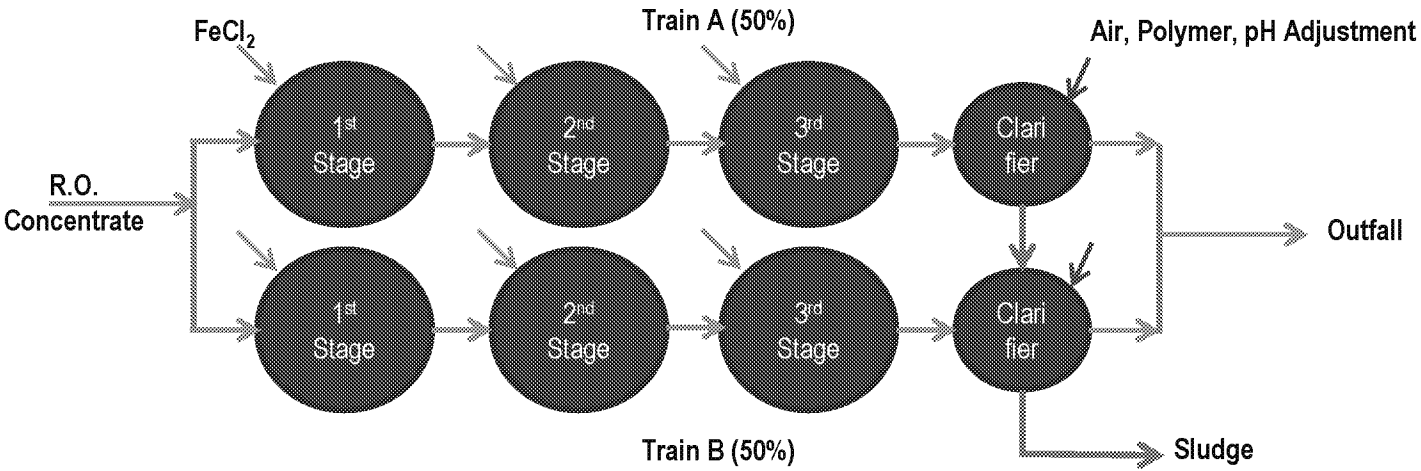
**Simpler terms….**

- Redox reaction with ZVI as the electron donor
- Immobilization through surface adsorption on iron oxide produced from iron corrosion




**Pironox Mechanism**

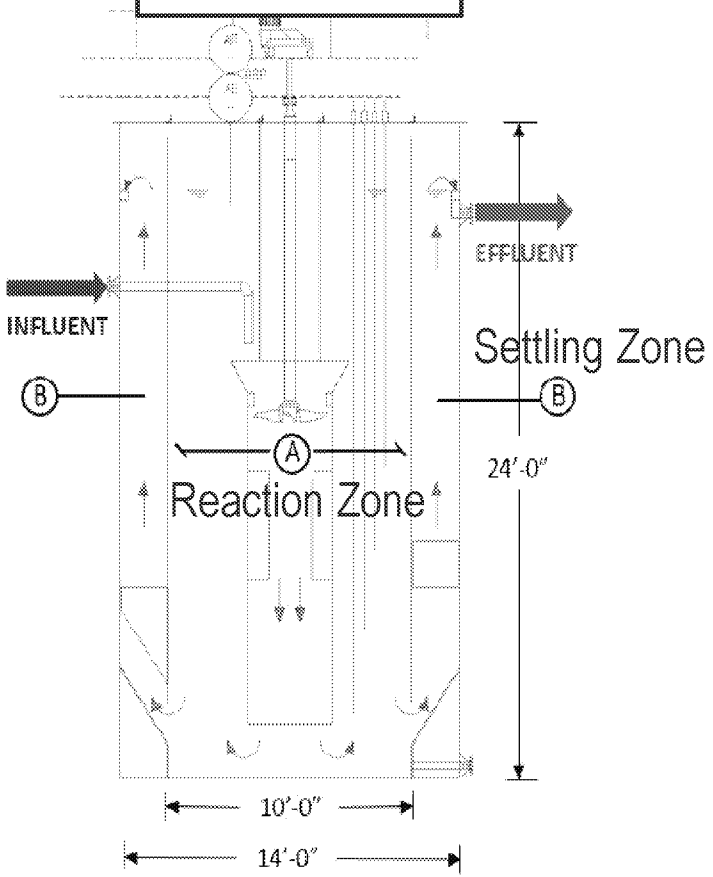
# Pironox Setup



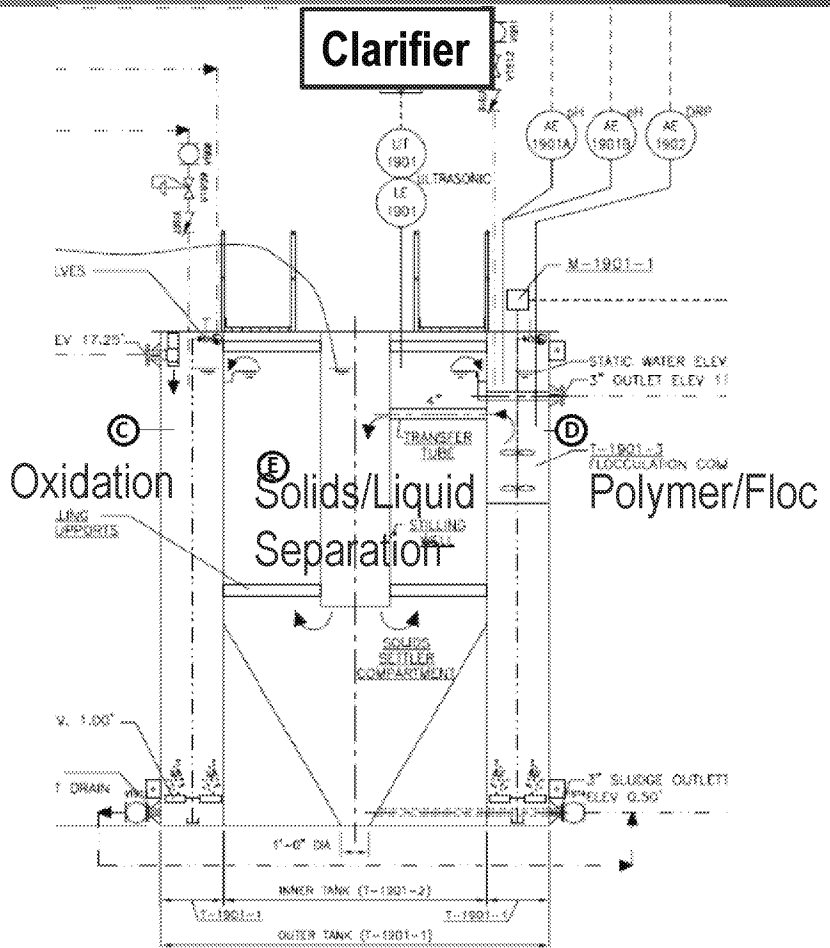

| | Design | Operating |
|---|---|---|
| Feed Flow (gpm) | 250 | 127 |
| RO Reject/ZVI Feed (gpm) | 62.5 | 41 |
| HRT per Rxn Tank (Hrs) | 6.6 | 5 |
| Overall Rxn HRT (Hrs) | 19.7 | 15 |

# Side View of Tanks

## Reaction Tank




## Clarifier

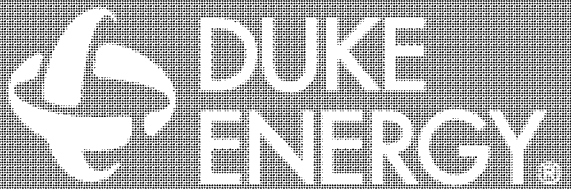


# Pironox data

| | Selenium (ug/L) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Date | Influent | ARx1 | ARx2 | ARx3 | Aeff | BRx1 | BRx2 | BRx3 | Beff |
| 10/2/17 | 300 | 160.0 | 24.0 | 1.9 | 6.3 | | | | |
| 10/3/17 | 290 | 180.0 | 40.0 | 5.3 | 13.0 | | | | |
| 10/4/17 | 300 | 180.0 | 37.0 | 8.2 | 15.0 | | | | |
| 10/5/17 | 280 | 190.0 | 37.0 | 9.2 | 12.0 | | | | |
| 10/6/17 | 300 | 160.0 | 30.0 | 8.0 | 10.0 | | | | |
| 10/7/17 | 150 | 100.0 | 35.0 | 11.0 | 11.0 | 69.0 | 4.7 | | |
| 8/8/17 | 280 | 96.0 | 19.0 | 12.0 | 15.0 | 90.0 | 2.1 | 1.9 | |
| 10/9/17 | 270 | 16.0 | 6.0 | 4.1 | 11.0 | 97.0 | 4.1 | 1.2 | |
| 10/10/17 | 270 | 6.7 | 4.5 | 2.8 | 4.7 | 140.0 | 10.0 | 2.1 | |
| 10/11/17 | 240 | 4.8 | 4.2 | 2.6 | 4.7 | 160.0 | 43.0 | 3.2 | 2.6 |
| 10/12/17 | 270 | 6.0 | 3.5 | 2.5 | 4.0 | 190.0 | 90.0 | 25.0 | 22.0 |
| 10/13/17 | 250 | 4.9 | 2.8 | 2.4 | 2.5 | 170.0 | 58.0 | 18.0 | 21.0 |
| 10/14/17 | 250 | 6.0 | 3.4 | 4.6 | 4.6 | 170.0 | 12.0 | 4.1 | 8.9 |
| 10/15/17 | 250 | 5.5 | 3.6 | 4.4 | 4.8 | 150.0 | 4.8 | 3.9 | 3.6 |
| 10/16/17 | 260 | 7.1 | 3.9 | 3.1 | 5.7 | 77.0 | 3.6 | 3.8 | 3.8 |

# Ash Basin/Leachate WWT Effluent

| | Mercury ng/L | Oil & Grease mg/L | Aluminum mg/L | Arsenic mg/L | Copper mg/L | Lead mg/L | Nickel mg/L | Selenium mg/L | Chloride mg/L | pH |
|---|---|---|---|---|---|---|---|---|---|---|
| **NPDES Permit Outfall 004 D/W - Monthly Avg.** | 47.0 | 15.0 | 8.0 | 0.01 | 0.00788 | 0.00294 | 0.025 | 0.005 | 230.0 | 6.0 to 9.0 |
| **10/26/2017** | 0.757 | < 5 | 0.017 | 0.001 | < 0.001 | < 0.001 | 0.002 | 0.001 | 84 | 7.28 |
| **10/30/2017** | < 0.5 | < 5 | 0.019 | < 0.001 | < 0.001 | < 0.001 | 0.001 | 0.001 | 64 | 8.31 |
| **11/9/2017** | < 0.5 | < 5 | 0.029 | 0.002 | < 0.001 | < 0.001 | 0.002 | 0.003 | 71 | 8.31 |
| **11/16/2017** | < 0.5 | < 5 | 0.023 | 0.001 | < 0.001 | < 0.001 | 0.002 | 0.003 | 73 | 8.12 |
| **11/20/2017** | < 0.5 | < 5 | 0.016 | < 0.001 | < 0.001 | < 0.001 | 0.001 | 0.003 | 85 | 7.82 |


DUKE
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**Commenter Name:** Thomas Cmar
**Commenter Affiliation:** Earthjustice, et al.
**Document Control Number:** EPA-HQ-OW-2009-0819-4684-A1
*Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category: EPA's Response to Public Comments*
7-26
**Comment Excerpt Number:** 126
**External Review Flag:** No External Review
**External Review Incorporated into Response:** No
**Comment Excerpt:**
EPA should have considered chemical precipitation plus evaporation as BAT for leachate. A technology is "available" where EPA has evidence that its use is practicable within the relevant industry. "That no plant in a given industry has adopted a pollution control device which could be installed does not mean that the device is not 'available.'"[536] A discharger may be required to use superior treatment technologies that have been demonstrated in another context if a technology transfer is practicable.[537] In this case, EPA
has "determined that combustion residual leachate from landfills and impoundments includes si milar types of constituents as FGD wastewater," although concentrations of the pollutants in leachate are "generally lower than FGD wastewater."[538] Thus, EPA should have considered chemical precipitation plus evaporation as BAT for leachate.
The record does not include any evidence to suggest that it is not technologically feasible or economically achievable to eliminate, or at least significantly reduce, toxic pollution in combustion residual leachate using a chemical precipitation plus mechanical evaporation system. As the record makes clear, the characteristics of leachate and FGD wastewa ter are similar, except that concentrations of most of the pollutants are lower in leachate. In fact, treating leachate and FGD wastewater or leachate alone in this type of system may actually act to improve performance by diluting the concentration of salts and other pollutants.[539] Thus, EPA should not have dismissed chemical precipitation plus evaporation for treatment of leachate out of hand.
[536] *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 636 (2d Cir. 1976).
[537] *See, e.g., Tanner's Council of Am. v. Train*, 540 F.2d 1188, 1192 (4th Cir. 1976) (holding that transfer is permissible if the technology can be practicably applied); *see also Reynolds Metals Co. v. EPA*, 760 F.2d 549, 562 (4th Cir. 1985) (treatment technology from aluminum forming industry was transferable to can-making industry).
[538] TDD at 7-39. *See also* Jenkins Leachate Report, Appendix D.
[539] *See* Section III.A.1 (noting that FGD wastewater requires pretreatment due to concentrated nature of the blowdown streams and high concentrations of metals and other pollutants).

**Comment Response:**
EPA disagrees with the commenter's claim that EPA "dismissed chemical precipitation plus evaporation for treatment of leachate out of hand." For the reasons described in preamble section VIII, EPA did not establish BAT limitations for combustion residual leachate based on chemical precipitation. EPA's rationale for not selecting chemical precipitation as the BAT basis for control combustion residual leachate discharges applies equally to technology options that rely on chemical precipitation, including chemical precipitation plus biological treatment, as well as chemical precipitation plus evaporation.

**Commenter Name:** Casey Roberts
**Commenter Affiliation:** Sierra Club
**Document Control Number:** EPA-HQ-OW-2009-0819-4810-A1
**Comment Excerpt Number:** 1
**External Review Flag:** No External Review
**External Review Incorporated into Response:** No
**Comment Excerpt:**
A coal-burning steam electric generating unit in Arkansas-the Flint Creek Power Plant operated by Southwestern Electric Power Company (SWEPCO)-plans to construct a biological treatment system for landfill leachate. The enclosed letter from the Arkansas Depmiment of Environmental Quality and Draft State Construction Permit describes the treatment system to be built as "consisting of feed tank and three bioreactors (ABMet system) followed by the effluent storage tank."[1] The system will also treat landfill truck wash water. This project is further evidence that landfill leachate may be treated in a biological reactor, contrary to EPA's assertion that this wastewater stream is too intermittent to be treated using such technology. *See* Technical Development Document for Proposed Steam EGU ELGs, at 8-13. The project at Flint Creek involves the same treatment technology that EPA considered as the basis for its BAT determination for FGD wastewater in most of the options in the proposed rule. In comments filed on behalf of Sierra Club and other organizations on September 20, 2013, we noted that EPA had no evidence regarding intermittency of this waste stream, and had not considered how the use of equalization tanks or impoundments could address any such intermittency in order to allow effective biological treatment. *See* Comments of Environmental Integrity Project, Sierra Club, Earthjustice, Waterkeeper Alliance, Tennessee Clean Water Network, Western North Carolina Alliance, Clean Air Task Force, Chesapeake Climate Council, Labadie Environmental Organization, and Valley Watch, EPA-HQ-OW-2009- 0819-4684, at p. 71-73 & Appendix D (Jenkins leachate report).
The Flint Creek plant does not have a wet FGD system, and plans to add a dry FGD system in the next few years in order to comply with regional haze and MATS requirements. Thus, this plant provides an example of a facility constructing an ABMet system solely for the treatment of landfill leachate and other minor waste streams. The recently renewed NPDES permit for the facility anticipates the discharge of treated landfill leachate, but does not set limits on toxic metals reflecting treatment in the ABMet system.[2]
I urge EPA to seek additional information from SWEPCO concerning their plans to treat landfill leachate at the Flint Creek plant using an ABMet system, including engineering evaluations, pilot studies, and the expected costs and effluent concentrations of selenium and other toxic metals. It is critical that EPA not miss this opportunity to reduce pollution from impoundment and landfill leachate by determining that BAT for this waste stream is chemical precipitation followed by biological treatment'



[1] Letter from Ryan Benefield, Deputy Director, Arkansas DEQ, to Carl Handley, Plant Manager, Aug. 14, 2013. Attached to this letter and also enclosed are the Public Notice, Statement of Basis, and Draft State Construction Permit No. AR 0037842C.
[2] *See* APDES Permit No. AR037842, at Page 2 of Part IA.

**Comment Response:**
EPA disagrees with the commenter that "BAT for [combustion residual leachate] is chemical precipitation followed by biological treatment." See preamble section VIII for additional information regarding EPA's rationale for the selection of the technology bases for BAT and NSPS for combustion residual leachate in the final rule. EPA notes that it did not select chemical precipitation as the basis for BAT for combustion residual leachate. EPA's rationale in the preamble for BAT for combustion residual leachate applies equally to other treatment systems that also rely on chemical precipitation, such as chemical precipitation plus biological treatment. Regarding the availability of the biological treatment system to treat combustion residual leachate, see response to DCN EPA-HQ-OW-2009-0819-4684-A1, Excerpt Number 128.

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**Commenter Name:** Thomas Cmar
**Commenter Affiliation:** Earthjustice, et al.
**Document Control Number:** EPA-HQ-OW-2009-0819-4684-A1
**Comment Excerpt Number:** 128
**External Review Flag:** No External Review
**External Review Incorporated into Response:** No
**Comment Excerpt:**
*1. Chemical precipitation plus biological treatment is technologically available.*
EPA's record demonstrates that chemical precipitation plus biological treatment is technologically available for plants operating FGD systems. The record shows that at least one plant, AEP's Mountaineer Plant in West Virginia, is treating combustion landfill leachate in an anaerobic biological reactor.[540] Furthermore, a technology is "available" where EPA has evidence that its use is practicable within the relevant industry. "That no plant in a given industry has adopted a pollution control device which could be installed does not mean that the device is not 'available.'"[541] A discharger may be required to use superior treatment technologies that have been demonstrated in another context if a technology transfer is practicable.[542] In this case, EPA has "determined that combustion residual leachate from landfills and impoundments includes similar types of constituents as FGD wastewater," although concentrations of the pollutants in leachate are "generally lower than FGD



wastewater."[543] Thus, some of the same treatment technologies available for FGD wastewater—including chemical precipitation and biological treatment—are also available to treat leachate.[544] The record supports EPA's determination that "[p]hysical/chemical treatment systems are capable of achieving low effluent concentrations of various metals and are effective at removing many of the pollutants of concern present in leachate discharges to surface waters."[545] Yet chemical precipitation alone "is not effective at removing selenium, boron, and certain other parameters that contribute to total dissolved solids (e.g., magnesium, sodium)" in leachate.[546] However, the addition of biological treatment can remove these pollutants from leachate similar to FGD wastewater and is BAT.[547]
At least one plant is already treating leachate with chemical precipitation and biological treatment with its FGD wastewater. The AEP Mountaineer plant in West Virginia operates and ABMet system that handles FGD wastewater and landfill leachate.[548] Influent and effluent data for this plant demonstrate that the plant can reliably meet the selenium and mercury limits proposed by EPA for biological treatment systems for FGD wastewaters.[549] In fact, the

Mountaineer plant achieves even sharper mercury reductions than plants operating two-stage chemical precipitation.[550]

EPA statements in the record also indicate that leachate can be treated with FGD wastewater with chemical precipitation and biological treatment.[551] For example, in determining compliance costs, EPA notes that plants required to use biological treatment to clean up FGD wastewaters will treat leachate and FGD wastewater in a single system (even though biological treatment is not necessary to meet leachate limits) because it would be more expensive to treat the two wastewater streams separately.[552]

As the attached report of David Jenkins states, the general result of combining untreated impoundment leachate with FGD wastewater is to dilute the concentrations of metals and other pollution.[553] This will make it easier for plants to comply with EPA's proposed effluent limitations for FGD wastewaters for selenium and mercury.[554] In addition, "the dilution of 'matric' components such as 'salt' (TDS, sulfate, chloride) will be beneficial to the anaerobic treatment processes."[555] Although plants will have to install adequate equalization upstream of the biological systems to account for intermittent flows and/or variable composition and regulate temperature, a closely monitored and well-operated chemical and biological treatment system could achieve the effluent limits EPA proposes for selenium and mercury.[556]

Chemical precipitation plus biological treatment is also technologically available to treat leachate at plants that don't have wet FGD systems. EPA dismissed this treatment option out of hand without a robust analysis. EPA's stated rationale for rejecting chemical precipitation plus biological treatment is that "leachate flows can be more variable than FGD wastewater and, more importantly, *may* be too intermittent to facilitate reliable and consistent biological treatment. Such variations are easily accommodated in a chemical precipitation treatment system, but *may* be difficult to manage in a biological treatment system reliant on healthy and sustainable populations of microorganisms."[557] EPA presents no data concerning the intermittency of these waste streams, only daily average flows. Further, there is no apparent reason why leachate from an impoundment would normally be intermittent because precipitation



is not needed to create leachate flow, as it would be for a landfill. In fact, any difficulties treating leachate in a biological treatment system can be easily managed with temperature regulation and collection tanks to store leachate and ensure a steady flow into the system.[558]

At least one coal-burning power plant currently uses a chemical treatment and biological system for leachate,[559] and coal plants have successfully utilized this technology to clean up discharges of FGD wastewater,[560] which has a similar composition to impoundment and landfill leachate.[561]

In addition, the removal of metals and other pollutants found in leachate "using chemical precipitation technology is also demonstrated by technical information compiled for ELGs promulgated for other industry sectors."[562] For example, during the rulemaking to establish ELGs for the Landfills Point Source Category, EPA estimated that even prior to promulgation of the new rules "33 percent of indirect hazardous landfills, 5 percent of indirect non-hazardous waste landfills, and 9 percent of direct non-hazardous landfill facilities employ chemical precipitation as part of wastewater treatment systems" to remove metals.[563] Thus, chemical precipitation plus biological treatment to clean up leachate discharges from power plants is technologically available.

[540] *See* ERG Memo, Status of Biological Treatment Systems to Remove Selenium (April 19, 2013), EPA-HQ-OW-2009-0819-2127.

541 *Hooker Chems. & Plastics Corp.*, 537 F.2d at 636.
542 *See, e.g.*, *Tanner's Council of Am.*, 540 F.2d at 1192 (holding that transfer is permissible if the technology can be practicably applied); *see also Reynolds Metals Co. v. EPA*, 760 F.2d 549, 562 (4th Cir. 1985) (treatment technology from aluminum forming industry was transferable to canmaking
industry).
543 TDD at 7-39.
544 *Id.*
545 TDD at 8-13.
546 TDD at 8-13.
547 *See, e.g. id.* At 7-9-7-10.
548 *See* ERG Memo, Status of Biological Treatment Systems to Remove Selenium (April 19, 2013), EPA-HQ-OW-2009-0819-2127; Section III.B.4. *supra.*
549 Section III.B.4. *supra.*
550 *Id.*

551 TDD at 9-41 n.84.
552 *Id. See also* U.S. Envtl. Prot. Agency, Incremental Costs and Pollutant Removals for the Proposed Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category 9-1 (Apr. 2013).
553 See Jenkins Leachate Report, Appendix D.
554 *Id.*
555 *Id.*
556 *Id.*
557 TDD at 8-13 (emphasis added).
558 *See* Jenkins report at 5 (noting that similar concerns with biological systems treating both FGD and leachate can be easily managed through equalization and collection tanks and temperature regulation).
559*See* ERG Memo, Status of Biological Treatment Systems to Remove Selenium (April 19, 2013), EPA-HQ-OW-2009-0819-2127; Section III.B.4. *supra.*
560 TDD at 7-40; Section III.B *supra.*
561 TDD at 7-39.
562 TDD at 8-13 (citing the TDDs for Landfills Point Source Category and Metal Products and Machinery Point Source Category).
563 *See* U.S. Envtl. Prot. Agency, Development Document for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category (EPA-821-R-99-019) 8-10 (Jan. 2000).

**Comment Response:**

This commenter, in this and other excerpts (see DCN EPA-HQ-OW-2009-0819-4684, Excerpt Number 126), states that EPA should not have "dismissed" chemical precipitation plus biological treatment or chemical precipitation plus evaporation for treatment of combustion residual leachate. EPA did consider both of these technologies and rejected basing BAT or BADCT on such technologies for the reasons described below.

*Best Available Control Technology Economically Achievable*: EPA agrees with the commenter that chemical precipitation is an available and well-demonstrated technology for removing

metals and other pollutants from a variety of industrial wastewaters, including leachate from landfills not located at power plants. Chemical precipitation is also well demonstrated at steam



electric power plants for treatment of FGD wastewater that contains the pollutants in combustion residual leachate. As such, EPA agrees chemical precipitation is technologically available for control of pollutants in combustion residual leachate discharges. However, EPA did not select chemical precipitation as BAT for control of combustion residual leachate discharges for the reasons explained in preamble section VIII. EPA's rationale applies equally to other treatment systems that also rely on chemical precipitation, such as chemical precipitation plus biological treatment and chemical precipitation plus evaporation.

*Best Available Demonstrated Control Technology*: EPA did select chemical precipitation as BADCT for combustion residual leachate discharges from new sources in the final rule. See preamble section VIII for additional information regarding EPA's rationale for the selection of the technology basis for BADCT for combustion residual leachate.

EPA did not select chemical precipitation plus biological treatment or chemical precipitation plus evaporation as BADCT for combustion residual leachate for several reasons. First, EPA concluded that the final NSPS already reflect "the greatest degree of effluent reduction [which is] achievable," as that phrase is used in section 306 of the Clean Water Act. The final rule regulates six different wastestreams at the BAT and BADCT levels of control. For two of those wastestreams, the final NSPS are based on technologies that go further to control pollutants in discharges from new sources as compared to existing sources: for discharges of combustion residual leachate, the NSPS require compliance with standards based on chemical precipitation and for discharges of FGD wastewater, the NSPS require compliance with standards based on evaporation. For three of the other wastestreams – fly ash transport water, bottom ash transport water, and FGMC wastewater – the final NSPS require (or continue to require, based on the previously established regulations) control of pollutants in discharges to the utmost degree, since they require "no discharge of pollutants." For the last wastestream, gasification wastewater, like the final BAT limitations, the final NSPS require compliance with standards based on evaporation. Moreover, these final NSPS apply to *all* steam electric generating units, regardless of unit size or type of fuel used, and there are no differentiated requirements for small or oil-fired units, as there are under the final BAT limitations. Therefore, the new source performance standards in the final rule are consistent with Congress's intent to demand the highest of standards from new sources.

Second, based on IPM analyses for this rule, as well as analysis performed for EPA's recently finalized Carbon Pollution Standard for New Power Plants, EPA projects no new coal-fired generating units for the periods analyzed. Even if there were to be a new coal-fired generating unit built in the future, as explained in Section VIII of the final preamble and the TDD, combustion residual leachate is a relatively minor wastestream in comparison to the other large wastestreams controlled in this final rule. EPA notes that it annually reviews all existing ELGs and can re-visit the final NSPS for combustion residual leachate in the future if conditions change.

Finally, practically, EPA did not propose chemical precipitation plus biological treatment or chemical precipitation plus evaporation as BADCT, so the public did not have an opportunity to comment on these options (indeed, nobody but the commenter submitted comments supporting or rejecting establishment of limitations or standards for combustion residual leachate based on

one or both of these technologies). Were EPA to have decided it might be appropriate to establish standards for new sources based on one of these two technologies, it would have been appropriate to conduct another round of notice and comment, something that EPA's schedule for finalizing this rule, under a consent decree to which the commenter is a party, did not afford.

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**Commenter Name:** Thomas Cmar **Commenter Affiliation:** Earthjustice, et al. *Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category: EPA's Response to Public Comments*
8-163

**Document Control Number:** EPA-HQ-OW-2009-0819-4684-A1 **Comment Excerpt Number:** 185
**External Review Flag:** No External Review **External Review Incorporated into Response:** No
**Comment Excerpt:**
Several treatment systems are technologically and economically achievable for dramatically reducing the toxicity of existing FGD wastewater and leachate that has been stored in separate impoundments.[832] However, EPA did not evaluate any of these treatment systems because it assumed, with no evidence, that most facilities send FGD and leachate wastewater to impoundments containing multiple waste streams. According to the Agency, the data supporting the BAT limits for the separate waste streams do not necessarily apply to the co-mingled waste streams, so EPA cannot evaluate whether the BAT limits would also represent BAT for the co- mingled waste in the impoundments.[833]
However, EPA acknowledges that 22% of facilities generating FGD wastewater send the wastewater to an impoundment containing only FGD wastewater.[834] Similarly, EPA notes that some facilities (EPA does not say how many) send leachate to small impoundments containing only leachate.[835] Moreover, in describing the various ways facilities could configure their treatment systems to comply with the new BAT requirements, EPA has included diagrams of systems that run both newly generated and legacy FGD wastewater through the treatment system that would be used to meet the new BAT requirements.[836] In fact, running legacy FGD wastewater through the biological treatment system would reduce the variability in FGD wastewater flow rates, allowing constant flow through the treatment system even during plant outages and maintenance periods.
As explained previously, treatment systems are technologically and economically achievable for eliminating the discharge of (or at least reducing the toxicity of) FGD wastewater and leachate.[837] Whatever system EPA ultimately selects as BAT for newly generated FGD wastewater and leachate must apply equally to existing wastes stored in separate impoundments, or where an impoundment contains only those two wastewaters.[838]
EPA has not advanced a credible technical or legal rationale for doing otherwise. To the extent that the FGD wastewater or leachate is stored in a separate impoundment, the treatment technology will work exactly the same on existing wastes as it will work on newly generated waste. Nothing will happen in 2017 to change the way the treatment systems work on these waste streams – if they will work in 2017 on newly generated wastes, they will perform equally well on existing wastes stored in separate impoundments. Put differently, there is no support in the record for claiming that the technological or economic achievability of treatment systems is affected by when the pollutants were generated – so long as the pollutants in a waste stream are stored in a separate impoundment and not co-mingled.
Legally, EPA has both the authority and the obligation to establish BAT guidelines that eliminate the discharge of pollutants for categories of sources – even if that category is smaller than the entire industry. Effluent limitations shall be achieved for "categories and classes of point

sources."[839] The effluent limitations "shall require the elimination of discharges of all pollutants" if EPA finds that "such elimination is technologically and economically achievable for a category or class of point sources."[840] The statute mandates a zero discharge standard if achievable for a "category or class."[841] Even if a zero discharge standard is not achievable, the effluent limitations must require the best available technology economically achievable "for such category or class."[842] Similarly, EPA must identify "the degree of effluent reduction attainable" through the best control measures "for classes and categories of point sources."[843]

EPA has identified a class of facilities that can eliminate the discharge of FGD wastewater and leachate, or, at a minimum, can treat such wastes with various technologies. That class is the 22% of plants that store FGD wastewater in separate impoundments and the class of plants that store leachate in separate impoundments. Whatever technology is selected as BAT for newly generated FGD wastes and leachate must apply equally to existing FGD wastes and leachate at these plants that store their wastes in separate impoundments. Moreover, since co-mingled FGD wastes and leachate are amenable to chemical and biological treatment, BAT for legacy FGD wastes and leachate co-mingled in an impoundment should be chemical and biological treatment.

832 *See supra* Sections III, VI (discussion of treatment systems for FGD and leachate waste streams).

833 78 Fed. Reg. at 34,461, 34,463.

834 *Id.* at 34,461.

835 *Id.* at 34,463.

836 TDD at 14-4, Figure 14-1.

837 *See supra* Sections III, VI.

838 As explained in the leachate report of Dr. David Jenkins, Appendix D, and as verified by the performance of the biological treatment system at the Mountaineer plant, leachate and FGD wastewater can be treated together in the chemical precipitation and biological treatment systems. Thus, where legacy FGD wastewater and leachate have been co-mingled, there is no technological barrier to treating these wastes in the biological system.

839 33 U.S.C. § 1311(b)(2)(A).

840 *Id.*

841 *Id.*

842 *Id. Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category: EPA's Response to Public Comments*

843 *Id.* § 1314(b)(2)(A). Congress modified the BAT requirements for the coal remining industry so that BAT for pre-existing discharges would be determined by the relevant permitting authority on a case-by-case basis using BPJ, rather than by EPA on a nation-wide basis. 42 U.S.C. § 1311(p)(1). The pre-existing discharge provision does not exempt the coal remining industry from BAT – instead, it only changes who determines BAT, and how—and applies only to a single industry, coal remining. Congress did not extend similar relief to other industries, such as power plants. Furthermore, the provision applies to pre-existing discharges, not pre-existing waste, further supporting the view that Congress did not intend to exempt the discharge of pre-existing wastes from the BAT requirements.

**Comment Response:**

EPA agrees in part and disagrees in part with the commenter's statement that "whatever technology is selected as BAT for newly generated FGD wastes and leachate must apply equally to existing FGD wastes and leachate at these plants that store their wastes in separate impoundments." The final rule establishes one set of BAT limitations applicable to discharges of combustion residual leachate, and the applicable BAT limitation is based on the use of surface impoundments. See response to DCN EPA-HQ-OW-2009-0819-4484-A1, Excerpt Number 7.

EPA disagrees with the commenter that the same set of BAT limitations should apply to all forms of FGD wastewater, including legacy FGD wastewater that is not commingled with other wastestreams and stored in a surface impoundment. For EPA's rationale as to why it established a different set of BAT limitations for legacy FGD wastewater based on surface impoundments, including why it rejected establishing BAT limitations for legacy FGD wastewater based on a technology other than surface impoundments for the few plants that do not commingle it with other wastestreams, see Section VIII.C.8 of the preamble.

EPA disagrees that it has no evidence that most facilities send their FGD wastewater to impoundments containing multiple waste streams, or that 22% of facilities generating FGD wastewater send their wastewater to an impoundment containing only FGD wastewater. In the preamble for the proposed rule, EPA stated that "78 percent of surface impoundments that receive FGD wastewater also receive fly ash and/or bottom ash transport water." The commenter apparently construed this statement to mean that the remaining 22 percent of surface impoundments that receive FGD wastewater only receive FGD wastewater. The commenter neglected to account for other wastes streams, other than fly ash transport water and bottom ash transport water, which are received by these impoundments. For the final rule, EPA updated its analysis based on survey responses for the final rule population (See preamble Section V) and determined that there are 65 steam electric power plants for which EPA estimated FGD wastewater compliance costs and that use a surface impoundment as part of their treatment system. For 54 of the 65 plants (83 percent), the FGD wastewater is commingled with, at least, fly and/or bottom ash transport water and for eight of the 65 plants (12 percent), the FGD wastewater is commingled with non-ash wastewater, such as cooling tower blowdown or low volume waste sources. Therefore, there are only three plants that transfer their FGD wastewater to a surface impoundment and do not commingle it with other wastewaters.



Also, see preamble section VIII and response to DCN EPA-HQ-OW-2009-0819-4303-A2, Excerpt Number 14, regarding how EPA is using the term legacy wastewater, as well as an overview of the legacy wastewater requirements in the final rule.

**Commenter Name:** Thomas Cmar **Commenter Affiliation:** Earthjustice, et al. **Document Control Number:** EPA-HQ-OW-2009-0819-4684-A1 **Comment Excerpt Number:** 186 **External Review Flag:** No External Review **External Review Incorporated into Response:** No

**Comment Excerpt:**

**B.** EPA MUST CONSIDER TECHNOLOGIES FOR ELIMINATING THE DISCHARGE OF, OR TREATING, CO-MINGLED WASTES.

EPA offers a different rationale for fly ash and bottom ash transport water. For those waste streams, EPA is proposing to choose between the current BPT requirements and zero discharge systems. The Agency notes that if dry ash handling is BAT, dry ash handling obviously does not treat existing wastewater.[844] That of course is true, but begs the question of whether other technologies exist that could treat the existing fly ash and bottom ash wastewater, whether stored separately or co-mingled in impoundments. EPA never addresses that question.

As mentioned above, effluent limitations "shall be achieved" for toxic pollutants "for categories and classes of point sources."[845] EPA must issue guidelines that identify "the degree of effluent reduction attainable" through the best control measures "for classes and categories of point sources."[846] EPA has an obligation to identify the reductions attainable for toxic pollutants discharged by point sources regardless of whether those pollutants are stored separately or co- mingled. The statute does not give EPA a free pass for legacy or co-mingled waste streams.

EPA has failed to meet its obligation, and has instead simply decided not to investigate whether there are controls and practices that can reduce pollutants stored in impoundments containing co- mingled waste streams. Chemical precipitation followed by biological treatment can be used for co-mingled FGD wastes and leachate.[847] Additionally, EPA evaluated chemical precipitation for ash handling, but rejected the technology because of its purportedly high cost relative to dry handling, not its technical feasibility.[848] This suggests that systems are available for treating ash transport water in existing impoundments. Moreover, chemical precipitation is effective at treating leachate,[849] which comes from co-mingled wastes in impoundments; and chemical precipitation, followed by biological treatment, is effective at treating at least certain kinds of co- mingled wastes, such as FGD wastes and leachate.[850] Taken together, the record suggests that systems may be technologically and economically achievable for treating legacy ash wastes, even when co-mingled with other waste streams. We urge EPA to identify the best technology for reducing discharges of existing wastes that are stored separately or co-mingled in impoundments. *Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category: EPA's Response to Public Comments*

844 78 Fed. Reg. at 34,461-62.
845 33 U.S.C. § 1311(b)(2)(A).
846 *Id.* § 1314(b)(2)(A).
847 *See* Jenkins Leachate Report, Appendix D.
848 78 Fed. Reg. at 34,461.
849 *See* discussion of BAT for leachate, *supra* Section VI.
850 *See* Jenkins Leachate Report, Appendix D.

**Comment Response:**

EPA disagrees with the commenter that EPA failed to consider "whether other technologies exist that could treat the existing fly ash and bottom ash wastewater, whether stored separately or co-mingled in impoundments." EPA did evaluate technologies beyond surface impoundments and dry ash handling technologies as applied to legacy wastewaters. Results from this evaluation revealed that the vast majority of steam electric power plants commingle some combination of their legacy wastewaters with each other and with other wastestreams, including cooling water, coal pile runoff, metal cleaning wastes, and low volume waste sources, in surface impoundments. Once commingled in surface impoundments, the legacy wastewaters no longer have the same characteristics that they did when they were first generated.

For example, the addition of cooling water can dilute the legacy wastewaters to a point where the pollutants are no longer present at treatable levels. Additionally, some wastestreams have significant variations in flow, such as metal cleaning wastes, which are generally infrequently generated, or coal pile runoff, which is generated during precipitation events. Because surface impoundments are typically open, with no cover, they also receive direct precipitation. Because of all of this, the characteristics of legacy wastewater contained in surface impoundments (flow rate and pollutant concentrations) vary at both, individual steam electric power plants and across plants nationwide. Furthermore, in deriving limits, EPA generally would like to have enough performance data at a well-designed, well-operated plant or plants to derive limitations and standards using its well-established and judicially upheld statistical methodology. In this case, except in very limited circumstances, steam electric power plants do not treat their legacy wastewaters that they send to a surface impoundment using anything beyond the surface impoundment itself. In fact, no plant uses chemical precipitation, biological treatment, or evaporation to treat its legacy fly ash transport water or legacy bottom ash transport water contained in an impoundment, including any impoundment that may contain only legacy flay ash transport water or only legacy bottom ash transport water. Thus, no steam electric industry data exist to establish BAT limitations for

these legacy wastewaters based on these technologies. Thus, EPA disagrees with the commenter that there are systems other than surface impoundments, like chemical precipitation, that are "technologically and economically achievable for treating legacy ash wastes systems."
Regarding the commenter's statement that "chemical precipitation followed by biological treatment can be used for co-mingled FGD wastes and leachate, see response to DCN EPA-HQ-OW-2009-0819-4684-A1, Excerpt Number 185.
Regarding the commenter's statement that "the statute does not give EPA a free pass for legacy or co-mingled waste streams," see response to DCN EPA-HQ-OW-2009-0819-4684-A1, Excerpt Number 51.

FRONTIER WATER SYSTEMS

April 20, 2018

# Memorandum

Response to US EPA request dated March 29, 2018 relating to capital costs of the Frontier Water System's SeHAWK® bioreactor system to treat FGD blowdown.

## 1. Introduction

Frontier Water Systems (FWS) provides a compact, pre-fabricated process equipment solution that can be rapidly installed, commissioned and scaled. Through lessons learned during 4 years of FGD field pilot trials, combined with several successful full scale SeHAWK® installations, Frontier's SeHAWK® FGD is an updated biological FGD wastewater treatment process and modular equipment solution for electric power generation geared to deliver consistent ELG compliance in a compact footprint. The Frontier Water SeHAWK® FGD water treatment system is the result of >35,000 engineering hours, 14 completed pilot test projects and a >$8 MM combined investment by FWS and the utility industry to date. The outcome is a completely modular bioreactor platform that is pre-manufactured, substantially saving on installation and on-site construction costs.

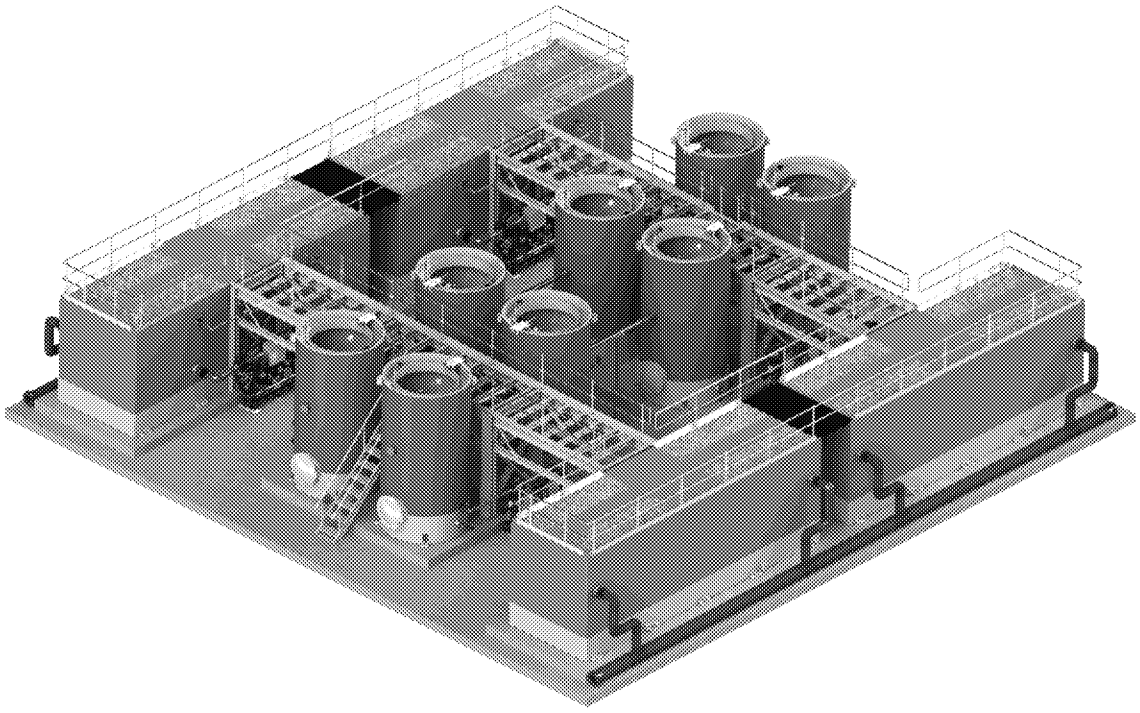


Figure 1 – The Frontier SeHAWK® FGD Modular Bioreactor, 600 gpm

FRONTIER WATER SYSTEMS

April 20, 2018

## 2. SeHAWK® FGD Cost Model

Per EPA's request, Frontier Water Systems has developed cost curves that depict how capital and O&M costs for a Frontier FGD treatment process vary over a range of plant flows. The assumptions and elements used to generate the modeled costs are outlined in sections 2.1 -2.4.

### 2.1. Capital Equipment

The following components are included in the costing to develop the requested Capital Equipment cost curve.

- SeHAWK® FGD two-stage bioreactors
- Bioreactor flow control skids
- Bioreactor backwash supply skids
- Feed, effluent, and backwash supply tanks
- Heat exchanger and feed water strainer skids
- Nitrate pretreatment system
- Chemical feed skids
- Ultrafiltration post treatment system
- Electrical equipment to include instrumentation
- Railing, stairs, and platforms
- Engineering, including electrical and structural design for equipment
- Technology licensing fees
- Company bonding/ insurance/ profit margin
- Control narrative
- Estimated freight costs of all components (assuming eastern US delivery)
- System start up and commissioning services
- Project contingency
- System start-up and operator training services
- Operation and maintenance manuals

The following items are excluded from the costing:

- Integration with plant DCS
- Pump MCC's
- Plant air supply
- Buildings/footings/foundations
- On site construction
- On site electrical
- Equipment offloading/ installation
- Interconnecting piping

The above exclusions and other on-site construction activities typically fall in the contractor's scope of work, and therefore are excluded from the cost curves. Site specific installation and Balance of Plant costs require engaging an estimator or contractor and are not provided.

FRONTIER WATER SYSTEMS

April 20, 2018

## 2.2. Operations and Maintenance

The following elements are included to model operation and maintenance costs of a Frontier FGD treatment system:

- Operating and Routine Maintenance Labor
- Chemical Consumption (bionutrient and UF membrane cleaning chemicals for CEB/CIP)
- Energy Costs

## 2.3. Plant Flows and Redundancy

The provided cost curves are developed directly from actual bioreactor plant designs with quoted component and fabrication costs as of the date of this memorandum. The selected flows cover the full range of the current SeHAWK® FGD product line. Specifically, plant flows of 100 gpm (144,000 gpd), 300 gpm (432,000 gpd), 600 (864,000 gpd) gpm and 1200 gpm (1,728,000 gpd) were selected as data points for the cost curves. Capital equipment and O&M costs for flows outside this range can be extrapolated from the curve to estimate order of magnitude costs for higher and lower flows. Plant designs for additional flows will be developed and optimized with cost estimates as the market develops and more information on specific project requirements are made available.

The costing provided assumes an N+1 redundancy requirement for the SeHAWK® FGD bioreactor treatment units, pretreatment filters, rotating equipment and ultrafiltration post-treatment skids. This allows one complete standby of each unit process.

## 2.4. Target Water Quality

It is assumed that the FWS SeHAWK® FGD bioreactor array would be integrated with a conventional physical chemical treatment system (by others), and is designed to meet the specified water quality parameters of 50 ug/L selenium, 356/788 ng/L mercury, 8/11 ng/L arsenic, and 4.4/17 mg/L Nitrate Nitrate-N, with the provided feed water parameters (Average Pollutant Concentrations in Influent FGD Wastewater Following Pretreatment, March 29, 2018).

## 2.5. Capital Equipment Cost Curve

Utilizing capital equipment components outlined in section 2.1, and the additional assumptions discussed in seconds 2.3 and 2.4, the resulting capital equipment cost curve is provided in Figure 2.

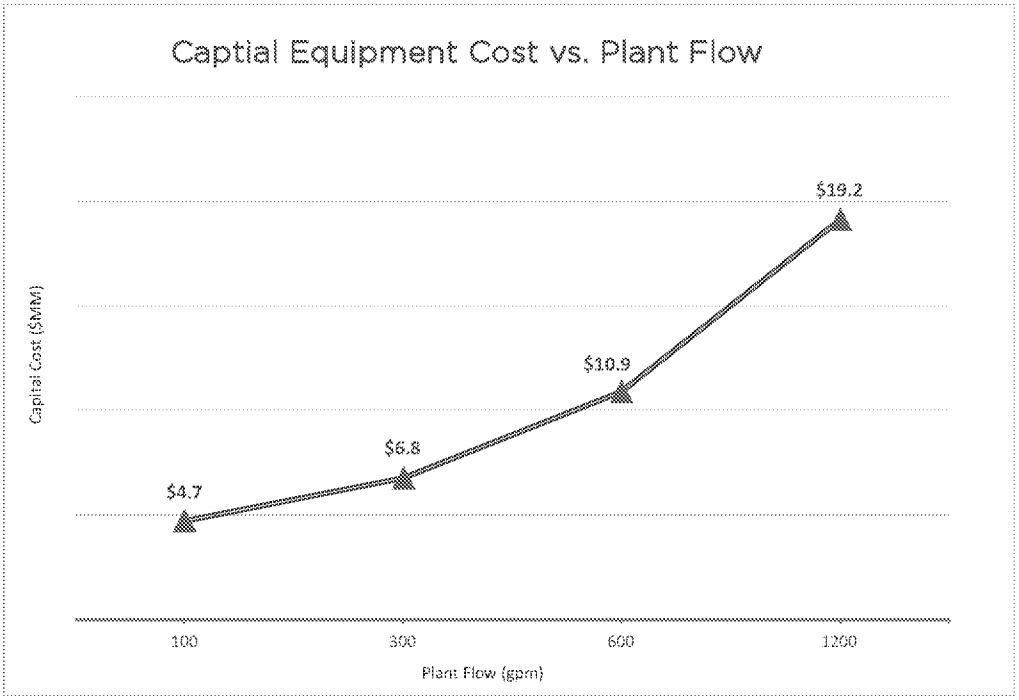



Figure 2 – Capital Equipment Costs for various FGD treatment plant flows

## 2.6. Operations and Maintenance Cost Curve

Incorporating the information and assumptions described in sections 2.2, 2.3 and 2.4, a cost curve for the operation and maintenance of a SeHAWK® FGD bioreactor and surrounding equipment is provided in Figure 3.

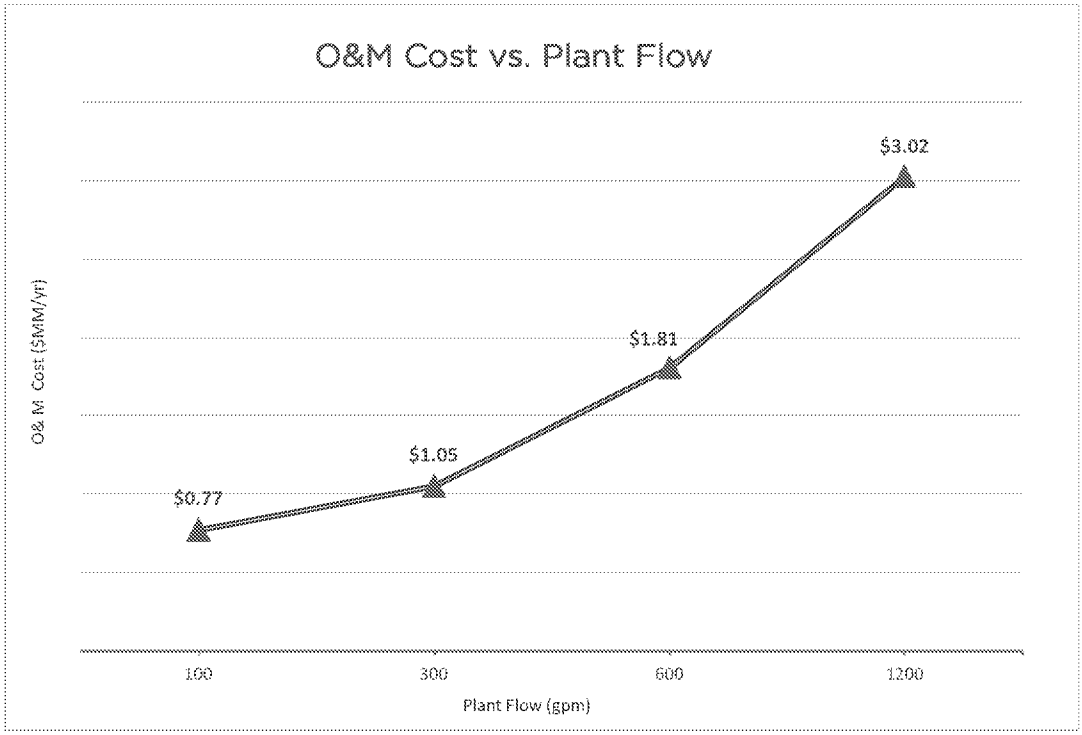



Figure 3 – Operation and maintenance costs for various FGD treatment plant flows

## 3. Additional Questions (per EPA Cost Request to FWS, March 29, 2018)

**EPA Question #1:** *Please provide a detailed description of the system design for your cost curves. Please include the following:*

a. *A list of treatment system units (including any pretreatment or post treatment), along with a process flow diagram indicating all chemical additions;*
b. *Information about the degree of redundancy, including the number of trains assumed and capacity (e.g., 2 x 75%);*
c. *Residence time of any tanks included in the system; and*
d. *Any equipment (treatment units, auxiliary equipment, controls, instrumentation, or electrical components) that you assumed would be provided by the plant and not included in the estimates.*

**FWS Response:** A list of treatment system units, redundancy information and equipment exclusions are provided in Section 2.1 and Section 2.3. Process flow diagram and reactor HRT are considered confidential and are excluded from this memorandum.

FRONTIER WATER SYSTEMS

April 20, 2018

**EPA Question #2:** *Describe the extent to which the Frontier SeHawk® System is modular, fabricated onsite, or fabricated offsite and transported to the plant.*

**FWS Response:** The SeHAWK® FGD bioreactor treatment solution consists entirely of modular equipment. Equipment includes various skids and bioreactor tanks that are modular, prefabricated, and are delivered to site for installation by an onsite contractor. For example, a 300 gpm bioreactor plant would consist of the following pre-fabricated assemblies:

- Feed pump skid (1)
- Strainer skids (1)
- Ultrafiltration skids (5)
- Flow control skids (12)
- Stage 1 bioreactors (8)
- Stage 2 bioreactor tanks (8 skids, 2 bioreactors per skid)
- Backwash skids (1)
- Product pump skids (1)
- Chemical feed skids (5)

**EPA Question #3:** *How would elevated nitrate/nitrite concentrations change the design of the treatment system? In EPA's experience, FGD wastewater can have nitrate/nitrite concentrations as high as 200 ppm. Please indicate the range of nitrate/nitrite concentrations the system corresponding to the cost curves is designed to handle. In cases where wastewater has a nitrate/nitrite concentration above the design concentration, or significantly above the average nitrate/nitrite concentration listed in Table 1, would additional denitrification be required? If so, what nitrate/nitrite concentration would trigger additional treatment?*

**FWS Response:** This costing exercise assumes a maximum nitrate/nitrite-N concentration of 91 mg/L, per Table 1. Concentrations above this amount may require bringing on additional nitrate pretreatment units, effectively increasing the system HRT. Conversely, it is noted by FWS that many sites have much lower than the provided nitrate concentrations, which would reduce or eliminate denitrification pre-treatment units, which would in turn reduce capital and O&M costs.

**EPA Question #4:** *Does the treatment system for the cost curves include any methods for monitoring oxidation reduction potential (ORP) or sulfites within the system (e.g., inline ORP monitor or sulfite analyzer)? If so, what type of monitoring is included and where is it located in the system? Does the system design include any method for managing or adjusting ORP or sulfites within the system (e.g., chemical addition such as sodium bisulfite), and are those costs included in the cost curves provided?*

**FWS Response:** High ORP conditions can exist in FGD blowdown at some sites. The Frontier Water bioreactor system includes a chemical feed system and ORP monitoring to accommodate reducing agent addition to the feed water stream when required. This equipment is included in the capital equipment cost curves.

**EPA Question #5:** *Provide a description of cleaning operations that are included in the O&M cost curve. Are there any additional cleaning actions that may be needed? If so, when and how often should these*

FRONTIER WATER SYSTEMS

April 20, 2018

*additional cleaning operations be completed and what are the requirements (including labor hours and cost)?*

**FWS Response:** O&M cost curve includes chemical costs and labor for cleaning operations, such as membrane Chemically Enhanced Backwash (CEB), membrane Clean in Place (CIP), and bioreactor backwash. These events are automated to a large degree to minimize labor.

**EPA Question #6:** *What is the footprint of a typical Frontier SeHAWK® system and are there any constraints (e.g., space or location) on where the treatment system can be located? Does the system need to be within a specific distance of any other unit or equipment? Does the system need to be housed in a building? Please keep in mind that EPA will be attempting to apply these costs across the entire industry, so even if a portion of plants (e.g., those located in colder states) would need special considerations, please provide that information.*

**FWS Response:** Estimated SeHAWK® FGD Total Footprint for the selected flows are: 100 gpm (14400 $ft^2$), 300 gpm (31200 $ft^2$), 600 gpm (45600 $ft^2$) and 1200 gpm (74400 $ft^2$). It is recommended that most components be housed in a building for freeze protection and operational considerations in inclement weather. Typically, the pump skids, chemical feed systems, electrical components, and ultrafiltration units would be placed in a building. Bioreactors and tanks could be located outside.

**EPA Question #6:** *Please indicate if there is a maximum concentration threshold (e.g., upper bound) for any parameters. Is there a specific parameter and concentration at which the treatment system becomes less effective? This could also include concentrations which require procedures outside the normal operating and maintenance activities to function as designed. Please identify the specific maximum concentration for each pollutant that can be accommodated by the system without affecting system performance, if known. Parameters of interest to EPA are chloride, TDS, and sulfate. Any other pollutant thresholds should also be identified.*

**FWS Response:** Frontier Water has operational experience in a wide range of water chemistries at various power plant sites with 14 pilot tests treating FGD blowdown. This testing demonstrates successful treatment of a broad range of FGD water chemistries, with TDS averaging 17,556 mg/L (36,000 maximum), chloride averaging 7,000 (17,200 mg/L max). Much of this testing was below the optimal design temperature of 90F, which can result in lower reduction rates. The maximum contaminant concentration thresholds have not been determined, as the pilot testing to date has been on empirical on-site water chemistry conditions available for testing.

**EPA Question #7.** Please estimate the typical duration between bid solicitation and commissioning of the treatment system.

**FWS Response**: Typical duration between CONTRACT AWARD and commissioning of the treatment system is anticipated at 18-24 months.

FRONTIER WATER SYSTEMS

April 27, 2018

# Memorandum

Response to US EPA request dated March 29, 2018 relating to capital costs of the Frontier Water System's SeHAWK® bioreactor system to treat FGD blowdown.

## 1. Introduction

Frontier Water Systems (FWS) provides a compact, pre-fabricated process equipment solution that can be rapidly installed, commissioned and scaled. Through lessons learned during 4 years of FGD field pilot trials, combined with several successful full scale SeHAWK® installations, Frontier's SeHAWK® FGD is an updated biological FGD wastewater treatment process and modular equipment solution for electric power generation geared to deliver consistent ELG compliance in a compact footprint. The Frontier Water SeHAWK® FGD water treatment system is the result of >35,000 engineering hours, 14 completed pilot test projects and a >$8 MM combined investment by FWS and the utility industry to date. The outcome is a completely modular bioreactor platform that is pre-manufactured, substantially saving on installation and on-site construction costs.

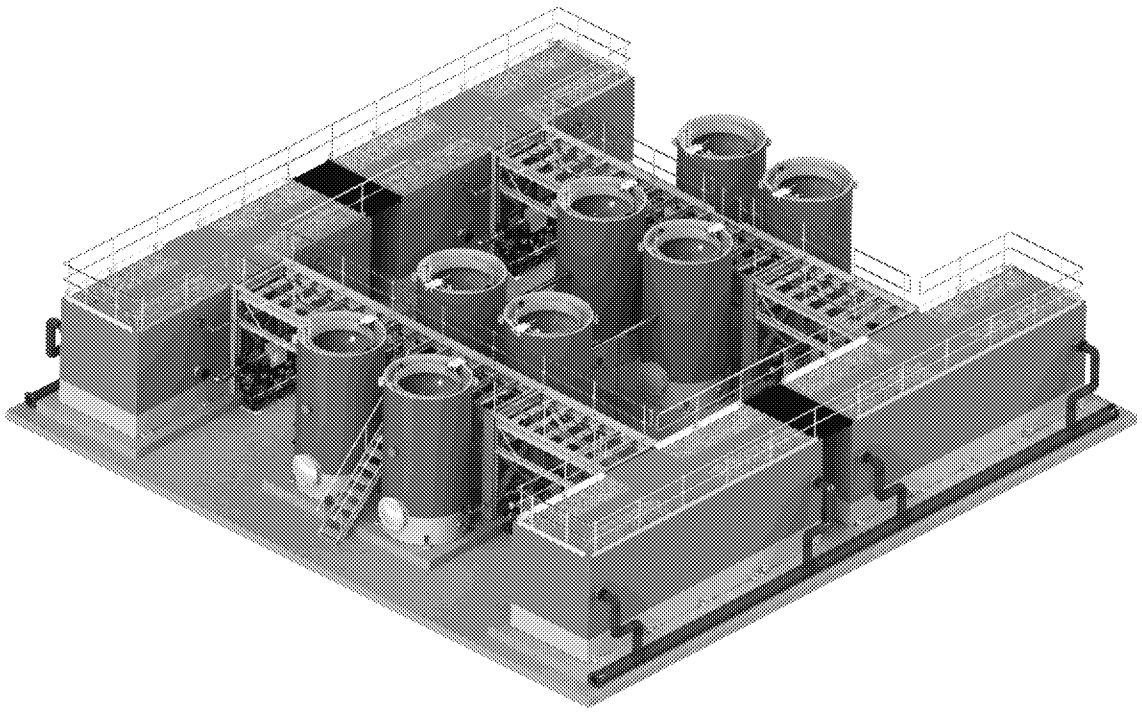


Figure 1 – The Frontier SeHAWK® FGD Modular Bioreactor, 600 gpm

FRONTIER WATER SYSTEMS

April 27, 2018

## 2. SeHAWK® FGD Cost Model

Per EPA's request, Frontier Water Systems has developed the following cost curves that depict how capital and O&M costs for a Frontier FGD treatment process vary over a range of plant flows. The assumptions and elements used to generate the modeled costs are outlined in sections 2.1 -2.4.

### 2.1. Capital Equipment

The following components are included in the costing to develop the requested Capital Equipment cost curve.

- SeHAWK® FGD two-stage bioreactors
- Bioreactor flow control skids
- Bioreactor backwash supply skids
- Feed, effluent, and backwash supply tanks
- Heat exchanger and feed water strainer skids
- Nitrate pretreatment system (for high nitrate-N condition cost curve only, >50 mg/L)
- Chemical feed skids
- Electrical equipment to include instrumentation
- Railing, stairs, and platforms
- Engineering, including electrical and structural design for equipment
- Technology licensing fees
- Company bonding/ insurance/ profit margin
- Control narrative
- Estimated freight costs of all components (assuming eastern US delivery)
- System start up and commissioning services
- Project contingency
- System start-up and operator training services
- Operation and maintenance manuals

The following items are excluded from the costing:

- Integration with plant DCS
- Pump MCC's
- Plant air supply
- Buildings/footings/foundations
- On site construction
- On site electrical
- Equipment offloading/ installation
- Interconnecting piping

The above exclusions and other on-site construction activities typically fall in the contractor's scope of work, and therefore are excluded from the cost curves. Site specific installation and Balance of Plant costs require engaging an estimator or contractor and are not provided.

FRONTIER WATER SYSTEMS

April 27, 2018

## 2.2. Operations and Maintenance

The following elements are included to model operation and maintenance costs of a Frontier FGD treatment system:

- Operating and routine maintenance labor
- Chemical consumption
- Energy costs

## 2.3. Plant Flows and Redundancy

The provided cost curves are developed directly from actual bioreactor plant designs with quoted component and fabrication costs as of the date of this memorandum. The selected flows cover the full range of the current SeHAWK® FGD product line. Specifically, plant flows of 100 gpm (144,000 gpd), 300 gpm (432,000 gpd), 600 gpm (864,000 gpd) and 1200 gpm (1,728,000 gpd) were selected as data points for the cost curves. Capital equipment and O&M costs for flows outside this range can be extrapolated from the curve to estimate order of magnitude costs for higher and lower flows. Plant designs for additional flows will be developed and optimized with cost estimates as the market develops and more information on specific project requirements are made available. Cost curves were developed for 2 cases – "Low Nitrate", which models costs for influent Nitrate-N values <50 mg/L and "High Nitrate", which assumes treatment of Nitrate-N waters containing >50 mg/L. For Nitrate-N concentrations above 50 mg/L, pre-denitrification equipment is provided for installation upstream of the SeHAWK® FGD reactor, adding capital and O&M costs.

The costing provided assumes an N+1 redundancy requirement for the SeHAWK® FGD bioreactor treatment units and associated skids (strainer, heat exchanger, pump skids etc.). This allows for one complete standby of each unit process.

## 2.4. Target Water Quality

It is assumed that the FWS SeHAWK® FGD bioreactor array would be integrated with a conventional physical chemical treatment system (by others), and is designed to meet the specified water quality parameters of 50 ug/L selenium, 356/788 ng/L mercury, 8/11 ng/L arsenic, and 4.4/17 mg/L Nitrate-N, with the provided feed water parameters (Average Pollutant Concentrations in Influent FGD Wastewater Following Pretreatment, March 29, 2018).

## 2.5. Capital Equipment Cost Curve

Utilizing capital equipment components outlined in section 2.1, and the additional assumptions discussed in seconds 2.3 and 2.4, the resulting capital equipment cost curve is provided in Figure 2.

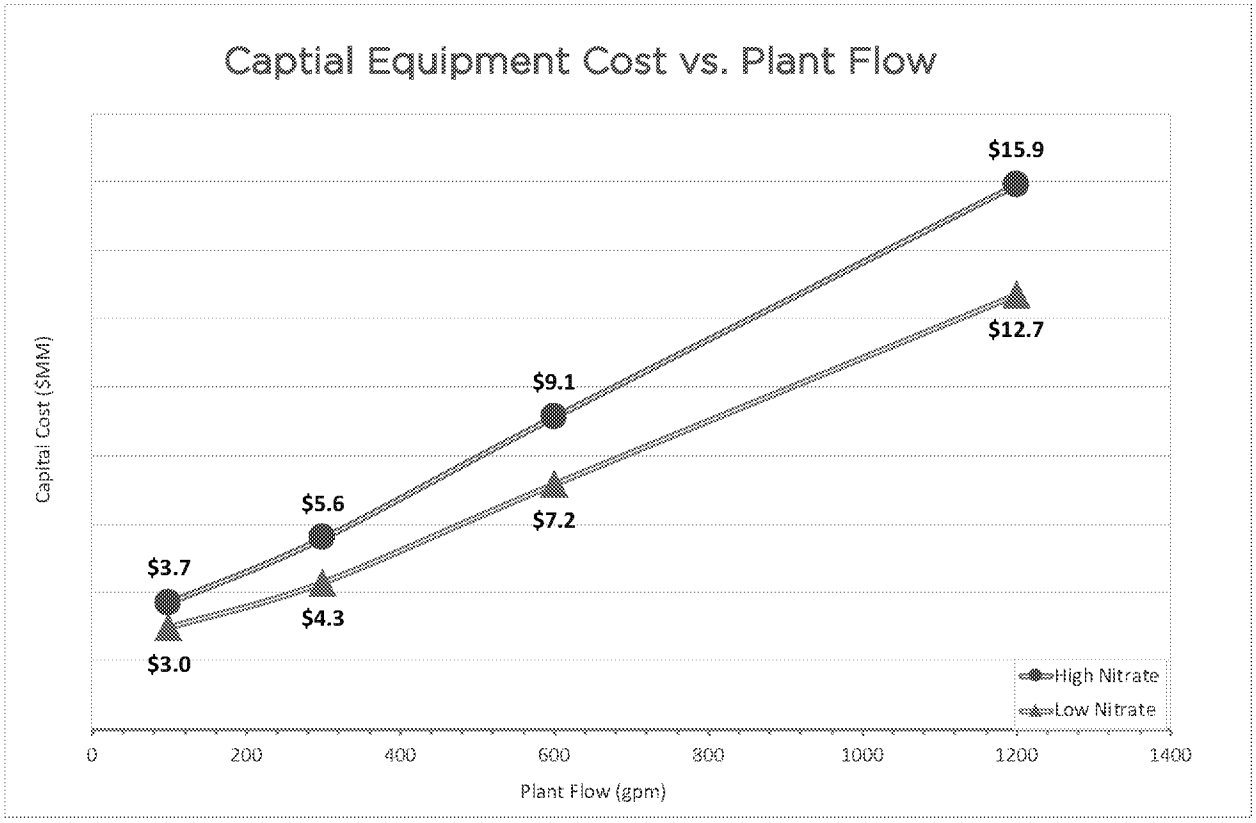



Figure 2 – Capital Equipment Costs for various FGD treatment plant flows

## 2.6. Operations and Maintenance Cost Curve

Incorporating the information and assumptions described in sections 2.2, 2.3 and 2.4, a cost curve for the operation and maintenance of a SeHAWK® FGD bioreactor and surrounding equipment is provided in Figure 3.

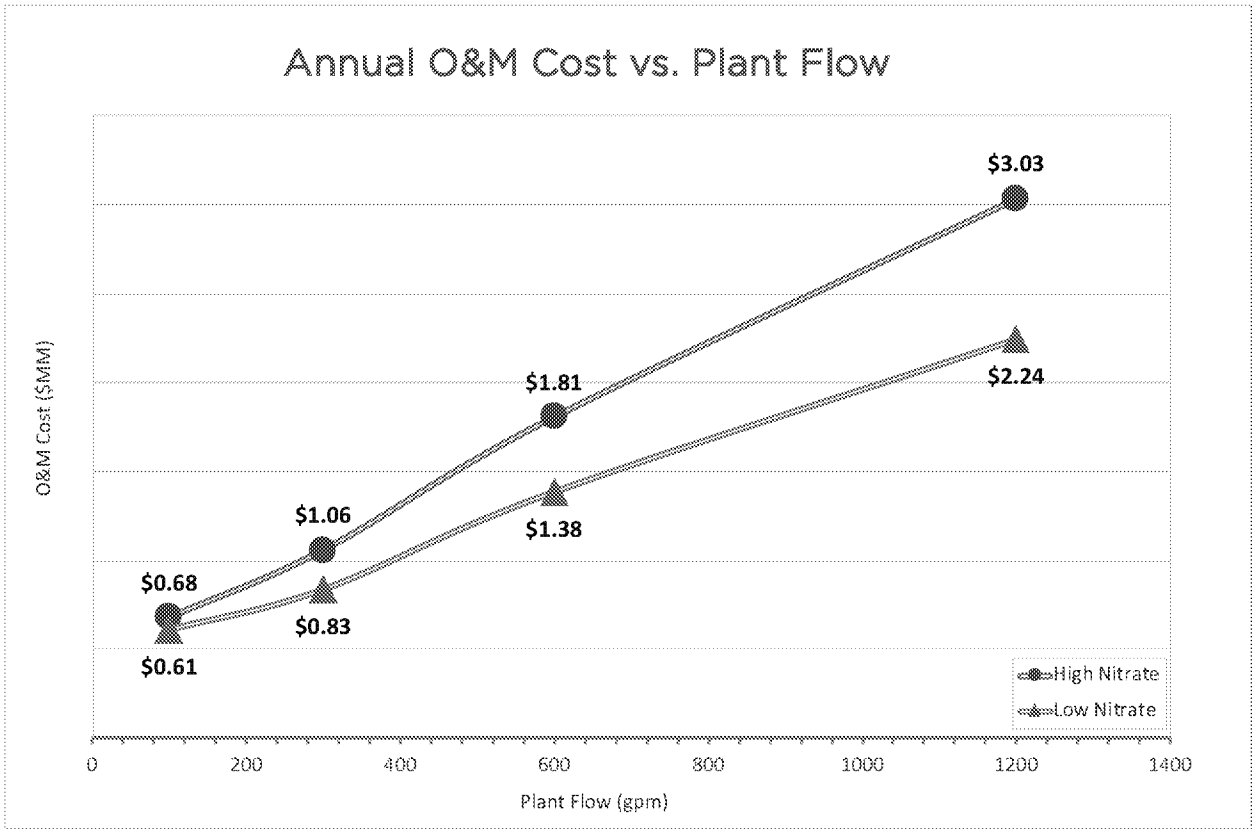



Figure 3 – Operation and maintenance costs for various FGD treatment plant flows

## 3. Additional Questions (per EPA Cost Request to FWS, March 29, 2018)

**EPA Question #1:** *Please provide a detailed description of the system design for your cost curves. Please include the following:*

a. *A list of treatment system units (including any pretreatment or post treatment), along with a process flow diagram indicating all chemical additions;*
b. *Information about the degree of redundancy, including the number of trains assumed and capacity (e.g., 2 x 75%);*
c. *Residence time of any tanks included in the system; and*
d. *Any equipment (treatment units, auxiliary equipment, controls, instrumentation, or electrical components) that you assumed would be provided by the plant and not included in the estimates.*

**FWS Response:** A list of treatment system units, redundancy information and equipment exclusions are provided in Section 2.1 and Section 2.3. Process flow diagrams and reactor HRT are considered confidential and are excluded from this memorandum.

**EPA Question #2:** *Describe the extent to which the Frontier SeHAWK® System is modular, fabricated onsite, or fabricated offsite and transported to the plant.*

**FWS Response:** The SeHAWK® FGD bioreactor treatment solution consists entirely of modular equipment. Equipment includes various skids and bioreactor tanks that are prefabricated, and are delivered to site for installation by an onsite contractor. For example, a 300 gpm bioreactor plant would consist of the following pre-fabricated assemblies:

- Feed pump skid (1)
- Strainer skids (1)
- Flow control skids (6)
- Stage 1 bioreactors (4)
- Stage 2 bioreactor skids (4, with 2 bioreactors per skid)
- Backwash skids (1)
- Product pump skids (1)
- Chemical feed skids (3)

**EPA Question #3:** *How would elevated nitrate/nitrite concentrations change the design of the treatment system? In EPA's experience, FGD wastewater can have nitrate/nitrite concentrations as high as 200 ppm. Please indicate the range of nitrate/nitrite concentrations the system corresponding to the cost curves is designed to handle. In cases where wastewater has a nitrate/nitrite concentration above the design concentration, or significantly above the average nitrate/nitrite concentration listed in Table 1, would additional denitrification be required? If so, what nitrate/nitrite concentration would trigger additional treatment?*

**FWS Response:** Two water quality cases were modeled for the cost curves in regard to Nitrate-N. The first case assumes Low Nitrate-N conditions (<50 mg/L as N) and the second case assumes High Nitrate-N conditions (>50 mg/L as N but less than 91 mg/L as N, per Table 1). Concentrations above 91 mg/L may require bringing on additional nitrate pretreatment units, effectively increasing the system HRT. Water quality data collected to date by Frontier Water indicate that most of the FGD blowdown test sites consistently produce a blowdown stream containing less than 50 mg/L nitrate-N, and this low nitrate condition would be the assumed design basis for full scale implementation at these sites.

**EPA Question #4:** *Does the treatment system for the cost curves include any methods for monitoring oxidation reduction potential (ORP) or sulfites within the system (e.g., inline ORP monitor or sulfite analyzer)? If so, what type of monitoring is included and where is it located in the system? Does the system design include any method for managing or adjusting ORP or sulfites within the system (e.g., chemical addition such as sodium bisulfite), and are those costs included in the cost curves provided?*

**FWS Response:** High ORP conditions can exist in FGD blowdown at some sites. The Frontier Water bioreactor system includes a chemical feed system and ORP monitoring to accommodate

reducing agent addition to the feed water stream when required. This equipment is included in the capital equipment cost curves.

**EPA Question #5:** *Provide a description of cleaning operations that are included in the O&M cost curve. Are there any additional cleaning actions that may be needed? If so, when and how often should these additional cleaning operations be completed and what are the requirements (including labor hours and cost)?*

**FWS Response:** O&M cost curve includes chemical costs and labor for cleaning operations, such as the bioreactor backwash and flush events. These events are automated to a large degree to minimize labor.

**EPA Question #6:** *What is the footprint of a typical Frontier SeHAWK® system and are there any constraints (e.g., space or location) on where the treatment system can be located? Does the system need to be within a specific distance of any other unit or equipment? Does the system need to be housed in a building? Please keep in mind that EPA will be attempting to apply these costs across the entire industry, so even if a portion of plants (e.g., those located in colder states) would need special considerations, please provide that information.*

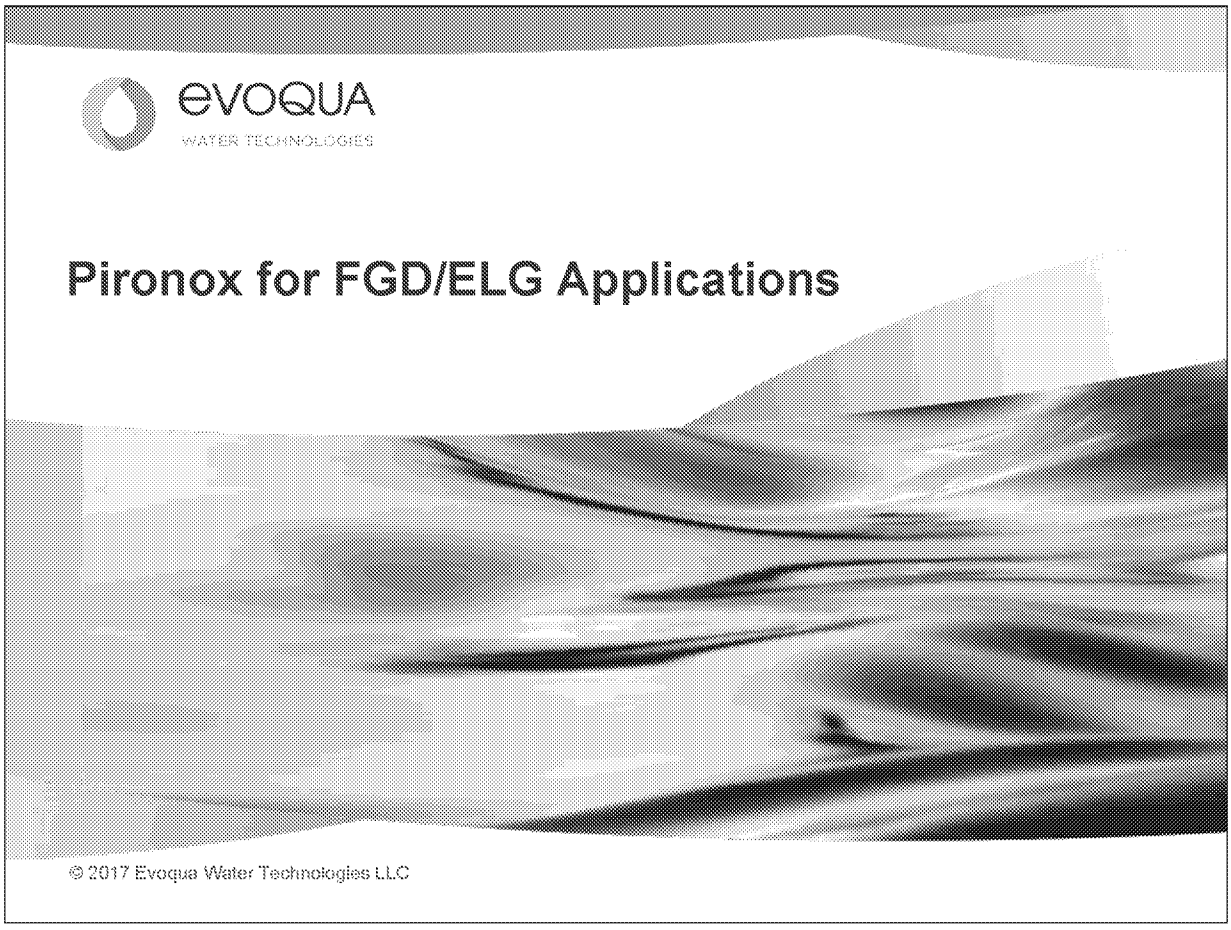
**FWS Response:** Estimated SeHAWK® FGD Total Footprint for the selected flows are: 100 gpm (14400 $ft^2$), 300 gpm (31200 $ft^2$), 600 gpm (45600 $ft^2$) and 1200 gpm (74400 $ft^2$). It is recommended that most components be housed in a building for freeze protection and operational considerations in inclement weather. Typically, the pump skids, chemical feed systems, and electrical components would be placed in a building. Bioreactors and tanks could be located outside.

**EPA Question #6:** *Please indicate if there is a maximum concentration threshold (e.g., upper bound) for any parameters. Is there a specific parameter and concentration at which the treatment system becomes less effective? This could also include concentrations which require procedures outside the normal operating and maintenance activities to function as designed. Please identify the specific maximum concentration for each pollutant that can be accommodated by the system without affecting system performance, if known. Parameters of interest to EPA are chloride, TDS, and sulfate. Any other pollutant thresholds should also be identified.*

**FWS Response:** Frontier Water has operational experience in at multiple power plant sites with 14 completed pilot tests to date treating FGD blowdown. This testing demonstrates successful treatment of a broad range of FGD water chemistries, with TDS averaging 17,556 mg/L (36,000 mg/L maximum) and chloride averaging 7,000 mg/L (17,200 mg/L maximum). The maximum contaminant concentration thresholds have not yet been determined as the pilot data gathered to date is empirically based on site specific water chemistry conditions available for testing.

**EPA Question #7.** Please estimate the typical duration between bid solicitation and commissioning of the treatment system.

**FWS Response**: Typical duration between CONTRACT AWARD and commissioning of the treatment system is anticipated at 18-24 months.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Pironox for FGD/ELG Applications
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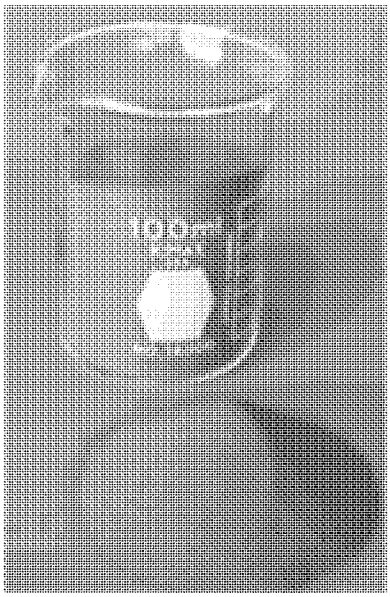
## BASIS OF ZVI REDUCTION TREATMENT:

### ZERO VALENT IRON ($FE^0$ OR ZVI) WHAT IS IT AND HOW DOES IT WORK

- **ZVI is elemental or pure iron**
- **ZVI reacts with many compounds such as:**
  - Oxyanions
  - Metal cations
  - Some organic molecules
- **Mechanism is complex based upon:**
  - Redox reaction with the ZVI acting as the electron donor
  - Immobilization through surface adsorption on iron oxide produced from iron corrosion



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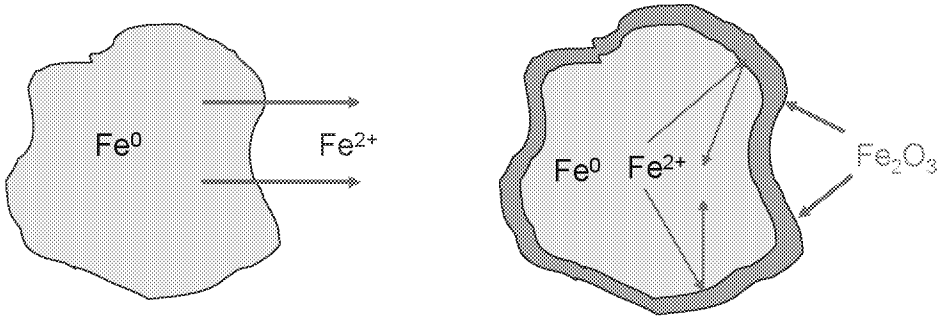
# HISTORICAL PERFORMANCE OF ZVI

- **Historical performance had been inconsistent**
  - Iron rusts resulting in loss of reactivity (passivation)
  - Plugging of columns
  - Many solutions tried – acidic conditions, frequent backwashes, packed beds, nano-scale ZVI, … but until recently no solution has been found

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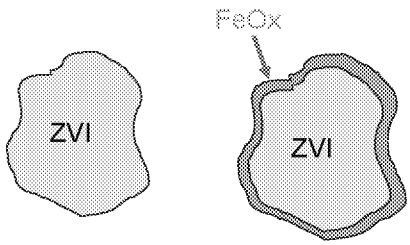
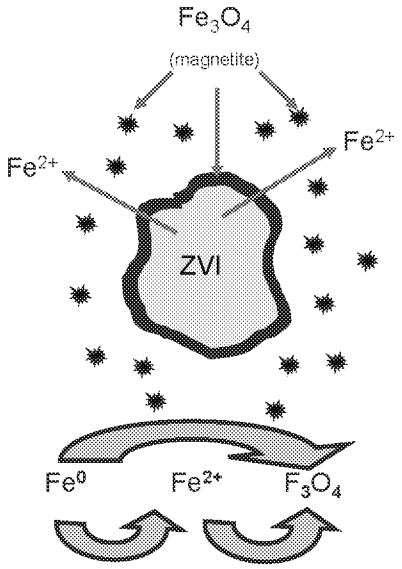
# ADVANCED ZVI REACTIVE MEDIA PROCESS MECHANISMS




- **Redox reaction**
  - **Oxyanions**
    - Oxyanions: Nitrate, selenate, molybdate, chromate, silica, arsenic
  - **Heavy Metals**
    - Copper, Mercury
- **Immobilization through surface adsorption on $Fe_xO_y$ produced from iron corrosion**
  - Heavy metals: Cadmium, Mercury, Arsenic, Nickel, Zinc, Thallium

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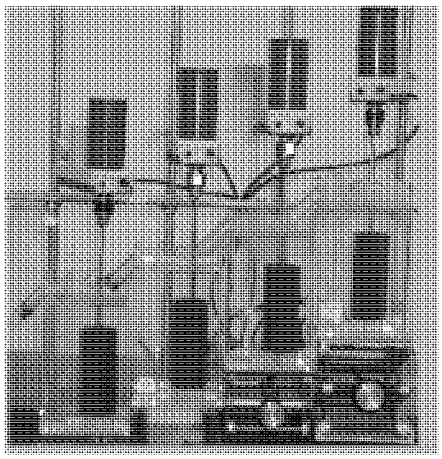
## PIRONOX LAB TESTING

- Over 20 Continuous Flow Lab Tests on Power Plant Wastewater
- Typical Flow Rate = 11.5 L/day
- CFD Designed Reactor – Good Correlation When Scaled-up to 25 and 50 gpm



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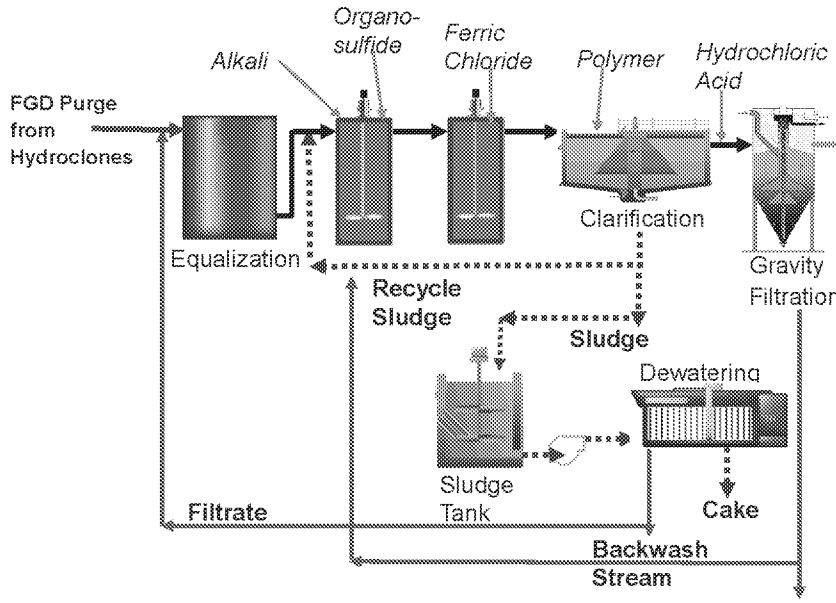
# PRIMARY - PHYSICAL CHEMICAL TREATMENT SYSTEM




- *pH Elevation / Gypsum Desaturation*
- *Heavy Metal / TSS Reduction*
- *Coagulation and Flocculation*
- *Clarification*
- *pH Adjustment*
- *Gravity Filtration*
- *Sludge Dewatering*

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## EXPECTED WATER QUALITY FROM PHYS CHEM

- Temperature 80-120 degree F
- TDS < 30,000 ppm
- Ca < 5,000 ppm
- Cl < 10,000 ppm
- Fe < 10 ppm
- ORP - 100-300 mV
- TSS < 100 ppm
- Nitrate – 5 - 50 ppm as N

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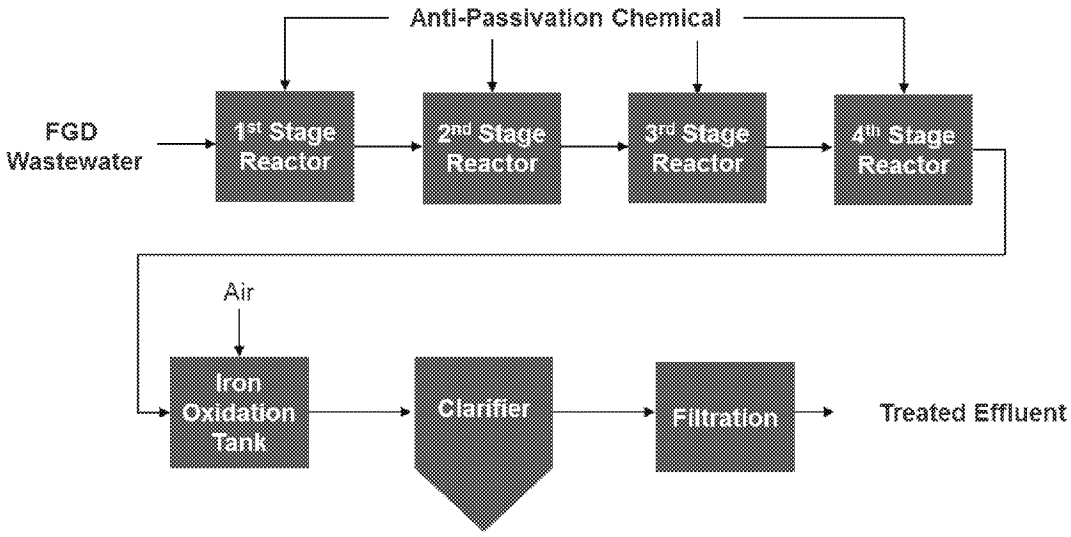
# ADVANCED ZVI REACTIVE MEDIA SYSTEM (PIRONOX) FOR REMOVAL OF METALS AND OTHER TRACE CONTAMINANTS

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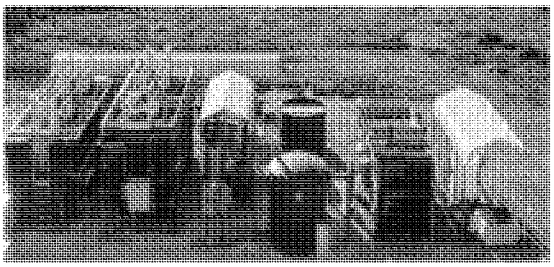
# CASE STUDY:
# FGD PURGE ADVANCED TREATMENT PILOT - PIRONOX

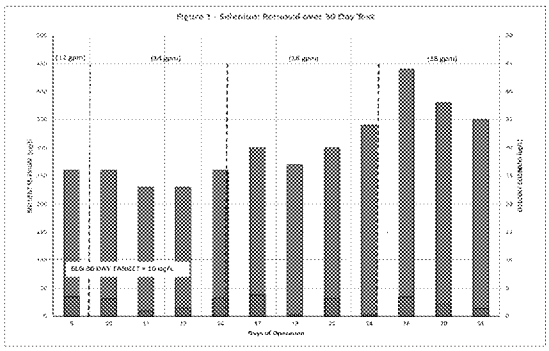
## Project Overview

- USA, Coal Fired Plant with FGD, 2,100 MW
- Solution Type: FGD wastewater pilot for ELG compliance
- Year of Completion: 2016
- Capacity: 20 gpm



## Customer Challenge

Demonstrate the ability of an advanced non-biological treatment technology to achieve ELG compliance for Se, Hg, As and NO2/NO3 for 30 consecutive days



## Solution

Pilot system operated to demonstrate the efficacy of the Pironox Advanced Treatment Process based on the hybrid zero valent iron technology

## Results

All ELG Limits met consistently for 30 day test period

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Re-do the chart, show As, Se and Hg, change the limit dash line on the chart

OBJECTIVE 1 (PHASE 1)

- **Long term stability**
- **Design Flow (12.0 - 12.5 gpm)**
- **30 consecutive days of ELG compliance**
- **Two shutdowns extended test period**
  30 days – broken pipe due to freezing
  7 days – Replenish ZVI
- **Total operation = 110 days** – only one day that did not meet ELG

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Phase 1 ultimately included 110 days of operation (2 interruptions – 1 major / 1 minor)
Major - weather related problem (freezing), 30 day shutdown)
Minor – ZVI deficiency, 7 day shutdown

OBJECTIVE 2 (PHASE 2)

- **Establish minimum system HRT**
- **Goal – ELG Compliance at 25 gpm (7.5 hour system HRT)**
- **Gradually increase flow**
- **50 days of actual operation**
  Zero days of non-ELG compliance
  Shutdown in middle (40 days) due to leak in tank

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Leak caused by faulty bracket

OBJECTIVE 3 AND 4

- **Evaluate removal of non-ELG metals.**
  Looked at 54 different parameters including 24 metals
- **Test the dewaterability and stability of sludge generated during treatment.**

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Both total and dissolved metals

# PHASE 1 - 110 DAYS OF OPERATION

| Parameter | Units | Average Influent | Average Effluent | ELG |
|---|---|---|---|---|
| Arsenic | µg/L | <5.5 | <5.5 | 8 / 11 |
| Mercury | ng/L | 11,738 | <59 | 356 / 788 |
| Selenium | µg/L | 305 | <7.2 | 12 / 23 |
| $NO_3/NO_2$ | mg/L-N | 16.4 | <0.137 | 4.4 / 17 |

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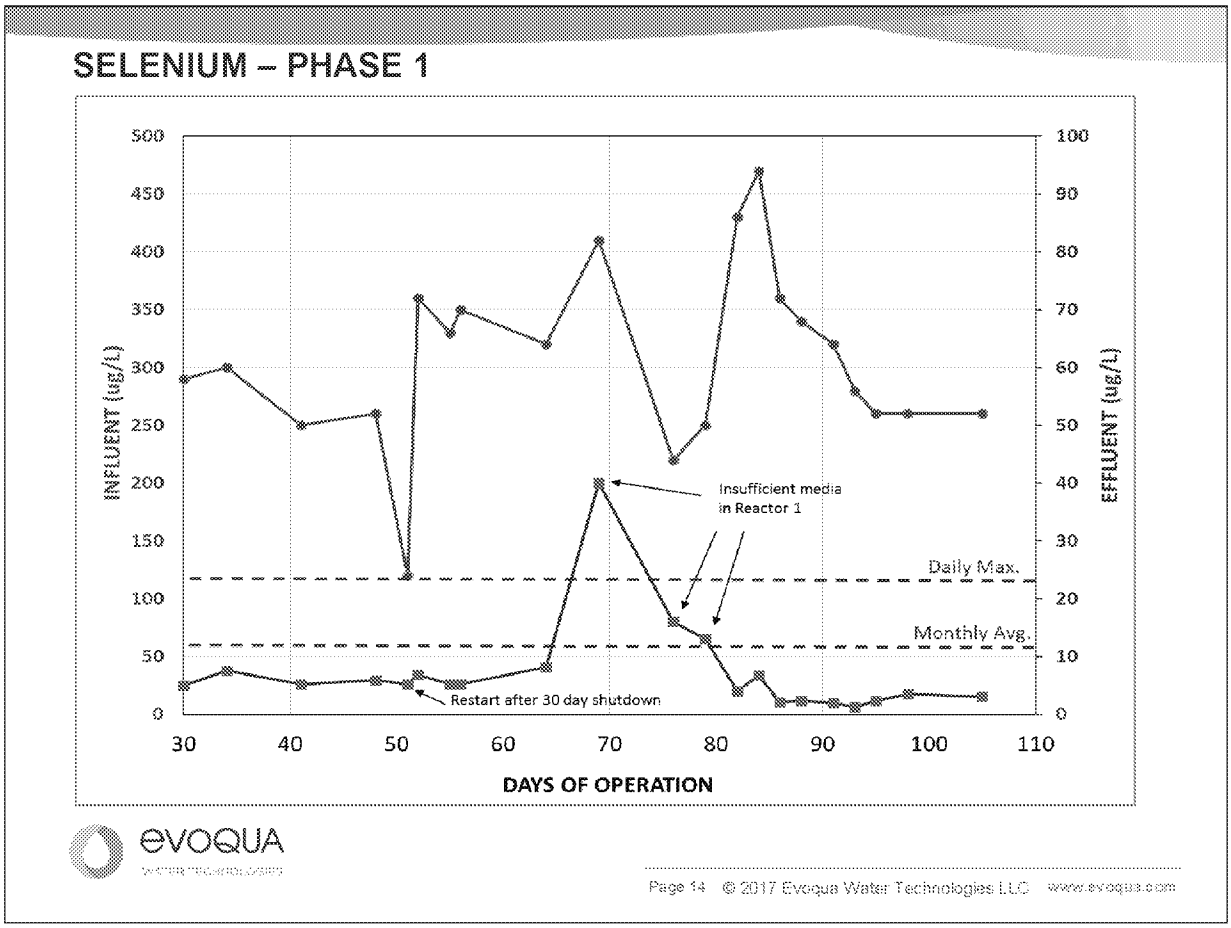
Results based on 23 influent and 21 effluent samples
47% of Hg samples were analyzed at <50 ppt
58% of NO3 reported at <0.01 mg/l (10 ppb)
Nitrate would have been <0.025 if not for samples collected when ZVI was at low level.
ELG – 30 day avg / daily max
Mercury as high as 45,300 ppt
Selenium as high as 470 ppb

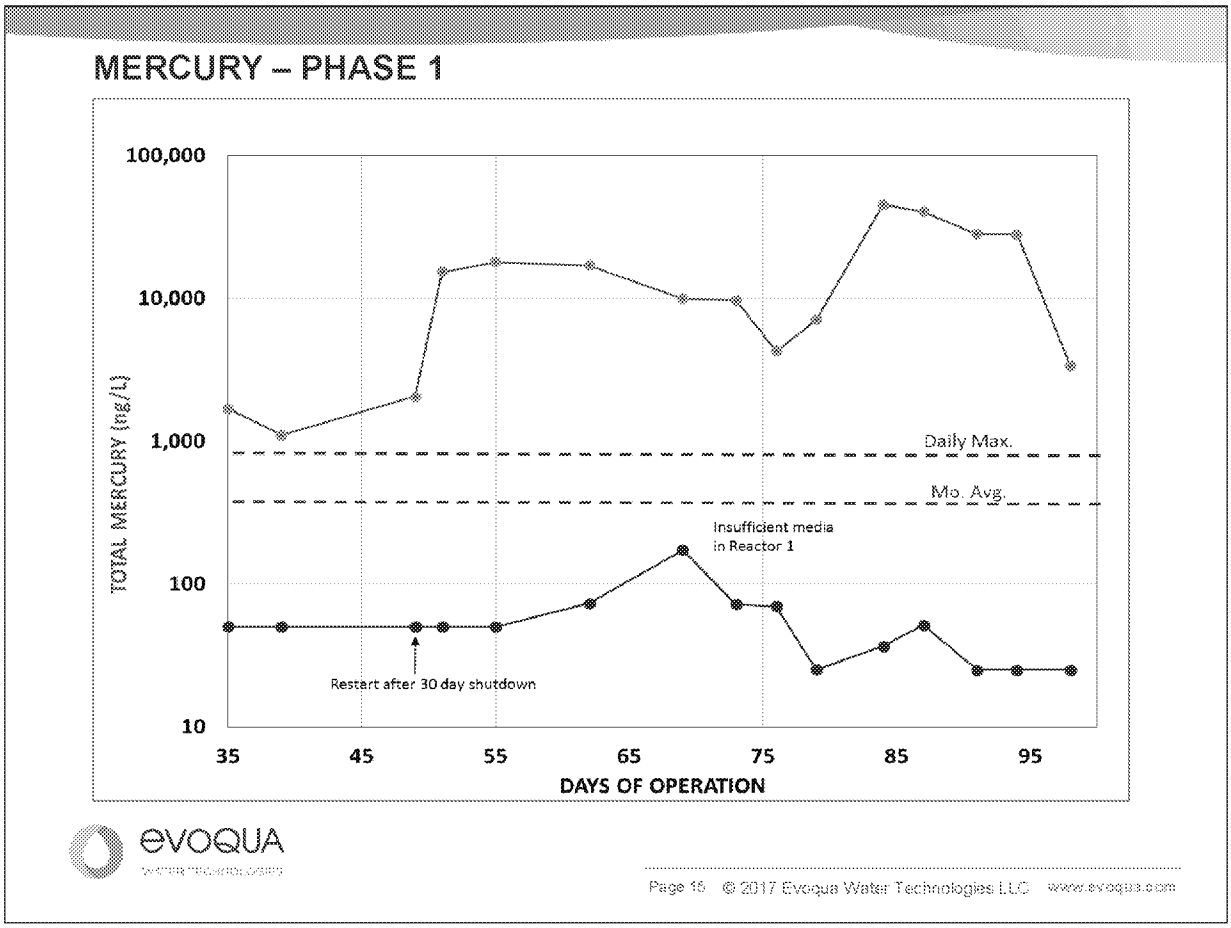



Virtually no Se increase during restart (5.2 to 6.9)

3 days exceeded ELG 30 day avg. – Due to insufficient ZVI in reactor

Only 1 point exceeded daily max

Average = 7.2 / 4.5 if 3 high points were removed



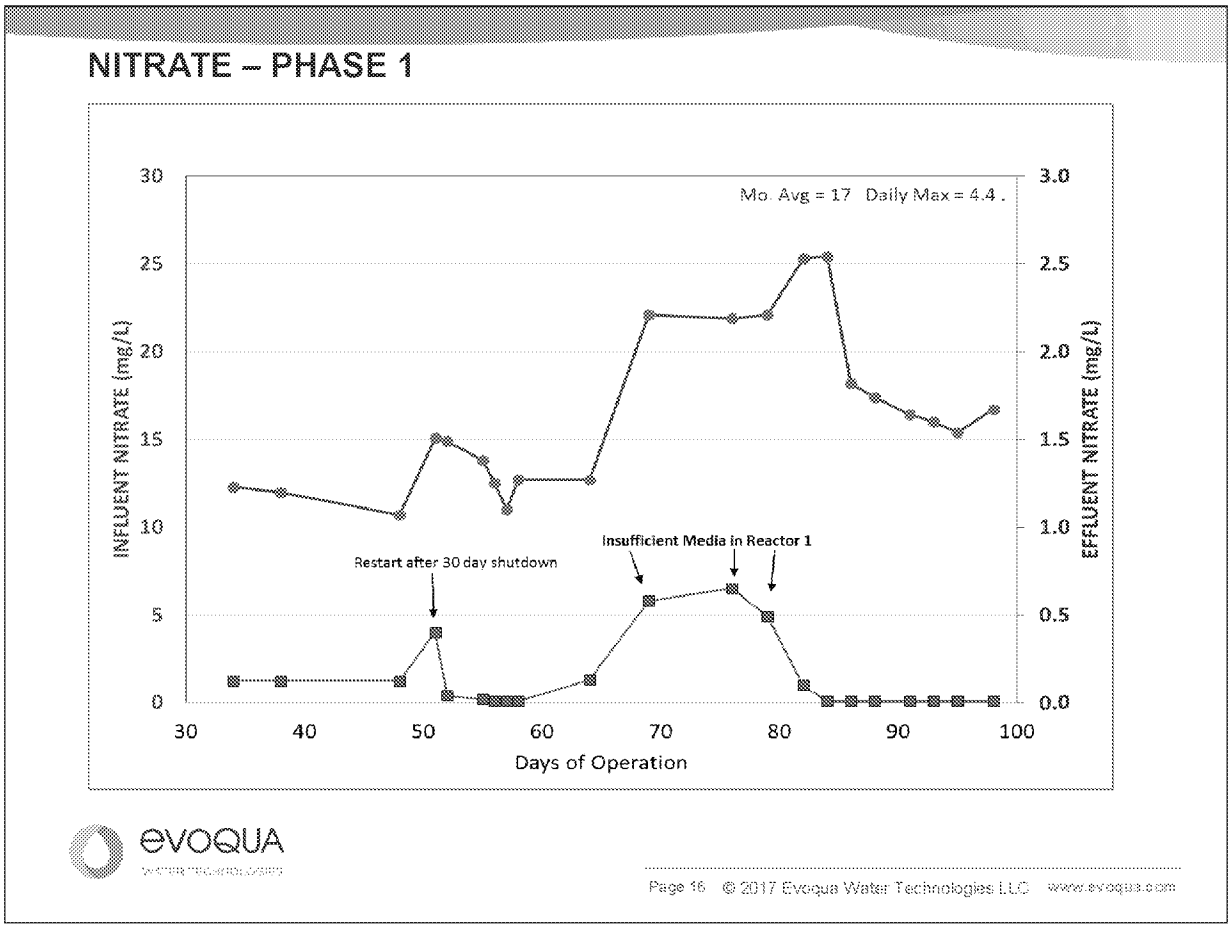

No change in Effluent upon restart

Only 1 point above 30 day ELG (173 ng/l) – below daily max

Insufficient ZVI in reactor when overage occurred.

Maximum influent = 49,000 ppt

Average effluent for the 60 day period was <59 ppt.




0.4 upon restart

Up to 0.65 due to insufficient media

Average effluent = 0.13 mg/l

4 days exceeded daily max

# PHASE 2 - 50 DAYS OF OPERATION

| Parameter | Units | Average Influent | Average Effluent | ELG |
|---|---|---|---|---|
| Arsenic | µg/L | <5.5 | <5.5 | 8 / 11 |
| Mercury | ng/L | 13,900 | <20 | 356 / 758 |
| Selenium | µg/L | 461 | 3.5 | 12 / 23 |
| $NO_3/NO_2$ | mg/L-N | 18.4 | 1.128 | 4.4 / 17 |

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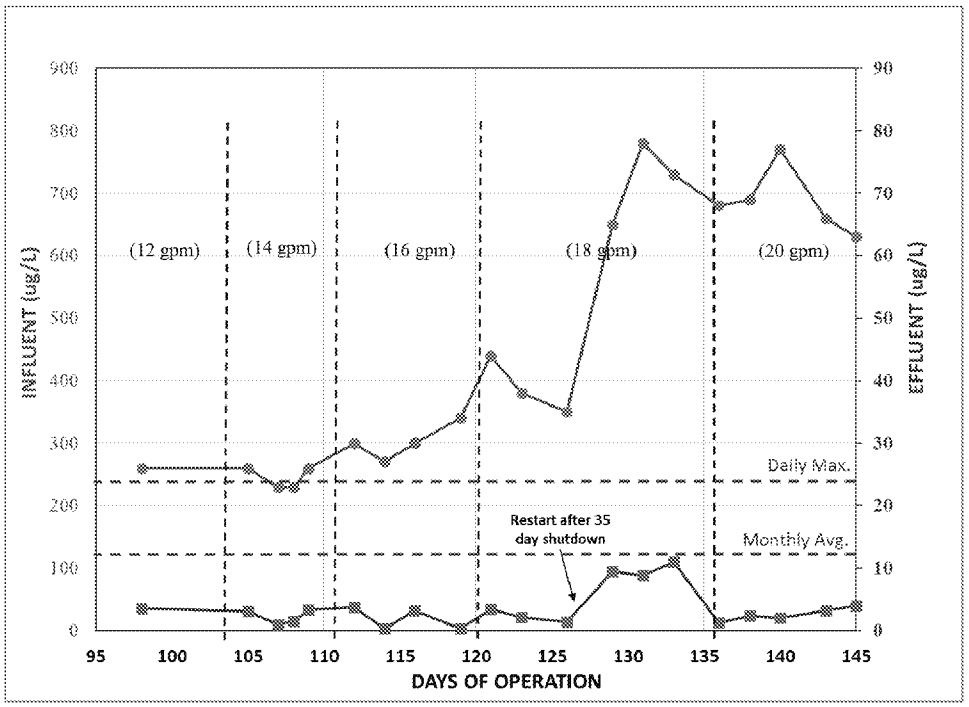
Results based on 20 influent and 20 effluent samples
All but 2 Hg effluent samples were analyzed at <25 ppt
Nitrate – first 12 samples <0.01 - last 7 were above 1.6 mg/l
ELG – 30 day avg / daily max
Mercury as high as 64,700 ppt
Selenium as high as 780 ppb

## SELENIUM – PHASE 2

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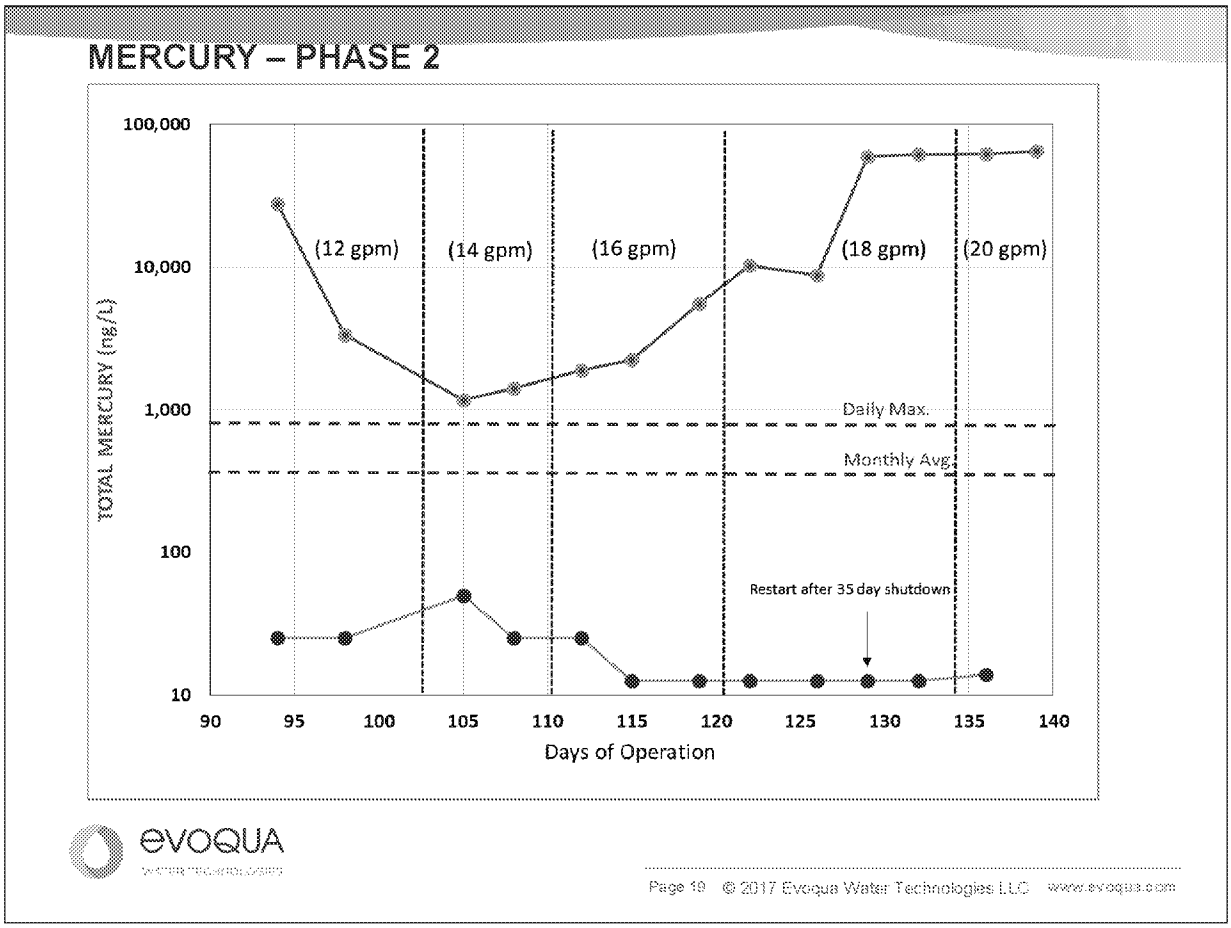
Only 1 day exceeded ELG 30 day avg. (value = 11 ppb)

Avg Se effluent= 3.5 ppb

Only a slight increase at restart – even at elevated flow

Note Se increase at same time flow was increasing – no effect on effluent



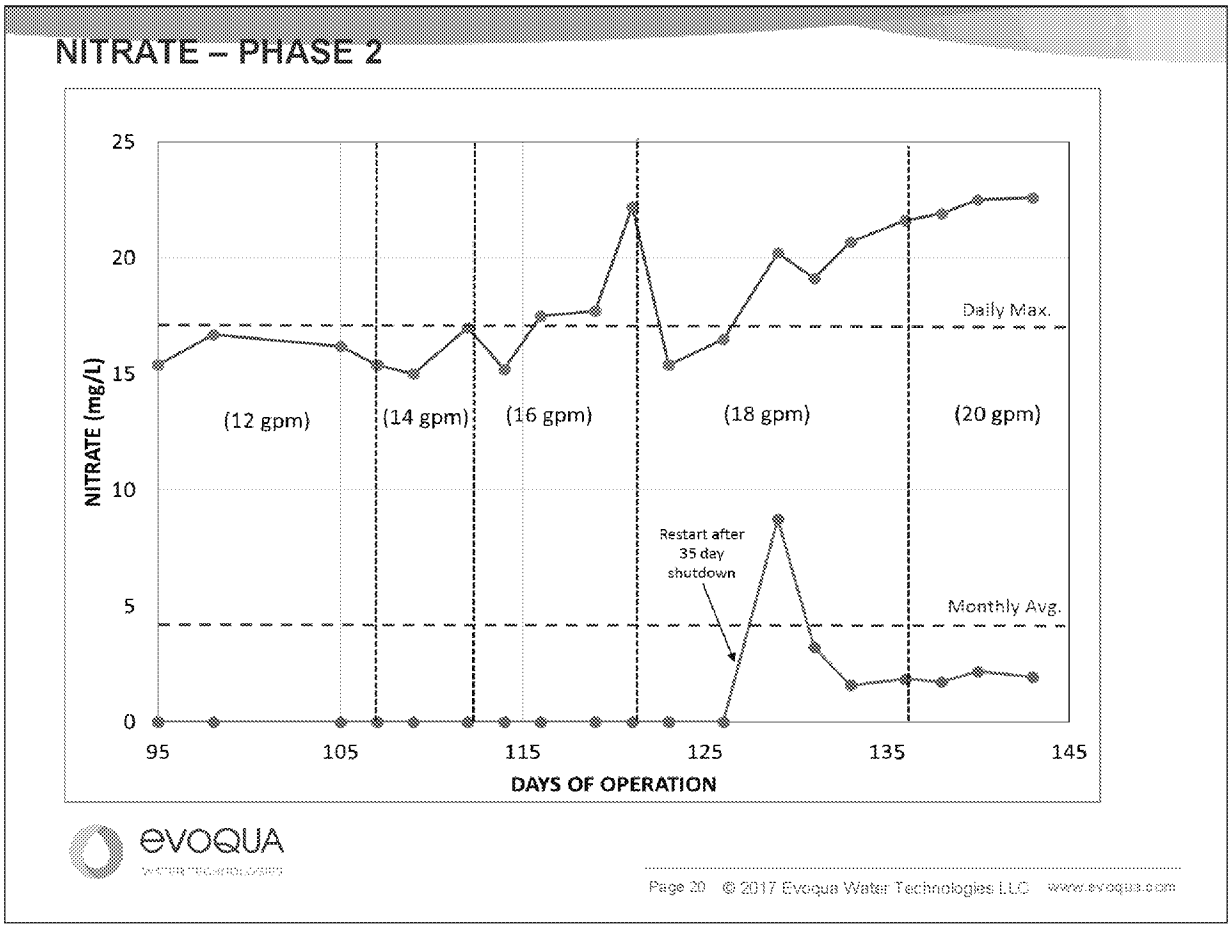

Log graph

Average influent = 24,000 ppt (max was 64,000)

Average effluent < 20 ppt

No change in effluent quality after restart

A results shown are “BDL”




Consistent results of <0.01 for over 30 days as flow was increased from 12 to 18 gpm.

Shut down on day 125 due to leak.

Upon restart nitrate climbed to 8.78 and then remained at ~1.75 mg/l.

Influent also increased from ~15 to ~22.5

# CONSTITUENTS NOT REMOVED BY PIRONOX

| | | Influent | Effluent | Removal |
|---|---|---|---|---|
| Chloride | (mg/L) | 6,881 | 6,735 | 2.1% |
| Sulfate | (mg/L) | 1,093 | 1,078 | 1.4% |
| Boron | (mg/L) | 146 | 133 | 8.6% |
| Calcium | (mg/L) | 3597 | 3507 | 2.5% |
| Magnesium | (mg/L) | 479 | 451 | 5.8% |
| Manganese | (mg/L) | 3.0 | 3.8 | -28% |
| Potassium | (mg/L) | 19.5 | 24.5 | -26% |
| Sodium | (mg/L) | 34 | 114 | -240% |
| Strontium | (mg/L) | 17.7 | 17.3 | 2.5% |

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51 Influent samples

26 Effluent Samples

## CONSTITUENTS REMOVED BY PIRONOX

| | Unit | Influent | Effluent | Eff DL | Removal |
|---|---|---|---|---|---|
| Aluminum | (ug/L) | 1,530 | 479 | 50 | > 68.7% |
| Antimony | (ug/L) | 2.87 | 0.39 | 0.25 | > 86.6% |
| Beryllium | (ug/L) | 2.69 | 0.39 | 0.25 | > 85.7% |
| Cadmium | (ug/L) | 92.86 | 0.6 | --- | 99.40% |
| Chromium | (ug/L) | 21.3 | 1.08 | 1.01 | > 94.9% |
| Cobalt | (ug/L) | 11.36 | 1.31 | --- | 88.50% |
| Copper | (ug/L) | 28.15 | 3.43 | 2.65 | > 87.8% |
| Lead | (ug/L) | 22.43 | 0.4 | 0.28 | > 98.2% |
| Molybdenum | (ug/L) | 27.53 | 2.79 | --- | 89.90% |

Shaded box indicates at least 50% of the values were below detection limit (DL)

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51 Influent samples
26 Effluent Samples
Highlighted – at least 50% of values below DL
Cd, Cr, Cu, Pb

## CONSTITUENTS REMOVED BY PIRONOX

| | Unit | Influent | Effluent | Eff DL | Removal |
|---|---|---|---|---|---|
| Nickel | (ug/L) | 219.91 | 8.27 | --- | 96.20% |
| Silicon | (ug/L) | 15,042 | 602 | 550 | > 96.0% |
| Silver | (ug/L) | 2.73 | 0.4 | 0.28 | > 85.2% |
| Thallium | (ug/L) | 6.11 | 0.39 | 0.28 | > 93.7% |
| Titanium | (ug/L) | 50.3 | 2.56 | 0.51 | > 94.9% |
| Tungsten | (ug/L) | 3.13 | 0.81 | 0.28 | > 74.0% |
| Uranium | (ug/L) | 25.21 | 0.39 | 0.28 | > 98.5% |
| Vanadium | (ug/L) | 53.68 | 5.93 | 5.5 | > 89.0% |
| Zinc | (ug/L) | 1347.95 | 3.9 | 2.65 | > 99.7% |

Shaded box indicates at least 50% of the values were below detection limit (DL)

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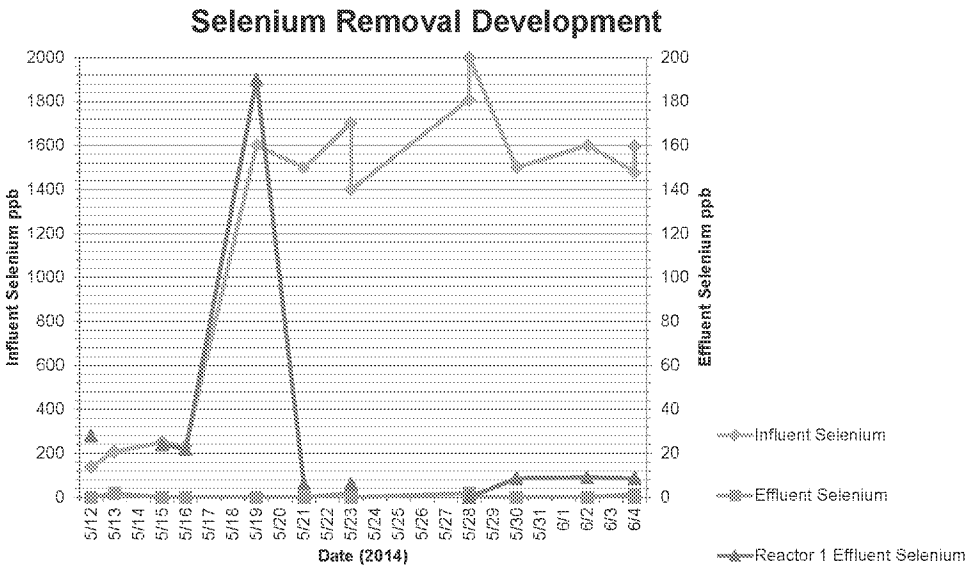
51 Influent samples
26 Effluent Samples
Highlighted – at least 50% of values below DL
Cd, Cr, Cu, Pb

# SELENIUM REMOVAL: DEMONSTRATION: METAL SPIKING TRIAL

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## MEDIA DISPOSAL/TCLP

- Passed numerous TCLP tests in several pilots
- On site or off site landfill
- Mixed with PhysChem and Final Clarifier Sludge

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## TCLP RESULTS

| Metal | TCLP Limits | Sample A | Sample B | Units |
|---|---|---|---|---|
| Silver | 5 | 0.002 | <0.012 | mg/L |
| Arsenic | 5 | 0.014 | <0.018 | mg/L |
| Barium | 100 | 0.305 | 0.201 | mg/L |
| Cadmium | 1 | 0.004 | 0.037 | mg/L |
| Chromium | 5 | <0.002 | <0.02 | mg/L |
| Mercury | 0.2 | 0.01 | <0.0002 | mg/L |
| Lead | 5 | 0.134 | 2.4 | mg/L |
| Selenium | 1 | <0.011 | <0.04 | mg/L |

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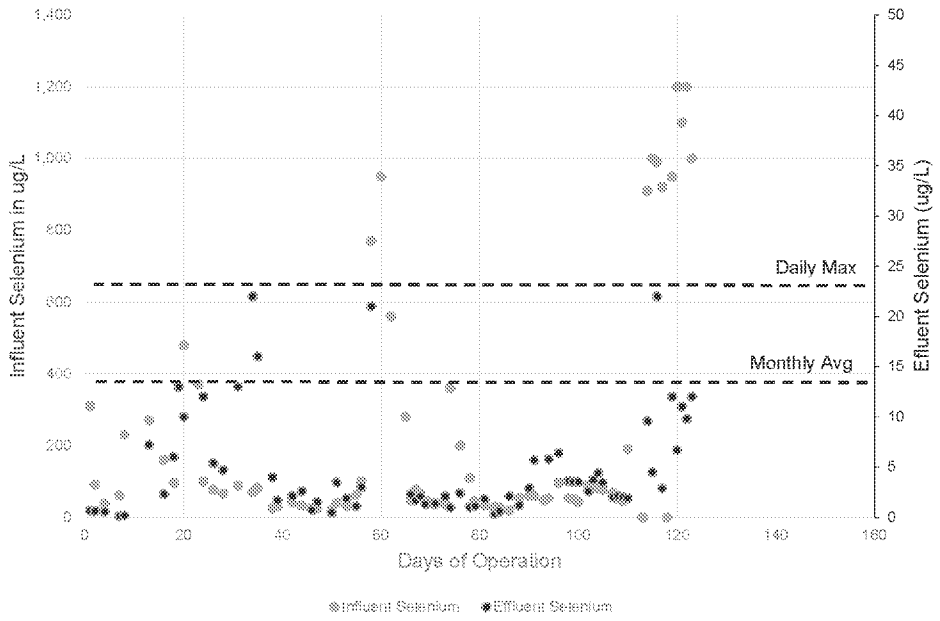
51 Influent samples
26 Effluent Samples
Highlighted – at least 50% of values below DL
Cd, Cr, Cu, Pb
Typical Cake = 41% Dry solids

# SOUTH CAROLINA PILOT - SELENIUM

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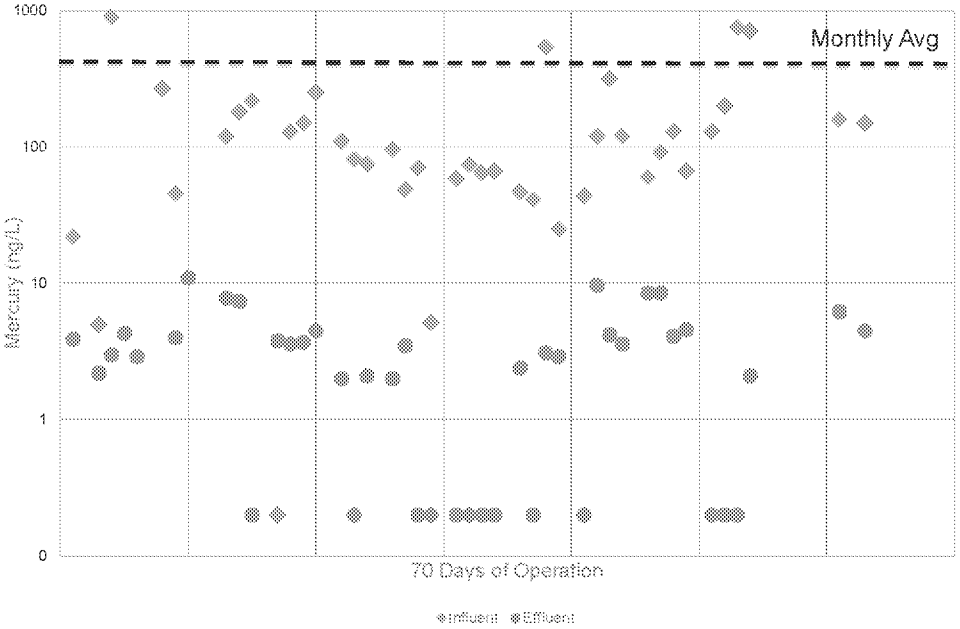
# SOUTH CAROLINA PILOT - MERCURY

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# SOUTH CAROLINA PILOT - NITRATE

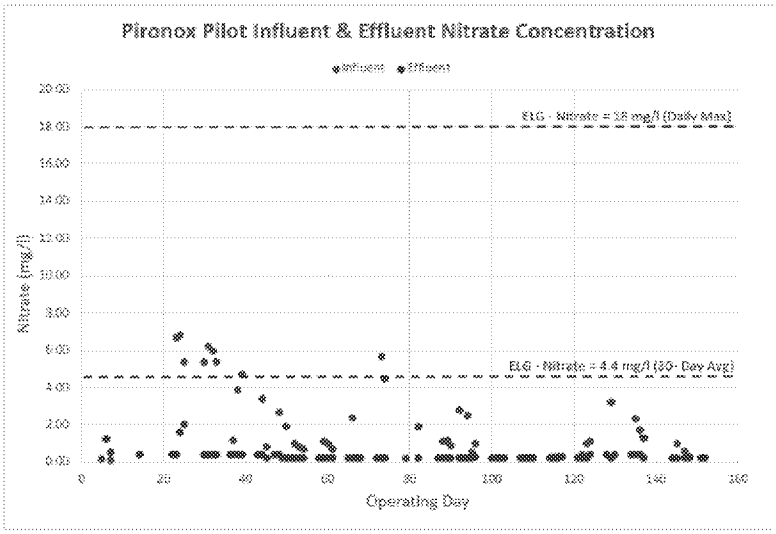


Figure 3: Pilot Influent and Effluent Total $NO_3$ compared to ELGs

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## SELENIUM REMOVAL CAPACITY/ REPLACEMENT

- 0.8 - 1.5 mg Se / mg of ZVI
- 4-12 mg ZVI / mg of $NO_3$-N
- Based on 20 ppm Nitrate and 2000 ppb Selenium – 10% /month replacement factor

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## PIRONOX LAB TESTING

- **Concentrated FGD Blowdown with Reverse Osmosis**
- **Tested Pironox at 20, 30, 35, 50 and 70 g/L TDS**

| | (Influent / Effluent) | | | |
|---|---|---|---|---|
| TDS (g/L) | Se (ug/L) | NO3-N (mg/L) | Hg (ng/L) | As (ug/L) |
| 20 | 75 / 2.7 | 13 / <0.4 | 504 / 11 | 2.8 / na |
| 30 | 93 / 3.9 | 19 / <1 | na / na | na / na |
| 35 | 83 / 6.4 | 21 / <1 | 892 / 13 | 6.0 / 5.6 |
| 50 | 110 / 6.5 | 33 / <1 | na / <5 | 8.3 / 7.9 |
| 70 | 190 / 20 | 46 / <1 | na / 1.9 | 15 / 13 |

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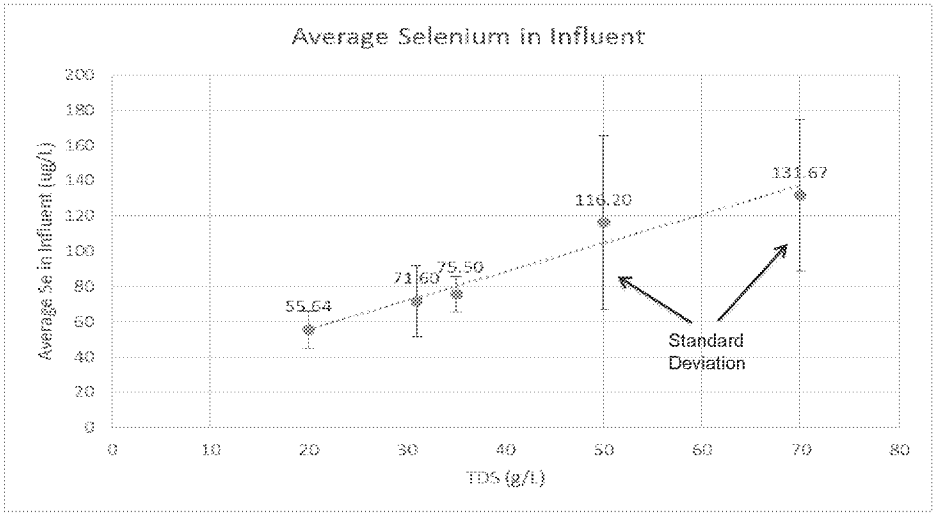
## PIRONOX LAB TESTING

- **Significant Analytical Issues at 50 and 70 g/L TDS**

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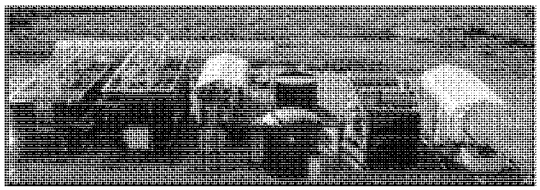
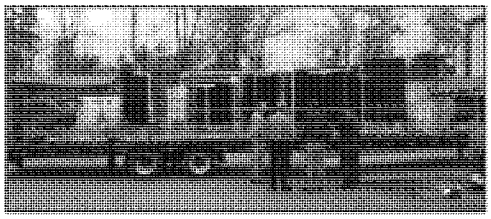
# PIRONOX PILOT EQUIPMENT

- One (1) 20 gpm skid mounted system

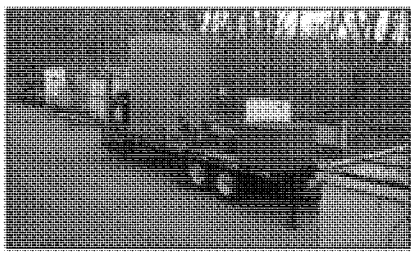


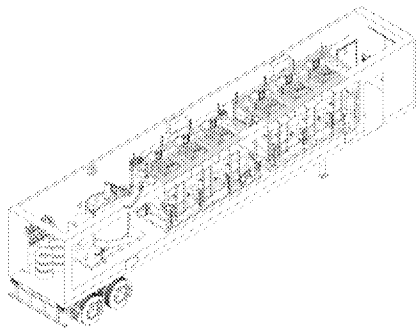


- Two (2) 2 gpm trailer systems – one (1) enclosed and one (1) bareback
- One (1) 5 gpm trailer system - bareback
- Two (2) 2 gpm skid mounted systems

**Nitrate Reduction:**

- One (1) 4 gpm Sequential Batch Reactor





EVOQUA

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## PILOT ACTIVITY

- Alabama – Completed
- Kentucky – Underway
- Wisconsin – Proposed
- Tennessee – Proposed
- Alabama - On Site Bench Testing

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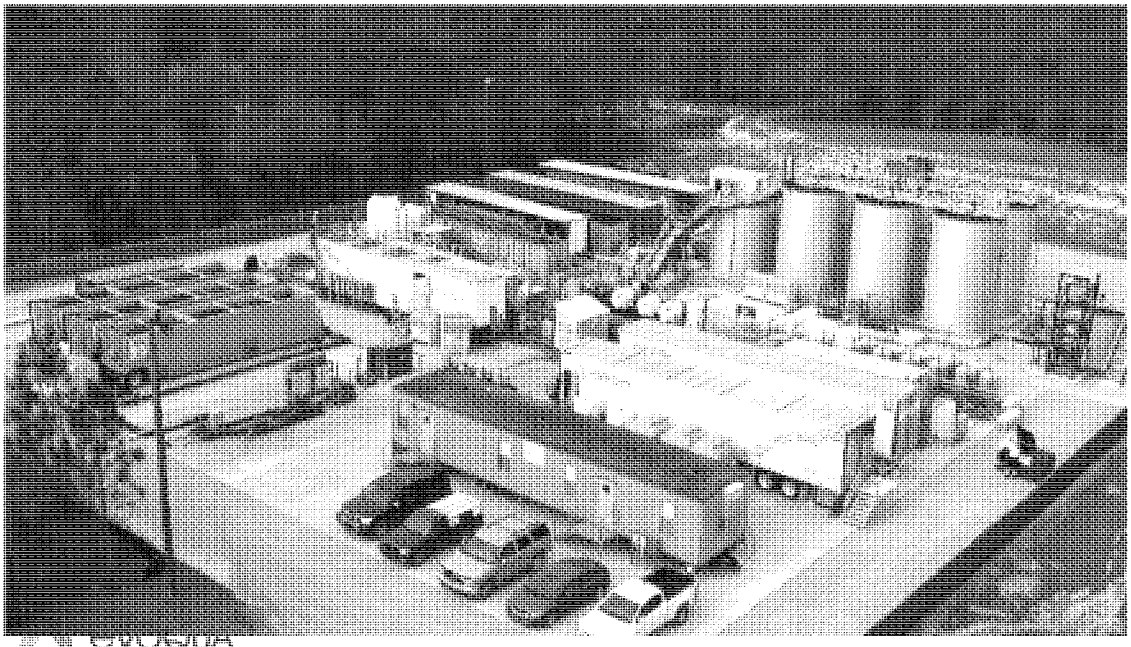
# ASH BASIN DEWATERING APPLICATION



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| | Unit | Influent | Effluent | Eff DL | Removal |
|---|---|---|---|---|---|
| | | | | | |
| Aluminum | (ug/L) | 1,530 | 479 | 50 | > 68.7% |
| Antimony | (ug/L) | 2.87 | 0.39 | 0.25 | > 86.6% |
| Beryllium | (ug/L) | 2.69 | 0.39 | 0.25 | > 85.7% |
| Cadmium | (ug/L) | 92.86 | 0.6 | --- | 99.40% |
| Chromium | (ug/L) | 21.3 | 1.08 | 1.01 | > 94.9% |
| Cobalt | (ug/L) | 11.36 | 1.31 | --- | 88.50% |
| Copper | (ug/L) | 28.15 | 3.43 | 2.65 | > 87.8% |
| Lead | (ug/L) | 22.43 | 0.4 | 0.28 | > 98.2% |
| Molybdenum | (ug/L) | 27.53 | 2.79 | --- | 89.90% |
| Nickel | (ug/L) | 219.91 | 8.27 | --- | 96.20% |
| Silicon | (ug/L) | 15,042 | 602 | 550 | > 96.0% |
| Silver | (ug/L) | 2.73 | 0.4 | 0.28 | > 85.2% |
| Thallium | (ug/L) | 6.11 | 0.39 | 0.28 | > 93.7% |
| Titanium | (ug/L) | 50.3 | 2.56 | 0.51 | > 94.9% |
| Tungsten | (ug/L) | 3.13 | 0.81 | 0.28 | > 74.0% |
| Uranium | (ug/L) | 25.21 | 0.39 | 0.28 | > 98.5% |
| Vanadium | (ug/L) | 53.68 | 5.93 | 5.5 | > 89.0% |
| Zinc | (ug/L) | 1347.95 | 3.9 | 2.65 | > 99.7% |

| | Unit | Influent | Effluent | Eff DL | Removal |
|---|---|---|---|---|---|
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| Chromium | (ug/L) | 21.3 | 1.08 | 1.01 | > 94.9% |
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| Molybdenum | (ug/L) | 27.53 | 2.79 | --- | 89.90% |
| | | | | | |
| | | | | | |
| | Unit | Influent | Effluent | Eff DL | Removal |
| | | | | | |
| Nickel | (ug/L) | 219.91 | 8.27 | --- | 96.20% |
| Silicon | (ug/L) | 15,042 | 602 | 550 | > 96.0% |
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| Vanadium | (ug/L) | 53.68 | 5.93 | 5.5 | > 89.0% |
| Zinc | (ug/L) | 1347.95 | 3.9 | 2.65 | > 99.7% |

**From:** Jordan, Ronald
**To:** Lon Petts
**Cc:** Angie Lee; cdevoe@[redacted]; Benware, Richard
**Subject:** RE: EPRI reports
**Date:** Friday, February 09, 2018 4:19:01 PM

Good afternoon,

Thank you for your February 7 email regarding the information that EPA requested in a January 3 letter from Robert Wood. As you noted, that letter requests Hoosier Energy to provide certain information by February 15, 2018. As you are aware, the Agency has a goal of completing its reconsideration of the new, more stringent requirements for bottom ash transport water and flue gas desulfurization wastewater in the 2015 Steam Electric Effluent Limitations Guidelines and Standards rule (2015 rule) no later than 2020, when the implementation dates in the 2015 rule would be triggered. During this time, the Agency must propose and finalize any revisions through notice and comment rulemaking. This schedule is very compressed for a rulemaking of this magnitude. As a result of this compressed schedule, timely receipt of the requested information is essential to ensure that the reconsideration of the 2015 rule can take place prior to the compliance date for the new requirements for any affected facilities, including facilities owned by Hoosier Energy.

To further this mutual goal, EPA believes that it is necessary for Hoosier Energy to provide all responsive information by March 1, 2018. Thus, EPA is granting a full extension for all responsive information from February 15, 2018 to March 1, 2018. This extension includes information that may be provided by the Electric Power Research Institute (EPRI). EPA recently met with EPRI to discuss reports at issue which EPA was aware of. Where these, or additional such reports are provided by EPRI, the Agency believes it would be an unnecessary paperwork burden for your company to duplicate this effort. Thus, where EPRI provides such materials to EPA by March 1, Hoosier Energy may reference such materials rather than provide them separately. Please also keep in mind that to the extent that Hoosier Energy has other responsive information, such as pollutant concentration data and process information not contained in materials provided by EPRI, this information must still be provided by March 1.

Thank you again for your careful attention to this request for information, and I look forward to continued discussions during EPA's evaluation of the 2015 rule. If you have any questions about the extension, you can contact me via e-mail at jordan.ronald@epa.gov or by phone at (202) 566-1003.

Regards,
Ron

---

EPA United States Environmental Protection Agency
Ron Jordan
Office of Water
Engineering and Analysis Division

Washington DC
202.566.1003

**From:** Lon Petts [mailto:lpetts@[redacted]
**Sent:** Wednesday, February 07, 2018 11:39 AM
**To:** Jordan, Ronald <Jordan.Ronald@epa.gov>
**Cc:** Angie Lee <ALee@[redacted]; cdevoe@[redacted]
**Subject:** EPRI reports

Ron,

As you are aware, one of the FGD Wastewater trials performed at our Merom Station was performed as a supplemental project with the Electric Power Research Institute. We understand that EPA and EPRI are working on the confidentiality and sensitivity issues associated with sharing EPRI research performed for its members. It would be our preference to respond to any request for information in the EPRI report with the following:

"It is Hoosier's preference that any report on trials conducted at the Merom Station in conjunction with the Electric Power Research Institute (EPRI) be submitted to EPA by EPRI under any agreement reached by those parties. We understand that any agreement may not be completed by the February 15, 2018, deadline for Hoosier's submittal. Therefore Hoosier requests an extension for submittal of these reports until such time that these issues are resolved."

If you would like to discuss, I can be reached at my office number below.

Thank you,

*Lon M. Petts*
Environmental Team Leader
Hoosier Energy REC, Inc.
2501 S. Cooperative Way
Bloomington, IN 47403
Phone [redacted]
Fax (812) 935-4728

# Pre-Site Visit Notes for Sutton

**Facility Name:** LV Sutton Steam Electric Plant

**Address:** 801 Sutton Steam Plant Rd, Wilmington, NC 28401

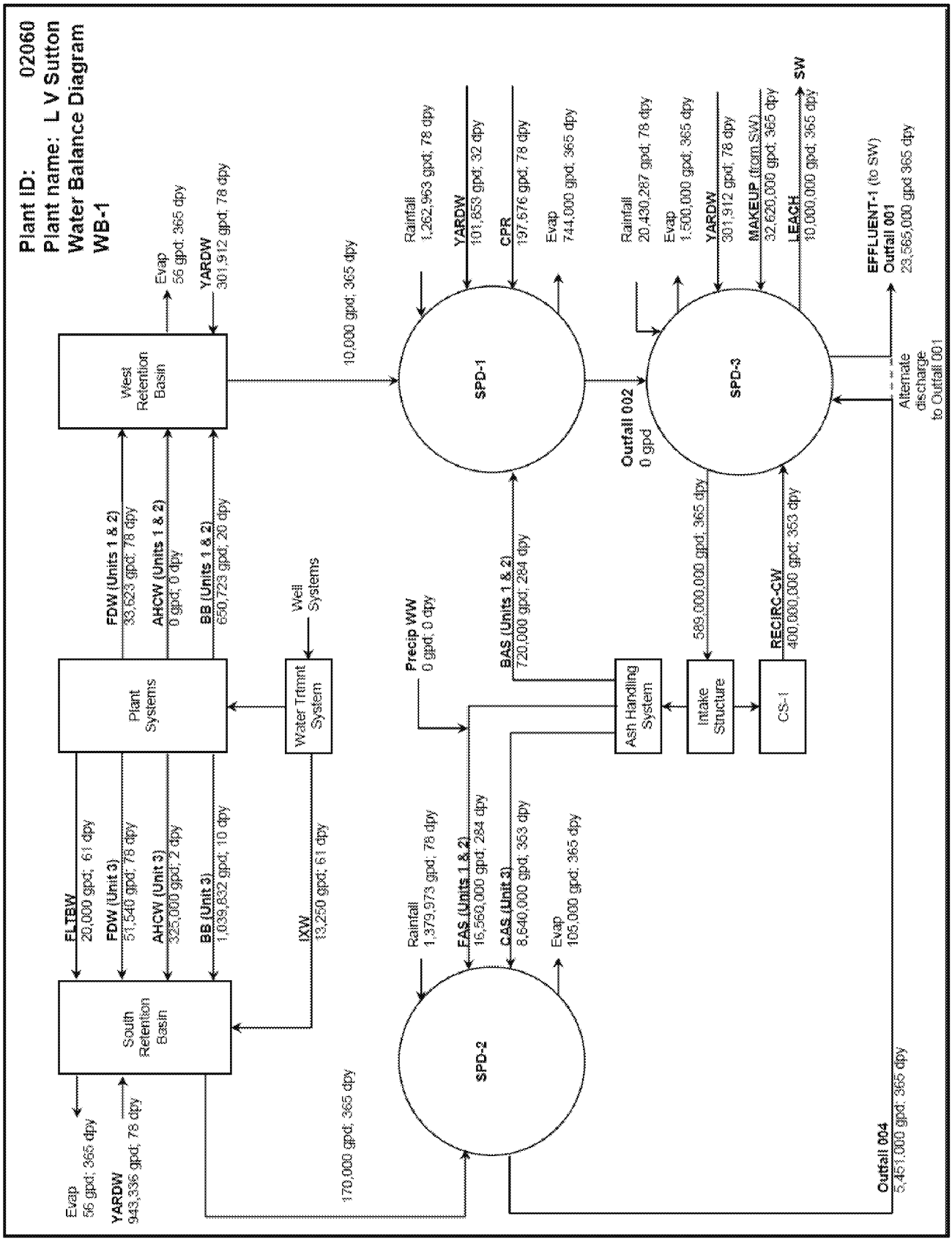
**Date of Site Visit:** Tuesday, December 12, 2017

**Plant Overview:** Sutton is a gas-fired power plant owned and operated by Duke Energy. Sutton does not currently operate any coal-fired generating units. At the time of the Steam Electric Survey, Sutton reported operating three coal-fired generating units, which are summarized in Table 1. Sutton subsequently retired these units in 2013 when a new gas-fired 625 MW combined-cycle unit began operating at the plant. No Sutton units were costed for bottom ash or FGD wastewater in the 2015 Rule.

**Table 1. Sutton Coal-Fired Generating Unit Information**

| SE Unit | Capacity (MW) | Primary Fuel Source | FGD System | Bottom Ash Handling | Status |
|---|---|---|---|---|---|
| SE Unit-1 | 112.5 | Coal | NA | NA | Retired |
| SE Unit-2 | 112.5 | Coal | NA | NA | Retired |
| SE Unit-3 | 446.6 | Coal | NA | NA | Retired |

**Ash Handling Information:** In the Steam Electric Survey, Sutton reported operating two onsite ash ponds and has since submitted a legally binding section 257.102 Notice of Intent to close the two unlined CCR units. Sutton is currently in the process of closing these ponds.


Plant ID: 02060
Plant name: L V Sutton
Water Balance Diagram
WB-1
West Retention Basin
Evap
56 gpd; 365 dpy
YARDW
301,912 gpd; 78 dpy
10,000 gpd; 365 dpy
Rainfall
1,262,963 gpd; 78 dpy
YARDW
101,853 gpd; 32 dpy
CPR
197,676 gpd; 78 dpy
Evap
744,000 gpd; 365 dpy
SPD-1
Rainfall
20,430,287 gpd; 78 dpy
Evap
1,500,000 gpd; 365 dpy
YARDW
301,912 gpd; 78 dpy
MAKEUP (from SW)
32,620,000 gpd; 365 dpy
LEACH
10,000,000 gpd; 365 dpy
SW
SPD-3
EFFLUENT-1 (to SW)
Outfall 001
23,565,000 gpd 365 dpy
Alternate discharge to Outfall 001
Outfall 002
0 gpd
FDW (Units 1 & 2)
33,623 gpd; 78 dpy
AHCW (Units 1 & 2)
0 gpd; 0 dpy
BB (Units 1 & 2)
650,723 gpd; 20 dpy
Plant Systems
Well Systems
Water Trtmnt System
Precip WW
0 gpd; 0 dpy
BAS (Units 1 & 2)
720,000 gpd; 284 dpy
Ash Handling System
Intake Structure
CS-1
589,000,000 gpd; 365 dpy
RECIRC-CW
400,000,000 gpd; 353 dpy
ELTBW
20,000 gpd; 61 dpy
FDW (Unit 3)
51,540 gpd; 78 dpy
AHCW (Unit 3)
325,000 gpd; 2 dpy
BB (Unit 3)
1,039,832 gpd; 10 dpy
South Retention Basin
Evap
56 gpd; 365 dpy
YARDW
943,336 gpd; 78 dpy
IXW
13,250 gpd; 61 dpy
170,000 gpd; 365 dpy
Rainfall
1,379,973 gpd; 78 dpy
EAS (Units 1 & 2)
16,562,000 gpd; 284 dpy
CAS (Unit 3)
8,640,000 gpd; 353 dpy
Evap
105,000 gpd; 365 dpy
SPD-2
Outfall 004
5,451,000 gpd; 365 dpy

Message

**From:** Jordan, Ronald [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B7B8E2766B3E4F29A86A3893D65023FF-RJORDAN]
**Sent:** 12/11/2017 1:06:48 PM
**To:** Rich and Jan Matuszko [randj.mat@[redacted]
**Subject:** RE: From our comment response document..relevant to our conversation and MEL's Suggestion regarding leachate

**Here's the response, pulled from the final CRD**

**Comment Response:**
This commenter, in this and other excerpts (see DCN EPA-HQ-OW-2009-0819-4684, Excerpt Number 126), states that EPA should not have "dismissed" chemical precipitation plus biological treatment or chemical precipitation plus evaporation for treatment of combustion residual leachate. EPA did consider both of these technologies and rejected basing BAT or BADCT on such technologies for the reasons described below.
*Best Available Control Technology Economically Achievable*: EPA agrees with the commenter that chemical precipitation is an available and well-demonstrated technology for removing metals and other pollutants from a variety of industrial wastewaters, including leachate from landfills not located at power plants. Chemical precipitation is also well demonstrated at steam electric power plants for treatment of FGD wastewater that contains the pollutants in combustion residual leachate. As such, EPA agrees chemical precipitation is technologically available for control of pollutants in combustion residual leachate discharges. However, EPA did not select chemical precipitation as BAT for control of combustion residual leachate discharges for the reasons explained in preamble section VIII. EPA's rationale applies equally to other treatment systems that also rely on chemical precipitation, such as chemical precipitation plus biological treatment and chemical precipitation plus evaporation.
*Best Available Demonstrated Control Technology*: EPA did select chemical precipitation as BADCT for combustion residual leachate discharges from new sources in the final rule. See preamble section VIII for additional information regarding EPA's rationale for the selection of the technology basis for BADCT for combustion residual leachate.
EPA did not select chemical precipitation plus biological treatment or chemical precipitation plus evaporation as BADCT for combustion residual leachate for several reasons. First, EPA concluded that the final NSPS already reflect "the greatest degree of effluent reduction [which is] achievable," as that phrase is used in section 306 of the Clean Water Act. The final rule regulates six different wastestreams at the BAT and BADCT levels of control. For two of those wastestreams, the final NSPS are based on technologies that go further to control pollutants in discharges from new sources as compared to existing sources: for discharges of combustion residual leachate, the NSPS require compliance with standards based on chemical precipitation and for discharges of FGD wastewater, the NSPS require compliance with standards based on evaporation. For three of the other wastestreams – fly ash transport water, bottom ash transport water, and FGMC wastewater – the final NSPS require (or continue to require, based on the previously established regulations) control of pollutants in discharges to the utmost degree, since they require "no discharge of pollutants." For the last wastestream, gasification wastewater, like the final BAT limitations, the final NSPS require compliance with standards based on evaporation. Moreover, these final NSPS apply to *all* steam electric generating units, regardless of unit size or type of fuel used, and there are no differentiated requirements for small or oil-fired units, as there are under the final BAT limitations. Therefore, the new source performance standards in the final rule are consistent with Congress's intent to demand the highest of standards from new sources.
Second, based on IPM analyses for this rule, as well as analysis performed for EPA's recently

finalized Carbon Pollution Standard for New Power Plants, EPA projects no new coal-fired generating units for the periods analyzed. Even if there were to be a new coal-fired generating unit built in the future, as explained in Section VIII of the final preamble and the TDD, combustion residual leachate is a relatively minor wastestream in comparison to the other large wastestreams controlled in this final rule. EPA notes that it annually reviews all existing ELGs and can re-visit the final NSPS for combustion residual leachate in the future if conditions change.

Finally, practically, EPA did not propose chemical precipitation plus biological treatment or chemical precipitation plus evaporation as BADCT, so the public did not have an opportunity to comment on these options (indeed, nobody but the commenter submitted comments supporting or rejecting establishment of limitations or standards for combustion residual leachate based on one or both of these technologies). Were EPA to have decided it might be appropriate to establish standards for new sources based on one of these two technologies, it would have been appropriate to conduct another round of notice and comment, something that EPA's schedule for finalizing this rule, under a consent decree to which the commenter is a party, did not afford.

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**From:** Rich and Jan Matuszko [mailto:randj.mat@[redacted]
**Sent:** Monday, December 11, 2017 7:46 AM
**To:** Jordan, Ronald <Jordan.Ronald@epa.gov>; Zomer, Jessica <Zomer.Jessica@epa.gov>; Levine, MaryEllen <levine.maryellen@epa.gov>
**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>
**Subject:** From our comment response document..relevant to our conversation and MEL's Suggestion regarding leachate

5/30/2018

American Water Works Association

# STATE OF THE SCIENCE ON BROMIDE DISCHARGE IMPACTS ON DRINKING WATER

WITH EXPERT PRESENTATIONS FROM NANCY MCDIGUE AND JEANNE VANBRIESEN

(UNPUBLISHED DATA REMOVED)

## WHY ARE WE HERE TODAY?

**Key Past Comments:**

- September 20, 2013: Comments on proposed Steam Power ELG (EPA-HQ-OW-2009-0819)
- December 5, 2016: AWWA-NAWC Opening Brief in Southwestern Electric Power et la. v. USEPA et al
- July 5, 2017: AWWA-NAWC Comments on postponement of compliance dates (EPA-HQ-OW-2009-0819-6485)
- AWWA and its partners have consistently requested that EPA examine the impacts of bromide discharges on downstream water systems and take action to regulate such discharges as part of the Steam Power ELG.
- Today, experts will provide scientific information demonstrating the need for EPA to conduct this analysis and take appropriate actions

## Steam Electric Power Plant Effluent Limitation Guidelines (ELGs)

- Rule finalized on ***September 30, 2015***
- Timeline for compliance: 2018-2023 *(postponed 2 years for FGD)*
- Bromide is not included directly

"Depending on site-specific conditions and applicable state water quality standards, it **may be appropriate for permitting authorities to establish water quality-based effluent-limitations on bromide,** especially where steam electric power plants are located **upstream from drinking water intakes**." TDD 14-35 and Final Rule p. 67886

# DISINFECTION BYPRODUCTS (DPS)

FORMATION AND IMPACT OF INCREASED BROMIDE

NANCY MCTIGUE

## BRIEF OVERVIEW OF WHAT ARE DBPs

- *Disinfection By-Products formed when halogens react with natural organic matter in the water*

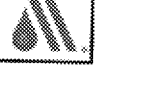
$$Precursor + \begin{pmatrix} disinfectant \\ oxidant \end{pmatrix} \rightarrow DBP$$

- Precursor = TOC, DOC, NOM

## CURRENTLY REGULATED DBPs OF CONCERN

- Trihalomethanes (THMs)
- Haloacetic Acids (HAAs)

From a regulatory perspective, elevated bromide is more of a concern with THMs at present time.



## STRUCTURAL FORMULA OF HALOGENATED DBPs

trichloromethane bromodichloromethane chlorodibromomethane tribromomethane

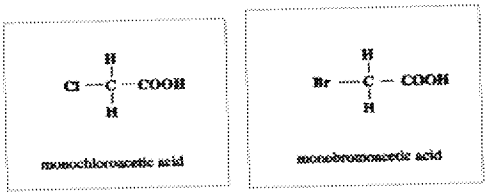
### Trihalomethanes

First regulated in 1979 at 100 µg/L

Regulated again in 1998 at 80 µg/L

chloroform bromoform

## STRUCTURAL FORMULA OF HALOGENATED DBPs



monochloroacetic acid monobromoacetic acid

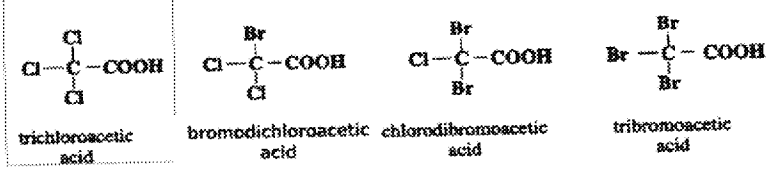
### Haloacetic Acids

First regulated in 1998 at 60 µg/L for HAA5

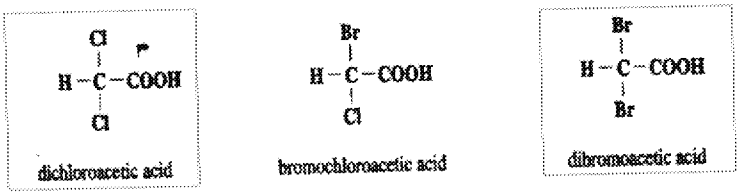
Five of the less brominated species are regulated

The 4 higher bromide species are not regulated but bromide species might be of more concern

As source bromide goes up the regulated HAA tend to go down and the unregulated go up



trichloroacetic acid bromodichloroacetic acid chlorodibromoacetic acid tribromoacetic acid



dichloroacetic acid bromochloroacetic acid dibromoacetic acid

## BROMINE FORMATION

- Inorganic Precursors

bromide ion

$$HOCl + Br^- \rightarrow HOBr + Cl^-$$
$$3O_3 + Br^- \rightarrow BrO_3^- + 3O_2$$

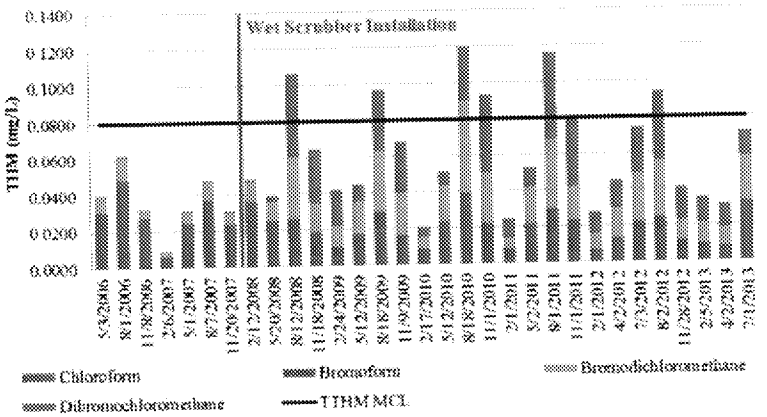
## IMPACT OF BROMIDE ON THMs

- Brominated DBPs have higher MW, compared to their chlorinated counterparts (e.g., bromoform versus chloroform) and can react with more precursors
  - TTHM MCL is mass based not molar based, hence the same amount of precursor will result in a higher concentration of TTHM with bromine than with chlorine
  - Generally brominated DBPs form faster and more completely than chlorinated
  - Possibly causing exceedance of DBP limits
- Brominated DBPs have reportedly greater health risks than chlorinated DBPs

## CANCER CONCERNS WITH BROMINATED THMs DUE TO POWER PLANTS --- STIG REGLI, EPA ODW, ES&T 2015

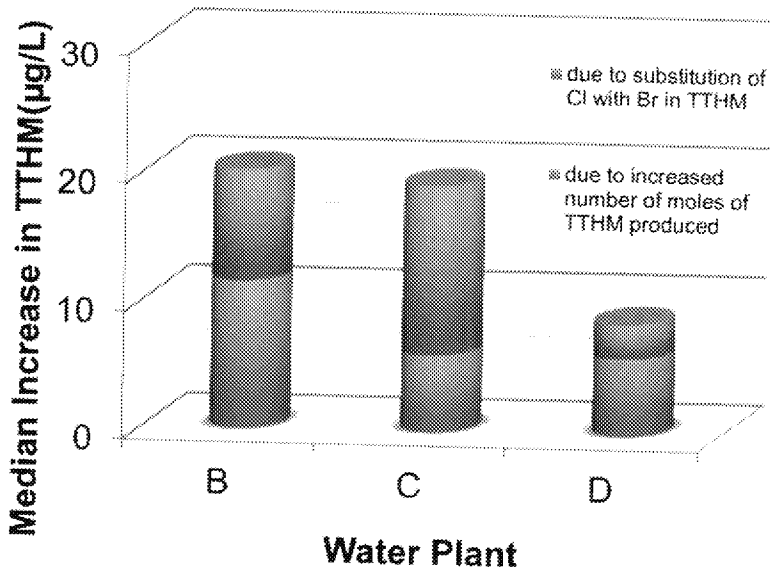
- Bromide increase of 50 µg/L could result in a potential increase of $10^{-3}$ to $10^{-4}$ excess lifetime bladder cancer risk
- At the 50 µg/L bromide increase
  - 90% of water treatment plants would have an increase in THM of at least 1 µg/L
  - 5 to 30% of all plants would have an increase in THM of at least 10 µg/L

## COAL-FIRED POWER PLANT Hg CONTROLS IMPACTING DOWNSTREAM WTPs




Source: McTigue, N.E., et al Occurrence and Consequences of Increased Bromide in Drinking Water Sources. Journal AWWA, Nov. 2014.

## ADDITION OF BROMIDE INCREASES THM FORMATION




McTigue, N.E., et al. Occurrence and Consequences of Increased Bromide in Drinking Water Sources. Journal AWWA, Nov. 2014.

## SUMMARY OF NUMBER OF POWER PLANTS THAT COULD IMPACT WTPS

| EIA 2011 Database | | | EIA 2013 Database | | | | | |
|---|---|---|---|---|---|---|---|---|
| Description | Currently Have Wet Scrubbers | | Have or Likely to Add Wet Scrubbers | | Potential to Add Wet Scrubbers | | Total Wet Scrubbers (Have, Likely to Add, and Potential to Add) |
| Coal-fired power plants | 118 | | 225 | | 182 | | 407 |
| Impacted water supply watersheds | 57 | ⇨ | 112 | + | 96 | = | 208 |
| Downstream water treatment plants | 96 | | 257 | | 316 | | 573 |
| States with impacted water supply watersheds | 22 | | 24 | | 24+9 | | 33 |

# BROMIDE SPIKING STUDY

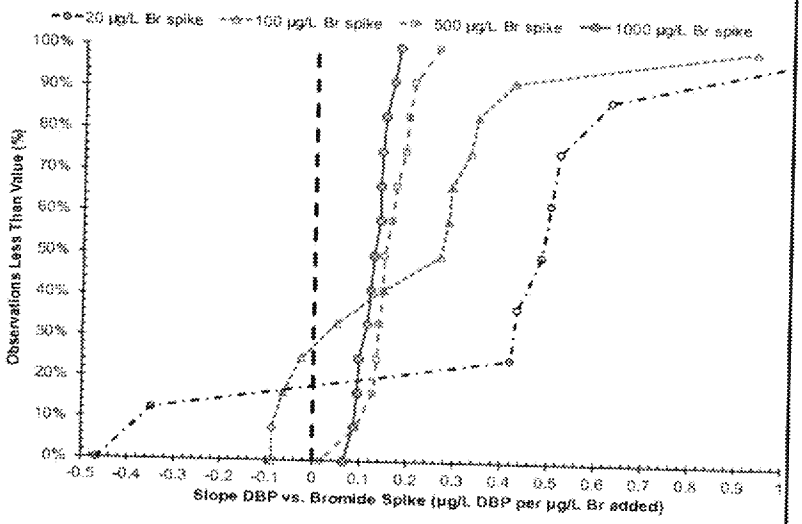
CONDUCTED BY CORNWELL ENGINEERING GROUP, 2015

NANCY MCTIGUE

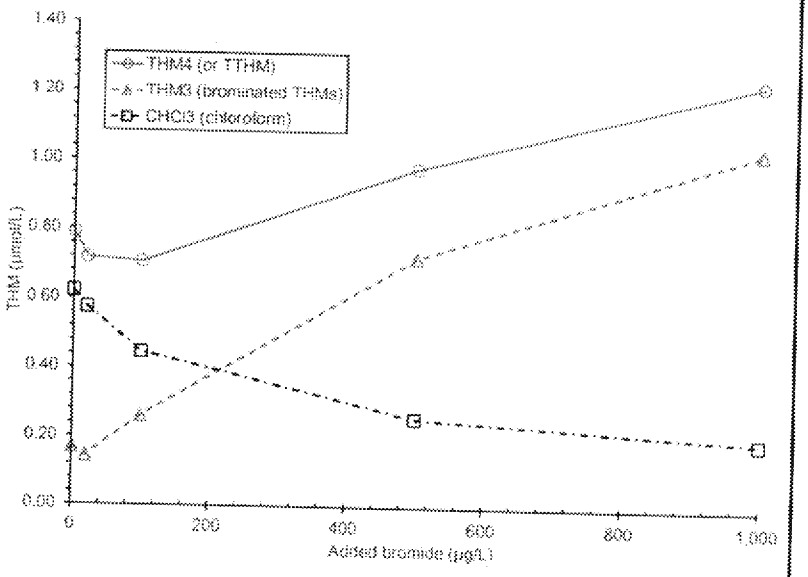
## BROMIDE SPIKE STUDY

- Obtained treated water w/o disinfectant from 15 utilities
- Lab addition of chlorine or chloramine and bromide at 20, 100, 500, 1000 µg/L
- Measured THM, HAA5 (regulated), HAA4
  - Therefore HAA9 as measured number
- Modeled results shown for THM only

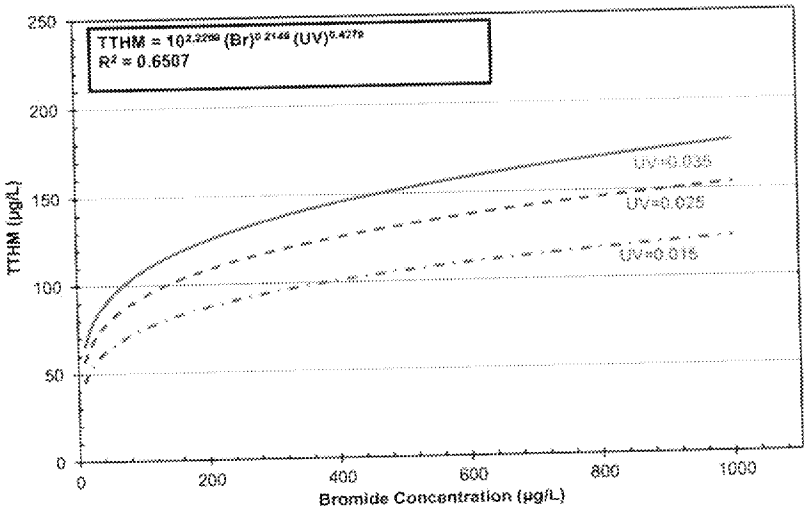
## SLOPE INCREASE OF THM vs BROMIDE: CHANGE IN THM PER INCREASE IN BROMIDE




## EXAMPLE THM SPECIES DATA FOR ONE WTP



## MODEL RESULTS FOR INCREASE OF THM vs BROMIDE




## NET THM INCREASE PER LISTED BROMIDE SPIKE

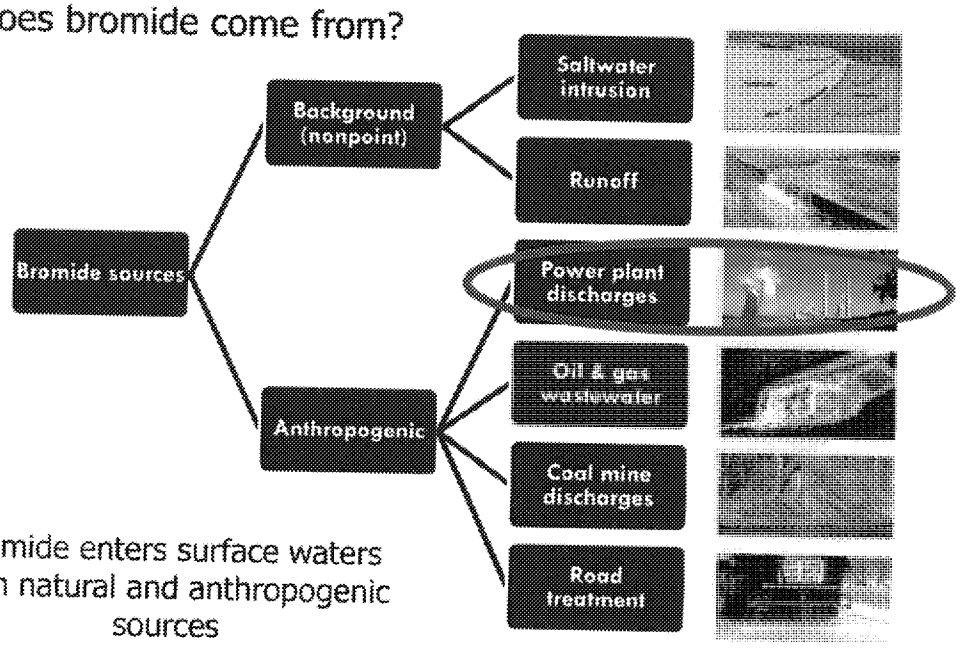
| Statistical Characteristic | ΔBr Spike (µg/L) | | | | |
|---|---|---|---|---|---|
| | 10 | 30 | 50 | 75 | 100 |
| | ΔTTHM (µg/L) from model † | | | | |
| median | 13.3 | 26.0 | 33.7 | 40.7 | 46.2 |
| 95th percentile | 16.0 | 31.2 | 40.5 | 49.0 | 55.5 |
| min | 9.9 | 19.3 | 25.1 | 30.3 | 34.3 |

As a Comparison—Regli indicated 10 ppb brominated DBP increase $=10^{-3}$ to $10^{-4}$ Cancer Risk

# BROMIDE SOURCES

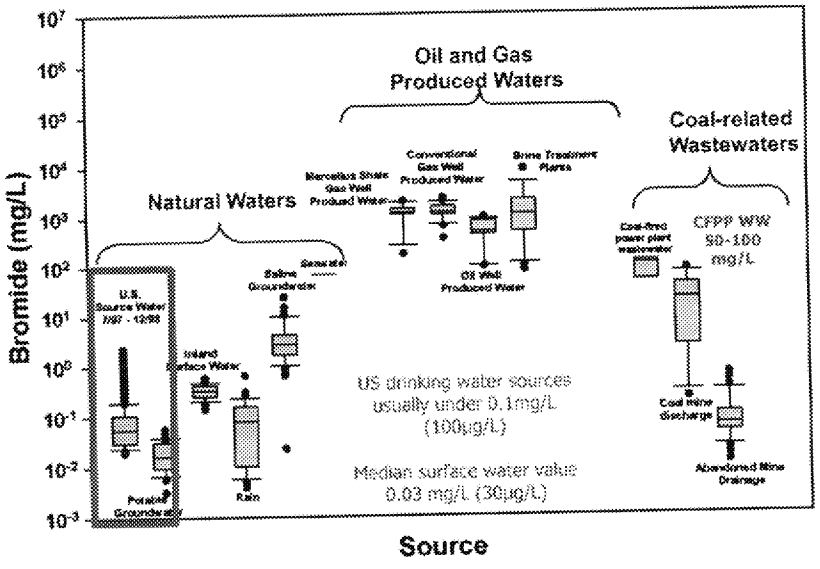
JEANNE VANBRIESEN

## Where does bromide come from?

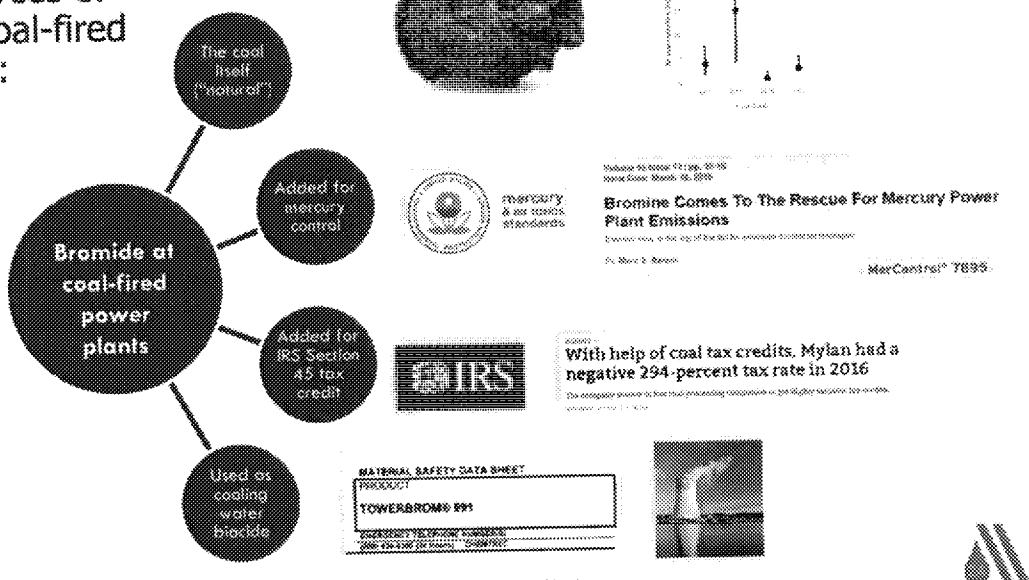



Bromide enters surface waters from natural and anthropogenic sources

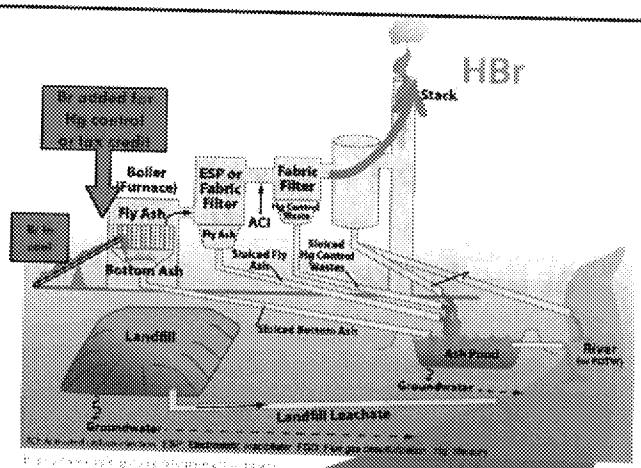
## Fossil-fuel associated wastewaters are enriched in bromide



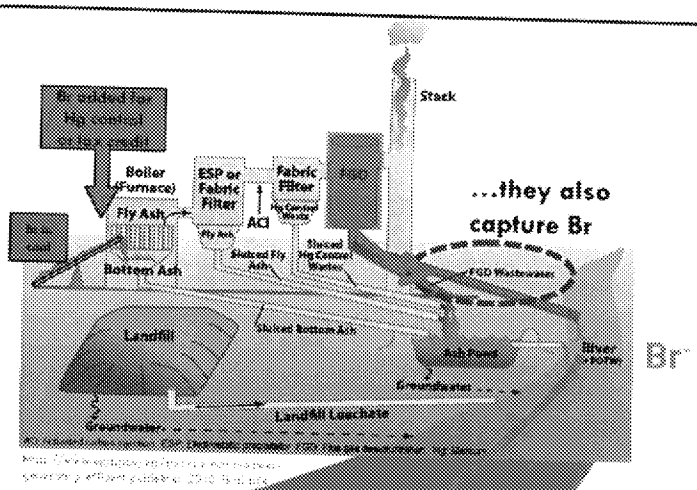

## There are several potential sources of bromide at coal-fired power plants:



Power plants discharge bromine to the air or water, depending upon deployed pollution control devices.

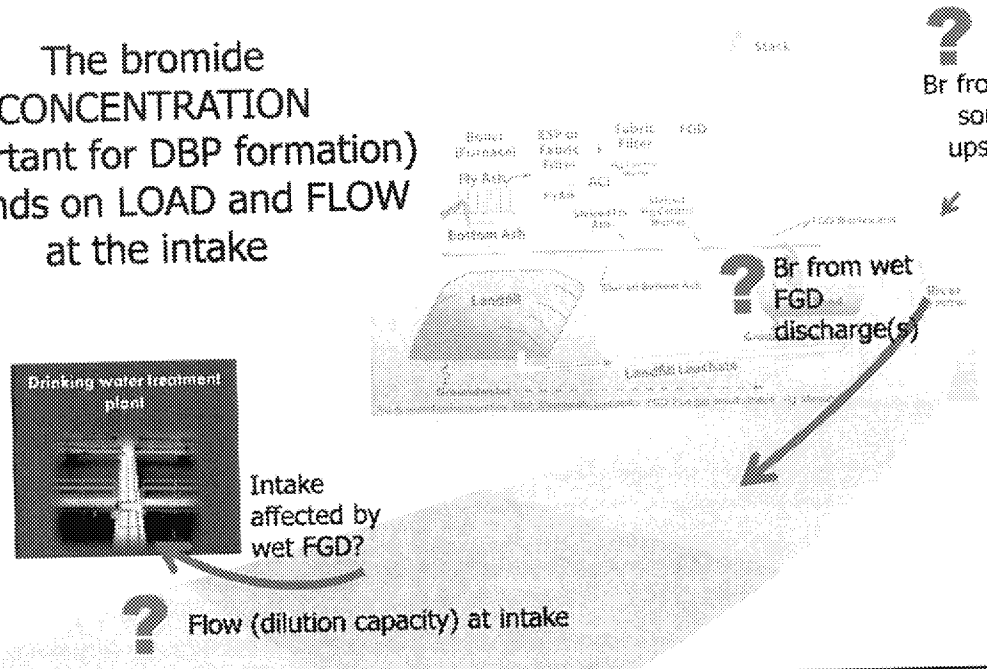



When wet flue gas desulfurization (FGD) systems are installed for sulfur dioxide and mercury control…



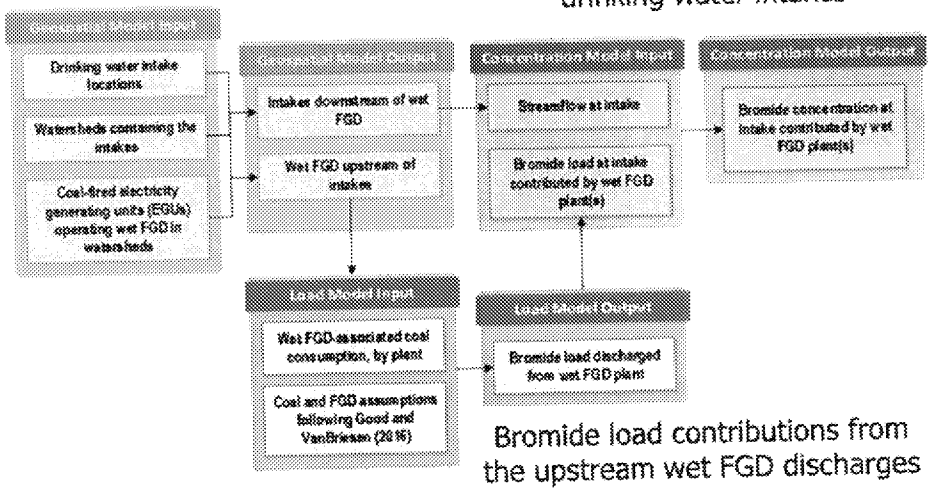

Wet FGD wastewater discharges release bromide naturally present in coal and bromide added for mercury control or Section 45 credit

# The bromide CONCENTRATION (important for DBP formation) depends on LOAD and FLOW at the intake




# Drinking water intakes downstream of wet FGD discharge(s)

# Bromide concentration contributions from wet FGD at drinking water intakes




Bromide load contributions from the upstream wet FGD discharges

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ENVIRONMENTAL Science & Technology

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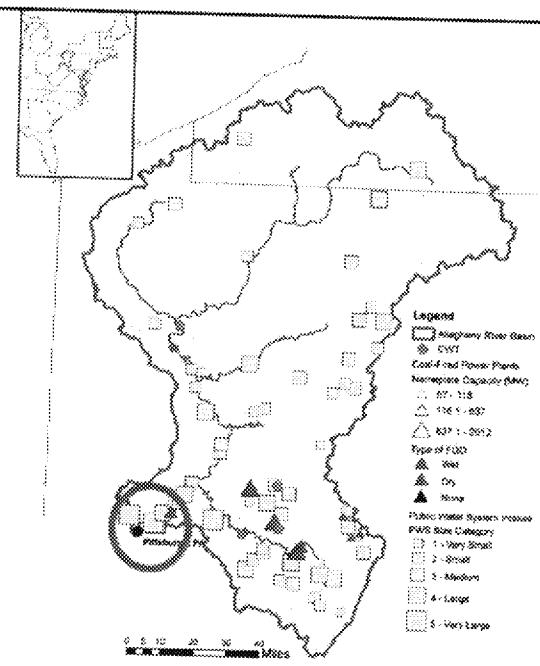
# Current and Potential Future Bromide Loads from Coal-Fired Power Plants in the Allegheny River Basin and Their Effects on Downstream Concentrations

Kelly D. Good and Jeanne M. VanBriesen*

Department of Civil and Environmental Engineering, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, Pennsylvania 15213, United States

*Environmental Science and Technology*.2016. 50(17): 9078-9088.

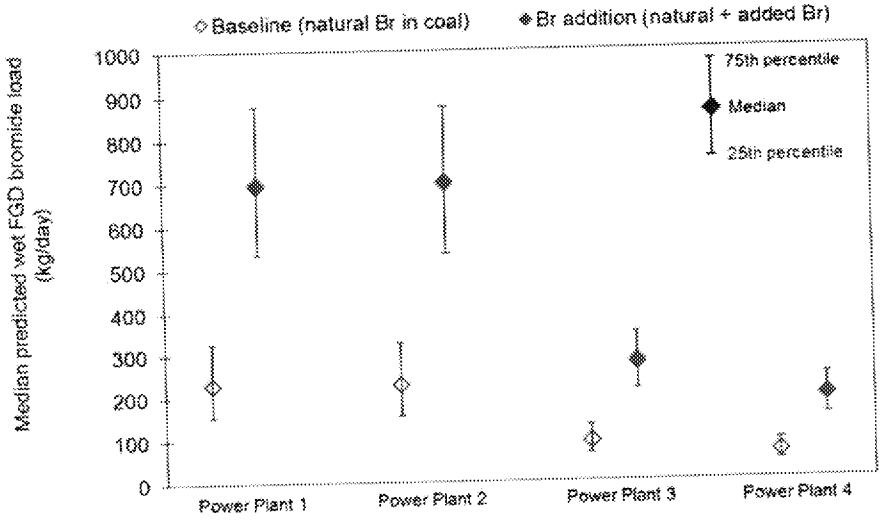



**The Allegheny Basin is a Drinking Water source for 1.2 million people.**

**8 (of 59) drinking water treatment plants are downstream of power plants with wet FGD systems.**

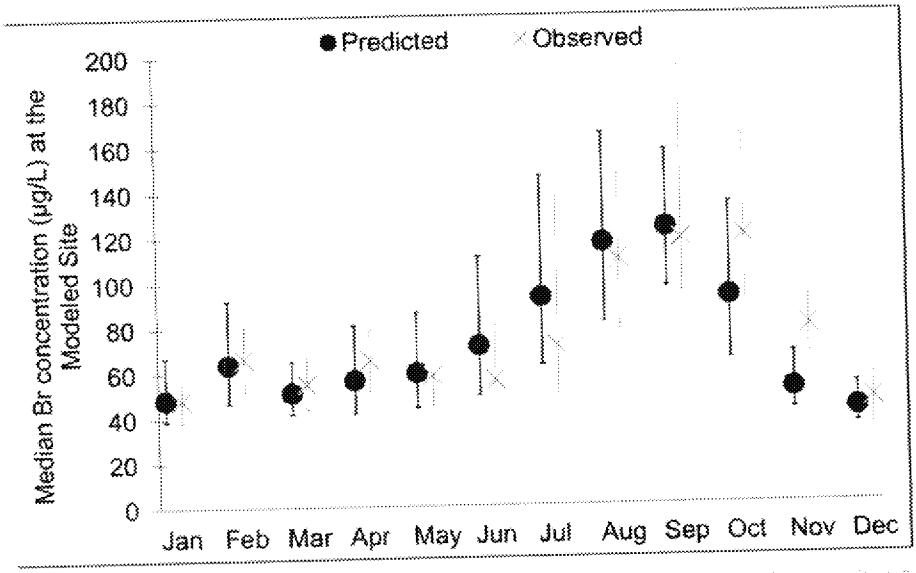
***This is only 14% of the DWTPs in the basin but approximately 36% of the population served (over 450,000 people).***

## Bromide loads can be estimated from coal consumption information. Bromide addition for mercury control can significantly affect bromide loads.




NOTE: Bromide addition estimated were for Hg control using rates from the trial at the Conemaugh plant as the highest value (106 ppm). These projections are lower than if bromide additions reported for Section 45 tax credit were used (see EPRI 2014).

## Loads are diluted in flows, which vary seasonally and inter-annually.

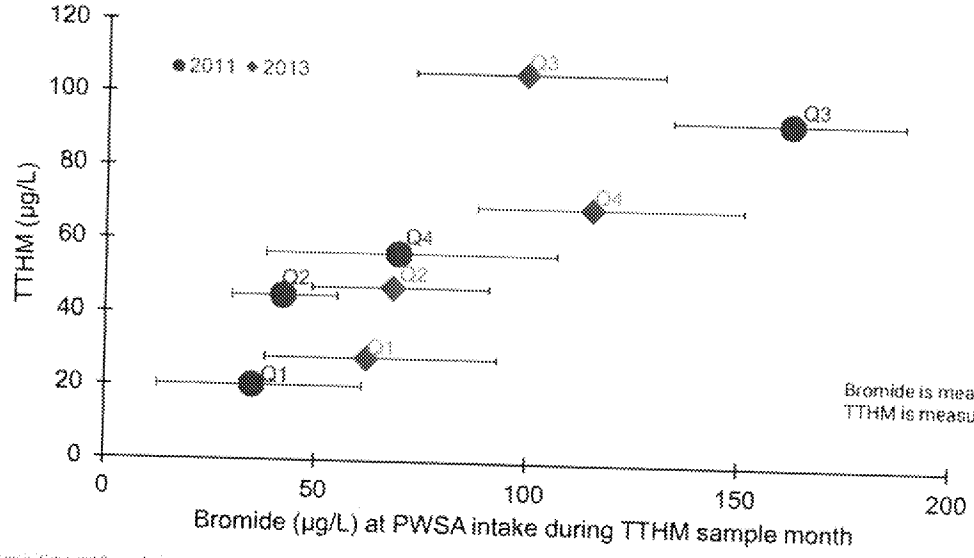



Model validation for the period Water Year 2012-2014 shows that predicted and observed bromide concentrations are not significantly different for most months ($\alpha$=0.05).

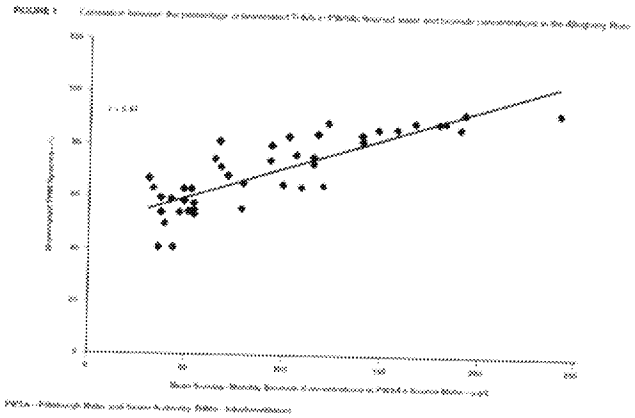
This modeling is based on naturally-occurring bromide in coal, not bromide added for Hg control.

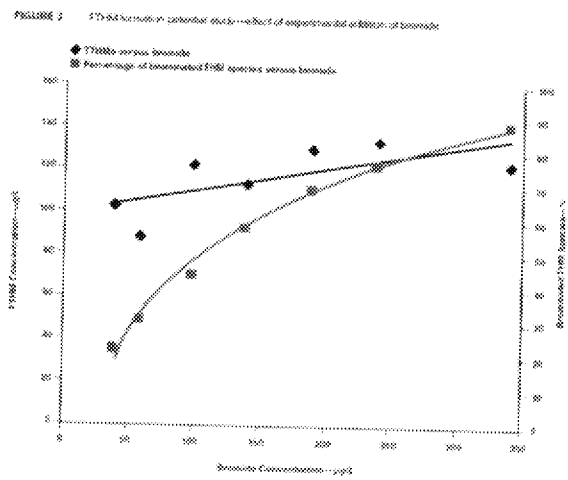
5/30/2018

## Elevated bromide concentrations in the Allegheny River are associated with elevated TTHM at the Pittsburgh Intake.

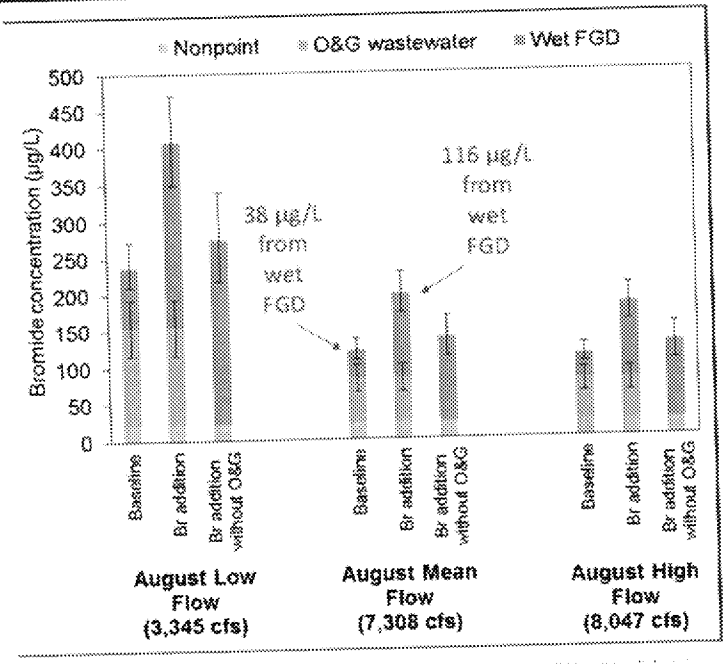



## Elevated bromide concentrations in the Allegheny River are associated with elevated bromination of THM species at the Pittsburgh Intake.





**Concentration contributions from power plants can be estimated under different scenarios and flow conditions.**

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Environmental Science & Technology

Cite This: Environ. Sci. Technol. 2017, 51, 11639−11648

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## Power Plant Bromide Discharges and Downstream Drinking Water Systems in Pennsylvania

Kelly D. Good[†] and Jeanne M. VanBriesen[*,‡]

[†]Graduate Research Assistant, Department of Civil and Environmental Engineering, Carnegie Mellon University, 5000 Forbes Ave., Pittsburgh, Pennsylvania 15213, United States

[‡]Duquesne Light Company Professor, Director of Water Quality in Urban Environmental Systems (Water-QUEST), Department of Civil and Environmental Engineering and Department of Engineering and Public Policy, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, Pennsylvania 15213, United States

*Environmental Science and Technology*.2017. 50(17): 9078-9088.

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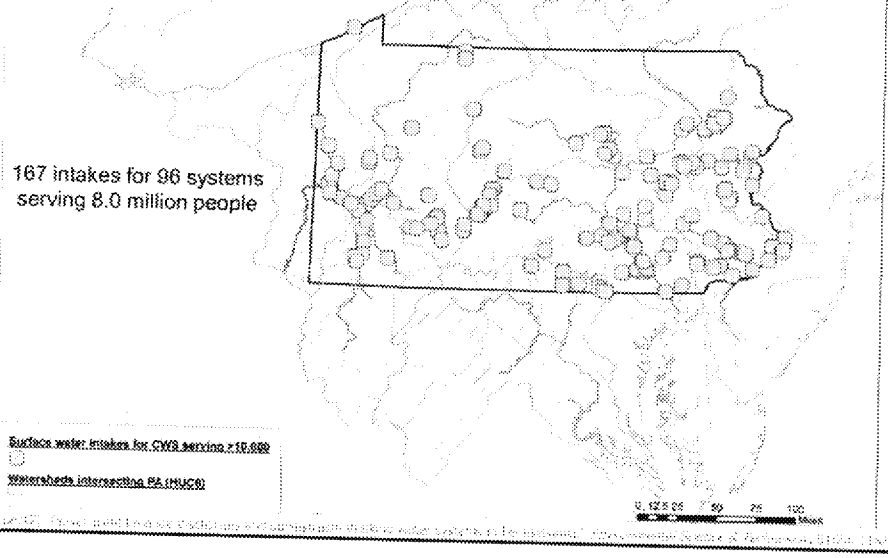
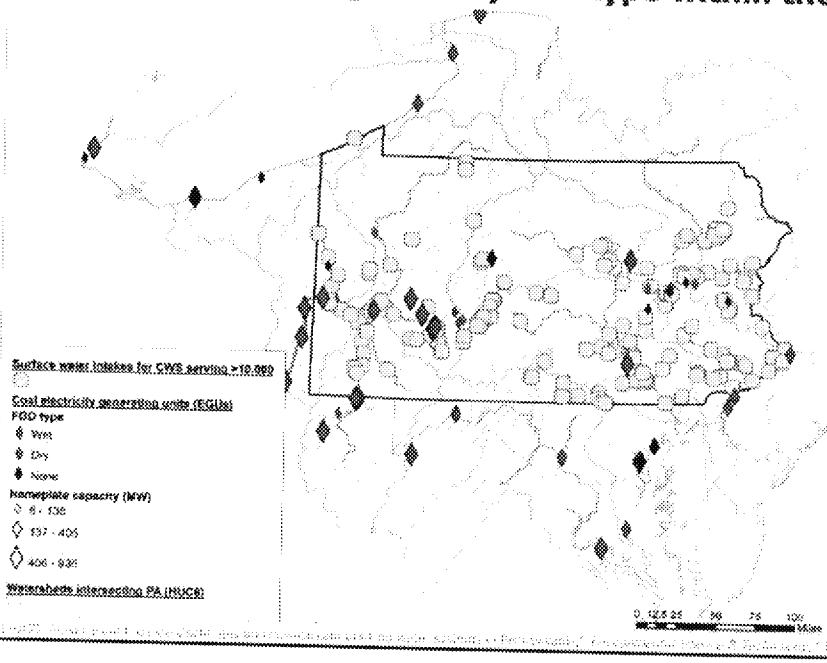
## Watersheds (HUC6 basin level) that touch Pennsylvania

Intakes for large community water systems (serving >10,000) with surface water as their primary source




Stream locations for intakes courtesy of Dr. Paul Westerhoff, Dr. Jacelyn Rice, and Thuy Nguyen of Arizona State University

## Coal-fired electricity generating units by FGD type within the watersheds

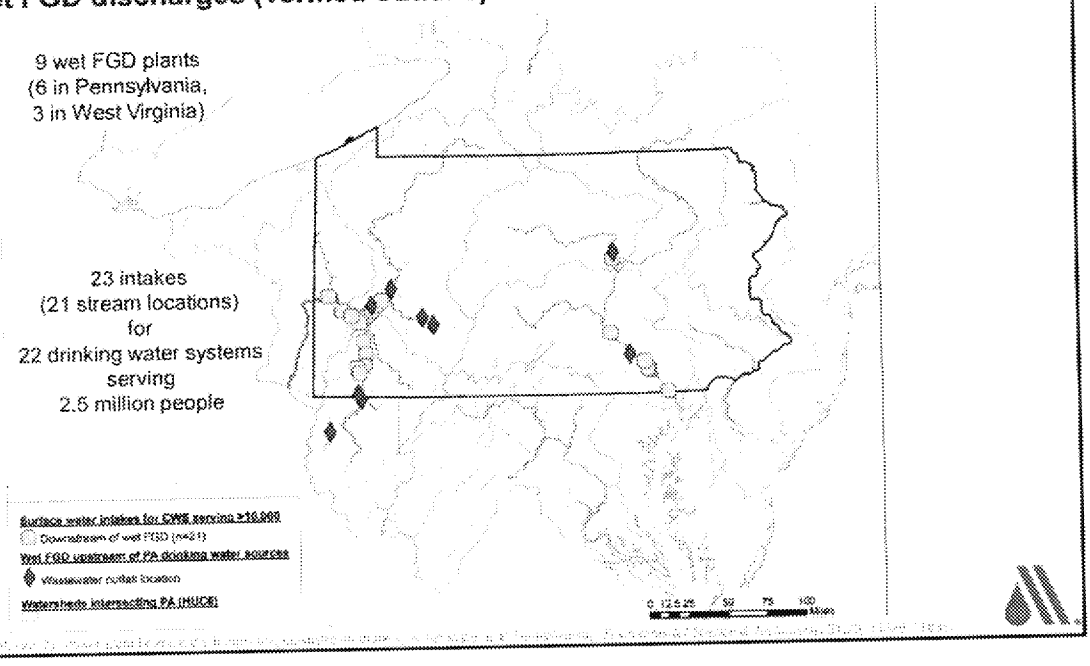



Stream locations for intakes courtesy of Dr. Paul Westerhoff, Dr. Jacelyn Rice, and Thuy Nguyen of Arizona State University

## Upstream wet FGD discharges (verified outfalls) and downstream drinking water intakes

9 wet FGD plants
(6 in Pennsylvania,
3 in West Virginia)

23 intakes
(21 stream locations)
for
22 drinking water systems
serving
2.5 million people



## Upstream wet FGD discharges (verified outfalls) and downstream drinking water intakes

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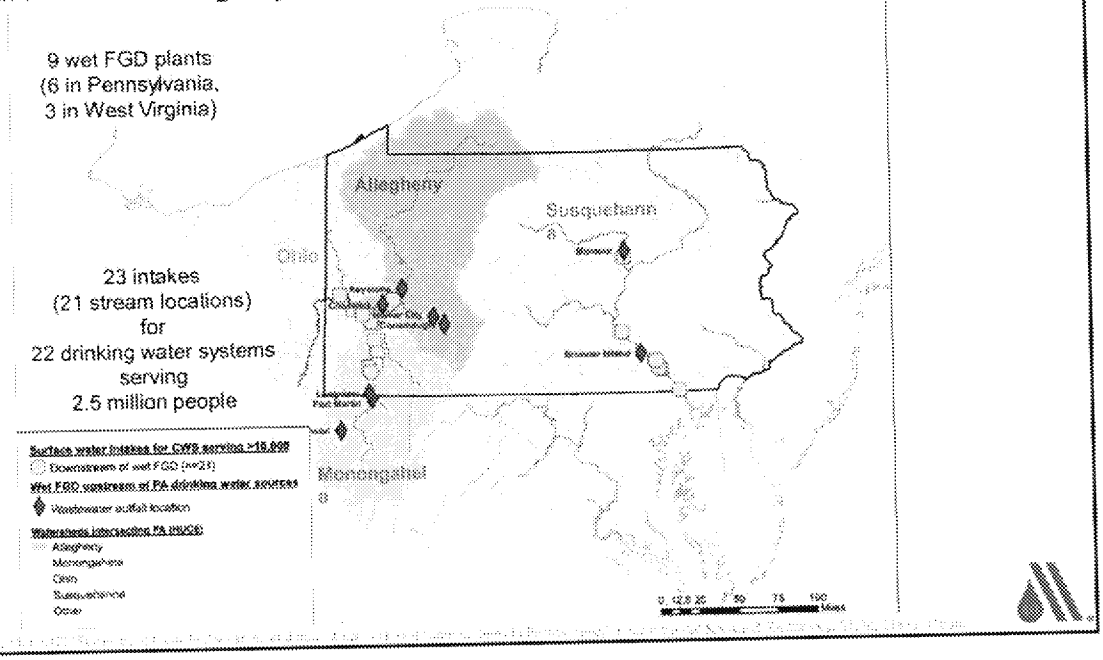
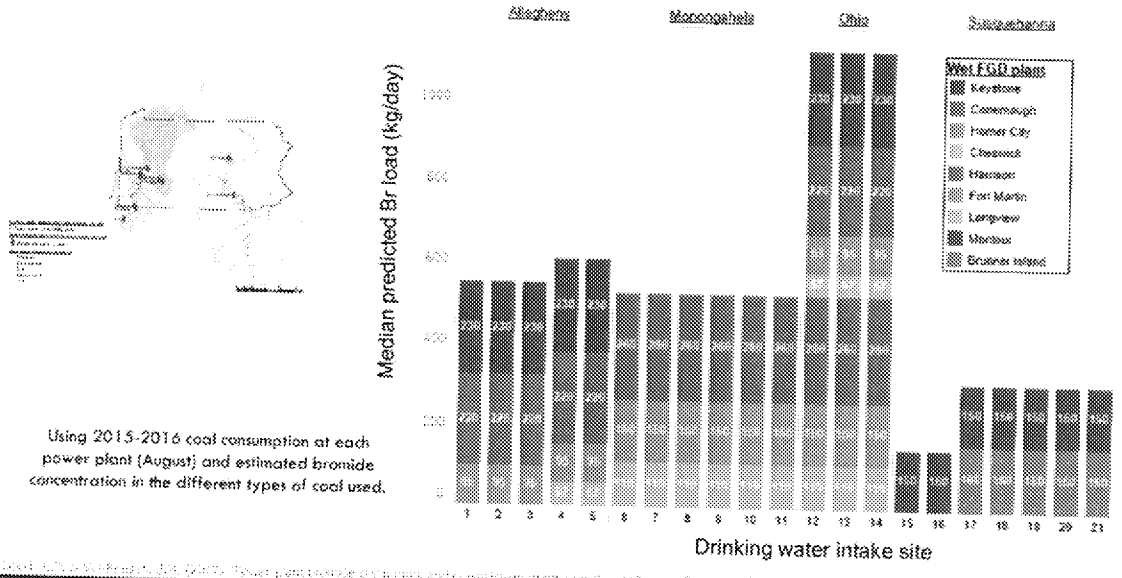
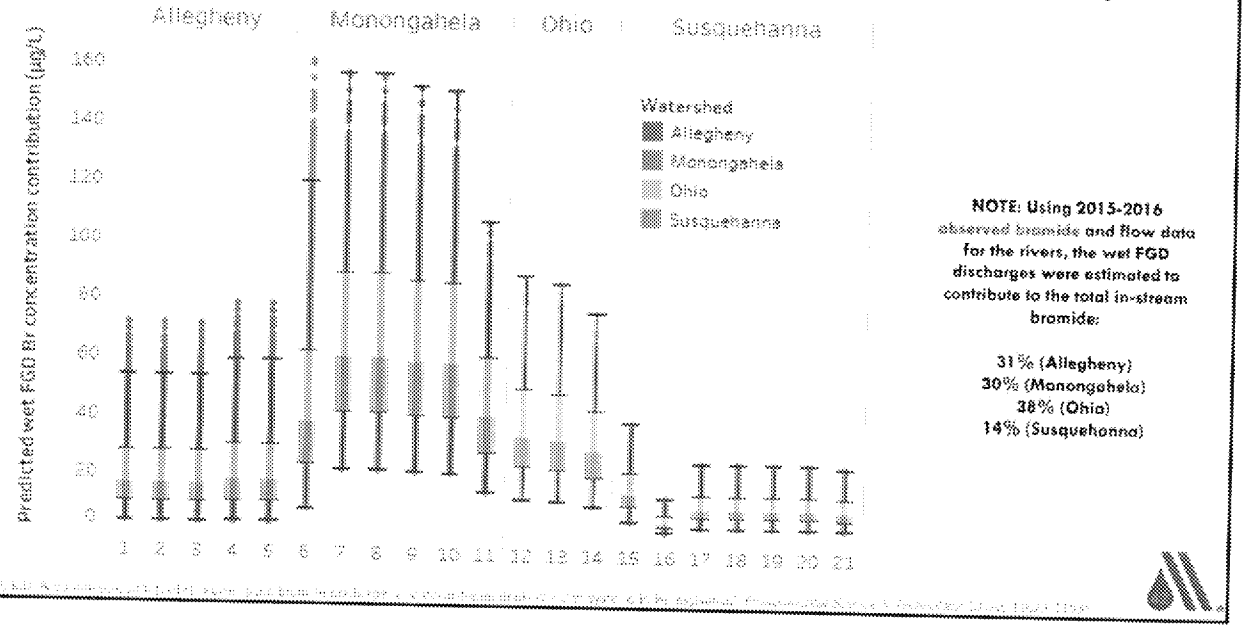


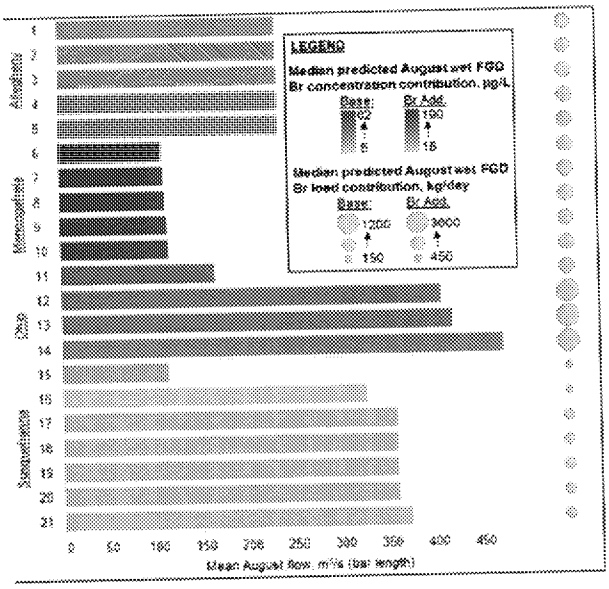
## The drinking water intake sites have different bromide load contributions from wet FGD power plants.



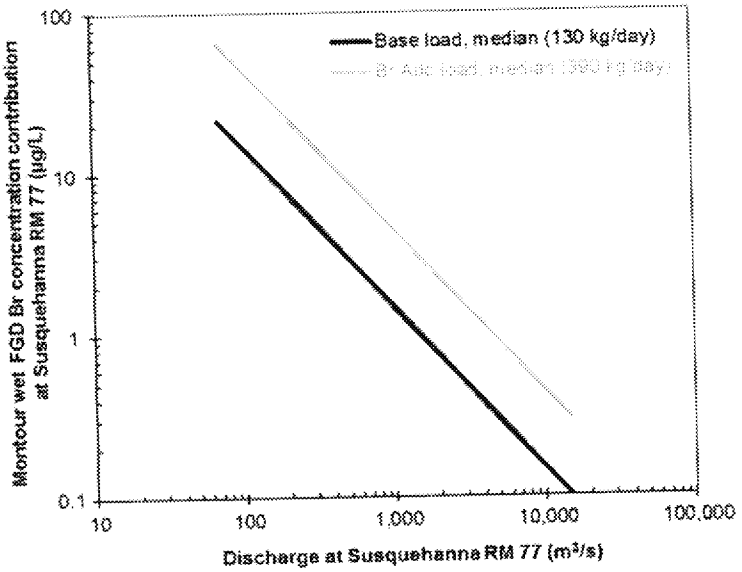

## Concentration contributions from all upstream FGD discharges are predicted at each drinking water intake using load and flow information (for August).



## High load and low flow lead to elevated concentrations in the Monongahela. Low load and high flow lead to much lower concentrations in the Susquehanna.




## The bromide concentration contribution can be predicted using power plant load estimates (annual median) and flow data for any location in any river system.



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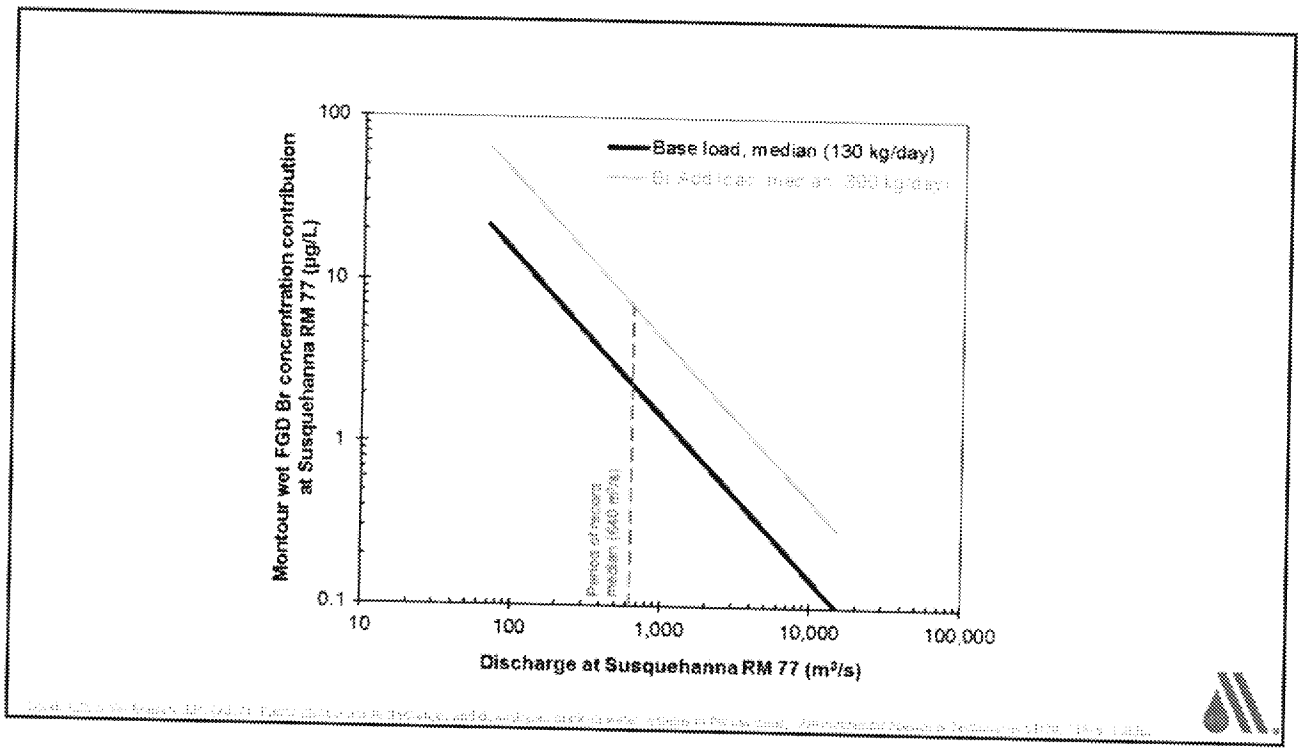
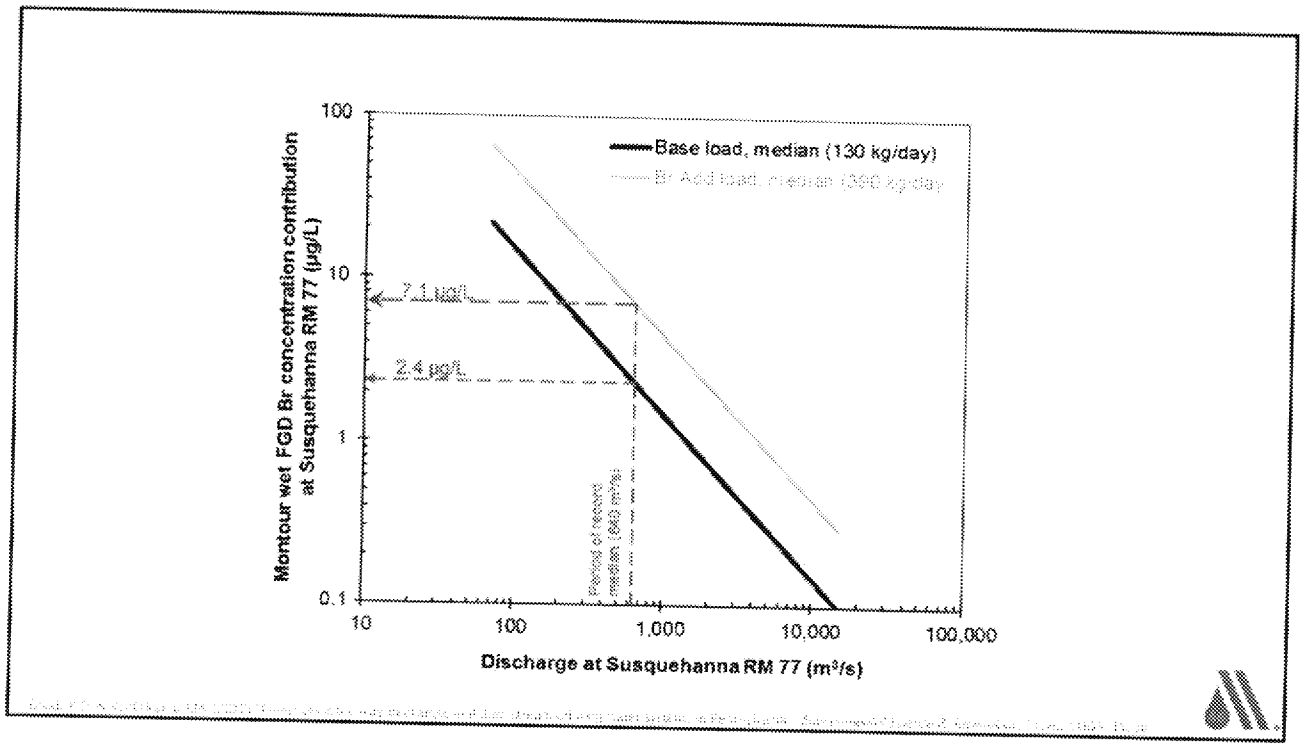
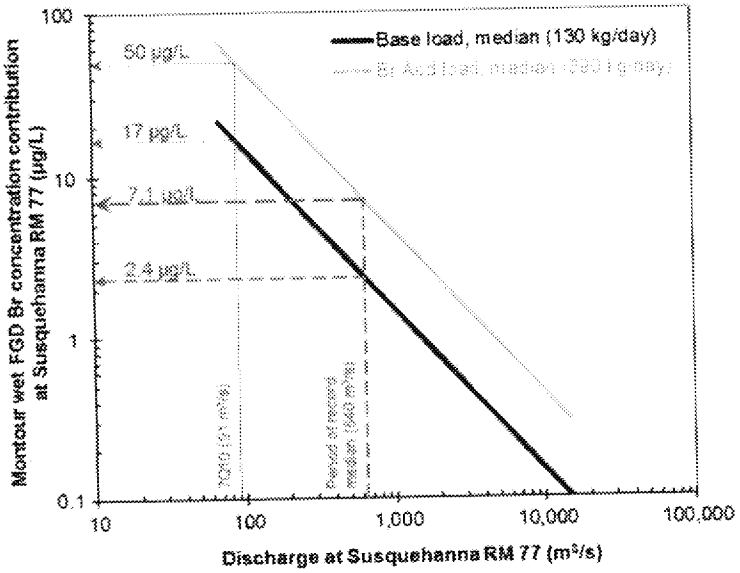
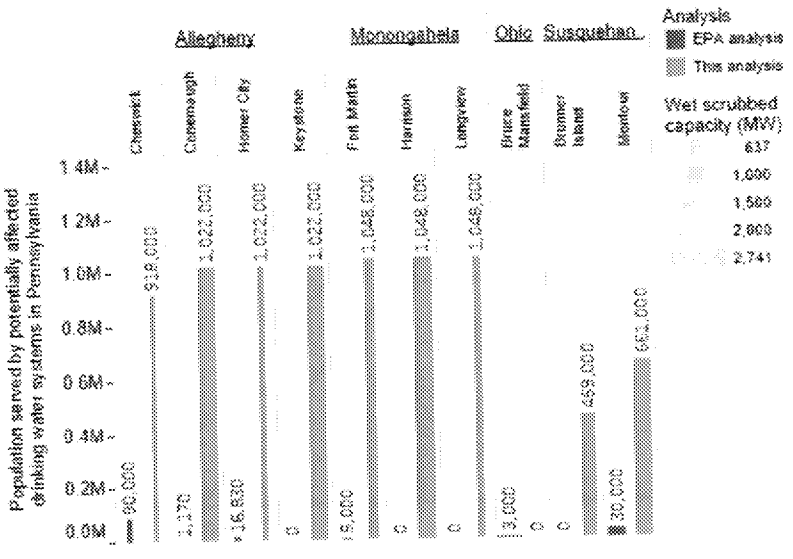

Base load, median (130 kg/day)
Br Add load, median (390 kg/day)
Montour wet FGD Br concentration contribution at Susquehanna RM 77 (µg/L)
100
10
1
0.1
10
100
1,000
10,000
100,000
Discharge at Susquehanna RM 77 (m³/s)

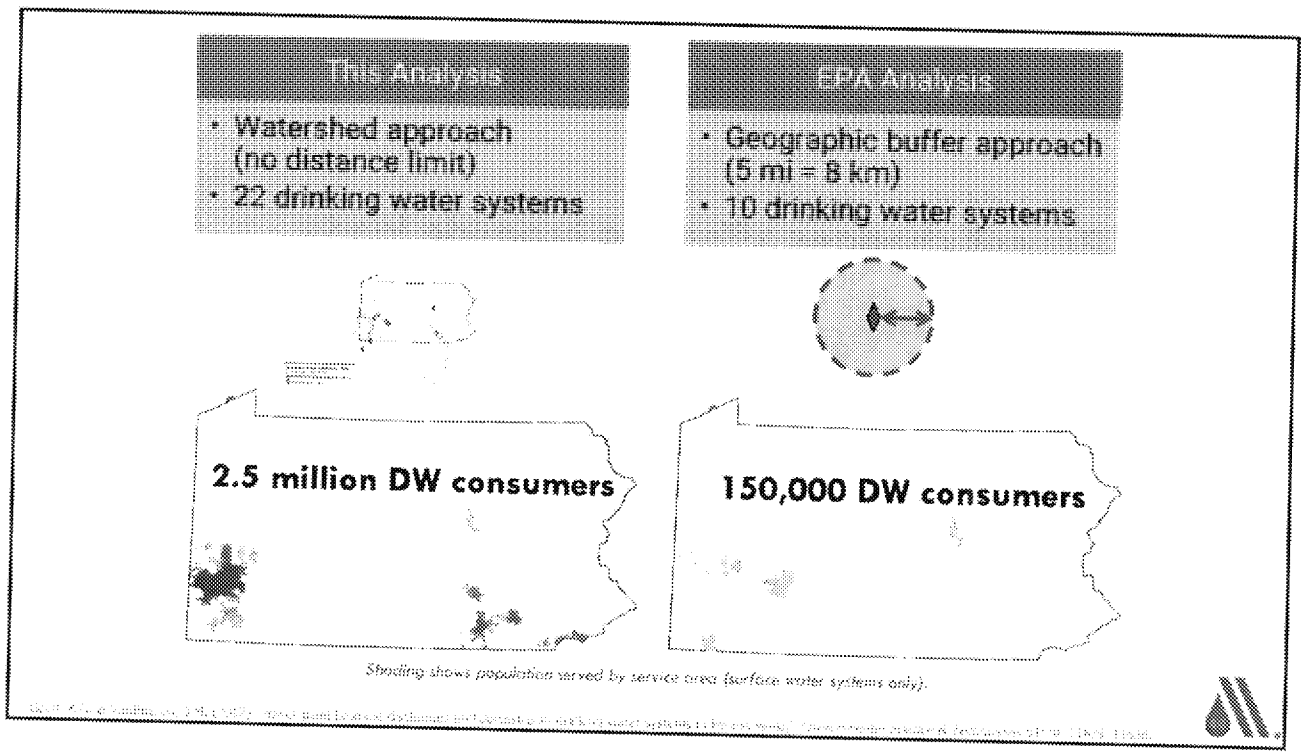

Base load, median (130 kg/day)
Br Add load, median (390 kg/day)
7.1 µg/L
2.4 µg/L
Montour wet FGD Br concentration contribution at Susquehanna RM 77 (µg/L)
100
10
1
0.1
10
100
1,000
10,000
100,000
Discharge at Susquehanna RM 77 (m³/s)

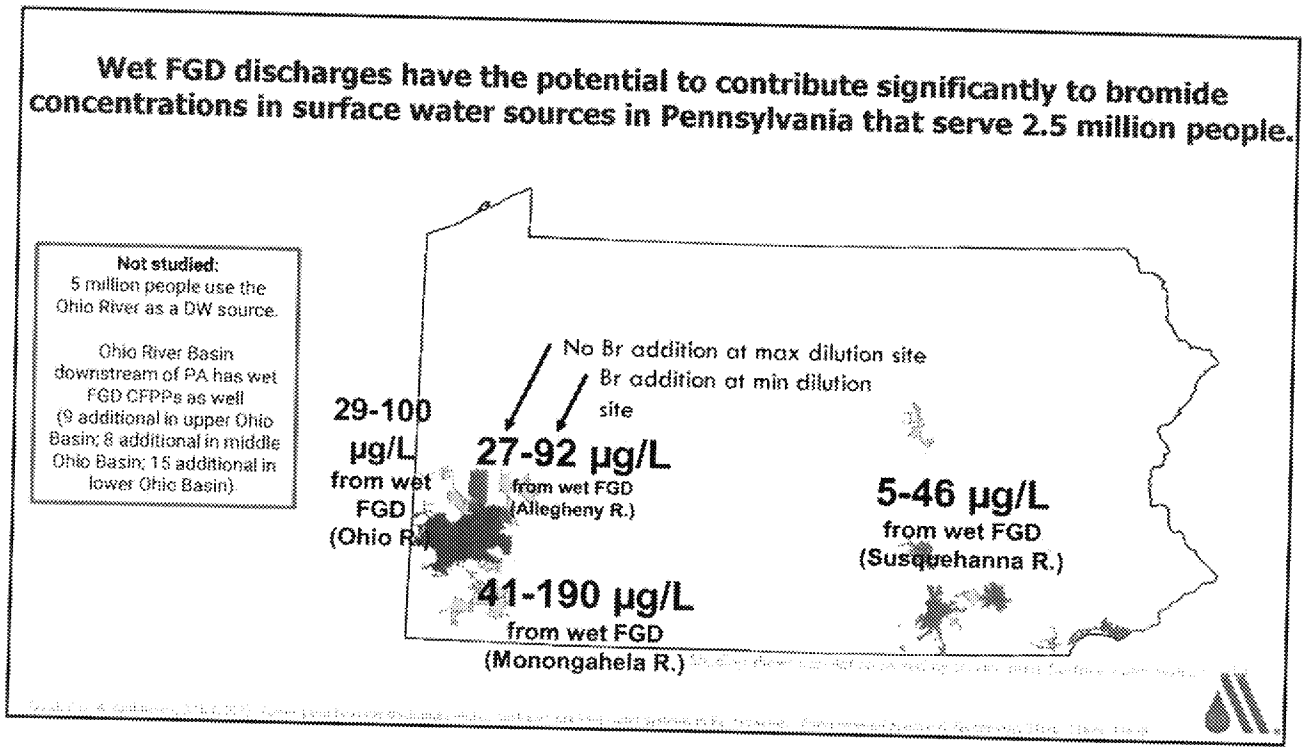



## Drinking water intakes downstream of power plants serve different populations.



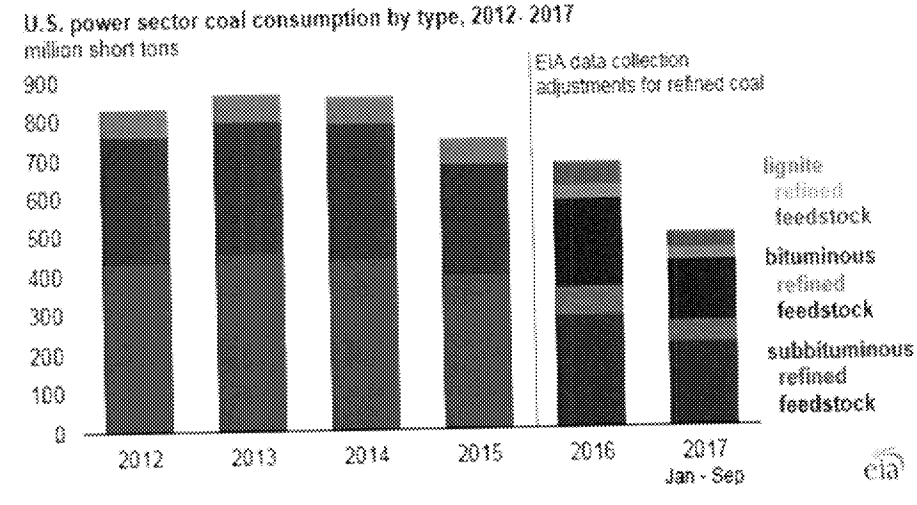
5/30/2018


IHS Analysis
• Watershed approach (no distance limit)
• 22 drinking water systems
EPA Analysis
• Geographic buffer approach (5 mi = 8 km)
• 10 drinking water systems
2.5 million DW consumers
150,000 DW consumers
Shading shows population served by service area (surface water systems only).


Wet FGD discharges have the potential to contribute significantly to bromide concentrations in surface water sources in Pennsylvania that serve 2.5 million people.
Not studied:
5 million people use the Ohio River as a DW source.
Ohio River Basin downstream of PA has wet FGD CFPPs as well (9 additional in upper Ohio Basin; 8 additional in middle Ohio Basin; 15 additional in lower Ohio Basin).
No Br addition at max dilution site
Br addition at min dilution site
29-100 µg/L from wet FGD (Ohio R.)
27-92 µg/L from wet FGD (Allegheny R.)
5-46 µg/L from wet FGD (Susquehanna R.)
41-190 µg/L from wet FGD (Monongahela R.)

## Recent changes affecting bromide loads . . .

## Overall, coal consumption has declined; refined coal use increasing.




Refined coal made up 17% of total power industry coal consumption in 2016 (117 of 671 million tons). Of this 70 million tons (60%) was associated with wet FGD.

## What is refined coal?

- EIA defines refined coal as: "a coal product that is created when impurities and/or moisture are removed to improve heat content and reduce emissions." EIA did not collect information on RC use until 2016. Historical comparisons (2004-2015) are not possible.
- IRS defined refined coal as any coal that has been modified in a way that will reduce air pollution emissions. This definition was created because of a tax credit included in the American Jobs Creation Act of 2004.
- "Refined coal" is not mentioned in the ELGs or any supporting documentation.

## How is refined coal made?

- EIA reports that RC is most commonly made by mixing proprietary additives to feedstock coal (typically a mix of halogens and metals), but they do not collect information on specific RC activities.
- IRS does not provide any publically available information on RC facilities. Facility permits and patent filings provide some information.
- To qualify for the tax credit, producers must demonstrate that burning the refined coal product reduces NOx by 20% and SOx or Hg by 40% compared to the feedstock coal. This verification need not be done on site. [The facility must also have been in service by Jan 1, 2012, and refined coal must be sold to an unrelated person for production of electricity.]
- "Section 45 pollution reduction targets are in some cases being met by addition of calcium bromide and an alkaline sorbent such as cement kiln dust. Not all refined coal contains added bromide." EPRI, 2014

## Why is so much more refined coal being used?

- IRS Section 45 tax code. Refined coal offers a tax benefit.
- The intent of this legislation was to incentivize investment in refined coal facilities, with the explicit goal of reducing criteria air pollutants from power plants (NOx, SOx, Hg). Under current conditions, there is no incentive for power plants to buy the more expensive refined coal or for anyone to invest in producing refined coal if the power plant can meet its air emission goals with conventional (unrefined) coal. The tax credit was to incentivize investment in refined coal facilities and the purchase of refined coal by power plants.

## Which plants are using RC or bromide addition and how much is being added?

- Little information on RC was available prior to 2016, when EIA began tracking RC use. EIA does NOT ask about the refining process or the amount of bromide added.
- EPRI conducted a survey from 2011 to 2013 of 75 coal fired units. "36 of the 75 units added bromide in the form of refined coal to obtain a section 45 tax advantage, 17 units added bromide to the coal to meet a state or other regulation, and 3 units used bromide to meet state regulation and section 45."

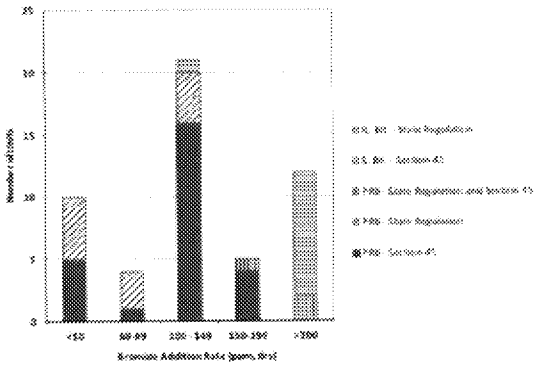
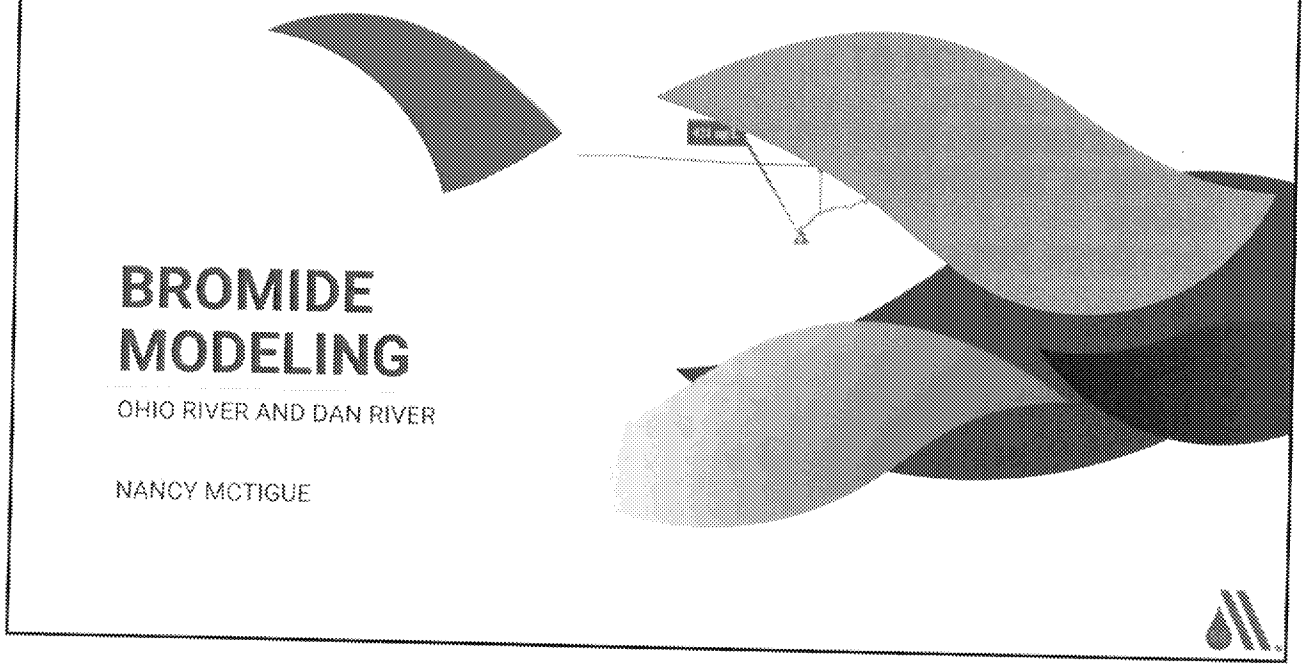


Figure 3-3
Bromide Addition Rates of Surveyed Units Operating Commercially

NOTE: Good and VanBriesen (2016 and 2017) based their analysis on additions only for Hg control, using rates from the Allegheny River plants (most likely value 35 ppm Br; highest value 106 ppm Br). Thus, their projections are much lower than if bromide additions were for section 45 and not just Hg control.

# What is next with RC tax credit?

- The tax credit was designed to expire. Only facilities in service by Dec 31, 2011 can claim the credit, and the credit expires after 10 years of service (by plant). The latest plant then would be using the credit in Dec 2021, but many facilities would see their tax credit expire sooner.
- Senators Hoeven and Heitkamp introduced legislation to extend the RC tax credit (Feb 2018) for another 10 years (S 2373). The legislation also allows new RC units to come on-line and claim the credit (between Dec 2017 and Jan 2021). Thus, existing facilities would be extended to 20 years from date of service, and new facilities could continue the credit through Jan 2041.
- Similar legislation (HR 5159) was introduced by Cramer and McKinley in the House in March 2018.



# BROMIDE MODELING

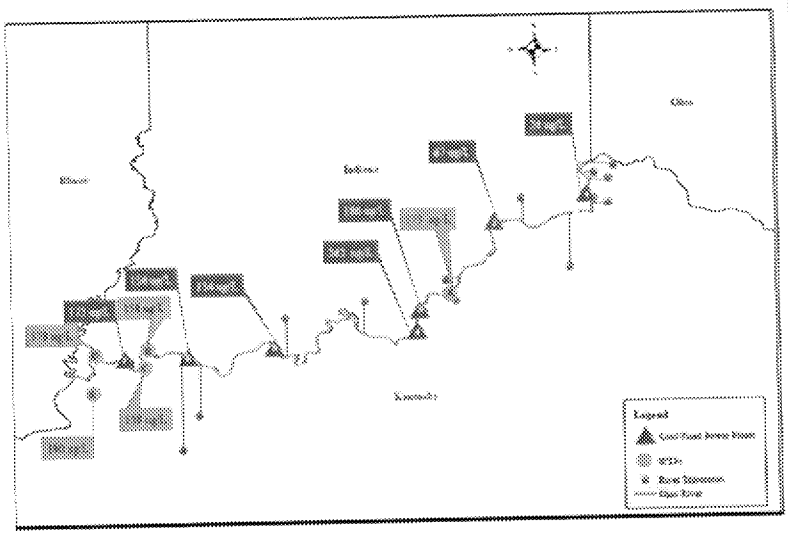
OHIO RIVER AND DAN RIVER

NANCY MCTIGUE

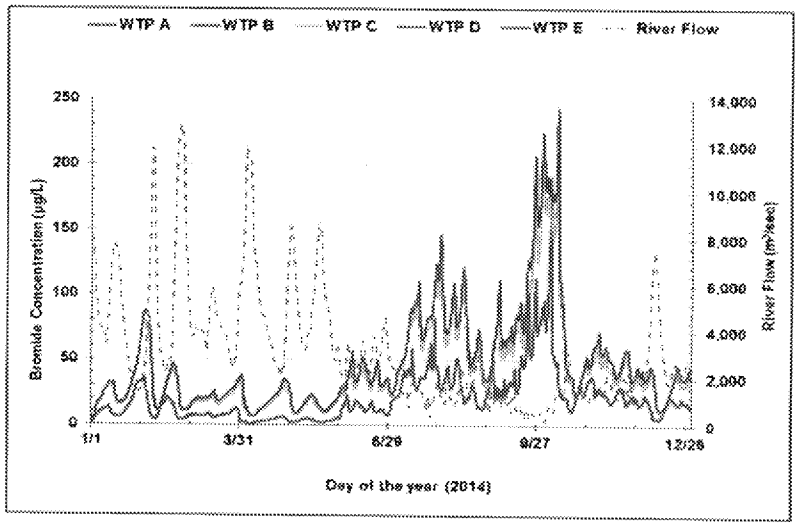
## BROMIDE TRANSPORT MODEL DEVELOPMENT

- Modeled using CE-QUAL 2 – COE hydrodynamic model
- Allows track bromide by distance down river from discharge as a function of time during the year
- Accounts for daily river flow and bromide discharge
- Completed for Ohio River along Indiana and Kentucky and Dan River in Virginia and North Carolina
- Bromide levels at WTP impacted heavily by River flow – dilution

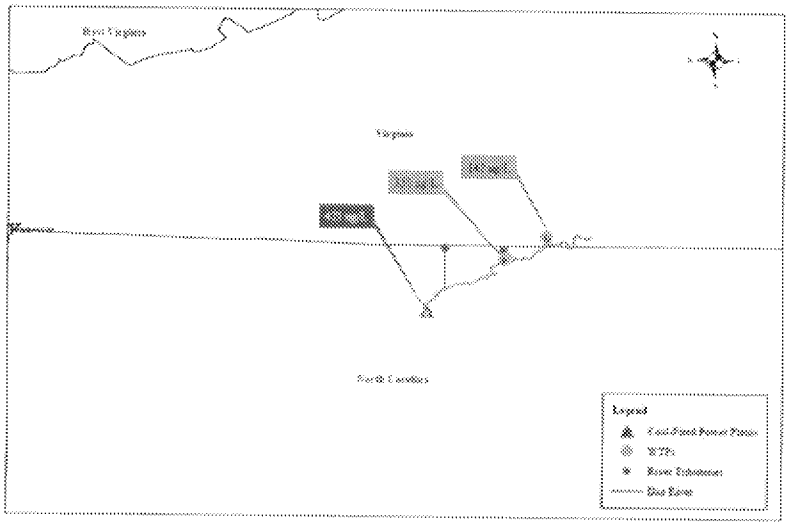
## MODELED BROMIDE CONCENTRATION AT POWER PLANTS, WTPs DURING LOW FLOW IN THE OHIO RIVER OCTOBER 2014



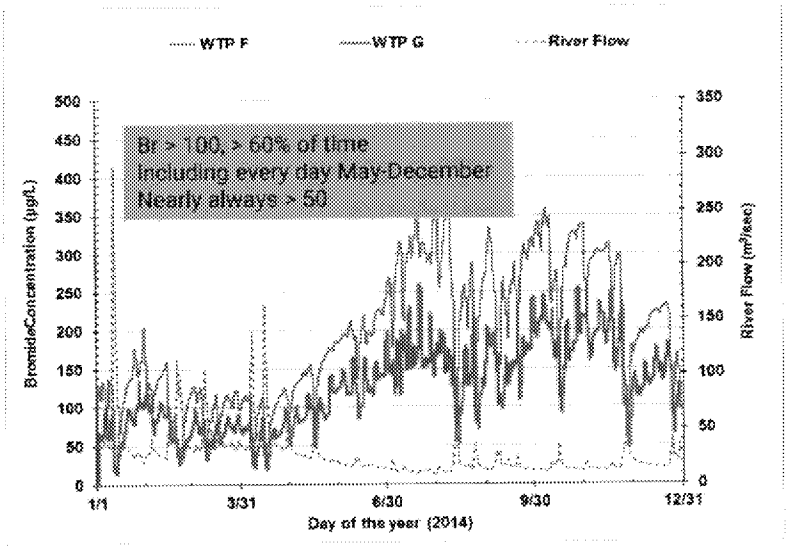
## BROMIDE LEVELS AT 5 WTPs ALONG OHIO STUDY AREA



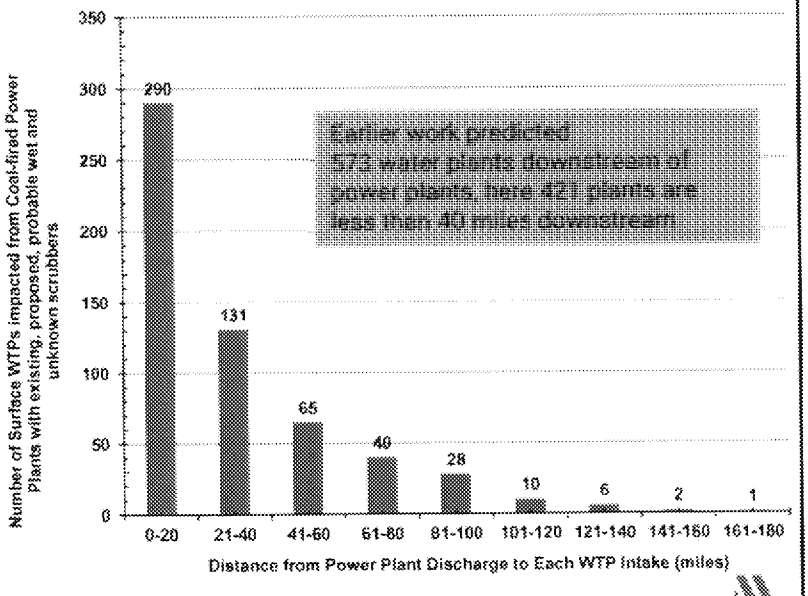

## MODELED BROMIDE CONCENTRATION AT POWER PLANTS, WTPs DURING LOW FLOW IN THE DAN RIVER JULY 2014



## BROMIDE LEVELS AT 2 WTPs ALONG DAN RIVER STUDY AREA




## DISTANCE FROM POWER PLANTS TO DOWNSTREAM WATER TREATMENT PLANTS



# BROMIDE MONITORING CHALLENGES

JEANNE VANBRIESEN

**Bromide concentration in source waters varies spatially and temporally, presenting a challenge for monitoring at outfalls, in the river, and at drinking water intakes.**

# BROMIDE MANAGEMENT OPTIONS

JEANNE VANBRIESEN

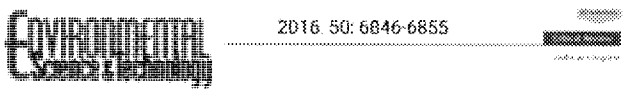
## How should bromide be managed to prevent formation of brominated DBPs in drinking water?

## DBP Control Options within Drinking Water Systems

- Reducing bromide and iodide precursors from source water.
- Reducing organic carbon prior to chlorination.
- Changing disinfectant (to chloramine).
- Removing DBPs after formation (blowers and mixers in tanks).

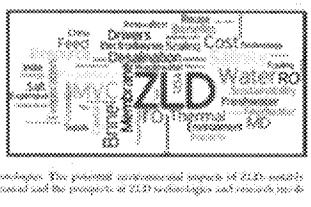
- Ion removal is expensive and non-specific. Resultant brines or sorbants require disposal.
- Changing Br:TOC ratio changes DBP speciation.
- Changing disinfectant changes types of DBPs that form (can reduce regulated forms and increase others; can increase NDMA)
- Removal of DBPs changes speciation and may reduce compliance problems without altering risk.

## Zero Liquid Discharge for Wastewaters




2016, 50, 6846-6855

**The Global Rise of Zero Liquid Discharge for Wastewater Management: Drivers, Technologies, and Future Directions**



NEWS & EVENTS March 1, 2017

**Eliminating Wastewater: Zero-liquid Discharge Market to $2.7 Billion in 2030**

Contact

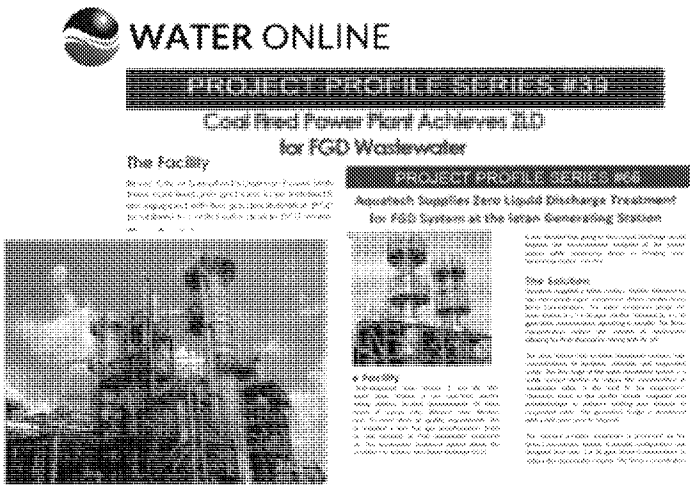
Emily Parker

Eliminating Wastewater: Zero-liquid Discharge Market to $2.7 Billion in 2030

BOSTON, MA – March 1, 2017 – Zero-liquid discharge (ZLD), an approach to wastewater treatment that prevents any liquid waste from flowing out of a power plant or factory, will grow at a 12% annual rate over the $2.7 billion market in 2030. The market will be boosted by technology innovations, rising water costs, and regulations due to growing concerns over surface water contamination, according to Lux Research.

## Zero Liquid Discharge for Flue Gas Desulfurization Wastewaters

- In the ELG Technical Development Document (8-26), EPA notes they identified 3 plants in the US that have installed evaporation systems for FGD wastewater.
- The ELG TDD also cites a 2009 survey that showed 51 ZLD units expected to be in operation by 2014.
- Spreadsheet (DCN SE00444) indicated ZLD is the technology basis for 31 wet FGD plants.


WATER ONLINE

PROJECT PROFILE SERIES #39

Coal Fired Power Plant Achieves ZLD for FGD Wastewater

The Facility

PROJECT PROFILE SERIES #38

Aquatech Supplies Zero Liquid Discharge Treatment for FGD System at the Intan Generating Station

The Solution

U.S. Environmental Protection Agency. Technical Development Document for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category. EPA-821-R-15-007; Washington, D.C., 2015b.
U.S. Environmental Protection Agency. Current and Future Industry Profile. DCN SE00444. EPA-HQ-OW-2009-0819-2015.
Case Study: Coal Fired Power Plant and ZLD for FGD Wastewater. Aquatech International Corporation. Accessed 5/27/2018.
Case Study: Aquatech supplies zero liquid discharge treatment for FGD system at the Intan Generating Station. Aquatech International Corporation. Accessed 5/27/2018

## Flue Gas Desulfurization Wastewaters in the ELGs

- Evaporative technology was regulatory option F in the ELG TDD. This option was not selected. The BAT was selected as chemical precipitation followed by biological treatment.
- ZLD was not selected because EPA "determined current methods that achieve ZLD are not available nationally." (TDD 8-7)
- The selected BAT is not expected to remove chlorides or bromides from FGD wastewaters prior to discharge.
- "Evaporative technology is potentially available and may be appropriate to achieve water quality-based effluent limitations, depending on site specific conditions. For example, evaporation may be appropriate for those steam electric power plants that discharge upstream of drinking water treatment plants and whose discharge of bromide negatively impacts treatment of source waters at these treatment plants." EA 7:38
- Voluntary incentives in the ELGs focus on FGD wastewater.

U.S. Environmental Protection Agency. Technical Development Document for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category. EPA-821-R-15-007; Washington, D.C., 2015.
U.S. Environmental Protection Agency. Environmental Assessment for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category. EPA-821-R-15-006; Washington, D.C., 2015.

## How do we identify which FGD discharges are likely to cause drinking water problems?

- Identify wet FGD units by electricity generating unit at each plant. In future, require bromide measurement in FGD discharges. (see TDD 14:27)
- Identify coal being burned at each generating unit (for base bromide levels).
- Identify use of RC and estimate bromide loading. In future, request additional information on refining method (esp. addition of bromide and iodide).
- Determine dilution capacity of receiving waters.
- Determine use of receiving waters as source waters for treatment plants (and population consuming that water).
- Identify regions with elevated risk of problems and focus additional plant-specific analyses on these regions.

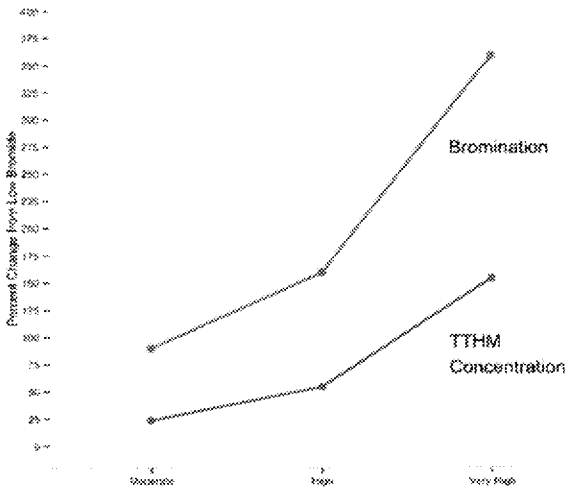
## How do we identify FGD discharges that are causing drinking water problems already?

- Identify regions with increasing bromination of DBPs at drinking water plants (Seidel et al, 2017; Cadwallader and VanBriesen, 2018).
- Identify regions with elevated bromide concentration in rivers/streams compared with values from ICR in 1997-1998 (ongoing work of WRF project; also Good et al, 2018)
- Compare regions with bromide or brominated DBP problems (identified above) with locations of wet FGD discharges and regions with extensive RC usage (identified in Good and VanBriesen, 2018).

## How do we identify levels of bromide in source water or in FGD wastewater that will cause problems?

- The relationship between bromide concentration in source water and the concentration of regulated or unregulated DBPs in drinking water, and their associated human health risk, is complex.
- Brominated DBPs form even at very low levels of bromide in source waters.
- Brominated DBPs are more toxic than chlorinated DBPs.
- Watersheds often have multiple bromide sources, including multiple power plants operating FGD.
- Bromide loads from power plants depend on the amount of coal, the type of coal, and the type of coal additives used. These can vary over time at power plants.
- Bromide concentrations observed at downstream drinking water plants depend on the number and type of sources in the watershed and the dilution capacity of the river, which usually varies seasonally.

## The effect of bromide increase on TTHM and bromination fraction can be assessed categorically.




- Categorical assessment of effect of increase.
- ICR data as baseline:
  - LOW (<20µg/L)
  - Moderate (21-65µg/L)
  - High (66-92µg/L)
  - Very High (>92µg/L)
- Effect of movement between bins can be estimated for bromination fraction and TTHM.

# BROMIDE COST IMPLICATIONS

NANCY MCTIGUE

# Cost Implications for Water Systems

**Total Annual Costs***

| Capacity (MGD) | Total Annual Unit Costs* ($/yr per MGD WTP Capacity) | | |
|---|---|---|---|
| | Chloramination | GAC | IX |
| 1 | $36,400 | $373,700 | $521,500 |
| 10 | $11,800 | $284,800 | $175,100 |
| 50 | $8,000 | $275,700 | $173,000 |

*Costs assume treatment technology will be successful. Application of chloramination may be questionable

**Predicted Monthly Household Cost Increases**

| Capacity (MGD) | Chloramination | GAC | IX |
|---|---|---|---|
| 1 | $3 | $33 | $46 |
| 10 | $1 | $25 | $16 |
| 50 | $1 | $27 | $17 |

**Source:** Roth et al., *Cost of DBP Mitigation Associated with Bromide Discharges from Power Plants*, 2015

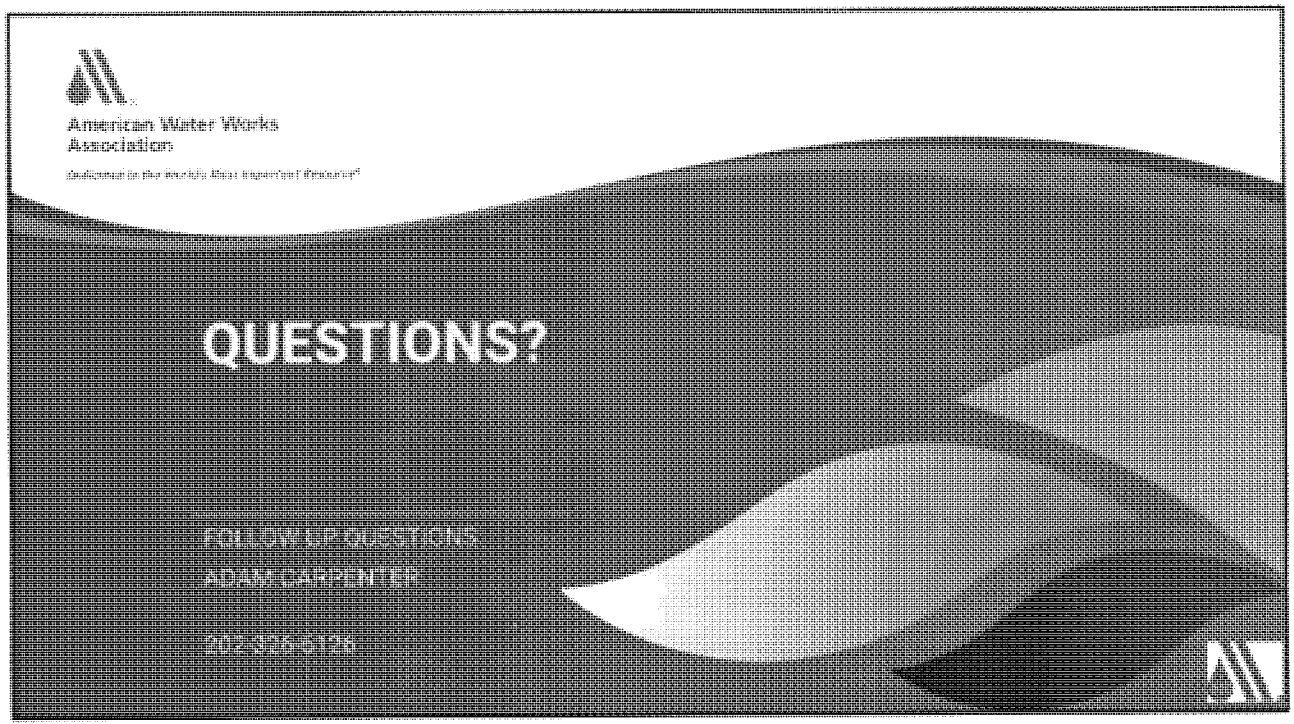
# Cumulative Cost Impact

- The cost of Stage 2 DBPR was $78.8 M spread across approximately 2,300 WTPs expected to make treatment changes

Assumed distribution of treatment options
- 20% of WTPs use chloramination
- 60% of WTPs use GAC
- 20% of WTPs use IX

| Total National Annual Cost | Percent of Plants Requiring Additional Treatment | | |
|---|---|---|---|
| | 100% | 50% | 25% |
| WTPs likely to be impacted (257 WTPs) | $469.1 M | $234.5 M | $117.3 M |
| WTPs that may be impacted (573 WTPs) | $1,276.0 M | $638.0 M | $319.0 M |

**Source:** Roth et al., *Cost of DBP Mitigation Associated with Bromide Discharges from Power Plants*, 2015



# Key Reference List


- Cadwallader, A., and VanBriesen, J.M. (2018) "Temporal and spatial changes in bromination of Pennsylvania drinking water disinfection byproducts," ASCE Journal of Environmental Engineering, in review.
- Good and VanBriesen (2018) "Wet flue gas desulfurization bromide discharges to U.S. watersheds and their effect on drinking water sources," in preparation.
- Good, K.D., Cadwallader, A., and VanBriesen, J.M. (2018) "Temporal and spatial bromide concentration variability in Pennsylvania drinking water sources," in preparation.
- Good, K.D. & VanBriesen, J.M. (2017) "Power plant bromide discharges and downstream drinking water systems in Pennsylvania," *Environmental Science & Technology*. 51:20, 11829–11838.
- Good and VanBriesen (2018) "Wet flue gas desulfurization bromide discharges to U.S. watersheds and their effect on drinking water sources," in preparation.
- McTigue, N.E., et al Occurrence and Consequences of Increased Bromide in Drinking Water Sources. Journal AWWA, Nov. 2014.
- Roth et al., *Cost of DBP Mitigation Associated with Bromide Discharges from Power Plants*, 2015
- Seidel, D.J. et al. (2017) Disinfection byproduction occurrence at large water systems after state 2 DBPR, Journal American Water Works Association, 109:7: 17-30.
- VanBriesen (2013) Potential Drinking Water Effects of Bromide Discharges from Coal-Fired Electric Power Plants, submitted comment to ELGs. See EPRI (2000, 2004, 2007) cites within
- Wilson, J.M.; Y. Wang; J.M. VanBriesen. "Sources of high total dissolved solids to drinking water supply in Southwestern Pennsylvania." *ASCE Journal of Environmental Engineering.140, Special Issue: Environmental Impacts of Shale Gas Development, B4014003.*
- Wilson and VanBriesen (2013) Source water changes and energy extraction activities in the Monongahela River, 2009-2012, Environmental Science and Technology, 47 (21): 12575-12582.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB - 5 2018

OFFICE OF WATER

Mark Berry
Vice President, Environmental & Natural Resources
Georgia Power
241 Ralph McGill Blvd NE
Atlanta, GA 30308

Dear Mr. Berry:

The U.S. Environmental Protection Agency (EPA) has received your January 22, 2018 request for extension letter, and is granting the request in part as detailed below. As you are aware, the Agency has a goal of completing its reconsideration of the new, more stringent requirements for bottom ash transport water and flue gas desulfurization wastewater in the 2015 Steam Electric Effluent Limitations Guidelines and Standards rule (2015 rule) no later than 2020, when the 2015 rule implementation dates would be triggered. During this time, the Agency must propose and finalize any revisions through notice and comment rulemaking. This schedule is very compressed for a rulemaking of this magnitude. As a result of this compressed schedule, timely receipt of the requested information is essential to ensure that the reconsideration of the 2015 rule can take place prior to the compliance date for the new requirements for any affected facilities, including facilities owned by Georgia Power.

To further this mutual goal, the EPA believes that it is necessary for Georgia Power to provide as much responsive information as possible by March 1, 2018. Thus, the EPA has already granted a full extension for all responsive information from February 15, 2018 to March 1, 2018 as detailed in the January 22 email from Ronald Jordan to Donna Hill. This extension includes data that is, or may be, confidential business information (CBI). Although Georgia Power has expressed concern about properly designating materials to avoid overly broad claims, this does not preclude the provision of such information to the Agency. Instead, the EPA suggests that where Georgia Power cannot determine the confidential nature of materials by the March 1 timeframe, that the information be provided to the EPA as CBI, and that as further refinements are made to those designations by Georgia Power, specific CBI claims may be lifted at a later date. This will allow Georgia Power the full protection of the EPA's procedures for handling CBI without unnecessarily risking a delay of the reconsideration. The EPA believes that this request is reasonable, particularly where existing reports are requested in their current form (e.g. Item A.10).

To the extent that the March 1 extension is believed to be insufficient where issues over data ownership are involved, the EPA is willing to facilitate a prompt resolution. The EPA has met with most of the technology vendors known to have provided pilot and full-scale systems to Georgia Power. Top executives at these companies have expressed a willingness to share information subject to the utility's approval. Furthermore, the EPA met with the Electric

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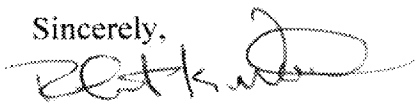
For remaining materials, the EPA acknowledges that collection and formatting of large amounts of data may require additional time in some circumstances. Therefore, upon submission of responsive data to the fullest extent possible on March 1, the EPA also requests that Georgia Power describe the additional information it agrees to produce, but requires more time to collect and format. For this remaining information, the EPA will grant the full requested extension to April 16, 2018.

We thank you again for your careful attention to this request for information, and look forward to continued discussions during the EPA's evaluation of the 2015 rule. If you have any questions about the extension, please contact Ronald Jordan via e-mail at jordan.ronald@epa.gov or by phone at (202) 566-1003.

Sincerely,



Robert K. Wood, Director
Engineering & Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Susan Comensky
Vice President, Environmental Affairs
Alabama Power
600 18th Street North
Birmingham, AL 35203

FEB - 5 2018

OFFICE OF WATER

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Sincerely,

Robert K. Wood, Director
Engineering & Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 6, 2018

Mark Berry
Vice President - Environmental & Natural Resources
Georgia Power
241 Ralph McGill Blvd NE
Atlanta, GA 30308

OFFICE OF WATER

Dear Mr. Berry:

Thank you for your timely submission in response to the Agency's January 3, 2018 letter requesting information associated with flue gas desulfurization (FGD) wastewater. We appreciate the time and effort your company invested in providing this responsive information. The Agency is continuing to work with the Electric Power Research Institute (EPRI) to obtain all responsive EPRI reports, and expects that such communications will result in a mutually agreeable outcome to complete Georgia Power's response.

Given an initial review of the substance of this submission, your company is well positioned to provide useful input to the Agency regarding this information and the Steam Electric Effluent Guidelines rulemaking in general. Therefore, we would like to invite Georgia Power to a one-on-one meeting with our technical staff. The purpose of this meeting would be to discuss any issues or other considerations that the Georgia Power engineers and technical staff believe would either assist the Agency in properly assessing this information, or for your company to suggest improvements to the 2015 Final Steam Electric Effluent Guidelines BAT requirements for flue gas desulfurization wastewater or bottom ash transport water. Although the Agency is reaching out to Georgia Power specifically at this time due to its intimate knowledge of the information provided, the Agency intends to engage with many other parties as part of the rulemaking process. Therefore, nothing in this letter should be construed as limiting the avenues by which Georgia Power or other stakeholders can reach out to the Agency.

We hope that you will consider our offer, and regardless of your decision we value further communication as we move toward a proposal. Please feel free to contact Richard Benware at (202) 566-1369 or benware.richard@epa.gov to arrange for a meeting. For follow-up questions, concerns, or supplemental submissions regarding your response to our January 3 letter, please feel free to contact Ronald Jordan at (202) 566-1003 or jordan.ronald@epa.gov. Thank you again.

Sincerely,

Robert Wood
Director, Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 6, 2018

Susan Comensky
Vice President - Environmental Affairs
Alabama Power
600 18th Street North
Birmingham, AL 35203

OFFICE OF WATER

Dear Ms. Comensky:

Thank you for your timely submission in response to the Agency's January 3, 2018 letter requesting information associated with flue gas desulfurization (FGD) wastewater. We appreciate the time and effort your company invested in providing this responsive information. The Agency intends to review all the information Alabama Power provided as we move forward in the rulemaking process.

Given an initial review of the substance of this submission, your company is well positioned to provide useful input to the Agency regarding this information and the Steam Electric Effluent Guidelines rulemaking in general. Therefore, we would like to invite Alabama Power to a one-on-one meeting with our technical staff. The purpose of this meeting would be to discuss any issues or other considerations that the Alabama Power engineers and technical staff believe would either assist the Agency in properly assessing this information, or for your company to suggest improvements to the 2015 Final Steam Electric Effluent Guidelines BAT requirements for flue gas desulfurization wastewater or bottom ash transport water. Although the Agency is reaching out to Alabama Power specifically at this time due to its intimate knowledge of the information provided, the Agency intends to engage with many other parties as part of the rulemaking process. Therefore, nothing in this letter should be construed as limiting the avenues by which Alabama Power or other stakeholders can reach out to the Agency.

We hope that you will consider our offer, and regardless of your decision we value further communication as we move toward a proposal. Please feel free to contact Richard Benware at (202) 566-1369 or benware.richard@epa.gov to arrange for a meeting. For follow-up questions, concerns, or supplemental submissions regarding your response to our January 3 letter, please feel free to contact Ronald Jordan at (202) 566-1003 or jordan.ronald@epa.gov. Thank you again.

Sincerely,

Robert Wood
Director, Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 28, 2017

James Kim
Chief Operating Officer
Tomorrow Water
1225 Pratt Street
Anaheim, CA 92801

Dear Mr. Kim:

Thank you for taking time to provide an overview of BKT Engineering's technology for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the FMX system on November 2, 2017. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain information cost and performance data associated with the FMX anti-fouling membrane filtration system. Below is a listing of the information EPA requested during our meeting:

- Performance data for the on-going demonstration at Duke Energy's Belews Creek Steam Station, including untreated FGD wastewater, pretreatment effluent/influent to the FMX system, and permeate and concentrate from the FMX system. Please also include any additional data that may be available for other intermediate monitoring points.
- Performance data for the pilot study being conducted at the Water Research Center at Plant Bowen, including untreated FGD wastewater and permeate and concentrate from the FMX system. Please also include any additional data that may be available for other intermediate monitoring points within the system.
- Performance data for the 2015 pilot study conducted at the West Virginia power plant, including untreated FGD wastewater, pretreatment effluent/influent to the FMX system, and permeate and concentrate from the FMX system. Please also include any additional data that may be available for other intermediate monitoring points.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for BKT Engineering's technology for treating FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI

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and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by **December 15, 2017**.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 28, 2017

David Martin
VP, Technology
KLeeNwater
5100 Enterprise Drive
Elliston, VA 24087

Dear Mr. Martin:

Thank you for taking time to provide an overview of KLeeNwater's technology for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting on September 27, 2017. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain information cost and performance data associated with KLeeNwater's membrane systems (including I-PRO and B-PRO systems) and associated physical/chemical pretreatment processes. Below is a listing of the information EPA requested during our meeting:

1. Electronic copy of the presentation used at our meeting on September 27, 2017.
2. Electronic copy of the presentation given at EUEC 2017.
3. The 2017 IWC conference technical paper presenting pilot study results.
4. Data from pilot-scale studies conducted at coal-fired power plants and available information for treated wastestreams. Please provide additional details on all pilot studies conducted on FGD wastewater including plant name, study dates and duration, process flow diagram for the pilot technology and associated pretreatment, chemical additions, plant operating conditions (e.g., coal types burned), and any available influent and effluent data.
5. Data from bench-scale studies on coal-fired power plant wastewater and available information about the source of the wastewater. Please specify which tests used FGD wastewater and provide any additional information available about plant operating conditions.
6. Any data from raw and treated FGD wastewater from past bench-scale studies that can be reanalyzed for additional constituents (e.g., bromide, iodide).
7. Cost curves as a function of wastewater flowrate (and any other relevant parameters such as influent characteristics) for full-scale membrane treatment systems for FGD wastewater along with bids you submitted for full-scale projects. Please specify treatment trains associated with each of the bids.

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The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for KLeeNwater's technologies for treating FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by **December 15, 2017**.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 28, 2017

John Tracy
Sr. Director, Marketing & Commercial Ops.
Oasys Water, Inc.
47 Moulton Street
Cambridge, MA 02138

Dear Mr. Tracy:

Thank you for taking time to provide an overview of Oasys' technologies for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the ClearFlo Membrane Brine Concentrator (MBC) system on October 19, 2017. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain information cost and performance data associated with the Oasys ClearFlo MBC system. Below is a listing of the information EPA requested during our meeting:

- Performance data for the pilot study conducted at the Water Research Center at Plant Bowen, including untreated FGD wastewater, pretreatment effluent/influent to the MBC system, and permeate and concentrate from the MBC system. Include all concentration data, including for analytes not regulated by the 2015 effluent guidelines rule (e.g., bromide, iodide).
- Performance data from pilot-scale and full-scale operations implemented at other coal-fired power plants, including in other countries. Please provide additional details including plant operating conditions (e.g., coal types burned), details on wastestreams treated, and any influent and effluent data (including any performance data available for intermediate streams).

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for Oasys' MBC technology for treating FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

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The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by **December 15, 2017**.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 28, 2017

Todd Whiting
Vice President Operations
Purestream
2401 Foothill Drive, Suite B
Salt Lake City, Utah 84109

Dear Mr. Whiting:

Thank you for taking time to provide an overview of Purestream's AVARA technology for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting on October 12, 2017. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain information cost and performance data associated with the Purestream AVARA system. Below is a listing of the information EPA requested during our meeting:

- The 2017 IWC conference technical paper presenting pilot study results.
- Data from pilot-scale studies conducted at coal-fired power plants and available information for treated wastestreams. Please provide additional details on all pilot studies conducted on FGD wastewater including plant name, study dates and duration, process flow diagram for the pilot technology and associated pretreatment, chemical additions, plant operating conditions (e.g., coal types burned), and any available influent and effluent data.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for Purestream's technologies for treating FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into

account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by **December 15, 2017**.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 0 3 2018

OFFICE OF WATER

Dhiaa Jamil
Executive Vice President and Chief Operating Officer
Duke Energy
550 South Tryon Street
Charlotte, NC 28202

Dear Mr. Jamil:

The U.S. Environmental Protection Agency (EPA), under the authority of the Clean Water Act, as amended (the "Act"), 33 USC 1251 et seq., published revisions to the effluent limitations guidelines and standards ("ELGs") for the steam electric power generating point source category in November 2015. EPA is currently evaluating possible revisions to the requirements for flue gas desulfurization (FGD) wastewater and bottom ash transport water included in the 2015 Rule. As part of this evaluation, EPA is assessing the performance and cost of FGD wastewater treatment technologies. In gathering this information, it has come to our attention that your company may have tested or installed one or more FGD wastewater treatment technologies and/or requested a bid for FGD wastewater technologies. In addition, EPA is collecting information regarding the presence and levels of halogens present in FGD wastewater discharges.

Thus, pursuant to Section 308 of the Act, 33 U.S.C. 1318, EPA requests that you provide the Agency with the information described below in Items A through D for each of the power plants that your company owns or operates, and that has at least one coal-fired steam electric generating unit and that operates a wet FGD system:

ITEM A: All FGD wastewater and FGD wastewater treatment data associated with on-site or off-site testing (full-, pilot-, or laboratory-scale) and/or implementation of the following technologies that has occurred since January 1, 2013: chemical precipitation; biological treatment; thermal technology (including partial or complete evaporation); ion exchange; zero valent iron (ZVI) technology; membrane technology (e.g., reverse osmosis, forward osmosis, ultrafiltration, etc.); paste, solidification, or encapsulation of FGD wastewater brine; electrodialysis; or electrocoagulation. The following identifies EPA's specific requests/questions related to the technology evaluations conducted during that timeframe:

1) Identify the specific plant, type of technology tested (e.g., chemical precipitation, biological, ZVI, membrane, or evaporation), the system vendor, and the trade

name associated with the evaluated system, if applicable.

2) Identify when and for which plant the technology evaluation was conducted, and if the evaluation is ongoing.

3) Identify and describe the objectives of the technology evaluation.

4) Provide a detailed process flow diagram for each technology evaluation conducted. Depict the entire test configuration including the FGD blowdown or purge sent to treatment, any existing or vendor-installed (for purposes of the test) pretreatment steps, all technologies evaluated, and any post-treatment technologies. The diagram should show all the specific sampling locations and chemical addition points for the entire test configuration. Please note that each diagram should include specific sampling location names so the analytical data can be matched specifically to each technology evaluated as part of the pilot study. See Enclosure 1 for an example of a detailed process flow diagram.

5) Describe any changes made to the pretreatment or post-treatment configuration/operations during the testing period and indicate when these changes occurred (e.g. prior to any testing, during the testing period, etc). Please include all changes made by the plant during the test period and any modifications made by the vendor during the test period. For example, describe any pretreatment steps that were added prior to the wastewater being transferred to the test technologies or describe changes in chemical addition to existing pretreatment steps. Include a detailed description of the pretreatment/post-treatment technology (or changes to the technology) including chemicals and dosage rates, and the date the changes were made. For any changes made to the pretreatment/post-treatment system, provide an explanation as to why the changes were made.

6) Describe how all effluent and/or byproduct streams from the test technology were handled during the period of the test. Please include any wastewater or solid streams resulting from the test technology. If any post-treatment technologies were used to manage the waste/wastewater from the vendor technology being evaluated (e.g., solidification/encapsulation), provide a description of these processes and the associated results.

7) Identify the amount of wastewater treated through each of the treatment technologies (including any pretreatment/post-treatment system(s)) and note any changes to the flow rate throughout the test duration. For any changes in the wastewater flow rate treated, explain why there was an increase/decrease in the flow rate.

8) Identify any wastestreams or dilution streams commingled with the FGD wastewater prior to treatment or added within the treatment train. Identify the

percent contribution of the other wastestreams/dilution streams compared to the FGD wastewater treated in the test.

9) Provide all pollutant concentration data collected during the technology test period for each of the sampling locations identified in Item A.4. EPA is particularly interested in concentration data characterizing the FGD purge, pretreatment effluent/test influent, treated wastewater effluent, and all intermediate sample locations for the technology evaluation. Please provide observations for both total and dissolved parameters, as well as any speciation data (e.g., selenite, selenate), if measured by the analytical laboratory. See Enclosure 2 and Attachment 1 for instruction on how to provide the analytical data.

10) Please provide the laboratory reports associated with the analytical data specified in Item A.9.

11) Provide all reports that have been prepared documenting the technology evaluation, including reports prepared by third parties such as the technology vendor or the Electric Power Research Institute.

12) Provide the type of coal used at the plant each day starting one month prior to the beginning of the test period and continuing through the entire test duration. In addition, please provide the sulfur, chlorine, bromine, and iodine content of the coal used at the plant for each day of this period, if available. For days where coal blending occurred, please note the percentage of each type of coal used. See Attachment 2 ("Supplemental Data" workbook, tab titled "Coal Data").

13) Provide the chloride concentration, pH, total dissolved solids (TDS), and average daily oxidation-reduction potential (ORP) values, within the FGD scrubber system for each day within the range of sampling results that are being provided, if available. See Attachment 2 ("Supplemental Data" workbook, tab titled "FGD System Information").

ITEM B: Identification of projected installation or testing of FGD wastewater technologies specified above in Item A.

1) For the technologies specified above in Item A, please identify each power plant that will either install or test the technology to treat FGD wastewater during 2018 or subsequent years. Identify the type of technology to be installed or tested, the projected date of the installation/test, the system vendor, and the trade name associated with the planned system, if applicable.

ITEM C: Information regarding halogen (e.g., chloride, bromide, iodide) concentrations in FGD wastewater and the use of halogen-based materials to control

flue gas emissions of air pollutants.

1) Please provide the halogen concentrations (chloride, bromide, and iodide) in the FGD treatment system effluent for the most recent year for which you have data for these parameters. Rather than submitting results for each individual sample you collected during the period covered, EPA requests that you provide summary statistics for the number of observations, mean, median, $10^{th}$ percentile, and $90^{th}$ percentile of the dataset. See Attachment 3 ("Halogen Analytical Data Table" workbook).

2) Indicate whether the plant utilized halogen-based materials for mercury emissions control, either by applying to coal prior to combustion, injecting into the flue gas post-combustion, or injection into the FGD scrubber, at any time since January 1, 2013. For each plant that has applied halogen-based materials, please provide the following information:

   a. The plant name and type(s) of application (e.g., sprayed on unburned coal, injected in flue gas stream prior to scrubber);
   b. The type(s) of halogen-based material applied (e.g., calcium bromide, calcium chloride, brominated powdered activated carbon) and dates of application; and
   c. Indicate whether halogen application was a test or the additive is used at full scale for emissions control.

ITEM D: All bids (cost estimates) received since January 1, 2013 from vendors or engineering firms (e.g., engineering, procurement, and construction (EPC) firms) for any treatment technologies for FGD wastewater. Please provide all bids as they were submitted by the vendor or EPC firm, regardless of whether the system has been installed at the plant. If not included in the bid documentation, please also include the following information:

1) Identify the specific plant, type of technology reflected in the bid (e.g., biological, ZVI, membrane, or evaporation), the system vendor, and the trade name associated with the evaluated system, if applicable.

2) System influent characteristics used as specifications for the vendor technology (e.g., FGD purge concentrations if vendor is responsible for providing all pretreatment, pretreatment effluent concentrations if vendor is not responsible for pretreatment).

3) Design flow rate of the treatment system.

4) Treatment system components (e.g., pretreatment elements, post treatment elements).

5) Any other bid details communicated to the vendor to generate the bid.

The information and data responsive to the items above should be received by EPA **no later than February 15, 2018.** The Agency believes that all the information and data requested is readily available to your company, and thus its request is reasonable. You must provide the information and data to EPA pursuant to the federal law cited above. EPA seeks to ensure that any information on which future regulations may be based presents an accurate and representative picture of the industry and we appreciate your cooperation in providing all information and data requested.

Enclosure 1 of this letter provides an example process flow diagram that should be provided in response to this request. Enclosure 2 of this letter provides details regarding how the analytical data and supplemental information should be provided to EPA. Enclosure 3 of this letter provides the statutory authority on which this request is based and explains your legal rights to protection of confidential business information. Enclosure 4 is a notice of EPA's intention to allow selected contractors access to all information, including the confidential information that you submit.

If you have any questions about the information requested, please contact Ronald Jordan via e-mail at jordan.ronald@epa.gov or by phone at (202) 566-1003.

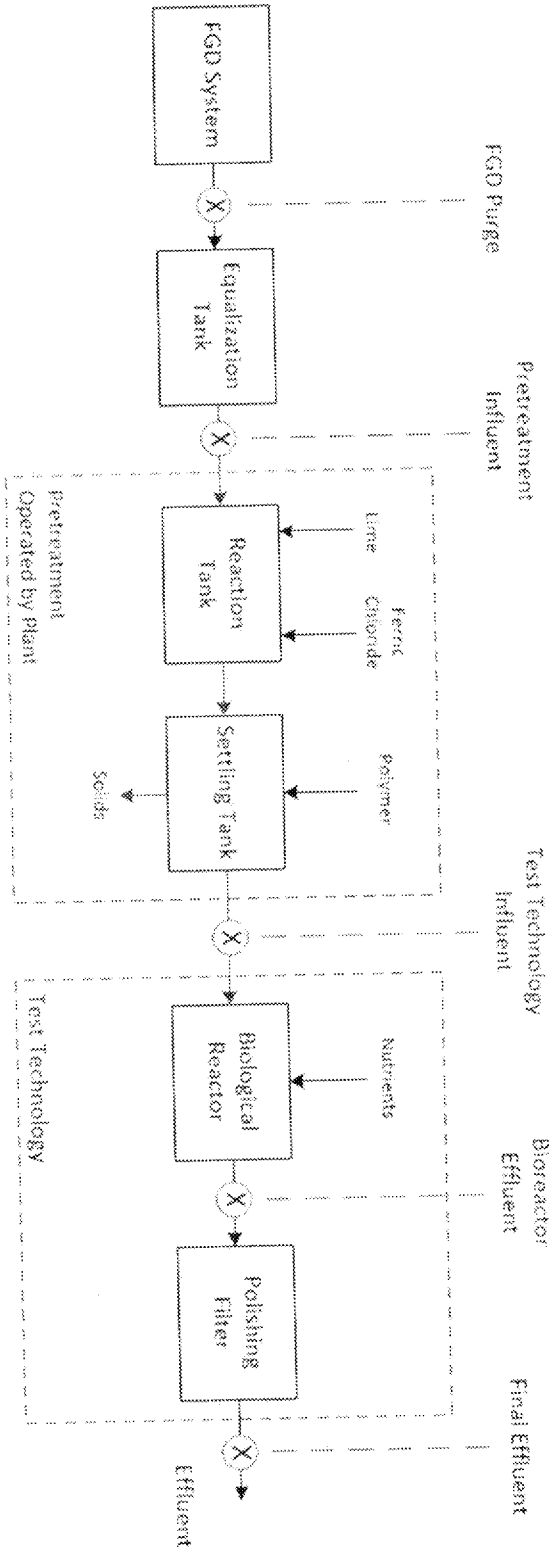
Sincerely,

Robert K. Wood, Director
Engineering & Analysis Division

Enclosures

**Enclosure 1**

Example Process Flow Diagram for Technology Evaluation



**Enclosure 2**

# Guidelines for Submitting Analytical Data and Supplemental Information for the Steam Electric Power Generating Effluent Guidelines Reconsideration

This document provides guidance regarding the submission of analytical data and supplemental information. The data you submit should reflect typical operating conditions and be representative of properly operating treatment systems. Data you submit should be relevant to **flue gas desulfurization wastewater.**

## Data Submission Format and Criteria

To facilitate EPA's analysis and use of the analytical data, the data should be submitted using the format provided in Attachment 1 titled "FGD Test Analytical Data Table." Included within the workbook are three tabs. The spreadsheet titled "Data Table Structure" identifies the information required for each individual sampling result and provides the table for entering the analytical data. The spreadsheet titled "Example Data Table" includes three example entries to provide some context of how to populate each of the fields in the data table. Additionally, the spreadsheet titled "Field Descriptions" describes each field included in the data table. Provide the individual sample results associated with each of the sampling locations. The following is the information that should be provided for each individual sampling result, as applicable (see the "Field Descriptions" spreadsheet for more details):

- Plant Survey ID (from the *Questionnaire for the Steam Electric Effluent Guidelines);*
- Plant Name;
- Date Sample Collected;
- Analyte (for metals, including whether it is total recoverable or dissolved);
- CAS Number;
- Analytical Method;
- Type of Sample Collected (e.g., grab, 24-hour composite);
- Type of Sample Analyzed (e.g., total recoverable, dissolved);
- Units;
- Non-Detect Indicator;
- Concentration;

**Enclosure 2**

- J-Value Concentration;
- Detection Limit;
- Reporting Limit;
- Dilution Factor;
- Qualifiers;
- Qualifier Description;
- Wastestream represented by result;
- Flow rate;
- Sample point description; and
- System upset description.

Provide a separate copy of Attachment 1 for each technology evaluated at each plant. Please include the name of the plant and the name of the technology in the file name using the following naming convention:

*FGD Test Analytical Data Table_Plant Name_Technology Name_Test Start Date (MMDDYYYY)*

For EPA to evaluate whether the data provided are valid and of sufficient quality for use in the loadings analyses and/or limitations development, the following supplemental information should accompany the submitted analytical data, as applicable:

- Chemicals and dosages added to the treatment system, including location of injection points (see Attachment 2 (Supplemental Data workbook, tab titled "Chemical Dosages"));
- Information about the coal burned during and immediately prior to the technology evaluation (see Attachment 2 (Supplemental Data workbook, tab titled "Coal Data")); and
- Information regarding the operation of the FGD scrubber system (see Attachment 2 (Supplemental Data workbook, tab titled "FGD System Information")).

## Enclosure 3

## Legal Authority

This request for information is made under authority provided by Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1318. Section 308 provides, in part, that, "Whenever required to carry out the objective of this Act, including but not limited to ... developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act ... the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods ..., (iv) sample such effluents ..., and (v) provide such other information as [she] may reasonably require."

## Confidentiality

A business ("you") may not withhold information from EPA on the grounds that it is confidential. You may, however, if you desire, assert a business confidentiality claim covering part or all of the information that you furnish to EPA.

EPA regulations concerning confidential business information are contained in 40 CFR Part 2, Subpart B. The manner of asserting such a claim is specified in 40 CFR 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent, and by means of the procedures, set forth in Subpart B.

If you wish to claim as confidential any of the information covered by the enclosed request, you must do so at the time you submit the information to EPA. If no such claim accompanies the information when EPA receives it, EPA may make the information available to the public without further notice to you.

EPA will notify you in the event that a request is made for release of information that you have claimed to be confidential or EPA otherwise decides to make a determination as to whether or not such information is entitled to confidential treatment. At that time, EPA will request that you substantiate any claim you have made that information is confidential. Therefore, we encourage you to consult 40 CFR Part 2, and to claim as confidential only those items that you truly believe satisfy the criteria for confidentiality.

Note that effluent data are not eligible for confidential treatment (see 40 CFR 2.302).

## Enclosure 4

### Notice of Intent to Transfer Confidential Information to Selected EPA Contractors

EPA intends to grant access to any confidential information collected as part of the steam electric effluent guidelines rulemaking to selected EPA contractors.

In accordance with 40 CFR Sections 2.301(h)(2-3), 2.302(h)(2-3), and 2.305(h)(2-3), EPA may allow those contractors identified below access to all data (including data claimed to be confidential) collected as part of this data request. Transfer of this information to these contractors is necessary in order for the contractors to assist EPA in performing technical, statistical, and environmental analyses to support the reconsideration of effluent limitations guidelines and standards for the steam electric power generating industry.

The contractors and subcontractors that will be providing support to EPA during the development of these regulations are listed below:

| EPA Office Receiving Support | Contractor Name | EPA Contract No. | Type of Support |
|---|---|---|---|
| Office of Water/ Office of Science & Technology/ Engineering & Analysis Division | Eastern Research Group, Inc. | EP-C-17-041 | Engineering, environmental, and statistical analysis |

EPA has determined that it is necessary to transfer the information described above to the designated contractors and subcontractors in order that they may carry out the work required by their contracts. The contracts contain all provisions necessary to implement the confidentiality regulations (see 40 CFR 2.301(h)(2), 2.302(h)(2), and 2.305(h)(2)).

In accordance with these confidentiality regulations, you are entitled to provide comments to EPA regarding this notice of contemplated disclosure. Any such comments must be received by EPA in writing within 10 days of your receipt of this notice. Please send such comments to:

Ron Jordan
USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Ave., N.W. (Mail Code: 4303T)
Washington, DC 20460
jordan.ronald@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

March 15, 2018

Daniel Bjorklund
Vice President
AquaChem ICD
1150 James Drive
Hartland, WI 53029

Dear Mr. Bjorklund,

Thank you for taking the time to provide an overview of Aquatech's technologies for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the evaporator and crystallizer systems on January 17, 2018. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain cost and performance data associated with Aquatech evaporator and crystallizer systems. Below is a listing of the information EPA requested during our meeting:

- Available performance data from full-scale Aquatech FGD wastewater treatment systems operating at coal-fired power plants. Please include pollutant concentrations for the influent, distillate, and (if applicable) concentrate.
- Additional information on ZLD Aquatech technologies used to treat mining wastewater.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for Aquatech's evaporator and crystallizer systems for treatment FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule.

Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by March 30, 2018.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

March 15, 2018

Alan R. Daza
VP Sales & Business Development
Aquatech International
1 Four Coins Drive
Canonsburg, PA 15317

Dear Mr. Daza,

Thank you for taking the time to provide an overview of Aquatech's technologies for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the evaporator and crystallizer systems on January 17, 2018. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain cost and performance data associated with Aquatech evaporator and crystallizer systems. Below is a listing of the information EPA requested during our meeting:

- Available performance data from full-scale Aquatech FGD wastewater treatment systems operating at coal-fired power plants. Please include pollutant concentrations for the influent, distillate, and (if applicable) concentrate.
- Additional information on ZLD Aquatech technologies used to treat mining wastewater.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for Aquatech's evaporator and crystallizer systems for treatment FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule.

Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by March 30, 2018.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

March 15, 2018

Craig Addison
Technical Specialist
Carmeuse Lime & Stone
11 Stanwix Street, 21st Floor
Pittsburgh, PA 15222

Dear Mr. Addison,

Thank you for taking time to provide an overview of Carmeuse's technologies for managing flue gas desulfurization (FGD) wastewater and other process waters from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the Pozzotec technology on January 9, 2018. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA requested certain cost and performance data associated with the Pozzotec technology. Below is a listing of the information EPA requested during our meeting:

- Technical reports that focus on treatment of FGD wastewater using a Pozzotec system.
- Performance and cost data for the pilot-scale study conducted at the Water Research Center at Plant Bowen. Include all pollutant concentration data, including for analytes not regulated by the 2015 effluent guidelines rule (e.g., bromide, iodide).
- Performance data from pilot-scale and full-scale operations implemented at other coal-fired power plants, including in other countries. Please provide additional details including plant operating conditions (e.g., coal types burned), details on wastestreams treated, and any influent data.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for Carmeuse's Pozzotec technology for treatment of FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by March 30, 2018.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 15, 2018

OFFICE OF WATER

Mark Owens
Senior Treatment Solutions Manager
SUEZ
8007 Discovery Dr.
Richmond, VA 23229

Dear Mr. Owens,

Thank you for taking time to provide an overview of SUEZ's technologies for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the ABMet® and thermal treatment technologies on January 18, 2018. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA requested certain cost and performance data associated with the SUEZ ABMet® and thermal treatment technologies. Below is a listing of the information EPA requested during our meeting:

- Details of the 2015/2016 Pleasant Prairie Power Plant (P4) post-pilot test analyses performed by SUEZ.
- Substantive data supporting treatability by the ABMet® of 35,000 ppm chlorides concentration.
- Water quality data and analyses for plants burning subbituminous coal.
- Details on the "techno-economic" model for pozzolanic solidification costs.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for SUEZ's ABMet® and thermal treatment technologies for treatment of FGD wastewater. Although it's in the public's interest to have as much of this information available in the public record as possible, we understand you may consider some data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into

account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by March 30, 2018.

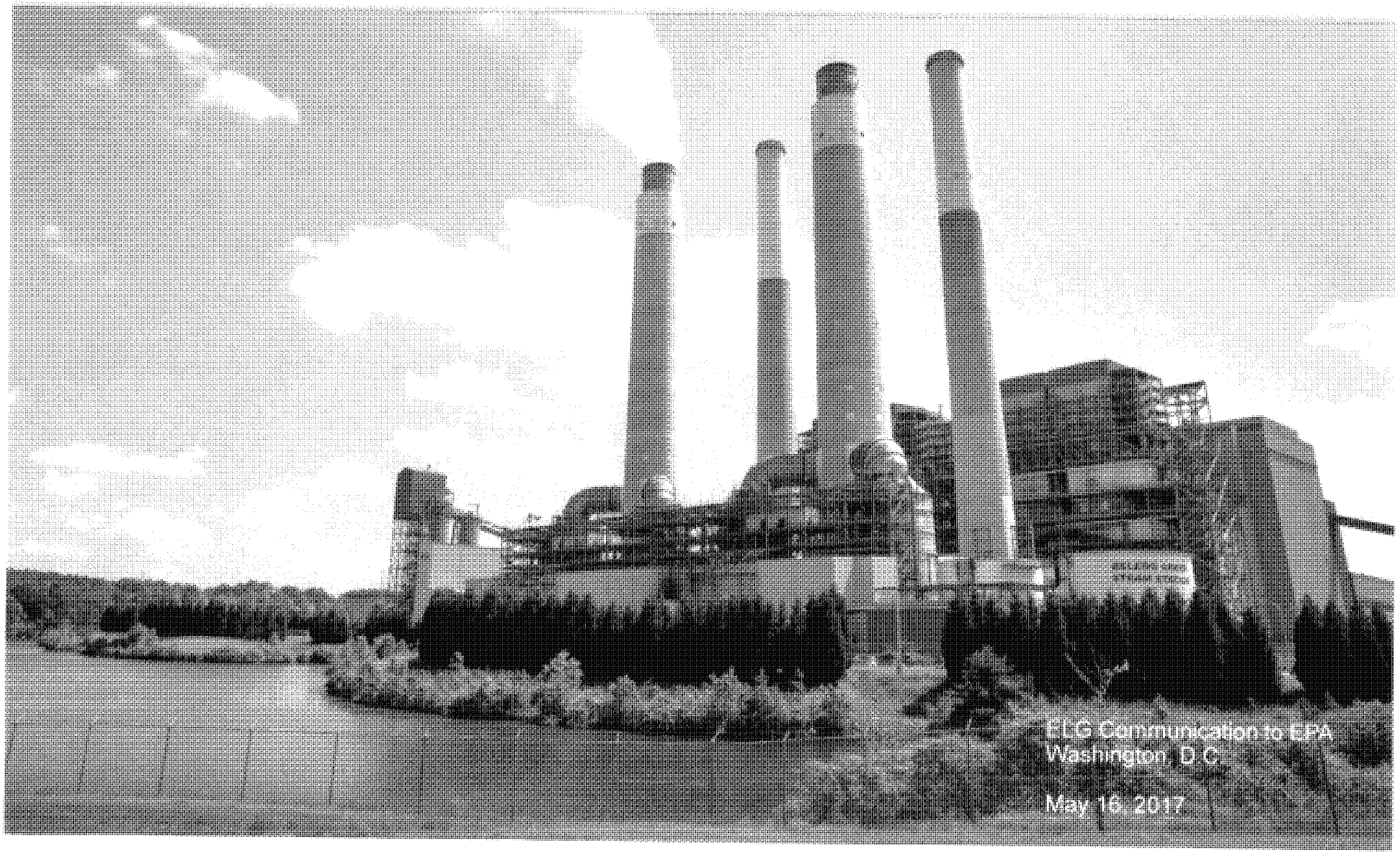
We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

EPA-HQ-2019-001328

FRONTIER
WATER SYSTEMS



ELG Communication to EPA
Washington, D.C.

May 16, 2017

ED_002364A_00009906-00001

EPA-HQ-2019-001328

# FRONTIER IS COLLABORATING WITH COAL BURNING PARTNERS TO IMPROVE FGD WASTEWATER TREATMENT COST AND PERFORMANCE

DUKE ENERGY · LG&E KU (PPL companies) · AEP · TVA · Southern Company · HOOSIER ENERGY · Santee Cooper

**$7.1MM**

Combined Investment by Industry and Frontier to Date Towards the Next Generation FGD Bioreactor Through Field Research and Design Engineering

**12**

FGD Pilots Completed Totaling over 5 years of Operational Field Time and Performance Data

**$20MM**

Approximate Average CAPEX Based On Current Research and Pilot Design

**35,000**

Estimated Hours spent in Travel, Engineering and Research and Development by Frontier in FGD Alone

**500**

Estimated Tons of Selenium, Nitrate and Heavy Metals that Would be Diverted from US Lakes and Rivers Annually

FRONTIER WATER SYSTEMS

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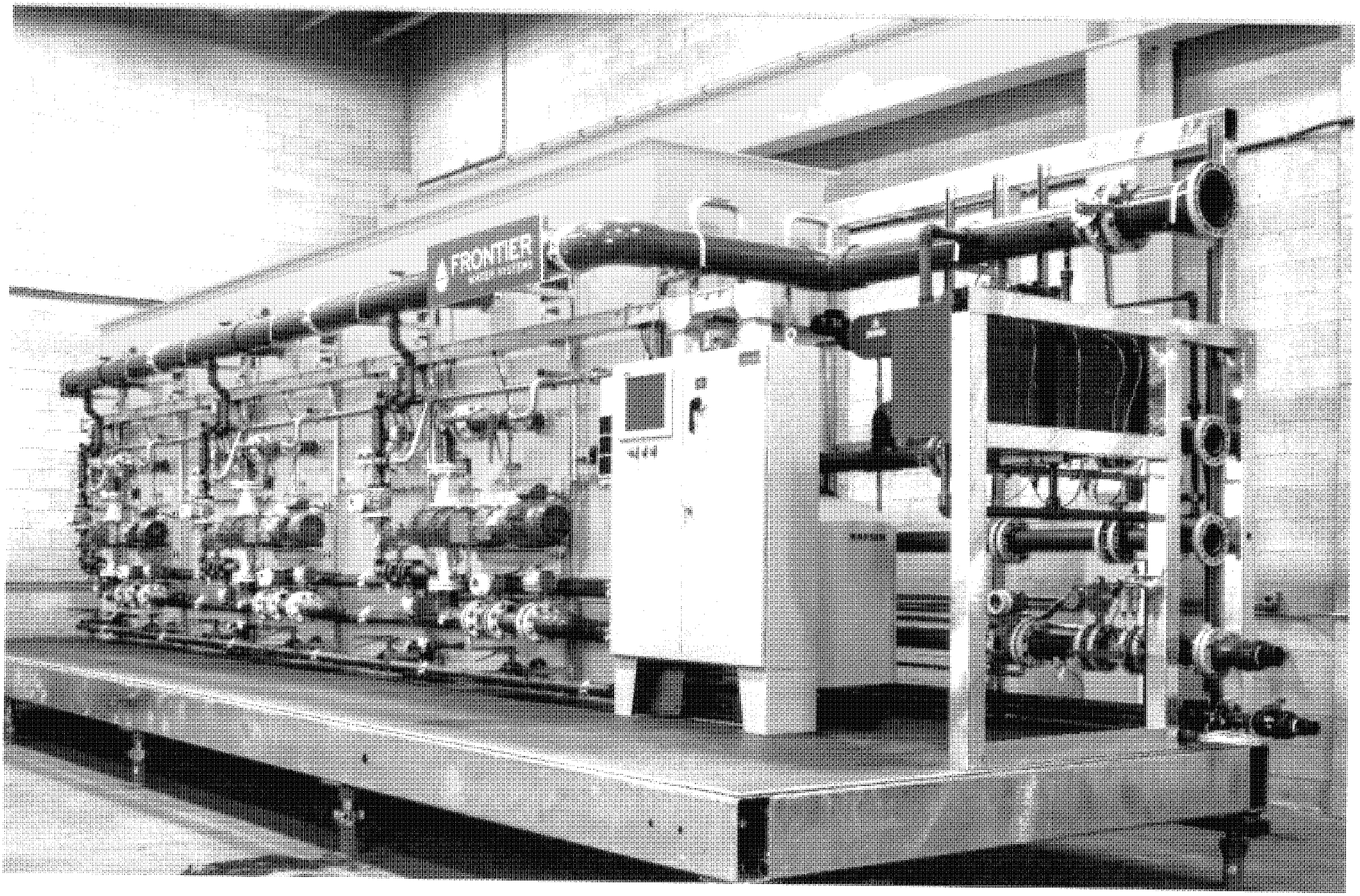
EPA-HQ-2019-001328

# 250 GPM SEHAWK™ TREATMENT MODULE

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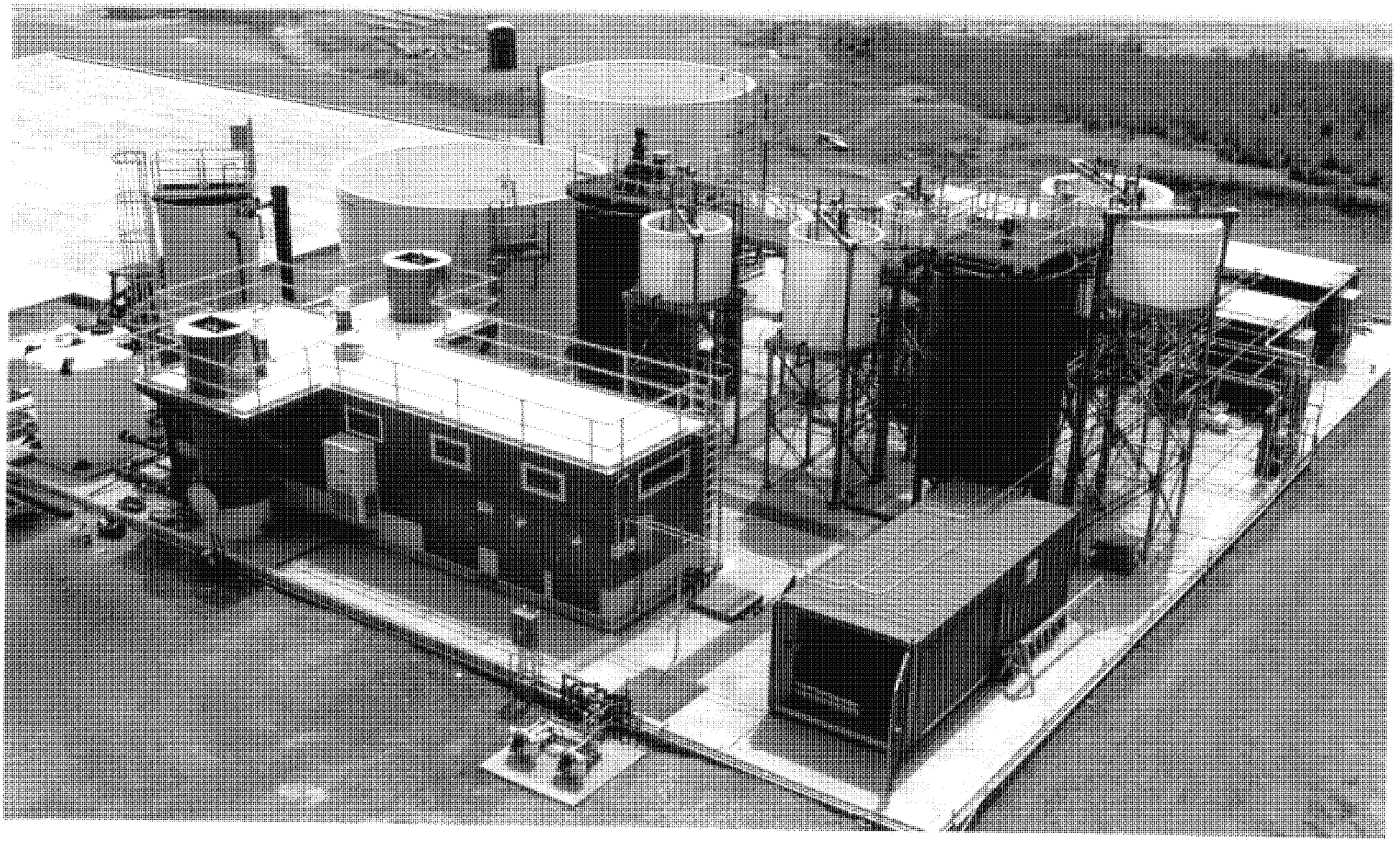
EPA-HQ-2019-001328

# SEHAWK™ WITH PHYS/CHEM PRETREATMENT (SOUTHERN COMPANY)



FRONTIER
WATER SYSTEMS

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EPA-HQ-2019-001328

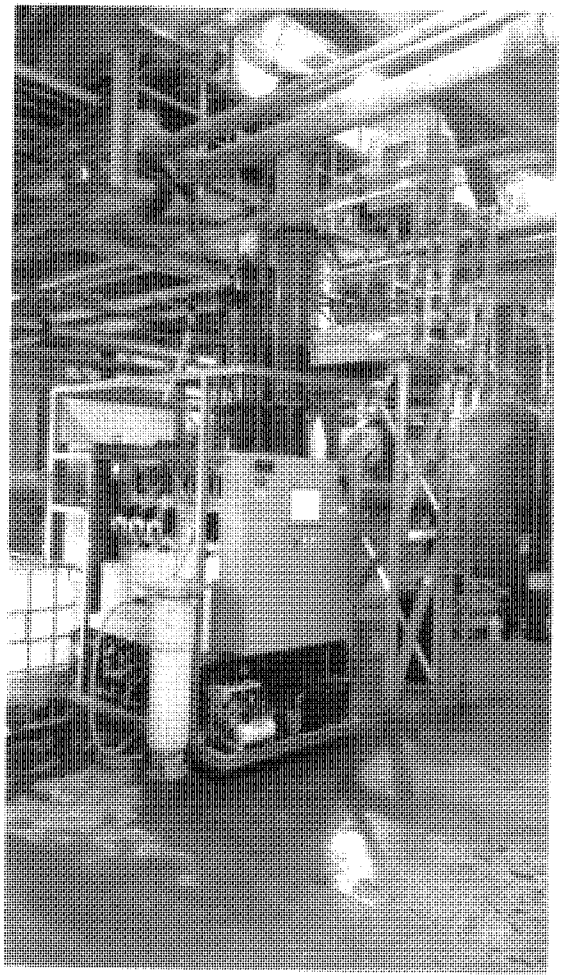
# SETTING UP PILOT TEST AT COAL BURNING STATION IN SC

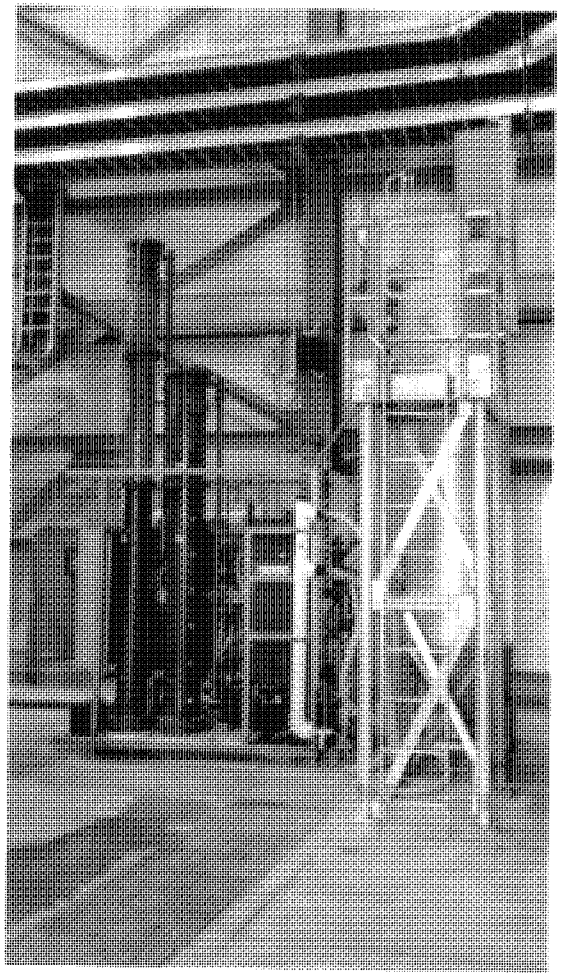
FRONTIER
WATER SYSTEMS

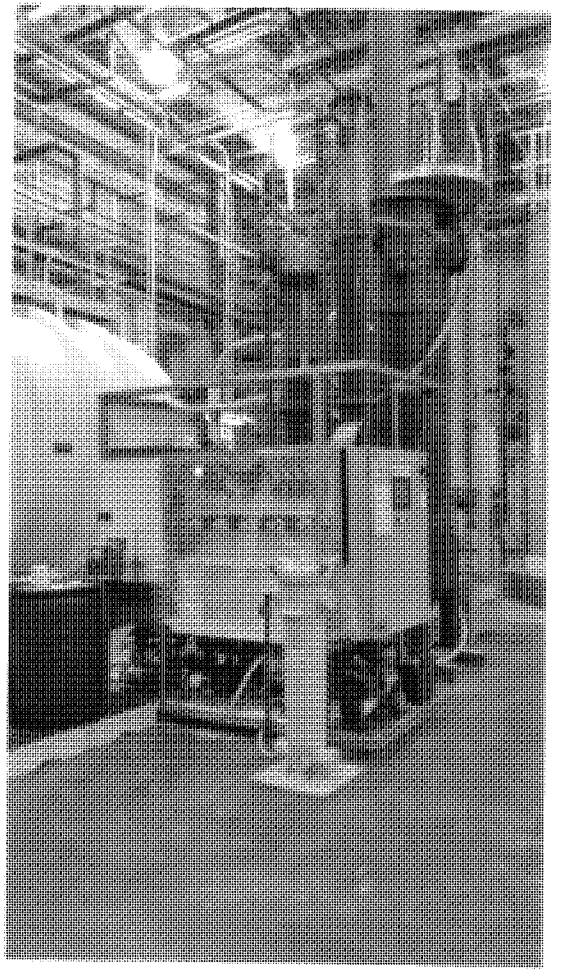
ED_002364A_00009906-00005

EPA-HQ-2019-001328

# PILOT INSTALLATION EXAMPLES IN WEST VIRGINIA, INDIANA AND SOUTH CAROLINA







FRONTIER
WATER SYSTEMS

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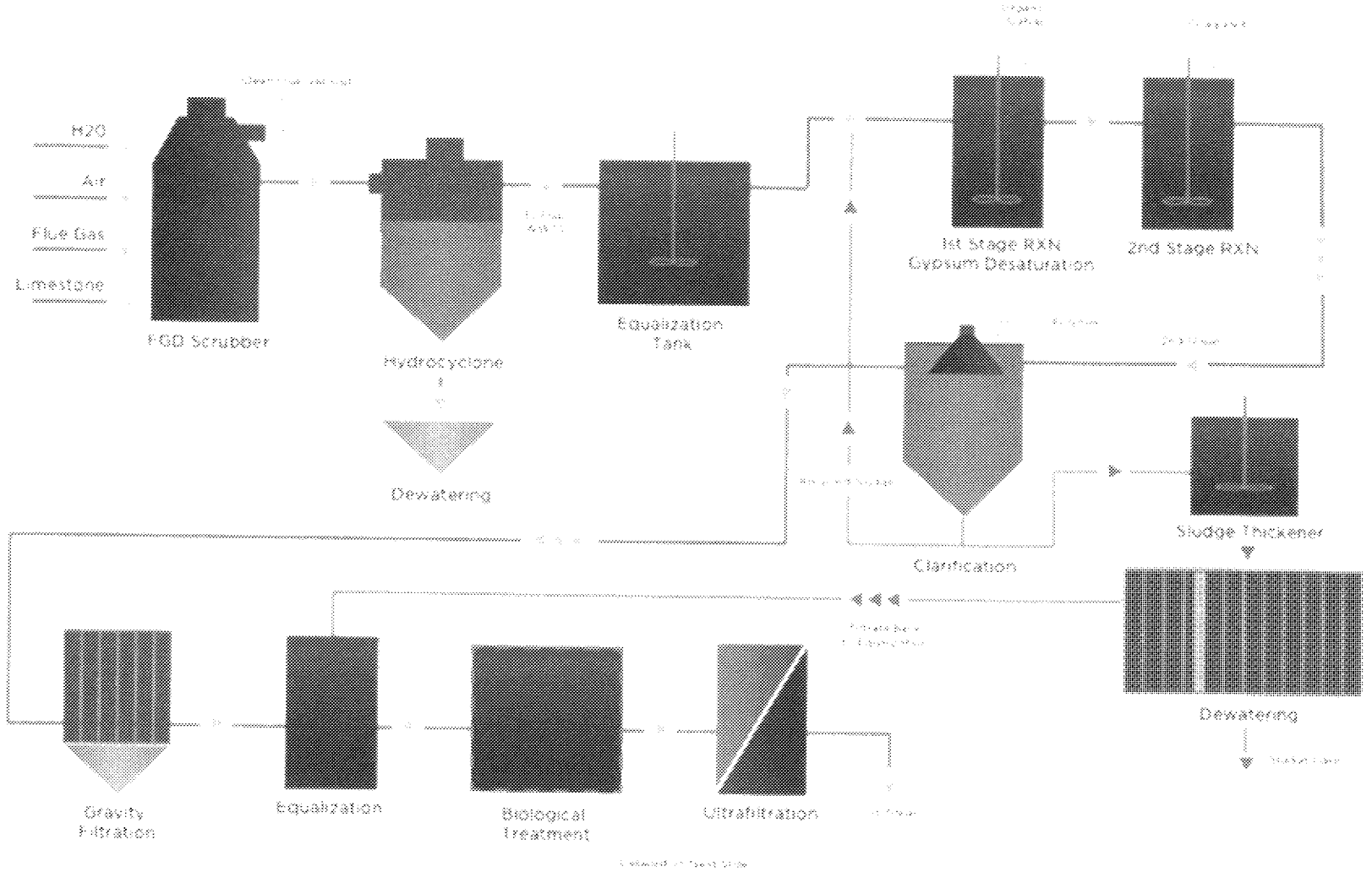
EPA-HQ-2019-001328

# PHYSICAL/CHEMICAL/BIOLOGICAL TREATMENT OF FGD WASTEWATER




FRONTIER WATER SYSTEMS

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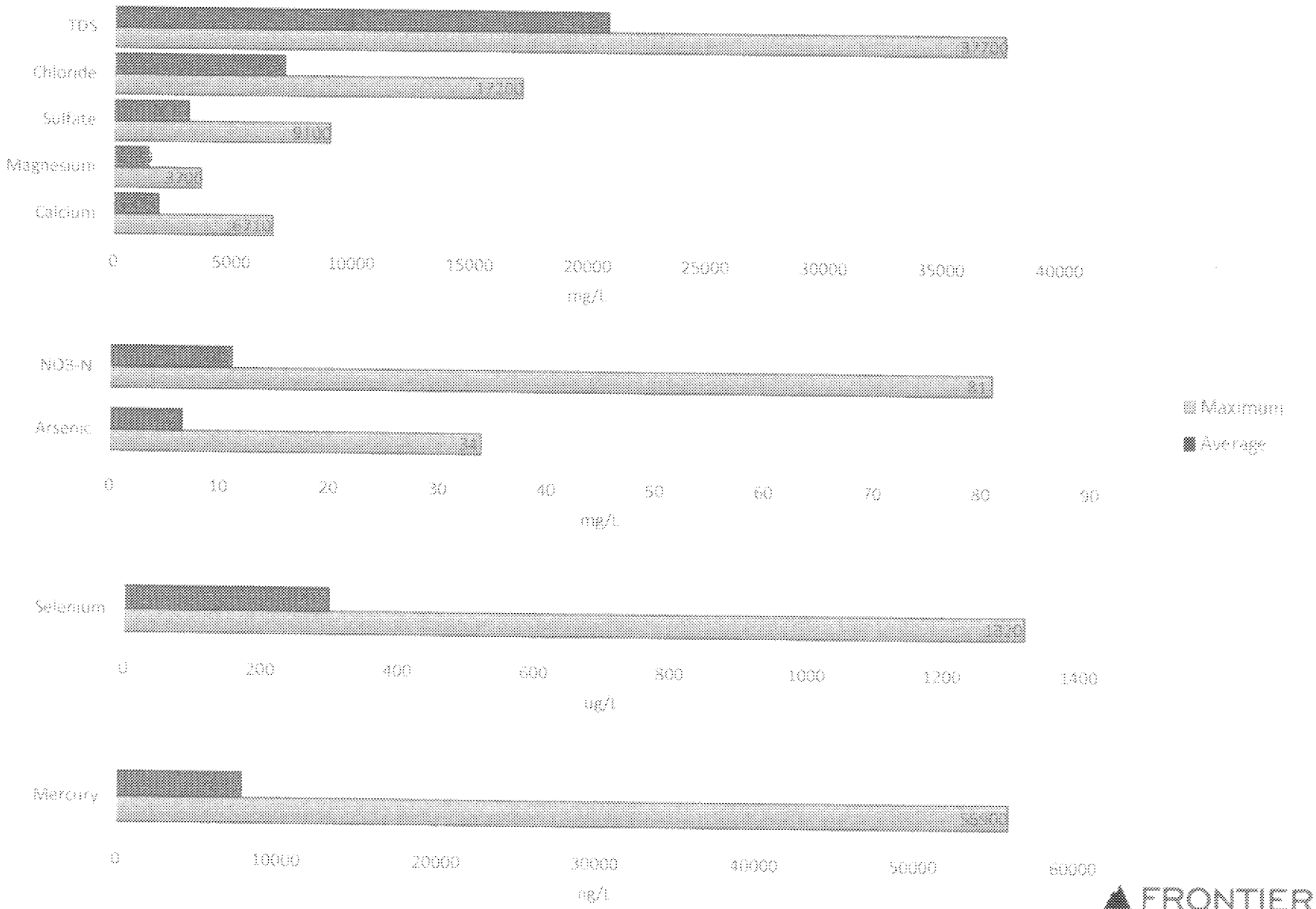
EPA-HQ-2019-001328

# PILOT INFLUENT WATER QUALITY RANGES




FRONTIER WATER SYSTEMS

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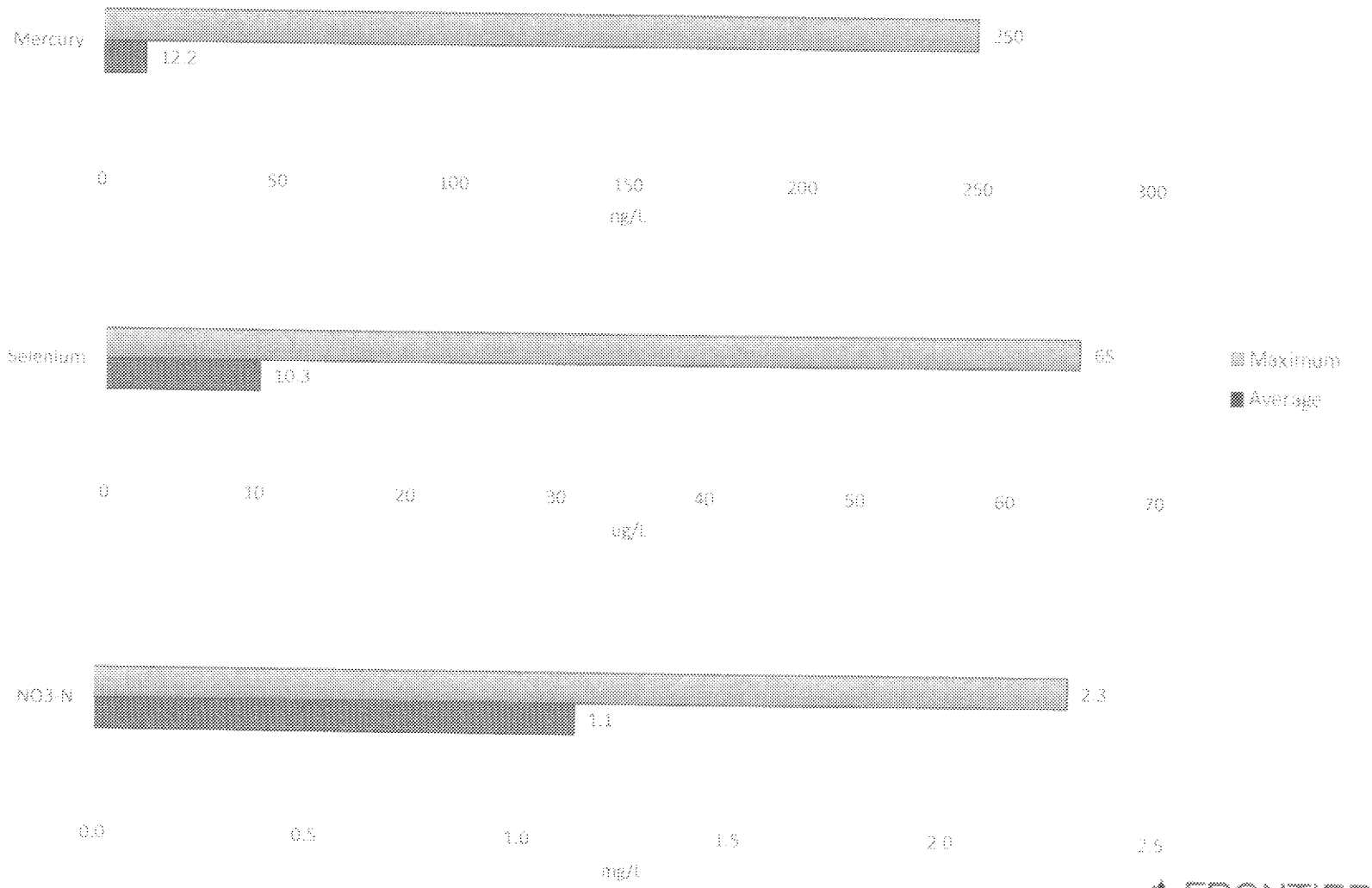
EPA-HQ-2019-001328

# PILOT EFFLUENT WATER QUALITY RANGES




FRONTIER WATER SYSTEMS

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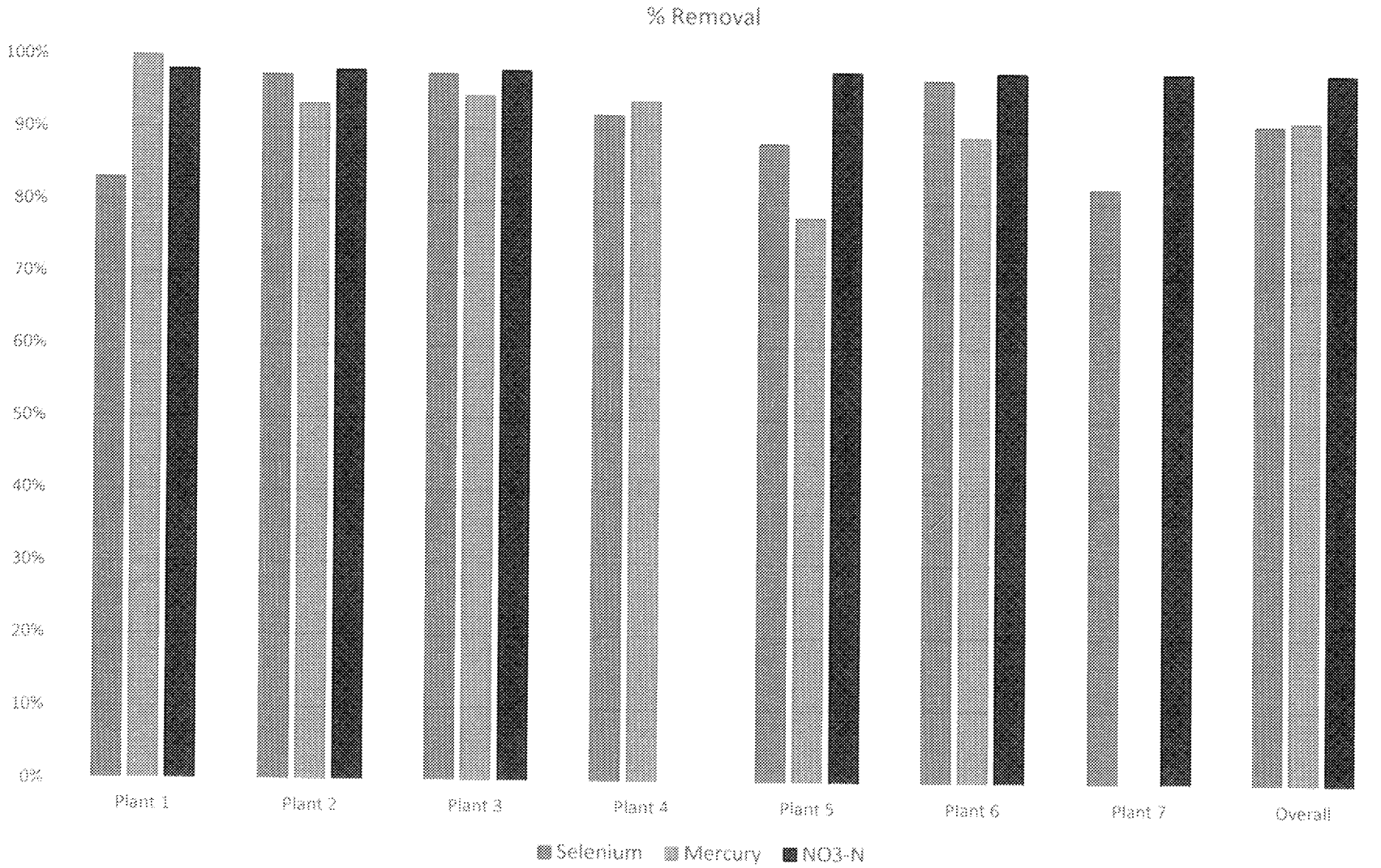
EPA-HQ-2019-001328

# SEHAWK® PILOT PERFORMANCE SUMMARY




FRONTIER WATER SYSTEMS

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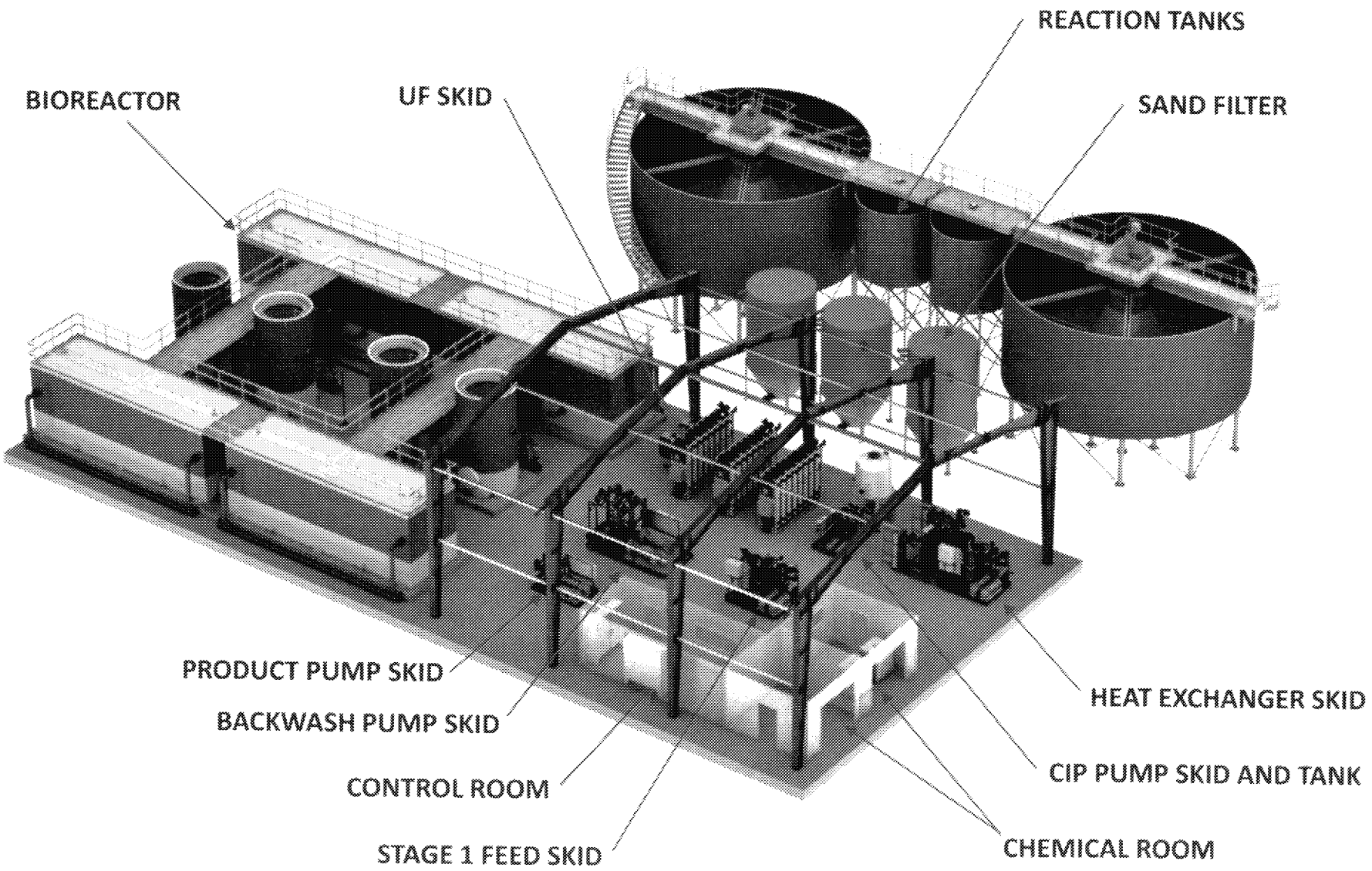
EPA-HQ-2019-001328

# 600 GPM STANDARD PLANT DESIGN LAYOUT

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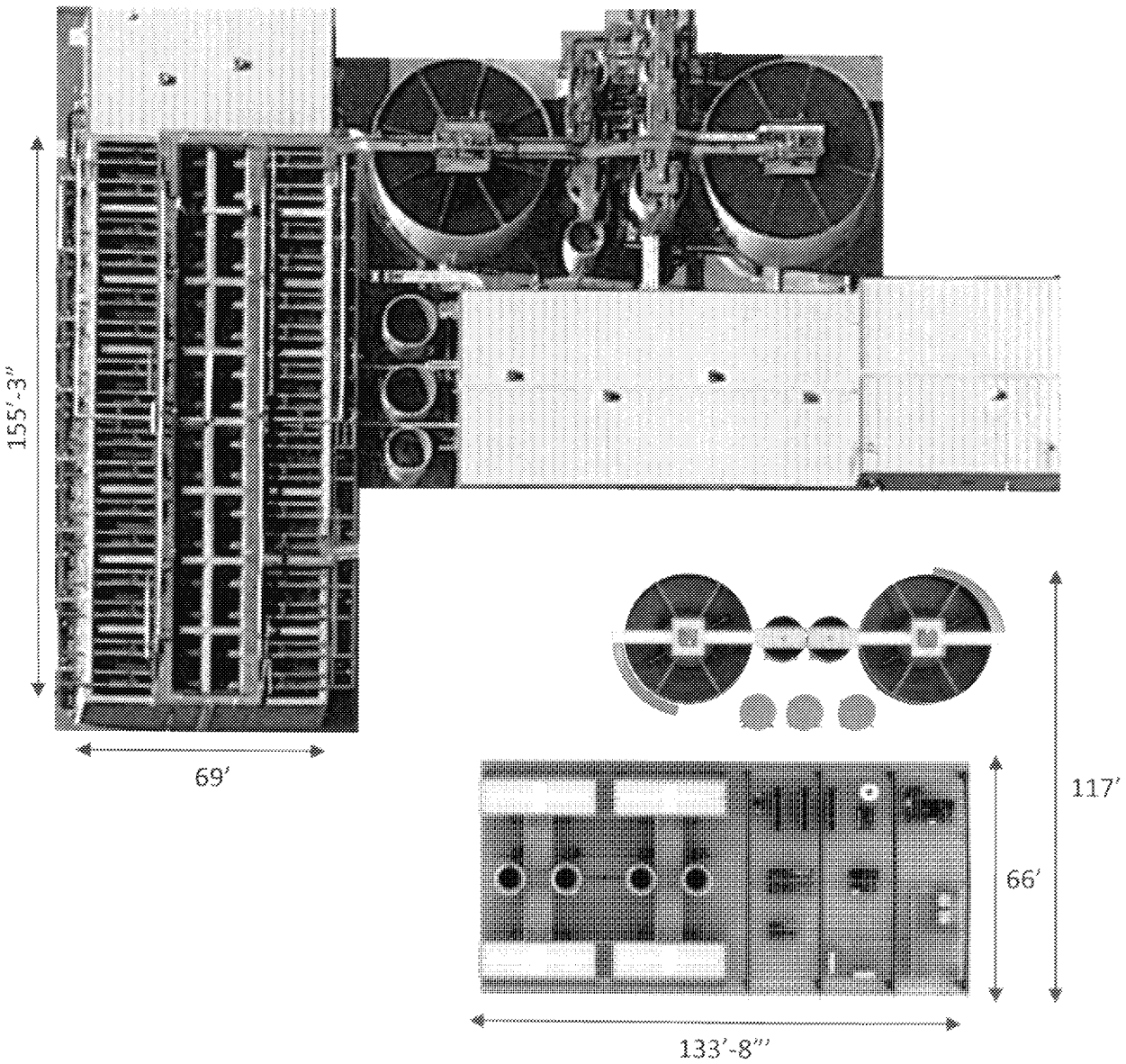
# EXPANSION ILLUSTRATION

EPA-HQ-2019-001328

# 600 GPM STANDARD PLANT LAYOUT




FRONTIER
WATER SYSTEMS

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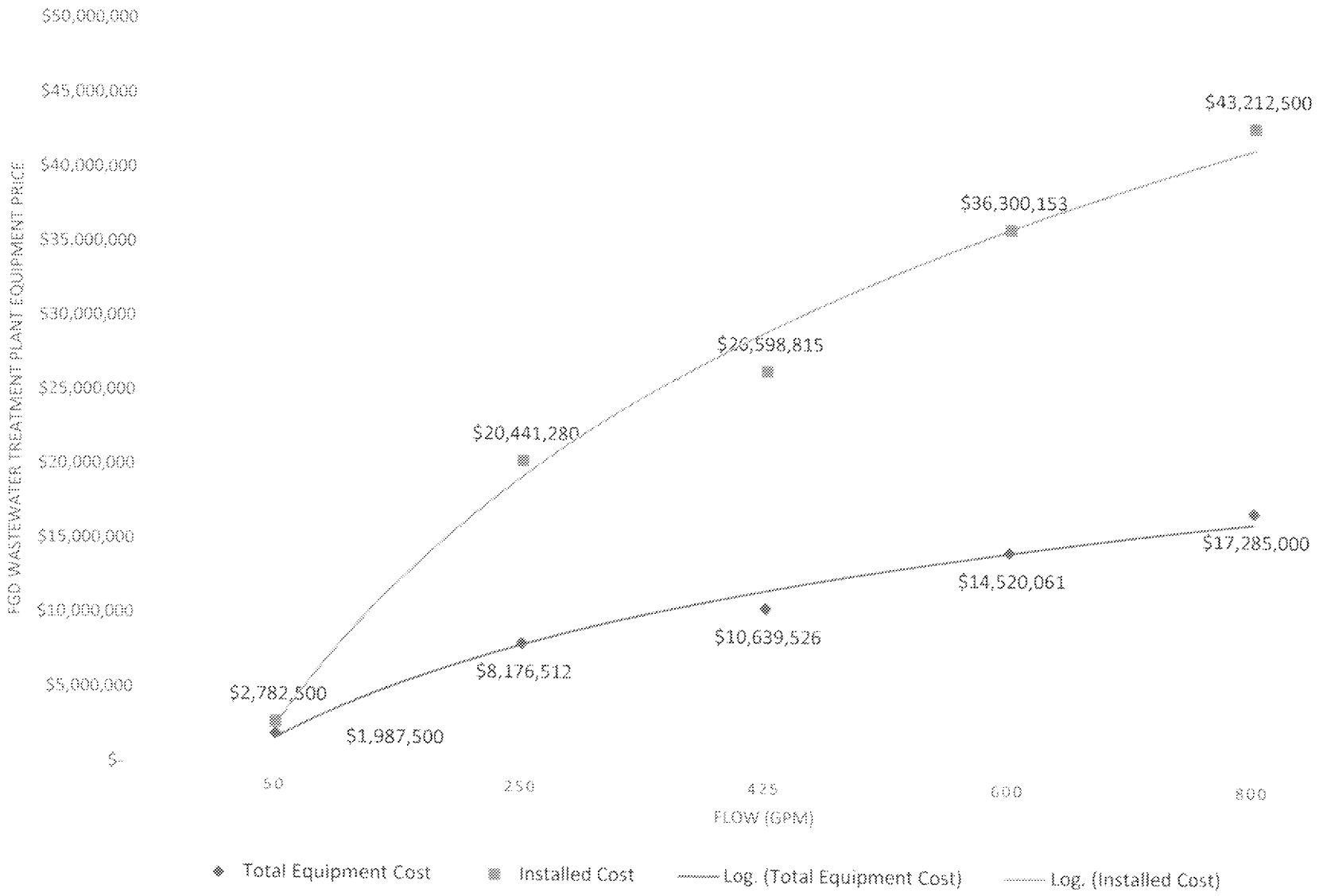
EPA-HQ-2019-001328

# FGD WASTEWATER TREATMENT COST VS PURGE FLOW TO MEET ELG LIMITS

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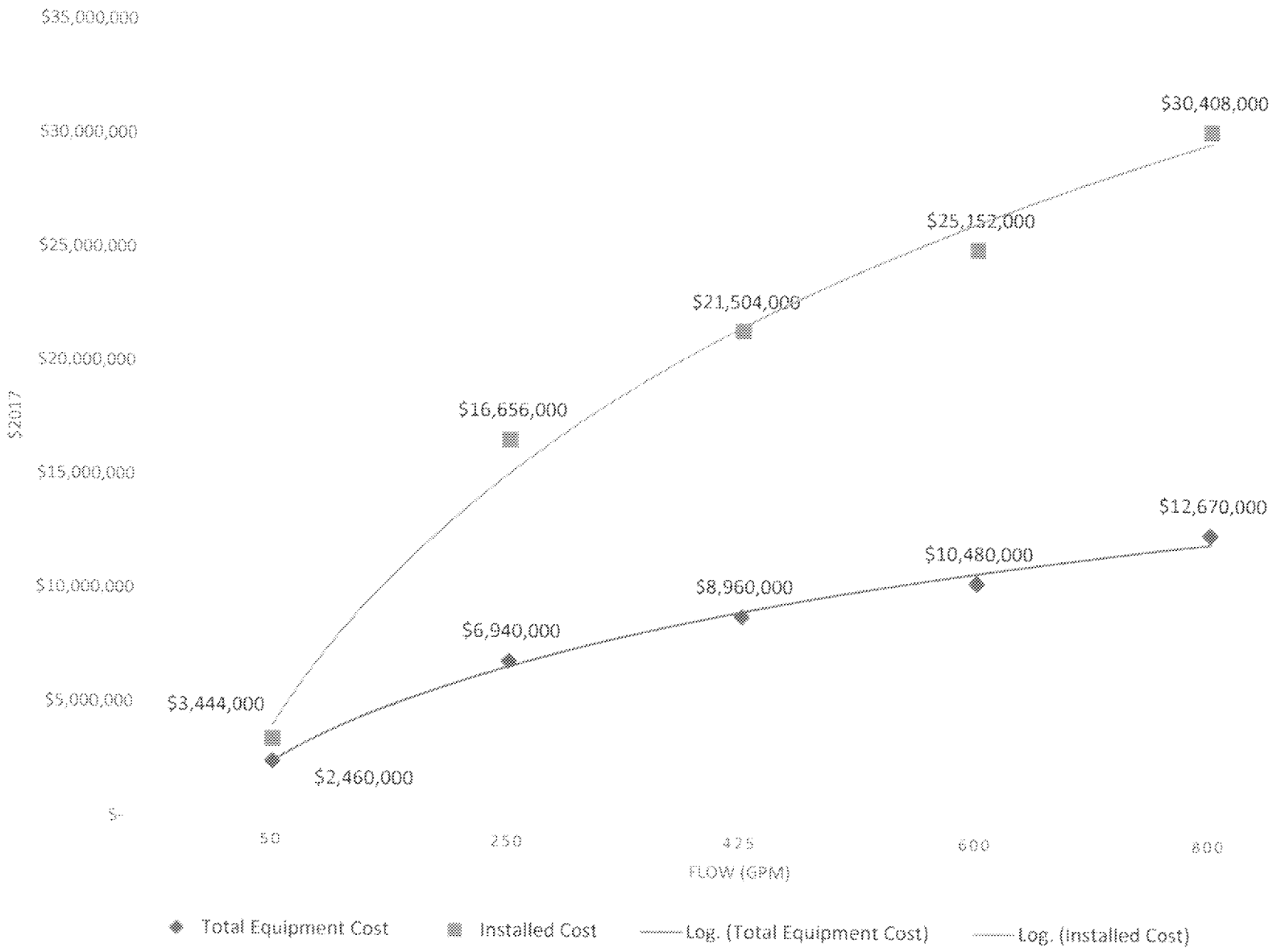
EPA-HQ-2019-001328

# FGD WASTEWATER TREATMENT COST VS PURGE FLOW (PILOTED DESIGN)

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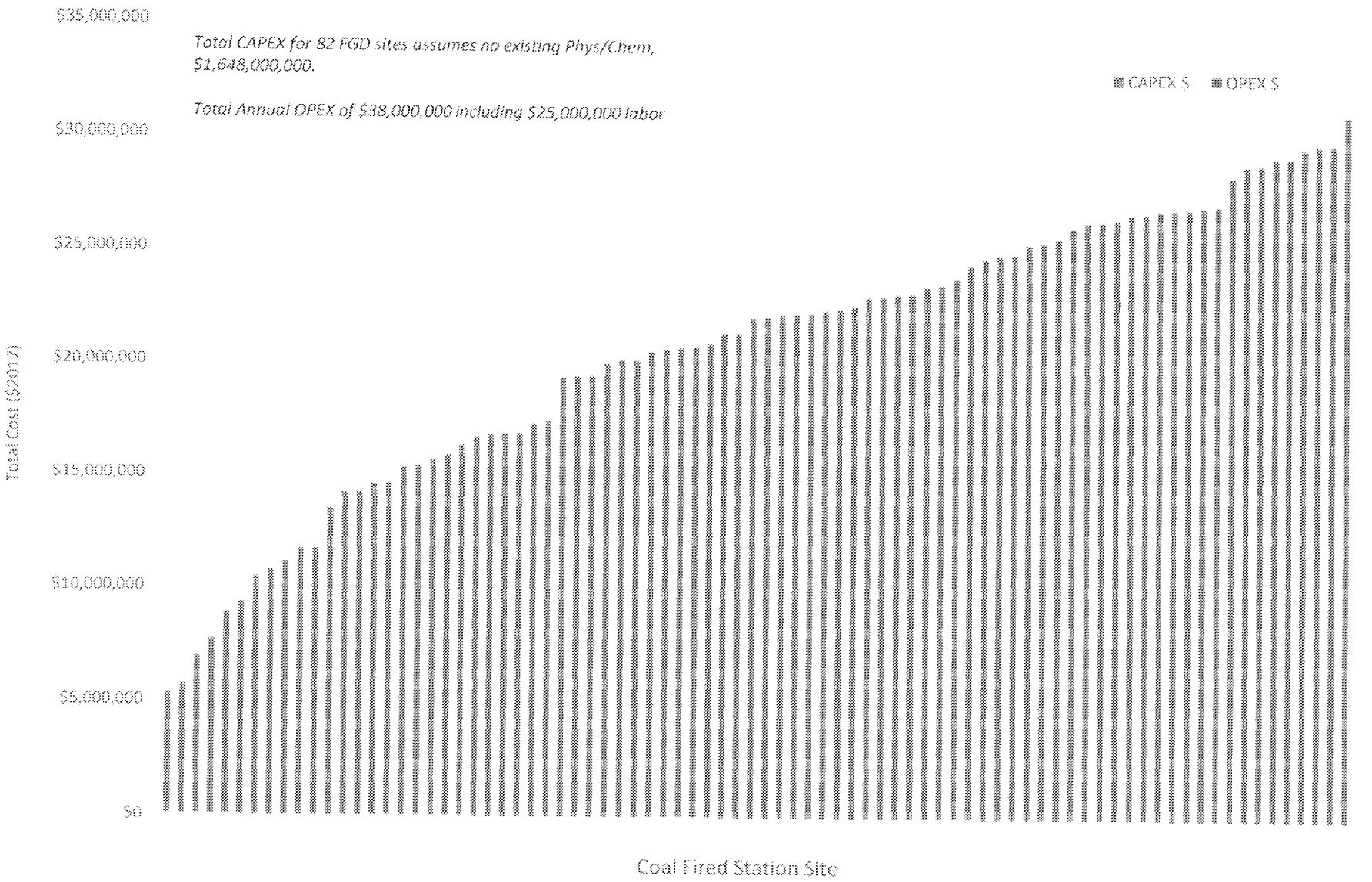
EPA-HQ-2019-001328

# ESTIMATED CAPEX AND OPEX COST PER SITE




ED_002364A_00009906-00016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 11, 2018

Malcolm Man
Saltworks Technologies Inc
13800 Steveston Hwy
Richmond, British Columbia
V6W 1A8
Canada

Dear Mr. Man,

Thank you for taking the time to provide an overview of Saltworks Technologies Inc.'s Salt Splitter-RO hybrid plus SaltMaker™ evaporator-crystallizer for treating flue gas desulfurization (FGD) wastewater from steam electric power plants. EPA has drafted notes summarizing the topics we discussed during our meeting about the SaltSplitter-RO hybrid system on November 2, 2017. We ask that you review these notes for accuracy and provide any corrections that may be warranted. The notes also highlight some follow-up questions on the topics discussed.

In addition, EPA previously requested certain cost and performance data associated with the SaltSplitter-RO hybrid system. Below is a listing of the information EPA requested during our meeting:

- Performance data on bromide, showing concentrations in untreated wastewater and all effluents from the SaltSplitter-RO hybrid system.
- Operation data for addition of monovalent ions (i.e., sodium chloride) in the influent.
- A breakdown of capital and O&M costs associated with the SaltSplitter technology (e.g., labor costs, energy costs, chemical costs, etc). If possible, please also provide some insight into how capital and O&M costs would vary based on flow rate (or TDS concentrations, if that's more applicable).
- Any available sampling data for pilot-scale studies treating FGD wastewater. EPA would like a copy of any sampling data collected by Saltworks Technologies for influent, effluent, or intermediate streams.

The information requested above will help further enhance EPA's understanding of the applicability, efficacy, and cost for Saltworks Technologies' SaltSplitter-RO hybrid system for treatment of FGD wastewater. Although it is in the public's best interest to have as much of this information available in the public record as possible, we understand you may consider some

data to be confidential business information (CBI). Federal regulations at Title 40, Part 2 of the Code of Federal Regulations specify how to assert a business confidentiality claim covering all or part of the information you submit. Please see the enclosed document for more information on what may be considered CBI and how to assert a claim of business confidentiality. Following receipt of your feedback on the draft notes and responses to the follow-up questions, including identifying what information you consider CBI, EPA will finalize the notes for the public record.

The information you provide will aid EPA's assessment of the treatability of FGD wastewater. The cost and performance data you provide are valued and will be taken into account as EPA reconsiders the effluent limitations guidelines established by the 2015 rule. Please provide the requested cost and performance data, as well as your comments on the draft meeting notes, by **January 31, 2018**.

We appreciate your interest in EPA's efforts and thank you in advance for providing the information requested.

Sincerely,

Ronald Jordan
Engineering and Analysis Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

JAN 0 3 2018

Marc Tye
Executive Vice President and Chief Operating Officer
Santee Cooper
1 Riverwood Drive
Moncks Corner, SC 29461

Dear Mr. Tye:

The U.S. Environmental Protection Agency (EPA), under the authority of the Clean Water Act, as amended (the "Act"), 33 USC 1251 et seq., published revisions to the effluent limitations guidelines and standards ("ELGs") for the steam electric power generating point source category in November 2015. EPA is currently evaluating possible revisions to the requirements for flue gas desulfurization (FGD) wastewater and bottom ash transport water included in the 2015 Rule. As part of this evaluation, EPA is assessing the performance and cost of FGD wastewater treatment technologies. In gathering this information, it has come to our attention that your company may have tested or installed one or more FGD wastewater treatment technologies and/or requested a bid for FGD wastewater technologies. In addition, EPA is collecting information regarding the presence and levels of halogens present in FGD wastewater discharges.

Thus, pursuant to Section 308 of the Act, 33 U.S.C. 1318, EPA requests that you provide the Agency with the information described below in Items A through D for each of the power plants that your company owns or operates, and that has at least one coal-fired steam electric generating unit and that operates a wet FGD system:

ITEM A: All FGD wastewater and FGD wastewater treatment data associated with on-site or off-site testing (full-, pilot-, or laboratory-scale) and/or implementation of the following technologies that has occurred since January 1, 2013: chemical precipitation; biological treatment; thermal technology (including partial or complete evaporation); ion exchange; zero valent iron (ZVI) technology; membrane technology (e.g., reverse osmosis, forward osmosis, ultrafiltration, etc.); paste, solidification, or encapsulation of FGD wastewater brine; electrodialysis; or electrocoagulation. The following identifies EPA's specific requests/questions related to the technology evaluations conducted during that timeframe:

1) Identify the specific plant, type of technology tested (e.g., chemical precipitation, biological, ZVI, membrane, or evaporation), the system vendor, and the trade

name associated with the evaluated system, if applicable.

2) Identify when and for which plant the technology evaluation was conducted, and if the evaluation is ongoing.

3) Identify and describe the objectives of the technology evaluation.

4) Provide a detailed process flow diagram for each technology evaluation conducted. Depict the entire test configuration including the FGD blowdown or purge sent to treatment, any existing or vendor-installed (for purposes of the test) pretreatment steps, all technologies evaluated, and any post-treatment technologies. The diagram should show all the specific sampling locations and chemical addition points for the entire test configuration. Please note that each diagram should include specific sampling location names so the analytical data can be matched specifically to each technology evaluated as part of the pilot study. See Enclosure 1 for an example of a detailed process flow diagram.

5) Describe any changes made to the pretreatment or post-treatment configuration/operations during the testing period and indicate when these changes occurred (e.g. prior to any testing, during the testing period, etc). Please include all changes made by the plant during the test period and any modifications made by the vendor during the test period. For example, describe any pretreatment steps that were added prior to the wastewater being transferred to the test technologies or describe changes in chemical addition to existing pretreatment steps. Include a detailed description of the pretreatment/post-treatment technology (or changes to the technology) including chemicals and dosage rates, and the date the changes were made. For any changes made to the pretreatment/post-treatment system, provide an explanation as to why the changes were made.

6) Describe how all effluent and/or byproduct streams from the test technology were handled during the period of the test. Please include any wastewater or solid streams resulting from the test technology. If any post-treatment technologies were used to manage the waste/wastewater from the vendor technology being evaluated (e.g., solidification/encapsulation), provide a description of these processes and the associated results.

7) Identify the amount of wastewater treated through each of the treatment technologies (including any pretreatment/post-treatment system(s)) and note any changes to the flow rate throughout the test duration. For any changes in the wastewater flow rate treated, explain why there was an increase/decrease in the flow rate.

8) Identify any wastestreams or dilution streams commingled with the FGD wastewater prior to treatment or added within the treatment train. Identify the

percent contribution of the other wastestreams/dilution streams compared to the FGD wastewater treated in the test.

9) Provide all pollutant concentration data collected during the technology test period for each of the sampling locations identified in Item A.4. EPA is particularly interested in concentration data characterizing the FGD purge, pretreatment effluent/test influent, treated wastewater effluent, and all intermediate sample locations for the technology evaluation. Please provide observations for both total and dissolved parameters, as well as any speciation data (e.g., selenite, selenate), if measured by the analytical laboratory. See Enclosure 2 and Attachment 1 for instruction on how to provide the analytical data.

10) Please provide the laboratory reports associated with the analytical data specified in Item A.9.

11) Provide all reports that have been prepared documenting the technology evaluation, including reports prepared by third parties such as the technology vendor or the Electric Power Research Institute.

12) Provide the type of coal used at the plant each day starting one month prior to the beginning of the test period and continuing through the entire test duration. In addition, please provide the sulfur, chlorine, bromine, and iodine content of the coal used at the plant for each day of this period, if available. For days where coal blending occurred, please note the percentage of each type of coal used. See Attachment 2 ("Supplemental Data" workbook, tab titled "Coal Data").

13) Provide the chloride concentration, pH, total dissolved solids (TDS), and average daily oxidation-reduction potential (ORP) values, within the FGD scrubber system for each day within the range of sampling results that are being provided, if available. See Attachment 2 ("Supplemental Data" workbook, tab titled "FGD System Information").

ITEM B: Identification of projected installation or testing of FGD wastewater technologies specified above in Item A.

1) For the technologies specified above in Item A, please identify each power plant that will either install or test the technology to treat FGD wastewater during 2018 or subsequent years. Identify the type of technology to be installed or tested, the projected date of the installation/test, the system vendor, and the trade name associated with the planned system, if applicable.

ITEM C: Information regarding halogen (e.g., chloride, bromide, iodide) concentrations in FGD wastewater and the use of halogen-based materials to control

flue gas emissions of air pollutants.

1) Please provide the halogen concentrations (chloride, bromide, and iodide) in the FGD treatment system effluent for the most recent year for which you have data for these parameters. Rather than submitting results for each individual sample you collected during the period covered, EPA requests that you provide summary statistics for the number of observations, mean, median, $10^{th}$ percentile, and $90^{th}$ percentile of the dataset. See Attachment 3 ("Halogen Analytical Data Table" workbook).

2) Indicate whether the plant utilized halogen-based materials for mercury emissions control, either by applying to coal prior to combustion, injecting into the flue gas post-combustion, or injection into the FGD scrubber, at any time since January 1, 2013. For each plant that has applied halogen-based materials, please provide the following information:

   a. The plant name and type(s) of application (e.g., sprayed on unburned coal, injected in flue gas stream prior to scrubber);
   b. The type(s) of halogen-based material applied (e.g., calcium bromide, calcium chloride, brominated powdered activated carbon) and dates of application; and
   c. Indicate whether halogen application was a test or the additive is used at full scale for emissions control.

ITEM D: All bids (cost estimates) received since January 1, 2013 from vendors or engineering firms (e.g., engineering, procurement, and construction (EPC) firms) for any treatment technologies for FGD wastewater. Please provide all bids as they were submitted by the vendor or EPC firm, regardless of whether the system has been installed at the plant. If not included in the bid documentation, please also include the following information:

1) Identify the specific plant, type of technology reflected in the bid (e.g., biological, ZVI, membrane, or evaporation), the system vendor, and the trade name associated with the evaluated system, if applicable.

2) System influent characteristics used as specifications for the vendor technology (e.g., FGD purge concentrations if vendor is responsible for providing all pretreatment, pretreatment effluent concentrations if vendor is not responsible for pretreatment).

3) Design flow rate of the treatment system.

4) Treatment system components (e.g., pretreatment elements, post treatment elements).

5) Any other bid details communicated to the vendor to generate the bid.

The information and data responsive to the items above should be received by EPA **no later than February 15, 2018.** The Agency believes that all the information and data requested is readily available to your company, and thus its request is reasonable. You must provide the information and data to EPA pursuant to the federal law cited above. EPA seeks to ensure that any information on which future regulations may be based presents an accurate and representative picture of the industry and we appreciate your cooperation in providing all information and data requested.

Enclosure 1 of this letter provides an example process flow diagram that should be provided in response to this request. Enclosure 2 of this letter provides details regarding how the analytical data and supplemental information should be provided to EPA. Enclosure 3 of this letter provides the statutory authority on which this request is based and explains your legal rights to protection of confidential business information. Enclosure 4 is a notice of EPA's intention to allow selected contractors access to all information, including the confidential information that you submit.

If you have any questions about the information requested, please contact Ronald Jordan via e-mail at jordan.ronald@epa.gov or by phone at (202) 566-1003.

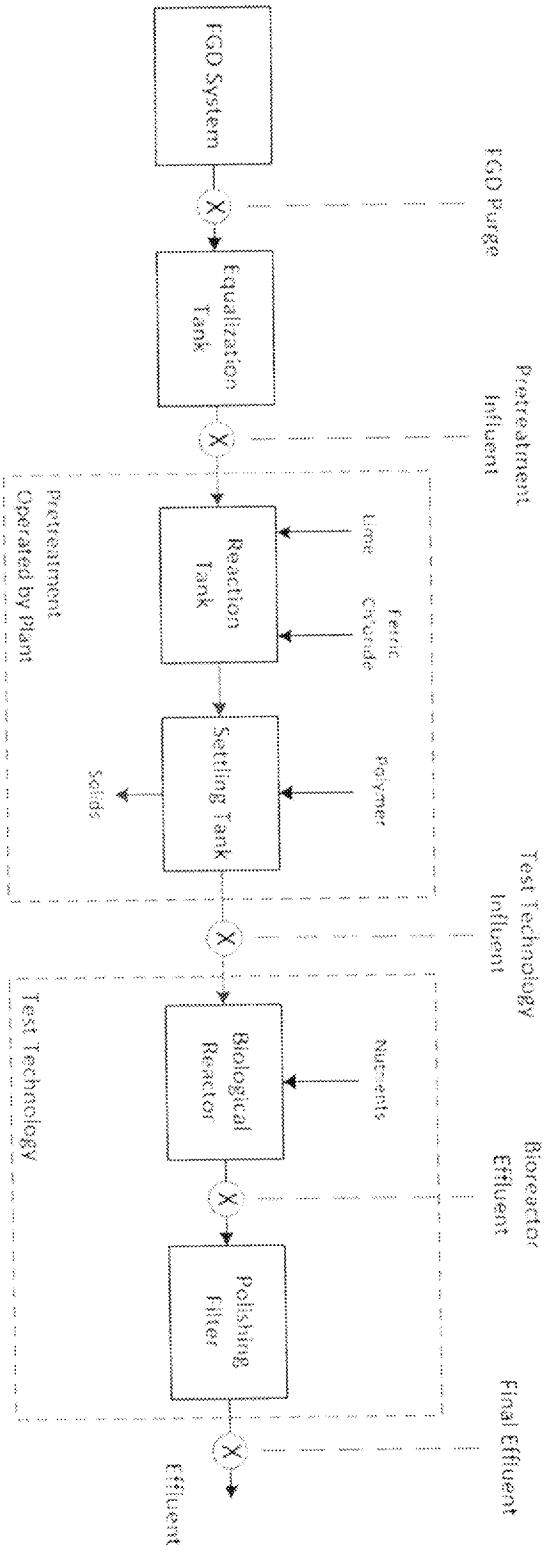
Sincerely,

Robert K. Wood, Director
Engineering & Analysis Division

Enclosures

**Enclosure 1**

Example Process Flow Diagram for Technology Evaluation



**Enclosure 2**

# Guidelines for Submitting Analytical Data and Supplemental Information for the Steam Electric Power Generating Effluent Guidelines Reconsideration

This document provides guidance regarding the submission of analytical data and supplemental information. The data you submit should reflect typical operating conditions and be representative of properly operating treatment systems. Data you submit should be relevant to **flue gas desulfurization wastewater.**

## Data Submission Format and Criteria

To facilitate EPA's analysis and use of the analytical data, the data should be submitted using the format provided in Attachment 1 titled "FGD Test Analytical Data Table." Included within the workbook are three tabs. The spreadsheet titled "Data Table Structure" identifies the information required for each individual sampling result and provides the table for entering the analytical data. The spreadsheet titled "Example Data Table" includes three example entries to provide some context of how to populate each of the fields in the data table. Additionally, the spreadsheet titled "Field Descriptions" describes each field included in the data table. Provide the individual sample results associated with each of the sampling locations. The following is the information that should be provided for each individual sampling result, as applicable (see the "Field Descriptions" spreadsheet for more details):

- Plant Survey ID (from the *Questionnaire for the Steam Electric Effluent Guidelines);*
- Plant Name;
- Date Sample Collected;
- Analyte (for metals, including whether it is total recoverable or dissolved);
- CAS Number;
- Analytical Method;
- Type of Sample Collected (e.g., grab, 24-hour composite);
- Type of Sample Analyzed (e.g., total recoverable, dissolved);
- Units;
- Non-Detect Indicator;
- Concentration;

**Enclosure 2**

- J-Value Concentration;
- Detection Limit;
- Reporting Limit;
- Dilution Factor;
- Qualifiers;
- Qualifier Description;
- Wastestream represented by result;
- Flow rate;
- Sample point description; and
- System upset description.

Provide a separate copy of Attachment 1 for each technology evaluated at each plant. Please include the name of the plant and the name of the technology in the file name using the following naming convention:

*FGD Test Analytical Data Table_Plant Name_Technology Name_Test Start Date (MMDDYYYY)*

For EPA to evaluate whether the data provided are valid and of sufficient quality for use in the loadings analyses and/or limitations development, the following supplemental information should accompany the submitted analytical data, as applicable:

- Chemicals and dosages added to the treatment system, including location of injection points (see Attachment 2 (Supplemental Data workbook, tab titled "Chemical Dosages"));
- Information about the coal burned during and immediately prior to the technology evaluation (see Attachment 2 (Supplemental Data workbook, tab titled "Coal Data")); and
- Information regarding the operation of the FGD scrubber system (see Attachment 2 (Supplemental Data workbook, tab titled "FGD System Information")).

## Enclosure 3

## Legal Authority

This request for information is made under authority provided by Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1318. Section 308 provides, in part, that, "Whenever required to carry out the objective of this Act, including but not limited to ... developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act ... the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods ..., (iv) sample such effluents ..., and (v) provide such other information as [she] may reasonably require."

## Confidentiality

A business ("you") may not withhold information from EPA on the grounds that it is confidential. You may, however, if you desire, assert a business confidentiality claim covering part or all of the information that you furnish to EPA.

EPA regulations concerning confidential business information are contained in 40 CFR Part 2, Subpart B. The manner of asserting such a claim is specified in 40 CFR 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent, and by means of the procedures, set forth in Subpart B.

If you wish to claim as confidential any of the information covered by the enclosed request, you must do so at the time you submit the information to EPA. If no such claim accompanies the information when EPA receives it, EPA may make the information available to the public without further notice to you.

EPA will notify you in the event that a request is made for release of information that you have claimed to be confidential or EPA otherwise decides to make a determination as to whether or not such information is entitled to confidential treatment. At that time, EPA will request that you substantiate any claim you have made that information is confidential. Therefore, we encourage you to consult 40 CFR Part 2, and to claim as confidential only those items that you truly believe satisfy the criteria for confidentiality.

Note that effluent data are not eligible for confidential treatment (see 40 CFR 2.302).

## Enclosure 4

### Notice of Intent to Transfer Confidential Information to Selected EPA Contractors

EPA intends to grant access to any confidential information collected as part of the steam electric effluent guidelines rulemaking to selected EPA contractors.

In accordance with 40 CFR Sections 2.301(h)(2-3), 2.302(h)(2-3), and 2.305(h)(2-3), EPA may allow those contractors identified below access to all data (including data claimed to be confidential) collected as part of this data request. Transfer of this information to these contractors is necessary in order for the contractors to assist EPA in performing technical, statistical, and environmental analyses to support the reconsideration of effluent limitations guidelines and standards for the steam electric power generating industry.

The contractors and subcontractors that will be providing support to EPA during the development of these regulations are listed below:

| EPA Office Receiving Support | Contractor Name | EPA Contract No. | Type of Support |
|---|---|---|---|
| Office of Water/ Office of Science & Technology/ Engineering & Analysis Division | Eastern Research Group, Inc. | EP-C-17-041 | Engineering, environmental, and statistical analysis |

EPA has determined that it is necessary to transfer the information described above to the designated contractors and subcontractors in order that they may carry out the work required by their contracts. The contracts contain all provisions necessary to implement the confidentiality regulations (see 40 CFR 2.301(h)(2), 2.302(h)(2), and 2.305(h)(2)).

In accordance with these confidentiality regulations, you are entitled to provide comments to EPA regarding this notice of contemplated disclosure. Any such comments must be received by EPA in writing within 10 days of your receipt of this notice. Please send such comments to:

Ron Jordan
USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Ave., N.W. (Mail Code: 4303T)
Washington, DC 20460

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 0 3 2018

OFFICE OF WATER

Rob Horton
VP Power Production
Hoosier Energy
P.O. Box 908
Bloomington, IN 47402-0908

Dear Mr. Horton:

The U.S. Environmental Protection Agency (EPA), under the authority of the Clean Water Act, as amended (the "Act"), 33 USC 1251 et seq., published revisions to the effluent limitations guidelines and standards ("ELGs") for the steam electric power generating point source category in November 2015. EPA is currently evaluating possible revisions to the requirements for flue gas desulfurization (FGD) wastewater and bottom ash transport water included in the 2015 Rule. As part of this evaluation, EPA is assessing the performance and cost of FGD wastewater treatment technologies. In gathering this information, it has come to our attention that your company may have tested or installed one or more FGD wastewater treatment technologies and/or requested a bid for FGD wastewater technologies. In addition, EPA is collecting information regarding the presence and levels of halogens present in FGD wastewater discharges.

Thus, pursuant to Section 308 of the Act, 33 U.S.C. 1318, EPA requests that you provide the Agency with the information described below in Items A through D for each of the power plants that your company owns or operates, and that has at least one coal-fired steam electric generating unit and that operates a wet FGD system:

ITEM A: All FGD wastewater and FGD wastewater treatment data associated with on-site or off-site testing (full-, pilot-, or laboratory-scale) and/or implementation of the following technologies that has occurred since January 1, 2013: chemical precipitation; biological treatment; thermal technology (including partial or complete evaporation); ion exchange; zero valent iron (ZVI) technology; membrane technology (e.g., reverse osmosis, forward osmosis, ultrafiltration, etc.); paste, solidification, or encapsulation of FGD wastewater brine; electrodialysis; or electrocoagulation. The following identifies EPA's specific requests/questions related to the technology evaluations conducted during that timeframe:

1) Identify the specific plant, type of technology tested (e.g., chemical precipitation, biological, ZVI, membrane, or evaporation), the system vendor, and the trade

name associated with the evaluated system, if applicable.

2) Identify when and for which plant the technology evaluation was conducted, and if the evaluation is ongoing.

3) Identify and describe the objectives of the technology evaluation.

4) Provide a detailed process flow diagram for each technology evaluation conducted. Depict the entire test configuration including the FGD blowdown or purge sent to treatment, any existing or vendor-installed (for purposes of the test) pretreatment steps, all technologies evaluated, and any post-treatment technologies. The diagram should show all the specific sampling locations and chemical addition points for the entire test configuration. Please note that each diagram should include specific sampling location names so the analytical data can be matched specifically to each technology evaluated as part of the pilot study. See Enclosure 1 for an example of a detailed process flow diagram.

5) Describe any changes made to the pretreatment or post-treatment configuration/operations during the testing period and indicate when these changes occurred (e.g. prior to any testing, during the testing period, etc). Please include all changes made by the plant during the test period and any modifications made by the vendor during the test period. For example, describe any pretreatment steps that were added prior to the wastewater being transferred to the test technologies or describe changes in chemical addition to existing pretreatment steps. Include a detailed description of the pretreatment/post-treatment technology (or changes to the technology) including chemicals and dosage rates, and the date the changes were made. For any changes made to the pretreatment/post-treatment system, provide an explanation as to why the changes were made.

6) Describe how all effluent and/or byproduct streams from the test technology were handled during the period of the test. Please include any wastewater or solid streams resulting from the test technology. If any post-treatment technologies were used to manage the waste/wastewater from the vendor technology being evaluated (e.g., solidification/encapsulation), provide a description of these processes and the associated results.

7) Identify the amount of wastewater treated through each of the treatment technologies (including any pretreatment/post-treatment system(s)) and note any changes to the flow rate throughout the test duration. For any changes in the wastewater flow rate treated, explain why there was an increase/decrease in the flow rate.

8) Identify any wastestreams or dilution streams commingled with the FGD wastewater prior to treatment or added within the treatment train. Identify the

percent contribution of the other wastestreams/dilution streams compared to the FGD wastewater treated in the test.

9) Provide all pollutant concentration data collected during the technology test period for each of the sampling locations identified in Item A.4. EPA is particularly interested in concentration data characterizing the FGD purge, pretreatment effluent/test influent, treated wastewater effluent, and all intermediate sample locations for the technology evaluation. Please provide observations for both total and dissolved parameters, as well as any speciation data (e.g., selenite, selenate), if measured by the analytical laboratory. See Enclosure 2 and Attachment 1 for instruction on how to provide the analytical data.

10) Please provide the laboratory reports associated with the analytical data specified in Item A.9.

11) Provide all reports that have been prepared documenting the technology evaluation, including reports prepared by third parties such as the technology vendor or the Electric Power Research Institute.

12) Provide the type of coal used at the plant each day starting one month prior to the beginning of the test period and continuing through the entire test duration. In addition, please provide the sulfur, chlorine, bromine, and iodine content of the coal used at the plant for each day of this period, if available. For days where coal blending occurred, please note the percentage of each type of coal used. See Attachment 2 ("Supplemental Data" workbook, tab titled "Coal Data").

13) Provide the chloride concentration, pH, total dissolved solids (TDS), and average daily oxidation-reduction potential (ORP) values, within the FGD scrubber system for each day within the range of sampling results that are being provided, if available. See Attachment 2 ("Supplemental Data" workbook, tab titled "FGD System Information").

ITEM B: Identification of projected installation or testing of FGD wastewater technologies specified above in Item A.

1) For the technologies specified above in Item A, please identify each power plant that will either install or test the technology to treat FGD wastewater during 2018 or subsequent years. Identify the type of technology to be installed or tested, the projected date of the installation/test, the system vendor, and the trade name associated with the planned system, if applicable.

ITEM C: Information regarding halogen (e.g., chloride, bromide, iodide) concentrations in FGD wastewater and the use of halogen-based materials to control

flue gas emissions of air pollutants.

1) Please provide the halogen concentrations (chloride, bromide, and iodide) in the FGD treatment system effluent for the most recent year for which you have data for these parameters. Rather than submitting results for each individual sample you collected during the period covered, EPA requests that you provide summary statistics for the number of observations, mean, median, $10^{th}$ percentile, and $90^{th}$ percentile of the dataset. See Attachment 3 ("Halogen Analytical Data Table" workbook).

2) Indicate whether the plant utilized halogen-based materials for mercury emissions control, either by applying to coal prior to combustion, injecting into the flue gas post-combustion, or injection into the FGD scrubber, at any time since January 1, 2013. For each plant that has applied halogen-based materials, please provide the following information:

   a. The plant name and type(s) of application (e.g., sprayed on unburned coal, injected in flue gas stream prior to scrubber);
   b. The type(s) of halogen-based material applied (e.g., calcium bromide, calcium chloride, brominated powdered activated carbon) and dates of application; and
   c. Indicate whether halogen application was a test or the additive is used at full scale for emissions control.

ITEM D: All bids (cost estimates) received since January 1, 2013 from vendors or engineering firms (e.g., engineering, procurement, and construction (EPC) firms) for any treatment technologies for FGD wastewater. Please provide all bids as they were submitted by the vendor or EPC firm, regardless of whether the system has been installed at the plant. If not included in the bid documentation, please also include the following information:

1) Identify the specific plant, type of technology reflected in the bid (e.g., biological, ZVI, membrane, or evaporation), the system vendor, and the trade name associated with the evaluated system, if applicable.

2) System influent characteristics used as specifications for the vendor technology (e.g., FGD purge concentrations if vendor is responsible for providing all pretreatment, pretreatment effluent concentrations if vendor is not responsible for pretreatment).

3) Design flow rate of the treatment system.

4) Treatment system components (e.g., pretreatment elements, post treatment elements).

5) Any other bid details communicated to the vendor to generate the bid.

The information and data responsive to the items above should be received by EPA **no later than February 15, 2018.** The Agency believes that all the information and data requested is readily available to your company, and thus its request is reasonable. You must provide the information and data to EPA pursuant to the federal law cited above. EPA seeks to ensure that any information on which future regulations may be based presents an accurate and representative picture of the industry and we appreciate your cooperation in providing all information and data requested.

Enclosure 1 of this letter provides an example process flow diagram that should be provided in response to this request. Enclosure 2 of this letter provides details regarding how the analytical data and supplemental information should be provided to EPA. Enclosure 3 of this letter provides the statutory authority on which this request is based and explains your legal rights to protection of confidential business information. Enclosure 4 is a notice of EPA's intention to allow selected contractors access to all information, including the confidential information that you submit.

If you have any questions about the information requested, please contact Ronald Jordan via e-mail at jordan.ronald@epa.gov or by phone at (202) 566-1003.

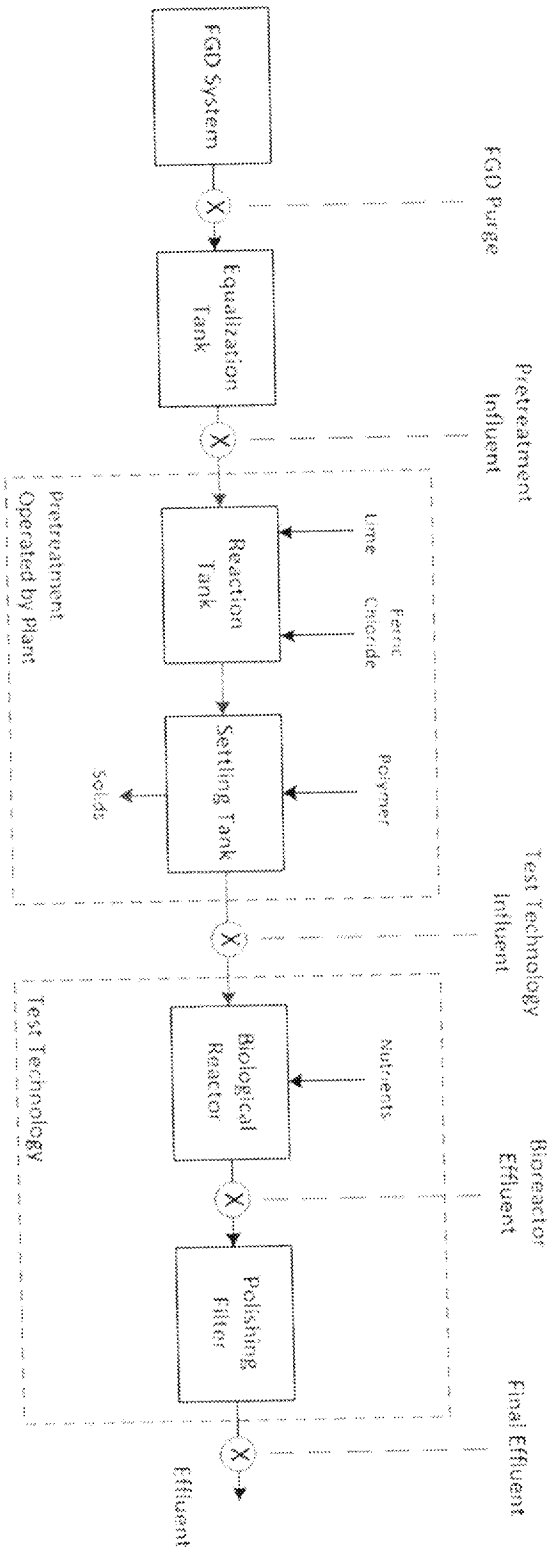
Sincerely,

Robert K. Wood, Director
Engineering & Analysis Division

Enclosures

**Enclosure 1**

Example Process Flow Diagram for Technology Evaluation



**Enclosure 2**

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**Enclosure 2**

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The contractors and subcontractors that will be providing support to EPA during the development of these regulations are listed below:

| EPA Office Receiving Support | Contractor Name | EPA Contract No. | Type of Support |
|---|---|---|---|
| Office of Water/ Office of Science & Technology/ Engineering & Analysis Division | Eastern Research Group, Inc. | EP-C-17-041 | Engineering, environmental, and statistical analysis |

EPA has determined that it is necessary to transfer the information described above to the designated contractors and subcontractors in order that they may carry out the work required by their contracts. The contracts contain all provisions necessary to implement the confidentiality regulations (see 40 CFR 2.301(h)(2), 2.302(h)(2), and 2.305(h)(2)).

In accordance with these confidentiality regulations, you are entitled to provide comments to EPA regarding this notice of contemplated disclosure. Any such comments must be received by EPA in writing within 10 days of your receipt of this notice. Please send such comments to:

Ron Jordan
USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Ave., N.W. (Mail Code: 4303T)
Washington, DC 20460
jordan.ronald@epa.gov

EARTHJUSTICE

July 12, 2018

**Via CM/ECF**

Lyle W. Cayce, Clerk of Court
United States Court of Appeals, Fifth Circuit
F. Edward Hebert Building
600 S. Maestri Place
New Orleans, LA 70130-3408

RE: **Notice of Related Cases – *Clean Water Action, et al. v. EPA, et al.*, No. 18-60079 (Agency No. 82 Fed. Reg. 43,494)**

Dear Mr. Cayce,

Pursuant to 5th Cir. R. 46.3, Petitioners hereby notify the Court of pending cases related to the above captioned matter. As previously identified in the appearance forms of undersigned counsel, currently pending in this Court are consolidated petitions for review of an EPA action that is related to the EPA action being challenged in their Petition. ***Southwestern Electric Power Co. v. EPA*, No. 15-60821 (5th Cir. filed Nov. 20, 2015)**. In addition, currently pending in the U.S. District Court for the District of Arizona is a complaint, brought by a plaintiff that is not a party to this case, that challenges the same EPA action being challenged in this Petition. ***Center for Biological Diversity v. Pruitt*, No. 4:18-cv-50 (D. Ariz. filed Jan. 30, 2018)**. The parties in this matter provided further explanation of the relationship between these related cases and this case in their Joint Motion to Govern Further Proceedings, ECF Doc. 00514462018 (May 7, 2018).

Finally, currently pending in the D.C. Circuit Court of Appeals is an appeal by Petitioners of a decision of the U.S. District Court for the District of Columbia that, in part, denied a motion for leave to amend and supplement their complaint in that matter to challenge the same EPA action that is being challenged in this Petition. ***Clean Water Action v. Pruitt*, No. 18-5149 (D.C. Cir. filed May 21, 2018)**. Petitioners provide further explanation of the relationship between the D.C. Circuit appeal and this case in the Jurisdictional Statement of their opening brief.

Respectfully submitted,

/s/ Thomas J. Cmar
Thomas J. Cmar
Earthjustice

Casey Roberts
Sierra Club
1536 Wynkoop St., Suite 312

1101 Lake St., Ste. 405B
Oak Park, IL 60301
[redacted]
tcmar@[redacted]

Matthew Gerhart
3639 N. Clayton St.
Denver, CO 80205
[redacted]
megerhart@[redacted]

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

*Gabriel Clark-Leach*
*Environmental Integrity Project*
*1206 San Antonio Street*
*Austin, Texas 78701*
*(512) 637-9478*
*gclark-leach@e*[redacted]

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

Denver, CO 80202
[redacted]
casey.roberts@[redacted]

Joshua D. Smith
Sierra Club
2101 Webster St., Suite 1300
Oakland, CA 94612
[redacted]
(510) 208-3140 (fax)
joshua.smith@[redacted]

*Counsel for Petitioner Sierra Club*

cc: Counsel of record (via the Court's CM/ECF system)

No. 18-60079

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**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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CLEAN WATER ACTION; ENVIRONMENTAL INTEGRITY PROJECT; SIERRA CLUB; WATERKEEPER ALLIANCE, INCORPORATED; PENNENVIRONMENT, INCORPORATED; CHESAPEAKE CLIMATE ACTION NETWORK; PHYSICIANS FOR SOCIAL RESPONSIBILITY, CHESAPEAKE, INCORPORATED; PRAIRIE RIVERS NETWORK,

*Petitioners*,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; ANDREW WHEELER, Acting Administrator, United States Environmental Protection Agency,

*Respondents*.

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Petition for Review of Final Administrative Actions of the United States Environmental Protection Agency

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**ORDER SOUGHT TO BE REVIEWED: 82 Fed. Reg. 43,494 (Sept. 18, 2017)**

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Dated: July 12, 2018

*Counsel for Petitioners Clean Water Action, Environmental Integrity Project, Sierra Club, Waterkeeper Alliance, Inc., PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for*

*Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network listed on following page*

Thomas J. Cmar
Earthjustice
1101 Lake St., Ste. 405B
Oak Park, IL 60301
[redacted]
tcmar@[redacted]

Matthew Gerhart
3639 N. Clayton St.
Denver, CO 80205
[redacted]
megerhart@[redacted]

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

Gabriel Clark-Leach
Environmental Integrity Project
1206 San Antonio Street
Austin, Texas 78701
[redacted]
gclark-leach@[redacted]

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

Casey Roberts
Sierra Club
1536 Wynkoop St., Suite 312
Denver, CO 80202
[redacted]
casey.roberts@[redacted]

Joshua D. Smith
Sierra Club
2101 Webster St., Suite 1300
Oakland, CA 94612
[redacted]
(510) 208-3140 (fax)
joshua.smith@[redacted]

*Counsel for Petitioner Sierra Club*

Rule 28 Revocation of Permits (Revised 07/18/72)
Rule 29 Conditions on Permits (Revised 03/14/06)
Rule 30 Permit Renewal (Revised 04/13/04)
Rule 32 Breakdown Conditions: Emergency Variances, A., B.1., and D. only. (Revised 02/20/79)
Rule 33 Part 70 Permits-General (Revised 04/12/11)
Rule 33.1 Part 70 Permits—Definitions (Revised 04/12/11)
Rule 33.2 Part 70 Permits—Application Contents (Revised 04/10/01)
Rule 33.3 Part 70 Permits—Permit Content (Revised 09/12/06)
Rule 33.4 Part 70 Permits—Operational Flexibility (Revised 04/10/01)
Rule 33.5 Part 70 Permits—Timeframes for Applications, Review and Issuance (Adopted 10/12/93)
Rule 33.6 Part 70 Permits—Permit Term and Permit Reissuance (Adopted 10/12/93)
Rule 33.7 Part 70 Permits—Notification (Revised 04/10/01)
Rule 33.8 Part 70 Permits—Reopening of Permits (Adopted 10/12/93)
Rule 33.9 Part 70 Permits—Compliance Provisions (Revised 04/10/01)
Rule 33.10 Part 70 Permits—General Part 70 Permits (Adopted 10/12/93)
Rule 34 Acid Deposition Control (Adopted 03/14/95)
Rule 35 Elective Emission Limits (Revised 04/12/11)
Rule 36 New Source Review—Hazardous Air Pollutants (Adopted 10/06/98)
Rule 42 Permit Fees (Revised 04/12/16)
Rule 44 Exemption Evaluation Fee (Revised 04/08/08)
Rule 45 Plan Fees (Adopted 06/19/90)
Rule 45.2 Asbestos Removal Fees (Revised 08/04/92)
Rule 47 Source Test, Emission Monitor, and Call-Back Fees (Adopted 06/22/99)
Rule 50 Opacity (Revised 04/13/04)
Rule 52 Particulate Matter—Concentration (Grain Loading)(Revised 04/13/04)
Rule 53 Particulate Matter—Process Weight (Revised 04/13/04)
Rule 54 Sulfur Compounds (Revised 01/14/14)
Rule 56 Open Burning (Revised 11/11/03)
Rule 57 Incinerators (Revised 01/11/05)
Rule 57.1 Particulate Matter Emissions From Fuel Burning Equipment (Adopted 01/11/05)
Rule 62.7 Asbestos-Demolition and Renovation (Adopted 06/16/92, Effective 09/01/92)
Rule 63 Separation and Combination of Emissions (Revised 11/21/78)
Rule 64 Sulfur Content of Fuels (Revised 04/13/99)
Rule 68 Carbon Monoxide (Revised 04/13/04)
Rule 71 Crude Oil and Reactive Organic Compound Liquids (Revised 12/13/94)
Rule 71.1 Crude Oil Production and Separation (Revised 06/16/92)
Rule 71.2 Storage of Reactive Organic Compound Liquids (Revised 09/26/89)
Rule 71.3 Transfer of Reactive Organic Compound Liquids (Revised 06/16/92)
Rule 71.4 Petroleum Sumps, Pits, Ponds, and Well Cellars (Revised 06/08/93)
Rule 71.5 Glycol Dehydrators (Adopted 12/13/94)
Rule 72 New Source Performance Standards (NSPS) (Revised 09/9/08)
Rule 73 National Emission Standards for Hazardous Air Pollutants (NESHAPS) (Revised 09/9/08)
Rule 74 Specific Source Standards (Adopted 07/06/76)
Rule 74.1 Abrasive Blasting (Revised 11/12/91)
Rule 74.2 Architectural Coatings (Revised 01/12/10)
Rule 74.6 Surface Cleaning and Degreasing (Revised 11/11/03—effective 07/01/04)
Rule 74.6.1 Batch Loaded Vapor Degreasers (Adopted 11/11/03—effective 07/01/04)
Rule 74.7 Fugitive Emissions of Reactive Organic Compounds at Petroleum Refineries and Chemical Plants (Revised 10/10/95)
Rule 74.8 Refinery Vacuum Producing Systems, Waste-Water Separators and Process Turnarounds (Revised 07/05/83)
Rule 74.9 Stationary Internal Combustion Engines (Revised 11/08/05)
Rule 74.10 Components at Crude Oil Production Facilities and Natural Gas Production and Processing Facilities (Revised 03/10/98)
Rule 74.11 Natural Gas-Fired Residential Water Heaters—Control of $NO_X$ (Revised 05/11/10)
Rule 74.11.1 Large Water Heaters and Small Boilers (Revised 09/11/12)
Rule 74.12 Surface Coating of Metal Parts and Products (Revised 04/08/08)
Rule 74.15 Boilers, Steam Generators and Process Heaters (5 MMBTUs and greater) (Revised 11/08/94)
Rule 74.15.1 Boilers, Steam Generators and Process Heaters (1 to 5 MMBTUs) (Revised 06/23/15)
Rule 74.16 Oil Field Drilling Operations (Adopted 01/08/91)
Rule 74.20 Adhesives and Sealants (Revised 09/11/12)
Rule 74.23 Stationary Gas Turbines (Revised 1/08/02)
Rule 74.24 Marine Coating Operations (Revised 09/11/12)
Rule 74.24.1 Pleasure Craft Coating and Commercial Boatyard Operations (Revised 01/08/02)
Rule 74.26 Crude Oil Storage Tank Degassing Operations (Adopted 11/08/94)
Rule 74.27 Gasoline and ROC Liquid Storage Tank Degassing Operations (Adopted 11/08/94)
Rule 74.28 Asphalt Roofing Operations (Adopted 05/10/94)
Rule 74.30 Wood Products Coatings (Revised 06/27/06)
Rule 74.31 Metal Working Fluids and Direct-Contact Lubricants (Adopted 11/12/13)
Rule 75 Circumvention (Revised 11/27/78)
Rule 101 Sampling and Testing Facilities (Revised 05/23/72)
Rule 102 Source Tests (Revised 04/13/04)
Rule 103 Continuous Monitoring Systems (Revised 02/09/99)
Rule 154 Stage 1 Episode Actions (Adopted 09/17/91)
Rule 155 Stage 2 Episode Actions (Adopted 09/17/91)
Rule 156 Stage 3 Episode Actions (Adopted 09/17/91)
Rule 158 Source Abatement Plans (Adopted 09/17/91)
Rule 159 Traffic Abatement Procedures (Adopted 09/17/91)
Rule 220 General Conformity (Adopted 05/09/95)
Rule 230 Notice to Comply (Revised 9/9/08)

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## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 423

**[EPA–HQ–OW–2009–0819; FRL–9967–90–OW]**

**RIN 2040–AF76**

### Postponement of Certain Compliance Dates for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** Under the Clean Water Act (“CWA”), The Environmental Protection Agency (EPA) intends to conduct a rulemaking to potentially revise certain best available technology economically achievable (“BAT”) effluent limitations and pretreatment standards for existing sources (“PSES”) for the steam electric power generating point source category, which were published in the **Federal Register** on November 3, 2015. EPA is, accordingly, postponing the associated compliance dates in the 2015 Rule. In particular, EPA is postponing the earliest compliance dates for the new, more stringent, BAT effluent limitations and PSES for flue gas desulfurization (“FGD”) wastewater and bottom ash transport water in the 2015 Rule for a period of two years. At this time, EPA does not intend to conduct a rulemaking that would potentially revise the new, more stringent BAT effluent limitations and pretreatment standards in the 2015 Rule for fly ash transport water, flue gas mercury control wastewater, and gasification wastewater, or any of the other requirements in the 2015 Rule. As such, EPA is not changing the compliance dates for the BAT limitations and PSES established by the 2015 Rule for these wastestreams. EPA’s action to postpone certain compliance dates in the 2015 Rule is intended to preserve the status quo for FGD wastewater and bottom ash transport

ED_002364A_00010383-00005 EPA-HQ-2019-001328
Case: 18-60079 Document: 00514552168 Page: 5 Date Filed: 07/12/2018



water until EPA completes its next rulemaking concerning those wastestreams, and it thus does not otherwise amend the effluent limitations guidelines and standards for the steam electric power generating point source category.

**DATES:** The final rule is effective September 18, 2017. In accordance with 40 CFR part 23, this regulation shall be considered issued for purposes of judicial review at 1 p.m. Eastern Standard Time on October 2, 2017. Under section 509(b)(1) of the CWA, judicial review of this regulation can be had only by filing a petition for review in the U.S. Court of Appeals within 120 days after the regulation is considered issued for purposes of judicial review. Under section 509(b)(2), the requirements in this regulation may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA–OW–2009–0819. All documents in the docket are listed on the *https://www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *https://www.regulations.gov.*

**FOR FURTHER INFORMATION CONTACT:** Ronald Jordan, United States Environmental Protection Agency, Engineering and Analysis Division; telephone number: (202) 566–1003; email address: *jordan.ronald@epa.gov.* Electronic copies of this document and related materials are available on EPA's Web site at *https://www.epa.gov/eg/steam-electric-power-generatingeffluent-guidelines-2015-final-rule.* Copies of this final rule are also available at *http://www.regulations.gov.*

**SUPPLEMENTARY INFORMATION:**

## I. Background

On November 3, 2015, the EPA published a final rule amending 40 CFR part 423, the effluent limitations guidelines and standards for the steam electric power generating point source category, under Sections 301, 304, 306, 307, 308, 402, and 501 of the CWA (33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361). The amendments addressed limitations and standards on various wastestreams at steam electric power plants: FGD wastewater, bottom ash transport water, fly ash transport water, flue gas mercury control wastewater, gasification wastewater, and combustion residual leachate. Collectively, this rulemaking is known as the "Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category," or "2015 Rule." For further information on the 2015 Rule, see 80 FR 67838 (November 3, 2015).

EPA received seven petitions for review of the 2015 Rule. The U.S. Judicial Panel on Multi-District Litigation issued an order on December 8, 2015, consolidating all of the petitions in the U.S. Court of Appeals for the Fifth Circuit, *Southwestern Electric Power Co., et al.* v. *EPA,* No. 15–60821.

In a letter dated March 24, 2017, the Utility Water Act Group ("UWAG") [1] submitted a petition for reconsideration of the 2015 Rule which requested that EPA suspend the Rule's approaching deadlines. UWAG supplemented its petition with additional information in a letter dated April 13, 2017. In a letter dated April 5, 2017, the Small Business Administration ("SBA") Office of Advocacy sent EPA a second petition for reconsideration of the 2015 Rule, which expressly supports UWAG's petition and raises issues that SBA considers to be pertinent to small businesses. The petitions raise wide-ranging objections to the Rule.[2] Among other things, the UWAG petition points to new data which they believe show that plants burning subbituminous and bituminous coal cannot comply with the 2015 Rule's limitations and standards for FGD wastewater and questions EPA's characterization of bottom ash transport water. UWAG also requested that EPA suspend or delay the "rule's fast-approaching compliance deadlines while EPA works to reconsider and revise, as appropriate, the substantive requirements of the current rule."

In an April 12, 2017 letter to those who submitted the reconsideration petitions, the Administrator announced his decision to reconsider the 2015 Rule. See DCN SE06612. As explained in that letter, after considering the objections raised in the reconsideration petitions, the Administrator determined that it is appropriate and in the public interest to reconsider the Rule. On April 14, 2017, EPA requested that the Fifth Circuit hold the case in abeyance while the Agency undertook reconsideration. On April 24, 2017, the Fifth Circuit granted the motion and placed the case in abeyance.

On June 6, 2017 (82 FR 26017), EPA proposed to postpone the compliance dates for the new, more stringent, BAT effluent limitations and PSES in the 2015 Rule for each of the following wastestreams: FGD wastewater, bottom ash transport water, fly ash transport water, flue gas mercury control wastewater, and gasification wastewater, while reconsideration of the 2015 Rule was underway. EPA explained that this postponement would preserve the regulatory status quo with respect to wastestreams subject to the 2015 Rule's new, and more stringent, limitations and standards during reconsideration and that postponement of compliance dates is intended to prevent the unnecessary expenditure of resources until EPA finalizes any rulemaking as a result of its reconsideration of the 2015 Rule. EPA also solicited comments on whether this postponement should be for a specified period of time, for example, two years.

On August 11, 2017, EPA sent a second letter to those who had requested reconsideration of the 2015 Rule, announcing the Administrator's decision to conduct a new rulemaking to potentially revise the new, more stringent BAT limitations and PSES in the 2015 Rule that apply to two wastestreams: FGD wastewater and bottom ash transport water. See DCN SE06670. On August 14, 2017, EPA filed a motion to govern further proceedings in the U.S. Court of Appeals for the Fifth Circuit, which explained that EPA intends to conduct further rulemaking to potentially revise the new, more stringent BAT/PSES requirements in the 2015 Rule applicable to FGD wastewater and bottom ash transport water, and requested, in part, that the Court sever and hold in abeyance all judicial proceedings concerning portions of the 2015 Rule related to those particular requirements. On August 22, 2017, the Court granted EPA's motion.

In an earlier action, EPA administratively postponed certain compliance dates that had not yet passed in part of the 2015 Rule pursuant to Section 705 of the Administrative Procedure Act ("APA"), 5 U.S.C. 705, which states that "[w]hen an agency finds that justice so requires, it may postpone the effective date of action taken by it pending judicial review." 82 FR 19005 (April 25, 2017). EPA had postponed the compliance dates as a

[1] According to the petition, UWAG is a voluntary, ad hoc, unincorporated group of 163 individual energy companies and three national trade associations of energy companies: Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Public Power Association.

[2] A copy of each petition and the supplemental information is included in the docket for this rule, Docket ID No. EPA–HQ–OW–2009–0819.

ED_002364A_00010383-00006 EPA-HQ-2019-001328
Case: 18-60079 Document: 00514552168 Page: 6 Date Filed: 07/12/2018



temporary measure pursuant to Section 705 to preserve the status quo while the litigation in the Fifth Circuit was pending and EPA's reconsideration was underway. Because EPA has decided to conduct further rulemaking to potentially revise the new, more stringent BAT limitations and PSES in the 2015 Rule applicable to two specific wastestreams (FGD wastewater and bottom ash transport water), and it is today finalizing a rule which postpones the associated compliance dates in the 2015 Rule pending its next rulemaking, there is no longer any need for the Agency to maintain its prior action pursuant to Section 705 of the APA. EPA, hereby, withdraws that action.

## II. Summary of Comments Received

EPA received thousands of written comments on the proposed rule to postpone certain compliance dates in the 2015 Rule. EPA also held a public hearing on July 31, 2017. The comments on the proposed rule generally fall into one of four categories: (1) Support for postponement of compliance dates; (2) opposition to the postponement of compliance dates; (3) comments on the substantive requirements of the 2015 Rule (which are outside the scope of this action, which concerns postponing certain compliance dates only); and (4) comments on the length of time that EPA should postpone the compliance dates.

Commenters that support the postponement rule generally assert that the postponement is appropriate to prevent industry from spending "unnecessary resources" until EPA completes its reconsideration of the 2015 Rule. Many commenters who support a postponement in compliance dates state that, given the substantial costs required to implement technology required to comply with the 2015 Rule, as well as the time needed for designing and optimizing treatment systems, certainty in the discharge requirements is needed and postponement of compliance dates allows for that. In addition, commenters argue that the Agency has both the authority and the responsibility to postpone the 2015 Rule until it completes any rulemaking following its reconsideration process.

Comments on the length of the postponement generally assert that EPA should postpone the compliance dates for a minimum of two years, until EPA has taken final action on any rule revisions, or some time period beyond when EPA has taken final action on any rule revisions.

Commenters that oppose the postponement rule generally assert that (1) the technology bases underlying the 2015 Rule are widely available and affordable now, many steam electric plants have already installed or are in the process of implementing these technologies, and postponing the compliance dates would hinder technology development; (2) any postponement allows power plants to continue to discharge pollutants that are harmful to public health and the environment, and the forgone public health and environmental benefits during any postponement outweigh the costs to industry; and (3) EPA lacks authority to postpone the compliance dates.

## III. Rationale for Finalizing a Postponement of Compliance Dates

In light of new information not contained in the record for the 2015 Rule and the inherent discretion the Agency has to reconsider past policy decisions consistent with the CWA and other applicable law, EPA intends to conduct a new rulemaking regarding the appropriate technology bases and associated limits for the BAT/PSES requirements applicable to FGD wastewater and bottom ash transport water discharged from steam electric power plants. Given this, and after carefully considering comments received on the proposed rule, EPA finds it appropriate to postpone the earliest compliance dates for the new, more stringent, BAT effluent limitations and PSES applicable to FGD wastewater and bottom ash transport water in the 2015 Rule until it completes the new rulemaking. This maintains the 2015 Rule as a whole at this time, with the only change being to postpone specific compliance deadlines for two wastestreams. Thus, the earliest compliance dates for plants to meet the new, more stringent FGD wastewater and bottom ash wastewater limitations and standards in the 2015 Rule, which were to be determined by the permitting authority as a date "as soon as possible beginning November 1, 2018 . . .", are now to be determined by the permitting authority as a date "as soon as possible beginning November 1, 2020 . . . ." EPA is not changing the "no later than" date of December 31, 2023, because EPA is not aware that the 2023 date is an immediate driver for expenditures by plants (petitioners had requested relief from the "fast-approaching compliance deadlines" in the 2015 Rule), and EPA plans to take up the appropriate compliance period in its next rulemaking. In order to be absolutely clear about what is being postponed, the final rule includes more precise regulatory text to implement the rule than was included in the proposed rule.

Agencies have inherent authority to reconsider past decisions and to revise, replace or repeal a decision to the extent permitted by law and supported by a reasoned explanation. *FCC* v. *Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009); *Motor Vehicle Mfrs. Ass'n* v. *State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 42 (1983). *See also Nat'l Ass'n of Home Builders* v. *EPA*, 682 F.3d 1032, 1038 & 1043 (D.C. Cir. 2012). Particularly relevant here, the CWA expressly authorizes EPA to revise effluent limitations and standards. 33 U.S.C. 1311(d), 1314(b), (g)(1), (m)(1)(A), 1317(b)(2). Moreover, in doing so, Section 304(b)(2)(B) of the CWA directs EPA to consider several factors, including "other factors as the Administrator deems appropriate," and the Agency is afforded considerable discretion in deciding how much weight to give each factor. *See, e.g., Weyerhaeuser Co.* v. *Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978). In this case, where EPA has decided to undertake a new rulemaking, which may result in substantive changes to the 2015 Rule, that is an appropriate factor to consider and one that warrants the postponement of compliance dates for the new, more stringent BAT and PSES requirements for two wastestreams in the 2015 Rule, until such a rulemaking is complete (*i.e.*, EPA issues any final rule that substantively revises the 2015 Rule or EPA decides not to issue such a final rule). This will prevent the potentially needless expenditure of resources during a rulemaking that may ultimately change the 2015 Rule in these respects.

As mentioned, some commenters stated that the record for the 2015 Rule demonstrates that the technologies underlying the new, more stringent requirements for FGD wastewater and bottom ash transport water are widely available and affordable. Notwithstanding statements in the 2015 Rule record, certain parties have raised serious concerns about the availability and affordability of the technology basis for the FGD wastewater and bottom ash transport water requirements in the 2015 Rule, and the Administrator wishes to take some time to carefully review these requirements in light of those concerns and ensure any such requirements are technologically available and economically achievable within the meaning of the statute. EPA has discretion in determining technological availability and economic achievability and is not constrained by the CWA to make the same policy decision as the former Administration, so long as its decision is reasonable. As explained above, the Agency may

ED_002364A_00010383-00007 EPA-HQ-2019-001328
Case: 18-60079 Document: 00514552168 Page: 7 Date Filed: 07/12/2018



reconsider past policy decisions consistent with the Clean Water Act and other applicable law. The Agency may also reconsider technical determinations in light of new information submitted to the Agency that was not in the record for the 2015 Rule. EPA intends to fully evaluate all of the issues raised in the petitions, including concerns about: Cost and impacts to steam electric facilities, public availability of information on which the rule is based, lack of data for plants that burn certain types of coal, and validity of certain pollutant data used in EPA's 2015 Rule analysis. For example, petitioners raised concerns about the numerical BAT limitations and PSES applicable to FGD wastewater in the 2015 Rule. They assert that there are differences among coal types that affect the performance and costs of biological treatment and that EPA did not have data to demonstrate the performance of biological treatment on all coal types. To resolve this concern, following the rulemaking, industry collected (and continues to collect) additional data on the performance of biological treatment for different coal types. As another example, petitioners raised questions about the inclusion and validity of certain data due, in part, to what they assert are flaws in data acceptance criteria, obsolete analytical methods, and the treatment of non-detect analytical results, which petitioners believed resulted in an overestimation of pollutant loadings for bottom ash transport water. EPA agrees that these are important issues that warrant further consideration in conjunction with the statutory factors for determining BAT for these wastestreams. EPA thus intends to re-evaluate these and other concerns raised in the petitions in the next rulemaking. EPA acknowledges that postponement of certain of the 2015 Rule's compliance dates may be disruptive to vendors and treatment technology suppliers. EPA, however, must also consider the substantial investments required by the steam electric power industry to comply with the BAT limitations and PSES,[3] and that certainty regarding the limitations and standards deserves prominent consideration by the Agency when these limitations and standards may change. As UWAG pointed out in its April 13, 2017 letter, "a rule of this magnitude and complexity requires substantial time to come into compliance for multiple wastestreams. Detailed studies and planning, followed by large capital expenditures and subsequent installation and testing, are time-consuming." Companies have been evaluating their compliance options and are reaching the point at which they will be committing funds, incurring costs, or commencing construction to install technologies.

As part of the 2015 Rule, EPA estimated the costs associated with compliance with the 2015 Rule's new requirements. For all applicable wastestreams, EPA assessed the operations and treatment system components, identified equipment and process changes that the plant would likely make to meet the 2015 Rule, and estimated the cost to implement those changes. This includes, among other things, the capital costs of installing the technology (based on estimates of the technology selected as representing the level of control) and the operation and maintenance costs of operating the technology. See Technical Development Document ("TDD"), pp. 9–1 through 9–52. EPA estimated that the total post-tax annualized compliance costs would be $339.6 million/year. See Regulatory Impact Analysis ("RIA"), Table 3–2 (Option D).[4]

The 2015 rulemaking record also describes evaluation of the initial capital costs that regulated parties would incur in the near term (if a stay were not in place) to meet the 2015 Rule's effluent limitations and standards. For the purpose of analysis, in the RIA, EPA assumed that all capital costs are incurred concurrently with technology installation according to discharge permit renewal schedules, but EPA realizes that feasibility studies and planning may need to be completed in advance of that date. Specifically, plants would incur engineering design costs, costs to acquire equipment, freight shipping costs to transport equipment from manufacturers to the installation site, costs for actions to prepare the site (such as installing concrete foundations and buildings for the new equipment), and construction expenses associated with connecting electrical and piping systems to new equipment. See TDD, p. 9–3. EPA estimated post-tax annualized capital costs of $204.4 million/year. See RIA, Table 3–2 (Option D). Although there is a wide degree of variability among the costs particular plants would expend, EPA estimates that the average post-tax annualized capital compliance costs for a plant would be approximately $1.5 million/year. See TDD, Table 9–19 (plants with compliance costs); RIA, Table 3–2 (Option D). To the extent that these costs are associated with the 2015 Rule requirements for FGD wastewater and bottom ash transport water, and in the event that EPA revises these requirements in a future rulemaking, these are costs that would be incurred for activities that ultimately might not be necessary. In that case, this would reflect costs incurred by facilities and potentially passed on to utility rate payers that ultimately did not need to be spent.

In light of these imminent planning and capital expenditures that facilities incurring costs under the 2015 Rule would need to undertake in order to meet the earliest compliance deadlines for the new, more stringent limitations and standards in the 2015 Rule, and the fact that the Agency is conducting a new rulemaking regarding the appropriate technology bases and associated limits for BAT limitations and PSES applicable to FGD wastewater and bottom ash transport water, the Agency views it as appropriate to postpone the earliest compliance dates that have not yet passed for these wastestreams in 2015 Rule. This will preserve the regulatory status quo with respect to requirements for FGD wastewater and bottom ash transport water until the new rulemaking is complete.

Some commenters also express concerns that postponement of compliance dates would hinder technology advancements. EPA's experience does not support this concern. The record for the 2015 Rule demonstrates that technology advancements were not hindered during that rulemaking. Rather, as explained in the preamble to the final 2015 Rule, vendors continued to improve existing technologies and to develop new technologies during the rulemaking leading up to the 2015 Rule.

EPA acknowledges that postponement of the compliance dates could lead to a delay in the accrual of some of the benefits attributable to the 2015 Rule. The 2015 Rule required that steam electric power plants would comply with the new, more stringent requirements no later than 2023, with plants expected to implement new control technologies over a five-year compliance period of 2019–2023 according to their permit renewal schedule. In the record for the 2015 Rule, EPA estimated the value of certain benefits linked to reduced pollutant

[3] In the 2015 Rule, EPA estimated the total annualized pre-tax compliance costs for the FGD and bottom ash requirements to be $486.8 million. See DCN SE05978.

[4] EPA analyzed both pre-tax and post-tax costs. Pre-tax costs provide insight on the total expenditures as initially incurred by the plants. Post-tax costs are a more meaningful measure of compliance impact on privately owned for-profit plants, and incorporate approximate capital depreciation and other relevant tax treatments in the analysis. RIA, p. 3–6.

ED_002364A_00010383-00008 EPA-HQ-2019-001328
Case: 18-60079 Document: 00514552168 Page: 8 Date Filed: 07/12/2018



discharges that could be monetized for the period 2019 through 2042. Based on the 2015 Rule data and methodology, and depending on the inclusion of the Clean Power Plan, EPA estimates that foregone annualized benefits for a two-year delay would be between $26.6 million and $33.6 million.[5] EPA similarly estimates that plants would experience annualized cost savings of between $27.5 million and $36.8 million as a result of a two-year delay. See DCN SE06668 for additional details, including calculations of the foregone benefits and cost savings. EPA understands that these estimates have uncertainty due to, for example, the possibility of unexpected implementation approaches, and thus that the actual cost savings could have been somewhat higher or lower than estimated. Similarly, due to data and analysis limitations, the forgone monetized benefits are likely underestimated. These estimates, however, are consistent with and reflect the best data and analysis available at the time of the 2015 Rule.

EPA notes that, as explained earlier, there is uncertainty as to the FGD wastewater and bottom ash transport water BAT/PSES requirements while EPA conducts a new rulemaking. If EPA did not postpone the compliance dates, industry would likely incur costs as it prepares to comply with the 2015 Rule, irrespective of what EPA ultimately determines to be BAT/PSES for FGD wastewater and bottom ash transport water. By contrast, under the 2015 Rule, even if permits were written today, the earliest those permits would have required compliance with the limitations and standards at issue are "as soon as possible beginning November 1, 2018." So, while some companies would have to plan to comply and spend money right away, the benefits would not begin to accrue until 2018, at the earliest. Also, these benefits may not be lost if a permitting authority requires similar effluent limitations where necessary to meet applicable water quality standards, under CWA section 301(b)(1)(C). EPA has carefully weighed the concerns about potentially foregone benefits with the consideration of the costs that could needlessly be incurred should the requirements be changed, as well as the overall uncertainty and potential confusion that would be caused by imposing the 2015 Rule requirements while simultaneously undertaking rulemaking that may change those requirements. On balance, EPA has concluded the more reasonable approach is to postpone the compliance dates in the 2015 Rule.

Thus, EPA agrees with commenters who argue that it should postpone the new, more stringent BAT/PSES requirements for FGD wastewater and bottom ash transport water in the 2015 Rule until it completes a new rulemaking on these wastestreams. After reflecting on the time it typically takes the Agency to propose and finalize revised effluent limitations guidelines and standards, and in light the characteristics of this industry and the anticipated scope of the next rulemaking, EPA projects it will take approximately three years to propose and finalize a new rule (Fall 2020). See DCN SE06667. Consequently, EPA is postponing the earliest compliance dates for the new, more stringent, BAT effluent limitations and PSES for FGD wastewater and bottom ash transport water for a period of two years (November 1, 2020).[6] To the extent that commenters believe a postponement under this rule should last beyond the time it takes EPA to complete its new rulemaking, such comments are appropriately considered as part of, and in light of, that new rulemaking and not this action. As explained, this rule is intended only as a relatively short-term measure until EPA completes the next rulemaking, and EPA anticipates that the next rulemaking will necessarily address compliance dates in some fashion. Although EPA proposed to postpone the compliance dates for the new, more stringent requirements applicable to fly ash transport water, gasification wastewater, and flue gas mercury control (FGMC) wastewater, in addition to the requirements for FGD wastewater and bottom ash transport water, this final rule does not postpone those former compliance dates. Commenters stated that EPA has no basis to postpone compliance dates for requirements that parties have not expressly argued should be reconsidered, such as those for fly ash transport water and FGMC wastewater. EPA agrees that the final rule should postpone only those requirements that the Agency plans to potentially revise in the next rulemaking. Because EPA is not conducting a new rulemaking concerning any of the other issues addressed by the 2015 Rule, including requirements for fly ash transport water, gasification wastewater, and FGMC wastewater, EPA is not changing the compliance dates for these wastestreams or any of the other compliance dates for the requirements in that Rule. The record for the 2015 Rule demonstrates that changes associated with converting a fly ash system are unrelated from an engineering perspective to conversions/upgrades for bottom ash transport water and FGD treatment systems. Converting a fly ash system requires installing a silo to capture the dry fly ash, which is subsequently transported offsite to beneficial reuse markets (*e.g.,* cement plants) or landfilled. Bottom ash is handled separately, regardless of whether it is wet or dry. The same is true for FGD wastes. EPA recognizes however, that from a financing and long-term planning perspective, there are advantages to a facility in knowing the full suite of requirements it will need to comply with over a longer term planning horizon.

Some facilities commented that they may need to know what the ultimate requirements will be for bottom ash transport water and FGD wastewater to assist them in considering alternatives for meeting the requirements for the other waste streams (fly ash transport water and FGMC wastewater) for which EPA is not postponing the earliest compliance dates. EPA notes that there continues to be discretion under the 2015 Rule for permitting authorities to consider: Time needed to "expeditiously plan (including time to raise capital), design, procure, and install equipment" to comply with the rule; changes being made at the plant to comply with several other rules; and "other factors as appropriate" in determining exactly when, within a specified compliance period, the 2015 Rule's new, more stringent limitations apply to any given plant. See 40 CFR 423.11(t).

In light of the compliance date postponements being finalized today, in determining the "as soon as possible date," EPA believes it would be reasonable for permitting authorities to consider the need for a facility to make integrated planning decisions regarding compliance with the requirements for all of the wastestreams currently subject to new, more stringent requirements in the 2015 Rule, as well as the other rules identified in § 423.11(t) to the extent that a facility demonstrates such a need. This could include harmonizing schedules to the extent provided for

[5] The calculations are based on the benefits and costs estimated for the 2015 Rule, which were detailed in the "Benefit and Cost Analysis for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category" (BCA) and "Regulatory Impact Analysis for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category" (RIA) reports.

[6] If EPA does not complete a new rulemaking by November, 2020, it plans to further postpone the compliance dates such that the earliest compliance date is not prior to completion of a new rulemaking.

ED_002364A_00010383-00009 EPA-HQ-2019-001328
Case: 18-60079 Document: 00514552168 Page: 9 Date Filed: 07/12/2018



under the 2015 Rule [7] for meeting the 2015 Rule requirements for fly ash transport water and FGMC wastewater to allow time for a facility to have certainty regarding what their ultimate requirements will be under the steam electric ELGs, as well as the requirements under the other rules listed in § 423.11(t).

This rule is effective immediately upon publication. Section 553(d) of the Administrative Procedure Act, 5 U.S.C. 553(d), provides that publication of a substantive rule must be made no less than 30 days before its effective date, subject to several exceptions. Section 553(d)(1) establishes an exception for "a substantive rule which grants or recognizes an exemption or relieves a restriction." The exception in Section 553(d)(1) reflects the purpose of the 30-day notice requirement, which is to give affected entities time to prepare for the effective date of a rule or to take any other action which the issuance of a rule may prompt. This rule fits within Section 553(d)(1) because it postpones certain requirements on steam electric power plants to control their pollutant discharges by two years, and as a result, it relieves a restriction on regulated entities for that period.

## IV. Statutory and Executive Order Reviews

*A. Executive Order 12866: Regulatory Planning and Review; and, Executive Order 13563: Improving Regulation and Regulatory Review*

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket.

*B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs*

This action is considered an Executive Order 13771 deregulatory action. Details on the estimated cost savings of this final rule can be found in EPA's analysis of the potential costs and benefits associated with this action.

*C. Paperwork Reduction Act*

This final rule does not involve any information collection activities subject to the PRA, 44 U.S.C. 3501 *et seq.*

*D. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action maintains the 2015 Rule as a whole at this time, with the only change being to postpone specific compliance deadlines for two wastestreams. As described above, EPA estimates that steam electric plants, including some small entities, would experience annualized cost savings of $27.5 million as a result of this two-year delay. We have therefore concluded that this action will relieve regulatory burden for some directly regulated small entities.

*E. Unfunded Mandates Reform Act (UMRA)*

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments.

*F. Executive Order 13132: Federalism*

This action does not have federalism implications, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

*G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action does not have Tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000).

*H. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

This final rule is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because EPA previously determined that the environmental health risks or safety risks addressed by the requirements EPA is finalizing do not present a disproportionate risk to children.

*I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution or use of energy.

*J. National Technology Transfer and Advancement Act (NTTAA)*

This rulemaking does not involve technical standards that would require Agency consideration under NTTAA section 12(d), 15 U.S.C. 272 note.

*K. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

This is a final rule to delay action, and it does not change the requirements of the effluent limitations guidelines and standards published in 2015. While the postponement in compliance dates could delay the protection the 2015 Rule would afford to all communities, including those impacted disproportionately by the pollutants in certain wastewater discharges, this action would not change any impacts of the 2015 Rule upon implementation. The EPA therefore believes it is more appropriate to consider the impact on minority and low-income populations in the context of possible substantive changes as part of any future rulemaking.

*L. Congressional Review Act*

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is a not a "major rule" as defined by 5 U.S.C. 804(2).

## List of Subjects in 40 CFR Part 423

Environmental protection, Electric power generation, Power plants, Waste treatment and disposal, Water pollution control.

Dated: September 12, 2017.

**E. Scott Pruitt,**

*Administrator.*

For reasons stated in the preamble, EPA amends 40 CFR part 423 as set forth below:

## PART 423—STEAM ELECTRIC POWER GENERATING POINT SOURCE CATEGORY

■ 1. The authority citation for part 423 continues to read as follows:

**Authority:** Secs. 101; 301; 304(b), (c), (e), and (g); 306; 307; 308 and 501, Clean Water Act (Federal Water Pollution Control Act

[7] For any final effluent limitation that is specified to become applicable after November 1, 2018, the specified date must be as soon as possible, but in no case later than December 31, 2023.

ED_002364A_00010383-00010 EPA-HQ-2019-001328
Case: 18-60079 Document: 00514552168 Page: 10 Date Filed: 07/12/2018



Amendments of 1972, as amended; 33 U.S.C. 1251; 1311; 1314(b), (c), (e), and (g); 1316; 1317; 1318 and 1361).

■ 2. Amend § 423.11 by revising paragraph (t) introductory text to read as follows:

**§ 423.11 Specialized definitions.**

* * * * *

(t) The phrase "as soon as possible" means November 1, 2018 (except for purposes of § 423.13(g)(1)(i) and (k)(1)(i), and § 423.16(e) and (g), in which case it means November 1, 2020), unless the permitting authority establishes a later date, after receiving information from the discharger, which reflects a consideration of the following factors:

* * * * *

**§ 423.13 [Amended]**

■ 3. Amend § 423.13 paragraphs (g)(1)(i) and (k)(1)(i) by removing the text "November 1, 2018" and adding the text "November 1, 2020" in its place.

**§ 423.16 [Amended]**

■ 4. Amend § 423.16 paragraphs (e) two times, and (g) by removing the text "November 1, 2018" and adding the text "November 1, 2020" in its place.

[FR Doc. 2017–19821 Filed 9–15–17; 8:45 am]

BILLING CODE 6560–50–P

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

### 50 CFR Part 635

**[Docket No. 170602535–7835–01]**

**RIN 0648–XF480**

## Atlantic Highly Migratory Species; Adjustments to 2017 Northern Albacore Tuna Quota, 2017 North and South Atlantic Swordfish Quotas, and 2017 Atlantic Bluefin Tuna Reserve Category Quota

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Temporary final rule.

**SUMMARY:** NMFS adjusts the northern albacore tuna annual baseline quota for 2017 with available underharvest of the 2016 adjusted U.S. northern albacore quota. NMFS also adjusts the North and South Atlantic swordfish baseline quotas for 2017 based on available underharvest from the 2016 adjusted U.S. quotas and international quota transfers. NMFS also augments the 2017 Atlantic bluefin tuna Reserve category quota with available underharvest of the 2016 adjusted U.S. bluefin tuna quota. This action is necessary to implement binding recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT), as required by the Atlantic Tunas Convention Act (ATCA), and to achieve domestic management objectives under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

**DATES:** Effective September 18, 2017, through December 31, 2017.

**ADDRESSES:** Supporting documents such as Environmental Assessments and Fishery Management Plans and their Amendments described below may be downloaded from the HMS Web site at *www.nmfs.noaa.gov/sfa/hms/*. These documents also are available upon request from Sarah McLaughlin, Steve Durkee, or Gray Redding at the telephone numbers below.

**FOR FURTHER INFORMATION CONTACT:** Sarah McLaughlin, 978–281–9260, Steve Durkee, 202–670–6637, or Gray Redding, 301–427–8503.

**SUPPLEMENTARY INFORMATION:** Regulations implemented under the authority of the Atlantic Tunas Convention Act (ATCA; 16 U.S.C. 971 *et seq.*) and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. 1801 *et seq.*) governing the harvest of northern albacore, swordfish, and bluefin tuna by persons and vessels subject to U.S. jurisdiction are found at 50 CFR part 635. Section 635.27(e) describes the northern albacore annual quota recommended by ICCAT and the annual northern albacore quota adjustment process. Section 635.27(c) describes the quota adjustment process for both North and South Atlantic swordfish. Section 635.27(a) subdivides the ICCAT-recommended U.S. bluefin tuna quota among the various domestic fishing categories, per the allocations established in the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan (2006 Consolidated HMS FMP) (71 FR 58058, October 2, 2006), as amended by Amendment 7 to the 2006 Consolidated HMS FMP (Amendment 7) (79 FR 71510, December 2, 2014), and describes the annual bluefin tuna quota adjustment process. NMFS is required under ATCA and the Magnuson-Stevens Act to provide U.S. fishing vessels with a reasonable opportunity to harvest the ICCAT-recommended quotas.

The northern albacore quota implementation and quota adjustment processes, along with the bluefin tuna quota adjustment process, were previously analyzed in Amendment 7, which published in August 2014 and included a Final Environmental Impact Statement, Final Regulatory Impact Review (RIR), Final Regulatory Flexibility Analysis (FRFA), and Final Social Impact Statement. ICCAT conducted another bluefin tuna stock assessment update in 2014, and, after considering the scientific advice in the stock assessment, adopted a recommendation regarding western Atlantic bluefin tuna management that increases the U.S. bluefin tuna quota for 2015 and 2016 (ICCAT Recommendation 14–05). NMFS published a final rule to implement that baseline annual U.S. bluefin tuna quota on August 28, 2015 (80 FR 52198), and prepared an Environmental Assessment (EA), RIR, and FRFA for that action. ICCAT Recommendation 16–08 extended the U.S. bluefin tuna allocation established in Recommendation 14–05 through 2017.

The North Atlantic swordfish quota adjustment process was previously analyzed in the EA, RIR, and FRFA that were prepared for the 2012 Swordfish Quota Adjustment Rule (July 31, 2012; 77 FR 45273). The South Atlantic swordfish quota adjustment process was previously analyzed in the EA, RIR, and FRFA that were prepared for the 2007 Swordfish Quota Specification Final Rule (October 5, 2007; 72 FR 56929). In the 2016 North and South Atlantic Swordfish Quotas Adjustment Final Rule (July 26, 2016, 81 FR 48719), after taking public comment on the issue, NMFS announced its intent to no longer issue proposed and final specifications/rules for North and South Atlantic swordfish quotas adjustments in cases where the quota adjustment follows previously codified and analyzed formulas. Therefore, beginning this year, NMFS is instead issuing a temporary final rule to adjust the quota, in a similar process to northern albacore and bluefin tuna quota adjustments. NMFS will continue to undertake notice and comment rulemaking when adopting new quotas, quota formulas, or otherwise altering conservation and management measures.

Note that weight information for northern albacore and bluefin tuna below is shown in metric tons (mt) whole weight (ww), and both dressed weight (dw) and ww is shown for swordfish.

### Northern Albacore Annual Quota and Adjustment Process

Since 1998, ICCAT has adopted recommendations regarding the northern albacore fishery. The current

## CERTIFICATE OF SERVICE

I hereby certify that on July 12, 2018, the foregoing was electronically filed with the Clerk of the Court using the CM/ECF system, which will send notification of said filing to the attorneys of record who have consented to electronic service.

*/s/ Thomas J. Cmar*
Thomas J. Cmar

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

## CERTIFICATIONS UNDER ECF FILING STANDARDS

Pursuant to paragraph A(6) of this Court's ECF Filing Standards, I hereby certify that (1) required privacy redactions have been made, 5th Cir. R. 25.2.13; (2) the electronic submission is an exact copy of the paper document, 5th Cir. R.25.2.1; and (3) the document has been scanned for viruses with the most recent version of a commercial virus scanning program and is free of viruses.

Dated: July 12, 2018

*/s/ Thomas J. Cmar*
Thomas J. Cmar

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

| | |
|---|---|
| CLEAN WATER ACTION, *et al.*,<br><br>*Petitioners*,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, *et al.*,<br><br>*Respondents*. | No. 18-60079 |

**PETITIONERS' MOTION FOR LEAVE TO FILE DOCUMENTS**

Petitioners Clean Water Action, Environmental Integrity Project, Sierra Club, Waterkeeper Alliance, Inc., PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network ("Petitioners") hereby move the Court for leave to file the attached standing declarations. In support of the motion, Petitioners state as follows:

1. Petitioners have attached to this motion declarations submitted by members and staff of their respective organizations. The attached declarations are cited in Petitioners' opening brief solely to support their standing to bring this case. Pursuant to Fifth Circuit Rule 27.4, Petitioners contacted counsel for all other parties prior to filing this motion. Counsel for Respondent United States

Environmental Protection Agency and Intervenor-Respondent Utility Water Act Group indicated that they do not object to this motion.

2. The United States Constitution "limits the jurisdiction of federal courts to 'Cases' and 'Controversies.'" *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 559 (1992). "[S]tanding is an essential and unchanging part of the case-or-controversy requirement of Article III." *Id.* at 560.

3. "[T]o satisfy Article III's standing requirements, a plaintiff must show (1) it has suffered an 'injury in fact' that is (a) concrete and particularized and (b) actual or imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision." *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.*, 528 U.S 167, 180-81 (2000) (citing *Lujan*, 504 U.S. at 560-61). Under the concept of "associational standing," an organization has "standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *Texans United for a Safe Economy Educ. Fund v. Crown Cent. Petroleum Corp.*, 207 F.3d 789, 792 (5th Cir. 2000) (citing *Hunt v. Wash. State Apple Adver. Comm'n*, 432 U.S. 333, 343 (1977)).

4. The party which invokes a court's jurisdiction bears the burden of proving standing by submitting admissible evidence. *See, e.g.*, *Owner-Operator Indep. Drivers Ass'n, Inc. v. U.S. Dep't of Transp.*, 831 F.3d 961, 966 (8th Cir. 2016) ("Parties seeking direct appellate review of an agency action must prove each element of standing with specific facts supported by affidavit or other evidence."); *Pub. Citizen, Inc. v. Nat'l Highway Traffic Safety Admin.*, 489 F.3d 1279, 1289 (D.C. Cir. 2007) ("Because petitioners bear the burden of proof on standing, they 'must either identify . . . record evidence sufficient to support [their] standing to seek review or, if there is none because standing was not an issue before the agency, submit additional evidence to the court of appeals.'").

5. Petitioners filed a petition for review which has been transferred to this Court. As petitioners, they bear the burden of establishing Article III standing. *See Owner-Operator Indep. Drivers Ass'n, Inc.*, 831 F.3d at 966; *Pub. Citizen, Inc.*, 489 F.3d at 1289.

6. To meet their burden to demonstrate Article III standing, Petitioners seek leave to file the attached declarations as part of the appellate record. The attached petitions do not contain any new evidence or argument concerning the merits of the case. Instead, Petitioners submit these documents solely to "prove each element of standing with specific facts supported by affidavit," *Owner-*

*Operator Indep. Drivers Ass'n, Inc.*, 831 F.3d at 966, and Petitioners will not cite the declarations in the merits section of their opening brief.[1]

## CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Court grant this motion for leave to file the attached standing declarations.[2]

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[1] In this Court and others, Environmental Petitioners have generally followed the practice of submitting Article III standing declarations as attachments to their briefs. *See, e.g.*, *Luminant Generation Co. et al. v. U.S. Environmental Protection Agency*, No. 10-60934, ECF Doc. 00511474859 (filed May 11, 2011). In a prior case in this Court, however, the Clerk of the Court expressed a preference for a motion for leave to file additional documents to the appellate record. *See* Motion for Leave to File Documents at 4 n.1, *Sw. Elec. Power Co. v. EPA*, No. 15-60821, ECF Doc. 00513785025 (5th Cir. Dec. 5, 2016); Clerk's Memorandum Granting Motion to for Leave to File Documents, *Sw. Elec. Power Co. v. EPA*, No. 15-60821, ECF Doc. 00513787457 (5th Cir. Dec. 7, 2016). Because the Fifth Circuit Rules do not specifically address the filing of such declarations, Environmental Petitioners respectfully request that the Court clarify its preferred process for submitting standing declarations.

[2] If the Court grants this motion, Petitioners will send seven paper copies of the declarations to the Court, unless the Court instructs otherwise.

Dated: July 12, 2018

Respectfully submitted,

*/s/ Thomas Joseph Cmar*
Thomas Joseph Cmar
Earthjustice
1101 Lake St., Ste. 405B
Oak Park, IL 60301
[redacted]
tcmar@[redacted]

Matthew Gerhart
3639 N. Clayton St.
Denver, CO 80205
[redacted]
megerhart@[redacted]

*Counsel for Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

*/s/ Casey Roberts*
Casey Roberts
Sierra Club
1536 Wynkoop St., Suite 312
Denver, CO 80202
[redacted]
casey.roberts[redacted]

Joshua D. Smith
Sierra Club
2101 Webster St., Suite 1300
Oakland, CA 94612
[redacted]
(510) 208-3140 (fax)
joshua.smith@[redacted]

*Counsel for Sierra Club*

*/s/ Gabriel Clark-Leach*
Gabriel Clark-Leach
Environmental Integrity Project
1206 San Antonio Street
Austin, Texas 78701
[redacted]
gclark-leach[redacted]

*Counsel for Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

## CERTIFICATE OF COMPLIANCE

The undersigned counsel states that this motion complies with FED. R. APP. P. 27(d)(2)(A) because it contains 797 words, excluding the parts exempted by FED. R. APP. P. 32(f), as counted by a word processing system and, therefore, is within the word limit. This motion also complies with the typeface requirements of FED. R. APP. P. 27(d)(1)(E) because it has been prepared in a proportionally spaced typeface in 14-point Times New Roman font.

Dated: July 12, 2018

*/s/ Thomas Joseph Cmar*
Thomas Joseph Cmar

*Counsel for Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

## CERTIFICATIONS UNDER ECF FILING STANDARDS

Pursuant to paragraph A(6) of this Court's ECF Filing Standards, I hereby certify that (1) required privacy redactions have been made, 5th Cir. R. 25.2.13; (2) the electronic submission is an exact copy of the paper document, 5th Cir. R.25.2.1; and (3) the document has been scanned for viruses with the most recent version of a commercial virus scanning program and is free of viruses.

Dated: July 12, 2018

*/s/ Thomas Joseph Cmar*
Thomas Joseph Cmar

*Counsel for Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

## CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system on this 12th day of July, 2018.

*/s/ Thomas Joseph Cmar*
Thomas Joseph Cmar

*Counsel for Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

No. 18-60079

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**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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CLEAN WATER ACTION; ENVIRONMENTAL INTEGRITY PROJECT; SIERRA CLUB; WATERKEEPER ALLIANCE, INCORPORATED; PENNENVIRONMENT, INCORPORATED; CHESAPEAKE CLIMATE ACTION NETWORK; PHYSICIANS FOR SOCIAL RESPONSIBILITY, CHESAPEAKE, INCORPORATED; PRAIRIE RIVERS NETWORK,

*Petitioners*,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; ANDREW WHEELER, Acting Administrator, United States Environmental Protection Agency,

*Respondents*.

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Petition for Review of Final Administrative Actions of the
United States Environmental Protection Agency

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# DECLARATIONS IN SUPPORT OF THE OPENING BRIEF OF PETITIONERS CLEAN WATER ACTION, ENVIRONMENTAL INTEGRITY PROJECT, SIERRA CLUB, WATERKEEPER ALLIANCE, INC., PENNENVIRONMENT, INC., CHESAPEAKE CLIMATE ACTION NETWORK, PHYSICIANS FOR SOCIAL RESPONSIBILITY, CHESAPEAKE, INC., AND PRAIRIE RIVERS NETWORK

---

Dated: July 12, 2018 *Counsel listed on following page*

Thomas J. Cmar
Earthjustice
1101 Lake St., Ste. 405B
Oak Park, IL 60301
(312) 257-9338
tcmar@earthjustice.org

Matthew Gerhart
3639 N. Clayton St.
Denver, CO 80205
(510) 847-7721
megerhart@gmail.com

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

Gabriel Clark-Leach
Environmental Integrity Project
1206 San Antonio Street
Austin, Texas 78701
(512) 637-9478
gclark-leach@environmentalintegrity.org

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

Casey Roberts
Sierra Club
1536 Wynkoop St., Suite 312
Denver, CO 80202
(303) 454-3355
casey.roberts@sierraclub.org

Joshua D. Smith
Sierra Club
2101 Webster St., Suite 1300
Oakland, CA 94612
(415) 977-5560
(510) 208-3140 (fax)
joshua.smith@sierraclub.org

*Counsel for Petitioner Sierra Club*

# TABLE OF CONTENTS

**Declarant** **Page**

Aboulhosn, Dalal ("Aboulhosn Decl.")
*Deputy Legislative Director for Water and Lands, Sierra Club* ..... DEC1

Davis, Don ("Davis Decl.")
*Member, Prairie Rivers Network*.....DEC7

Dent, Howard ("Dent Decl.")
*Member, Chesapeake Climate Action Network*.....DEC10

Grenter, Patrick ("Grenter Decl.")
*Beyond Coal Senior Campaign Representative, Sierra Club*.....DEC15

Hays, Carol ("Hays Decl.")
*Executive Director, Prairie Rivers Network*.....DEC19

Hickey, John ("Hickey Decl.")
*Chapter Director for the Missouri Chapter, Sierra Club*..... DEC23

Jacko, Laura ("Jacko Decl.")
*Member, Sierra Club* .....DEC29

Keck, Paul, Dr. ("Keck Decl.")
*Member, Sierra Club* .....DEC33

Limbach, Kurt ("Limbach Decl.")
*Member, PennEnvironment* .....DEC38

Masur, David ("Masur Decl.")
*Executive Director, PennEnvironment* .....DEC44

McManus, Brendan ("McManus Decl.")
*Member, Sierra Club* .....DEC50

Popovich, Ted ("Popovich Decl.")
*Member, Clean Water Action* .....DEC54

Rolke, Paul ("Rolke Decl.")
*Member, Sierra Club* ..... DEC59

Schaeffer, Eric ("Schaeffer Decl.")
*Executive Director, Environmental Integrity Project*..... DEC65

Smith, Tim ("Smith Decl.")
*Member, Emerald Coastkeeper (Waterkeeper Alliance, Inc.)* .....DEC72

Thorp, Lynn ("Thorp Decl.")
*National Campaigns Director, Clean Water Action* .....DEC77

Tidwell, Michael ("Tidwell Decl.")
*Founder and Director, Chesapeake Climate Action Network*.....DEC83

Whitehouse, Timothy ("Whitehouse Decl.")
*Executive Director, Physicians for Social Responsibility, Chesapeake, Inc.* .....DEC87

Yaggi, Marc A. ("Yaggi Decl.")
*Executive Director, Waterkeeper Alliance, Inc.* ..... DEC92

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

| | |
|---|---|
| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

## DECLARATION OF DALAL ABOULHOSN

I, Dalal Aboulhosn, declare as follows:

1. My name is Dalal Aboulhosn. I am over 18 years old and have personal knowledge of the matters set forth in this declaration.
2. I am Sierra Club's Deputy Legislative Director for Water, Lands and Democracy. I have worked in this position or similar positions in the Sierra Club since 2008. As a result, I have extensive knowledge of the interests and activities of the Sierra Club.
3. Sierra Club is a nonprofit corporation incorporated in California, with more than 800,000 members nationwide. The Sierra Club is dedicated to exploring, enjoying, and protecting the wild places of the Earth; to practicing

and promoting the responsible use of the Earth's resources and ecosystems; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives.

4. The Sierra Club has a longstanding commitment to ensuring that the Clean Water Act is fully enforced, properly implemented and ultimately used to ensure clean water for all Americans. The Sierra Club trains volunteers to monitor their local waterways for pollutants, has fought for stronger regulations to safeguard waterbodies, and lobbies federal government agencies to fully implement and protect keystone environmental laws, like the Clean Water Act. The Sierra Club recognizes that to have a robust economy and healthy communities, our government must be committed to the Clean Water Act and its principles to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," with the goal that all waters be fishable and swimmable where possible.

5. The Sierra Club has an interest in ensuring that the Clean Water Act is fully implemented and enforced with respect to steam electric power plants, and coal-fired power plants in particular, because power plants cause more toxic water pollution than any other industrial source in the country. This toxic water pollution harms our members' interest in a healthy environment.

6. In furtherance of that interest, the Sierra Club regularly reviews and submits comments on the wastewater discharge permits issued to coal-fired power plants. By engaging in these permitting processes, the Sierra Club seeks to ensure that these permits contain stringent limits on discharges of coal ash and flue gas desulphurization wastewater, among other provisions. Sierra Club also brings enforcement actions against dischargers, including coal-fired power plants, where evidence shows they are violating the limits or other terms of their permit.
7. Sierra Club has sought to further its interests in full implementation of the Clean Water Act with respect to coal plants by filing a lawsuit against U.S. EPA to force the agency to update its effluent limitation guidelines (ELGs) for coal plants. That lawsuit resulted in the agency issuing a proposed ELG rule in the summer of 2013, on which Sierra Club and its members filed extensive comments.
8. EPA finalized the ELG rule in September 2015 ("ELG rule"). This rule represents a significant step forward in reducing water pollution from coal plants, by requiring those plants to eliminate discharges of bottom ash and fly ash transport water, and limiting the amount of mercury, selenium, arsenic, and nitrate/nitrite in discharges of scrubber wastewater. According to EPA, this rule will reduce the amount of pollution these plants discharge

annually by 1.4 billion pounds, including significant reductions in the amount of toxic metals that harm the health of people who use the affected lakes and rivers for drinking water or recreation.

9. The ELG rule became effective on January 4, 2016 and since that time, Sierra Club's staff and volunteers have worked to ensure that National Pollutant Discharge Elimination System (NPDES) permits issued to steam electric power plants fully incorporate the ELG rule and establish compliance deadlines consistent with the rule's original mandate that plants achieve compliance as soon as possible beginning November 1, 2018.

10. On April 25, 2017, EPA published a notice in the Federal Register postponing certain compliance deadlines in the ELG Rule by an indefinite amount of time. 82 Fed. Reg. 19,005 (Apr. 25, 2017) ("ELG Stay"). Sierra Club opposed that stay.

11. In June 2017, EPA published a proposed rule to stay or delay the compliance deadlines in the ELG rule. Sierra Club and its allied organizations submitted detailed technical comments opposing that proposal and the Club's members and supporters expressed opposition at a July 31, 2017 public meeting held by EPA. EPA ultimately issued a final rule in September 2017 that delayed the compliance deadlines for bottom ash and scrubber wastewater by two years while EPA reconsiders the effluent limitations for those two

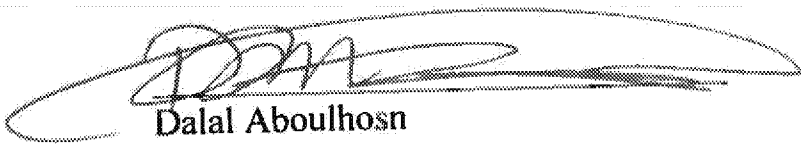
wastestreams. Authorities issuing NPDES permits must now determine a compliance date that as soon as possible beginning November 1, 2020.

12. This delay in compliance deadlines for the bottom ash and FGD wastewater standards means that communities affected by discharges of these two highly toxic wastewater streams will be denied the benefits of cleaner water for at least two more years. Furthermore, the uncertainty created by this delay, as well as EPA's suggestion that it may grant yet another delay in several years, has caused some state permitting agencies to set compliance dates for coal plants that are over five years away, without any other showing that the plant requires that much time to come into compliance.

13. The rule delaying ELG compliance allows continued pollution of the lakes and rivers that Sierra Club's members use for drinking water and recreation. The health of our members and their children will continue to be harmed by the toxic pollutants discharged by these plants, including mercury, lead, and other heavy metals. Their ability to enjoy local lakes and rivers for fishing, swimming, wildlife viewing and other interests protected by the Clean Water Act will remain diminished for longer than if the Delay Rule were never issued.

14. I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Dated July 12, 2018.



Dalal Aboulhosn

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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|---|---|
| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF DON DAVIS**

I, Don Davis, declare and state as follows:

1. I am over 21 years of age and suffer from no impairment or disability affecting my ability to give truthful testimony. I have personal knowledge of the facts set forth below.

2. I am a member of Prairie Rivers Network. I have been a member since 2014. I joined Prairie Rivers Network in 2014 because I am a landowner on the Sangamon River floodplain and I am concerned about mercury and other toxic metals accumulating in the food web of the local environment. I have been involved in conservation efforts since the 1970s and I also recreate and fish on Illinois rivers, so I have an interest in preserving the integrity of natural ecosystems and also in making them safe for fishing and other uses.

3. I reside at 6363 Stagecoach Road, Pleasant Plains, IL, 62677. I have lived at this address since 1994. I have lived in the Springfield area my whole life.

4. My wife and I are co-owners, along with two other couples, of a land right on 185 acres of along the Sangamon River, roughly 20 miles downstream from where Sugar Creek enters the Sangamon. We have been co-owners since 2002. The 185 acres have been under a conservation easement since before we became co-owners. We have managed the land as part of the Conservation Reserve Enhancement Program, which is a state and federal cooperative effort to improve water quality and reduce sediment and nutrient loads on the Sangamon River.

5. I know that the coal plant known as Dallman Station, also known as City, Water, Light and Power, discharges wastewater into Sugar Creek. I know that the wastewater from Dallman Station contains heavy metals and other pollutants from coal ash. Water pollution from Dallman Station flows through Sugar Creek into the Sangamon River, and ultimately through the 185 acres that I co-own. Our land is in a floodplain. Sediment in the river, which includes pollution from Dallman Station, frequently redeposits on our land. Pollutants in the river and in sediment also accumulate up the aquatic and terrestrial foodchains into the fish and game that my family eats.

6. Of the co-owners of the land right, I get the most recreational use of the area. My family and I all fish in the Sangamon River. We fish within the 185-acre area that we co-own, and we also fish further upstream, as far upstream as the Route 29 bridge. I do not fish closer to Sugar Creek because I am concerned about the mercury, lead, cadmium, and other heavy metals from coal ash that are in the water.

7. My family and I also hunt in the area. We hunt and eat deer, turkey, and squirrels that use the Sangamon River as a water supply. Since we are on a food chain that starts with the Sangamon River, I am concerned about the heavy metals and other pollutants that I am being exposed to.

8. I know that the Environmental Protection Agency set new pollution limits for coal plants in 2015. I also know that the EPA is reconsidering those pollution limits right now and has pushed back the compliance dates for some of the existing limits. I oppose any delay in implementing the new pollution limits because I believe that any delay will directly harm my family, my community and myself by increasing the amount of pollution that we might be exposed to.

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on this 3 day of ~~June~~ July, 2018.

Donald R. Davis

Don Davis

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF HOWARD DENT**

I, Howard Dent, declare and state as follows:

1. I am over 21 years of age and suffer from no impairment or disability affecting my ability to give truthful testimony. I have personal knowledge of the facts set forth below.

2. My name is Howard Dent. I am 71 years old. I own a home on Cobb Neck in Charles County at 14725 Banks O'Dee Road, Newburg, MD 20664 with my wife Nancy Schertler. My home is located less than three miles from the Morgantown Generating Station. I have owned this home for 18 years.

3. I have been concerned about air and water pollution generally for my whole adult life. I remember seeing the pictures of Los Angeles covered in smog in the 1950s and have been concerned about the health impacts of pollution since then.

4. Since I live so close to the Morgantown coal plant, I am particularly concerned about the pollution coming from that facility. I attended a hearing at Piccowaxen Middle School about ten years ago when Mirant Mid-Atlantic, LLC, the Morgantown facility operator at the time, was proposing to install new scrubbers and a new smokestack at the plant. I went to show my support for strong pollution limits at the facility. The Chesapeake Climate Action Network ("CCAN") was at that hearing and, in February 2010, I signed up to be member of CCAN. In 2011, I helped CCAN in a lawsuit to clean up pollution from the Faulkner coal ash landfill, which was used to store coal ash generated at the Morgantown facility. I participated in that action because of my concern about toxic metal pollution in waterways. Today, I remain an active member of CCAN.

5. I am aware that coal plants such as Morgantown discharge large quantities of toxic water pollution, including mercury and arsenic. I am aware that these pollutants are discharged into the Potomac River where they pollute the water, accumulate in fish, and harm people's health. I am extremely concerned about the impact of this pollution on my health, the health of my community, water quality, and the larger environment.

6. I live on Cuckold Creek, off the Potomac River and downstream from the Morgantown facility. I regularly use and enjoy the local waterways. I own a boat and I go boating and swimming at least once a week when conditions permit. I can see the smokestacks at Morgantown from my boat when I take it into the Potomac River. I am concerned about the effects that water pollution can have on my health when I swim and boat in these waterways. I closely watch the state's Department of Natural Resources website to check for warnings not to swim due to pollution and I heed those warnings.

7. I eat the crabs I catch from the banks of the creek. I also fish about once or twice a year from my boat or my pier. I eat the croaker and other smaller fish I catch. I do not eat the catfish I catch in part because I worry about the levels of pollution that build up in larger fish such as catfish. I have read literature that warns not to consume more than one or two catfish a month, and I refrain from eating it entirely. My friends have a standing invitation to fish from my pier and they often eat the catfish they catch. I worry about the impact that eating this catfish is having on their health.

8. In partnership with the Chesapeake Bay Foundation, I raise oysters at my home. The organization delivers about 1,000 baby oysters, or spat, each September. I raise them on the shallow banks of Cuckold Creek over the winter, and return them to the organization in June. I have partnered with the Chesapeake

Bay Foundation to raise oysters for them for about 17 years. I raise them because of their ability to filter and clean the water and contribute to a healthier environment. I bring them to local festivals and use them as an educational tool.

9. Cuckold Creek is largely sheltered from the Potomac River and, as a result, it takes 25 to 30 days for the creek to flush entirely. By comparison, creeks that are suitable for marinas flush once every five days. Because the water in which I swim, boat, crab, fish, and raise oysters is so sheltered, I worry about prolonged exposure to pollution that enters the creek.

10. I have been worried about the environmental and health impacts of coal plants such as Morgantown for well over a decade. I am aware that in 2015 the U.S. Environmental Protection Agency (EPA) took steps—through the Steam Electric Effluent Limitations and Guidelines (ELG) rule—to limit the amount of toxic metals and other harmful pollutants that facilities such as Morgantown can discharge into our waterways. I am aware that, under the new administration, the EPA delayed certain compliance deadlines in the 2015 final ELG rule. I understand that while compliance with the rule is delayed, the Morgantown coal plant near me may not be subject to limits that would otherwise apply. This means that the amount of toxic pollution entering the Potomac River will likely be higher than it otherwise would be.

11. I am concerned that a delay or rollback of the ELG rule will allow facilities—particularly the Morgantown facility—to continue to release an unlimited amount of toxic pollution into the water. I am concerned about what continuous exposure to high levels of toxic pollution will have on me, my friends, and the waterways. If the ELG rule were to go into effect and Morgantown was required to limit the toxic pollution it discharges into the river, I would be less concerned about the health impacts of swimming and boating in the water. I would be less concerned about my friends eating the fish they catch from my pier. I would still probably not eat too much catfish myself because I do not like the taste, but I would be much less concerned about the health impacts of doing so.

12. Limits on toxic pollution that coal plants such as Morgantown are allowed to discharge would help to address the above-discussed concerns and harms and protect me, my family, my community, and aquatic species from the harms of toxic water pollution.

I declare under penalty of perjury that the foregoing is true and correct, to the best of my knowledge, belief, and recollection, pursuant to 28 U.S.C. § 1746.

Executed on this 8 day of July, 2018.

Howard Dent

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental, Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF PATRICK GRENTER**

I, Patrick Grenter, declare as follows:

1. My name is Patrick Grenter. I am over 18 years old and have personal knowledge of the matters set forth in this declaration.
2. I am a Senior Campaign Representative with the Beyond Coal campaign of the Sierra Club for the states of Pennsylvania and Maryland. In this position, I oversee the Sierra Club's campaign to limit water pollution from coal-fired power plants. In this position, I have become familiar with many of the communities that live downstream of these plants, including individual Sierra Club members who are deeply concerned about the impact of coal plant water pollution on their health.
3. As part of our efforts to ensure that coal plants comply with all applicable public health and environmental protections, the Sierra Club often comments on National Pollutant Discharge Elimination System ("NPDES") permits issued by state permitting authorities.

Our goal is to make sure that these permits contain the strongest possible effluent limits justified by the law and science, and adequate monitoring to enable enforcement of those limits.

4. The Cheswick Power Plant in Springdale, Pennsylvania is one of the nearly 20 coal-fired power plants in the state that I am familiar with as a result of my work for the Sierra Club. The Cheswick plant discharges bottom ash transport water and flue gas desulphurization ("FGD") water to Allegheny River about 5 miles upstream of the town of Verona and is within the Pittsburgh metropolitan area. Just a few miles further upriver, the Keystone Power Plant in Plumcreek Township also discharges bottom ash transport water and FGD wastewater to the Allegheny River.

5. I am aware that in 2015, EPA finalized the Effluent Limitation Guideline ("ELG") rule that would prohibit plants like Cheswick and Keystone from discharging bottom ash transport water, and would limit the amount of mercury, arsenic, selenium, and nitrogen in the Cheswick and Keystone plants' discharges of FGD wastewater. I am also aware that these public health protections will not apply to the Cheswick and Keystone plants until their permits are renewed.

6. The Pennsylvania Department of Environmental Protection ("PaDEP") issues NPDES permits to the coal plants affecting Sierra Club's members. Many of these NPDES permits, including those for Cheswick and Keystone, had not been renewed in the last five years, as the Clean Water Act requires. Last year, Sierra Club and the Lower Susquehanna Riverkeeper brought legal action against PaDEP to expedite its renewal of NPDES permits for ten coal plants. This lawsuit led to a settlement agreement in which PaDEP agreed to issue draft NPDES permits for those ten facilities on various dates

throughout 2018, and to issue final, updated NPDES permits for the facilities by March 2019.

7. I am aware that on September 18, 2017, EPA issued a rule delaying by two years the "as soon as possible" compliance dates for bottom ash transport water and FGD wastewater. This rule has had a significant effect on our advocacy for clean water in Pennsylvania.

8. On December 29, 2017, PaDEP issued a draft NPDES permit for the Cheswick plant, which set December 31, 2023 as the compliance date for both bottom ash transport water and FGD wastewater. The draft permit provided no rationale for this delayed compliance date, but instead deferred to the justification submitted by Cheswick's operator which rested substantially on the regulatory uncertainty created by EPA's delay of the ELG compliance deadlines. Sierra Club, PennEnvironment, Clean Water Action, Environmental Integrity Project, and other environmental and public health advocates filed comments opposing this delayed compliance and submitting an expert analysis that the plant could easily comply with the standards much sooner.

9. PaDEP also recently issued a draft NPDES permit for the Keystone Power Plant, which also gave the plant until the last possible date to comply with the bottom ash and FGD standards, citing EPA's delay of compliance deadlines the Delay Rule and attendant regulatory uncertainty. Sierra Club, Clean Water Action, and Environmental Integrity Project also filed comments opposing those provisions in the draft permit.

10. Under our settlement, we expect PaDEP to issue final permits for Cheswick and Keystone by the end of this year. We also expect PaDEP to issue final NPDES permits for four other coal plants in the next year: Conemaugh, Homer City, Montour, and Bruce Mansfield.

11. Because EPA has postponed by two years the compliance deadlines in the ELG rule for the new standards for bottom ash transport water and FGD wastewater, and because PaDEP has already relied upon that delay in setting compliance deadlines for Cheswick and Keystone, I am concerned that when PaDEP renews all of these NPDES permits as required in the settlement agreement, it will include compliance deadlines for bottom ash transport water and FGD wastewater that are at least two years later than the deadlines they would have imposed under the 2015 Rule. As a result, I believe the rule delaying compliance deadlines will allow these coal plants, including the Cheswick and Keystone plants, to continue discharging toxic water pollution to the Allegheny River and other Pennsylvania waterways for longer than would otherwise have happened.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Dated this __10th of July 2018 in Harrisburg, Pennsylvania.

Patrick Grenter

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF CAROL HAYS**

I, Carol Hays, declare and state as follows:

1. I am over 21 years of age and suffer from no impairment or disability affecting my ability to give truthful testimony. I have personal knowledge of the facts set forth below.

1. I am the Executive Director of Prairie Rivers Network (PRN), serving in this position since 2015. PRN advocates for clean water and healthy rivers for the people, fish and wildlife of Illinois and is the independent state affiliate for Illinois of the National Wildlife Federation.

3. PRN champions clean, healthy rivers and lakes and safe drinking water to benefit the people and wildlife of Illinois. Drawing upon sound science and working cooperatively with others, we advocate public policies and cultural values

that sustain the ecological health and biological diversity of water resources and aquatic ecosystems. We work to protect water quality and river health from the impacts of coal waste pollution and the toxic chemicals which can leach from coal ash ponds into groundwater, lakes and river, polluting drinking water supplies and threatening fish and wildlife.

4. PRN regularly submits comments to ensure that National Pollution Discharge Elimination System (NPDES) permit renewals for major polluters comply with the law. PRN has also brought lawsuits on behalf of its members to combat illegal and unsafe discharges of water pollutants from fossil-fuel-burning facilities. For example, we've commented on NPDES permits for many Illinois coal-fired power plants, including Springfield, Newton, Meredosia, Powerton, Vermilion, and Waukegan. We've brought lawsuits against coal-fired polluters, such as our groundwater violation case against four Midwest Generation plants and challenging the permit at Waukegan.

5. Prairie Rivers Network is a membership based non-profit organization, with members across Illinois. PRN's nearly 1000 members use Illinois' many rivers for fishing, swimming, boating, drinking, and enjoying wildlife. Many of our members live and recreate downstream of plants that would need to update limits for the ELG rule, and would be adversely affected by the discharge of pollutants that degrade water quality.

6. I am aware that in 2015 the U.S. Environmental Protection Agency (EPA) promulgated the Steam Electric Effluent Limitations and Guidelines (ELG) rule to limit the amount of toxic metals and other harmful pollutants that facilities such as Dallman in Springfield, IL can discharge into our rivers and other waterways. I am also aware that the EPA decided to reconsider the 2015 final ELG rule, indefinitely delayed certain compliance deadlines in April, 2017, and replaced that indefinite delay with a two-year delay for certain waste streams in September, 2017. I understand that if while the rule is delayed, coal plants in Illinois will be able to discharge wastewater that would otherwise be subject to common-sense limits on toxic pollution. In a state like Illinois, with many coal plants, any delay can directly lead to a large increase in the cumulative pollution load entering Illinois waterways.

7. I know that many of the pollutants in coal ash wastewater bio-accumulate, building up to unsafe levels in fish and other species. These pollutants, and other coal ash pollutants, threaten the health of PRN members who fish in Illinois waterways, and who drink water from Illinois waterways, and also threaten the wildlife that PRN members regularly enjoy while recreating on Illinois waterways. A delay of ELG compliance deadlines, or rollback of the ELG rule, will allow coal plants to continue to release an unlimited amount of toxic pollution into the water, exposing PRN members and wildlife to higher levels of pollution than they would

otherwise be exposed to if the rule was allowed to go into effect. This, in turn, will increase the likelihood that PRN members will experience adverse health effects and a diminished ability to enjoy Illinois' ecological wealth.

8. Promptly implementing the ELG rule's limits on pollution that coal plants are allowed to discharge into the water will help to address the above-discussed harms and protect PRN members.

I declare under penalty of perjury that the foregoing is true and correct, to the best of my knowledge, belief, and recollection, pursuant to 28 U.S.C. § 1746.

Executed on this 5th day of July, 2018.

Carol Hays

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br>Respondents. | Case No. 18-60079 |

**DECLARATION OF JOHN HICKEY**

I, John Hickey, declare as follows:

1. My name is John Hickey. I am over 18 years old. The information in this declaration is based on my personal experience and my review of publicly available information.
2. I live in Webster Groves, St. Louis County, Missouri, 63119 with my spouse and my 15- and 16-year old sons. I have lived at my current address since 2001.
3. I am the Chapter Director for the Missouri Chapter of the Sierra Club. I have held this position for over five years. In my position as Chapter Director, I

work with the Club's volunteer leadership and members on local, state and national issues and campaigns.

4. I am a current member of the Sierra Club. I joined the Sierra Club in 1997 because of my care for the environment and my desire to be part of an organization that worked on environmental policy issues.

5. My responsibilities as Chapter Director for the Missouri Chapter include trying to clean up water pollution from Ameren's Labadie coal fired power plant. For example, we spent several years encouraging the Missouri Department of Natural Resources ("MDNR") to re-issue Labadie's nearly sixteen-year overdue National Pollutant Discharge Elimination System ("NPDES") permit. During the public process to reissue that permit, the Missouri Chapter pushed for stronger limits on the amount of pollution Labadie can discharge to the Missouri River. When the Department finally reissued the permit in 2015, the agency failed to include strong limits in the permit, which the Chapter has appealed.

6. The Chapter has also pushed for stronger protections in the NPDES permits for Ameren's Meramec and Rush Island coal fired power plants and asked the state to implement groundwater monitoring due to concerns about unlined leaking coal ash ponds at both locations.

7. I live downstream from Ameren's Labadie coal fired power plant. I am aware that the Labadie coal plant discharges coal ash wastewater from its facility to the Missouri River. I know that this wastewater includes toxic pollution like mercury, arsenic and selenium, which are harmful to humans, wildlife, and the environment.
8. The water my family and I use for drinking, cooking and bathing is supplied by Missouri American Water. I know that Missouri American Water draws its water supplies from the Missouri River approximately 15 to 20 river miles downstream of the Labadie plant.
9. I enjoy spending time outdoors and recreate on or along the Missouri River downstream of the Labadie coal plant where I enjoy viewing the wildlife and aesthetic beauty of the area. In recent summers, my family and I have engaged in all-day canoe trips on the Missouri River downstream from the Labadie plant. These trips included swimming in the Missouri River. My family and I hope to go again this year. A few times a year, my family and I will bike along the Katy Trail, which runs parallel to the Missouri River downstream of the Labadie plant, and hike and wade along the creeks that feed into the river. The creeks are sometimes backed up with water from the Missouri River when it is high. In the past, my family and I have hiked down to the Missouri River bed to look for prehistoric bones and antler sheds.

10. I have long been concerned with the water quality of the Missouri River downstream of Labadie. I am concerned about the impact of the water pollution from Labadie's wastewater to my family and me when we use the water for drinking, cooking and bathing.

11. I am also concerned that Labadie's wastewater makes the Missouri River unhealthy for contact while swimming and hiking in the creeks when they are backed up. I am also concerned about the impact of Labadie's wastewater on the fish and wildlife in the area, including the endangered Pallid Sturgeon that live downstream of Labadie. These concerns affect my aesthetic and recreational enjoyment of the Missouri River.

12. I know that in 2015, the U.S. EPA issued a final rule limiting the amount of toxic pollution contained in wastewater discharged by coal plants like Labadie into waterbodies like the Missouri River. I know that the rule prohibited the discharge of coal ash wastewater, requiring the use of dry handling or closed loop systems once the state permitting authority incorporates those requirements into the water pollution permit for power plants like Labadie. And while certain aspects of the rule, including the limitations on leachate discharges, should have been more stringent, I strongly supported the rule's limitations on the discharge of coal ash wastewater.

13. I would benefit from the implementation of EPA's 2015 rule, and the improved water quality that will result from a reduction in the amount of toxic pollution that the Labadie coal plant will be allowed to discharge into the Missouri River.

14. I am also aware that in September 2017, the new Administrator of EPA issued a new rule allowing plants like Labadie to wait an additional two years before eliminating discharges of coal ash wastewater. This means that instead of coming into compliance with EPA's water quality safeguards as soon as possible after 2018, plants like Labadie, Meramac, and Rush Island will be able to continue discharging harmful coal ash wastewater into Missouri waterways for at least another several years. I am particularly concerned about the health and environmental impacts of EPA's delay of coal ash protections because it means that Labadie will continue, for at least two more years, discharging toxic coal ash wastewater into the Missouri River upstream of where my family's drinking water comes from, and in the area where my family and I enjoy boating, recreating, and observing wildlife.

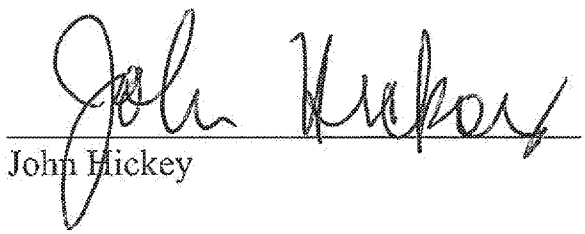
15. EPA's 2015 rule would expedite the reduction of toxic pollution in the Missouri River and improve my and my family's enjoyment and use of the river. EPA's new rule delaying the implementation of those safeguards will

delay those benefits, and will therefore adversely impact my enjoyment of the river and result in prolonged exposure to potential health impacts from coal ash pollution.

16. If the Court overturns EPA's new rule delaying those coal ash compliance deadlines, I will benefit from the improved water quality that will result from the reduction in the amount of toxic pollution that the Labadie coal plant will be allowed to discharge into the Missouri River.

17. Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that, to the best of my knowledge, all of the foregoing is true and correct.

Dated July 9, 2018.



John Hickey

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br>Respondents. | Case No. 18-60079 |

**DECLARATION OF LAURA JACKO**

I, Laura Jacko, declare as follows:

1. My name is Laura Jacko. I am over 18 years old. The information in this declaration is based on my personal experience and my review of publicly available information.
2. I live at 437 North Ave, Verona PA 15147. I have lived at this address for approximately 5 years.
3. I am a current member of the Sierra Club. I first joined the Sierra Club in 2003 when I was in college. While in college, I was part of a team that helped with sustainability projects on campus and in the surrounding areas. Two years ago, I joined the Pennsylvania Chapter of the Sierra Club. I have always been interested in protecting the environment, and I wanted to

volunteer so that I could make more of a difference in keeping my community clean and educating others about the importance of environmental initiatives.

4. Since joining the Pennsylvania Chapter, I have been actively involved in numerous events that raise public awareness about the air and water pollution in Pittsburgh and its surrounding areas as well as how environmental initiatives can help create healthier communities. Most of my efforts over the past year have been targeted at exposing the amount of air and water pollution that the Cheswick Power Plant produces. Among other things, I encourage people to attend meetings, I hand out flyers, I organize movie screenings about pollution, and I help with a project that analyzes the amount of ash that accumulates in peoples' backyards from the Cheswick Power Plant.

5. I live less than a half mile from the Allegheny River. The Cheswick Power Plant is only five and a half miles upstream from my community. I am well aware that coal plants, including the Cheswick Power Plant, discharge heavy metals such as lead and mercury into the Allegheny River. I am also aware that the Keystone Generating Station discharges similar pollutants that end up in the Allegheny River. I know that these heavy metals are harmful to



page 3 Jul 12 2018 10:47AM Magee-Womens Foundation 4126418919
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humans and the environment and that they have been found in drinking water sources.

6. I am very concerned about this pollution because my water comes from the Oakmont Water Authority, which gets its water directly from the Allegheny River.

7. I am not only concerned for my own health, but also for my 10-month-old baby's health and my husband's health. I have been researching to see if there is an in-home filter that can remove these heavy metals from our water. The filters that are available are cost prohibitive because they would require extreme renovation of my water system and kitchen. Every day I live in fear that I am mixing my baby's formula with toxic water.

8. In addition to being concerned that our drinking water is polluted, I worry about having too much exposure to the water when recreating in the Allegheny River. The water is far too polluted to swim in, and I know that it is not healthy to eat fish that have been caught in the Allegheny.

9. I enjoy kayaking and taking rowing classes on the Allegheny and I would be likely to engage in these activities more often if the water was cleaner.

10. I am aware that in 2015 the U.S. EPA issued a new rule that limits the amount of toxic pollution that coal plants are allowed to discharge. I know that this rule established more stringent standards that would help reduce



Jul 12 2018 10:47AM Magee-Womens Foundation 4126418919 page 4
08:49:40 07-12-2018 4 4126418919
DEC31

toxic pollution from the Cheswick Power Plant and the Keystone Power Plant into the Allegheny River. I also know that, under the 2015 rule, coal plants are required to comply with the new standards as soon as possible beginning in 2018.

11. I am very concerned that EPA issued a rule to delay the compliance deadline for this rule by two years, allowing coal plants like the Cheswick Plant and the Keystone Plant to continue discharging coal ash wastewater into the Allegheny until after 2020. If EPA's action to delay the compliance deadline is overturned, my family and I will benefit from the improved water quality that will result from reduction in the amount of toxic pollution that the Cheswick Generating Station and the Keystone Generating Station are allowed to discharge.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Dated July 18, 2018.

Laura Jacko



page 5 Jul 12 2018 10:47AM Magee-Womens Foundation 4126418919
DEC32
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**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF DR. PAUL KECK**

I declare as follows:

1. My name is Dr. Paul Keck. I am over 18 years old. The information in this declaration is based on my personal experience and my review of publicly available information.
2. I live in West Olive, Michigan, on Croswell, the first street north of the Consumer's Energy J.H. Campbell coal-fired power plant, with frontage on Lake Michigan. My family has resided here for the last 26 years.
3. I am a current member of the Sierra Club and joined over a year ago because I want to help address significant pollution issues in my community, including but not limited to local air and water pollution. Over 35 million

people derive their drinking water from Lake Michigan. I feel that the Sierra Club gives me a voice in environmental and conservation issues, including water and air quality issues.

4. By living on Lake Michigan we frequently enjoy recreating on and along the lake. My wife and I frequently walk barefoot along the shoreline, swim, stand-up paddleboard, and occasionally fish on the lake. We eat the fish that we catch, and we also eat fish caught elsewhere in Lake Michigan that we procure locally such as whitefish. My grandson and my wife swim on his frequent summer visits.

5. From my deck, I can see Consumer's pier and discharge pipe extending 1200 feet out into Lake Michigan. At the western end of the pier, the discharge pipe is diverted to the bottom of the lake, continuing in a north-westerly direction for approximately 1/2 mile. The discharge site creates turbulence on the surface of the water, clearly visible. Local fishermen typically fish here in the spring and fall for perch, which are attracted to the warm water discharge. Until recently, I thought from a conversation with the facilities manager, that this pipe only discharged uncontaminated cooling water for their generators. I have just recently learned that the plant actually discharges polluted wastewater, including coal ash wastewater, which contains metals that are neurotoxic to everyone, but even more so to young individuals such as my grandson.

6. I have also learned that the impoundments at the Campbell plant that hold coal ash wastewater are not lined with clay, rendering them fully permeable. I am concerned that pollutants from this wastewater are contaminating the groundwater, which is of a concern as all the homes in this area including mine, utilize well water for cooking, bathing, drinking and irrigation.
7. I am concerned that the pollutants in both the wastewater and smokestack discharge from the plant are affecting my health and that of my family, my friends, my neighbors, and those living far beyond such as Grand Rapids, and Ada, Michigan. Both my wife and I have documented elevated levels of lead, mercury and arsenic in our blood, and adipose tissue, typical of those chronically exposed to the air and water released from coal fired power plants. I personally have undergone IV chelation treatments to reduce these levels, all of which I have clinically documented. I am concerned that my continued exposure to pollution from the Campbell Coal burning power plant, through its wastewater discharges, air emissions, and probable groundwater contamination is affecting my health. I intend to have my mercury and lead levels assayed again in December of 2018 to see if my post chelation toxin levels have risen, which would be solely attributed to the pollution from Campbell Power Plant's activities.
8. I know that these pollutants, all know carcinogens, cause a multitude of serious health issues for those exposed, including humans and animals.

9. As I learn more about the pollutants in the coal ash wastewater released from the impoundments at the Campbell plant into Lake Michigan, Pigeon Lake, and the Pigeon River, I am far less likely to swim or fish in Lake Michigan. I have serious concerns about my grandson and wife doing so as well.

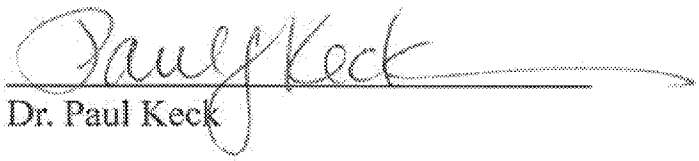
10. I am aware that in 2015 the U.S. EPA issued a rule limiting the amount of toxic wastewater pollution discharged by coal plants like Campbell into bodies of water like Lake Michigan, Pigeon Lake, and the Pigeon River. I know that this rule prohibits the discharge of coal ash wastewater, requiring the use of dry handling or closed loop systems. Implementation of this rule will not only eliminate discharges of coal ash wastewater from Campbell Power Plant into Lake Michigan, Pigeon Lake and Pigeon River, but might also reduce groundwater contamination if the plant stops using its unlined impoundments, followed by appropriate remediation.

11. I am also aware that in September of last year, the EPA allowed plants like Campbell to wait two additional years before eliminating discharges of coal ash wastewater. The Michigan Department of Environmental Quality, which issued the wastewater discharge permit to the Campbell plant, cited this EPA rule when it gave the Campbell plant until the very end of 2023 to eliminate its discharges. As a result, the Campbell plant will be able to continue discharging coal ash wastewater into Lake Michigan, Pigeon Lake, and Pigeon River near my home for over five (5) more years. If the EPA's action

to delay the compliance deadline is overturned, I, as well as the 35 million individuals drinking the water from our Great Lakes eco-system encompassing 8 states and Canada, will benefit from the improved water quality and from the reduction in the amount of toxic pollution that the Campbell plant is allowed to discharge into our water and airways.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Dated July 11, 2018.



Dr. Paul Keck

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF KURT LIMBACH**

I, Kurt Limbach, declare and state as follows:

1. I am over 18 years of age. The information in this declaration is based on my personal knowledge and my review of publicly available information.
2. I live at 350 Creek Road, Bolivar, PA. I have lived at this address since 1990.
3. My home is located on approximately 229 acres of land, portions of which overlook the Conemaugh River. I chose to make this part of Western Pennsylvania my home because of the quality of life that living here provides me. In particular, I value the opportunities for outdoor recreation and connection with the natural environment.
4. I have been a PennEnvironment member since 2002. I joined PennEnvironment because they work to limit pollution and uphold the law in Pennsylvania. I

worked with PennEnvironment on a successful suit in 2007 against the Conemaugh Plant, which was violating its discharge limits for metals in the Conemaugh River so PennEnvironment and Sierra Club sued them.

5. I have been a Sierra Club member since 1996. I joined Sierra Club because of my interest in environmental activism and because I see the tremendous environmental destruction from pollution in Western Pennsylvania. I know there's another, better way to do things and to generate electricity, and I appreciate the fact that Sierra Club fights for that and for the protection of our natural resources.

6. My home is located four (4) miles from the Conemaugh Generating Station.

7. I am aware that water pollution and effluent discharges from coal-fired power plants contribute to a wide range of negative public health and environmental effects. I know that pollutants such as arsenic, mercury, and selenium have been linked to adverse health impacts and that these and numerous other harmful pollutants are discharged into the Conemaugh River from the Conemaugh power plant. I am deeply concerned about water pollution from this large source and about the health effects of exposure to toxins in its discharges.

8. In the past, I have regularly kayaked on the Conemaugh River downstream of the Conemaugh Generating Station. I enjoy kayaking this stretch of the river given its close proximity to my home, because of the Class 1, 2, and 3 rapids

that make for enjoyable paddling, and because of the natural beauty surrounding that part of the river. I plan to spend time this summer kayaking this section of the river; I generally kayak between May and July when river water levels are sufficiently high. I often would like to get out of my kayak and go for a swim when it's hot outside, however, I avoid swimming in the river because of my concerns with the polluted effluent discharges from the Conemaugh plant and so as to limit the levels of pollution to which I am potentially exposed. It would be nice to spend more time on the Conemaugh River near my house; it's such a beautiful area, but the river itself is so damaged and polluted it degrades my experience.

9. Although I enjoy fishing, I avoid doing so on the Conemaugh River because of the water pollution and my concern that the fish will be polluted with toxins. In fact, because of the pollution in my stretch of river—only a couple miles downstream of the Conemaugh plant, there are limited fishing opportunities; the river is basically dead for aquatic life, even bugs you would expect to see on the water are largely nonexistent. There are pockets here and there where you may find a couple fish (for instance where cleaner feeder streams hit the main branch of the Conemaugh) but, for most stretches of the river, you could go three or four miles and not see any fish. In addition, I know that some of the pollutants discharged from the Conemaugh power plant, such as selenium and mercury,

are bioaccumulative and, therefore, I would not feel comfortable eating fish from the river downstream of the plant. I am the Secretary and on the Board of Directors of a local fish club, the Tubville Trout Club Unlimited, a 501(c)(3), and we operate in one of the waters that feeds into the Conemaugh doing activities such as teaching children how to fish. I would like to do some of the same activities in the Conemaugh, but I cannot because there is no fishing opportunity—I would not eat the fish that are there.

10. I am aware that in 2015 the U.S. Environmental Protection Agency ("EPA") promulgated the Steam Electric Effluent Limitations and Guidelines ("ELG") rule to limit the amount of toxic metals and other harmful pollutants that facilities such as Conemaugh can discharge into our rivers and other waterways. I understand that the 2015 ELG rule would reduce water pollution in the Conemaugh River, thereby improving environmental and public health. Such improvements would also increase opportunities for ecotourism in my area and likewise positively impact property values in my community. I am also aware that the ELG rule requires plants including the Conemaugh Plant to comply with limits on toxic discharges by a certain date and that the Pennsylvania Department of Environmental Protection ("DEP") would have to include these limits in Conemaugh's next National Pollutant Discharge Elimination System ("NPDES") permit. I am also aware that in 2017 the EPA decided to delay

certain compliance deadlines in the rule and to reconsider the 2015 final ELG rule. I understand that if the rule is delayed, the Conemaugh Plant may not have to meet these common sense limits on how much toxic pollution can enter the Conemaugh River until years later than they were originally scheduled to.

11. The 2015 ELG rule would require DEP to incorporate new limits on coal ash pollution when it next renews the NPDES permit for the Conemaugh Generating Station, which would benefit me. I would worry less about my health and the health of my friends and family and would be able to more fully enjoy the stretch of Conemaugh River near my home with stricter limits in place for this plant's discharges. I would kayak more, fish more, and my property would likely be worth more. I, and my whole community, would benefit from the resulting improvement in water quality and from knowing that Conemaugh's permit would be renewed with additional limits for toxic metals and pollutants known to be discharged by coal-fired power plants. EPA's delay of certain deadlines in the ELG rule means that DEP may renew the NPDES permit for the Conemaugh Plant with later compliance dates. This will allow the toxic pollutants that otherwise would be reduced or eliminated to continue to flow into the Conemaugh River, meaning my health, recreational, environmental, and even economic interests will continue to be injured. Without stricter mandatory limits required to be met within the ELG rule's

original timelines, the Conemaugh Plant will continue to pollute as much as it can get away with, even if the plant has the technology and capacity to reduce its pollutant discharges.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed this 5 day of ~~June~~ July, 2018.

Kurt Limbach

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF DAVID MASUR**

I, David Masur, declare and state as follows:

1. I am over 18 years of age and competent to give truthful testimony. I have personal knowledge of the facts provided below.

2. I am the Executive Director of PennEnvironment, and have been since 2002. I am responsible for staff management, strategic planning, direct advocacy on our environmental agenda, and the day to day operations of the organization. I also oversee any environmental litigation in which PennEnvironment is involved.

3. PennEnvironment is a Pennsylvania non-profit corporation organized for the purpose of conducting public interest research, policy

development and analysis, public education, litigation, and advocacy to protect the environment and people of Pennsylvania, including the quality of Pennsylvania's water. Its principal place of business is 1420 Walnut Street, Suite 650, Philadelphia, PA 19102. PennEnvironment was formed in 2002 to carry on the environmental work previously conducted by the Pennsylvania Public Interest Research Group. PennEnvironment currently has approximately 15,000 members in Pennsylvania.

4. Protecting the quality of Pennsylvania's waters has been one of PennEnvironment's lead environmental priorities. PennEnvironment regularly engages the Pennsylvania Department of Environmental Protection ("DEP") regarding Clean Water Act issues, reviews DEP and U.S. Environmental Protection Agency ("EPA") files on Pennsylvania facilities that have National Pollutant Discharge Elimination System ("NPDES") permits, and releases reports on water quality in Pennsylvania. In 2007, PennEnvironment filed a successful suit in federal court alleging thousands of illegal discharges of pollutants including metals such as selenium from the Conemaugh Generating Station. In 2011, we won our case and the court ordered the Conemaugh Plant's to pay $3.75 million, $3.5 million to restore the Conemaugh River and an additional $250,000 in civil penalties.

5. PennEnvironment undertakes its clean water programs on behalf of its members. Its efforts to promote clean water are directly responsive to the interests of its members, who have indicated repeatedly that this is a high priority for them. Because many of its members become citizen activists in support of PennEnvironment's programs, PennEnvironment works to keep its members informed and to hear their concerns. Through PennEnvironment, individual citizens are able to act collectively and to speak with a more powerful voice.

6. People often decide to join PennEnvironment after a canvasser comes to their door to discuss the organization and to offer them the opportunity to become a member, or after they hear a PennEnvironment staffer speak about the organization's campaigns or projects at a local meeting. PennEnvironment members join by paying a membership fee, and they are asked to renew that financial commitment each year. PennEnvironment regularly communicates with its members to inform them about new developments, to encourage them to become engaged in its work, and to solicit their feedback. Such communication takes the form of door-to-door canvassing, newsletters, annual reports, interactive email action alerts, member appreciation events, member surveys, advisory committees, and events where members interact with experts from the environmental,

labor, business, or political fields. PennEnvironment relies on the input of its members in shaping its policy priorities, and the pursuit of litigation to enforce the Clean Water Act has always received strong member support.

7. Many of PennEnvironment's member live, fish, swim, kayak, and enjoy the wildlife along the waterways immediately downstream from coal plants in Pennsylvania. Our members are concerned about the quality of the fish they eat, the quality of the water they swim in, and the health of the environment that they are a part of.

8. I, like many of PennEnvironment's members, am concerned about the pollutants in coal ash wastewater, including heavy metals like mercury and selenium, and other pollutants, that can be toxic to humans and wildlife. I know that many of these pollutants bioaccumulate, making fish unsafe to eat.

9. Due to our successful lawsuit for illegal discharges at the Conemaugh Plant and our work reviewing National Pollutant Discharge Elimination System ("NPDES") permits and discharges of pollutants in Pennsylvania, I am aware that many of the NPDES permits for coal-fired power plants in Pennsylvania are expired, and specifically that the NPDES permit for the Conemaugh Generating Station is chronically overdue for renewal, having expired in 2006.

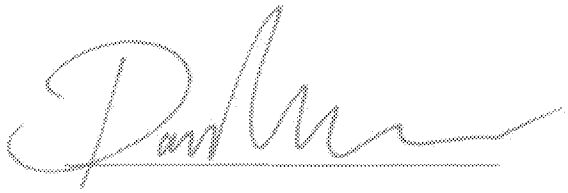
10. I am aware the EPA finalized a regulation limiting water pollution from power plants in 2015. I know that the rule requires dry handling of fly ash and bottom ash and sets numeric limits on the amount of pollution in flue gas desulfurization (scrubber) wastewater. I know that the rule would dramatically reduce the toxic pollution load coming from these plants, and that the rule would require limits on discharges from the Conemaugh Plant.

11. I am also aware that the EPA decided to reconsider the 2015 rule and delay the compliance deadlines in the existing rule. EPA's about-face, and any delay in compliance with the rule or weakening of the rule, will inevitably expose PennEnvironment members to more pollution than they would otherwise be exposed to. This will lead to an increased risk of cancer and other health effects to PennEnvironment members who eat fish from affected waterways, an increased risk to the health of the wildlife that PennEnvironment members regularly enjoy, and a general degradation of the environment that I and my organization work so hard to protect, including in the areas downstream of the Conemaugh and Cheswick Plants.

12. Instead of delaying and rolling back the common-sense protections in the ELG rule, EPA should be working harder to protect and

improve Pennsylvania waterways for the benefit of PennEnvironment members, all Pennsylvania citizens, and the environment itself.

I declare under penalty of perjury, this 3 day of June, 2018, that the foregoing is true and correct.



David Masur

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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|---|---|
| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF BRENDAN McMANUS**

I, Brendan McManus, declare as follows:

1. My name is Brendan McManus. I am over 18 years old. The information in this declaration is based on my personal experience and my review of publicly available information.
2. I live at 462 Taylor Street, Pittsburgh, PA, 15224. I have lived at this address for approximately 1.5 years.
3. I am a current member of the Sierra Club. I joined the Sierra Club 3.5 years ago. I first became involved with the Sierra Club as an intern with the Massachusetts Chapter where I worked to mitigate beach erosion. Among other things, I helped with the Chapter's "beach nourishment" initiative,

which involves using sand from another source to replace the sand from a beach suffering from erosion. I am interested in protecting waterbodies and surrounding areas because I enjoy swimming and other water sports.

4. In March of 2018, I joined the Allegheny Group of the Sierra Club's Pennsylvania Chapter. I have remained active with the Sierra Club because I enjoy being outside, and it is important to me to help protect the environment.

5. When I first moved to Pittsburgh, I worked for Sustainable Pittsburgh. Currently, I work for a kayak company that is located on the Allegheny River. The confluence of the Allegheny and Monongahela Rivers is less than a half mile from where I work. After the two rivers converge, they become the Ohio River. My duties involve helping customers check in, outfitting customers with boats and other gear, assisting customers get in and out of the river, and paddling out into different areas of the Allegheny, Monongahela, and Ohio Rivers to check currents and assess whether there are any hazards that could be dangerous to customers.

6. In addition to having a job that allows me to spend time outside, I also enjoy recreating outdoors. I especially enjoy swimming and being in and around water. However, I don't swim in the Allegheny River because it is not exactly pristine. The water is actually very polluted, and it is well known

that it is not safe to swim in. I would love to swim in the Allegheny River if it was less polluted.

7. I am aware that the Cheswick Generating Station and the Keystone Generating Station are upstream from where I work, and that these coal plants discharge coal ash and other wastewater from their facilities that ends up in the Allegheny River. I've heard the most about the Cheswick Generating Station, which is approximately 16 miles upstream from where I work. I know that the Cheswick Generating Station dumps wastewater directly into the Allegheny River that includes toxic pollution like mercury, arsenic and selenium, which are harmful to humans, wildlife and the environment. I am also aware that the Keystone Generating Station is further up the Allegheny River and creates similar pollution.

8. I am also aware the Monongahela River is one of the busiest rivers for coal transportation in America. I saw in the news last month that some coal barges had an accident and spilled coal into the Monongahela River. I'm concerned that this spill caused lead and other heavy metals to enter the river.

9. I am aware that in 2015 the U.S. EPA issued a new rule limiting the amount of toxic pollution contained in wastewater discharged by coal plants. I am also aware that this rule established more protective standards that would

( PRODUCT

help reduce toxic pollution from the Cheswick Generating Station and the Keystone Generating Station into the Allegheny River. I also know that EPA's rule required coal plants to comply with this new rule as soon as possible beginning in 2018.

10. I am further aware that recently EPA issued a rule to delay the compliance deadline for this rule by two years, allowing coal plants like the Cheswick Generating Station and the Keystone Generating Station to wait until 2020 or even later before complying with the rule's more protective standards concerning coal plant wastewater. As a result, these coal plants, as well as other coal plants, will be able to continue discharging toxic wastewater into the Allegheny and Monongahela Rivers for several more years. If EPA's action to delay the compliance deadline is overturned, I will benefit from the improved water quality that will result from reduction in the amount of toxic pollution that the Cheswick Generating Station and the Keystone Generating Station are allowed to discharge.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Dated July 9, 2018.

Brendan McManus

Brendan McManus

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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|---|---|
| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br>Respondents. | Case No. 18-60079 |

**DECLARATION OF TED POPOVICH**

I, Ted Popovich, declare as follows:

1. My name is Ted Popovich. I am over 18 years old. The information in this declaration is based on my personal knowledge.
2. I live in Franklin Park Borough, Allegheny County, Pennsylvania, 15143. I have lived at this location for approximately two-and-a-half years. For 8 years prior I lived in Ben Avon, Pennsylvania, which is a few miles south of my current residence.
3. I am a current member of Clean Water Action. I joined Clean Water Action approximately 7 years ago. In addition to being a member, I serve on Clean Water Action's Western Pennsylvania Steering Committee. I also frequently participate in Clean Water Action-sponsored lobby days in

Harrisburg, PA to speak with state legislators about public health and environmental issues that concern me.

4. I am active in many environmental causes in my community. I am co-founder and an active member of Allegheny County Clean Air Now, which is a citizen's group spreading awareness of the health and quality of life impacts of pollution in Allegheny County. I have also been a member of the Group Against Smog and Pollution ("GASP") since 2007.

5. I first became active with Clean Water Action and other environmental organizations because I was concerned about the air pollution from the DTE Shenango Incorporated coke plant on Neville Island, from which I used to live only a half-mile away until I relocated to get further away from the air pollution. I am also concerned about water pollution in Pennsylvania's rivers, in particular the potential impact that wastewater from fossil fuel extraction and combustion can have on my drinking water sources. I get my drinking water from the West View Water Authority, which had to upgrade its treatment system because bromide from improperly treated fracking wastewater discharged upstream interacted with drinking water disinfectants to form harmful trihalomethane (THM). I am aware that coal-fired power plants like the Cheswick plant can also

discharge pollution containing bromide and I am concerned about the impact these pollution discharges can have on my drinking water.

6. I enjoy recreating outdoors, especially near Pennsylvania's beautiful rivers. I am an avid hiker, biker, and cross country skier. I hike or walk up to five miles a day. When hiking or walking my dogs, I enjoy viewing the surrounding wildlife and aesthetic beauty of the riparian areas around Pennsylvania's rivers. I often hike on trails along the Allegheny River near the Cheswick power plant because of the spectacular beauty of the area, and because I enjoy participating in the annual Rachel Carson Trail Challenge that takes place in that area.

7. I am aware that the Cheswick power plant discharges coal ash wastewater from its facility into the Allegheny River. I am aware that this wastewater includes toxic contaminants like mercury, arsenic, lead and selenium, which are harmful to humans, pets, wildlife and the environment.

8. I hike along the Allegheny River near the Cheswick power plant several times a year, and in past years I have hiked there as many as 12-15 times to train for the Rachel Carson Trail Challenge. I can see the Cheswick power plant and its coal ash wastewater pond when I hike along the river. When hiking, I enjoy observing birds and other wildlife in the area.

9. I have long been concerned with the water quality along this stretch of the Allegheny River. I worry that the coal ash wastewater discharged by the Cheswick power plant has a negative impact on the fish and wildlife living in and near the Allegheny River. This concern affects my aesthetic and recreational enjoyment of the Allegheny River.

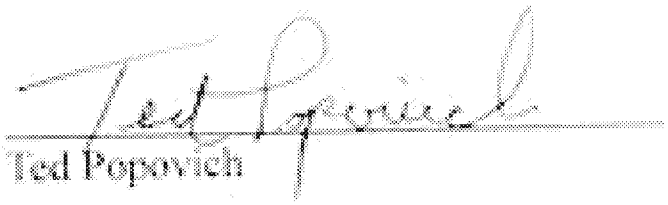
10. I am aware that in 2015 the U.S. EPA issued a new rule limiting the amount of toxic pollution contained in wastewater discharged by coal fired power plants like Cheswick power plant into waterbodies like the Allegheny River. I know that the new rule prohibits the discharge of coal ash wastewater, requiring the use of dry handling or closed loop systems, and that it requires that discharges of wastewater from power plant air pollution "scrubbers" meet lower limits on the pollution they are allowed to discharge by using enhanced wastewater treatment. I support this new rule and would benefit from its implementation, and from the improved water quality that would result from the Cheswick power plant being required to reduce its discharges of toxic pollution to the Allegheny River.

11. I am also aware that in September 2017, the Administrator of EPA issued a new rule allowing plants like Cheswick to wait an additional two years before reducing the toxic pollution in their discharges. I am also aware that EPA has said that it may delay the compliance deadlines again in the

future, which creates considerable uncertainty around if or when the Cheswick plant will be required to reduce its pollution. This delay of two years or longer deprives me of the benefits I would receive from the improved water quality that would result from reduction in the amount of toxic pollution that Cheswick power plant will be allowed to discharge into the Allegheny River. Because of this postponement, I will continue to be harmed by discharges of toxic pollution that the rule would have required Cheswick to eliminate or reduce.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Dated: July 10, 2018



Ted Popovich

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.<br>Respondents. | ) | Case No. 18-60079 |

**DECLARATION OF PAUL ROLKE**

I, Paul Rolke, declare and state as follows:

1. I am a citizen of the United States and I own a home and cattle ranch at 1439 Rolke Ranch Road, Franklin, Texas 77856. My property is approximately 2,300 acres, which I co-own with my sister and mother. I am retired, but use and enjoy my property for recreational and aesthetic purposes, for rest and relaxation, and to raise cattle.

2. I am currently an active member of Sierra Club and have been a member off and on since the 1980's. I am a member of Sierra Club because I support and believe in its environmental work, and I am interested in protecting the health of my community.

3. I use my property to raise cattle. I own and graze approximately 600-700 head of cattle on my property. The cattle graze from grass grown on the property, and regularly wade in and drink water from Duck Creek downstream of the Luminant Oak Grove power plant and coal ash landfill. My sister directly oversees the cattle operation and lives on the property.

4. I also use the property for recreational, aesthetic, and other domestic purposes. There are three different wells that draw water from the underlying aquifer for drinking water and domestic water use at five different houses on the property. I regularly visit the property for rest and relaxation, and regularly walk along Duck Creek and throughout the property, enjoying the scenic views and wildlife and birds that live on and migrate through the property.

5. Several years ago, we became aware that the Oak Grove power plant discharges coal ash and scrubber wastewater, as well as landfill leachate and other pollutants, into Duck Creek and downstream through our property. I am also aware that the facility disposes of coal ash and scrubber wastewater into an adjacent landfill and coal ash impoundments, which discharge wastewater directly into the creek. My property is located approximately 6 miles downstream from the Luminant Oak Grove Power

Plant and coal ash impoundment. The Oak Grove coal ash impoundment discharges coal ash waste to Duck Creek, which runs directly through my property. The area where Duck Creek runs through my property is characterized by relatively flat bottomlands, which flood easily. At least five to seven times a year, Duck Creek will flood extensively, potentially spreading coal ash residue over large swaths of my property.

6. I have been vocal about my concerns about coal ash waste and contamination from the Oak Grove power plant. In approximately 2010, I participated in a contested case hearing involving the water pollution discharges and coal ash landfill at the Oak Grove power plant. Through my involvement in that case, I became aware that the facility stores coal ash in a landfill that is protected only with an earthen liner, which is more susceptible to leak toxic pollutants and heavy metals such as mercury into the nearby groundwater than synthetic liners. I understand that these toxic pollutants may already be entering Duck Creek through surface water or leachate discharges. As part of that proceeding, I voiced my concern about the Oak Grove power plant's pollution, and the company's apparent unwillingness to do any more than the bare minimum to protect against environmental contamination.

7. I am deeply concerned about the safety, health, and environmental risks of discharges from the Oak Grove power plant and coal ash impoundment for me, my family, and the nearby community. I understand that scrubber and coal ash wastewater from power plants like Oak Grove contain many hazardous contaminants, including arsenic, cadmium, chromium, lead, mercury, selenium, and thallium. I am concerned that discharges from the power plant and its coal ash ponds have adverse impacts to my property, my cattle, and my enjoyment of the creek.

8. I know that coal ash wastewater discharges contain highly toxic combinations of neurotoxins and carcinogens and chemicals that can cause other diseases. My family and I are often concerned about the impacts that the Oak Grove discharges could have to both surface and groundwater. We draw drinking water from the wells on our property and we worry about the impacts that pollution from Oak Grove may have on our drinking water. We also worry about the impacts that coal ash or scrubber pollution in Duck Creek may have on our cattle which drink from the creek and graze on grasses that may be covered in coal ash residue from flood events.

9. I am also worried about the harm to the environment that can be caused by the coal ash. I worry about the risks to the health of Duck Creek and fish and wildlife from coal ash entering the creek. I enjoy walking along

the creek, and watching the wildlife in and around the creek. I am afraid that these recreational pursuits will be lost if the creek is polluted by coal ash or chemicals leaching from the coal ash impoundment.

10. I understand that in 2015, EPA issued a rule limiting the amount of toxic pollution contained in wastewater discharged by coal plants like Oak Grove. I know that the new rule prohibits the discharge of coal ash wastewater, requiring the use of dry handling or closed loop systems, and requires scrubber wastewater to meet new, more stringent pollution limits. I am generally supportive of the rule because it will reduce the amount of pollution that Oak Grove is allowed to discharge into Duck Creek.

11. I am also aware that in September 2017, EPA gave plants like Oak Grove another two years to eliminate harmful discharges of coal ash wastewater. Instead of ceasing all coal ash discharges as soon as possible after 2018, power plants like Oak Grove could continue discharging dangerous coal ash wastewater for years.

12. I supported most aspects of EPA's 2015 rule because it would force the Oak Grove power plant to reduce toxic pollution that flows into Duck Creek, thereby improving my use and enjoyment of my property and creek itself. EPA's delay of the wastewater rule will allow Oak Grove to continue polluting Duck Creek, and will result in more overall pollution than

under the 2015 rule. As a result, EPA's recent actions to delay wastewater rules will delay the benefit of cleaner water on my property, and will impair my enjoyment of the creek and my own property, and will result in my family and I being exposed to the potential health impacts from coal ash pollution for longer than we would otherwise be subjected to it.

13. If the Court invalidates EPA's effort to delay the implementation of the coal ash rule, I will benefit from the improved water quality on my property. A court order overruling EPA's delay will also reduce the risk that toxic coal ash waste water could impair our drinking water.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that all of the forgoing is true and correct.

Signed on this 10th day of July 2018.

Paul Rolke

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

# DECLARATION OF ERIC SCHAEFFER

I, Eric Schaeffer, declare and state as follows:

1. My name is Eric Schaeffer, and I am the Executive Director of the Environmental Integrity Project ("EIP"). I am over 18 years of age and suffer from no impairment or disability affecting my ability to give truthful testimony. I founded EIP in 2002, and have served as the Executive Director since then. I am also the Secretary of EIP's Board of Directors.

2. EIP is a non-profit organization based in Washington, D.C. and Austin, Texas, dedicated to ensuring the effective enforcement of state and federal environmental laws to protect public health and the environment. EIP's offices are

located at 1000 Vermont Avenue, NW, Suite 1100, Washington D.C., 20005, and 1206 San Antonio Street Austin, Texas 78701.

3. EIP's three objectives are: to provide objective analysis of how the failure to enforce or implement environmental laws increases pollution and affects the public's health; to hold federal and state agencies, as well as individual corporations, accountable for failing to enforce or comply with environmental laws; and to help local communities in key states obtain the protection of environmental laws.

4. To further this mission, EIP advocates for laws to protect public health and the environment from air and water pollution from coal-fired power plants and other large sources of pollution. As part of its efforts to ensure effective enforcement of environmental laws, EIP participates in federal and state rulemakings related to water pollution from the utility industry and brings lawsuits to enforce the Clean Water Act on behalf of community and environmental groups that are harmed by coal plant pollution. In addition, EIP uses public data obtained through FOIA requests to develop reports, media materials, and litigation briefs that educate the public and decision-makers.

5. I am aware that the EPA promulgated a final rule regulating the discharge of pollutants from the Steam Electric Industry, known as the "Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating

Point Source Category" ("ELG Rule") in November, 2015. The ELG Rule primarily regulates wastewater from the storage and disposal of the byproducts of coal combustion, generally known as "coal ash."

6. I am also aware that the EPA stayed certain compliance deadlines in the rule on April 25, 2017, and replaced that with a two-year delay of certain compliance deadlines for bottom ash transport water and flue gas desulfurization wastewater on September 18, 2017.

7. EIP invests substantial time and effort in documenting ground and surface water pollution caused by coal ash disposal. EIP uses this information to help ensure that coal-burning power plants comply with state and federal environmental laws, and to advocate for improvements to existing laws to protect human health and the environment from the unsafe disposal of coal ash. For example, in 2013 EIP published a report with the Sierra Club and other organizations detailing how coal-burning power plants were frequently discharging wastewater without monitoring of, or limits on, toxic pollution, often into waterways that were impaired for coal ash pollutants. In 2015 EIP published a report with Physicians for Social Responsibility and other organizations explaining that the EPA had underestimated the monetary value of the human health benefits of the proposed ELG Rule. EIP has also published a series of reports documenting

coal ash "damage cases," which include many cases of surface water impacts from coal ash.

8. In addition to informing the public about discharges of pollution from power plants and other industrial facilities through reports, EIP represents citizens and groups, on a pro bono basis, whose health, recreational, aesthetic and other environmental interests are harmed by coal-burning power plants and other industrial sources in their communities. Among other things, EIP advocates on behalf of these citizens and groups by reviewing permits required under the Clean Water Act and challenging them when necessary, and by bringing enforcement actions when sources violate conditions of state-issued permits or federal law. For example, EIP was involved in legal challenges to several Clean Water Act permits in Tennessee that failed to include the case-by-case limits on toxic pollutants that are required in the absence of comprehensive Effluent Limitations Guidelines.

9. Our ability to carry out our mission, and specifically our ability to provide legal assistance to people affected by coal ash pollution, is directly dependent on the extent to which EPA carries out its statutory mandate under the Clean Water Act, including the extent to which EPA regulations protect human health and the environment consistent with the Clean Water Act's requirements.

10. The ELG Rule replaced a legal framework under which states, when issuing permits to power plants (or EPA itself, when acting as the permitting

authority), were required to make case-by-case determinations about the best available technology to treat toxic coal ash pollutants that power plants seek authorization to discharge. The ELG Rule's establishment of uniform, national effluent limitations based on best available technology that must be incorporated into all power plant permits creates a "floor" of protections that will allow EIP to make more effective use of its limited resources, because we will not have to review or challenge case-by-case determinations of best available technology, or the lack thereof, when advocating for greater protections for downstream communities.

11. The delay in the implementation of the ELG Rule has created, and will continue to create, increased discharges of coal ash pollutants as permit-writers set compliance dates later than they would otherwise have been set, or defer permit renewals while they wait for EPA to revise the ELG Rule.

12. The ELG Rule, when implemented, will also provide monitoring data that will provide EIP and the affected public with evidence of each permitted facility's compliance or noncompliance with the Clean Water Act. While implementation is delayed or on hold, monitoring data will continue to be either absent or difficult to obtain.

13. Because our ability to carry out our mission depends on EPA's adherence to its Clean Water Act mandate, EIP invested substantial time and effort

to push EPA to issue a strong ELG Rule. In 2009, EIP notified EPA of our intent to sue the Agency for failing to meet its statutory obligation to review and, as appropriate, revise, the Effluent Limitations Guidelines for the Steam Electric Power Generating Category. We then participated in litigation and negotiations that resulted in a consent decree establishing a deadline for EPA to promulgate a final ELG Rule.

14. During the ELG rulemaking, EIP submitted comments on the proposed rule, released public reports about the significance, strengths, and weaknesses of the proposed rule, and met with EPA and other government actors to advocate for a strong final Rule.

15. I have lived in the Washington, D.C. area, in the heart of the Chesapeake Bay watershed, for 40 years. Over that time I have fished in, kayaked and canoed on, swum in, and otherwise enjoyed the waterways of the Chesapeake Bay watershed, specifically including the Potomac River, and I have relied on water from the Potomac River for consumption and household use. The same is true of many of EIP's Board and staff.

16. I am aware that the EPA anticipates significant improvements in Chesapeake Bay water quality as a result of this rule. Specifically, the EPA identified nine steam electric power plants that discharge wastewater to the Chesapeake Bay Watershed, including, for example, the Brandon Shores, Herbert

A. Wagner, and Chalk Point power plants in Maryland, and the Brunner Island power plant in Pennsylvania. Reducing pollution from these plants will help reduce the water quality impairments that are currently affecting the Chesapeake Bay, thereby increasing the opportunities that I, my Board, and my staff have for enjoying the waterways of the Chesapeake Bay watershed.

17. While implementation of the ELG Rule is delayed or on hold, power plants in the Chesapeake Bay Watershed will continue to discharge unsafe amounts of pollution, with adverse consequences for myself, my Board, my staff, and other users of the Chesapeake Bay.

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on this 28 day of June, 2018.

Eric Schaeffer, Executive Director
Environmental Integrity Project

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental, Protection Agency, et al.,<br>Respondents. | Case No. 18-60079 |

**DECLARATION OF TIM SMITH**

I, Tim Smith, declare as follows:

1. My name is Tim Smith. I have personal knowledge of the matters stated herein. I am over the age of 18 and suffer from no legal incapacity. I submit this declaration in support of Waterkeeper Alliance, Inc.'s challenge of delay of compliance with certain requirements of the Effluent Limitations Guidelines rule for power plants ("ELG rule").

2. I live in Navy Point, Florida, which is near Pensacola. I grew up in this area in the Northwest Panhandle. I left for a military career but moved back after I retired.

3. I am a member of the Emerald Coastkeeper, which is a member of Waterkeeper Alliance, Inc. I joined Emerald Coastkeeper because I love spending

time out on the water, boating, fishing, and swimming in the bays and rivers throughout our region, and I want to see those waters protected and made better for my kids and grandkids and future generations to enjoy.

4. I have known about the James F. Crist Generating Plant ("Plant Crist"), a coal-fired power plant in Pensacola, since I was a kid. I had always heard that the Escambia River that runs near Plant Crist was polluted, and that I should not go swimming or fishing there or eat fish that were caught there.

5. Now as an adult, I am aware that the pollution comes from coal ash that is produced from the coal that is burned in the plant, some of which makes its way into wastewater that the plant dumps into the Escambia River. I know that this wastewater contains mercury and other toxic heavy metals. I understand that these substances can have negative effects on human health, and can harm fish, birds, and other organisms that are exposed to them.

6. I frequently recreate in waters throughout the region, but I rarely go anywhere near Plant Crist. I don't fish just for sport. It costs real money to pay for a recreational fishing license and buy gas for my boat to go fishing, and I want to be able to eat the fish that I catch. But I wouldn't feel safe eating fish caught from the Escambia River downstream from Plant Crist. I also would not feel safe swimming in the water there.

7. I would love to fish and swim on the Escambia River, if I felt like it

was safe to do so. I would visit there regularly if it was not for the pollution from Plant Crist. It upsets me that the pollution from Plant Crist has taken away from me the ability to catch and eat fish from the Escambia River. For someone like me who fishes to supplement my grocery budget, taking away a fishing area takes away from my ability to provide for myself.

8. Because of my concerns about pollution on the Escambia River, I have visited there only on occasion and do not enjoy visiting there. I do most of my boating, fishing, and swimming in Pensacola Bay. I go spear fishing there regularly; in some years I have gone as often as once or twice per week during the summer. I enjoy eating the flounder that I catch there. I also enjoy traveling to islands around Pensacola Bay where I can sit on the sand bars and go swimming.

9. I have recently realized, however, that the area of Pensacola Bay where I go spear fishing is only about 15 miles downstream of Plant Crist, because the Escambia River dumps out into Escambia Bay which dumps out into Pensacola Bay. I have become concerned that the flounder that I catch and eat from Pensacola Bay are contaminated by pollution from Plant Crist. Flounder are a migratory, predatory species, and I am concerned that the flounder that I have been catching and eating from Pensacola Bay may have ranged closer to the Escambia River and Plant Crist and picked up some of the contamination from there, resulting in me being personally exposed to contamination from Plant Crist when I

eat flounder from Pensacola Bay. This could have an impact on my health, and it may cause me to reconsider where I go fishing in the future.

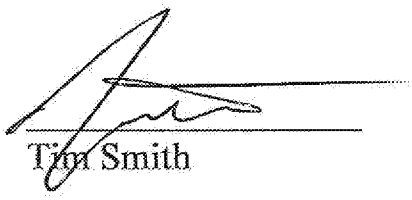
10. I am aware that the United States Environmental Protection Agency ("EPA") issued the ELG rule in 2015 to set national pollution standards for power plants like Plant Crist that require them to invest in new technologies to clean up their wastewater. I am also aware that the ELG rule originally required Plant Crist to comply as soon as possible beginning in 2018, but that the Florida Department of Environmental Protection ("DEP") has not yet renewed the permit that would set a compliance date for Plant Crist. Further, I am aware that the current leadership at EPA issued a rule last year that delays compliance with the ELG rule's pollution standards by two years or more, and that Florida DEP cited that EPA delay rule in a recent draft of a new permit for Plant Crist that would not require compliance with the ELG rule's pollution standards until 2023.

11. I am harmed by EPA's rule delaying Plant Crist's compliance with the ELG rule's pollution standards. To my understanding, it's only a question of whether and when the corporation that owns Plant Crist will spend the money needed to bring it into compliance. I firmly believe that, with all of the money that the owners of the plant have made over the years, they should have to invest a little bit more into better practices that give something back to the community. It should be people over profits, not the other way around.

12. I strongly support the lawsuit by Waterkeeper Alliance, Inc., and other organizations to challenge EPA's rule delaying compliance with the ELG rule pollution standards. I am harmed each day that Plant Crist is not required to come into compliance with the ELG rule's pollution standards, because that is another day that I don't feel safe fishing or swimming in the Escambia River near the plant, and another day that the fish that I catch in Pensacola Bay may be exposed to contamination from the plant. Thus, if the EPA delay rule were struck down by a court, I would benefit personally. It would also be meaningful to me because it would help improve the quality of the water in the Escambia River and other waterways for my kids and grandkids and future generations.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed on July 09, 2018.



Tim Smith

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF LYNN THORP**

I, Lynn Thorp, declare as follows:

1. I am the National Campaigns Director for Clean Water Action. I have worked for Clean Water Action in this position for 19 years.

2. In my role, I oversee all of Clean Water Action's national campaigns, which include policy research and advocacy around national environmental and public health laws, with an emphasis on the Clean Water Act and the Safe Drinking Water Act.

3. Clean Water Action is a national, non-profit membership organization incorporated under the laws of the District of Columbia, with its principal place of business in Washington, DC. Clean Water Action conducts campaigns on the national level as well as state and local campaigns in offices around the country.

Clean Water Action maintains two offices in the Commonwealth of Pennsylvania: Philadelphia and Pittsburgh.

4. Clean Water Action's mission includes prevention of pollution in the nation's water, protection of natural resources, creation of environmentally-safe jobs and businesses, and empowerment of people to make democracy work. Its activities include policy research and advocacy, public education and grassroots mobilization. Clean Water Action has been involved with the Clean Water Act since our founding in 1972 and has also been involved in implementation activities throughout its history. Clean Water Action's core programs have always included efforts to strengthen the Act's implementation and enforcement and to work toward the Act's goal of zero discharge of pollution into waters of the United States. Since 2013, advocating for the United States Environmental Protection Agency ("EPA") to finalize and implement a rule establishing stringent revised "Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category" (also known as the "ELG Rule") has been a priority campaign for Clean Water Action.

5. During the 2013 public comment period for the proposed ELG Rule, Clean Water Action filed comments signed by over 200 national, state and local public interest organizations and collected nearly 45,000 comments from our members and other supporters, which called on EPA to finalize an ELG Rule that

would require steam electric power plants to eliminate discharges of bottom ash, fly ash, and flue gas desulfurization ("FGD") wastewater. Since 2013 Clean Water Action has frequently communicated with our members and the public (via emails, posts to our followers on social media, blogs, and other channels) on the extent of the water pollution from steam electric power plants, which discharge billions of pounds of heavy metals, nutrients, and other harmful chemicals to waters of the U.S. every year, and the need for a strong ELG Rule.

6. In 2013 Clean Water Action contributed to and co-released a major report on the extent of water pollution coming from steam electric power plants across the country, *Closing the Floodgates: How the Coal Industry is Poisoning Our Water and How We Can Stop It*, along with organizations Sierra Club, Earthjustice, Environmental Integrity Project, and Waterkeeper Alliance. In 2015 Clean Water Action also contributed to a report with Physicians for Social Responsibility, Environmental Integrity Project and other organizations explaining that the EPA had underestimated the monetary value of the human health benefits of the proposed ELG Rule.

7. Since EPA published its final ELGs for steam electric power plants in the fall of 2015, Clean Water Action has advocated at the national level, as well as in states where we have chapters, that the rule be implemented effectively. We believe the pollution limits required under the new ELGs, which include complete

elimination of fly and bottom ash coal combustion wastewater and stringent treatment of FGD wastewater, will result in significant improvements in water quality and public health.

8. One way that Clean Water Action has advocated for effective implementation of the new ELGs is by becoming a party to litigation pending over the rule to help defend it against legal challenges. In December 2015, the U.S. Court of Appeals for the Fifth Circuit granted Clean Water Action leave to intervene, along with other environmental organizations, as respondents to petitions for review of the new ELGs filed by the Utility Water Group and two of its members. In April 2016, the Fifth Circuit also granted Clean Water Action leave to intervene as respondents to petitions for review of the new ELGs filed by two other industry parties, Duke Energy Indiana and the City of Springfield, Missouri.

9. On April 25, 2017, EPA published a notice in the Federal Register postponing certain compliance deadlines in the new ELGs for an indefinite period of time. Also in April 2017, EPA successfully moved the Fifth Circuit to hold the litigation over the rule in abeyance while the Agency considers petitions for reconsideration filed by opponents of the rule. Subsequently, in August 2017, EPA announced that it intended to reconsider the ELG rule's new effluent limitations for bottom ash and FGD wastewater. In September 2017, EPA issued a new rule

replacing the indefinite stay of compliance deadlines with a two-year delay of compliance for bottom ash and FGD effluent limitations, with compliance now not required until November 1, 2020 at the earliest.

10. As a result of EPA's actions, ongoing efforts to implement the new ELGs have been disrupted and indefinitely delayed. State permitting agencies are unlikely to issue permits to power plants incorporating compliance deadlines prior to November 1, 2020 for the new ELGs. Further, in many cases, state agencies that have issued permits since the September 2017 delay rule was issued have set the compliance deadlines for bottom ash and FGD wastewater even later than November 1, 2020, due to the uncertainty around implementation of the ELG rule that EPA has created through its actions.

11. Any delay in implementing the new ELGs adversely affects Clean Water Action and its members. Our members use and enjoy water bodies throughout the country that are harmed by pollution from power plants, and any delay or weakening of the new ELGs deprives our members of the benefits of the rule's water quality and public health protections. The harm suffered by Clean Water Action and its members from EPA's postponement of the new ELGs' compliance deadlines would be redressed by an order of the court vacating EPA's action and directing EPA to inform permitting agencies and industry to resume their efforts to implement the rule.

12. When an individual becomes a member of Clean Water Action, his or her current residential address is recorded in Clean Water Action's membership database. This database is regularly updated to add new members, reflect address changes, and change membership status for those who are no longer active members.

13. Clean Water Action currently has over 600,000 members nationwide, including 47,000 members in Pennsylvania.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed on July 6, 2018.

Lynn W. Thorp

Lynn Thorp

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br>Respondents. | Case No. 18-60079 |

**DECLARATION OF MICHAEL TIDWELL**

I, Michael Tidwell, declare and state as follows:

1. I am over 21 years of age and suffer from no impairment or disability affecting my ability to give truthful testimony. I have personal knowledge of the facts set forth below.

2. I am the founder and director of the Chesapeake Climate Action Network (CCAN).

3. CCAN is a grassroots non-profit organization dedicated to raising awareness regarding the health and environmental impacts of global warming, and promoting the transition to clean energy generation in the mid-Atlantic region—specifically Maryland, Virginia, and Washington, D.C.

4. The centerpiece of CCAN's mission is to educate and mobilize citizens in order to create a societal switch towards clean energy solutions and away from fossil fuel energy generation.

5. CCAN's efforts to transition to a clean-energy-powered society include ensuring that facilities that are powered by fossil fuels do not threaten public health or the environment.

6. CCAN's efforts include educating the public as to the risks associated with pollution from fossil-fuel-burning facilities and advocating for the reduction or elimination of such pollution. CCAN and its members have dedicated considerable time, effort, and other resources to advocating for stronger pollution standards, including standards relating to discharges from fossil-fuel-fired facilities.

7. CCAN regularly submits comments to ensure that National Pollution Discharge Elimination System (NPDES) permit renewals for major polluters comply with the law. CCAN has also brought lawsuits on behalf of its members to combat illegal discharges of water pollutants from fossil-fuel-burning facilities. For example, in 2010 CCAN challenged a NPDES permit issued for one of Maryland's oldest and dirtiest power plants, the R. Paul Smith power plant in Williamsport, MD (which has since retired). CCAN is dedicated to preventing

future harm to the environment and public health from dangerous water pollutants on behalf of its members.

8. CCAN has more than 40,000 members in Maryland, Virginia, and Washington, D.C. As CCAN's Director, I know that CCAN's members live, exercise, work, raise children, garden, fish, and recreate on a regular basis in the vicinity of large fossil-fuel-burning facilities located in Maryland and Virginia, where they are exposed to toxic discharges from these facilities.

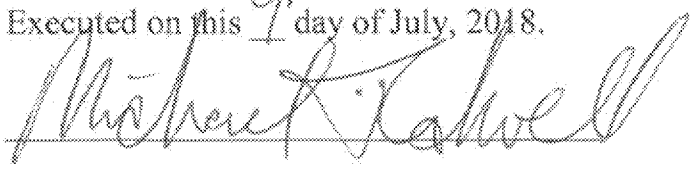
9. I am aware that in 2015 the U.S. Environmental Protection Agency (EPA) took steps—through the Steam Electric Effluent Limitations and Guidelines (ELG) rule—to limit the amount of toxic metals and other harmful pollutants that facilities such as Morgantown and Dickerson can discharge into our rivers, lakes, streams, and bays. CCAN testified in favor of a strong ELG rule in 2013 when EPA was drafting the updated rule. I am aware that, under the new administration, the EPA published a notice indefinitely staying certain compliance deadlines in the 2015 final ELG rule, then replaced that indefinite stay with a two-year delay of certain deadlines in September, 2017. I understand that while compliance with the rule is delayed, coal plants in Maryland and Virginia will not be subject to the pollution limits that would otherwise apply.

10. A delay of the ELG rule will allow facilities to continue to release an unlimited amount of toxic pollution into the water. This will expose CCAN members — where they live, exercise, work, raise children, garden, fish, and recreate — to higher levels of pollution than they would otherwise be exposed to if the rule was allowed to go into effect. This, in turn, will increase the likelihood that they will experience adverse health effects that are associated with increased exposure.

11. Limits on pollution that coal plants are allowed to discharge into the water will help to address the above-discussed harms and protect CCAN members across Maryland, Virginia, and Washington, D.C.

I declare under penalty of perjury that the foregoing is true and correct, to the best of my knowledge, belief, and recollection, pursuant to 28 U.S.C. § 1746.

Executed on this 9th day of July, 2018.



Michael Tidwell

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al.,<br><br>Respondents. | Case No. 18-60079 |

**DECLARATION OF TIMOTHY WHITEHOUSE**

I, Timothy Whitehouse, declare and state as follows:

1. I am over 21 years of age and suffer from no impairment or disability affecting my ability to give truthful testimony. I have personal knowledge of the facts set forth below.

2. I am the Executive Director of Physicians for Social Responsibility, Chesapeake, Inc. ("Chesapeake PSR"). I have been the Director since January 2014 and have held the title Executive Director since 2015.

3. Chesapeake PSR is a non-profit organization dedicated to creating a healthy, just, and peaceful world for both present and future generations. On behalf of its approximately 300 members, Chesapeake PSR uses its medical and public-health expertise to engage in regulatory and permitting processes to promote

clean, renewable energy and to minimize the amount of toxic pollution released from coal-fired power plants.

4. I live at 17207 Lightfoot Lane, Poolsville, Maryland. My home is 5.8 miles downstream of the Dickerson Plant. My family and I have lived here since 2007, and we are about 4 miles from the canal in the Potomac River.

5. As Executive Director of Chesapeake PSR, I have been involved with coal-fired power plants such as the Dickerson Plant through their air permitting processes, having submitted comments and challenged air pollution permits that did not comply with environmental laws. I am familiar with the types of pollutants that can be discharged into the water, including arsenic, selenium, and other metals and toxic pollutants, and the threats that these contaminants can pose to human health and aquatic life. For example, I know that some of these pollutants are neurotoxins and that there are correlations between some of these pollutants, like arsenic, and cancer.

6. I recreate along the Potomac River on a very frequent basis. I walk along the Potomac River about 200 days per year and also ride my bike along the river. We bring our dog three to five times per week. When I hike in the area, there are a number of times a year that I actually walk across the discharge point. Usually when we go on a longer bike ride we follow the canal and the canal crosses right across the discharge point for the Dickerson plant. I don't swim in

the water with my full body submerged because I don't believe the water is safe and am concerned about exposure to pollutants in the River, but I do get in up to my knees several times per year. I am specifically concerned about my potential exposure to the multiple pollutants in the Potomac River discharged from the Dickerson coal-fired power plant. I am concerned that there are unlimited amounts of mercury and other pollutants being discharged into the Potomac from the Dickerson Plant, and I certainly wouldn't want to accidentally swallow any of it or make swimming in the river part of my routine. I do swim a lot but not in the river – I swim regularly in pools near here and I swim when we are camping, which is fairly often, in lakes and rivers, if I have a good sense that they are clean. The pollution from the Dickerson Plant is one of the reasons why I do not swim in this portion of the Potomac. There are many beautiful areas to swim in along the Potomac and I would love to be able to swim in this portion of the Potomac if I thought it was safe.

7. I have family members that recreate with me and I am concerned about their exposures as well. I am particularly concerned that I see families with young children and they are immigrant families fishing. I am concerned when I see people eating out of the river knowing that there is mercury and other toxic metals being discharged in unlimited amounts into the river and these families are putting the fish into their buckets to consume. I am concerned about these

pollutants being in the food chain and the impacts that the presence of these pollutants will have on people in my community. There are a lot of people fishing in the river.

8. In addition, I like to birdwatch and enjoy all the aspects of the canal throughout the year, and I am concerned about the impacts the pollutants in the river may have on the birds and other wildlife in the area, which harms my enjoyment of the river.

9. Many of Chesapeake PSR's members also live and recreate downstream of the Dickerson Plant and other coal-fired power plants in Maryland and Virginia that discharge toxics and that would be required to limit or eliminate their discharge of toxics in accordance with the U.S. Environmental Protection Agency's ("EPA") 2015 Effluent Limitation Guidelines ("ELG") Rule.

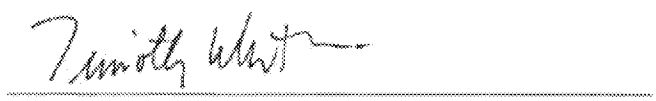
10. I am aware that the Dickerson Plant discharges toxics into the Potomac and that its National Pollutant Elimination System ("NPDES") permit is overdue for renewal. I am also aware that the 2015 ELG Rule requires limits on discharges of toxic pollutants from plants including the Dickerson Plant that would have to be incorporated into the NPDES Permits for these plants, and that the rule originally required compliance with such limits as soon as possible after November 1, 2018, and in no case later than December 31, 2023. I am also aware that the EPA delayed compliance deadlines for the ELG rule twice in

2017, most recently with a two-year delay of certain deadlines in September, 2017. I understand that as long as the rule is delayed, coal plants in the Chesapeake region, including the Dickerson Plant, may not be subject to pollution limits that would otherwise be in place. The delay of the ELG rule will increase the likelihood that members of Chesapeake PSR, including myself, and the local wildlife downstream of plants that would be subject to the ELG rule, will be exposed to more pollution than would otherwise have been allowed, which will, likewise, increase the likelihood of adverse impacts to our members' health and recreational interests.

11. In contrast, adherence to the compliance deadlines and requirements set forth in the 2015 ELG rule would reduce or prevent the release of toxic pollution into rivers we used and enjoy, including the Potomac, which would therefore reduce the adverse impacts to Chesapeake PSR and its members, including myself.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 5, 2018.



Timothy Whitehouse

**UNITED STATES COURT OF APPEALS**
**FOR THE FIFTH CIRCUIT**

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| CLEAN WATER ACTION, et al.,<br><br>Petitioners,<br><br>v.<br><br>ANDREW WHEELER, Acting Administrator, U.S. Environmental Protection Agency, et al.,<br>Respondents. | Case No. 18-60079 |

**DECLARATION OF MARC A. YAGGI**

I, Marc A. Yaggi, hereby declare and state:

1. I have personal knowledge of the matters stated herein. I am over the age of 18 and suffer from no legal incapacity. I submit this declaration in support of Waterkeeper Alliance, Inc.'s (WKA) challenge of the delay of compliance deadlines for certain requirements of the Steam Electric Power Generating Effluent Limitation Guidelines ("ELG rule"). I am the Executive Director of WKA. As Executive Director, I am responsible for supervising all employees of WKA and for providing overall direction to the organization's campaigns and fulfillment of the organization's mission.

2. I received a Bachelor of Science in Administration of Justice from Pennsylvania State University. I earned a Juris Doctor degree and a Master of Laws (LL.M) degree from Pace University School of Law.

3. WKA is a nonprofit corporation headquartered in New York City that strengthens and grows a global network of grassroots leaders protecting everyone's right to clean water. WKA is a membership organization, currently comprised of over 300 member Waterkeeper Organizations (WKOs) and Waterkeeper Affiliates (Affiliates) in 44 countries on six (6) continents. WKA and many of its WKOs and Affiliates also have individual members.

4. There are over 170 member WKOs and Affiliates in the United States. WKA has interests in the matters addressed herein that are aligned with the interests of WKOs and Affiliates and their individual members. Every case that WKA brings is on behalf of itself, WKOs and Affiliates, and the WKOs and Affiliates' individual members.

5. Emerald Coastkeeper is a member of WKA in good standing.

6. WKA's organizational model emphasizes grassroots advocacy. To become a member of WKA, prospective WKOs and Affiliates must submit a proposal demonstrating they will meet a series of "quality standards" upon becoming a licensed WKO or Affiliate. A committee of the WKA Board of Directors meets regularly to decide whether to approve or deny new WKO or Affiliate

proposals. Each WKO or Affiliate is associated with a particular body of water or watershed, which represents the WKO's or Affiliate's "jurisdiction." WKOs and Affiliates seek to protect and preserve water quality within each of their jurisdictions by advocating for compliance with environmental laws, responding to citizen complaints, identifying problems that negatively affect their water bodies, and devising appropriate remedies to address those issues.

7. WKA advances its own interests, those of its member WKOs and Affiliates, and those of the WKO's and Affiliates' individual members, through a variety of means, including identifying noncompliance with federal and state environmental laws and regulations, and bringing that noncompliance to regulatory authorities' attention. WKA also brings litigation on behalf of itself, its member WKOs and Affiliates, and their respective individual members to enforce federal and state environmental laws and regulations.

8. Through my educational and professional experience, I have gained extensive knowledge about a wide range of environmental topics, including the harmful effects of pollution associated with coal extraction and combustion on aquatic ecosystems and human health.

9. My educational and professional experiences have taught me that coal combustion wastewater—including bottom ash and flue gas desulfurization ("FGD") wastewater—discharged by coal-burning power plants typically

contains contaminants such as mercury, arsenic, lead, manganese, selenium, chromium, and other toxic pollutants that are harmful to human health and aquatic ecosystems. I am also aware that leachate from coal combustion landfills and impoundments typically contains similar toxic pollutants.

10. To achieve its organizational mission of strengthening and growing a global network of grassroots leaders protecting everyone's right to clean water, WKA concentrates its work on certain issues that most strongly affect that mission, especially when an issue affects a large number of member WKOs and Affiliates. One such issue is water pollution resulting from the extraction, transportation, combustion, and disposal of coal. WKA staff work with WKOs, Affiliates, and other partners to investigate coal-related pollution sources and to implement strategies to abate such pollution. The Clean Water Act, and federal and state regulations implementing the Act, are primary tools that WKA and its member WKOs and Affiliates rely on to protect waterways from coal pollution. Staff members working on our Clean and Safe Energy Campaign perform a wide range of services for WKA and various WKOs and Affiliates to help those organizations identify and address issues of water pollution related to coal-burning power plants. This includes reviewing Clean Water Act National Pollutant Discharge Elimination System ("NPDES") permits, discharge monitoring reports, and downstream water quality data of

coal-burning power plants and their associated coal combustion residual ("coal ash") impoundments and landfills. I am informed and believe that WKA staff have also observed permitted and unpermitted discharges into surface water bodies at those sites.

11. WKA and its member WKOs and Affiliates frequently participate in administrative processes before state and federal agencies, including the United States Environmental Protection Agency ("EPA"), concerning proposed NPDES permits for coal-burning power plants, in order to urge those agencies to require discharge limits in NPDES permits for coal-burning power plants that are consistent with Clean Water Act requirements.

12. In addition, WKA and its member WKOs and Affiliates frequently participate in citizen enforcement suits under the Clean Water Act, including citizen suits against the owners or operators of coal-burning power plants when they discharge pollutants without a NPDES permit or violate the discharge limits or other conditions of their NPDES permits.

13. I am aware that coal-burning power plants discharge coal combustion wastewater, including bottom ash and FGD wastewater, into many of the surface waters that WKA aspires to protect, including many surface waters associated with particular WKOs and Affiliates.

14. I am informed and believe that at power plants within WKO and Affiliate jurisdictions in the United States there are more than 150 coal ash sites, which include coal ash landfills and/or coal ash impoundments, discharging to surface water. More than fifty (50) individual WKOs in the United States have at least one (1) coal ash landfill and/or coal ash impoundment at a power plant that discharges to surface water located within their jurisdiction.

15. I understand that, cumulatively, current discharge limits in the NPDES permits for coal-burning power plants allow discharges of over a billion pounds of toxic pollution to waterways in the United States each year.

16. I am aware that EPA adopted the final ELG rule in 2015, establishing new discharge limits on toxic pollutants and nutrients from coal-burning power plants that must be implemented in power plant NPDES permits. When EPA proposed the ELG rule in 2013, WKA worked with WKOs and partner organizations on comments urging EPA to finalize a strong rule consistent with Clean Water Act requirements. WKA also took a number of other steps to advocate for a strong final ELG rule, including working with partner organizations to issue reports on the rulemaking and meeting with the White House Office of Management and Budget and other decision-makers.

17. I understand that the ELG rule will require more stringent treatment, and in some cases complete elimination, of discharges of coal combustion

wastewater, including bottom ash and FGD wastewater. I also understand that this increased treatment and/or elimination of discharges will prevent significant amounts of toxic and nutrient water pollution from entering waterways around the country, including in WKO and Affiliate jurisdictions.

18. I am informed and believe that approximately 69 WKOs and Affiliates work on waterways impacted by coal-burning power plants that would need to comply with the ELG rule requirements.

19. I am aware that, on April 25, 2017, EPA issued a notice announcing an indefinite hold on certain requirements of the ELG rule. I understand that EPA later took public comment on a proposed rule to promulgate a stay or delay of the ELG rule compliance deadlines and ultimately issued a final rule in September 2017 that delayed the compliance deadlines for bottom ash and FGD wastewater by two years while EPA reconsiders the effluent limitations for those two wastestreams. WKA worked with WKOs and partner organizations on comments urging EPA not to stay or delay compliance with the ELG rule, and representatives of WKA and a number of WKOs attended a public hearing that EPA held on July 31, 2017.

20. I understand that this two-year delay of those compliance deadlines would mean that states will likely not require compliance with those effluent limitations in power plant NPDES permits during the period of the delay. I

am further aware that, because of the uncertainty created by EPA's postponement of these compliance deadlines and reconsideration of the effluent limitations, many states are postponing compliance with the ELG rule's effluent limitations for bottom ash and FGD wastewater even longer than two years while they wait to see whether EPA takes additional action. As a result, for many power plants, compliance with the effluent limitations set by the ELG rule for bottom ash and FGD wastewater will likely be delayed indefinitely.

21. I understand that delaying these compliance deadlines in the ELG rule likely means that coal-burning power plants will not need to decrease the amount of toxic and nutrient water pollution they discharge to waterways. I am aware that this means that waterways, including those in the jurisdictions of WKOs and Affiliates, are more likely to continue to be impacted by the pollutants found in coal combustion wastewater. This would harm the interests that WKA, WKOs and Affiliates, and their respective individual members have in improving water quality in bodies of water.

22. I understand that, if the two-year delay of the bottom ash and FGD wastewater requirements in the ELG rule were to be vacated, the compliance deadlines for those wastestreams would be restored. As a result, coal-burning power plants would be required to meet the ELG rule's lower limits on the levels of

pollutants that they discharge to member WKO's and Affiliates' waterways sooner than they would if the postponement of compliance deadlines remained in effect, thus redressing the concerns of WKA, WKOs, and Affiliates, and their respective individual members regarding water quality impacts from coal combustion wastewater.

I declare under the penalty of perjury that the foregoing is true and correct.

Executed on July 10, 2018 in New York, New York.

Marc A. Yaggi

**IN THE UNITED STATES COURT OF APPEALS**

**FOR THE NINTH CIRCUIT**

| | |
|---|---|
| **In Re: U.S. EPA, REGION 9** | |
| DINE' CITIZENS AGAINST RUINING THE ENVIRONMENT | **PETITION FOR WRIT OF MANDAMUS PURSUANT TO 28 U.S.C. § 1651 33 U.S.C. §1369(B)(1)(F)** |
| SAN JUAN CITIZENS ALLIANCE | |
| CENTER FOR BIOLOGICAL DIVERSITY | **Case No._____** |
| AMIGOS BRAVOS | |
| SIERRA CLUB | |
| Petitioners. | |
| **v.** | |
| U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9 | |
| ALEXIS STRAUSS, ACTING REGIONAL ADMINISTRATOR US EPA REGION 9 | |
| TOMAS TORRES, DIRECTOR, WATER DIVISION, US EPA REGION 9 | |
| Respondents. | |

## TABLE OF CONTENTS

TABLE OF AUTHORITIES.....p. 3

RULE 26.1 CORPORATE DISCLOSURE STATEMENT.....p. 5

INTRODUCTION.....p. 6

PARTIES AND JURISDICTION.....p. 7

STATUTORY AND REGULATORY BACKGROUND.....p. 13

A. The Clean Water Act.....p. 13

B. EPA's National Pollutant Discharge Elimination System Permitting Regulations.....p. 15

FACTUAL BACKGROUND.....p. 16

A. The Coal Plant.....p. 16

B. The San Juan River, Morgan Lake, and the Chaco River.....p. 18

C. Endangered Colorado Pikeminnow and Razorback Sucker...p. 18

D. The NPDES Permit.....p. 20

E. The Discharges and Cooling Water Intake.....p. 21

ARGUMENT.....p. 26

A. This Court has Jurisdiction to Issue a Mandamus Order.....p. 26

B. A Writ Should Issue Because EPA has Unreasonably Delayed Issuing the Final Permit.....p. 28

CONCLUSION.....p. 34

## TABLE OF CASE LAW AUTHORITIES

*Air Line Pilots Association, International("ALPA") v. CAB*,
750 F.2d 81, 84 (D.C. Cir. 1984).....p. 27

*Biodiversity Legal Found. v. Badgley*,
309 F.3d 1166, 1177 n. 11 (9th Cir. 2002).....p. 29

*Clark v. Busey*, 959 F.2d 808, 811 (9th Cir. 1992).....p. 27

*Crown Simpson Pulp Co. v. Costle*, 445 U.S. 193, 196 (1980).....p. 27
*Ecological Rights Foundation v. Pacific Lumber Company*,
230 F.3d 1141, 1151 (9th Cir. 2000).....p. 32

*FTC v. Dean Foods Co.*, 384 U.S. 597, 604 (1966).....p. 27

*Friends of the Earth v. Gaston Copper Recycling Corp.*,
204 F.3d 149, 155-61 (4th Cir. 2000).....p. 32

*Independence Mining Co. v. Babbitt,* 105 F.3d 502, 507 (9th Cir. 1997)...p. 29

*In re Am. Rivers & Idaho Rivers United*, 372 F.3d 413, 419
(D.C. Cir. 2004).....p. 31

*In re A Cmty. Voice*, 878 F.3d 779, 787 (9th Cir. 2017) .....p. 29

*In re Pesticide Action Network*, 798 F.3d 809 (9th Cir. 2015).....p. 30

*In re United Mine Workers of Am. Int'l Union*, 190 F.3d 545, 554
(D.C. Cir. 1999).....p. 33

*MCI Telecommunications Corp. v. FCC*, 627 F.2d 322, 340
(D.C. Cir. 1980)). .....p. 31

*Midwest Gas Users Asso. v. FERC*, 833 F.2d 341, 359 (D.C. Cir. 1987)...p. 31

*Nader v. FCC*, 520 F.2d 182, 206 (D.C. Cir. 1975).....p. 31

*Natural Res. Def. Council, Inc. v. EPA*,
966 F.2d 1292, 1296-97 (9th Cir. 1992).....p. 28

*NRDC v. Cnty. of Los Angeles*, 725 F.3d 1194, 1208 (9th Cir. 2013).....p. 14

*Pacific Legal Found. v. Costle*, 586 F.2d 650, 654-55 (9th Cir. 1978).....p. 28

*Potomac Elec. Power Co. v. ICC*, 702 F.2d 1026, 1035 (D.C. Cir. 1983)...p. 31

*Public Citizen Health Research Group v. Auchter*,
702 F.2d 1150, 1157- 1159 (D.C. Cir. 1983).....p. 31

*Pub. Util. Comm'r v. Bonneville Power Admin.*, 767 F.2d 622, 626,
630 (9th Cir. 1985).....p. 27

*S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*,
541 U.S. 95, 102 (2004).....p. 13

*Telecommunications Research & Action Center v. FCC*,
750 F.2d 70, 76 (D.C. Cir 1984) ("*TRAC*").....p. 12, 27, 28, 30

*Waterkeeper Alliance, Inc. v. U.S. EPA*, 399 F.3d 486, 491 (2nd Cir. 2005...p. 13

## RULE 26.1 CORPORATE DISCLOSURE STATEMENT

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure, Dine' Citizens Against Ruining the Environment ("Dine' CARE"), San Juan Citizens Alliance ("SJCA"), Center for Biological Diversity ("CBD"), Amigos Bravos, and Sierra Club, collectively referred to herein as "Petitioners", respectfully submit this disclosure statement. Dine' CARE is a non-profit organization based on the Navajo Nation and is composed of Navajo members. Dine' CARE has no parent corporation nor is there any publicly held corporation that owns stock or other interests in the organization. SJCA is a non-profit environmental organization incorporated in the State of Colorado. San Juan Citizens Alliance has no parent corporation nor is there any publicly held corporation that owns stock or other interests in the organization. CBD is a non-profit membership corporation incorporated in the State of Arizona. The Center for Biological Diversity has no parent corporation nor is there any publicly held corporation that owns stock or other interests in the organization. Amigos Bravos is a non-profit membership corporation incorporated in the State of Arizona. Amigos Bravos has no parent corporation nor is there any publicly held corporation that owns stock or other interests in the organization. Sierra Club is a non-profit membership corporation incorporated in the State of California. The Sierra Club has no parent corporation

nor is there any publicly held corporation that owns stock or other interests in the organization.

## I. INTRODUCTION

Petitioners request that this Court issue a writ of mandamus compelling the Environmental Protection Agency ("EPA") Region 9 to take long overdue action on a National Pollution Discharge Elimination System ("NPDES") permit application, which has been pending since 2006, related to the coal fired Four Corners Power Plant ("FCPP" or "power plant"), as required by the federal Clean Water Act ("CWA" or "Act"), 33 U.S.C. § 1342(b)(1)(B). This action is necessary to ensure the facility is operating in compliance with the current mandates of the Act and its implementing regulations, and to protect the people, livestock, wildlife, and waters of the Navajo Nation Reservation and areas downstream from unnecessary harm and preventable degradation.

The current FCPP NPDES permit was issued by EPA in 2001 and expired over 12 years ago. Since that time EPA has failed to take final action on a NPDES renewal permit application pending since 2006. EPA is in patent violation of the mandates and procedures of the CWA and EPA's own regulations governing the processing of the NPDES permit application for the FCPP.

## II. PARTIES, JURISDICTION, AND VENUE

Plaintiff Diné CARE is an all-Navajo membership organization comprised of a federation of grassroots community activists in the Four Corners region of Arizona, New Mexico, Colorado, and Utah, and the Tribal lands within the borders of those states. Diné CARE's goal is to protect all life in their ancestral homeland by empowering local and traditional people to organize, speak out, and assure conservation and stewardship of the environment through civic involvement, engagement, and oversight in decision-making processes relating to tribal development, and oversight of government agencies' compliance with all applicable environmental laws. Diné CARE members live, use, and enjoy the waters and areas that are affected by the FCPP, including areas in Arizona. Diné CARE members include customers of the Arizona utilities who own the FCPP. Diné CARE brings this action on its own behalf and on behalf of its adversely affected members. Its primary office is located in Dilkon, Arizona. The declaration of Dailan Long, a member of Dine' CARE is attached as Exhibit 1 and describes how EPA's failure to render final action of the pending NPDES permit application adversely impacts his interests and those of Dine' CARE. Mr. Long is a member of Dine' CARE. Exhibit 1, p. 1, ¶1. Mr. Long lives on the Navajo Nation and his homestead is located on the east and west side of the Chaco River. *Id* at p. 2, ¶3. Mr. Long raises sheep on Navajo lands near the Chaco River. *Id* at p. 1, ¶1.

The FCPP is visible from Mr. Long's home. *Id* at p. 3, ¶8. Mr. Long also recreates along the Chaco River. *Id* at p. 2, ¶4. Mr. Long is forced to haul water from a well 15 miles away from his homestead because tribal members downstream of the FCPP experience livestock mortality when consuming water from the Chaco River. *Id* at p. 3, ¶7. Mr. Long is adversely impacted by EPA's failure to make a final determination on the pending NPDES permit application because EPA's inaction exacerbates public health concerns associated with pollution discharges from the plant, denies Mr. Long data and information on coal ash water pollution discharges that would be regulated under a new permit, and impacts water quality in the Chaco River thus creating a risk to his personal health, his property, his livestock, and the agricultural use of his property. *Id* at p. 3, ¶10. Issuance of a final decision by EPA would remedy some of the harms of inaction by providing more information about water pollution discharges and its impact on the Chaco River and endangered species. *Id* at p. 4, ¶12. Issuance of a final decision by EPA would also provide a procedural right to appeal any deficiencies with the permit, which is currently being thwarted by EPA's inaction. *Id* at p. 4, ¶11.

Petitioner SJCA is a non-profit membership organization with over 500 members in the Four Corners region. The declaration of Mike Eisenfeld, a member of SJCA, Amigos Bravos, and Sierra Club is attached as Exhibit 2 and describes how EPA's failure to render final action of the pending NPDES permit application

adversely impacts his interests and those of the conservation organizations of which he is a member. More specifically, Mr. Eisenfeld lives in Farmington, New Mexico about 15 miles from the FCPP. Exhibit 2 at p. 1, ¶¶ 2& 3 and p. 3 ¶7. Mr. Eisenfeld is an avid river runner and has boated on the San Juan River on numerous occasions. *Id* at p. 2, ¶4. Mr. Eisenfeld also frequently visits Morgan Lake, into which the FCPP directly discharges pollutants. *Id* at p. 3, ¶6. Mr. Eisenfeld has physical contact with the San Juan River and Morgan Lake when he recreates in those waterbodies and is concerned about health impacts to himself and his family from exposure to pollution. *Id* at pp. 8-9, ¶17. Mr. Eisenfeld is concerned with impacts of the FCPP on endangered species living in the San Juan River, namely the Colorado pikeminnow and razorback sucker. *Id.* EPA's failure to take final action on the permit application harms Mr. Eisenfeld because it results in unregulated pollution discharges into the Chaco River watershed, fails to address impacts to endangered fish species, and interferes with his recreational interests in Morgan Lake and the San Juan River. *Id.* at p. 9, ¶19. Mr. Eisenfeld's concerns would be eased if EPA would take final action on the permit because he would have more information about water pollution discharges, impacts to endangered fish species, and would diminish his concerns about health risks to himself and his family. *Id.* at pp. 9-10, ¶20.

Petitioner CBD is a non-profit membership corporation with offices in Arizona. CBD is actively involved in species and habitat protection issues worldwide, including throughout the western United States. The Center, its members, and staff members use the lands and waters near the FCPP —in particular the San Juan River—for recreational, scientific, and aesthetic purposes. The Center brings this action on its own behalf and on behalf of its adversely affected members. The declaration of Taylor McKinnon, a member of CBD is attached as Exhibit 3 and describes how EPA's failure to render final action on the pending NPDES permit application adversely impacts his interests and those of CBD. Mr. McKinnon is also an avid river runner and used to be a river guide on the San Juan River. Exhibit 3 hereto at pp. 3-4, ¶7. Mr. McKinnon also has a personal and professional interest in protecting the endangered fish species that live in the San Juan River and the critical habitat that supports the fish species. *Id.* Mr. McKinnon has concerns that pollution from the FCPP is adversely impacting these endangered fish species. *Id.* at p. 5, ¶9. Mr. McKinnon is also concerned that the Four Corner Power Plant cooling water intake structure that pulls large volumes of water from the San Juan River may be contributing to adverse impact and mortality to the endangered fish species. *Id.* at p. 6, ¶9. Mr. McKinnon is concerned that the EPA's refusal to take final action on the permit may contribute to further poisoning, endangerment and rarity of its endangered species, all of

which he cares deeply about. Some of his concerns would be redressed by issuance of a final permit by EPA because it would begin to regulate these problems. *Id.* at p. 6, ¶9. In addition, he would be able to appeal any deficiencies in a final permit. *Id.* EPA's failure to finalize a permit has denied him of this legal opportunity. *Id.*

Amigos Bravos is a non-profit conservation membership organization. Amigos Bravos is dedicated to preserving and restoring the ecological and cultural integrity of New Mexico's water and the communities that depend on it.

Sierra Club is America's oldest and largest grassroots environmental organization with more than 820,000 members and supporters nationwide including more than 30,000 members residing in Arizona, Utah, and New Mexico. The Sierra Club's concerns encompass the protection of the San Juan River and the endangered species found therein. Sierra Club's main office is located in Oakland, California.

As outlined above, Petitioners have standing to bring this case on their own behalf and through their members.

Environmental Protection Agency, Region 9, is a federal government agency with the primary responsibility for taking final action on the long pending FCPP NPDES Permit application and is located in San Francisco, California.

Alexis Strauss is the Acting Regional Administrator for EPA Region 9, whose office is located in San Francisco, California. Ms. Strauss was previously the Director of Region 9's Water Division and personally signed the 2001 NPDES permit. Exhibit 4 hereto, page 1 of the 2001 NPDES Permit.

Tomas Torres is the current Director of the Water Division at US EPA Region 9. The Water Division is responsible for issuing NPDES Permits for water pollution discharges located on the Navajo Nation, such as those from the FCPP.

Water pollution and other impacts from the power plant will occur on the Navajo Nation and in tributary downstream waters in Arizona. The majority owner of the coal plant, Arizona Public Service, is based in Arizona. The Salt River Project and Tucson Electric Company, minority owners of the FCPP, are also based in Arizona. The seat of the Navajo Nation is also in Arizona.

This Court has jurisdiction to issue the writ of mandamus sought by this Petition pursuant to the All Writs Act, 28 U.S.C. § 1651. The CWA grants this Court jurisdiction to review EPA's NPDES permitting actions, 33 U.S.C. § 1369(b)(1)(F), and the All Writs Act empowers this Court to issue a writ to protect its "prospective jurisdiction" by compelling EPA to make substantive decisions that once made will be reviewable by this Court. *Telecommunications Research & Action Center v. FCC*, 750 F.2d 70, 76 (D.C. Cir 1984) ("*TRAC*"). EPA's years of inaction constitute both unlawfully withheld action and unreasonable delay

pursuant to 5 U.S.C. § 706(1), and warrant a writ of mandamus from this Court ordering EPA to take final action on the pending permit application.

This Court is a proper venue for this action pursuant to 33 U.S.C. § 1369(b)(1)(F) which directs that cases be filed "in the Circuit Court of Appeals of the United States for the Federal judicial district in which such person resides or transacts business which is directly affected by such action upon application by such person."

## II. STATUTORY AND REGULATORY BACKGROUND

### A. The Clean Water Act

The CWA prohibits the "discharge of any pollutant" from a point source—"any discernible, confined and discrete conveyance"—to navigable waters "except in compliance with law." 33 U.S.C. §§ 1311, 1362. The CWA authorizes EPA, or states with permit programs approved by EPA, to issue NPDES permits allowing for the discharge of pollutants into waters of the United States. 33 U.S.C. § 1342. EPA Region 9 in San Francisco is responsible for the issuance of NPDES Permits for sources of water pollution on the Navajo Nation.

Every NPDES permit must establish "effluent limitations" for the pollutants being discharged. *Waterkeeper Alliance, Inc. v. U.S. EPA,* 399 F.3d 486, 491 (2nd Cir. 2005 (citing *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 102 (2004)). NPDES permits must also contain conditions requiring both

monitoring and reporting of pollutants in any discharge. 33 U.S.C. § 1342(a)(2); 40 C.F.R. § 122.44(i)(1) & (2). EPA's regulations specify that NPDES permits shall include conditions requiring monitoring "[t]o assure compliance with permit limitations." 40 C.F.R. § 122.44(i)(1). Specifically, a permit must include "requirements to monitor . . . each pollutant limited in the permit" to ascertain whether the pollutants in the discharge stay within the permitted limits. *Id.* at § 122.44(i)(1)(i). Such conditions are necessary to verify compliance with effluent limitations and to facilitate permit enforcement. *NRDC v. Cnty of Los Angeles*, 725 F.3d 1194, 1208 (9th Cir. 2013).

In addition, section 316(b) of the CWA requires that NPDES permits for facilities with cooling water intake structures ensure that the location, design, construction, and capacity of the structures reflect the best technology available for minimizing adverse environmental impact. 33 U.S.C. § 1326(b); *see also* 40 C.F.R. § 401.14 (same). The chosen technology must reduce the adverse aquatic impact, impingement or entrainment, to the smallest amount, extent or degree reasonably possible. 40 C.F.R. §125.92(r) (2014). Under the permitting scheme in effect at the time EPA Region 9 issued the last permit for the FCPP, permits were issued on a case-by-case basis, with the permitting agency using its "best professional judgment" to impose conditions necessary to meet Best Technology Available ("BTA"). 40 C.F.R. § 125.90(b).

Section 402(b)(1)(B) of the CWA specifies that NPDES permits are to be issued for fixed terms not to exceed five years. 33 U.S.C. § 1342(b)(1)(B). The five-year limit on a NPDES permit's maximum duration establishes a mandatory expiration date at which the permit must be reviewed and updated to reflect changes in the law, the conditions of discharge and receiving waters, or the requirements applicable to the permittees.

### B. EPA's National Pollutant Discharge Elimination System Permitting Regulations

EPA regulations mandate a specific process designed to lead to timely final action expiring NPDES permits before or shortly after they expire that EPA has simply declined to follow with respect to the FCPP. An applicant initiates the NPDES process when it files a permit application providing information regarding the facility and its proposed discharges. *See* 40 C.F.R. § 124.3. Once the application is complete, EPA then prepares and issues a draft permit and explanatory fact sheet. *See* 40 C.F.R. §§ 124.6, 124.8, and 124.56. EPA provides public notice of these documents, and holds a thirty–day public comment period. *See id.* § 124.10(a)(1)(ii) and (b)(1). After the close of the public comment period, the Regional Administrator determines whether a final permit should be issued, based on the administrative record compiled during the public comment period. *See id.* §§ 124.15, 124.18.

After EPA issues a final permit decision, an interested party may request an evidentiary hearing to contest the resolution of any questions raised during the public comment period. *Id.* § 124.74(a). The Regional Administrator then grants or denies the request for a hearing. *See id.* § 124.75(a)(1). If a Regional Administrator denies a request for an evidentiary hearing, the denial becomes final agency action within thirty days unless an appeal is made to the Environmental Appeals Board ("EAB"). *Id.* §§ 124.60(c)(5) and 124.91. An EAB order denying review renders the Regional Administrator's previous decision final. *Id.* § 124.91(f)(1). Finally, once an EPA permit decision has become final, any interested person may obtain judicial review of the decision by petitioning for review in the Circuit Court of Appeals. 33 U.S.C. § 1369(b)(1).

## III. FACTUAL BACKGROUND

### A. The Coal Plant

The Four Corners Power Plan is located on the Navajo Nation, near Farmington, New Mexico. The power plant began operations in 1963 and is scheduled to continue operating until at least 2041.

The power plant is owned and operated by Arizona Public Service Company on behalf of itself as well as the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Public Service Company of New Mexico, and Tucson Electric Power Company.

The FCPP provides electrical power to utilities in Arizona, Texas, and New Mexico. Units 1-3 of the coal plant were built in 1963 and operated for over half a century through 2013. In 2013 the owners of the coal plant opted to retire Units 1-3 rather than retrofit them to meet federally mandated air pollution limits. The much larger Units 4-5 of the coal plant, totaling 1540 MW of capacity, have been operating since 1970. Arizona Public Service intends to operate Units 4-5 through 2041, at which time the coal plant will be 71 years old.

Units 4-5 burn approximately 19,000 tons of coal per day. The coal boils water to create steam, which turns a turbine to generate electricity. The coal plant diverts up to 48 million gallons of water per day from the San Juan River. On average the coal plant pumps approximately 27,500 af/yr from the river. The water is withdrawn via two 8 by 8.5-foot screened intake bays located just above a gated weir. The weir dams water to assure the intake bays are adequately submerged. Water drawn from the San Juan River is stored in Morgan Lake, a man-made reservoir adjacent to the coal plant.

Coal combustion waste results from burning coal at the coal plant. This waste—fly ash, bottom ash, and boiler slag—is collected in the plant's boilers and pollution control equipment and then disposed of in lined and unlined liquid surface impoundments at the site. Over the past 50 years, Arizona Public Service has disposed of approximately 33.5 million tons of coal combustion waste.

Coal ash contains numerous toxic constituents including heavy metals such as antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, and thallium. Pollutants from coal combustion waste have leached through the bottom of existing coal combustion waste impoundments at the site and entered the groundwater migrating toward the Chaco River. Arizona Public Service has constructed various intercept trenches and pump-back wells beginning in 1977 and continuing through the present attempting to minimize the migration of this pollution to the adjacent Chaco River.

### B. The San Juan River, Morgan Lake, and the Chaco River

The second largest of the three sub-basins of the Colorado River, the San Juan River is one of the most important waterways in the Southwest. Morgan Lake and the Chaco River, both located on the power plant property, are tributary to the San Juan River. The Chaco River flows into the San Juan River near Shiprock, New Mexico.

Morgan Lake is a 1,200 acre cooling pond for the power plant that is also operated as a public recreation area.[1] Primary contact recreation is allowed on the lake, including windsurfing, boating, fishing, and other activities which can result in ingestion, inhalation, and direct contact with the waters of Morgan Lake.

### C. Endangered Colorado Pikeminnow and Razorback Sucker

[1] https://farmingtonnm.org/listings/morgan-lake/ (last visited November 30, 2017).

The Colorado pikeminnow was federally listed as endangered in 1973. Critical habitat for the Colorado pikeminnow, designated in 1994, includes the 100-year floodplain of the species' historic range in San Juan County, New Mexico, and San Juan County, Utah. This critical habitat includes the stretch of the San Juan River adjacent to the FCPP and Navajo mine. Remnant populations exist in the segment of the San Juan River.

The razorback sucker was federally listed as endangered in 1991. The Service designated the segment of the San Juan River from the Hogback Diversion to Lake Powell as critical habitat for the razorback sucker in 1994. This critical habitat includes the stretch of the San Juan River adjacent to the FCPP.

In 2015, as required by section 7 of the ESA, the Fish and Wildlife Service issued a Biological Opinion analyzing the effects of continued operation of the power plant and related coal mine on endangered species as part of the lease extension allowing operation of the plant from 2016- 2041. Exhibit 5. The Biological Opinion acknowledged the already dire state of the Colorado pikeminnow and razorback sucker populations in the San Juan River and cataloged substantial adverse impacts to these populations and their critical habitat from the continued operation of the FCPP and Navajo Mine, including impacts from water pollution and the FCPP cooling water intakes. Exhibit 5 at pp. 105-119.

The Biological Opinion found that entrainment in the coal plant's water intake system, as well as other impacts, would decrease the population viability of Colorado pikeminnow and razorback sucker in the San Juan River basin. Exhibit 5 at p. 134.

**D. The NPDES Permit**

On April 3, 2001 Alexis Strauss, then Director of EPA Region 9's Water Division, issued the most recent effective NPDES permit for the FCPP, NPDES Permit No. NM0000019. Exhibit 4, p. 1. The permit became effective on April 7, 2001, and expired on April 6, 2006. *Id.*

Under the terms of the permit and EPA regulation, the permittee was required to submit a renewal application at least 180 days prior to the expiration of the permit. APS submitted an application for a new NPDES permit on October 5, 2005. After sitting dormant at EPA for over 7 years, on October 30, 2012 EPA acknowledged that "much time has elapsed since [APS] submitted the original application for renewal" and requested an updated application. Exhibit 6, p. 1. EPA indicated at that time that it "plan[ned] to draft and issue a renewed NPDES permit for the APS Four Corners Power Plant in 2013." *Id.*

APS submitted a revised permit application on February 15, 2013. On February 19, 2013, EPA stated that it would "draft a proposed renewed NPDES permit within 6 months" after receiving the revised application. Exhibit 7, p. 1.

EPA failed to issue a draft permit by its stated deadline of August 15, 2013. On May 16, 2014, Petitioners issued a 60-day notice of intent to sue letter to EPA alleging, *inter alia,* that EPA had illegally delayed in issuing a final NPDES permit for the FCPP. Exhibit 8.

On November 13, 2014, EPA released a draft permit and opened a public comment period. Exhibit 9. On February 18, 2015 Petitioners and other conservation organizations submitted timely written comments on EPA's draft permit. Exhibit 10. The public comment period closed on February 18, 2015.

Over three years after the close of the public comment period EPA still has not taken final action on the pending permit application. On February 28, 2018, EPA stated that it "will issue the permit for the Four Corners Power Plant in the immediate future." Exhibit 11, Response to Comments, p. 1, Response 1. On March 8, 2018, Petitioners asked EPA Region 9 for a more precise schedule for its issuance of the FCPP Permit. Exhibit 12. On that same day, EPA's permit engineer responded that it would issue the permit in April 2018. *Id.* But again, EPA Region 9 failed to render a final decision on the permit application in April 2018. EPA has again delayed its timeline for acting on the permit application, this time until June 2018. Exhibit 13. As of the date of this Petition, EPA has not taken final action on the permit application.

### E. The Discharges and Cooling Water Intake

FCPP discharges a suite of pollutants including copper, iron, chlorine, heated water, suspended solids, among others to Morgan Lake, the Chaco River, and ultimately the San Juan River.

**1. The discharge into Morgan Lake, No Name Wash, Chaco River, and the San Juan River.**

a. Outfall 001

The FCPP discharges pollutants from Morgan Lake to No Name Wash, which flows to the Chaco River and then the San Juan River. Exhibit 9, Fact Sheet, pp. 2-3. The flow rate of this discharge is approximately 4.2 million gallons/day. *Id* at p.2. This discharge is used to regulate total dissolved solids (TDS) build up in the lake, which must be controlled because the lake water is also used for cooling the generation units. *Id.* The current and proposed draft permit sets a flow limit of 14.7 million gallons per day from this Outfall and allows a maximum daily temperature discharge of up to 95 degrees Fahrenheit (35 degrees Celsius), and regulates pH. *Id.* The permits also require monitoring for TDS from Outfall 001. *Id.*

b. The "Internal" Outfalls

The draft permit also regulates discharges from the following so-called "internal outfalls":

i. Internal Outfall 01A: FCPP also discharges condensor cooling water into an effluent channel which flows to Morgan Lake. This discharge is referred to as

"Internal Outfall 01A." FCPP chlorinates the cooling water to act as a biocide to prevent fouling of the generating units. This permit allows a discharge of 954 pounds per day of Total Residual Chlorine into Morgan Lake, and also regulates pH, oil and grease, and requires flow and toxicity monitoring. *Id.*

ii. Internal Outfall 01B: This internal outfall was used for disposing of chemical cleaning wastewater to an ash pond. APS claims that Internal Outfall 01B is not in use but wishes to retain the possibility of discharging through the outfall in the future. *Id.*

iii. Internal Outfall 01E: This outfall discharges water pollution from the combined waste treatment pond that receives 8-13 million gallons per day of waste streams from various pollution sources at the power plant. *Id.* The wastewater from this pond is channeled into a culvert which is regulated prior to mixing with the condenser cooling water discharged from Internal Outfall 01A. The combined discharges from Internal Outfall 01E and Internal Outfall 01A are then discharged into Morgan Lake. A large component of Internal Outfall 01E is bottom ash transport water. This discharge is regulated for total suspended solids (TSS), pH, and oil and grease.

2. **The leaking coal ash impoundments**

Since at least 1977, the coal ash impoundments at the FCPP have leaked contaminated seepage into the Chaco River Basin. Exhibit 14 at p. 4.5-61 (FEIS,

Section 4.5 Water Resources-Hydrology). The Final Environmental Impact Statement documents the history of coal ash seepage into the Chaco River Basin by stating:

> Previous studies found two primary areas of groundwater seepage beneath the ash disposal areas, the "north seep" and "south seepage area" (APS 2013). In 1977, APS constructed an open ditch system to collect seepage water from the ash disposal facilities as part of the NPDES permits for the FCPP. In 1993 and 2011, extraction wells were installed. These systems are designed to prevent contamination of the Chaco wash. In October 2011, APS constructed a north intercept trench excavated to the Lewis shale formation. A review of groundwater level data and water quality data in three wells located downgradient of the trench show declines in all constituents and groundwater level. APS installed a second south intercept trench to collect groundwater in early 2014. The finished project entailed the construction of two French drains adjoining each other in a north to south direction. Both French drains are 2 miles long and the trenches for the drains were excavated to the Lewis shale formation. The bottom of the trench was filled with a granular media and slotted pipe, to allow the collection of water at two points approximately mid-length in location. Water that is collected at these points is pumped to FCPP's Lined Decant Water Pond. With the operation of the intercept trenches, continued operation of wet ash ponds and expansion of the DFADAs would have less potential to contaminate local groundwater and water quality in Chaco Wash.

*Id.* EPA was a cooperating agency with regard to the 2015 FEIS. Exhibit 15, p. 2. (EPA ESA memo 11/10/2014).

The coal ash seepage is believed to contain mercury, selenium, boron, nickel, uranium, zinc, and total dissolved solids. The coal ash seepage is also expected to exceed pollution concentrations standards enacted to protect human health, livestock, and aquatic life. However, EPA's 2001 NPDES permit does not

require monitoring, reporting, or pollution effluent limits for the coal ash discharges into the Chaco River Basin.

EPA's 2014 Draft Renewal Permit for the FCPP would require the following:

> "A Seepage Monitoring and Management Plan shall be established and implemented to determine the source of and pollutants in seepages below all ash ponds that receive or received coal combustion residue either currently or in the past. The Plan shall be established and submitted to EPA within 120 days of the issuance of this permit. The Plan shall at a minimum do the following:
> 1. Identify all seeps within 100 meters down gradient of such impoundments;
> 2. Conduct sampling (or provide summary of current data if sufficient and valid) of seepages for boron, mercury, nickel, selenium, uranium, zinc and total dissolved solids.
> 3. Provide information about number of flows observed and range of flows observed
> 4. Provide information about exceedances of any human health, livestock, or chronic or acute aquatic life standards as established in the 2007 NNWQS in the samples collected for analysis.

Exhibit 9 at p. 15 (Draft Permit).

### 3. The cooling water intake structure

As noted above, cooling water intake structures are regulated by EPA upon issuance of an NPDES permit. The 2001 NPDES permit does not regulate the intake structure or require publicly available reporting on the impacts the intake structure is having on endangered fish species. In contrast, EPA's 2014 draft permit states:

> "The Permittee shall submit all the material required under 40 CFR 122.21

(r) (1)-(8) upon submittal of their next renewal application."

Exhibit 9 at p. 11 (Draft Permit). This regulatory requirement requires the operator of existing cooling water intake structures to identify threatened and endangered species in the affected watershed and biological data on mortality and impacts to such species. The Service has found that Colorado pikeminnow and Razorback sucker exist in the area of the San Juan River impacted by the FCPP. Exhibit 16 p. 6 of pdf (USFS 9/2/2014 Memo). The Service also found that the project area contains critical habitat for these endangered fish species. *Id.* at p. 8 of pdf. The cooling water intake system at the FCPP can cause injury or death to these critically endangered native species due to impingement on the intake structure screens and entrainment in the cooling water system itself. EPA has acknowledged that adverse effects to endangered fish species can also result from "entrainment at the APS Weir on the San Juan River." Exhibit 15, p. 2 (Region 9 11/10/14 ESA memo). To date, a thorough assessment of the impacts to Colorado pikeminnow and razorback sucker from impingement and entrainment in the cooling water intake system has never been submitted for public review and comment.

## IV. ARGUMENT

### A. This Court has Jurisdiction to Issue a Mandamus Order

This Court has jurisdiction to issue the writ of mandamus sought by Petitioners pursuant to the All Writs Act, 28 U.S.C. § 1651. Section 509(b)(1)(F)

of the Clean Water Act, 33 U.S.C § 1369(b)(1)(F), grants jurisdiction to the Courts of Appeals to review EPA's NPDES permitting actions and the All Writs Act empowers this Court to issue a writ to protect its "prospective jurisdiction" by compelling EPA to make substantive decisions that once made will be reviewable by this Court. *TRAC*, 750 F.2d at 76; *Air Line Pilots Association, International("ALPA") v. CAB*, 750 F.2d 81, 84 (D.C. Cir. 1984). Section 509 effectively assigns exclusive jurisdiction to the Court of Appeals for claims concerning *delay* in agency action on NPDES permits because the agency action Petitioners seek—action on the delayed permit reissuance applications—will be reviewable by this Court under section 509(b)(1)(F) once it happens. *See FTC v. Dean Foods Co.*, 384 U.S. 597, 604 (1966); *Pub. Util. Comm'r v. Bonneville Power Admin.*, 767 F.2d 622, 626, 630 (9th Cir. 1985); *TRAC*, 750 F.2d at 79; *see also Clark v. Busey*, 959 F.2d 808, 811 (9th Cir. 1992) (reasoning that because the Court of Appeals' jurisdiction to review the final FAA order is exclusive, jurisdiction to review any procedural irregularities preceding the final order is also exclusive) (citations omitted).[2]

[2] There appears to be no controlling authority specifically addressing the type of inaction alleged by Petitioners in this case, *i.e.*, unreasonable delay in acting on NPDES permit reissuance application. However, the Supreme Court and other Circuit Courts of Appeals have found jurisdiction in the Courts of Appeals over various claims attendant to or related to the issuance of CWA section 402 permits. 33. U.S.C. § 1342. In *Crown Simpson Pulp Co. v. Costle*, 445 U.S. 193, 196 (1980), the Supreme Court found that EPA's denial of a variance and disapproval

### B. A Writ Should Issue Because EPA has Unreasonably Delayed Issuing the Final Permit

EPA is in violation of the CWA and its own implementing regulations for failing to take final action on the FCPP application. When a permit is required by federal law and a valid application is pending, the APA states that the permitting agency must act "within a reasonable time" and "with due regard for the rights of interested parties and those adversely affected." 5 U.S.C. § 558(c). Here, EPA's over-decade long failure to take final action, and its over three year-long failure to act since it closed the comment period on the draft permit are both unreasonable.

The D.C. Circuit in *TRAC* first laid out the test for determining whether an agency's delay is "so egregious as to warrant mandamus." 750 F.2d at 80. The *TRAC* test, which has been adopted in this Circuit, requires courts to consider the following factors: (1) the time agencies take to make decisions must be governed by a "rule of reason"[;] (2) where Congress has provided a timetable or other

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of effluent restrictions contained in a State-issued 402 permit was a denial of an NPDES permit within the CWA's grant of jurisdiction under section 509(b)(1)(F) and remanded the case to the Ninth Circuit. Similarly, this Court has found that CWA section 509(b)(1)(F) grants jurisdiction to the Courts of Appeals to hear challenges involving agency extensions of NPDES permits and the issuance of NPDES regulations. *See Pacific Legal Found. v. Costle*, 586 F.2d 650, 654-55 (9th Cir. 1978) (finding the extension of an NPDES permit was tantamount to a permit issuance and thus within grant of jurisdiction under CWA section 509(b)(1)(F)), *rev'd* on other grounds by 445 U.S. 198 (1980); *Natural Res. Def. Council, Inc. v. EPA*, 966 F.2d 1292, 1296-97 (9th Cir. 1992) (finding that CWA section 509 grants circuit court jurisdiction to review "rules that regulate the underlying permit procedures").

indication of the speed with which it expects the agency to proceed in the enabling statute, that statutory scheme may supply content for this rule of reason[;] (3) delays that might be reasonable in the sphere of economic regulation are less tolerable when human health and welfare are at stake[;] (4) the court should consider the effect of expediting delayed action on agency activities of a higher or competing priority[;] (5) the court should also take into account the nature and extent of the interests prejudiced by the delay[;] and (6) the court need not "find any impropriety lurking behind agency lassitude in order to hold that agency action is unreasonably delayed." *Id.* (citations omitted); *See Independence Mining Co. v. Babbitt,* 105 F.3d 502, 507 (9th Cir. 1997) (adopting *T.R.A.C.* factors); *Biodiversity Legal Found. v. Badgley,* 309 F.3d 1166, 1177 n. 11 (9th Cir. 2002) (noting *T.R.A.C.* factors apply "in the absence of a firm deadline")

EPA's inaction over the FCPP NPDES application presents one of the circumstances where mandamus relief is appropriate. In this Circuit, the Court has granted a writ requiring a final decision when, as here, the agency's delay is harming human health or the environment and the agency lacks a "concrete timeline" for its decision. *See, In re A Cmty. Voice*, 878 F.3d 779, 787 (9th Cir. 2017) (granting a writ mandating EPA take action on lead-based paints were EPA had delayed for more than eight years, offered only "speculative dates" and failed to offer a "concrete timetable" for final action, and "there is a clear threat to human

welfare"); *In re Pesticide Action Network*, 798 F.3d 809, 813 (9th Cir. 2015) (granting a writ where EPA failed to take final action as promised, had delayed for more than eight years, lacked a "concrete timeline" for final action, and the action involved a pesticide harmful to human health).

EPA's ongoing delay frustrates this Court's role in providing a forum for review of the final permits, and as discussed below, the above factors support a finding that EPA has unreasonably delayed action and mandamus is the appropriate remedy. *TRAC*, 750 F.2d 70.

### 1. The Clean Water Act's Statutory Framework and the Rule of Reason Supports a Finding that EPA's Delay is Unreasonable.

Congress mandated that NPDES permits be for fixed terms, no greater than five years. 33 U.S.C. § 1342(b)(1)(B). The five-year limit for NPDES permits establishes a mandatory expiration date at which point the permit must be reviewed and updated to reflect changes in the law, the conditions of receiving waters, or the requirements applicable to the permittees. Congress could not have intended that permits be for fixed five year terms and yet allow EPA to leave an expired NPDES Permit in place to serve as the *de facto* permit for more than three additional five year permit cycles, as is the case here, without EPA review and update.

As one court has stated, although "there is no per se rule as to how long is too long to wait for agency action . . . a reasonable time for agency action is

typically counted in weeks or months, not years." *In re Am. Rivers & Idaho Rivers United*, 372 F.3d 413, 419 (D.C. Cir. 2004) *citing Midwest Gas Users Asso. v. FERC*, 833 F.2d 341, 359 (D.C. Cir. 1987) ("This court has stated generally that a reasonable time for an agency decision could encompass 'months, occasionally a year or two, but not several years or a decade.'" (*quoting MCI Telecommunications Corp. v. FCC*, 627 F.2d 322, 340 (D.C. Cir. 1980)).

Numerous courts have issued mandamus orders for regulatory delays that were far shorter in length than the current over twelve year delay in issuing the FCPP NPDES permit. *See, Potomac Elec. Power Co. v. ICC*, 702 F.2d 1026, 1035 (D.C. Cir. 1983) (eight year delay unreasonable); *Public Citizen Health Research Group v. Auchter,* 702 F.2d 1150, 1157- 1159 (D.C. Cir. 1983) (three year delay unreasonable); *MCI*, 627 F.2d at 324-25 (four year delay unreasonable); *Nader v. FCC*, 520 F.2d 182, 206 (D.C. Cir. 1975) (ten year delay unreasonable). In sum, the CWA's mandate for five year permit terms and prevailing case law finding delays of several years to be unreasonable underscore EPA's ongoing over twelve year delay in acting on the FCPP permit application is unreasonable.

EPA's own regulations impose a duty on the agency to act after it issues a draft NPDES permit. More specifically, EPA's regulations state, "[a]fter the close of the public comment period under §124.10 on a draft permit, the Regional

Administrator ***shall issue a final permit decision…"*** 40 C.F.R. §124.15(a)(emphasis added).

### 2. Public Health and Welfare Interests are Negatively Prejudiced by EPA's Delay.

EPA's ongoing inaction harms Petitioners because EPA has delayed the issuance of permits with potentially stricter requirements that would result in cleaner water and protection of endangered fish species. As envisioned by Congress, Petitioners and the general public have a legally cognizable interest in clean water. *C.f. Ecological Rights Foundation v. Pacific Lumber Company*, 230 F.3d 1141, 1151 (9th Cir. 2000) (citing *Friends of the Earth v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 155-61 (4th Cir. 2000) (*en banc*) (the increased risk of harm based on CWA permit violations is an injury in- fact.)).

Congress intended NPDES permits to be for fixed terms, so that every five years the permitting agency would update the permit and where applicable, include any more stringent effluent limitations that are warranted. In other words, Congress intended that EPA would review NPDES permits every five years to determine whether improvements in available technology warranted more stringent technology-based effluent limitations or deterioration in water quality warranted more stringent water quality based effluent limits. In the twelve years that EPA has delayed taking final action on the expired NPDES Permit, there have been both advances in the available and economically achievable water pollution reduction

technology for coal-fired power plants and a deterioration in the water quality of the applicable water bodies into which the facility discharges. EPA's delay has postponed an assessment of compliance with current effluent limitation guidelines, CWA, 33 U.S.C. §§ 1311(b), 1314(b) and assessment of best available technology economically achievable ("BAT"), which EPA can set based upon "best professional judgment" ("BPJ") on a case-by-case basis in individual NPDES permits. 33 U.S.C. § 1342(a)(1); 40 C.F.R. § 122.41(a)(1).

EPA's inaction has also delayed the regulation of coal ash discharges into the Chaco River watershed resulting from seepage from the FCPP coal ash disposal facilities. Finally, EPA's inaction has also delayed collection and public dissemination of the impacts to endangered fish species in the San Juan River. These delays can be remedied by an order from this Court directing EPA to take final action on the long pending NPDES application by a reasonable date certain.

**3. EPA's inaction is inexcusable**

EPA may claim that it has other priorities, but "[h]owever many priorities the agency may have, and however modest its personnel and budgetary resources may be, there is a limit to how long it may use these justifications to excuse inaction in the face of the congressional command to act." *In re United Mine Workers of Am. Int'l Union*, 190 F.3d 545, 554 (D.C. Cir. 1999). EPA's failure to

issue a final permit and allow the 2001 permit to remain in effect for over 3 five-year permit cycles is inexcusable.

#### 4. The Public Has Been Precluded From Participating in Environmental Decision-Making Processes For the Coal Plants.

EPA's failure to take final action has denied Petitioners the opportunity to appeal a final NPDES permit. EPA's failure to take final action has delayed regulation of unpermitted discharges of coal ash seepage into the Chaco River watershed thus posing a risk to public health and the endangered aquatic species living downstream. EPA's inaction has also resulted in inexcusable delay in the collection and public dissemination of information regarding the impacts to endangered fish species resulting from operation of the cooling water intake structure on the San Juan River.

## V. CONCLUSION

Petitioners respectfully request that the Court issue a writ of mandamus compelling EPA Region 9 to take final action on the long pending NPDES permit application for the FCPP by a reasonable date certain within 3 months of its decision. In addition, the Petitioners request that the Court awards fees and costs to Petitioners under CWA section 509(b)(3), 33 U.S.C. § 1369(b)(3), in an amount to be determined following subsequent motion practice and briefing.

## VI. STATEMENT OF RELATED CASES

Petitioners are not aware of any related cases pending in this Court.

Respectfully submitted,

s/ John M. Barth
John Barth (Colorado #22957)
Attorney at Law
P.O. Box 409
Hygiene, Colorado 80533
[redacted]
barthlawoffice@[redacted]

Shiloh Hernandez
Andrew Hawley
Western Environmental Law Center
103 Reeder's Alley
Helena, MT 59601
Hernandez@[redacted]
Hawley@[redacted]
[redacted]

Attorneys for Petitioners

Michael Saul (Colorado 30143)
Center for Biological Diversity
1536 Wynkoop St. Suite 421
Denver, CO 80202
MSaul@[redacted]
[redacted]

Attorney for Petitioner Center for Biological Diversity

Dine' Citizens Against Ruining the Environment
HC 63 Box 272
Winslow, AZ 86047

928-221-7859

San Juan Citizens Alliance
1309 E 3rd Ave., Suite 5
Durango, CO 81301
(970) 259-3583

Center for Biological Diversity
P.O. Box 710
Tucson, AZ 85702-0710
(520) 623-5252

Amigos Bravos
114 Des Georges Place
Taos, NM 87571
575-758-3874

Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612

**Certification of Compliance**

I certify pursuant to Circuit Court Rule 21-2(c) that this Petition complies with the type-volume limitation of 30 pages, excluding items allowed by rules or local rules.

s/ John Barth

**Certification of Service**

I certify that this Petition for Writ of Mandamus and was served by U.S. Priority Mail upon the following this 23rd day of May 2018.

Alexis Strauss
Acting Regional Administrator
EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Tomas Torres
Director, Water Division
EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Matthew Z. Leopold
General Counsel, Mail Code 2310A
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20460

Jeff Sessions
Attorney General of the United States
950 Pennsylvania Ave, NW
Washington, D.C. 20530-0001

s/ John Barth

John Barth

HNITED STATES COURT OF APPEALS
FOR DISTRICT OF COLUMBIA CIRCUIT 

UNITED STATES COURT OF APPEALS
FOR DISTRICT OF COLUMBIA CIRCUIT
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**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

CLEAN WATER ACTION, ENVIRONMENTAL INTEGRITY PROJECT, SIERRA CLUB, WATERKEEPER ALLIANCE, INC., PENNENVIRONMENT, INC., CHESAPEAKE CLIMATE ACTION NETWORK, PHYSICIANS FOR SOCIAL RESPONSIBILITY, CHESAPEAKE, INC., and PRAIRIE RIVERS NETWORK

Petitioners,

v.

E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency and U.S. ENVIRONMENTAL PROTECTION AGENCY

Respondents.

Case No. 17-1193

ORIGINAL

**PROTECTIVE PETITION FOR REVIEW**

Pursuant to Federal Rule of Appellate Procedure 15, *and as a protective matter only to preserve their right to judicial review*, Clean Water Action, Environmental Integrity Project, Sierra Club, Waterkeeper Alliance, Inc., PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network (collectively, "Environmental Petitioners") file this petition for review of the U.S. Environmental Protection Agency's ("EPA") indefinite stay entitled *Postponement*

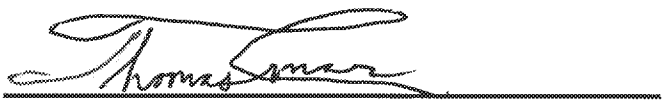
*of Certain Compliance Dates for Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category* and issued on April 25, 2017 ("Indefinite Stay"). *See* 82 Fed. Reg. 19,005 (Apr. 25, 2017), attached as Exhibit A.

The Indefinite Stay postpones certain compliance deadlines in EPA's November 2015 final rule revising the Clean Water Act Effluent Limitation Guidelines for power plants (the "ELG rule"). The ELG rule had been finalized by EPA after a lengthy rulemaking process. 80 Fed. Reg. 67,838 (Nov. 3, 2015). The effective date of the rule was January 4, 2016—nearly nineteen months ago.

Environmental Petitioners contend that the Indefinite Stay is a violation of the Administrative Procedure Act, 5 U.S.C. § 706(2)(A), for which jurisdiction and venue are proper in the District Court for the District of Columbia, and they have filed a complaint and have an ongoing proceeding in the District Court. Nevertheless, because EPA contends that jurisdiction and venue are proper only in Circuit Court, pursuant to 33 U.S.C. § 1369(b)(1), Environmental Petitioners are filing this petition for review as a protective matter to preserve their right to judicial review.

Dated: August 21, 2017

Respectfully submitted,



Thomas J. Cmar
Earthjustice
1101 Lake Street, Suite 405B
Oak Park, IL 60301
T: (312) 257-9338
E: tcmar@earthjustice.org

Matthew Gerhart
3639 N. Clayton Street
Denver, CO 80205
T: (510) 847-7721
E: megerhart@gmail.com

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

Casey Austin Roberts
Sierra Club
Environmental Law Program
1536 Wynkoop Street, Suite 312
Denver, CO 80202
T: (303) 454-3355
E: casey.roberts@sierraclub.org

Joshua Smith
Sierra Club
Environmental Law Program
2101 Webster Street, Suite 1300
Oakland, CA 94612
T: (415) 977-5560
E: joshua.smith@sierraclub.org

*Counsel for Petitioner Sierra Club*

Patton Dycus
Environmental Integrity Project
1000 Vermont Avenue NW, Suite 1100
Washington, DC 20005
T: (202) 296-8800
E: pdycus@environmentalintegrity.org

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

UNITED STATES COURT OF APPEALS
FOR DISTRICT OF COLUMBIA CIRCUIT
USCA Case #17-1193 Document #1689680 Filed: 08/21/2017
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CLEAN WATER ACTION, ENVIRONMENTAL INTEGRITY PROJECT, SIERRA CLUB, WATERKEEPER ALLIANCE, INC., PENNENVIRONMENT, INC., CHESAPEAKE CLIMATE ACTION NETWORK, PHYSICIANS FOR SOCIAL RESPONSIBILITY, CHESAPEAKE, INC., and PRAIRIE RIVERS NETWORK

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Respondents.

Case No. 17-1193

ORIGINAL

## RULE 26.1 DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Petitioners Clean Water Action, Environmental Integrity Project, Sierra Club, Waterkeeper Alliance, Inc., PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network make the following disclosures:

**Clean Water Action**

Non-Governmental Corporate Party to this Action: Clean Water Action.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Clean Water Action is a national, non-profit membership organization incorporated under the laws of the District of Columbia, and has more than 800,000 members nationwide. Clean Water Action's mission includes the prevention of pollution in the nation's waters, protection of natural resources, creation of environmentally-safe jobs and businesses, and empowerment of people to make democracy work.

**Environmental Integrity Project**

Non-Governmental Corporate Party to this Action: Environmental Integrity Project.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Environmental Integrity Project ("EIP") is a non-profit organization based in Washington, D.C. EIP's objectives are to provide objective analysis of how the failure to enforce or implement environmental laws increases pollution and affects the public's health, to hold federal and state agencies, as well as individual corporations, accountable for failing to enforce or

comply with environmental laws, and to help local communities in key states obtain the protection of environmental laws.

**Sierra Club**

Non-Governmental Corporate Party to this Action: Sierra Club.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Sierra Club is a non-profit corporation incorporated in San Francisco, California, with more than 744,000 members nationwide. Sierra Club is dedicated to exploring, enjoying, and protecting the wild places of the Earth; to practicing and promoting responsible use of the Earth's resources and ecosystem; and to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out those objectives.

**Waterkeeper Alliance, Inc.**

Non-Governmental Corporate Party to this Action: Waterkeeper Alliance, Inc.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Waterkeeper Alliance, Inc. is a non-profit headquartered in New York, New York uniting more than 300 Waterkeeper Organizations and Affiliates around the world and focusing citizen advocacy on

issues that affect our waterways and water quality. Within the United States, Waterkeeper Alliance, Inc. works with more than 160 Waterkeeper Organizations and Affiliates to create and preserve drinkable, fishable, swimmable, and clean waterways.

**PennEnvironment, Inc.**

Non-Governmental Corporate Party to this Action: PennEnvironment, Inc.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: PennEnvironment, Inc. is a non-profit environmental advocacy group that is actively engaged in education, research, lobbying, litigation, and citizen organizing to encourage conservation and environmental protections in Pennsylvania. PennEnvironment, Inc. has worked to reduce toxic pollution in Pennsylvania waterways and educate the public about the dangers of mercury and other toxic pollutants through its reports and grassroots outreach on behalf of its tens of thousands of members.

**Chesapeake Climate Action Network**

Non-Governmental Corporate Party to this Action: Chesapeake Climate Action Network.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Chesapeake Climate Action Network ("CCAN") is a grassroots, non-profit organization founded to transition the region towards clean-energy solutions to climate change, specifically in Maryland, Virginia, and Washington, D.C. CCAN's mission is to educate and mobilize citizens in a way that fosters a rapid societal switch to clean energy sources. This mission includes ensuring that facilities that contribute to global warming, such as coal-fired power plants, do not impact the health of CCAN's members or the environment through the release of dangerous pollutants.

**Physicians for Social Responsibility, Chesapeake, Inc.**

Non-Governmental Corporate Party to this Action: Physicians for Social Responsibility, Chesapeake, Inc.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Physicians for Social Responsibility, Chesapeake, Inc. ("Chesapeake PSR") is a non-profit organization dedicated to creating a healthy, just, and peaceful world for both present and future generations. On behalf of its approximately 300 members, Chesapeake PSR uses its medical and public-health expertise to engage in regulatory and permitting processes to promote clean, renewable energy and to minimize the amount of toxic pollution released from coal-fired power plants.

**Prairie Rivers Network**

Non-Governmental Corporate Party to this Action: Prairie Rivers Network.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Prairie Rivers Network ("PRN") is an Illinois non-profit organization that champions clean, healthy rivers and lakes and safe drinking water to benefit the people and wildlife of Illinois. Drawing upon sound science and working cooperatively with others, PRN advocates public policies and cultural values that sustain the ecological health and biological diversity of water resources and aquatic ecosystems.

Dated: August 21, 2017

Respectfully Submitted,

Thomas J. Cmar
Earthjustice
1101 Lake Street, Suite 405B
Oak Park, IL 60301
T: (312) 257-9338
E: tcmar@earthjustice.org

Matthew Gerhart
3639 N. Clayton Street
Denver, CO 80205
T: (510) 847-7721
E: megerhart@gmail.com

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

Casey Austin Roberts
Sierra Club
Environmental Law Program
1536 Wynkoop Street, Suite 312
Denver, CO 80202
T: (303) 454-3355
E: casey.roberts@sierraclub.org

Joshua Smith
Sierra Club
Environmental Law Program
2101 Webster Street, Suite 1300
Oakland, CA 94612
T: (415) 977-5560
E: joshua.smith@sierraclub.org

*Counsel for Petitioner Sierra Club*

Patton Dycus
Environmental Integrity Project
1000 Vermont Avenue NW, Suite 1100
Washington, DC 20005
T: (202) 296-8800
E: pdycus@environmentalintegrity.org

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

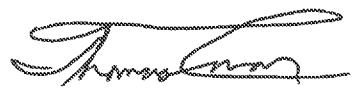
## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing Protective Petition for Review and Rule 26.1 Disclosure Statement of Petitioners by sending a copy via First Class Mail to each of the following addresses on this 21st day of August, 2017:

E. Scott Pruitt
EPA Headquarters 1101A
United States Environmental Protection Agency
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Jeff Sessions
Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001

Correspondence Control Unit
Office of General Counsel (2311)
United States Environmental Protection Agency
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460



Thomas Cmar

UNITED STATES COURT OF APPEALS
FOR DISTRICT OF COLUMBIA CIRCUIT 

UNITED STATES COURT OF APPEALS
FOR DISTRICT OF COLUMBIA CIRCUIT
FILED AUG 21 2017
CLERK

AUG 21 2017
RECEIVED

**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

CLEAN WATER ACTION, ENVIRONMENTAL INTEGRITY PROJECT, SIERRA CLUB, WATERKEEPER ALLIANCE, INC., PENNENVIRONMENT, INC., CHESAPEAKE CLIMATE ACTION NETWORK, PHYSICIANS FOR SOCIAL RESPONSIBILITY, CHESAPEAKE, INC., and PRAIRIE RIVERS NETWORK

Petitioners,

v.

E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency and U.S. ENVIRONMENTAL PROTECTION AGENCY

Respondents.

Case No. 17-1193

ORIGINAL

# EXHIBIT A

# INDEFINITE STAY NOTICE

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 423**

**[EPA–HQ–OW–2009–0819; FRL–9961–67–OW]**

**RIN 2040–AF14**

## Postponement of Certain Compliance Dates for Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notification; postponement of compliance dates.

**SUMMARY:** By a letter dated April 12, 2017, the Administrator announced the EPA decision to reconsider the final rule that amends the effluent limitations guidelines and standards for the steam electric point source category under the Clean Water Act ("CWA"), published in the **Federal Register** on November 3, 2015. These regulations have been challenged in the U.S. Court of Appeals for the Fifth Circuit, *Southwestern Electric Power Co., et al.* v. *EPA,* No. 15–60821. The EPA is postponing these compliance dates pending judicial review.

**DATES:** April 25, 2017.

**ADDRESSES:** EPA has established a docket for the Rule amending 40 CFR part 423 under Docket ID No. EPA–HQ–OW–2009–0819. All documents in the docket are listed on the *http://www.regulations.gov* Web site.

**FOR FURTHER INFORMATION CONTACT:** For technical information, contact Ronald Jordan, United States Environmental Protection Agency, Engineering and Analysis Division; telephone number: (202) 564–1003; email address: *jordan.ronald@epa.gov.* For information related to NPDES permitting of these facilities, contact Sean Ramach at (202) 564–2865, email address: *ramach.sean@epa.gov.*

Electronic copies of this document and related materials are available on EPA's Web site at *https://www.epa.gov/eg/steam-electric-power-generating-effluent-guidelines-2015-final-rule.* Copies of this notification are also available at *http://www.regulations.gov.*

**SUPPLEMENTARY INFORMATION:**

### I. Background

On November 3, 2015, the EPA issued a final rule amending 40 CFR part 423, the effluent limitations guidelines and standards for the steam electric power generating point source category, under Sections 301, 304, 306, 307, 308, 402, and 501 of the CWA (33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361). The amendments addressed and contained limitations and standards on various wastestreams at steam electric power plants: Fly ash transport water, bottom ash transport water, flue gas mercury control wastewater, flue gas desulfurization ("FGD") wastewater, gasification wastewater, and combustion residual leachate. Collectively, this rulemaking is known as the "Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category" ("Rule"). For further information on the Rule, see 80 FR 67838 (Nov. 3, 2015).

EPA received seven petitions for review of the Rule. The United States Judicial Panel on Multi-District Litigation issued an order on December 8, 2015, consolidating all of the petitions in the U.S. Court of Appeals for the Fifth Circuit. Petitioners have filed their briefs, and EPA's brief is currently due by May 4, 2017.

In a letter dated March 24, 2017, the Utility Water Act Group ("UWAG")[1] submitted a petition for reconsideration of the Rule and requested that EPA suspend the Rule's approaching deadlines. In a letter dated April 5, 2017, the Small Business Administration Office of Advocacy also petitioned the EPA for reconsideration of the Rule. The petitions raise wide-ranging and sweeping objections to the Rule, some of which overlap with the claims in the ongoing litigation challenging the Rule in the U.S. Court of Appeals for the Fifth Circuit.[2] The UWAG petition also points to new data, claiming that plants burning subbituminous and bituminous coal cannot comply with the Rule's limitations and standards for FGD wastewater through use of EPA's model technology. The UWAG petition says that a pilot study has been conducted at the Pleasant Prairie plant that supports petitioner's request, and that a final report on the pilot study "is likely to [be] publish[ed] . . . within the next few weeks." Moreover, the petitions say that new data have been collected by American Electric Power that "illustrate[ ] that variability in wastewater management can also impact performance at bituminous plants such that additional technologies beyond EPA's model technology will be needed to achieve the limits." EPA wishes to review these data.

In an April 12, 2017 letter to those who submitted the reconsideration petitions, the Administrator announced his decision to reconsider the Rule (a copy of this letter is included in the docket for the Rule). As explained in that letter, after considering the objections raised in the reconsideration petitions, the Administrator determined that it is appropriate and in the public interest to reconsider the Rule. Under Section 705 of the APA ("Administrative Procedure Act"), 5 U.S.C. 705, and when justice so requires, an Agency may postpone the effective date of action taken by it pending judicial review. The earliest compliance dates for the new, and more stringent, best available technology economically achievable effluent limitations and pretreatment standards is November 1, 2018, for each of the following wastestreams: Fly ash transport water, bottom ash transport water, flue gas desulfurization wastewater, flue gas mercury control wastewater, and gasification wastewater. These dates have not yet passed, and they are within the meaning of the term "effective date" as that term is used in Section 705 of the APA. In light of the capital expenditures that facilities incurring costs under the Rule will need to undertake in order to meet the compliance deadlines for the new, more stringent limitations and standards in the Rule—which are as early as November 1, 2018, for direct dischargers and by November 1, 2018, for indirect dischargers—the Agency finds that justice requires it to postpone the compliance dates of the Rule that have not yet passed, pending judicial review. *See* 80 FR 67838, 67863–67868 (Nov. 3, 2015) (discussion of costs of the Rule). This will preserve the regulatory status quo with respect to wastestreams subject to the Rule's new, and more stringent, limitations and standards, while the litigation is pending and the reconsideration is underway. While EPA is not making any concession of error with respect to the rulemaking, the far-ranging issues contained in the reconsideration petitions warrant careful and considerate review of the Rule. EPA will also file a motion requesting the Fifth Circuit to hold the litigation challenging the Rule in abeyance while the Agency reconsiders the Rule, after which it will inform the

[1] UWAG is a voluntary, ad hoc, unincorporated group of 163 individual energy companies and three national trade associations of energy companies: Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Public Power Association.

[2] A copy of each petition is included in the docket for this rule, Docket ID No. EPA–HQ–OW–2009–0819.

Court of any portions of the Rule for which it seeks a remand so that it can conduct further rulemaking. Separately, EPA intends to conduct notice and comment rulemaking to stay the compliance deadlines for the new, more stringent limitations and standards in the Rule.

**II. Postponement of Compliance Dates**

The EPA hereby issues a postponement of the compliance dates that have not yet passed contained in the following sections of the Effluent Guidelines and Standards for the Steam Electric Power Generating Point Source Category under Section 705 of the APA pending judicial review: 40 CFR 423.11(t), 423.13(g)(1)(i), (h)(1)(i), (i)(1)(i), (j)(1)(i), and (k)(1)(i), and 423.16(e), (f), (g), (h), and (i).

**List of Subjects in 40 CFR Part 423**

Environmental protection, Electric power generation, Power plants, Waste treatment and disposal, Water pollution control.

Dated: April 12, 2017.

**E. Scott Pruitt,**

*Administrator.*

[FR Doc. 2017–07811 Filed 4–24–17; 8:45 am]

BILLING CODE 6560–50–P

# United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

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**No. 17-1193** **September Term, 2017**

**EPA-82FR19005**

**Filed On: July 23, 2018**

Clean Water Action, et al.,

Petitioners

v.

Andrew R. Wheeler and Environmental Protection Agency,

Respondents

**BEFORE:** Rogers, Tatel, and Srinivasan, Circuit Judges

**O R D E R**

Upon consideration of the motion to lift abeyance and dismiss, or alternatively to transfer, the opposition thereto, and the reply; and the motions to govern, it is

**ORDERED** that this case be removed from abeyance. It is

**FURTHER ORDERED** that the motion to transfer be granted and this case be transferred to the United States Court of Appeals for the Fifth Circuit. 28 U.S.C. § 2112(a). Transfer is appropriate "where the same or inter-related proceeding was previously under review in a court of appeals, and is now brought for review . . . in a follow-on phase, where continuance of the same appellate tribunal is necessary to maintain continuity in the total proceeding." Pub. Serv. Comm'n v. Fed'l Power Comm'n, 472 F.2d 1270, 1272 (D.C. Cir. 1972) (internal quotation marks omitted); see also Eastern Air Lines, Inc. v. Civil Aeronautics Bd., 354 F.2d 507, 511 (D.C. Cir. 1965). Transfer is granted without prejudice to the authority of the Fifth Circuit to address mootness and to determine any other jurisdictional issues.

The Clerk is directed to transmit the original files and a copy of this order to the Fifth Circuit. Pursuant to D.C. Circuit Rule 36, this disposition will not be published.

**Per Curiam**

# *United States Court of Appeals*

**FIFTH CIRCUIT**
**OFFICE OF THE CLERK**

**LYLE W. CAYCE**
**CLERK**

**TEL. 504-310-7700**
**600 S. MAESTRI PLACE**
**NEW ORLEANS, LA 70130**

August 31, 2018

Mr. Scott Pruitt
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
William Jefferson Clinton Building
Mail Code 1101A
Washington, DC 20460-0000

Mr. Andrew Wheeler
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
William Jefferson Clinton Building
Washington, DC 20460-0000

No. 18-60619 Clean Water Action, et al v. EPA, et al
Agency No. 82 Fed. Reg. 19,005

Dear Mr. Pruitt, Mr. Wheeler,

We received an order from the United States Court of Appeals for the District of Columbia Circuit transferring their case number 17-1193 to us. We have assigned the new case number shown above. Please refer to this docket number on all correspondence pertaining to this case.

**Special Guidance for Filing the Administrative Record:** Pursuant to 5th Cir. R. 25.2, Electronic Case Filing (ECF) is mandatory for all counsel. Agencies responsible for filing the administrative record with this court are requested to electronically file the record via CM/ECF using one or more of the following events as appropriate:

Electronic Administrative Record Filed;
Supplemental Electronic Administrative Record Filed;
Sealed Electronic Administrative Record Filed; or
Sealed Supplemental Electronic Administrative Record Filed.

Electronic records must meet the requirements listed below. Records that do not comply with these requirements will be rejected.

- Max file size 20 megabytes per upload.

- Where multiple uploads are needed, describe subsequent files as "Volume 2", "Volume 3", etc.
- Individual documents should remain intact within the same file/upload, when possible.
- Supplemental records must contain the supplemental documents only. No documents contained within the original record should be duplicated.

Electronic records are automatically paginated for the benefit of counsel and the court and provide an accurate means of citing to the record in briefs. A copy of the paginated electronic record is provided to all counsel at the time of filing via a Notice of Docket Activity (NDA). Upon receipt, counsel should save a copy of the paginated record to their local computer.

Agencies unable to provide the administrative record via docketing in CM/ECF may instead provide a copy of the record on a flash drive or CD which we will use to upload and paginate the record.

If the agency intends to file a certified list in lieu of the administrative record, it is *required* to be filed electronically. Paper filings will not be accepted. See FED. R. APP. P. 16 and 17 as to the composition and time for the filing of the record.

Counsel who desire to appear in this case must electronically file a "Form for Appearance of Counsel" within 14 days from this date. You must name each party you represent, see FED. R. APP. P. and 5TH CIR. R. 12. The form is available from the Fifth Circuit's website, www.ca5.uscourts.gov. If you fail to electronically file the form, we will remove your name from our docket.

ATTENTION ATTORNEYS: Attorneys are required to be a member of the Fifth Circuit Bar and to register for Electronic Case Filing. The "Application and Oath for Admission" form can be printed or downloaded from the Fifth Circuit's website, www.ca5.uscourts.gov. Information on Electronic Case Filing is available at www.ca5.uscourts.gov/cmecf/.

We recommend that you visit the Fifth Circuit's website, www.ca5.uscourts.gov and review material that will assist you during the appeal process. We especially call to your attention the Practitioner's Guide and the 5th Circuit Appeal Flow Chart, located in the Forms, Fees, and Guides tab.

**Sealing Documents on Appeal:** Our court has a strong presumption of public access to our court's records, and the court scrutinizes any request by a party to seal pleadings, record excerpts, or other documents on our court docket. Counsel moving to seal matters must explain in particularity the necessity for sealing in our court. Counsel do not satisfy this burden by simply stating that the originating court sealed the matter, as the circumstances that justified sealing in the originating court may have changed or may not apply in an appellate proceeding. It is the obligation of counsel to justify a request to file under seal, just as it is their obligation to notify the court whenever sealing is no longer necessary. An unopposed motion to seal does not obviate a counsel's obligation to justify the motion to seal.

Sincerely,

LYLE W. CAYCE, Clerk

By: _____
Allison G. Lopez, Deputy Clerk
504-310-7702

Enclosure

cc: Mr. Thomas Joseph Cmar
Mr. Patton Dycus
Mr. Matthew Gerhart
Mr. Tsuki Hoshijima
Mr. Matthew Z. Leopold
Mr. Martin Francis McDermott
Ms. Casey Austin Roberts
Mr. Joshua Smith

ORAL ARGUMENT NOT YET SCHEDULED

**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

| | |
|---|---|
| CLEAN WATER ACTION, *et al.*,<br><br>*Appellants*,<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, *et al.*,<br><br>*Appellees.* | No. 18-5149 |

**APPELLANTS' MOTION TO HOLD JURISDICTION ISSUES IN ABEYANCE**

Appellants Clean Water Action, Environmental Integrity Project, Sierra Club, Waterkeeper Alliance, Inc., PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network (collectively, "Appellants") respectfully move to sever and hold in abeyance their claims in this appeal described in Issue One of their Statement of Issues, also being filed today in this case (the "Delay Rule" claims), pending the decision of the Fifth Circuit Court of Appeals in a related proceeding. Appellants respectfully request that briefing proceed on their claims in this appeal described in Issue Two of their Statement of Issues (the "Indefinite Stay" claims).

Counsel for the Government has advised that Appellees intend to file a response to this motion. Counsel for Intervenor has advised that it takes no position on the motion and reserves the right to file a response after reviewing the motion.

The complaint filed in district court challenged the United States Environmental Protection Agency's ("EPA") decision to indefinitely stay, without any prior notice or opportunity for public comment, compliance deadlines for EPA's 2015 rule revising Effluent Limitations Guidelines for steam electric power plants (the "ELG Rule"). *See* 82 Fed. Reg. 19,005 (Apr. 25, 2017) (the "Indefinite Stay"). The ELG Rule limits the amount of toxic water pollution that can be discharged by power plants, which are the United States' largest industrial source of toxic pollutant discharges. After EPA issued the Indefinite Stay, EPA promulgated a separate rule after notice and comment that delayed by two years some of the ELG Rule's compliance deadlines. 82 Fed. Reg. 43,494 (Sept. 18, 2017) (the "Delay Rule"). The Delay Rule also purported to withdraw the Indefinite Stay. *Id.* at 43,496.

On April 18, 2018, the district court held that plaintiffs' claims challenging the Indefinite Stay are moot, and the court dismissed the action. *Clean Water Action v. Pruitt*, No. 17-cv-00817 (DLF), 2018 WL 1865919, at *10-13 (D.D.C. Apr. 18, 2018). The district court also denied plaintiffs' motion to amend and supplement the complaint to add claims challenging the Delay Rule. *Id.* at *13.

The district court held that it lacked jurisdiction over the Delay Rule claims in the proposed amended complaint, and that such claims must be brought directly in a court of appeals. *Id.* at *8. On May 11, 2018, the plaintiffs filed a notice of appeal. Notice of Appeal, *Clean Water Action v. Pruitt*, No. 17-cv-00817 (D.D.C. May 11, 2018), ECF Doc. 88. Appellants seek review of the district court's holdings that it lacks jurisdiction over their Delay Rule claims and that their Indefinite Stay claims are now moot. Statement of Issues, ECF Doc. 1736975.

Appellants respectfully request that the Court sever their appeal of the issue of jurisdiction over the Delay Rule claims and hold it in abeyance. Appellants are currently briefing the merits of those same Delay Rule claims in a separate proceeding in the Fifth Circuit Court of Appeals, *Clean Water Action v. EPA*, Case No. 18-60079 (5th Cir.), which was initially commenced by Appellants in this Court as a protective petition to preserve their right to judicial review of the Delay Rule in the event that the district court concluded that it lacks jurisdiction. *See* Protective Petition for Review, *Clean Water Action v. Pruitt*, Case No. 17-1216 (D.C. Cir. Oct. 11, 2017), ECF Doc. 1698542. This Court subsequently transferred Appellants' protective petition to the Fifth Circuit, Order, *Clean Water Action v. Pruitt*, No. 17-1216 (D.C. Cir. Feb. 1, 2018), ECF Doc. 1716063, which held proceedings on it in abeyance pending the district court's decision on jurisdiction, Order, *Clean Water Action v. EPA*, Case No. 18-60079 (5th Cir. April 5, 2018),

ECF Doc. 514417108. Following the district court's decision, the Fifth Circuit issued a briefing notice, under which Appellants' opening brief is due on July 12, 2018, and the case will be fully briefed by November 16, 2018. Briefing Notice, *Clean Water Action v. EPA*, Case No. 18-60079 (5th Cir. May 8, 2018), ECF Doc. 514464306.

In light of the Fifth Circuit proceeding now moving to merits briefing, this Court should sever and hold in abeyance the Delay Rule issue in this appeal. This would preserve Appellants' right to appellate review of the district court's holding that it lacks jurisdiction over the Delay Rule. Additionally, holding the Delay Rule issue in abeyance would promote judicial economy and minimize the risk of inconsistent judgments that would result from this Court hearing the issue of which court has jurisdiction over Appellants' Delay Rule claims at the same time that the Fifth Circuit is hearing the merits of those same claims. Although no party to date has directly challenged the Fifth Circuit's jurisdiction over the Delay Rule, and the district court's judgment on the jurisdiction issue below would (unless reversed on appeal) preclude Appellants from doing so, the issue of whether district or appeals courts have original jurisdiction over the Delay Rule has not been finally resolved. For example, it is possible that the Fifth Circuit will, *sua sponte*, consider whether it has jurisdiction to review the Delay Rule and conclude that it does not, ruling instead that challenges to the Delay Rule must proceed in district courts. *See, e.g.*,

*Bender v. Williamsport Area Sch. Dist.*, 475 U.S. 534, 541 (1986) ("every federal appellate court has a special obligation to satisfy itself . . . of its own jurisdiction") (internal quotation marks and citation omitted). Indeed, this Court's Order transferring the protective petition to the Fifth Circuit declined to rule on the jurisdictional issue and noted that the Fifth Circuit remained free to determine its own jurisdiction. Order at 1, *Clean Water Action v. Pruitt*, No. 17-1216 (D.C. Cir. Feb. 1, 2018) (per curiam), ECF Doc. 1716068 ("Transfer is granted without prejudice to the authority of the Fifth Circuit to determine its own jurisdiction."). In addition, at least one other party is challenging the Delay Rule in district court; in that District of Arizona case, there are pending motions concerning this same jurisdictional issue. *See* Complaint, *Center for Biological Diversity v. Pruitt*, Case No. 4:18-cv-00050- JAS (D. Ariz. Jan. 30, 2018), ECF Doc. 1.

If the Fifth Circuit issues a decision on the merits of Appellants' Delay Rule claims, that would likely obviate the need for any further proceedings in this Court concerning those claims. However, if the Fifth Circuit or another court hearing challenges to the Delay Rule determines that district courts are the proper forum for such challenges, Appellants would no longer have a forum available to litigate their claims against the Delay Rule in the absence of this appeal. Because this jurisdiction issue remains unsettled, severing Appellants' Delay Rule claims and holding them in abeyance pending the Fifth Circuit's decision is appropriate.

At the same time, there is no reason for this Court to delay in hearing Appellants' Indefinite Stay claims, which are not being litigated in any other court. As with their Delay Rule claims, Appellants filed a protective petition in this Court on their Indefinite Stay claims. Protective Petition for Review, *Clean Water Action v. Pruitt*, Case No. 17-1193 (D.C. Cir. Aug. 21, 2017), ECF Doc. 1689680. This Court held proceedings on the Indefinite Stay protective petition in abeyance, pending the decision of the district court below of which Appellants now seek this Court's review. Order, *Clean Water Action v. Pruitt*, Case No. 17-1193 (D.C. Cir. Oct. 10, 2017), ECF Doc. 1697787. Following the district court's decision, Appellants requested that the Court keep this Indefinite Stay protective petition in abeyance pending the outcome of this appeal, which will provide the Court with the benefit of a more complete record for appellate review of whether Appellants' claims challenging the Indefinite Stay are moot. Envtl. Pet'rs' Mot. to Govern, *Clean Water Action v. Pruitt*, Case No. 17-1193 (D.C. Cir. May 18, 2018), ECF Doc. 1731698. By contrast, EPA has moved the Court to either dismiss the Indefinite Stay protective petition as moot or transfer it to the Fifth Circuit, Resp'ts Mot. to Lift Abeyance, *Clean Water Action v. Pruitt*, Case No. 17-1193 (D.C. Cir. Feb. 20, 2018), ECF Doc. 1718714, and Appellants have opposed that motion, Envtl. Pet'rs' Resp. to Mot. to Lift Abeyance, *Clean Water Action v. Pruitt*, Case No. 17-1193 (D.C. Cir. Mar. 2, 2018), ECF Doc. 1720468. For the reasons set

forth in Appellants' filings in that protective petition proceeding, Appellants contend that this appeal of the district court's holding that their Indefinite Stay claims are moot is the proper forum for adjudication of that issue. Accordingly, Appellants request that the Court order briefing to proceed on the Indefinite Stay issue in this appeal.

## CONCLUSION

For the reasons set forth above, Appellants respectfully request that the Court grant their motion to sever and hold in abeyance the issue concerning their Delay Rule claims pending a decision in *Clean Water Action v. EPA*, Case No. 18-60079 (5th Cir.), and order that the parties file joint motions to govern within 14 days after the Fifth Circuit's decision. Further, Appellants respectfully request that the Court set a briefing schedule for the Indefinite Stay issue.

Dated: June 20, 2018

Respectfully submitted,

/s/ Thomas Cmar
Thomas Cmar
Earthjustice
1101 Lake Street, Suite 405B
Oak Park, IL 60301
(312) 257-9338
tcmar@earthjustice.org

Matthew Gerhart
3639 N. Clayton Street
Denver, CO 80205
(510) 847-7721
megerhart@gmail.com

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

/s/ Casey Austin Roberts
Casey Austin Roberts
Sierra Club
Environmental Law Program
1536 Wynkoop Street, Suite 312
Denver, CO 80202
(303) 454-3355
casey.roberts@sierraclub.org

Joshua Smith
Sierra Club
Environmental Law Program
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5560
joshua.smith@sierraclub.org

*Counsel for Petitioner Sierra Club*

/s/ Patton Dycus
Patton Dycus
Environmental Integrity Project
1000 Vermont Avenue NW, Suite 1100
Washington, DC 20005
(202) 296-8800
pdycus@environmentalintegrity.org

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

## CERTIFICATE OF COMPLIANCE

The undersigned counsel states that this motion complies with FED. R. APP. P. 27(d)(2)(A) because it contains 1,507 words, excluding the parts exempted by FED. R. APP. P. 32(f), as counted by a word processing system and, therefore, is within the word limit. This motion also complies with the typeface requirements of FED. R. APP. P. 27(d)(1)(E) because it has been prepared in a proportionally spaced typeface in 14-point Times New Roman font.

Dated: June 20, 2018

/s/ Thomas J. Cmar
Thomas J. Cmar

**CERTIFICATE OF SERVICE**

I hereby certify that on this 20th day of June, 2018, I have served the foregoing on all registered counsel through the Court's electronic filing system (ECF).

/s/ Thomas J. Cmar
Thomas J. Cmar

**UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

| | | |
|---|---|---|
| CLEAN WATER ACTION, et al., | ) | |
| Petitioners, | ) | |
| v. | ) | Case No. 17-1193 |
| E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, et al., | ) | |
| Respondents. | ) | |

**MOTION TO LIFT ABEYANCE AND TO DISMISS, OR ALTERNATIVELY TO TRANSFER**

Respondents U.S. Environmental Protection Agency and Scott Pruitt, Administrator of the U.S. Environmental Protection Agency (collectively, "EPA") move to lift the abeyance in this case and to dismiss or in the alternative transfer this petition to the U.S. Court of Appeals for the Fifth Circuit pursuant to 28 U.S.C. § 2112(a). This petition should be dismissed for mootness because EPA has withdrawn the action that is being challenged. In the alternative, this petition should be transferred for the same reason that this Court recently transferred a related petition to the Fifth Circuit: the EPA action challenged in this petition is part of the same agency proceeding for which there is a pending consolidated challenge in the Fifth Circuit.

## BACKGROUND

This petition for review challenges the second in a series of interrelated actions by EPA under the Clean Water Act concerning effluent discharges from steam electric power plants. Each action has brought about its own set of legal challenges. The following is a brief chronology and procedural history.

### I. EPA's ELG Rule

On November 3, 2015, EPA promulgated the Steam Electric Power Generating Effluent Limitations Guidelines Rule ("ELG Rule"), which established effluent limits under the Clean Water Act for six types of effluent wastestreams generated by new and existing steam electric power plants. *See generally* Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, 80 Fed. Reg. 67,838, 67,841–42 (Nov. 3, 2015). Seven petitions for review of the ELG Rule were filed, and the Judicial Panel on Multidistrict Litigation consolidated the petitions in the Fifth Circuit pursuant to 28 U.S.C. § 2112(a). *In re: EPA, Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category; Final Rule*, MCP No. 136 (JPML Dec. 8, 2015). The consolidated litigation is currently in the merits briefing stage on some issues while some issues are stayed pending further agency action pursuant to EPA's reconsideration and administrative proceedings on a

variance request. *Sw. Elec. Power Co. v. EPA*, No. 15-60821 (5th Cir. filed Nov. 20, 2015).

## II. The § 705 Notice and ELG Rule Amendment

During the course of merits briefing in case number 15-60821, one of the petitioners, the Utility Water Act Group, as well as the Small Business Administration Office of Advocacy, submitted to EPA administrative petitions to reconsider the ELG Rule and to suspend approaching compliance deadlines. By letter dated April 12, 2017, EPA announced its intention to reconsider the ELG Rule. In light of the pending reconsideration, EPA published a notice in the Federal Register announcing a stay pending judicial review, under 5 U.S.C. § 705, of compliance deadlines for certain effluent limitations and standards in the ELG Rule. *See* Postponement of Certain Compliance Dates for Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, 82 Fed. Reg. 19,005 (Apr. 25, 2017) ("§ 705 Notice"). The § 705 Notice, which is the agency action that the Petitioners in this case challenge, postponed the deadlines for new, more stringent effluent limitations and pretreatment standards for existing facilities for five wastestreams regulated by the ELG Rule. *Id.* at 19,005–06.

By letter dated August 11, 2017, EPA announced that it would conduct a rulemaking to potentially revise the new, more stringent effluent limitations and

pretreatment standards for existing facilities for two wastestreams regulated by the ELG Rule. On August 22, 2017, the Fifth Circuit granted EPA's motion in case number 15-60821 to sever and hold in abeyance the challenges related to the requirements under reconsideration, as well as the requirements related to an application for a variance submitted to EPA by one of the petitioners in that case. The remaining challenges have proceeded to merits briefing.

On September 18, 2017, EPA issued a final rule that postponed by two years ELG Rule compliance deadlines for the two wastestreams subject to further rulemaking pursuant to EPA's reconsideration. Postponement of Certain Compliance Dates for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, 82 Fed. Reg. 43,494 (Sept. 18, 2017) ("ELG Rule Amendment"). EPA determined that it would not extend the deadlines for limits or standards applicable to the other wastestreams regulated by the ELG Rule because EPA was not planning to conduct a further rulemaking to consider revising those requirements. Finally, EPA stated that it was withdrawing the § 705 Notice because "there is no longer any need" for it. *Id.* at 43,496 ("Because EPA has decided to conduct further rulemaking to potentially revise the new, more stringent BAT limitations and PSES in the 2015 Rule applicable to two specific wastestreams (FGD wastewater and bottom ash transport water), and it is today finalizing a rule which postpones the associated compliance

dates in the 2015 Rule pending its next rulemaking, there is no longer any need for the Agency to maintain its prior action pursuant to Section 705 of the APA.").

## III. Procedural History

On May 3, 2017, the Petitioners filed suit against EPA in the U.S. District Court for the District of Columbia, challenging EPA's § 705 Notice as a violation of the APA. *Clean Water Action v. Pruitt* (*Clean Water Action I*), No. 17-cv-817-DLF (D.D.C. filed May 3, 2017). EPA moved to dismiss the action or to transfer the action to the Fifth Circuit on the basis that under the Clean Water Act's judicial review provision, 33 U.S.C. § 1369(b)(1), exclusive jurisdiction to challenge the § 705 Notice lay in a court of appeals, rather than in a district court. *Clean Water Action I*, ECF No. 32. That motion remains pending.

On August 21, 2017, the Petitioners filed this "protective" petition (*Clean Water Action II*) for review of the § 705 Notice. The Petitioners moved to hold this case in abeyance pending the district court's decision in *Clean Water Action I*, stating that the purpose of the petition was merely to preserve their right to judicial review in case the district court held that their challenge to the § 705 Notice belonged in a court of appeals under 33 U.S.C. § 1369(b)(1). EPA did not take a position on the Petitioners' motion for abeyance except to state that in the event that the motion was granted, EPA "wishe[d] to reserve the opportunity to seek termination of any such abeyance on jurisdictional or other grounds." Doc. No.

1696103 at 2.[1] On October 10, 2017, this Court granted the Petitioners' motion for abeyance and directed the parties to file motions to govern further proceedings within thirty days of the district court's disposition of *Clean Water Action I*. Doc. No. 1697787.

After EPA finalized the ELG Rule Amendment on September 12, 2017, EPA moved to dismiss *Clean Water Action I* as moot based on the ELG Rule Amendment's withdrawal of the § 705 Notice. *Clean Water Action I*, ECF No. 60. The Petitioners opposed the motion and simultaneously filed a motion for leave to amend their complaint to include two additional claims that challenge the ELG Rule Amendment as contrary to the APA. *Clean Water Action I*, ECF Nos. 63, 64. EPA opposed the Petitioners' motion for leave to amend their complaint on the basis that the amendment was futile because 33 U.S.C. § 1369(b)(1) requires the Petitioners' challenge to the ELG Rule Amendment to be brought in a court of appeals, not a district court. *Clean Water Action I*, ECF No. 70. Those motions remain pending.

The Petitioners filed a petition for review of the ELG Rule Amendment in this Court on October 11, 2017. *Clean Water Action v. Pruitt* (*Clean Water Action III*), No. 17-1216 (D.C. Cir. filed Oct. 11, 2017). On February 1, 2018, this Court granted EPA's motion to transfer *Clean Water Action III* to the Fifth Circuit on the

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[1] Unless otherwise specified, "Doc. No." refers to docket entries in this action.

basis that "the same or inter-related proceeding" was already under review in the Fifth Circuit. *Clean Water Action III*, Doc. No. 1716063. The Court left it to the Fifth Circuit to determine its own jurisdiction. *Id.* The Fifth Circuit docketed the case as number 18-60079.

## ARGUMENT

### I. The Abeyance in This Case Should be Lifted

EPA did not take a position on the Petitioners' motion for abeyance except to state that it "wishe[d] to reserve the opportunity to seek termination of any such abeyance on jurisdictional or other grounds." Doc. No. 1696103 at 2. EPA now raises both a jurisdictional and "other" ground for lifting the abeyance. Mootness is a jurisdictional issue and may be raised at any time. *JB Pictures, Inc. v. Dep't of Def.*, 86 F.3d 236, 238 (D.C. Cir. 1996). In the alternative, 28 U.S.C. § 2112(a) mandates transfer to the Fifth Circuit.

There is no reason to continue holding this case in abeyance and wait for the district court's decision in *Clean Water Action I* before deciding these issues. Mootness implicates the jurisdiction of this Court, and nothing that can happen in the district court will bring this controversy back to life. While the mootness issue has been briefed in the district court, the district court has not yet decided the issue. In the alternative, § 2112(a) requires transfer of this petition regardless of what happens in the district court case.

## II. This Case Should Be Dismissed for Mootness

Because EPA has withdrawn the agency action that the Petitioners challenge, there is no longer any relief that this Court can grant and therefore there is no longer a live controversy. This petition should be dismissed for lack of jurisdiction.

Federal courts are courts of limited jurisdiction that may exercise only powers authorized by the Constitution and statute. *Kokkonen v. Guardian Life Ins. Co. of Am.*, 511 U.S. 375, 377 (1994). "The requirement that jurisdiction be established as a threshold matter 'spring[s] from the nature and limits of the judicial power of the United States' and is 'inflexible and without exception.'" *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 94–95 (1998) (quoting *Mansfield, C. & L.M. Ry. Co. v. Swan*, 111 U.S. 379, 382 (1884)).

Mootness is a jurisdictional doctrine, *JB Pictures, Inc.*, 86 F.3d at 238, that "limits federal courts to deciding actual, ongoing controversies," *Am. Bar Ass'n v. FTC*, 636 F.3d 641, 645 (D.C. Cir. 2011) (quoting *Clarke v. United States*, 915 F.2d 699, 700–01 (D.C. Cir. 1990) (en banc)). Accordingly, if an event occurs during the pendency of a case that makes it impossible for the court to grant any effectual relief, the case must be dismissed. *Church of Scientology v. United States*, 506 U.S. 9, 12 (1992); *Anderson v. Carter*, 802 F.3d 4, 10 (D.C. Cir. 2015); *Transwestern Pipeline Co. v. FERC*, 897 F.2d 570, 575 (D.C. Cir. 1990); *Clarke*,

915 F.2d at 700–01 (explaining that the mootness doctrine requires a federal court to refrain from deciding the case if "events have so transpired that the decision will neither presently affect the parties' rights nor have a more-than-speculative chance of affecting them in the future") (quoting *Transwestern Pipeline*, 897 F.2d at 575). Particularly relevant here, the D.C. Circuit has recognized that withdrawal of a challenged agency action generally renders a challenge to that action moot. *See, e.g.*, *Ctr. for Sci. in the Pub. Interest v. Regan*, 727 F.2d 1161, 1164–65 (D.C. Cir. 1984); *Nat. Res. Def. Council, Inc. v. U.S. Nuclear Regulatory Comm'n*, 680 F.2d 810 (D.C. Cir. 1982); *Relf v. Weinberger*, 565 F.2d 722 (D.C. Cir. 1977).

The Petitioners challenge the § 705 Notice, which EPA expressly withdrew in the ELG Rule Amendment. *See* 82 Fed. Reg. at 43,495–96. The Petitioners' challenge to the § 705 Notice is therefore moot. *See Ctr. for Sci. in Pub. Interest*, 727 F.2d at 1164 (holding that subsequent rulemaking that displaced challenged agency action mooted original challenge). There is no continuing harm to the Petitioners from the withdrawn § 705 Notice. For this Court to nonetheless review the § 705 Notice would constitute an impermissible advisory opinion. *See Preiser v. Newkirk*, 422 U.S. 395, 401 (1975) (federal courts have no power to issue advisory opinions); *El Paso Nat. Gas Co. v. United States*, 750 F.3d 863, 883 (D.C. Cir. 2014).

This case does not implicate the "capable of repetition yet evading review" exception to the mootness doctrine. *See Safari Club Int'l v. Jewell*, 842 F.3d 1280, 1288 (D.C. Cir. 2016). The purpose of the § 705 Notice was to temporarily stay certain compliance deadlines in the ELG Rule pending judicial review and in light of EPA's decision to undertake reconsideration of the ELG Rule. Through notice-and-comment rulemaking resulting in the ELG Rule Amendment, EPA withdrew the § 705 Notice, reinstated compliance deadlines for limits it is not reconsidering, and formally amended the compliance deadlines in EPA regulations for the limits it is reconsidering. There is no "reasonable expectation" or "demonstrated probability" of recurrence of this controversy, *Pub. Utilities Comm'n of the State of Calif. v. F.E.R.C.*, 236 F.3d 708, 714–15 (D.C. Cir. 2001), now that the ELG Rule Amendment has been promulgated.

## III. Alternatively, This Case Must Be Transferred

This Court must transfer this action under 28 U.S.C. § 2112(a). When multiple petitions for review of an agency action are filed in different courts of appeals, § 2112(a) provides for consolidation of the petitions in a single court. If, within ten days of issuing an order, an agency receives petitions for review in more than one court of appeals, then the Judicial Panel on Multidistrict Litigation randomly designates one of those courts of appeals as the court in which the agency must file the record. *Id.* § 2112(a)(1), (3). "All courts in which proceedings

are instituted with respect to the same order . . . shall transfer those proceedings to the court in which the record is so filed." *Id.* § 2112(a)(5).

This Court recently transferred the related petition in *Clean Water Action III*, which challenges the ELG Rule Amendment, to the Fifth Circuit under § 2112(a). *Clean Water Action III*, Doc. No. 1716068. This Court's per curiam order stated that § 2112(a) provides for transfer "where the same or inter-related proceeding was previously under review in a court of appeals, and is now brought for review . . . in a follow-on phase, where continuance of the same appellate tribunal is necessary to maintain continuity in the total proceeding." *Id.* at 1 (quoting *Pub. Serv. Comm'n v. Fed. Power Comm'n*, 472 F.2d 1270, 1271 (D.C. Cir. 1972) (per curiam)). This Court also stated that § 2112(a) "should be liberally applied to permit review by a single court of closely related matters where appropriate for sound judicial administration." *Id.* (quoting *Eastern Air Lines, Inc. v. Civil Aeronautics Bd.*, 354 F.2d 507, 511 (D.C. Cir. 1965)).

This petition must be transferred for the same reason. The § 705 Notice, like the ELG Rule Amendment, was part of the "same or inter-related proceeding" as the ELG Rule, which is under review in the Fifth Circuit. In its motion to transfer in *Clean Water Action III*, EPA explained the relationship between the ELG Rule Amendment and the ELG Rule as follows:

> The ELG Rule Amendment under challenge in this petition was a targeted revision of certain compliance deadlines in the ELG Rule.

> That revision was an outgrowth of EPA's decision to commence a new rulemaking to potentially revise aspects of the ELG Rule during the course of the Fifth Circuit litigation challenging the ELG Rule. The relationship between the ELG Rule and the ELG Rule Amendment is not one of mere similarity of subject matter; rather, the ELG Rule Amendment is sequentially linked to the ELG Rule as a continuation of the same administrative proceeding that produced the ELG Rule in 2015.

*Clean Water Action III*, Doc. No. 1704178, at 11–12. The relationship between the § 705 Notice and the ELG Rule is even closer. The § 705 Notice was a stay pending judicial review of compliance deadlines for certain effluent limitations and standards in the ELG Rule. EPA's authority under § 705 to issue the notice was directly tied to ongoing judicial review of the ELG Rule.[2] In *Clean Water Action III*, this Court found that the ELG Rule Amendment was sufficiently related to the ELG Rule for a § 2112(a) transfer even though the ELG Rule Amendment was a rule separately promulgated under notice and comment. The § 705 Notice was an even closer follow-on action to the ELG Rule, both temporally and procedurally.

This Court's transfer decision in *Clean Water Action III* was supported, just as transfer of this case is supported, by previous decisions in this Court and others. "[C]ourts have recognized that the statutory reference to the 'same order' [in 28 U.S.C. § 2112(a)(5)] should be broadly construed." *Nat. Res. Def. Council, Inc. v.*

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[2] Federal Rule of Appellate Procedure 18(a)(1) reinforces this relationship. That rule allows parties to seek a judicial stay of an agency action pending judicial review, but only after moving first before the agency for an administrative stay pending review.

*EPA*, 673 F.2d 392, 399 (D.C. Cir. 1980) (per curiam); *see also Am. Civil Liberties Union v. FCC*, 486 F.2d 411, 414 (D.C. Cir. 1973) ("The public policy underlying section 2112(a) requires that it 'be liberally applied to permit review by a single court of closely related matters where appropriate for sound judicial administration.'" (quoting *Eastern Air Lines, Inc.*, 354 F.2d at 511)). Consolidation of closely related matters avoids situations in which "the action of the agency [is] subjected to fragmentary review by different courts." *Am. Civil Liberties Union*, 486 F.2d at 414.

In light of that statutory purpose, courts have treated agency actions as part of the "same order" for purposes of § 2112(a) when the actions arose from closely interrelated agency proceedings, even when there was a temporal gap or a lack of strict subject matter identicality between the actions.[3] In *American Civil Liberties*

[3] Some of these decisions predate the 1988 amendment to 28 U.S.C. § 2112(a) that adopted a random selection mechanism (in place of the previously used first-to-file rule) to choose between multiple courts of appeals in which petitions are filed. *Compare* Pub. L. No. 85-791, § 2, 72 Stat. 941 (original version of § 2112(a)), *with* Pub. L. No. 100-236, § 1, 101 Stat. 1731 (1988 amendment). These decisions remain good law to the extent that they articulate standards for determining when two agency actions are part of the "same order" such that petitions challenging such actions must be consolidated in one court of appeals, which is a separate issue from how that single court of appeals should be selected. *See* S. Rep. No. 100-263 at 5, 1987 U.S.C.C.A.N. 3198, 3202 ("[The 1988 amendment] is not intended to change the practice of having sequential or closely related orders issued in the course of the same or interrelated administrative proceedings treated as 'the same order' and reviewed by the circuit court reviewing the initial order.").

*Union v. FCC*, the ACLU sought review of the FCC's denial of its petition for administrative reconsideration. 486 F.2d at 412. The FCC had denied other persons' petitions for reconsideration in the same administrative docket over six months after it had denied the ACLU's petition for administrative reconsideration, and a petition for judicial review of those denials was pending in the Ninth Circuit. *Id.* at 413. This Circuit held that the ACLU's petition for review and the pending Ninth Circuit petition for review concerned the "same order" within the meaning of § 2112(a) — even though "the particular subject matter of the two petitions is not the same" — because the agency actions "represent[ed] the staggered implementation of a single, multi-faceted agency undertaking." *Id.* at 414.

Similarly, in *BASF Wyandotte Corp. v. Costle*, the First Circuit held that interim effluent limitation guidelines with immediate effect and a subsequent final rule that amended the interim effluent limitation guidelines over a year later were part of the "same order" for purposes of § 2112(a). 582 F.2d 108, 112 (1st Cir. 1978). There were "significant differences between the two sets of regulations," and some persons governed by the interim effluent limitation guidelines were not covered at all under the final regulations. *Id.* at 110. Nonetheless, the First Circuit reasoned that the two regulations should be considered the same order because they arose from the "same or interrelated proceedings." *Id.* at 112 (quoting *Pub. Serv. Comm'n*, 472 F.2d at 1272); *see also MCI WorldCom, Inc. v. FCC*, No. 99-

1182, 1999 WL 728373, at *1 (D.C. Cir. Aug. 2, 1999) (per curiam) ("The Stay Order at issue in these petitions and the First Report and Order at issue in the *Iowa Utilities Board* litigation pending in the Eighth Circuit must be treated as the 'same order' for purposes of § 2112(a), because 'they were issued during the course of the same proceeding and implemented a single, multi-faceted agency undertaking,' the effectuation of the local-competition provisions of the Telecommunications Act of 1996." (quoting *Nat. Res. Def. Council, Inc.*, 673 F.2d at 399 n.16)); *Westinghouse Elec. Corp. v. U.S. Nuclear Regulatory Comm'n*, 598 F.2d 759, 767 (3d Cir. 1979) ("[I]n keeping with the purposes of [§ 2112(a)], courts have interpreted the term, 'the same order,' so as to insure the consolidation in one court of petitions from sequential orders arising from the same administrative background and cumulative record.").

This Court's *Clean Water Action III* transfer decision did not inquire into the substantive merits of the petition and the issues raised in the Fifth Circuit litigation, and this Court need not do so in order to transfer this petition, either. In *BASF Wyandotte*, the First Circuit declined to delve into the substantive differences between the two sets of effluent limitation guidelines challenged in the prior petition and the petition before it. The First Circuit's reasoning was that limiting the focus to the *procedural* relationship between the two regulations would allow the court to determine proper venue without wading unnecessarily deeply into the

complicated subject matter of the regulations. 582 F.2d at 112. Likewise, deciding this transfer motion does not require this Court to attempt to predict what arguments will be raised in support of this petition and how those arguments will relate to those raised in the Fifth Circuit. The procedural closeness between the ELG Rule and the § 705 Notice is sufficient for the Court to find that they are the "same order" for purposes of § 2112(a).[4] Upon such a finding, Congress has directed that this Court "*shall* transfer" this petition. 28 U.S.C. § 2112(a)(5) (emphasis added).

If transfer is not required by the "same order" provision in § 2112(a)(5), this Court should transfer this petition under statutory authority to transfer "to any other court of appeals" "[f]or the convenience of the parties in the interest of justice." 28 U.S.C. § 2112(a)(5). Even aside from that statutory authority, this Court has inherent authority to transfer this petition "in the interest of justice and sound judicial administration." *Heartland Plymouth Court MI, LLC v. Nat'l Labor Relations Bd.*, 838 F.3d 16, 26 n.8 (D.C. Cir. 2016) (quoting *Eastern Air Lines, Inc.*, 354 F.2d at 510).

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[4] Although the ELG Rule and the § 705 Notice are part of the "same order" for purposes of 28 U.S.C. § 2112(a), they remain separate agency actions for purposes of the APA, 5 U.S.C. § 701(b)(2) (citing 5 U.S.C. § 551(13)), and time constraints for bringing a challenge under the Clean Water Act judicial review provision, 33 U.S.C. § 1369(b). The cases that EPA relies on to support a broad construction of the statutory term "same order" are specific to the use of the term in 28 U.S.C. § 2112(a).

The Fifth Circuit's familiarity with the ELG Rule favors discretionary transfer of this petition, and the recent transfer of *Clean Water Action III* to the Fifth Circuit makes that interest even more compelling. *Eastern Air Lines, Inc.*, 354 F.2d at 510 ("Certainly one factor that has considerable weight in the guidance of judicial discretion is the desirability of transfer to a circuit whose judges are familiar with the background of the controversy through review of the same or related proceedings."); *see also Abourezk v. FPC*, 513 F.2d 504, 505 n.1 (D.C. Cir. 1975) (statement of Bazelon, J.) (describing discretionary factors as "one circuit's familiarity with the issues and parties from prior litigation; the need for continuity and consistency in reviewing a series of agency decisions; and, the facilitation of judicial economy"); *Midwest Television, Inc. v. FCC*, 364 F.2d 674, 675 (D.C. Cir. 1966) (per curiam) (allowing transfer of petition for review of agency action to circuit with a pending petition "which is the precursor of the present proceedings and which perforce involves many of the same issues").

## CONCLUSION

The Court should lift the abeyance in this case and dismiss the case or, in the alternative, transfer this case to the U.S. Court of Appeals for the Fifth Circuit.

Respectfully submitted,

Dated: February 20, 2018

JEFFREY H. WOOD
Acting Assistant Attorney General
Environment and Natural Resources Division

*Of Counsel:*
JESSICA H. ZOMER

Office of General Counsel
U.S. Environmental Protection Agency
Washington, D.C.

*/s/ Tsuki Hoshijima*
MARTIN F. McDERMOTT
TSUKI HOSHIJIMA
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Defense Section
P.O. Box 7611
Washington, D.C. 20044
(202) 514-3468
tsuki.hoshijima@usdoj.gov

*Counsel for Respondents*

## CERTIFICATE OF COMPLIANCE

I certify that the foregoing motion complies with the word limit of Fed. R. App. P. 27(d)(2)(A) because it contains 4152 words, excluding the parts of the filing exempted by Fed. R. App. P. 32(f). The filing complies with the typeface and type style requirements of Fed. R. App. 32(a)(5) and (a)(6) because it was prepared in a proportionately spaced typeface using Microsoft Word 2013 in Times New Roman fourteen-point font.

/s/ Tsuki Hoshijima

## CERTIFICATE OF SERVICE

I certify that on February 20, 2018, I filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notice of such filing to all counsel of record registered to use the CM/ECF system.

/s/ Tsuki Hoshijima

**ORAL ARGUMENT NOT YET SCHEDULED**

**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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| CLEAN WATER ACTION, *et al.*,<br><br>*Petitioners,*<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency and U.S. ENVIRONMENTAL PROTECTION AGENCY<br><br>*Respondents.* | Case No. 17-1193 |

**PETITIONERS' RESPONSE TO MOTION TO LIFT ABEYANCE AND TO DISMISS, OR ALTERNATIVELY TO TRANSFER**

Petitioners Clean Water Action, Environmental Integrity Project, Sierra Club, Waterkeeper Alliance, Inc., PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network (collectively, "Petitioners") oppose Respondents' motion to lift the abeyance in this case and dismiss or transfer the petition. Petitioners initiated this action for protective purposes only, to preserve the right to review the agency action at issue in the event that the district court concludes it does not have jurisdiction. Both jurisdictional and merits issues have been fully briefed in the district court since October 2017, *Clean Water Action v. Pruitt (Clean Water*

*Action I)*, No. 17-cv-00817-DLF (D.D.C.), and the district court should resolve those issues in the first instance. Lifting the abeyance of this matter to address the same Respondents' claims that are pending below is premature and a waste of judicial resources. Furthermore, even if this Court were to reach Respondents' contentions concerning mootness and transfer, those arguments are without merit.

## BACKGROUND

In this case, Petitioners challenge – as a protective matter only, to preserve their right to judicial review – EPA's action, taken without providing any prior notice or opportunity for comment, to indefinitely suspend compliance deadlines in the Agency's Effluent Limitation Guidelines Rule for steam electric power plants ("ELG Rule"). 82 Fed. Reg. 19,005 (Apr. 25, 2017) (the "Indefinite Stay"). Because EPA purported to issue the Indefinite Stay under the Administrative Procedure Act ("APA"), 5 U.S.C. § 705, the Stay does not fall within any of the seven enumerated categories of actions that the Clean Water Act requires to be challenged in a court of appeals. *See* 33 U.S.C. § 1369(b)(1). Accordingly, Petitioners sought review of the Indefinite Stay in district court under the federal question statute, 28 U.S.C. § 1331. *See* Compl., *Clean Water Action I*, ECF Doc. 1 (May 3, 2017).

Petitioners filed the present case as a precaution within Section 1369(b)(1)'s 120-day limitations period after EPA moved to dismiss the district court case based

on the argument that jurisdiction lies in a court of appeals pursuant to 33 U.S.C. § 1369(b)(1). Had Petitioners not filed this case within the limitations period, they would not be able to file a petition for review of the Indefinite Stay in this Court if EPA successfully obtains dismissal of the district court case. *See, e.g.*, *Eagle-Picher Indus. v. EPA*, 759 F.2d 905, 912 (D.C. Cir. 1985) ("[W]e have previously admonished petitioners of the wisdom of filing protective petitions for review during the statutory period."); *Recreation Vehicle Indus. Ass'n v. EPA*, 653 F.2d 562, 569 (D.C. Cir. 1981) ("As a general rule, of course, counsel would be wise to file a protective petition for review within the statutory [] period . . . .").

Petitioners moved for an abeyance after filing this action, noting that briefing on jurisdictional and merits issues arising from EPA's Indefinite Stay was already complete in the district court. ECF Doc. 1693981. EPA took no position on that motion. ECF Doc. 1696103. On October 10, 2017, the Court granted Petitioners' abeyance motion and directed the parties "to file motions to govern further proceedings in this case within 30 days of the district court's disposition." ECF Doc. 1697787.

## LEGAL STANDARDS

Courts have inherent authority to stay proceedings to conserve the resources of the court and the parties. *See Dellinger v. Mitchell*, 442 F.2d 782, 786 (D.C. Cir. 1971). Where a party files a petition solely as a protective matter, courts of

appeals frequently stay the petition proceeding pending resolution of the district court action "to prevent duplicative litigation." *Ctr. for Biological Diversity v. EPA*, 861 F.3d 174, 180-81 (D.C. Cir. 2017).

28 U.S.C. § 2112(a) provides that when multiple petitions for review of the "same order" are filed in different circuits, the Judicial Panel on Multidistrict Litigation randomly selects a circuit as the venue in which all challenges to the order in question will be transferred. *Id.* § 2112(a)(5).

"As a general rule, 'voluntary cessation of allegedly illegal conduct does not deprive the tribunal of power to hear and determine the case, *i.e.*, does not make the case moot.'" *Cty. of L.A. v. Davis*, 440 U.S. 625, 631 (1979) (quoting *United States v. W. T. Grant Co.*, 345 U.S. 629, 632 (1953)). In *Davis*, the Supreme Court announced a two-prong test for determining whether an action is mooted by the defendant's voluntary cessation of the allegedly unlawful conduct. *Id.* at 631.

First, the defendant must show that "'there is no reasonable expectation . . .' that the alleged violation will recur." *Davis*, 440 U.S. at 631 (citation omitted). Second, "interim relief or events have completely and irrevocably eradicated the effects of the alleged violation." *Id.*; *see also Firefighters Local Union No. 1784 v. Stotts*, 467 U.S. 561, 570 (1984) ("[I]t is the respondents' burden to convince us" that the challenged action does not continue to have an impact on the parties.).

Even where a case may be found to be moot, the court may nevertheless retain jurisdiction should it determine that the violation is "capable of repetition, yet evading review." *Envtl. Def. Fund v. Gorsuch*, 713 F.2d 802, 810 (D.C. Cir. 1983) (quoting *S. Pac. Terminal Co. v. Interstate Commerce Comm'n*, 219 U.S. 498, 515 (1911)). This exception to mootness applies if two elements are satisfied: "(1) the challenged action [is] in its duration too short to be fully litigated prior to its cessation or expiration, and (2) there [is] a reasonable expectation that the same complaining party would be subjected to the same action again." *Id.* (quoting *Weinstein v. Bradford*, 423 U.S. 147, 149 (1975)).

## ARGUMENT

### I. THE ABEYANCE SHOULD REMAIN IN PLACE FOR REASONS OF JUDICIAL ECONOMY AND TO AVOID CONFLICTING DECISIONS.

As a threshold matter, this Court should not address the merits of EPA's requests to dismiss or transfer this case. From the initial filing in this case, Petitioners indicated that this is a protective petition only, made to preserve their right to judicial review in the event that the district court concludes it lacks jurisdiction. It would be premature and wasteful of judicial resources, and defeat the purpose of protective filings, if this Court were to allow EPA to litigate jurisdiction and venue issues in the Court of Appeals before the district court action is complete. That is particularly the case here, where EPA has already

raised the same jurisdiction and venue arguments in the court below, all motions in that case have been fully briefed since October 2017, and the district court is poised to rule on the very issues that Respondents now seek to litigate in this Court. This Court has frequently held protective petitions in abeyance pending resolution of the related district court action and should do the same here. *See, e.g.*, *Ctr. for Biological Diversity*, 861 F.3d at 180–81 (staying proceedings on a protective petition "to prevent duplicative litigation"); Order, *Sierra Club v. EPA*, No. 13-1262, ECF Doc. 1517042 (D.C. Cir. Oct. 15, 2014) (granting motion to hold protective petition in abeyance while district court action proceeded); Order, *Sierra Club v. EPA*, No. 11-1263, ECF Doc. 1326602 (D.C. Cir. Aug. 30, 2011) (granting motion to hold in abeyance a protective petition pending district court's resolution of EPA motion to dismiss for lack of jurisdiction).

## II. THIS CASE IS NOT MOOT.

Contrary to EPA's claim, this case is not moot. Respondents contend that this challenge to the Indefinite Stay was rendered moot by EPA's action on September 18, 2017 to replace the Indefinite Stay with a two-year postponement of certain compliance deadlines in the ELG Rule. EPA Mot. at 8. Yet EPA has not come close to overcoming the "general rule" that "'voluntary cessation of allegedly illegal conduct does not deprive the tribunal of power to hear and determine the case, *i.e.*, does not make the case moot.'" *Davis*, 440 U.S. at 631. In particular,

EPA has not met its burden of satisfying both *Davis* factors: that "'there is no reasonable expectation . . .' that the alleged violation will recur" and "interim relief or events have completely and irrevocably eradicated the effects of the alleged violation." *Davis*, 440 U.S. at 631 (citation omitted).

### A. There Is a Reasonable Expectation that EPA Will Issue a Similar Stay in the Future.

EPA has not met its "heavy burden" of proving that "'there is no reasonable expectation . . .' that the alleged violation will recur." *Davis*, 440 U.S. at 631 (citation omitted). EPA's withdrawal of the Indefinite Stay was entirely voluntary, and there is a reasonable likelihood that the agency will issue a similar stay of ELG Rule compliance deadlines in the future.

EPA withdrew the Indefinite Stay because the agency believes that a separate action postponing the ELG Rule's compliance deadlines accomplishes the same objective as the Stay. 82 Fed. Reg. 43,494, 43,496 (Sept. 18, 2017) ("Because EPA has decided to conduct further rulemaking . . . and it is today finalizing a rule which postpones the associated compliance dates in the 2015 rule pending its next rulemaking, there is no longer any need for the Agency to maintain its prior action pursuant to Section 705 of the APA."). This indicates that if EPA perceived the "need" to stay the ELG Rule's compliance deadlines for any reason, EPA would reinstate the Indefinite Stay, consistent with the Agency's position in the district court that it may do so as long as legal challenges to the

merits of the 2015 Rule are pending in the Fifth Circuit, *see* EPA Mem. at 24, *Clean Water Action I*, ECF Doc. 31 & 32.[1]

There is a reasonable expectation that EPA's perceived "need" for such a stay may arise in the future. For example, both Petitioners in this case and another non-profit plaintiff are pursuing separate district court lawsuits challenging the September 18 rule. *See* Pls.' Mot. for Leave to Amend, *Clean Water Action I*, ECF Doc. 63; Compl., *Ctr. for Biological Diversity v. Pruitt*, No. 4-18-cv-00050-JAS (D. Az. filed Jan. 30, 2018). If EPA's September 18 rule were vacated or enjoined for a period of time, it is reasonable to expect that EPA would seek to reinstate the Indefinite Stay. EPA could also reinstate the Indefinite Stay if its reconsideration of the ELG Rule is not completed by the November 2020 beginning of the compliance period established by the September 18 rule. *See* 82 Fed. Reg. at 43,498 n.6 ("If EPA does not complete a new rulemaking by November, 2020, it plans to further postpone the compliance dates such that the earliest compliance date is not prior to the completion of a new rulemaking.").

Courts have considered the relative ease with which an agency could reinstate a withdrawn action in determining the likelihood that the defendant will

[1] On September 27, 2017, the Fifth Circuit granted the parties' joint motion to resume briefing of Environmental Petitioners' claims that the ELG Rule is insufficiently protective, but hold all other parties' claims in abeyance. Order, *Sw. Elec. Power Co. v. EPA*, No. 15-60821, ECF Doc. 00514172854 (5th Cir., filed Sept. 27, 2017).

reinstate the withdrawn action. *See, e.g.*, *Reeve Aleutian Airways, Inc. v. United States*, 889 F.2d 1139, 1143 (D.C. Cir. 1989) ("The agency's claim to such wide-ranging, summary authority heightens a reasonable expectation of a repeat violation . . . ."). In the district court, EPA has disavowed any obligation to provide notice and allow for public comment on a stay issued under 5 U.S.C. § 705, *see* EPA Mem. at 35-38, *Clean Water Action I*, ECF Doc. 31 & 32, and contends that no analysis other than the agency's judgment that "justice so requires" the stay is necessary to support such an action, *see id.* at 22-24. If EPA followed these legal positions and repeated its practice in issuing the Indefinite Stay, it would be very easy for the Agency to issue another stay of the ELG Rule under 5 U.S.C. § 705, as long as legal challenges to the merits of the ELG Rule are pending in the Fifth Circuit.

Further support for the likelihood that EPA may again use Section 705 to stay the ELG Rule comes from federal agencies' recent use of Section 705 to stay other rules. *See, e.g.*, *Becerra v. U.S. Dep't of Interior*, 276 F. Supp. 3d 953 (N.D. Cal. Aug. 30, 2017) (holding that the Department of the Interior violated the APA by staying a coal valuation rule under 5 U.S.C. § 705); Order, *California v. U.S. Bureau of Land Management*, No. 17-cv-03804, 2017 WL 4416409, at *8-*12 (N.D. Cal. Oct. 4, 2017) (finding that the BLM unlawfully stayed a rule under 5 U.S.C. § 705); Compl., *Mass. Rivers Alliance v. Pruitt*, No. 1:17-cv-11825-GAO

(D. Mass. Sept. 22, 2017) (district court action challenging EPA stay under 5 U.S.C. § 705 postponing the effective date of Clean Water Act stormwater permits).

### B. The Indefinite Stay Continues to Harm Petitioners.

In addition to failing the first prong of the *Davis* test, EPA's motion fails the second prong as well, because EPA has not proven that its withdrawal of the Indefinite Stay has "completely and irrevocably eradicated the effects of the alleged violation." *Davis*, 440 U.S. at 631.

Petitioners' members are harmed by coal plants' discharges of toxic pollutants—discharges that the ELG Rule will significantly reduce when the Rule is implemented. *See* Pls.' Mem. of P. & A. at 13-19, *Clean Water Action I*, ECF Doc. 20 (citing declarations). However, the ELGs become effective at a plant only when incorporated into that plant's wastewater discharge permit, known as a National Pollution Discharge Elimination System ("NPDES") permit, which should be updated every five years. *See* 33 U.S.C. § 1342(b)(1)(B). The 2015 ELG Rule left to permitting authorities—primarily states—to determine when a plant should be required to comply with the ELGs for each wastestream, subject to the requirement that the compliance date be "as soon as possible beginning November 1, 2018, but no later than December 31, 2023." *E.g.*, 40 C.F.R. § 423.13(g)(1)(i) (2015).

Prior to the Indefinite Stay, several state agencies were preparing to issue permits setting deadlines for compliance with the ELG Rule, and some agencies had proposed compliance deadlines as early as November 2018. *See* Pls.' Mem. of P. & A. at 16, 16 nn.22-24, *Clean Water Action I*, ECF Doc. 20 (citing declarations). However, as far as Petitioners are aware, not a single power plant NPDES permit was renewed during the five-month life of the Indefinite Stay, and only five have been renewed since the Indefinite Stay was lifted.[2] This delay in issuing NPDES permits increases the likelihood that each permitting authority's determination of the "as soon as possible" compliance date will also be extended by months or even years.

At least one of the NPDES permit renewals that has been issued relies expressly on the Indefinite Stay to delay compliance with the ELG Rule. On July 27, 2017, the Nebraska Department of Environmental Quality issued a draft NPDES permit renewal for the Platte Generating Station that requires compliance with the bottom ash transport water effluent limitation by December 31, 2023 – the latest permissible compliance date under the ELG Rule. (Ex. 1, Draft Permit at 11 & Fact Sheet at 7). In doing so, the Department cited EPA's Indefinite Stay and noted that the compliance "schedule was developed to comply with the

[2] Petitioners are only aware of such permits having been issued in Nebraska, Georgia, Tennessee, and Indiana.

postponement of compliance dates." *Id.* The Nebraska agency finalized this permit on September 19, 2017. (*See* Ex. 2).

In addition, there is evidence that at least two utilities have delayed plans to comply with the ELGs because of the Indefinite Stay. In June 2017, citing the Indefinite Stay, the Northern Indiana Public Service Company ("NIPSCO") reported to the Indiana Utility Regulatory Commission that it was delaying projects to comply with the ELG Rule. Verified Settlement Testimony of Kelly R. Carmichael, on behalf of Northern Indiana Public Service Company, at 5:8-12 and 12:6-12, Indiana Utility Regulatory Commission, Cause No. 44872 (filed June 22, 2017), attached as Ex. 3.

Eversource, which operates the Merrimack coal plant in New Hampshire, notified EPA in a letter dated April 20, 2017, that although it had previously planned to comply with the ELG Rule's limitations on bottom ash transport water by 2022, it would instead "delay the implementation of the work . . . until such time as there is clarity in the content and timing of a potentially very different, less onerous regulation." Letter from Linda T. Landis, Senior Counsel, Eversource Energy, to Mark Stein, Senior Assistant Regional Counsel, EPA Region 1, Merrimack Station NPDES AR-1388 (Apr. 20, 2017), *available at* https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/ar/AR-1388.pdf,

attached as Ex. 4. The date of this letter indicates that Eversource decided to halt implementation based on the Indefinite Stay.[3]

In each of the examples cited above, the end result is a delay in power plants meeting the ELG Rule's requirements to reduce toxic water pollution. Thus, the Indefinite Stay that Petitioners challenge in this case has delayed implementation of the ELG Rule's requirements that power plants reduce toxic water pollution, and this delay continues to harm Petitioners' members who drink, fish, and recreate in waters polluted by power plants. *See* Pls.' Mem. of P. & A. at 13-19, *Clean Water Action I*, ECF Doc. 20 (citing declarations). EPA's voluntary withdrawal of the Indefinite Stay has not "completely and irrevocably eradicated the effects" of the Stay, and therefore this case is not moot. *See Am. Fed. of Gov't Employees v. Reagan*, 870 F.2d 723, 726 (D.C. Cir. 1989) (Although a newly-issued executive order had superseded the allegedly defective original order, "[i]mportant collateral consequences flowing from the [original] order lead us to the conclusion that the controversy remains very much alive.").

[3] The Indefinite Stay was first announced by EPA on April 13, 2017. *See* Press Release, EPA to Reconsider ELG Rule, https://www.epa.gov/newsreleases/epa-reconsider-elg-rule. The action was then published in the Federal Register on April 25, 2017.

## III. EVEN IF THIS CASE WERE MOOT, THE INDEFINITE STAY IS AN ACTION CAPABLE OF REPETITION YET EVADING REVIEW.

Contrary to EPA's cursory argument, EPA Mot. at 10, the Indefinite Stay is a quintessential example of an action "capable of repetition, yet evading review," over which this Court has jurisdiction. *See generally Safari Club Int'l v. Jewell*, 842 F.3d 1280, 1288 (D.C. Cir. 2016); *Del Monte Fresh Produce Co. v. United States*, 570 F.3d 316, 316 (D.C. Cir. 2009). The Indefinite Stay satisfies both criteria for this exception to the mootness doctrine, as the Indefinite Stay was "in its duration too short to be fully litigated prior to its cessation or expiration" and there is "a reasonable expectation that the same complaining party would be subjected to the same action again." *Weinstein*, 423 U.S. at 149.

This case is controlled by *Environmental Defense Fund, Inc. v. Gorsuch*, in which this Court held that a challenge to an agency regulation delaying the implementation of environmental standards was not moot, despite the agency's later withdrawal of the challenged regulation. In *Environmental Defense Fund*, EPA argued that the case was moot because the agency had withdrawn and replaced the rule being challenged. 713 F.2d at 810.

This Court rejected EPA's argument because EPA's action was "capable of repetition, yet evading review." *Id.* EPA conceded that "the challenged action [was] in its duration too short to be fully litigated prior to its cessation or expiration," *id.* The court also found that there was a "reasonable expectation that

[Environmental Defense Fund] would be subjected to the same action again," *id.*, given its broad interest in enforcing the environmental statute at issue, and that there was reason to expect that EPA would engage in similar delays again given its history of deferring regulatory requirements and its "conspicuous failure . . . to foreswear future deferrals." *Id.* at 811.

Here, nearly five months elapsed between EPA's issuance and withdrawal of the Indefinite Stay. *See* 82 Fed. Reg. 19,005 (publishing the Indefinite Stay on Apr. 25, 2017); 82 Fed. Reg. 43,494 (withdrawing the Indefinite Stay on Sept. 18, 2017). Given that this Court found that a rule lasting roughly one year was "too short to be fully litigated," the Indefinite Stay also meets this standard. *Envtl. Def. Fund*, 713 F.2d at 810; *see also Humane Soc'y of the U.S. v. EPA*, 790 F.2d 106, 113 (D.C. Cir. 1986) ("The one-year life span of the permits simply did not allow completion of the process prior to their demise.").

In addition, there is a "reasonable expectation" that the Petitioners here will "be subjected to the same action again," *Envtl. Def. Fund*, 713 F.2d at 810, because EPA may issue another unlawful stay of the ELG Rule. As explained above, *see supra* at 7-9, several factors support finding that there is reasonable expectation that EPA may once again issue an unlawful stay of the ELG Rule under Section 705.

Moreover, the applicable legal test is not whether a plaintiff will be subjected to the same agency action in the same rulemaking, but whether a plaintiff will be subjected to the same action in a future rulemaking under any statute. *See Envtl. Def. Fund*, 713 F.2d at 810-11 (rejecting as "too narrow" EPA's argument that the inquiry is whether the agency will reissue the challenged stay of a particular RCRA rule, and holding that the plaintiffs would likely be subject to a stay of another RCRA rule); *Del Monte Fresh Produce*, 570 F.3d at 324 (capable of repetition analysis should focus on "whether the legal wrong complained of by the plaintiff is reasonably likely to recur," rather than "whether the precise historical facts that spawned the plaintiff's claims are likely to recur"). Like the plaintiff in *Environmental Defense Fund*, Petitioners in this action include nationwide and regional organizations whose membership relies on the protections of the Clean Water Act and other environmental statutes. Compl. ¶¶ 9-17, *Clean Water Action I*, ECF Doc. 1. Even if EPA does not issue a further stay of ELG Rule deadlines, EPA's and other agencies' recent practice of issuing unlawful Section 705 stays of their actions, *see supra* at 7-9 (citing examples), makes it reasonable to expect that Petitioners will be harmed by unlawful Section 705 stays of environmental rules in the future. *See Envtl. Def. Fund*, 713 F.2d at 811; *see also W.T. Grant Co.*, 345 U.S. at 632 (finding a "public interest in having the

legality of practices settled" where the challenged conduct was unlawful and capable of being repeated).

In sum, the Indefinite Stay is a classic example of an action "capable of repetition, yet evading review." *Envtl. Def. Fund*, 713 F.2d at 810. Indeed, this is no accident. EPA told the district court on multiple occasions that it believes the Indefinite Stay is not subject to judicial review because it was intended to be temporary. *See* EPA Mem. at 8, 24-25, *Clean Water Action I*, ECF Doc. 31 & 32. Accepting EPA's mootness argument would set a dangerous precedent that would allow any agency, not just EPA, to eviscerate the APA's rulemaking requirements by quickly issuing an unlawful stay and then issuing a replacement rule before judicial review of the unlawful stay can be completed. *See, e.g.*, *Becerra*, 276 F. Supp. 3d at 966 ("By acting outside its statutory authority to in effect repeal the Rule . . . without allowing the public to comment, [the agency] improperly put the cart before the horse. While Defendants argue that its subsequent rulemaking included notice and comment to adopt the Repeal Rule months later, that does not cure the failure to give the public an opportunity to weigh in with comments beforehand as required by the APA.").

## IV. IF THE COURT OF APPEALS IS DETERMINED TO BE THE APPROPRIATE COURT FOR REVIEW OF THE INDEFINITE STAY, THIS COURT IS THE APPROPRIATE FORUM TO DECIDE THIS PETITION.

### A. The Court's Order Transferring the Protective Petition Filed in a Separate Proceeding is Not Applicable Here.

This Court transferred to the Fifth Circuit a protective petition for review that Environmental Petitioners filed challenging EPA's September 18 rule postponing ELG Rule compliance deadlines. Order, *Clean Water Action v. Pruitt (Clean Water Action III)*, No. 17-1216, ECF Doc. 1716063 (Feb. 1, 2018) ("Transfer Order"). The Transfer Order is not controlling here, because of material factual differences between the agency actions at issue in the two cases.

The Court transferred to the Fifth Circuit the challenge to the September 18 rule under the theory that the case was "closely related" to the challenges to the substance of the ELG Rule pending in the Fifth Circuit. While Environmental Petitioners continue to maintain that the September 18 rule is a separate and discrete action from the ELG Rule itself, *see* Pet'rs' Opp'n to Mots. to Transfer & Reply in Support of Mot. to Hold Case in Abeyance, *Clean Water Action III*, ECF Docs. 1706174, 1706353, there is even less of a basis for finding that the Indefinite Stay challenged in this case is closely related to promulgation of the ELG Rule. In both the September 18 rule and the ELG Rule, EPA claimed to take action under the Clean Water Act. *See* 82 Fed. Reg. at 43,494; 80 Fed. Reg. 67,838, 67,841-44

(Nov. 3, 2015). By contrast, in the Indefinite Stay at issue here, EPA claimed to act under Section 705 of the APA. 82 Fed. Reg. at 19,005. As a result, the legal issues in this case concern an agency's authority under the APA, which are wholly distinct from the legal issues before the Fifth Circuit concerning EPA's authority under the Clean Water Act. Accordingly, this case is not closely related to, nor is it the same or an inter-related proceeding as, the proceedings regarding the ELG Rule before the Fifth Circuit.[4]

**B. The Transfer Order Reached the Wrong Result.**

Petitioners respectfully submit that the Transfer Order reached the wrong result, and transfer would be inappropriate here as well. The cases cited in the Transfer Order do not support transfer of this case to the Fifth Circuit. To begin, each of the three cases cited in the Transfer Order was issued under the prior, "race to the courthouse" version of 28 U.S.C. § 2112, rather than the current version of the statute. In 1988, Congress amended 28 U.S.C. § 2112(a) by eliminating the provision that provided for venue in the court in which the first petition was filed; Congress replaced that provision with the current system, in which the Judicial Panel on Multidistrict Litigation randomly selects the court to hear the case, from

[4] In issuing the Transfer Order, this Court did not decide whether jurisdiction is proper in the district court or in a court of appeals. ECF Doc. 1716063 at 1 ("Transfer is granted without prejudice to the authority of the Fifth Circuit to determine its own jurisdiction.").

among the courts in which petitions have been filed within a prescribed time period. *See* PL-100-236, 101 Stat. 1731 (Jan. 8, 1988). Given these substantial changes to 28 U.S.C. § 2112, it is at least questionable whether cases interpreting the former version are relevant to the current version.

More importantly, the cases that are cited in the Transfer Order are all distinguishable. The Transfer Order cites *Public Service Commission for N.Y. v. Federal Power Commission*, but the court in that case denied a request to transfer. Indeed, the *Public Service Commission* court rejected an argument nearly identical to the argument made in support of transfer here, namely, that the case should be transferred to the Fifth Circuit because the Fifth Circuit had heard other cases that allegedly were related. 472 F.2d 1270, 1271-72 (D.C. Cir. 1972) ("The theory underlying the motion is that the Commission's opinions and orders under review in the instant proceedings 'are in many material decisional respects related to its findings and conclusions' in other proceedings which either have been reviewed in the Fifth Circuit or are slated for review there, and raise 'common questions of law.'").

The Transfer Order also cites *Liquor Salesmen's Union Local 2 of N.Y. v. NLRB*, which holds that in deciding whether to transfer a case under 28 U.S.C. § 2112, courts should consider several factors, including "whether one circuit is more familiar with the same parties and issues or related issues than other courts."

664 F.2d 1200, 1205 (D.C. Cir. 1981). In the Fifth Circuit proceeding involving the 2015 ELG Rule, the parties have briefed issues concerning the lawfulness of the rule under the Clean Water Act—and not any issues concerning the lawfulness of the stay or postponement of compliance deadlines under the APA. As a result, the Fifth Circuit is no more familiar with the stay or postponement of ELG Rule compliance deadlines than this Court is.

The remaining case cited by the Transfer Order is also distinguishable. In *Eastern Air Lines, Inc. v. Civil Aeoronautics Board*, the court transferred a case to the First Circuit because the case challenged an agency's action taken after remand of a prior action, and the First Circuit had heard the challenge to the original agency action. 354 F.2d 507, 509 (D.C. Cir. 1965). The original and subsequent agency actions concerned the same substantive issue: whether an airline should be certified as a carrier for a particular route. By contrast, here, neither the Indefinite Stay at issue in this case nor the September 18 rule postponing ELG Rule compliance deadlines is related to any ruling from the Fifth Circuit on the ELG Rule. Nor do they implicate the same factual and legal issues as the ELG Rule itself. As Petitioners have explained previously, the multi-district litigation provisions in 28 U.S.C. § 2112(a) govern review of the same agency action, but the actions EPA has taken to stay and delay the ELG rule are not the same actions as the ELG rule itself. *See* Pet'rs' Opp'n to Mots. to Transfer & Reply in Support of

Mot. to Hold Case in Abeyance, *Clean Water Action III*, No. 17-1216, ECF Docs. 1706174, 1706353. This is particularly true for the Indefinite Stay, the lawfulness of which hinges on EPA's authority under the APA to stay compliance deadlines within a rule and has no bearing on the issues concerning the legal validity of the ELG Rule under the Clean Water Act that are pending before the Fifth Circuit. *See Sierra Club v. Jackson*, 813 F. Supp. 2d 149, 159 (D.D.C. 2011) (holding that EPA's invocation of 5 U.S.C. § 705 to suspend compliance deadlines in a prior rulemaking "is an action under the authority of the APA," separate from the prior rule itself, and therefore is subject to judicial review in district court).

Accordingly, for the purposes of 28 U.S.C. § 2112, the stay rule at issue in this case is not the "same order" as the ELG rule at issue in the Fifth Circuit proceedings.

## CONCLUSION

For the reasons set forth above, Petitioners respectfully request that the Court deny Respondents' motion in its entirety and continue to hold this case in abeyance.

Dated: March 2, 2018

Respectfully submitted,

s/ *Thomas J. Cmar*
Thomas J. Cmar
Earthjustice
1101 Lake Street, Suite 405B
Oak Park, IL 60301
T: (312) 257-9338
E: tcmar@earthjustice.org

Matthew Gerhart
3639 N. Clayton Street
Denver, CO 80205
T: (510) 847-7721
E: megerhart@gmail.com

*Counsel for Petitioners Clean Water Action, Sierra Club, and Waterkeeper Alliance, Inc.*

s/ *Casey Austin Roberts*
Casey Austin Roberts
Sierra Club
Environmental Law Program
1536 Wynkoop Street, Suite 312
Denver, CO 80202
T: (303) 454-3355
E: casey.roberts@sierraclub.org

Joshua Smith
Sierra Club
Environmental Law Program
2101 Webster Street, Suite 1300
Oakland, CA 94612
T: (415) 977-5560
E: joshua.smith@sierraclub.org

*Counsel for Petitioner Sierra Club*

s/ *Patton Dycus*
Patton Dycus
Environmental Integrity Project
1000 Vermont Avenue NW, Suite 1100
Washington, DC 20005
T: (202) 296-8800
E: pdycus@environmentalintegrity.org

*Counsel for Petitioners Environmental Integrity Project, PennEnvironment, Inc., Chesapeake Climate Action Network, Physicians for Social Responsibility, Chesapeake, Inc., and Prairie Rivers Network*

## CERTIFICATE OF COMPLIANCE

The undersigned counsel states that this motion complies with FED. R. APP. P. 27(d)(2)(A) because it contains 5,155 words, excluding the parts exempted by FED. R. APP. P. 32(f), as counted by a word processing system and, therefore, is within the word limit. This motion also complies with the typeface requirements of FED. R. APP. P. 27(d)(1)(E) because it has been prepared in a proportionally spaced typeface in 14-point Times New Roman font.

Dated: March 2, 2018

/s/ Thomas J. Cmar
Thomas J. Cmar

## CERTIFICATE OF SERVICE

I hereby certify that on this 2nd day of March, 2018, I have served the foregoing on all registered counsel through the Court's electronic filing system (ECF).

/s/ Thomas J. Cmar
Thomas J. Cmar

**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

| | |
|---|---|
| CLEAN WATER ACTION, *et al.*,<br><br>*Petitioners,*<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency and U.S. ENVIRONMENTAL PROTECTION AGENCY<br><br>*Respondents.* | Case No. 17-1193 |

# EXHIBIT 1

## Platte Generating Station Draft NPDES Permit & Fact Sheet

# Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES)

This NPDES permit is issued in compliance with the provisions of the Federal Water Pollution Control Act (33 U.S.C. Secs. 1251 *et. seq.* as amended to date), the Nebraska Environmental Protection Act (Neb. Rev. Stat. Secs. 81-1501 *et. seq.* as amended to date), and the Rules and Regulations promulgated pursuant to these Acts. The facility and outfall(s) identified in this permit are authorized to discharge wastewater and are subject to the limitations, requirements, prohibitions and conditions set forth herein. This permit regulates and controls the release of pollutants in the discharge(s) authorized herein. This permit does not relieve permittees of other duties and responsibilities under the Nebraska Environmental Protection Act, as amended, or established by regulations promulgated pursuant thereto.

| | |
|---|---|
| NPDES Permit No.: | **NE0113646** |
| IIS File Number: | **58027** |
| Facility Name: | **Platte Generating Station** |
| Permittee: | **City of Grand Island** |
| Facility Address: | **1035 West Wildwood Drive, Grand Island, NE 68801** |
| Mailing Address: | **PO Box 1968, Grand Island, NE 68802-1968** |
| Legal Description: | **N ½, Section 9, Township 10 N, Range 9 E, Hall County, NE** |
| Latitude/Longitude: | **40.855° North / 98.3486° West** |
| Receiving Water: | **Platte River (MP2-10000 of the Middle Platte River Basin)** |
| Effective Date: | |
| Expiration Date: | |

Pursuant to a Delegation Memorandum dated August 22, 2016 and signed by the Director, the undersigned hereby executes this document on behalf of the Director.

Signed this _____ day of _____, _____

_____

Shelley Schneider
Water Permits Division Administrator

pwd

## TABLE OF CONTENTS

**PART I. EFFLUENT LIMITS AND MONITORING REQUIREMENTS ..... 3**

A. Outfall LV01 – Low Volume Wastewater ..... 3
B. Outfall BA01 – Bottom Ash Transport Water ..... 4
C. Outfall CP01 – Coal Pile Runoff Water ..... 5
D. Outfall CT01 – Cooling Tower Blowdown ..... 6
E. Outfall MC01 – Discharge from Metal Cleaning ..... 7
F. Outfall 001 – Discharge of Wastewater from Settling Pond ..... 8
G. Outfall 001 – Seasonal Requirements ..... 9
H. Outfall 001 – Dissolved Metals Monitoring from the Settling Pond ..... 10

**PART II. STEAM ELECTRIC POWER GENERATING POINT SOURCE EFFLUENT LIMITATION GUIDELINES ... 11**

**PART III. OTHER REQUIREMENTS AND CONDITIONS ..... 11**

A. Polychlorinated Biphenyls (PCB) ..... 11
B. Narrative Limits ..... 11
C. Method Detection Limit Reporting Requirements ..... 11
D. Notification of Chemical Addition ..... 11
E. Response to Toxicity Noncompliance ..... 11
F. Permit Attachments ..... 12
G. Permit Modification and Reopening ..... 12
H. Electronic Submission of Discharge Monitoring Reports ..... 12

**TABLE OF CONTENTS FOR APPENDIX A ..... 13**

Attachment 1 – Guidance for Conducting Toxicity Testing and TIE/TRE Studies
Attachment 2 – Sampling and Analysis Requirements for Process Wastewater Discharges for the NPDES Permit Renewal Application

## Part I. Effluent Limits and Monitoring Requirements

### A. Outfall LV01 – Low Volume Wastewater

The discharge from internal Outfall LV01 to the settling pond consists of low volume amounts of water from equipment drains and floor drains. Effluent discharge through Outfall LV01 is authorized and shall be monitored and limited as set forth in Table 1 below.

**Table 1: Discharge Limits and Monitoring Requirements for Outfall LV01**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Daily Maximum | | |
| Total Suspended Solids | 00530 | mg/L | 30.0 | 100.0 | Quarterly | Grab |
| Oil and Grease | 00552 | mg/L | 15.0 | 20.0 | Quarterly | Grab |
| Flow | 50050 | MGD | Report | Report | Daily | Calculated or Metered |
| **Parameters** | **Storet #** | **Units** | **Discharge Limits** | | **Monitoring Frequency** | **Sample Type** |
| | | | **Daily Minimum** | **Daily Maximum** | | |
| pH | 00400 | S.U. | 6.0 | 9.0 | Quarterly | Grab[a] |

**Footnotes:**
(a) Analysis shall occur within 15 minutes of sample collection.
**Abbreviations:**
S.U. – Standard Units; mg/L – milligrams per liter; MGD – million gallons per day

ED_002364A_00010987-00031 EPA-HQ-2019-001328



**B. Outfall BA01 – Bottom Ash Transport Water**

The discharge from internal Outfall BA01 to the settling pond consists of bottom ash transport water. Effluent discharge through Outfall BA01 is authorized and shall be monitored and limited as set forth in Table 2 below.

Outfall BA01 may not discharge pollutants to the settling pond after the date set forth in Part II of the permit. Any wastewater in the pond containing bottom ash transport water that was discharged into the Settling Pond prior to that date shall be treated as legacy wastewater and shall be subject to the limitations below.

**Table 2: Discharge Limits and Monitoring Requirements for Outfall BA01**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Daily Maximum | | |
| Total Suspended Solids | 00530 | mg/L | 30.0 | 100.0 | Quarterly | Grab |
| Oil and Grease | 00552 | mg/L | 15.0 | 20.0 | Quarterly | Grab |
| Flow | 50050 | MGD | Report | Report | Daily | Calculated or Metered |
| **Parameters** | **Storet #** | **Units** | **Discharge Limits** | | **Monitoring Frequency** | **Sample Type** |
| | | | **Daily Minimum** | **Daily Maximum** | | |
| pH | 00400 | S.U. | 6.0 | 9.0 | Quarterly | Grab[(a)] |

**Footnotes:**
(a) Analysis shall occur within 15 minutes of sample collection.
**Abbreviations:**
S.U. – Standard Units; mg/L – milligrams per liter; MGD – million gallons per day

## C. Outfall CP01 – Coal Pile Runoff Water

Wet weather events may result in runoff from the facility coal pile being discharged through Outfall CP01 to the settling pond. Effluent discharge through Outfall CP01 is authorized and shall be monitored and limited as set forth in Table 3 below.

**Table 3: Discharge Limits and Monitoring Requirements for Outfall 002**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Daily Maximum | | |
| **Total Suspended Solids** | 00530 | mg/L | Report | 50.0 [(b)] | Quarterly | Grab |
| **Flow** | 50050 | MGD | Report | Report | Daily | Calculated or Metered |
| **Duration of Flow** | 81381 | Hours | Report | | Quarterly | Calculated |
| **Parameters** | **Storet #** | **Units** | **Discharge Limits** | | **Monitoring Frequency** | **Sample Type** |
| | | | **Daily Minimum** | **Daily Maximum** | | |
| **pH** | 00400 | S.U. | 6.0 | 9.0 | Quarterly | Grab[(a)] |

**Footnotes:**
(a) Analysis shall occur within 15 minutes of sample collection.
(b) Any untreated overflow from facilities designed, constructed, and operate to treat the volume of coal pile runoff, which is associated with a 10 year, 24-hour rainfall event shall **not** be subject to TSS limitation.

**Abbreviations:**
S.U. – Standard Units; mg/L – milligrams per liter; MGD – million gallons per day

## D. Outfall CT01 – Cooling Tower Blowdown

The discharge for internal Outfall CT01 consists of categorical cooling tower blowdown wastewater to the settling pond. The discharge from Outfall CT01 is authorized and shall be monitored and subject to the limits set forth in Table 4 below. No other classes of categorical wastestreams or noncategorical dilution wastestreams shall be present in the effluent from Outfall CT01 during sample collection.

**Table 4: Discharge Limits and Monitoring Requirements for Outfall CT01**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Daily Maximum | | |
| **Flow** | 50050 | MGD | Report | Report | Daily | Calculated or Metered |
| **Total Chromium** | 01034 | mg/L | 0.2 | 0.2 | Annually | Grab |
| **Total Zinc** | 01092 | mg/L | 1.0 | 1.0 | Annually | Grab |
| **Priority Pollutants**[b] | 50008 | mg/L | Report[c] | Report[c] | Annually | Grab |
| **Free Available Chlorine**[d] | 50064 | mg/L | 0.2[e] | 0.5 | Quarterly | Grab |
| **Parameters** | **Storet #** | **Units** | **Discharge Limits** | | **Monitoring Frequency** | **Sample Type** |
| | | | **Daily Minimum** | **Daily Maximum** | | |
| **pH** | 00400 | S.U. | 6.0 | 9.0 | Quarterly[a] | Grab |

**Footnotes:**

(a) Analysis shall be conducted within 15 minutes of sample collection.

(b) Compliance with the limitations for the 126 priority pollutants may be determined by engineering calculations instead of a chemical analysis, which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR Part 136. The engineering calculations are based on the chemicals added for cooling tower maintenance. See 40 CFR Part 423 Appendix A for a list of the priority pollutants.

(c) No detectable amounts are permitted for any of the priority pollutants in the final discharge, except for chromium and zinc, using the analytical methods of 40 CFR Part 136.

(d) Neither free available chlorine or total residual chlorine may be discharged from any unit for more than two hours in any one day and not from more than one unit in the plant at any one time unless Platte Generating Station can demonstrate to the NDEQ that the units in a particular location cannot operate at or below this level of chlorination. The term free available chlorine shall mean the value obtained using the amperometric titration method for free available chlorine described in *Standard Methods for the Examination of Water and Wastewater*, page 112 (13th Edition).

(e) The average concentration means the average of analyses made over a single period of chlorine release which does not exceed two hours.

**Abbreviations:** S.U. – Standard Units; mg/L – milligrams per liter; MGD – million gallons per day
µmhos/cm – microohms per centimeter

ED_002364A_00010987-00034 EPA-HQ-2019-001328

USCA Case #17-1193 Document #1720468 Filed: 03/02/2018 Page 8 of 57



## E. Outfall MC01 – Discharge from Metal Cleaning

The discharge from metal cleaning though internal Outfall MC01 is authorized and shall be monitored and subject to the limits set forth in Table 5 below. The metal cleaning wastewater may be discharged to the settling pond. Samples from MC01 shall be taken prior to discharge and before comingling with any other classes of categorical wastestreams or non-categorical dilution water.

**Table 5: Limits and Monitoring Requirements for Outfall MC01**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Maximum | | |
| **Flow** | 50050 | MGD | Report | Report | Semiannually | Calculated or Metered |
| **Oil and Grease** | 00552 | mg/L | 15.0 | 20.0 | Semiannually | Grab |
| **Total Suspended Solids** | 00530 | mg/L | 30.0 | 100.0 | Semiannually | Grab |
| **Total Copper** | 01119 | mg/L | 1.0 | 1.0 | Semiannually | Grab |
| **Total Iron** | 01045 | mg/L | 1.0 | 1.0 | Semiannually | Grab |
| **Parameters** | **Storet #** | **Units** | **Discharge Limits** | | **Monitoring Frequency** | **Sample Type** |
| | | | **Daily Minimum** | **Daily Maximum** | | |
| **pH** | 00400 | S.U. | 6.0 | 9.0 | Semiannually [a] | Grab |

**Footnotes:**
(a) Analysis shall occur within 15 minutes of sample collection.
**Abbreviations:** S.U. – Standard Units; mg/L – milligrams per liter; MGD – million gallons per day

ED_002364A_00010987-00035 EPA-HQ-2019-001328



## F. Outfall 001 – Discharge of Wastewater from Settling Pond

Wastewater from low volume sources, bottom ash transport settling water, coal pile runoff, metal cleaning wastewater, and cooling tower blowdown is discharged to the settling pond. The discharge of wastewater from the settling pond through Outfall 001 to the Platte River (MP2-10000) is authorized. The wastewater discharged through Outfall 001 must be consistent with the description provided in the permit application and any supplemental information submitted used in the development of this permit and shall be monitored and subject to the limits set forth below in Tables 6, 7, and 8.

The settling pond may not receive any bottom transport water after the date set forth in Part II of the permit. Any wastewater in the pond containing bottom ash transport water that was discharged into the Settling Pond prior to that date shall be treated as legacy wastewater and shall be subject to the limitations below.

**Table 6: Discharge Limits and Monitoring Requirements for Outfall 001**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Daily Maximum | | |
| **Flow** | 50050 | MGD | Report | Report | Daily | Calculated or Metered |
| **Temperature** | 00011 | °F | Report | 90.0 | Daily | Measured[a] |
| **Total Suspended Solids** | 00530 | mg/L | 30.0 | 100.0 | Monthly | Grab |
| **Oil and Grease** | 00552 | mg/L | Report | 10.0 | Monthly | Grab |
| **Parameter** | **Storet #** | **Units** | **Requirements** | | **Monitoring Frequency** | **Sample Type** |
| **Pollution Scan[c]** | 51168 | Yes = 1<br>No = 0 | Report | | Once per permit term | Grab |
| **Parameter** | **Storet #** | **Units** | **Discharge Limits** | | **Monitoring Frequency** | **Sample Type** |
| | | | **Daily Minimum** | **Daily Maximum** | | |
| **pH** | 00400 | S.U. | 6.5 | 9.0 | Monthly | Grab[a] |

**Footnotes:**
(a) Analysis shall occur within 15 minutes of sample collection.
(b) Toxicity shall be measured using the Whole Effluent Toxicity (WET) test procedures set forth in 40 CFR Part 136. See Attachment 1 for Guidance for Conducting Toxicity Testing and TIE/TRE Studies.
(c) Pollution scan requirements are detailed in Attachment 2. If a pollution scan is conducted this monitoring period, enter 1 on the DMR. If it was not conducted during this period, enter 0.
**Abbreviations:** S.U. – Standard Units; mg/L – milligrams per liter; MGD – million gallons per day °F – degrees Fahrenheit

ED_002364A_00010987-00036 EPA-HQ-2019-001328

USCA Case #17-1193 Document #1720468 Filed: 03/02/2018 Page 10 of 57



## G. Outfall 001 – Seasonal Requirements

The discharge of wastewater from the settling pond from Outfall 001 to the Platte River is authorized. The discharge must be consistent with the description provided in the permit application and any supplemental information submitted used in the development of this permit. The discharge from Outfall 001 shall be monitored and subject to the limits set forth below in Table 7.

**Table 7: Seasonal Discharge Limits and Monitoring Requirements for Outfall 001**

| Parameters | Storet # | Units | Discharge Limits | | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|---|
| | | | Monthly Average | Daily Maximum | | |
| **Spring Total Residual Chlorine (TRC)** (March 1 – May 31) | 50060 | mg/L | 0.029 | 0.041 | Monthly[a] | Grab[b] |
| **Summer Total Residual Chlorine (TRC)** (June 1 – Oct. 31) | 50060 | mg/L | 0.010 | 0.020 | Monthly[a] | Grab[b] |
| **Winter Total Residual Chlorine (TRC)** (Nov. 1 – Feb. 28[29]) | 50060 | mg/L | 0.011 | 0.021 | Monthly[a] | Grab[b] |
| **Conductivity** | 00094 | µmhos/cm | Report | Report | Quarterly | Grab |
| **Acute Toxicity** – *Ceriodaphnia sp* | 61425 | TUa | Report | 1.0 | Annually[c] | Grab[d] |
| **Acute Toxicity** – *Pimephales promelas* | 61427 | TUa | Report | 1.0 | Annually[c] | Grab[d] |

**Footnotes:**
(a) If chlorine is not used for disinfection, monitoring is not required (NODI Code 9, monitoring condition not required).
(b) Analysis shall occur within 15 minutes of sample collection.
(c) Annual sampling is required. Sampling will be conducted seasonally. Therefore, at least one annual sample will be taken in spring (March 1 – May 31), at least one annual sample in summer (June 1 – October 31), and at least one sample in winter (November 1 – February 28[29]).
(d) Toxicity shall be measured using the Whole Effluent Toxicity (WET) test procedures set forth in 40 CFR Part 136. See Attachment 1 for Guidance for Conducting Toxicity Testing and TIE/TRE Studies.
**Abbreviations:** µmhos/cm – microohms per centimeter mg/L – milligrams per liter; TUa – acute toxicity units

## H. Outfall 001 – Dissolved Metals Monitoring from the Settling Pond

The discharge of wastewater from the settling pond from Outfall 001 to the Platte River is authorized. The discharge must be consistent with the description provided in the permit application and any supplemental information submitted used in the development of this permit. The discharge from Outfall 001 shall be monitored and subject to the limits set forth below in Table 8.

**Table 8: Dissolved Metals Monitoring Requirements for Outfall 001**

| Parameters[(a)] | Storet # | Units | Discharge Limits | Monitoring Frequency | Sample Type |
|---|---|---|---|---|---|
| **Dissolved Cadmium** | 01025 | mg/L | Report | Annually | Grab |
| **Dissolved Chromium** | 01030 | mg/L | Report | Annually | Grab |
| **Dissolved Copper** | 01040 | mg/L | Report | Annually | Grab |
| **Dissolved Iron** | 01046 | mg/L | Report | Annually | Grab |
| **Dissolved Lead** | 01049 | mg/L | Report | Annually | Grab |
| **Dissolved Nickel** | 01065 | mg/L | Report | Annually | Grab |
| **Dissolved Zinc** | 01090 | mg/L | Report | Annually | Grab |
| **Dissolved Mercury** | 71890 | µg/L | Report | Annually | Grab |

**Footnotes:**
(a) The analytical procedure used for the determination of metals limits must be sufficiently sensitive to provide accurate results to 0.010 mg/L except for mercury where the analytical procedure used must be sufficiently sensitive to provide accurate results to 0.02 µg/L.
**Abbreviations:** µg/L – micrograms per liter mg/L – milligrams per liter

## Part II. Steam Electric Power Generating Point Source Effluent Limitation Guidelines

Upon issuance of this permit, the City of Grand Island shall implement the compliance schedule set forth below for meeting final permit requirements regarding the elimination of pollutants in bottom ash transport water as set forth by the new regulations promulgated in 40 CFR Part 423 on November 3, 2015. This schedule may be modified in accordance with NDEQ Title 119 and written notice from the NDEQ.

**Annually**

The City of Grand Island shall send an annual update to NDEQ progress that has occurred to achieve the requirements of this compliance schedule. This update may include information such as planning upgrades to the facility wastewater system, steam electric generating process changes, or other data which will result in the establishment of BAT limitations.

**December 31, 2023**

No later than December 31, 2023, the City of Grand Island shall complete the construction of upgrades to Platte Generating Station that will result in either the elimination of pollutants in bottom ash transport water or elimination of discharge of bottom ash transport water to the settling pond and later discharge through Outfall 001. No later than December 31, 2023, either no more pollutants will be present in the station discharge of bottom ash transport water or the facility will not discharge bottom ash transport water to the settling pond or other impoundment.

At this time, any bottom ash transport water discharged prior to the date promulgated above to the settling pond will be classified as "legacy wastewater." Legacy wastewater will be subject to the limitations set forth for Outfall 001 in Table 6.

## Part III. Other Requirements and Conditions

**A. Polychlorinated Biphenyls (PCB)**

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid. At the discretion of the NDEQ, this requirement for no discharge of PCBs can be confirmed either by chemical analysis of the discharge effluent or by an engineering study which would demonstrate that PCBs are not present in the final discharge.

**B. Narrative Limits**

Discharges authorized under this permit;

1. Shall not be toxic to aquatic life in surface waters of the State outside the mixing zones allowed in NDEQ Title 117 - *Nebraska Surface Water Quality Standard;*
2. Shall not contain pollutants at concentrations or levels that produce objectionable films, colors, turbidity, deposits, or noxious odors in the receiving stream or waterway; and
3. Shall not contain pollutants at concentrations or levels that cause the occurrence of undesirable or nuisance aquatic life in the receiving stream.

**C. Method Detection Limit Reporting Requirements**

The minimum detection limit (MDL) is defined as the level at which the analytical system gives acceptable calibration points. If the analytical results are below the MDL then the reported value on the DMR shall be a numerical value less than the MDL (e.g. <0.005).

**D. Notification of Chemical Addition**

The NDEQ shall be notified if any changes in the chemical additives introduced into the cooling water system that are not chemically equivalent to existing additives. Notification shall include but is not limited to the submission to the NDEQ of MSDS sheets and product labels.

**E. Response to Toxicity Noncompliance**

If the whole effluent toxicity tests results exceed the toxicity limitations in this permit, this is a permit violation and the Department may require the permittee to initiate Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) studies. The permittee must initiate TIE/TRE studies according to the United States

Environmental Protection Agency *Methods for Aquatic Toxicity Evaluations* and *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs).*

**F. Permit Attachments**

The attachments to this permit may be modified without a formal modification of the permit.

**G. Permit Modification and Reopening**

The NDEQ reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Clean Water Act in order to bring all discharges into compliance with the Clean Water Act.

**H. Electronic Submission of Discharge Monitoring Reports**

The National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule requires electronic reporting of NPDES information rather than the currently required paper based reports from the permitted facilities. To comply with the federal rule, permittees will be required to submit DMRs electronically using the EPA NetDMR tool (Appendix A of 40 CFR part 127). Permittees may seek an electronic reporting waiver by submitting a letter to the department with a brief written statement regarding the basis for needing such a temporary waiver. The department will either approve or deny this electronic reporting waiver request. The duration of a temporary waiver may not exceed 5 years, which is the normal period for an NPDES permit term.

**Table of Contents for Appendix A**

**Standard Conditions that Apply to NPDES Permits**


| Section | | Page |
|---|---|---|
| 1. | Information Available | 1 |
| 2. | Duty to Comply | 1 |
| 3. | Violations of this Permit | 1 |
| 4. | Duty to Reapply | 1 |
| 5. | Need to Halt or Reduce Activity not a Defense | 1 |
| 6. | Duty to Mitigate | 1 |
| 7. | Proper Operation and Maintenance | 1 |
| 8. | Permit Actions | 2 |
| 9. | Property Rights | 2 |
| 10. | Duty to Provide Information | 2 |
| 11. | Inspection and Entry | 2 |
| 12. | Monitoring and Records | 2 |
| 13. | Signatory Requirements | 3 |
| 14. | Reporting Requirements | 4 |
| 15. | Bypass | 6 |
| 16. | Upset | 7 |
| 17. | Other Rules and Regulations Liability | 7 |
| 18. | Severability | 7 |
| 19. | Other Conditions that Apply to NPDES and NPP Permits | 7 |
| 20. | Definitions | 10 |
| 21. | Abbreviations | 12 |

## Appendix A

## Conditions Applicable to all NPDES Permits

The following conditions apply to all NPDES permits:

1. **Information Available**

   All permit applications, fact sheets, permits, discharge data, monitoring reports, and any public comments concerning such shall be available to the public for inspection and copying, unless such information about methods or processes is entitled to protection as trade secrets of the owner or operator under Neb. Rev. Stat. §81-1527, (Reissue 1999) and NDEQ Title 115, Chapter 4.

2. **Duty to Comply**

   a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Federal Clean Water Act and the Applicable State Statutes and Regulations and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

   b. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

3. **Violations of this Permit**

   a. Any person who violates this permit may be subject to penalties and sanctions as provided by the Clean Water Act.

   b. Any person who violates this permit may be subject to penalties and sanctions as provided by the Nebraska Environmental Protection Act.

4. **Duty to Reapply**

   If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

5. **Need to Halt or Reduce Activity not a Defense**

   It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. **Duty to Mitigate**

   The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

7. **Proper Operation and Maintenance**

   The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance based on designed facility removals, effective management, adequate operator staffing and training, adequate process controls, adequate funding that reflects proper user fee schedules, adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary

facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

**8. Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

**9. Property Rights**

This permit does not convey any property rights of any sort, or any exclusive privilege.

**10. Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

**11. Inspection and Entry**

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

**12. Monitoring and Records**

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

i) The date(s), exact place, time and methods of sampling or measurements;

ii) The individual(s) who performed the sampling or measurements;

iii) The date(s) analyses were performed;

iv) The individual(s) who performed the analyses;

v) The analytical techniques or methods used; and

vi) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under NDEQ Title 119, Chapter 27 002 unless another method is required under 40 CFR Subchapters N – Effluent Guidelines and Standards Parts 425 to 471 or O – Sewer Sludge Parts 501 and 503.

e. Falsifies, Tampers, or Knowingly Renders Inaccurate

i) On actions brought by EPA, the Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction: be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

ii) On action brought by the State, The Nebraska Environmental Protection Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished pursuant to Neb. Stat. §81-1508.01.

**13. Signatory requirements**

a. All applications, reports, or information submitted to the Director shall be signed and certified.

i) All permit applications shall be signed as follows:

(a) For a corporation

(i) By a responsible corporate officer: For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or

(b) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(b) For a partnership or sole proprietorship

(i) By a general partner or the proprietor.

(c) For a municipality, State, Federal, or other public agency

(i) By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

b. Reports and Other Information

i) All reports required by permits, and other information requested by the Director shall be signed by a person described in this section [paragraphs13. a. i) (a),(b), or (c)], or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(a) The authorization is made in writing by a person described in paragraphs 13. a. i) (a),(b), or (c);

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or any individual occupying a named position) and;

(c) The written authorization is submitted to the Director.

c. Changes to Authorization

If an authorization of paragraphs 13. a. i) (a),(b), or (c) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification

All applications, reports and information submitted as a requirement of this permit shall contain the following certification statement:

i) I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

e. False Statement, Representation, or Certification

i) The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

ii) The Nebraska Environmental Protection Act provides criminal penalties and sanctions for false statement, representation, or certification in any application, label, manifest, record, report, plan, or other document required to be filed or maintained by the Environmental Protection Act, the Integrated Solid Waste Management Act, the Livestock Waste Management Act or the rules or regulations adopted and promulgated pursuant to such acts.

**14. Reporting Requirements**

a. Planned Changes

i) The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(a) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in NDEQ Title 119, Chapter 4 and 8.

(b) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under NDEQ Title 119, Chapter 15.

(c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions

that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. The sludge program is not delegated to the State so notification to the EPA Regional Administrator in addition to the State is required.

b. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under NDEQ Title 119, Chapter 24 in some cases, modification or revocation and reissuance is mandatory.

d. Monitoring Reports

i) Monitoring results shall be reported at the intervals specified elsewhere in this permit.

ii) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director.

iii) Monitoring results shall be submitted on a quarterly basis using the reporting schedule set forth below, unless otherwise specified in this permit or by the Department.

| Monitoring Quarters | DMR Reporting Deadlines |
|---|---|
| January - March | April 28 |
| April - June | July 28 |
| July - September | October 28 |
| October - December | January 28 |

iv) For reporting results of monitoring of sludge use or disposal practices

v) Additional reports may be required by the EPA Regional Administrator.

vi) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved in NDEQ Title 119, Chapter 27 002, or another method required for an industry-specific waste stream under 40 CFR Subchapters N – Effluent Guidelines and Standards Parts 425 to 471 and O – Sewer Sludge Parts 501 and 503, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director or EPA Regional Administrator.

vii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f. Twenty-four Hour Reporting

i) The permittee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in this permit.

(b) Any upset which exceeds any effluent limitation in this permit.

(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours.

g. The Director may waive the written report on a case-by-case basis for reports under section 14. f. ii) (a), (b) and (c) if the oral report has been received within 24 hours.

h. Other noncompliance

The permittee shall report all instances of noncompliance not reported under paragraphs d., e., and f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph f. of this section.

i. Other information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

j. Noncompliance Report Forms

i) Noncompliance Report Forms are available from the Department and shall be submitted with or as the written noncompliance report.

ii) The submittal of a written noncompliance report does not relieve the permittee of any liability from enforcement proceedings that may result from the violation of permit or regulatory requirements.

**15. Bypass**

a. Definitions

i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 15.c. and d. of this section.

c. Notice

i) Anticipated Bypass

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

ii) Unanticipated Bypass

The permittee shall submit notice of an unanticipated bypass as required in paragraph 14.f. of this section (24-hour notice).

d. Prohibition of Bypass

Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

iii) The permittee submitted notices as required under paragraph 15.c. of this section.

e. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 15.d.

**16. Upset**

a. Definition

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 16.c. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions Necessary for a Demonstration of Upset.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

i) An upset occurred and that the permittee can identify the cause(s) of the upset;

ii) The permitted facility was at the time being properly operated;

iii) The permittee submitted notice of the upset as required in paragraph 14.f. ii) (a), of this section (24-hour notice).

iv) The permittee complied with any remedial measures required under paragraph (d) of this section.

d. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

**17. Other Rules and Regulations Liability**

The issuance of this permit in no way relieves the obligation of the permittee to comply with other rules and regulations of the Department.

**18. Severability**

If any provision of this permit is held invalid, the remainder of this permit shall not be affected.

**19. Other Conditions that Apply to NPDES and NPP Permits**

a. Land Application of Wastewater Effluent

The permittee shall be permitted to discharge treated domestic wastewater effluent by means of land application in accordance with the regulations and standards set forth in NDEQ Title 119, Chapter 12 002.

The Wastewater Section of the Department must be notified in writing if the permittee chooses to land apply effluent.

b. Toxic Pollutants

The permittee shall not discharge pollutants to waters of the state that cause a violation of the standards established in NDEQ Titles 117, 118 or 119. All discharges to surface waters of the state shall be free of toxic (acute or chronic) substances which alone or in combination with other substances, create conditions unsuitable for aquatic life outside the appropriate mixing zone.

c. Oil and Hazardous Substances/Spill Notification

Nothing in this permit shall preclude the initiation of any legal action or relieve the permittee from any responsibilities, liabilities or penalties under section 311 of the Clean Water Act. The permittee shall conform to the provisions set forth in NDEQ Title 126, Rules and Regulations Pertaining to the Management of Wastes. If the permittee knows, or has reason to believe, that oil or hazardous substances were released at the facility and could enter waters of the state or any of the outfall discharges authorized in this permit, the permittee shall immediately notify the Department of a release of oil or hazardous substances. During Department office hours (i.e., 8:00 a.m. to 5:00 p.m., Monday through Friday, except holidays), notification shall be made to the Nebraska Department of Environmental Quality at telephone numbers (402) 471-2186 or (877) 253-2603 (toll free). When NDEQ cannot be contacted, the permittee shall report to the Nebraska State Patrol for referral to the NDEQ Immediate Response Team at telephone number (402) 471-4545. It shall be the permittee's responsibility to maintain current telephone numbers necessary to carry out the notification requirements set forth in this paragraph.

d. Removed Substances

i) Solids, sludge, filter backwash or other pollutants removed in the course of treatment or control of wastewater shall be disposed of at a site and in a manner approved by the Nebraska Department of Environmental Quality.

(a) The disposal of nonhazardous industrial sludges shall conform to the standards established in or to the regulations established pursuant to 40 CFR Part 257.

(b) The disposal of sludge shall conform to the standards established in or to the regulations established pursuant to 40 CFR Part 503.

(c) If solids are disposed of in a licensed sanitary landfill, the disposal of solids shall conform to the standards established in NDEQ Title 132.

ii) Publicly owned treatment works shall dispose of sewage sludge in a manner that protects public health and the environment from any adverse effects which may occur from toxic pollutants as defined in Section 307 of the Clean Water Act.

iii) This permit may be modified or revoked and reissued to incorporate regulatory limitations established pursuant to 40 CFR Part 503.

e. Representative Sampling

i) Samples and measurements taken as required within this permit shall be representative of the discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to the Department and with the written approval of the Director.

ii) Composite sampling shall be conducted in one of the following manners;

(a) Continuous discharge - a minimum of one discrete aliquot collected every three hours,

(b) Less than 24 hours - a minimum of hourly discrete aliquots or a continuously drawn sample shall be collected during the discharge, or

(c) Batch discharge - a minimum of three discrete aliquots shall be collected during each discharge.

(d) Composite samples shall be collected in one of the following manners:

(i) The volume of each aliquot must be proportional to either the waste stream flow at the time of sampling or the total waste stream flow since collection of the previous aliquot,

(ii) A number of equal volume aliquots taken at varying time intervals in proportion to flow,

(iii) A sample continuously collected in proportion to flow, and

(e) Where flow proportional sampling is infeasible or non-representative of the pollutant loadings, the Department may approve the use of time composite samples.

(f) Grab samples shall consist of a single aliquot collected over a time period not exceeding 15 minutes.

iii) All sample preservation techniques shall conform to the methods adopted in NDEQ Title 119, Chapter 21 006 unless:

(a) In the case of sludge samples, alternative techniques are specified in 40 CFR Part 503, or

(b) Other procedures are specified in this permit.

iv) Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be used to insure the accuracy and reliability of measurements. The devices shall be installed, calibrated and maintained to insure the accuracy of the measurements. The accepted capability shall be consistent with that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of +/- 10%. The amount of deviation shall be from the true discharge rates throughout the range of expected discharge volumes. Guidance can be obtained from the following references for the selection, installation, calibration and operation of acceptable flow measurement devices:

(a) "Water Measurement Manual," U.S. Department of the Interior, Bureau of Reclamation, Third Edition, Revised Reprint, 2001.
(Available online at http://www.usbr.gov/tsc/techreferences/mands/wmm/index.htm)

(b) "NPDES Compliance Flow Measurement Manual, "U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-77, September 1981, 147 pp.
(Available online at http://www.epa.gov/nscep, and enter 'NPDES Compliance Flow Measurement Manual, Publication MCD-77' in the search box)

f. Changes of Loadings to Publicly Owned Treatment Works (POTWs)

All POTWs must provide adequate notice to the Director of the following:

i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to NDEQ Title 119, Chapter 26, if it were directly discharging those pollutants;

ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

iii) For purposes of this paragraph, adequate notice shall include information on the quality and quantity of effluent introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

**20. Definitions**

**Administrator:** The Administrator of the USEPA.

**Aliquot:** An individual sample having a minimum volume of 100 milliliters that is collected either manually or in an automatic sampling device.

**Annually:** Once every calendar year.

**Authorized Representative:** Individual or position designated the authorization to submit reports, notifications, or other information requested by the Director on behalf of the Owner under the circumstances that the authorization is made in writing by the Owner, the authorization specifies the individual or position who is duly authorized, and the authorization is submitted to the Director.

**Bimonthly:** Once every other month.

**Biosolids:** Sewage sludge that is used or disposed through land application, surface disposal, incineration, or disposal in a municipal solid waste landfill.

**Biweekly:** Once every other week.

**Bypass:** The intentional diversion of wastes from any portion of a treatment facility.

**Certifying Official:** See Section 13, Standard Conditions above.

**Daily Average:** An effluent limitation that cannot be exceeded and is calculated by averaging the monitoring results for any given pollutant parameter obtained during a 24-hour day.

**Department:** Nebraska Department of Environmental Quality.

**Director:** The Director of the Nebraska Department of Environmental Quality.

**Industrial Discharge:** Wastewater that originates from an industrial process and / or is noncontact cooling water and / or is boiler blowdown.

**Industrial User:** A source of indirect discharge (a pretreatment facility).

**Monthly Average:** An effluent limitation that cannot be exceeded. It is calculated by averaging any given pollutant parameter monitoring results obtained during a calendar month.

**Operator:** A person (often the general contractor) designated by the owner who has day to day operational control and/or the ability to modify project plans and specifications related to the facility.

**Owner:** A person or party possessing the title of the land on which the activities will occur; or if the activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the activity.

**Outfall:** A discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged into Waters of the State.

**Passive Discharge:** A discharge from a POTW that occurs in the absence of an affirmative action and is not authorized by the NPDES permit (e.g. discharges due to a leaking valve, discharges from an overflow structure) and / or is a discharge from an overflow structure not designed as part of the POTW (e.g. discharges resulting from lagoon berm / dike breaches).

**Publicly Owned Treatment Works (POTW):** A treatment works as defined by Section 212 of the Clean Water Act (Public Law 100-4) which is owned by the state or municipality, excluding any sewers or other conveyances not leading to a facility providing treatment.

**Semiannually:** Twice every year.

**Significant Industrial User (SIU):** All industrial users subject to Categorical Pretreatment Standards or any industrial user that, unless exempted under Chapter 1, Section 105 of NDEQ Title 119, discharges an average of 25,000 gallons per day or more of process water; or contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW; or is designated as such by the Director on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any National Pretreatment Standard or requirement.

**Sludge:** Any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect.

**30-Day Average:** An effluent limitation that cannot be exceeded. It is calculated by averaging any given pollutant parameter monitoring results obtained during a calendar month.

**Total Toxic Organics (TTO):** The summation of all quantifiable values greater than 0.01 milligrams per liter (mg/l) for toxic organic compounds that may be identified elsewhere in this permit. (If this term has application in this permit, the list of toxic organic compounds will be identified, typically in the Limitations and Monitoring Section(s) and/or in an additional Appendix to this permit.)

**Toxic Pollutant:** Those pollutants or combination of pollutants, including disease causing agents, after discharge and upon exposure, ingestion, inhalation or assimilation into an organism, either directly from the environment or indirectly by ingestion through food chains will, on the basis of information available to the administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunction (including malfunctions in reproduction), or physical deformations in such organisms or their offspring.

**Upset:** An exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee, excluding such factors as operational error, improperly designed or inadequate treatment facilities, or improper operation and maintenance or lack thereof.

**Volatile Organic Compounds (VOC):** The summation of all quantifiable values greater than 0.01 milligrams per liter (mg/l) for volatile, toxic organic compounds that may be identified elsewhere in this permit. (See the definition for Total Toxic Organics above. In many instances, VOCs are defined as the volatile fraction of the TTO parameter. If the term VOC has application in this permit, the list of toxic organic compounds will be identified, typically in the Limitations and Monitoring Section(s) and/or in an additional Appendix to this permit.)

**Waters of the State:** All waters within the jurisdiction of this state including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

**Weekly Average:** An effluent limitation that cannot be exceeded. It is calculated by averaging any given pollutant parameter monitoring results obtained during a fixed calendar week. The permittee may start their week on any weekday but the weekday must remain fixed. The Department approval is required for any change of the starting day.

**"X" Day Average:** An effluent limitation defined as the maximum allowable "X" day average of consecutive monitoring results during any monitoring period where "X" is a number in the range of one to seven days.

**21. Abbreviations**

**CFR:** Code of Federal Regulations

**kg/Day:** Kilograms per Day

**MGD:** Million Gallons per Day

**mg/L:** Milligrams per Liter

**NOI:** Notice of Intent

**NDEQ:** Nebraska Department of Environmental Quality

**NDEQ Title 115:** Rules of Practice and Procedure

**NDEQ Title 117:** Nebraska Surface Water Quality Standards

**NDEQ Title 118:** Ground Water Quality Standards and Use Classification

**NDEQ Title 119:** Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System

**NDEQ Title 126:** Rules and Regulations Pertaining to the Management of Wastes

**NDEQ Title 132:** Integrated Solid Waste Management Regulations

**NPDES:** National Pollutant Discharge Elimination System

**NPP:** Nebraska Pretreatment Program

**POTW:** Publicly Owned Treatment Works

**µg/L:** Micrograms per Liter

**WWTF:** Wastewater Treatment Facility

Attachment 1

# Guidance for Conducting Toxicity Testing and TIE/TRE Studies

(January 2001)

## 1. Test Procedures

Acute and chronic toxicity is a measure of the toxic effect that a waste water effluent may have on living organisms (i.e., *Pimephales promelas* and *Ceriodaphnia* species). Acute and chronic toxicity analyses are conducted using the EPA approved Whole Effluent Toxicity (WET) test methods set forth in 40 CFR, Part 136 (July 1996 edition). These test methods establish standardized conditions and require that certain chemical and physical analyses be conducted in conjunction with the toxicity analysis.

## 2. Results Reporting

Test results are reported in terms of toxic units. Acute toxic units are abbreviated TUa, and are the inverse of the $LC_{50}$ (i.e., the concentration of effluent that is lethal to 50% of the organisms) expressed as a decimal fraction. Chronic toxic units are abbreviated TUc, and are the inverse of the NOEC (i.e., the highest concentration of effluent at which there is no observed effect on the organisms) with respect to growth or reproductive inhibition) expressed as a decimal fraction. The tables below provide examples of the $LC_{50}$ and NOEC conversions to toxic units.

| $LC_{50}$ | Decimal Fraction | TUa |
|---|---|---|
| 0.1 % | 0.001 | 1000 |
| 1% | 0.01 | 100 |
| 10% | 0.1 | 10 |
| 25% | 0.25 | 4 |
| 50% | 0.5 | 2 |
| 100% | 1 | 1 |

| NOEC | Decimal Fraction | TUc |
|---|---|---|
| 0.1 % | 0.001 | 1000 |
| 1% | 0.01 | 100 |
| 10% | 0.1 | 10 |
| 25% | 0.25 | 4 |
| 50% | 0.5 | 2 |
| 100% | 1 | 1 |

## 3. Initial Response to Non-Compliance

If the permit limits for toxicity are exceeded, the permittee typically needs to perform the following actions.

a. Submit a written non-compliance report (NCR) within 5 days. In the NCR, identify any suspect sources of the toxicity and describe any measures being taken to reduce toxicity.
b. Conduct a follow-up toxicity testing with both organisms within four (4) weeks.

## 4. Return to Compliance

If the follow-up test results are in compliance with the limits in the permit, the permittee typically needs to perform the following actions.

a. Within 30 days submit the results of the follow-up test in a written report to the NDEQ. The written report should discuss the effect of the measures taken to reduce toxicity. The report should also provide the NDEQ with a recommendation relative to their success and, if ongoing, the need to continue implementing these measures.
b. Testing can generally be resumed on the routine schedule established in the permit, unless the NDEQ specifies otherwise. The NDEQ can require additional follow-up testing on a case-by-case basis (e.g., if there was no apparent reason why toxicity decreased). Any measures taken to reduce toxicity will generally need to be continued as Best Management Practices, unless the NDEQ provides a written approval for their discontinuance.

Attachment 4

5. **Actions to Address Continued Non-Compliance**
If the follow-up toxicity test results are not in compliance with the permit limits, the permittee typically needs to perform. Toxicity Identification Evaluations (TIE) and Toxicity Reduction Evaluations (TRE) asspecified below. The permittee is responsible for maintaining compliance with the toxicity limits in this permit. The undertaking of the TIE/TRE process does not constitute compliance unless or until compliance with the permit limits is achieved. See explanatory note below concerning Departmental actions to address non-compliance.
   a. Development and implementation of a Toxicity Identification Evaluation (TIE) needs to begin immediately. A summary plan for the initiation of the TIE should be submitted to the NDEQ within 30 days of when the follow-up of non-compliant result is received. A meeting with the NDEQ to discuss TIE/TRE alternatives within this period is encouraged.
   b. A complete TIE/TRE schedule should be submitted to the NDEQ within 90 days. The NDEQ will seek clarification on at least some aspects of the schedule, and may request some modification.
   c. The TIE and TRE processes should continue concurrently; i.e., as the TIE process identifies toxicity sources, reasonable measures to reduce the toxicity from these sources should be taken. The TIE/TRE schedule may need to be revised in response to ongoing TIE/TRE activities.
   d. Sometimes it is possible to forego or discontinue the TIE process, and proceed directly with the TRE process. However, before abandoning the TIE process, it is important that:
      i. the source of the toxicity be known; and
      ii. NDEQ concurs with this approach.

Note: On-going non-compliance with a toxicity limit will typically be addressed in one of two ways depending on whether agreement can be achieved between the NDEQ and permittee on the TIE/TRE schedule and procedures. If agreement can be achieved, the NDEQ and the permittee may wish to enter into a Consent Order. If agreement cannot be achieved, the NDEQ may proceed unilaterally via administrative and/or enforcement actions. In most instances, it is advantageous for all parties if a mutually agreed to TIE/TRE process can be implemented. For that reason, early meetings and discussions with the Department are encouraged.

**Attachment 2 – Sampling and Analysis Requirements for Process Wastewater Discharges for the NPDES Permit Renewal Application**

Except for stormwater discharges, all manufacturing, commercial, mining and silvicultural dischargers applying for NPDES permits which discharge process wastewater shall provide the information in Section A through D to the Department once per permit term.

**A. General Required Sampling and Analysis**

Every applicant must report quantitative data for every outfall directly discharging process wastewater for the following pollutants:

Biochemical Oxygen Demand ($BOD_5$)
Chemical Oxygen Demand
Total Organic Carbon
Total Suspended Solids
Ammonia (as N)
Temperature (both winter and summer)
pH

The Director may waive the reporting requirements for individual point sources or for a particular industry category for one or more of the pollutants listed in Section A if the applicant has demonstrated that such a waiver is appropriate because information adequate to support issuance of a permit can be obtained with less stringent requirements.

**B. Industry Specific Sampling and Analysis**

Each applicant with processes in one or more primary industry category (see Section C) contributing to a discharge must report quantitative data for the following pollutants in each outfall containing process wastewater:

1. The organic toxic pollutants in the fractions designated in Table I for the applicant's industrial category or categories unless the applicant qualifies as a small business under paragraph (g)(8) of 40 CFR 122.21. Table II lists the organic toxic pollutants in each fraction. The fractions result from the sample preparation required by the analytical procedure which uses gas chromatography/mass spectrometry. A determination that an applicant falls within a particular industrial category for the purposes of selecting fractions for testing is not conclusive as to the applicant's inclusion in that category for any other purposes (see Part D).
2. The pollutants listed in Table III (the toxic metals, cyanide, and total phenols).
3. Each applicant must indicate whether it knows or has reason to believe that any of the pollutants in Table IV (certain conventional and nonconventional pollutants) is discharged from each outfall. If an applicable effluent limitations guideline either directly limits the pollutant or, by its express terms, indirectly limits the pollutant through limitations on an indicator, the applicant must report quantitative data. For every pollutant discharged which is not so limited in an effluent limitations guideline, the applicant must either report quantitative data or briefly describe the reasons the pollutant is expected to be discharged.
4. Each applicant must indicate whether it knows or has reason to believe that any of the pollutants listed in table II or table III (the toxic pollutants and total phenols) for which quantitative data are not otherwise required under paragraph (g)(7)(v) of 40 CFR 122.21 are discharged from each outfall. For every pollutant expected to be discharged in concentrations of 10 ppb or greater the applicant must report quantitative data. For acrolein, acrylonitrile, 2,4 dinitrophenol, and 2-methyl-4, 6 dinitrophenol, where any of these four pollutants are expected to be discharged in concentrations of 100 ppb or greater the applicant must report quantitative data. For every pollutant expected to be discharged in concentrations less than 10 ppb, or in the case of acrolein, acrylonitrile, 2,4 dinitrophenol, and 2-methyl-4, 6 dinitrophenol, in concentrations less than 100 ppb, the applicant must either submit quantitative data or briefly describe the reasons the pollutant is expected to be discharged. An applicant qualifying as a small business under paragraph (g)(8) of 40 CFR 122.21 is not required to analyze for pollutants listed in table II (the organic toxic pollutants).
5. Each applicant must indicate whether it knows or has reason to believe that any of the pollutants in table V (certain hazardous substances and asbestos) are discharged from each outfall. For every pollutant expected to be discharged, the applicant must briefly describe the reasons the pollutant is expected to be discharged, and report any quantitative data it has for any pollutant.

6. Each applicant must report qualitative data, generated using a screening procedure not calibrated with analytical standards, for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) if it:
   a. Uses or manufactures 2,4,5-trichlorophenoxy acetic acid (2,4,5,-T); 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5,-TP); 2-(2,4,5-trichlorophenoxy) ethyl, 2,2-dichloropropionate (Erbon); O,O-dimethyl O-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel); 2,4,5-trichlorophenol (TCP); or hexachlorophene (HCP); or
   b. Knows or has reason to believe that TCDD is or may be present in an effluent.

**C. Applicable Primary Industry Categories**

| | |
|---|---|
| Adhesives and sealants | Ore mining |
| Aluminum forming | Organic chemicals manufacturing |
| Aluminum forming | Paint and ink formulation |
| Auto and other laundries | Pesticides |
| Battery manufacturing | Petroleum refining |
| Coal mining | Pharmaceutical preparations |
| Coil coating | Photographic equipment and supplies |
| Copper forming | Plastics processing |
| Electrical and electronic components | Plastic and synthetic materials manufacturing |
| Electroplating | Porcelain enameling |
| Explosives manufacturing | Printing and publishing |
| Foundries | Pulp and paper mills |
| Gum and wood chemicals | Rubber processing |
| Inorganic chemicals manufacturing | Soap and detergent manufacturing |
| Iron and steel manufacturing | Steam electric power plants |
| Leather tanning and finishing | Textile mills |
| Mechanical products manufacturing | Timber products processing |
| Nonferrous metals manufacturing | |

**Table I—Testing Requirements for Organic Toxic Pollutants by Industrial Category for Existing Dischargers**

| Industrial category | GC/MS Fraction[1] | | | |
|---|---|---|---|---|
| | Volatile | Acid | Base/neutral | Pesticide |
| Adhesives and Sealants | 2 | 2 | 2 | |
| Aluminum Forming | 2 | 2 | 2 | |
| Auto and Other Laundries | 2 | 2 | 2 | 2 |
| Battery Manufacturing | 2 | | 2 | |
| Coal Mining | 2 | 2 | 2 | 2 |
| Coil Coating | 2 | 2 | 2 | |
| Copper Forming | 2 | 2 | 2 | |
| Electric and Electronic Components | 2 | 2 | 2 | 2 |
| Electroplating | 2 | 2 | 2 | |
| Explosives Manufacturing | | 2 | 2 | |
| Foundries | 2 | 2 | 2 | |
| Gum and Wood Chemicals | 2 | 2 | 2 | 2 |
| Inorganic Chemicals Manufacturing | 2 | 2 | 2 | |
| Iron and Steel Manufacturing | 2 | 2 | 2 | |
| Leather Tanning and Finishing | 2 | 2 | 2 | 2 |
| Mechanical Products Manufacturing | 2 | 2 | 2 | |
| Nonferrous Metals Manufacturing | 2 | 2 | 2 | 2 |
| Ore Mining | 2 | 2 | 2 | 2 |
| Organic Chemicals Manufacturing | 2 | 2 | 2 | 2 |
| Paint and Ink Formulation | 2 | 2 | 2 | 2 |
| Pesticides | 2 | 2 | 2 | 2 |
| Petroleum Refining | 2 | 2 | 2 | 2 |
| Pharmaceutical Preparations | 2 | 2 | 2 | |
| Photographic Equipment and Supplies | 2 | 2 | 2 | 2 |
| Plastic and Synthetic Materials Manufacturing | 2 | 2 | 2 | 2 |
| Plastic Processing | 2 | | | |
| Porcelain Enameling | 2 | | 2 | 2 |
| Printing and Publishing | 2 | 2 | 2 | 2 |
| Pulp and Paper Mills | 2 | 2 | 2 | 2 |
| Rubber Processing | 2 | 2 | 2 | |
| Soap and Detergent Manufacturing | 2 | 2 | 2 | |
| Steam Electric Power Plants | 2 | 2 | 2 | |
| Textile Mills | 2 | 2 | 2 | 2 |
| Timber Products Processing | 2 | 2 | 2 | 2 |

[1]The toxic pollutants in each fraction are listed in Table II.
[2]Testing required.

**Table II—Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS)**

| | | |
|---|---|---|
| **Volatiles** | | |
| 1V acrolein | 11V chloroform | 22V methylene chloride |
| 2V acrylonitrile | 12V dichlorobromomethane | 23V 1,1,2,2-tetrachloroethane |
| 3V benzene | 14V 1,1-dichloroethane | 24V tetrachloroethylene |
| 5V bromoform | 15V 1,2-dichloroethane | 25V toluene |
| 6V carbon tetrachloride | 16V 1,1-dichloroethylene | 26V 1,2-trans-dichloroethylene |
| 6V carbon tetrachloride | 17V 1,2-dichloropropane | 27V 1,1,1-trichloroethane |
| 7V chlorobenzene | 18V 1,3-dichloropropylene | 28V 1,1,2-trichloroethane |
| 8V chlorodibromomethane | 19V ethylbenzene | 29V trichloroethylene |
| 9V chloroethane | 20V methyl bromide | 31V vinyl chloride |
| 10V 2-chloroethylvinyl ether | 21V methyl chloride | |
| **Acid Compounds** | | |
| 1A 2-chlorophenol | 5A 2,4-dinitrophenol | 9A pentachlorophenol |
| 2A 2,4-dichlorophenol | 6A 2-nitrophenol | 10A phenol |
| 3A 2,4-dimethylphenol | 7A 4-nitrophenol | 11A 2,4,6-trichlorophenol |
| 4A 4,6-dinitro-o-cresol | 8A p-chloro-m-cresol | |
| **Base/Neutral** | | |
| 1B acenaphthene | 17B 4-chlorophenyl phenyl ether | 32B fluorene |
| 2B acenaphthylene | 18B chrysene | 33B hexachlorobenzene |
| 3B anthracene | 19B dibenzo(a,h)anthracene | 34B hexachlorobutadiene |
| 4B benzidine | 20B 1,2-dichlorobenzene | 35B hexachlorocyclopentadiene |
| 5B benzo(a)anthracene | 21B 1,3-dichlorobenzene | 36B hexachloroethane |
| 6B benzo(a)pyrene | 22B 1,4-dichlorobenzene | 37B indeno(1,2,3-cd)pyrene |
| 7B 3,4-benzofluoranthene | 23B 3,3'-dichlorobenzidine | 38B isophorone |
| 8B benzo(ghi)perylene | 24B diethyl phthalate | 39B napthalene |
| 9B benzo(k)fluoranthene | 25B dimethyl phthalate | 40B nitrobenzene |
| 10B bis(2-chloroethoxy)methane | 26B di-n-butyl phthalate | 41B N-nitrosodimethylamine |
| 11B bis(2-chloroethyl)ether | 27B 2,4-dinitrotoluene | 42B N-nitrosodi-n-propylamine |
| 12B bis(2-chloroisopropyl)ether | 28B 2,6-dinitrotoluene | 43B N-nitrosodiphenylamine |
| 13B bis (2-ethylhexyl)phthalate | 29B di-n-octyl phthalate | 44B phenanthrene |
| 14B 4-bromophenyl phenyl ether | 30B 1,2-diphenylhydrazine (as azobenzene) | 45B pyrene |
| 15B butylbenzyl phthalate | | 46B 1,2,4-trichlorobenzene |
| 16B 2-chloronaphthalene | 31B fluroranthene | |
| **Pesticides** | | |
| 1P aldrin | 10P dieldrin | 19P PCB-1254 |
| 2P alpha-BHC | 11P alpha-endosulfan | 20P PCB-1221 |
| 3P beta-BHC | 12P beta-endosulfan | 21P PCB-1232 |
| 4P gamma-BHC | 13P endosulfan sulfate | 22P PCB-1248 |
| 5P delta-BHC | 14P endrin | 23P PCB-1260 |
| 6P chlordane | 15P endrin aldehyde | 24P PCB-1016 |
| 7P 4,4'-DDT | 16P heptachlor | 25P toxaphene |
| 8P 4,4'-DDE | 17P heptachlor epoxide | |
| 9P 4,4'-DDD | 18P PCB-1242 | |

**Table III—Conventional and Nonconventional Pollutants Required to Be Tested by Existing Dischargers if Expected to be Present**

| | | |
|---|---|---|
| Bromide | Phosphorus, Total | Boron, Total |
| Chlorine, Total Residual | Radioactivity | Cobalt, Total |
| Color | Sulfate | Iron, Total |
| Fecal Coliform | Sulfide | Magnesium, Total |
| Fluoride | Sulfite | Molybdenum, Total |
| Nitrate-Nitrite | Surfactants | Manganese, Total |
| Nitrogen, Total Organic | Aluminum, Total | Tin, Total |
| Oil and Grease | Barium, Total | Titanium, Total |

**Table IV—Toxic Pollutants and Hazardous Substances Required To Be Identified by Existing Dischargers if Expected To Be Present**

| **Toxic Pollutants** | | |
|---|---|---|
| Asbestos | | |
| **Hazardous Substances** | | |
| Acetaldehyde | Dintrobenzene | Nitrotoluene |
| Allyl alcohol | Diquat | Parathion |
| Allyl chloride | Disulfoton | Phenolsulfanate |
| Amyl acetate | Diuron | Phosgene |
| Aniline | Epichlorohydrin | Propargite |
| Benzonitrile | Ethion | Propylene oxide |
| Benzyl chloride | Ethylene diamine | Pyrethrins |
| Butyl acetate | Ethylene dibromide | Quinoline |
| Butylamine | Formaldehyde | Resorcinol |
| Captan | Furfural | Strontium |
| Carbaryl | Guthion | Strychnine |
| Carbofuran | Isoprene | Styrene |
| Carbon disulfide | Isopropanolamine Dodecylbenzenesulfonate | 2,4,5-T (2,4,5-Trichlorophenoxy acetic acid) |
| Chlorpyrifos | | |
| Coumaphos | Kelthane | TDE (Tetrachlorodiphenylethane) |
| Cresol | Kepone | 2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid] |
| Crotonaldehyde | Malathion | |
| Cyclohexane | Mercaptodimethur | Trichlorofan |
| 2,4-D (2,4-Dichlorophenoxy acetic acid) | Methoxychlor | Triethanolamine dodecylbenzenesulfonate |
| | Methyl mercaptan | |
| Diazinon | Methyl methacrylate | Triethylamine |
| Dicamba | Methyl parathion | Trimethylamine |
| Dichlobenil | Mevinphos | Uranium |
| Dichlone | Mexacarbate | Vanadium |
| 2,2-Dichloropropionic acid | Monoethyl amine | Vinyl acetate |
| Dichlorvos | Monomethyl amine | Xylene |
| Diethyl amine | Naled | Xylenol |
| Dimethyl amine | Napthenic acid | Zircon |

**D. Suspensions**

The Environmental Protection Agency has suspended the requirements of 40 CFR 122.21(g)(7)(ii)(A) and Table I as they apply to certain industrial categories. The suspensions are as follows:

1. At 46 FR 2046, Jan. 8, 1981, the Environmental Protection Agency suspended until further notice §122.21(g)(7)(ii)(A) as it applies to coal mines.
2. At 46 FR 22585, Apr. 20, 1981, the Environmental Protection Agency suspended until further notice §122.21(g)(7)(ii)(A) and the corresponding portions of Item V-C of the NPDES application Form 2c as they apply to:
   a. Testing and reporting for all four organic fractions in the Greige Mills Subcategory of the Textile Mills industry (Subpart C—Low water use processing of 40 CFR part 410), and testing and reporting for the pesticide fraction in all other subcategories of this industrial category.
   b. Testing and reporting for the volatile, base/neutral and pesticide fractions in the Base and Precious Metals Subcategory of the Ore Mining and Dressing industry (subpart B of 40 CFR part 440), and testing and reporting for all four fractions in all other subcategories of this industrial category.
   c. Testing and reporting for all four GC/MS fractions in the Porcelain Enameling industry.
3. At 46 FR 35090, July 1, 1981, the Environmental Protection Agency suspended until further notice §122.21(g)(7)(ii)(A) and the corresponding portions of Item V-C of the NPDES application Form 2c as they apply to:
   a. Testing and reporting for the pesticide fraction in the Tall Oil Rosin Subcategory (subpart D) and Rosin-Based Derivatives Subcategory (subpart F) of the Gum and Wood Chemicals industry (40 CFR part 454), and testing and reporting for the pesticide and base/neutral fractions in all other subcategories of this industrial category.
   b. Testing and reporting for the pesticide fraction in the Leather Tanning and Finishing, Paint and Ink Formulation, and Photographic Supplies industrial categories.
   c. Testing and reporting for the acid, base/neutral and pesticide fractions in the Petroleum Refining industrial category.
   d. Testing and reporting for the pesticide fraction in the Papergrade Sulfite subcategories (subparts J and U) of the Pulp and Paper industry (40 CFR part 430); testing and reporting for the base/neutral and pesticide fractions in the following subcategories: Deink (subpart Q), Dissolving Kraft (subpart F), and Paperboard from Waste Paper (subpart E); testing and reporting for the volatile, base/neutral and pesticide fractions in the following subcategories: BCT Bleached Kraft (subpart H), Semi-Chemical (subparts B and C), and Nonintegrated-Fine Papers (subpart R); and testing and reporting for the acid, base/neutral, and pesticide fractions in the following subcategories: Fine Bleached Kraft (subpart I), Dissolving Sulfite Pulp (subpart K), Groundwood-Fine Papers (subpart O), Market Bleached Kraft (subpart G), Tissue from Wastepaper (subpart T), and Nonintegrated-Tissue Papers (subpart S).
   e. Testing and reporting for the base/neutral fraction in the Once-Through Cooling Water, Fly Ash and Bottom Ash Transport Water process wastestreams of the Steam Electric Power Plant industrial category.

**4. For the duration of the suspensions, therefore, Table I effectively reads:**

**Table I—Testing Requirements for Organic Toxic Pollutants by Industry Category**

| Industry category | GC/MS fraction[2] | | | |
|---|---|---|---|---|
| | Volatile | Acid | Neutral | Pesticide |
| Adhesives and sealants | 1 | 1 | 1 | |
| Aluminum forming | 1 | 1 | 1 | |
| Auto and other laundries | 1 | 1 | 1 | 1 |
| Battery manufacturing | 1 | | 1 | |
| Coal mining | | | | |
| Coil coating | 1 | 1 | 1 | |
| Copper forming | 1 | 1 | 1 | |
| Electric and electronic compounds | 1 | 1 | 1 | 1 |
| Electroplating | 1 | 1 | 1 | |
| Explosives manufacturing | | 1 | 1 | |
| Foundries | 1 | 1 | 1 | |
| Gum and wood (all subparts except D and F) | 1 | 1 | | |
| Subpart D—tall oil rosin | 1 | 1 | 1 | |
| Subpart F—rosin-based derivatives | 1 | 1 | 1 | |
| Inorganic chemicals manufacturing | 1 | 1 | 1 | |
| Iron and steel manufacturing | 1 | 1 | 1 | |
| Leather tanning and finishing | 1 | 1 | 1 | |
| Mechanical products manufacturing | 1 | 1 | 1 | |
| Nonferrous metals manufacturing | 1 | 1 | 1 | 1 |
| Ore mining (applies to the base and precious metals/Subpart B) | | 1 | | |
| Organic chemicals manufacturing | 1 | 1 | 1 | 1 |
| Paint and ink formulation | 1 | 1 | 1 | |
| Pesticides | 1 | 1 | 1 | 1 |
| Petroleum refining | 1 | | | |
| Pharmaceutical preparations | 1 | 1 | 1 | |
| Photographic equipment and supplies | 1 | 1 | 1 | |
| Plastic and synthetic materials manufacturing | 1 | 1 | 1 | 1 |
| Plastic processing | 1 | | | |
| Porcelain enameling | | | | |
| Printing and publishing | 1 | 1 | 1 | 1 |
| Pulp and paperboard mills—see Page C8 | | | | |
| Rubber processing | 1 | 1 | 1 | |
| Soap and detergent manufacturing | 1 | 1 | 1 | |
| Steam electric power plants | 1 | 1 | | |
| Textile mills (Subpart C—Greige Mills are exempt from this table) | 1 | 1 | 1 | |
| Timber products processing | 1 | 1 | 1 | 1 |

[1]Testing required.

[2]The pollutants in each fraction are listed in Table II.

**Pulp and Paperboard Mills:**

| | GS/MS fractions | | | |
|---|---|---|---|---|
| **Subpart[3]** | **VOA** | **Acid** | **Base/neutral** | **Pesticides** |
| A | 2 | 1 | 2 | 1 |
| B | 2 | 1 | 2 | 2 |
| C | 2 | 1 | 2 | 2 |
| D | 2 | 1 | 2 | 2 |
| E | 1 | 1 | 2 | 1 |
| F | 1 | 1 | 2 | 2 |
| G | 1 | 1 | 2 | 2 |
| H | 1 | 1 | 2 | 2 |
| I | 1 | 1 | 2 | 2 |
| J | 1 | 1 | 1 | 2 |
| K | 1 | 1 | 2 | 2 |
| L | 1 | 1 | 2 | 2 |
| M | 1 | 1 | 2 | 2 |
| N | 1 | 1 | 2 | 2 |
| O | 1 | 1 | 2 | 2 |
| P | 1 | 1 | 2 | 2 |
| Q | 1 | 1 | 2 | 1 |
| R | 2 | 1 | 2 | 2 |
| S | 1 | 1 | 2 | 1 |
| T | 1 | 1 | 2 | 1 |
| U | 1 | 1 | 1 | 2 |

[1]Must test.
[2]Do not test unless "reason to believe" it is discharged.
[3]Subparts are defined in 40 CFR Part 430.

# Nebraska Department of Environmental Quality

## Wastewater Section

1200 'N' Street, Suite 400, The Atrium
P.O. Box 98922
Lincoln, NE 68509-8922
Tel. (402) 471-4220
Fax (402) 471-2909

Fact Sheet
City of Grand Island
Platte Generating Station
Grand Island, Nebraska
NPDES NE0113646 / NDEQ ID 58027

**Table of Contents**

A. Proposed Action – Tentative Determination ..... 2
B. Applicant and Facility Information ..... 2
C. Segment, Use Designations, and Impairment ..... 2
D. Description of Discharge and Potential Pollutants ..... 3
1. Outfall LV01 ..... 3
2. Outfall BA01 ..... 3
3. Outfall CP01 ..... 3
4. Outfall CT01 ..... 3
5. Outfall MC01 ..... 3
6. Outfall 001 ..... 3
7. Antidegradation Review ..... 4
E. Existing Permit Limits ..... 4
F. Summary of the Proposed Changes in the Draft Permit ..... 5
G. Basis for Requirements in the Draft Permit ..... 6
1. Overview of Permit Requirements ..... 6
2. Outfall LV01 – Basis for Monitoring and Limitations ..... 6
3. Outfall BA01 – Basis for Monitoring and Limitations ..... 7
4. Outfall CP01 – Basis for Monitoring and Limitations ..... 8
5. Outfall CT1 – Basis for Monitoring and Limitations ..... 8
6. Outfall MC01 – Basis for Monitoring and Limitations ..... 9
7. Outfall 001 – Basis for Monitoring and Limitations ..... 10
8. Other Conditions and Requirements ..... 14
H. Supporting Documentation ..... 14
I. Information Requests ..... 15
J. Submission of Formal Comments or Requests for Hearing ..... 15

Attachment 1 – WLA Spreadsheets
Attachment 2 – Site Maps

pwd

## A. Proposed Action – Tentative Determination

On the basis of a preliminary staff review, the Nebraska Department of Environmental Quality has made a tentative determination to reissue, with change, the NPDES Permit Number NE0113646 to the City of Grand Island for discharge of process wastewater to the Platte River in the Middle Platte River Basin.

## B. Applicant and Facility Information

| | |
|---|---|
| **Applicant** | City of Grand Island |
| **Mailing Address** | PO Box 1968, Grand Island, NE 68802-1968 |
| **Location of Facility** | 1035 West Wildwood Drive, Grand Island, NE 68801 |
| **Legal Description** | N ½, Section 9, Township 10 N, Range 9 E, Hall County, NE |
| **SIC Number** | 4911 |
| **Other Information** | Platte Generating Station is a publicly owned coal-fired steam electric generating facility located in Fremont, Nebraska that supplies the electrical needs for the City of Grand Island. Power is obtained from a 100 megawatt (MW) coal-fired boiler, though it may also run on fuel oil. Wastewater sources from the station include cooling tower blowdown, non-contact cooling water, coal pile runoff, and low volume waste sources. |

## C. Segment, Use Designations, and Impairment

Platte Generating Station discharges process and non-process wastewater to the Platte River in the Middle Platte River Basin. Segment, basin, and use designation are set forth in NDEQ Title 117, Chapter 5, *Nebraska Surface Water Quality Standards*. Impairments and pollutants are from the NDEQ *2016 Surface Water Quality Integrated Report*.

| | |
|---|---|
| **Receiving Stream for the facility** | Platte River |
| **Basin / Segment** | MP2-10000 in the Middle Platte River Basin |

**Water Quality Usage Designations for the Platte River**

| | |
|---|---|
| State Resource Water | No |
| Recreation | Yes |
| Aquatic Life | Warmwater A |
| Public Drinking Water Supply | Yes |
| Agriculture Water Supply | A |
| Industrial Water Supply | No |
| Aesthetics | Yes |
| Key Species | *Channel catfish, Flathead catfish* |

**Impairments and Parameters of Concern for the Platte River**

| | |
|---|---|
| Impairments | None |
| Parameters of Concern | None |

## D. Description of Discharge and Potential Pollutants

### 1. Outfall LV01

The discharge from internal Outfall LV01 to the settling pond consists of low volume amounts of water from equipment drains and floor drains. The discharge travels through an oil water separator prior to entering the settling pond. The average reported quarterly discharge on DMRs is 0.020 MGD as determined from flow data from 2012-2017. The primary pollutants of concern present in the discharge are total suspended solids, oil and grease, and pH.

### 2. Outfall BA01

The discharge from internal Outfall BA01 consists of bottom ash transport water. The ash and water travel through a hopper, hopper seal with receiver tank, dewatering bin, and settling tank prior to discharge to the settling pond. Average discharge flow for the current permit period is 0.044 MGD. The primary pollutants of concern present in the discharge are total suspended solids, oil and grease, and pH.

Bottom ash and combustion residuals are moved using transport water to a settling tank on site. Settled ash and residuals are deposited in a monofill on the west side of the facility (NDEQ IWM Permit # NE0203831). Much of this ash is utilized by farmers and local uses rather than kept at the landfill.

### 3. Outfall CP01

The discharge from internal Outfall CP01 consists of runoff from the on-site coal pile which typically occurs during wet weather events. The runoff for the pile pools in Pond C before being discharged to a settling tank for flocculation. Water is then discharged to the settling pond. During the current permit term, when the outfall was discharging, the average flow to the settling pond was 0.02 MGD. The primary pollutants of concern present in the discharge are total suspended solids and pH.

### 4. Outfall CT01

The discharge from internal Outfall CT01 consists of cooling tower blowdown from the facility cooling tower for the generating unit. The average monthly discharge from cooling tower blowdown reported during the current permit term is 0.457 MGD. Source water for cooling is from non-chlorinated on-site groundwater wells.

The primary pollutants of concern present in the discharge are chromium, zinc, priority pollutants, and pH. The power plant has the option to utilize chlorine for disinfection of the cooling towers upon activation of this permit. If chlorine is used for disinfection it will be a pollutant of concern for Outfall 001.

### 5. Outfall MC01

The discharge from internal Outfall MC01 consists of metal cleaning wastewater generated from any cleaning of metal at the facility, including boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning. The metal cleaning water is discharged first to Pond A prior to discharge to the final settling pond (Pond B). Two discharges during the current permit period were reported as 0.1 MGD. The primary pollutants of concern to be present in the discharge are total suspended solids, oil and grease, iron, copper and pH.

### 6. Outfall 001

Outfall 001 is the final discharge from the settling pond to the Platte River (MP2-10000). The final settling pond is Pond B at the facility. Wastewater from the generating station can be discharged to either Pond A for settling and treatment and then to Pond B for final discharge or directly to Pond B. The outfall is continuously discharging to the Platte River. All internal wastestreams are discharged to the settling pond.

Grand Island Platte Generating Station used to discharge the plant activated sludge sanitary effluent to the settling pond for discharge. This internal outfall has been eliminated and the facility now discharges

sanitary wastewater to the Grand Island publically owned treatment works (POTW). The permit was modified on October 19, 2016 to remove this outfall.

The primary pollutants of concern to be present in the discharge are temperature, total nitrogen, total phosphorus, oil and grease, total suspended solids, chlorine, metals, and pH.

7. **Antidegradation Review**

An antidegradation review was performed for purposes of developing the permit pursuant to 40 CFR 131.12. The results of the evaluation indicate that the Platte River, the receiving water body of the discharge addressed by the permit, is a habitat for aquatic life. The designated uses of the Platte River were considered during permit development. The limitations in the draft permit are protective of the Clean Water Act § 101(a)(2) fishable/swimmable goals and ensure the existing quality of water in the receiving stream is not lowered.'

## E. Existing Permit Limits

Listed below is a summary of the existing permit monitoring requirements and limitations for the treated effluent discharged to the receiving stream.

**Table FS – 1. Platte Generating Station – Existing Monitoring Requirements for Outfall LV01**

| Parameter | Monthly Average | Maximum | Monitoring Frequency |
|---|---|---|---|
| Flow | Report | Report | Daily |
| Total Suspended Solids | 30 mg/L | 100 mg/L | Quarterly |
| Oil and Grease | Report | 10 mg/L | Quarterly |
| pH | 6.0 – 9.0 Standard Units (S.U.) | | Quarterly |

**Table FS – 2. Platte Generating Station – Existing Monitoring Requirements for Outfall BA01**

| Parameter | Monthly Average | Maximum | Monitoring Frequency |
|---|---|---|---|
| Flow | Report | Report | Daily |
| Total Suspended Solids | 30 mg/L | 100 mg/L | Quarterly |
| Oil and Grease | Report | 10 mg/L | Quarterly |
| pH | 6.0 – 9.0 Standard Units (S.U.) | | Quarterly |

**Table FS – 3. Platte Generating Station – Existing Monitoring Requirements for Outfall CP01**

| Parameter | Monthly Average | Maximum | Monitoring Frequency |
|---|---|---|---|
| Flow | Report | Report | Daily |
| Total Suspended Solids | Report | 50 mg/L | Quarterly |
| pH | 6.0 – 9.0 Standard Units (S.U.) | | Quarterly |

**Table FS – 4. Platte Generating Station – Existing Monitoring Requirements for Outfall CT01**

| Parameter | Monthly Average | Maximum | Monitoring Frequency |
|---|---|---|---|
| Flow | Report | Report | Daily |
| Chromium, Total | 0.2 mg/L | 0.2 mg/L | Annually |
| Zinc, Total | 1.0 mg/L | 1.0 mg/L | Annually |
| Priority Pollutants | Report | Report | Annually |
| Free Available Chlorine | 0.2 | 0.5 | Monthly |
| pH | 6.0 – 9.0 Standard Units (S.U.) | | Monthly |

| Table FS – 5. Platte Generating Station – Existing Monitoring Requirements for Outfall MC01 | | | |
|---|---|---|---|
| **Parameter** | **Monthly Average** | **Maximum** | **Monitoring Frequency** |
| Flow | Report | Report | Semiannually |
| Total Suspended Solids | 30 mg/L | 100 mg/L | Semiannually |
| Oil and Grease | 15 mg/L | 20 mg/L | Semiannually |
| Total Copper | 1.0 mg/L | 1.0 mg/L | Semiannually |
| Total Iron | 1.0 mg/L | 1.0 mg/L | Semiannually |
| pH | 6.0 – 9.0 Standard Units (S.U.) | | Semiannually |

| Table FS – 6. Platte Generating Station – Existing Monitoring Requirements for Outfall 001 | | | |
|---|---|---|---|
| **Parameter** | **Monthly Average** | **Maximum** | **Monitoring Frequency** |
| Flow | Report | Report | Daily |
| Temperature | Report | 90 °F | Daily |
| Total Suspended Solids | Report | Report | Monthly |
| Oil and Grease | Report | 10 mg/L | Monthly |
| Ammonia | Report | Report | Monthly |
| Total Nitrogen | Report | Report | Monthly |
| Total Phosphorus | Report | Report | Monthly |
| Spring TRC | 0.03 mg/L | 0.06 mg/L | Monthly |
| Summer TRC | 0.01 mg/L | 0.02 mg/L | Monthly |
| Winter TRC | 0.04 mg/L | 0.07 mg/L | Monthly |
| Dissolved Cadmium | Report | Report | Annually |
| Dissolved Chromium | Report | Report | Annually |
| Dissolved Copper | Report | Report | Annually |
| Dissolved Iron | Report | Report | Annually |
| Dissolved Lead | Report | Report | Annually |
| Dissolved Mercury | Report | Report | Annually |
| Dissolved Nickel | Report | Report | Annually |
| Dissolved Zinc | Report | Report | Annually |
| Acute Toxicity – *Ceriodaphnia sp* | Report | Report | Annually |
| Acute Toxicity – *Pimephales promelas* | Report | Report | Annually |
| pH | 6.5 – 9.0 Standard Units (S.U.) | | Monthly |

## F. Summary of the Proposed Changes in the Draft Permit

The highlights of the proposed draft permit requirements are summarized below. See the attached permit for specific information on the permit conditions.

1. A pollution scan has been added to Outfall 001.
2. Monitoring for ammonia is removed from Outfall 001, and total nitrogen and total phosphorus monitoring is changed to quarterly. Quarterly monitoring for conductivity is added.
3. Chlorine and pH monitoring for Outfall CT01 is changed to quarterly.
4. Duration of discharge is added to Outfall CP01.
5. A compliance schedule has been added to the permit to address the removal of the discharge of bottom ash transport water for Outfall BA01.
6. TRC limits for Outfall 001 are revised.
7. WET limits are implemented for Outfall 001 rather than monitoring only.
8. Updates to general conditions and requirements, including E-reporting requirement has been added to the permit.

## G. Basis for Requirements in the Draft Permit

### 1. Overview of Permit Requirements

When developing effluent limits for a NPDES permit, the NDEQ considers limits based on both the technology available to treat the pollutants (technology-based effluent limits) and limits that are protective of the designated uses of the receiving water (water quality-based effluent limits). Technology-based effluent limits for facilities are derived from secondary treatment standards. The intent of technology-based effluent limitations is to require a minimum level of treatment for point sources based on currently available treatment technology. Water quality-based effluent limits are developed by the State of Nebraska to protect the beneficial used of the receiving waters. The water quality-based effluent limits involve a site-specific evaluation of the effluent discharge and its effect on the receiving water. Permit limits are developed by a comprehensive assessment of both technology-based limits and water quality-based limits.

#### a. Technology-Based Limits

Platte Generating Station is a coal-fired steam driven electricity generating facility. The facility's technology-based standards are set forth in 40 CFR Part 423 – *Steam Electric Power Generating Point Source Category.*

#### b. Water Quality-Based Effluent Limits

Water quality monitoring and limitations are included in the permit to protect the receiving stream from the discharge of toxic substances in toxic amounts. In NDEQ Title 117, *Nebraska Surface Water Quality Standards*, the water quality criteria for residual chlorine are determined as acute and chronic in-stream criteria. The NDEQ develops seasonal (spring, summer, winter) wasteload allocations (WLA) to protect these criteria. If there is a reasonable potential to cause an in-stream excursion of the water quality criteria for a parameter, then limitations are included in the NPDES permit. The permit limitations are established from the WLAs according to the procedures given in the *Technical Support Document for Water Quality-based Toxics Control* (TSD).

### 2. Outfall LV01 – Basis for Monitoring and Limitations

The discharge from internal Outfall LV01 to the settling pond consists of low volume amounts of water from equipment drains and floor drains. The basis for permit monitoring requirements and limitations are specified below.

#### a. Basis for Flow Monitoring

Flow monitoring of the discharge is required based on NDEQ permitting procedures and Federal Regulations. The flow can either be calculated or measured. NPDES permits do not regulate discharge flows, but flow may be inherently related to the mass of pollutants discharged and to the impact of the discharge pollutants on the receiving water body. The median flow rate from the facility may be used in subsequent permits to determine water quality limits.

#### b. Basis for the pH Discharge Limits

The hydrogen ion concentration of the discharge is expressed as pH. A pH range of 6.0 to 9.0 S.U. is continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for low volume waste sources in 40 CFR Part 423.12(b)(1).

#### c. Basis for Total Suspended Solids (TSS) Discharge Limits

The TSS monthly average of 30 mg/L and a daily maximum of 100 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for low volume waste sources in 40 CFR Part 423.12(b)(3). Low volume waste sources means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established and are regulated according to the categorical limits established in 40 CFR Part 423. Quarterly monitoring is maintained in the permit.

**d. Basis for Oil and Grease, Hexane Extractable Method (HEM), Discharge Limits**

The oil and grease monthly average of 15 mg/L and a daily maximum of 20 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for low volume waste sources in 40 CFR Part 423.12(b)(3). Quarterly monitoring is maintained in the permit.

**3. Outfall BA01 – Basis for Monitoring and Limitations**

Bottom ash transport water from Platte Generating Station Outfall BA01 discharges to settling pond. Interim requirements are set forth in 40 CFR Part 423.12.

On November 3, 2015 the EPA published new effluent limitation guidelines and standards for the Steam Electric Power Generating Point Source Category. There new guidelines and regulations contained provisions for the cessation of the generation, treatment, and impoundment of bottom ash transport wastewater. Facilities which generated bottom ash transport water must achieve a best available technology economically achievable (BAT) level of treatment at a time determined by the Department as soon as possible beginning November 1, 2018 and no later than December 31, 2023. After this date, there will be no discharge of pollutants in bottom ash transport water.

For bottom ash transport water there are two sets of BAT limitations. The first set is a numeric limitation on total suspended solids in the discharge. The BAT limitations are equal to the previously established best practicable control technology currently available (BPT). The second set of BAT limitations is zero discharge of bottom ash transport water pollutants. As established by the rule, bottom ash transport water generated prior to a date determined by the department (as soon as possible after November 1, 2018 and no later than December 31, 2023) will be designated as "legacy wastewater" after the date. Once confined, legacy wastewater no longer has the same characteristics as it did when first generated. Legacy wastewater is not subject to the zero discharge limitations and is regulated by the BPT guidelines for TSS as previously promulgated.

On April 25, 2017 the EPA postponed certain compliance dates set forth in the rule (Federal Register Vol. 82, No. 78, April 25, 2017, EPA-HQ-OW-2009-0819). BAT requirements and limitations are still promulgated. However, the EPA found that justice requires it to postpone compliance dates of the rule that have not yet passed, pending judicial review.

The proposed permit contains a schedule for the establishment of BAT limitations for bottom ash transport wastewater discharged to the settling pond (Outfall 001). This schedule was developed to comply with the postponement of compliance dates. A final date for compliance with BAT limitations for discharges from BA01 is set forth in the permit, with the final date past the expiration dates of the permit. If the final date of December 31, 2023 is modified or removed, the NDEQ will modify the proposed permit.

**a. Basis for Flow Monitoring**

Flow monitoring of the discharge is required based on NDEQ permitting procedures and Federal Regulations. The flow can either be calculated or measured. NPDES permits do not regulate discharge flows, but flow may be inherently related to the mass of pollutants discharged and to the impact of the discharge pollutants on the receiving water body. The median flow rate from the facility may be used in subsequent permits to determine water quality limits.

**b. Basis for the pH Discharge Limits**

The hydrogen ion concentration of the discharge is expressed as pH. A pH range of 6.0 to 9.0 S.U. is continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth in 40 CFR Part 423.12(b)(1). Quarterly monitoring is maintained in the permit.

**c. Basis for Total Suspended Solids (TSS) Discharge Limits**

The interim TSS monthly average of 30 mg/L and a daily maximum of 100 mg/L limitations are

continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for bottom ash transport water in 40 CFR Part 423.12(b)(4). Quarterly monitoring is maintained in the permit.

**d. Basis for Oil and Grease, Hexane Extractable Method (HEM), Discharge Limits**

The interim oil and grease monthly average of 15 mg/L and a daily maximum of 20 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for bottom ash transport water in 40 CFR Part 423.12(b)(4). Quarterly monitoring is maintained in the permit.

**4. Outfall CP01 – Basis for Monitoring and Limitations**

Coal pile runoff and excess stormwater, discharging through Outfall CP01 discharges to settling pond. The basis for permit monitoring requirements and limitations are specified below. Outfall 002 only discharged once on the current permit term. If Outfall 002 discharges only once a quarter, then sampling will be required. If the outfall discharges more than once a quarter, then monitoring is only required quarterly.

**a. Basis for Flow Monitoring**

Flow monitoring of the discharge is required based on NDEQ permitting procedures and Federal Regulations. The flow can either be calculated or measured. NPDES permits do not regulate discharge flows, but flow may be inherently related to the mass of pollutants discharged and to the impact of the discharge pollutants on the receiving water body. The median flow rate from the facility may be used in subsequent permits to determine water quality limits.

**b. Basis for the pH Discharge Limits**

The hydrogen ion concentration of the discharge is expressed as pH. A pH range of 6.0 to 9.0 S.U. is continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth in 40 CFR Part 423.12(b)(9).

**c. Basis for Duration of Discharge Monitoring**

Duration of a discharge is implemented in the permit based on NDEQ permitting procedure for intermittent discharges from basins and lagoons.

**d. Basis for Total Suspended Solids (TSS) Discharge Limits**

The TSS maximum concentration of 50 mg/L is continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for coal pile runoff in 40 CFR Part 423.12(b)(9). Quarterly monitoring is maintained in the permit.

**5. Outfall CT1 – Basis for Monitoring and Limitations**

Outfall CT1 is an internal outfall which is defined as cooling tower blowdown prior to discharge to the settling pond. The cooling tower blowdown must be sampled before dilution or combining with any other categorical waste stream.

**a. Basis for Flow Monitoring**

Flow monitoring of the discharge is required based on NDEQ permitting procedures and Federal Regulations. The flow can either be calculated or measured. NPDES permits do not regulate discharge flows, but flow may be inherently related to the mass of pollutants discharged and to the impact of the discharge pollutants on the receiving water body.

**b. Basis for the pH Discharge Limits**

The hydrogen ion concentration of the discharge is expressed as pH. A pH range of 6.0 to 9.0 S.U. is continued in the permit following requirements set forth in 40 CFR Part 423.12(b)(1). Monitoring is changed to quarterly as the discharge has been meeting limits and is discharging to the settling pond.

**c. Basis for Free Available Chlorine Limits**

The free available chlorine monthly average of 0.2 mg/L and a daily maximum of 0.5 mg/L limitations are continued in the permit according to the requirements set forth in 40 CFR Part 423.13(d)(1) that provides the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) for cooling tower blowdown. The requirement that neither free chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit at one time is according to BAT requirements set forth in 40 CFR Part 423.13(d)(2). The average concentration for chlorine discharge is defined as the average of analysis made over a single period of chlorine release not to exceed two hours according to the definitions of 40 CFR Part 423.11. The term free available chlorine shall mean the value obtained using the amperometric titration method for free available chlorine described in Standard Methods for the Examination of Water and Wastewater, page 112 (13th Edition).Monthly monitoring is changed to quarterly as chlorine is monitored for Outfall 001 and the facility is meeting limits.

**d. Basis for Chromium Discharge Limits**

The total chromium monthly average of 0.2 mg/L and a daily maximum of 0.2 mg/L limitations are continued in the permit according to the requirements set forth in 40 CFR Part 423.13(d)(1) that provides the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) for cooling tower blowdown. Annual monitoring is continued in the permit.

**e. Basis for Zinc Discharge Limits**

The total zinc monthly average of 1.0 mg/L and a daily maximum of 1.0 mg/L limitations are continued in the permit according to the requirements set forth in 40 CFR Part 423.13(d)(1) that provides the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) for cooling tower blowdown. Annual monitoring is continued in the permit.

**f. Basis for Priority Pollutants Monitoring**

The requirement to test the effluent discharge for total chromium and total zinc along with the 126 priority pollutants listed in 40 CFR Part 423 Appendix A is according to the requirements set forth in 40 CFR Part 423.13(d)(1) that provides the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) for cooling tower blowdown. At the discretion of the NDEQ in accordance with 40 CFR Part 423.13(d)(3), annual compliance with these requirements may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR Part 136. Annual monitoring is continued in the permit.

**6. Outfall MC01 – Basis for Monitoring and Limitations**

Metal cleaning waste is defined in 40 CFR Part 423.11(d) as any wastewater resulting from the cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning. Limitations are included in the permit for TSS, oil and grease, total copper, and total iron according to the requirements set forth in 40 CFR Part 423.12(b)(5) for metal cleaning wastes.

Outfall MC01 discharges to the settling pond, which discharges through Outfall 001. Monitoring requirements are established below.

**a. Basis for Flow Monitoring**

Flow monitoring of the discharge is required based on NDEQ permitting procedures and Federal Regulations. The flow can either be calculated or measured. NPDES permits do not regulate

discharge flows, but flow may be inherently related to the mass of pollutants discharged and to the impact of the discharge pollutants on the receiving water body.

**b. Basis for Total Suspended Solids (TSS) Discharge Limits**

The TSS monthly average of 30 mg/L and a daily maximum of 100 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for metal cleaning wastes in 40 CFR Part 423.12(b)(5). Semiannual monitoring is continued in the permit.

**c. Basis for the pH Discharge Limits**

The hydrogen ion concentration of the discharge is expressed as pH. A pH range of 6.0 to 9.0 S.U. is continued in the permit following requirements set forth in 40 CFR Part 423.12(b)(1). Semiannual limits and monitoring is implemented in the permit following the requirements set forth in 40 CFR.

**d. Basis for Oil and Grease, Hexane Extractable Method (HEM), Discharge Limits**

The oil and grease monthly limitations of 15.0 mg/L for a monthly average and 20.0 mg/L for a daily maximum are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for metal cleaning wastes in 40 CFR Part 423.12(b)(5). Semiannual monitoring is continued in the permit.

**e. Basis for Copper Discharge Limits**

The total copper monthly average of 1.0 mg/L and a daily maximum of 1.0 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for metal cleaning wastes in 40 CFR Part 423.12(b)(5). Semiannual monitoring is continued in the permit.

**f. Basis for Iron Discharge Limits**

The total iron monthly average of 1.0 mg/L and a daily maximum of 1.0 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for metal cleaning wastes in 40 CFR Part 423.12(b)(5). Semiannual monitoring is continued in the permit.

**7. Outfall 001 – Basis for Monitoring and Limitations**

The continuous discharge to the Platte River (MP2-10000) from the settling pond consists of wastewater from low volume sources, bottom ash transport settling water, coal pile runoff, metal cleaning wastewater, and cooling tower blowdown. The basis for the permit monitoring requirements and limitations are specified below.

**a. Basis for Flow Monitoring**

Flow monitoring of the discharge is required based on NDEQ permitting procedures and Federal Regulations. The flow can either be calculated or measured. NPDES permits do not regulate discharge flows, but flow may be inherently related to the mass of pollutants discharged and to the impact of the discharge pollutants on the receiving water body. The median flow rate from the facility may be used in subsequent permits to determine water quality limits.

**b. Basis for Temperature Monitoring**

Temperature monitoring is implemented in the permit. Temperature standards to protect aquatic life are set forth in NDEQ Title 117 *Nebraska Surface Water Quality Standards* Chapter 4 – *General Criteria for Aquatic Life*. According to the requirements of Title 117, the temperature of a receiving water shall not be increased by a total of more than 5° F. For warm waters, the maximum limit is 90° F. The settling pond received cooling tower blowdown, and data from DMRs indicates that the discharge has the potential to be higher than 90° F. In addition, the amount of water entering the Platte River has the potential to change the background temperature by more than 5° F. Monitoring

frequency is maintained as daily and the daily maximum limit is maintained.

**c. Basis for the pH Discharge Limits**

According to NDEQ Title 117, hydrogen ion concentrations, expressed as pH, shall be maintained between 6.5 to 9.0 standard units (S.U.) in order to ensure water quality is not impacted. Therefore the pH limits for Platte Generating Station are included in the permit in the range of "6.5 to 9.0" based on Title 117 and NDEQ permitting procedures. Monitoring is maintained as monthly.

**d. Basis for Total Suspended Solids (TSS) Discharge Limits**

The TSS monthly average of 30 mg/L and a daily maximum of 100 mg/L limitations are continued in the permit based on the best practicable control technology currently available (BPT) requirements set forth for low volume waste sources in 40 CFR Part 423.12(b)(3). Low volume waste sources means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established and are regulated according to the categorical limits established in 40 CFR Part 423. Monthly monitoring is maintained in the permit.

**e. Basis for Oil and Grease, Hexane Extractable Method (HEM), Discharge Limits**

The oil and grease limitations are continued in the permit in accordance with NDEQ Title 117, Chapter 4 003. The maximum discharge limit of 10 mg/L is equal to the maximum in-stream criteria for petroleum oil for aquatic life, and is more stringent than the requirement set forth in 40 CFR Part 423. Monthly monitoring is maintained in the permit.

**f. Basis for Metals Monitoring**

Dissolved metals monitoring for cadmium, chromium, copper, iron, lead, mercury, nickel, and zinc is continued in the permit to determine if there is a reasonable potential for the discharge to exceed water quality criteria for these metals. Annual monitoring is continued in the permit as only two years of data are available for the current permit term.

**g. Basis for Total Residual Chlorine Monitoring**

Platte Generating Station will be utilizing chlorine for disinfection of its cooling towers. In NDEQ Title 117 *Nebraska Surface Water Quality Standards*, the water quality criteria for total residual chlorine (TRC) are determined by the chronic or acute criteria. Seasonal (spring, summer, winter) wasteload allocations (WLAs) are developed to ensure that the effluent discharge from the end of the pipe of the treatment system does not exceed these criteria. The WLAs are developed to protect the assigned beneficial uses of the stream. The calculation of the WLAs from the TRC criterion is based on stream design flows, receiving stream parameters, effluent flow design parameters, and receiving stream information and is chosen using the most protective long-term average. NDEQ Title 117, Chapter 2 requires that all mixing zones be based on critical condition of minimum dilution, which has been defined as 1Q10 and 7Q10 flows (design flow).

The limits for Platte Generating Station are based on effluent flow and default parameters. Mixing zones were obtained from NDEQ Title 117, Chapter 2. Receiving stream flow for spring and winter was from the USGS Station on the Platte River (6770500), while summer was default flow from NDEQ Title 117, Chapter 2.

**Table FS-7. Platte Generating Station TRC Waste Load Allocations (WLAs)**

| Parameter | Spring | Summer | Winter |
|---|---|---|---|
| Acute TRC | 0.041 mg/L | 0.020 mg/L | 0.021 mg/L |
| Chronic TRC | 0.138 mg/L | 0.018 mg/L | 0.031 mg/L |

The chloride permit limits are calculated from the WLAs according to the procedures given in the TSD for permit limit derivation from two-value, steady-state outputs for acute and chronic protection.

The permit limits are chosen using the most protective long-term average which is the acute for the spring, summer, and winter seasons. The calculation of projected TRC limits are documented in Attachment 1 and presented in Table FS-8.

**Table FS-8. Platte Generating Station Projected TRC Limitations Derived from WLAs**

| Parameter | 30-Day Average | Maximum |
|---|---|---|
| Spring TRC (March 1 – May 31) | 0.029 mg/L | 0.041 mg/L |
| | 0.09 kg/day | 0.12 kg/day |
| Summer TRC (June 1 – October 31) | 0.017 mg/L | 0.020 mg/L |
| | 0.07 kg/day | 0.08 kg/day |
| Winter TRC (Nov. 1 – February 28 [29]) | 0.011 mg/L | 0.021 mg/L |
| | 0.04 kg/day | 0.08 kg/day |

The projected TRC limits are revised based on changes to the effluent flow rate and CV values from the facility discharge. The draft spring and winter TRC limits are lower than the previously calculated limits. Therefore, the proposed spring and winter limits are implemented in the permit. Current summer permit limits are maintained in the permit to comply with anti-backsliding requirements. Mass limits are not implemented on the best professional judgment of the permit writer. Monthly monitoring is maintained as long as chlorine is used for disinfection. If chlorine is not being utilized, testing is not required.

**h. Basis for Removal of Ammonia Monitoring**

In 2016 Platte Generating Station connected to the sanitary sewer. The connection was removed from the permit on October 19, 2016. All sanitary wastes from the facility are sent to the Grand Island POTW. The NDEQ anticipates that ammonia present in the Outfall 001 discharge was present from this wastestream. Any ammonia present in the discharge is not likely to violate water quality standards. Therefore, monitoring for ammonia is removed from the permit.

**i. Basis for Total Nitrogen and Total Phosphorus Monitoring**

High levels of nitrogen and phosphorus in rivers and streams can cause the degradation of water bodies and harm fish, wildlife, and human health. Excessive levels of nutrients in water bodies are often the direct result of human activities. Nitrogen and phosphorus are contributed to water bodies by both point and nonpoint sources, but the extent to which they contribute to water quality degradation varies by watershed and surrounding land uses. Monitoring for nitrogen and phosphorus is continued in the permit so that the Department can evaluate the input of the wastewater effluent loadings of these pollutants in the receiving stream. However, as the NDEQ anticipates that a large part of the nutrients present in the discharge was from sanitary wastewater, which is removed from the permit. Therefore, the monitoring frequency is reduced to quarterly.

**j. Basis for Conductivity Monitoring**

In NDEQ Title 117 *Nebraska Surface Water Quality Standards*, the water quality criteria for conductivity are determined by the chronic criterion. Seasonal (spring, summer, winter) wasteload allocations (WLAs) are developed to ensure that the effluent discharge from the end of the pipe of the treatment system does not exceed these criteria. The WLAs are developed to protect the assigned beneficial uses of the stream. The calculation of the WLAs from the conductivity criterion is based on stream design flows, receiving stream parameters, effluent flow design parameters, and receiving stream information and is chosen using the most protective long-term average. NDEQ Title 117, Chapter 2 requires that all mixing zones be based on critical condition of minimum dilution, which has been defined as 7Q10 flow (design flow).

The limits for Platte Generating Station are based on effluent flow and default parameters. Mixing zones were obtained from NDEQ Title 117, Chapter 2. Receiving stream flow for spring and winter was from the USGS Station on the Platte River (6770500), while summer was default flow from NDEQ Title 117, Chapter 2. Background conductivity was obtained from the Platte River (MP2-10000). A placeholder was used for the acute criteria, as limits are based on chronic conductivity.

| Table FS-9. Platte Generating Station Conductivity Waste Load Allocations (WLAs) | | | |
|---|---|---|---|
| **Parameter** | **Spring** | **Summer** | **Winter** |
| Chronic Conductivity | 12987 µmhos/cm | 2664 µmhos/cm | 2863 µmhos/cm |

The conductivity permit limits are calculated from the WLAs according to the procedures given in the TSD for permit limit derivation from two-value, steady-state outputs for acute and chronic protection. The permit limits are chosen using the most protective long-term average which is the chronic for the spring, summer, and winter seasons. The calculation of projected conductivity limits are documented in Attachment 1 and presented in Table FS-10.

| Table FS-10. Platte Generating Station Projected Conductivity Limitations Derived from WLAs | | |
|---|---|---|
| **Parameter** | **30-Day Average** | **Maximum** |
| Spring Conductivity (March 1 – May 31) | 10478 µmhos/cm | 21021 µmhos/cm |
| Summer Conductivity (June 1 – October 31) | 2181 µmhos/cm | 4376 µmhos/cm |
| Winter Conductivity (Nov. 1 – February 28 [29]) | 2345 µmhos/cm | 4704 µmhos/cm |

The NDEQ does not have data for conductivity discharged from the facility. The Department is implementing quarterly conductivity sampling without limits to determine if the discharge from Outfall 001 has the potential to violate water quality standards for conductivity.

**k. Basis for Whole Effluent Toxicity Limits**

Acute whole effluent toxicity (WET) monitoring and limits are included in the permit to determine if the biocides or conditioners added to the cooling tower water or other chemicals in the low volume wastewater will cause toxicity in the receiving stream. Whole effluent toxicity limits are included in the permit because toxicity to aquatic life shall not be allowed at any time outside of either an acute or chronic mixing zone. According to Title 117, the pollutant levels or concentrations of wastewaters, which contain unknown or complex mixtures or potentially additive or synergistic toxic pollutants, shall not exceed 0.3 acute toxicity units (TUa) or 1.0 chronic toxicity units (TUc). The permit limitations are established from the acute toxic criteria according to the procedures given in the *Technical Support Document for Water Quality-based Toxics Control* (TSD) and are documented in Attachment 1. Limits are implemented in the permit.

**l. Basis for Pollutant Scan Requirements**

40 CFR Part 122.21(g) requires facilities which discharge process wastewater to scan for multiple parameters, many not regularly monitored by the facility. Any parameters that are monitored regularly by the facility do not need to be tested during the scan. Pollutant scan requirements are included in Attachment 2 of the permit.

**8. Other Conditions and Requirements**

**a. Polychlorinated Biphenyls**

The requirement that there be no discharge of PCB compounds as those commonly used for transformer fluid is set forth in 40 CFR Part 423.12(b)(2).

**b. Narrative Limits**

The narrative limits on toxicity, noxious odors, objectionable materials, and undesirable aquatic life are in accordance with water quality criteria in NDEQ Title 117.

**c. Additional Monitoring**

The conditions under which the Department may require increases in monitoring frequencies and monitoring for additional parameters are in accordance with NDEQ Title 119.

**d. Method Detection Limit Reporting Requirements**

The requirement to report the method detection limits on the Discharge Monitoring Report (DMR) instead of zero (0) when an analyte is not detected is according to NDEQ permitting procedures.

**e. Permit Modification and Reopening**

The permit may be reopened and modified in accordance with NDEQ Title 119.

**f. Notification of Change of Chemical Additives**

The notification requirement pertaining to certain system or chemical use changes is included in the permit because such change could alter the pollutant characteristics of the effluent discharge which could require modification of the permit.

**g. Revision of Permit Attachments**

The option to revise permit attachments is according to NDEQ permitting procedures. These attachments can be modified without public hearing since the attachments are not a component of the NPDES Permit terms and conditions.

**h. Electronic Submission of Discharge Monitoring Reports**

On October 22, 2015, EPA published the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which requires electronic reporting of NPDES information rather than the currently required paper based reports from the permitted facilities. To comply with the federal rule, permittees will be required to submit DMRs electronically using the EPA NetDMR tool (Appendix A of 40 CFR part 127).

## H. Supporting Documentation

The following documents and regulations were used in the preparation of the draft permit.

1. NDEQ Title 117, *Nebraska Surface Water Quality Standards*, December 13, 2014.
2. NDEQ Title 118, *Ground Water Quality Standards and Use Classifications*, March 27, 2006.
3. NDEQ Title 119, *Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System*, July 2, 2017.
4. NDEQ, *2016 Surface Water Quality Integrated Report*, April 1, 2016.
5. *Technical Support Document for Water Quality-based Toxic Control* (EPA 505/2-90-001 PB91-127415, March 1991.
6. 40 CFR Parts 122, 124, and 125, NPDES Regulations.
7. 40 CFR Part 423, *Steam Electric Power Generating Source Category*

8. Permit application form 1 and 2C from the City of Grand Island received on February 23, 2017.
9. DMR data and facility file data for Platte Generating Station; NPDES NE0113646; NDEQ ID 58027.

## I. Information Requests

Inquiries concerning the draft permit, its basis or the public comment process may be directed to:

Lisa Giesbrecht Tel. (402) 471-8830 or (402) 471-4220 Fax: (402) 471-2909

Individuals requiring special accommodations or alternate formats of materials should notify the Department by calling (402) 471-2186. TDD users should call (800) 833-7352 and ask the relay operator to call the Department at (402) 471-2186.

Copies of the application and other supporting material used in the development of the permit are available for review and copying at the Department's office between 8:00 A.M. and 5:00 P.M. on weekdays.

Office Location: The Atrium, 1200 N Street, Suite 400, Lincoln, NE

Mail Address: NPDES Permits Unit, Nebraska Department of Environmental Quality, P.O. Box 98922; Lincoln, Nebraska 68509-8922

## J. Submission of Formal Comments or Requests for Hearing

The date on which the public comment period ends is specified in the public notice. During the public notice period, the public may submit formal comments or objections, and/or petition the Department to hold a public hearing concerning the issuance of the draft permit. All such requests need to: be submitted in written form, state the nature of the issues to be raised, and present arguments and factual grounds to support them. The Department shall consider all written comments, objections and/or hearing petitions, received during the public comment period, in making a final decision regarding permit issuance.

Formal comments, objections and/or hearing requests need to be submitted to:

Lisa Giesbrecht; NPDES Permits Unit

Mailing Address: Nebraska Department of Environmental Quality
P.O. Box 98922
Lincoln, Nebraska 68509-8922

Location Address: Nebraska Department of Environmental Quality
The Atrium, 1200 N Street, Suite 400
Lincoln, Nebraska

# Attachment 1 – WLA Spreadsheets
## TRC – Outfall 001

**General Information**

| Facility | Receiving Water | Title 117 ID: | Prepared By: | Date | Review by: | Date |
|---|---|---|---|---|---|---|
| Platte Generating Station | Platte River | MP2-10000 | PWD | 11-Apr-17 | | |

**Assigned Beneficial Uses**

| State Resource Water | Aquatic Life Use Class | Recreation (Y/N) | Agriculture (A/B) | Water Supply | Aesthetics | Key Species |
|---|---|---|---|---|---|---|
| N | WWA | Y | A | None | Y | Channel Catfish, Flathead Catfish |

| Is the waterbody on the current 303(d) List? | | Does the Facility Discharge 303(d) Listed Pollutant? | |
|---|---|---|---|
| | N | | N |

**Stream Design Flows**

| | Spring | Summer | Winter |
|---|---|---|---|
| 1q10 | 111 39 | 0.1 | 23.9 |
| 7q10 | 147.18 | 1 | 39.17 |
| 30q5 | 482.67 | 1 | 430.95 |
| Source | USGS | Default | 6770500 |
| Confidence | High | Low | High |

**Receiving Stream Design Parameters**

| | Value | Spring Source | Confidence | | Value | Summer Source | Confidence | | Value | Winter Source | Confidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chronic Temp. | | | | Chronic Temp. | | | | Chronic Temperature | | | |
| Chronic pH | | | | Chronic pH | | | | Chronic pH | | | |
| Chronic NH3 background (mg/l) | | | | Chronic NH3 background (mg/l) | | | | Chronic NH3 background (mg/l) | | | |
| Chronic Criteria (mg/l) | | | | Chronic Criteria (mg/l) | | | | Chronic Criteria (mg/l) | | | |
| Acute NH3 background (mg/l) | | | | Acute NH3 background (mg/l) | | | | Acute NH3 background (mg/l) | | | |
| Other Chronic background | | DEQ Data | High | Other Chronic background | | DEQ Data | High | Other Chronic background | | DEQ Data | High |
| Other Acute background | | DEQ Data | High | Other Acute background | | DEQ Data | High | Other Acute background | | DEQ Data | High |
| TRC Chronic Criteria | 0.011 | | | TRC Chronic Criteria | 0.011 | | | TRC Chronic Criteria | 0 011 | | |

**Effluent Design Parameters**

| | Value | Spring Source | Confidence | | Value | Summer Source | Confidence | | Value | Winter Source | Confidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Median MGD | 0.787 | ICIS | High | Median MGD | 1.055 | ICIS | High | Median MGD | 1.005 | ICIS | High |
| cubic feet/sec | 1.218 | | | cubic feet/sec | 1.632 | | | cubic feet/sec | 1.555 | | |
| Temperature | | | | Temperature | | | | Temperature | | | |
| pH | | | | pH | | | | pH | | | |
| Acute NH3 Criteria (from criteria worksheet) | | | | Acute NH3 Criteria (from criteria worksheet) | | | | Acute NH3 Criteria (from criteria worksheet) | | | |
| TRC Acute Criteria | 0.019 | | | TRC Acute Criteria | 0.019 | | | TRC Acute Criteria | 0 019 | | |

**Receiving Stream Information**

| Known Stream Flow (cfs) | Known Average Velocity (fps) | Known Average Depth (ft) | Known Average Width (ft) | Stream Slope (ft/mile) | Ls/Lv | Chronic Mixing Zone to 5000 Ft? |
|---|---|---|---|---|---|---|
| 402 | 1.45 | 3.06 | 452 | 3.817 | 1.048 | n |

| Spring | | | | Summer | | | | Winter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chronic NH3 WLA | % Stream | Acute NH3 WLA | %Stream | Chronic NH3 WLA | % Stream | Acute NH3 WLA | % Stream | NH3 WLA | % Stream | Acute NH3 WLA | %Stream |
| 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! |
| Chronic WLA | % Stream | Acute WLA | %Stream | Chronic WLA | % Stream | Acute WLA | % Stream | Chronic WLA | % Stream | Acute WLA | %Stream |
| 0.138 | 9.55 | 0.041 | 1.26 | 0.018 | 100.00 | 0.020 | 50.00 | 0.031 | 7.12 | 0.021 | 0.58 |

pwd

| General Data | |
|---|---|
| Facility Name: | Platte Generating Station |
| Permit Number: | NE0113646 |
| Date: | 11-Apr-17 |
| Permit Writer: | PWD |
| Receiving Stream: | Platte River |
| Title 117 ID: | MP2-10000 |
| Aquatic Use: | WWA |
| Pollutant of Concern: | TRC |
| Coefficient of Variation (CV): | |
| Spring | 0.254 |
| Summer | 0.1 |
| Winter | 0.544 |
| Samples/Month (N): | 4 |
| Chronic (N) day average: | 4 |

**Data from WLA Worksheet**

| | Spring | Summer | Winter |
|---|---|---|---|
| Effluent Flow in cfs: | 1.2176464 | 1.632296 | 1.554936 |
| 1q10 Stream Flow in cfs: | 111.39 | 0.1 | 23.9 |
| 7q10 Stream Flow in cfs: | 147.18 | 1 | 39.17 |
| 30q5 Stream Flow in cfs: | 482.67 | 1 | 430.95 |
| % 1q10 used for mixing: | 1.26 | 50.00 | 0.58 |
| % 7q10 used for mixing: | 9.55 | 100.00 | 7.12 |
| % 30q5 used for mixing: | 9.55 | 100.00 | 7.12 |
| Acute WLA: | 0.0409062 | 0.019582 | 0.020704 |
| Chronic WLA: | 0.14 | 0.017739 | 0.030729 |

**Calculated WLA Multipliers**

| | Spring | Summer | Winter |
|---|---|---|---|
| acute WLA multiplier: | 0.577 | 0.797 | 0.348 |
| chronic WLA multiplier: | 0.751 | 0.891 | 0.557 |
| MDL LTA multiplier: | 1.73 | 1.25 | 2.87 |
| AML LTA multiplier: | 1.22 | 1.08 | 1.50 |

**Water Quality Based Permit Limit Calculations for: TRC**

| | Spring | Summer | Winter |
|---|---|---|---|
| Acute WLA | 0.041 | 0.020 | 0.021 |
| Chronic WLA | 0.138 | 0.018 | 0.031 |
| Acute LTA | 0.024 | 0.016 | 0.007 |
| Chronic LTA | 0.104 | 0.016 | 0.017 |
| ***Concentration Based Permit Limits:*** | | | |
| ***Maximum Daily (mg/L)*** | ***0.041*** | ***0.020*** | ***0.021*** |
| ***Average Monthly (mg/L)*** | ***0.029*** | ***0.017*** | ***0.011*** |
| ***Mass Based Permit Limits:*** | | | |
| ***Maximum Daily (kg/day)*** | ***0.12*** | ***0.08*** | ***0.08*** |
| ***Average Monthly (kg/day)*** | ***0.09*** | ***0.07*** | ***0.04*** |

**Whole Effluent Toxicity Limits**

****Based on CV of 0.6**

| | Spring | Summer | Winter |
|---|---|---|---|
| Acute WLA | 0.65 | 0.31 | 0.33 |
| Chronic WLA | 12.55 | 1.61 | 2.79 |
| Acute LTA | 0.21 | 0.10 | 0.10 |
| Chronic LTA | 6.62 | 0.85 | 1.47 |
| Acute Toxicity (TUa) | 0.65 | 0.31 | 0.33 |
| Chronic Toxicity (TUc) | 20.61 | 2.65 | 4.59 |
| ***Permit Limits:*** | | | |
| ***Acute Toxicity (TUa)*** | ***1.00*** | ***1.00*** | ***1.00*** |

# Conductivity – Outfall 001

**General Information**

| Facility | Receiving Water | Title 117 ID: | Prepared By: | Date | Review by: | Date |
|---|---|---|---|---|---|---|
| Platte Generating Station | Platte River | MP2-10000 | PWD | 11-Apr-17 | | |

**Assigned Beneficial Uses**

| State Resource Water | Aquatic Life Use Class | Recreation (Y/N) | Agriculture (A/B) | Water Supply | Aesthetics | Key Species |
|---|---|---|---|---|---|---|
| N | WWA | Y | A | None | Y | Channel Catfish, Flathead Catfish |

| Is the waterbody on the current 303(d) List? | N | Does the Facility Discharge 303(d) Listed Pollutant? | N |
|---|---|---|---|

**Stream Design Flows**

| | Spring | Summer | Winter |
|---|---|---|---|
| 1q10 | 111.39 | 0.1 | 23.9 |
| 7q10 | 147.18 | 1 | 39.17 |
| 30q5 | 482.67 | 1 | 430.95 |
| Source | USGS | Default | 6770500 |
| Confidence | High | Low | High |

**Receiving Stream Design Parameters**

| | Value | Spring Source | Confidence | | Value | Summer Source | Confidence | | Value | Winter Source | Confidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chronic Temp. | | | | Chronic Temp. | | | | Chronic Temperature | | | |
| Chronic pH | | | | Chronic pH | | | | Chronic pH | | | |
| Chronic NH3 background (mg/l) | | | | Chronic NH3 background (mg/l) | | | | Chronic NH3 background (mg/l) | | | |
| Chronic Criteria (mg/l) | | | | Chronic Criteria (mg/l) | | | | Chronic Criteria (mg/l) | | | |
| Acute NH3 background (mg/l) | | | | Acute NH3 background (mg/l) | | | | Acute NH3 background (mg/l) | | | |
| Other Chronic background | 980 | DEQ Data | High | Other Chronic background | 916 | DEQ Data | High | Other Chronic background | 975 | DEQ Data | High |
| Other Acute background | 1084 | DEQ Data | High | Other Acute background | 1006 | DEQ Data | High | Other Acute background | 1215 | DEQ Data | High |
| Conductivity Chronic Criteria | 2000 | | | Conductivity Chronic Criteria | 2000 | | | Conductivity Chronic Criteria | 2000 | | |

**Effluent Design Parameters**

| | Value | Spring Source | Confidence | | Value | Summer Source | Confidence | | Value | Winter Source | Confidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Median MGD | 0.787 | ICIS | High | Median MGD | 1.055 | ICIS | High | Median MGD | 1.005 | ICIS | High |
| cubic feet/sec | 1.218 | | | cubic feet/sec | 1.632 | | | cubic feet/sec | 1.555 | | |
| Temperature | | | | Temperature | | | | Temperature | | | |
| pH | | | | pH | | | | pH | | | |
| Acute NH3 Criteria (from criteria worksheet) | | | | Acute NH3 Criteria (from criteria worksheet) | | | | Acute NH3 Criteria (from criteria worksheet) | | | |
| Conductivity Placeholder | 30000 | | | Conductivity Placeholder | 30000 | | | Conductivity Placeholder | 30000 | | |

**Receiving Stream Information**

| Known Stream Flow (cfs) | Known Average Velocity (ft/s) | Known Average Depth (ft) | Known Average Width (ft) | Stream Slope (ft/mile) | Ls/Lv | Chronic Mixing Zone to 5000 Ft? |
|---|---|---|---|---|---|---|
| 402 | 1.45 | 3.06 | 452 | 3.817 | 1.048 | n |

| Spring | | | | Summer | | | | Winter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chronic NH3 WLA | % Stream | Acute NH3 WLA | %Stream | Chronic NH3 WLA | % Stream | Acute NH3 WLA | % Stream | NH3 WLA | % Stream | Acute NH3 WLA | %Stream |
| 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! | 0.00 | #DIV/0! |
| Chronic WLA | % Stream | Acute WLA | %Stream | Chronic WLA | % Stream | Acute WLA | % Stream | Chronic WLA | % Stream | Acute WLA | %Stream |
| 12796.848 | 8.76 | 62254.907 | 1.22 | 2664.095 | 100.00 | 30888.135 | 50.00 | 2863.419 | 3.34 | 31212.367 | 0.27 |

| General Data | |
|---|---|
| Facility Name: | Platte Generating Station |
| Permit Number: | NE0113646 |
| Date: | 11-Apr-17 |
| Permit Writer: | PWD |
| Receiving Stream: | Platte River |
| Title 117 ID: | MP2-10000 |
| Aquatic Use: | WWA |
| Pollutant of Concern: | Conductivity |
| Coefficient of Variation (CV): | |
| Spring | 0.6 |
| Summer | 0.6 |
| Winter | 0.6 |
| Samples/Month (N): | 4 |
| Chronic (N) day average: | 4 |

**Data from WLA Worksheet**

| | Spring | Summer | Winter |
|---|---|---|---|
| Effluent Flow in cfs: | 1.2176464 | 1.632296 | 1.554936 |
| 1q10 Stream Flow in cfs: | 111.39 | 0.1 | 23.9 |
| 7q10 Stream Flow in cfs: | 147.18 | 1 | 39.17 |
| 30q5 Stream Flow in cfs: | 482.67 | 1 | 430.95 |
| % 1q10 used for mixing: | 1.22 | 50.00 | 0.27 |
| % 7q10 used for mixing: | 8.76 | 100.00 | 3.34 |
| % 30q5 used for mixing: | 8.76 | 100.00 | 3.34 |
| Acute WLA: | 62254.907 | 30888.14 | 31212.37 |
| Chronic WLA: | 12796.85 | 2664.095 | 2863.419 |

**Calculated WLA Multipliers**

| | Spring | Summer | Winter |
|---|---|---|---|
| acute WLA multiplier: | 0.321 | 0.321 | 0.321 |
| chronic WLA multiplier: | 0.527 | 0.527 | 0.527 |
| MDL LTA multiplier: | 3.11 | 3.11 | 3.11 |
| AML LTA multiplier: | 1.55 | 1.55 | 1.55 |

**Water Quality Based Permit Limit Calculations for: Conductivity**

| | Spring | Summer | Winter |
|---|---|---|---|
| Acute WLA | 62254.91 | 30888.14 | 31212.37 |
| Chronic WLA | 12796.85 | 2664.10 | 2863.42 |
| Acute LTA | 19989.01 | 9917.66 | 10021.77 |
| Chronic LTA | 6749.49 | 1405.13 | 1510.26 |
| ***Concentration Based Permit Limits:*** | | | |
| ***Maximum Daily (mg/L)*** | ***21020.986*** | ***4376.227*** | ***4703.650*** |
| ***Average Monthly (mg/L)*** | ***10478.068*** | ***2181.363*** | ***2344.569*** |
| ***Mass Based Permit Limits:*** | | | |
| ***Maximum Daily (kg/day)*** | ***62617.39*** | ***17475.09*** | ***17892.38*** |
| ***Average Monthly (kg/day)*** | ***31212.11*** | ***8710.59*** | ***8918.59*** |

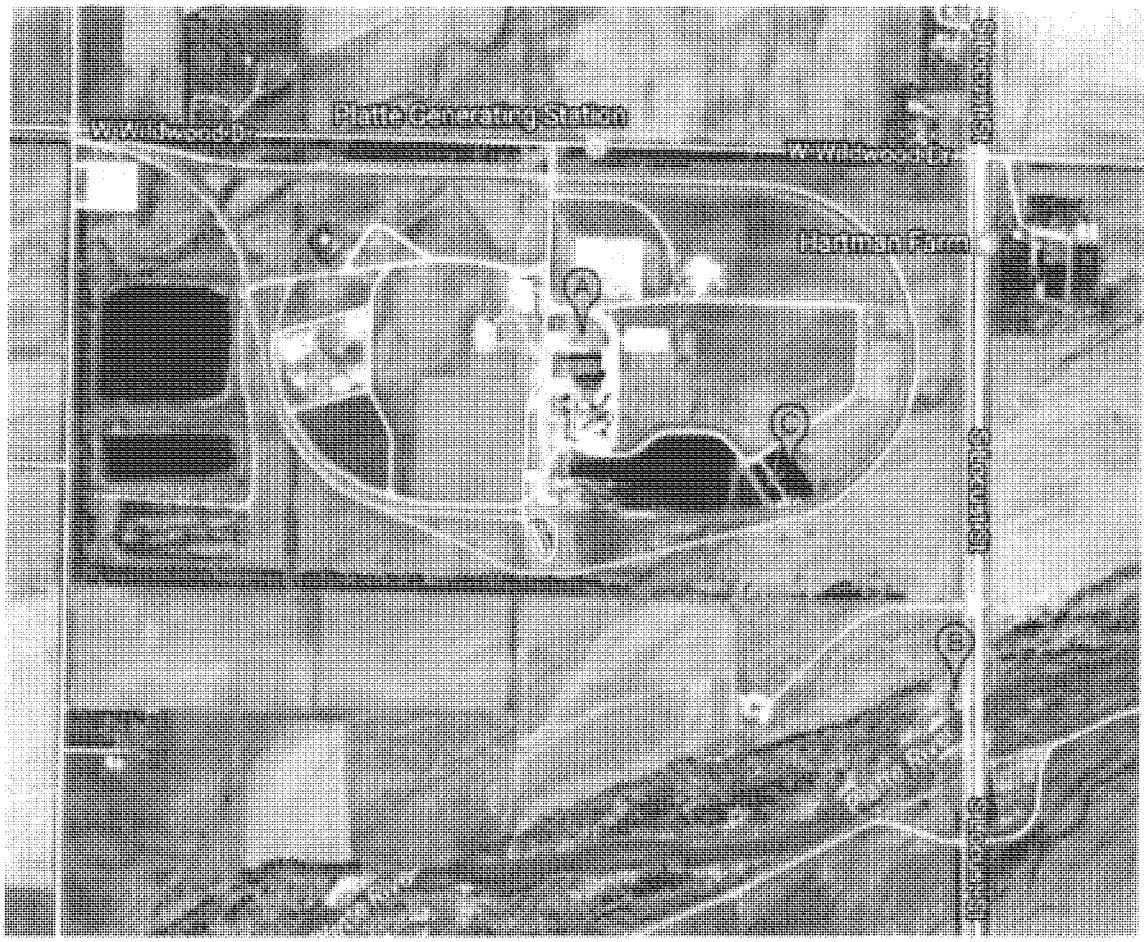
**Whole Effluent Toxicity Limits**

****Based on CV of 0.6**

| | Spring | Summer | Winter |
|---|---|---|---|
| Acute WLA | 0.63 | 0.31 | 0.31 |
| Chronic WLA | 11.59 | 1.61 | 1.84 |
| Acute LTA | 0.20 | 0.10 | 0.10 |
| Chronic LTA | 6.11 | 0.85 | 0.97 |
| Acute Toxicity (TUa) | 0.63 | 0.31 | 0.31 |
| Chronic Toxicity (TUc) | 19.03 | 2.65 | 3.03 |
| ***Permit Limits:*** | | | |
| ***Acute Toxicity (TUa)*** | ***1.00*** | ***1.00*** | ***1.00*** |

Attachment 2 – Site Maps
Map 1 – Topographic Map
A – Platte Generating Station

Attachment 2 – Site Maps
Map 2 – Aerial Photograph
A – Platte Generating Station
B – Outfall 001 to Platte River
C – Settling Pond (B) (at red arrow)



**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

| | |
|---|---|
| CLEAN WATER ACTION, *et al.*,<br><br>*Petitioners,*<br><br>v.<br><br>E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency and U.S. ENVIRONMENTAL PROTECTION AGENCY<br><br>*Respondents.* | Case No. 17-1193 |

# EXHIBIT 2

## Platte Generating Station Final NPDES Permit