

ENVIRONMENTAL ENGINEERING

NEWSLETTER

9 FEB. 2015

This week's edition includes:

If you need older URLs contact George at ghh@att.net.

Please Note: This newsletter contains articles that offer differing points of view regarding climate change, energy and other environmental issues. Any opinions expressed in this publication are the responses of the editor alone and do not represent the positions of the Environmental Engineering Division or the ASME.

George Holliday

This week's edition includes:

ENVIRONMENT: A. OBAMA ADMINISTRATION UNVEILS CHANGES TO OFFSHORE OIL, GAS LEASING

The Interior Department on Tuesday released a draft plan for its offshore oil and natural gas lease sales spanning 2017 to 2022, proposing 14 sales in the Gulf of Mexico, offshore Alaska and along the mid- and south Atlantic coast. This came as President Barack Obama permanently barred 9.8 million acres of the Beaufort and Chukchi seas from being considered for leases. American Petroleum Institute Upstream and Industry Operations Director Erik Milito said the plan disregards such areas that "could create more than half a million new American jobs and generate hundreds of billions of dollars for the government."

[FuelFix.com](#) (1/27), [Oil & Gas Journal](#) (1/27)

B. IMECE CALL FOR PAPERS: CCS

Carbon capture and storage (CCS) is one of the technologies expected to reduce greenhouse gas emissions. Efficient, economic, and environmentally friendly solutions are always being sought. This symposium brings together the work of prominent researchers in the field with the emphasis on both CCS fundamentals and applications. Main areas of interest are 1) engineering challenges of CCS, and 2) progress made in recent years in terms of novel materials, processes and applications. Papers, extended abstracts and technical presentation are solicited in areas including but not limited to:

- CCS system - general (control, behavior, response, interaction with power generation and transmission systems, etc.)
- Gas capture (separation) from large point sources (power generation, natural gas processing, heavy industries, hydrogen production, etc.)
- Gas compression/dehydration
- CO₂ transport and transport system maintenance
- Beneficial reuse of CO₂ (e.g. enhanced oil recovery (EOR), urea application, food industry, beverage carbonation, carbonate/bicarbonate, biomass processing)

- Materials developed for CO₂ capture, separation, purification, transport, storage, and applications

Interested authors should submit a (maximum) 400-word abstract via the web tool at the Congress 2015 website. <http://www.asmeconferences.org/Congress2015/>
Final papers will be available on CD-ROM at the meeting.

SUBMISSION DEADLINE: March 2, 2015

See Conference website for detailed Publication Schedule
<http://www.asmeconferences.org/IMECE2015/>

C. NPDES GENERAL PERMIT SHIELDS SELENIUM DISCHARGES, SAYS SIXTH CIRCUIT

On January 27, 2015, the U.S. Court of Appeals for the Sixth Circuit issued a decision in *Sierra Club v. ICG Hazard, LLC*, Opinion No. 13-5086 (6th Cir. Jan. 27, 2015), affirming that coverage under a National Pollutant Discharge Elimination System (NPDES) general permit shielded ICG from citizen suit liability, even though ICG's selenium discharges exceeded state water quality standards.

When applicable, the NPDES permit shield protects permit holders from agency enforcement actions and citizen suits. However, the permit shield only protects a permit holder who (1) "complies with the express terms of its permit and with the [Clean Water Act]'s disclosure requirements" and (2) "does not make a discharge of pollutants that was not within the reasonable contemplation of the permitting authority at the time the permit was issued." *Piney Run Pres. Ass'n v. County Comm'rs*, 268 F.3d 255, 259 (4th Cir. 2000). Before this case, courts had not determined whether or how the permit shield applied to a general discharge permit. According to the Sixth Circuit, the NPDES permit shield applies equally to general as to individual permits.

The court also found that ICG satisfied both *Piney Run* prongs, meriting protection under the permit shield. Because the ICG's general permit required only one-time selenium sampling and did not set selenium effluent limitations, ICG satisfied the first, disclosure-based, *Piney Run* prong by sampling for selenium in 2009. Even though sampling revealed concentrations exceeding state water quality standards, the court found that ICG had complied with the reporting requirements imposed by its general permit. Then, applying the second *Piney Run* prong, the Court determined that the Kentucky Division of Water had reasonably contemplated finding selenium in coal company effluent and had responded to that possibility by imposing a one-time sampling requirement. Finding both *Piney Run* tests fulfilled, the Court concluded that ICG's general permit shielded it from citizen suit liability for selenium discharges, even those in excess of water quality standards. One judge dissented; criticizing the court for ignoring standards intended to protect human health and the environment from a known, toxic pollutant. This case diverges from a Fourth Circuit permit shield case involving selenium discharges and an individual NPDES permit. See TIP 2014-118. There, in *Southern Appalachian Mountain Stewards v. A & G Coal Corp.*, 758 F.3d 560, 562 (4th Cir. 2014), the Fourth Circuit applied the first *Piney Run* prong and held that a coal company was not shielded from liability for selenium discharges when the company had failed to disclose in its NPDES permit application whether selenium was believed to be present or absent from its waste stream.

A copy of the Sixth Circuit's opinion in *Sierra Club v. ICG Hazard, LLC*, Opinion No. 13-5086 (6th Cir. Jan. 27, 2015) is attached.

D. CARBON STORAGE NEWS LETTER FROM AROUND THE WORLD:

- The U.S. Department of Energy (DOE) announced that the Midwest Geological Sequestration Consortium's (MGSC) Illinois Basin-Decatur Project successfully captured and stored 1 million metric tons of carbon dioxide (CO₂) in a saline formation.
- Under a cooperative agreement with DOE's NETL, NITEC LLC developed new software that enables quicker, more affordable technical studies of CO₂-enhanced oil recovery (EOR).
- The 5th version of NETL's Carbon Capture and Storage (CCS) Database is now available.
- The United States of America and the People's Republic of China announced bilateral cooperation on climate change.
- The Carbon Capture Simulation Initiative (CCSI) and the National Risk Assessment Partnership (NRAP) are using predictive computational modeling to help DOE meet its goal of having CCS technologies ready for demonstration in the 2020 to 2025 timeframe.
- The United Kingdom's (UK) Department for Energy and Climate Change (DECC) made funding available through the Energy Technologies Institute (ETI) for the evaluation of CO₂ storage sites beneath the North Sea.
- The Regional Greenhouse Gas Initiative (RGGI) released the Auction Notice and application materials for the 27th CO₂ allowance auction.
- National Grid awarded a front-end engineering and design (FEED) contract to Applied Drilling Technology International (ADTI) for the White Rose CCS project.
- According to researchers, the mussel population may be affected by potential climate change.
- The Government of Alberta announced the extension of four climate change regulations.
- South Korea opened its CO₂ cap-and-trade system.

Research Articles:

- In silico science for climate policy: How policy-makers process and use carbon storage simulation data
- Fractal analysis in pore structure of coal under conditions of CO₂ sequestration process
- Mineral carbon storage in pre-treated ultramafic ores
- APTES grafted ordered mesoporous silica KIT-6 for CO₂ adsorption
- Molecular dynamics simulation on volume swelling of CO₂-alkane system
- Assessment of the recovery and front contrast of CO₂-EOR and sequestration in a new gas condensate reservoir by compositional simulation and seismic modeling
- Fully coupled wellbore-reservoir modeling of geothermal heat extraction using CO₂ as the working fluid
- Ground Gas Monitoring: Implications for Hydraulic Fracturing and CO₂ Storage
- The importance of soil sampling depth for accurate account of soil organic carbon sequestration, storage, retention and loss
- Short-term carbon dioxide emission under contrasting soil disturbance levels and organic amendments
- Carbon pricing versus emissions trading: A supply chain planning perspective

· Gains from Emissions Trading Under Multiple Stabilization Targets and Technological Constraints

Did you know that the United States has at least 2,400 billion metric tons of potential CO₂ storage resources in saline formations, oil and gas reservoirs, and unmineable coal? Download DOE's [United States Carbon Storage Atlas](#) to learn more.

Be sure to read current event information and other special announcements in your January 2015 Carbon Storage Newsletter from DOE's NETL. Learn more about [DOE's Carbon Storage Program](#).

Please share this email with anyone interested in carbon storage technology news, projects, and events.

Arnold Feldman

E. SENATE APPROVES KEYSTONE PIPELINE BILL, IN FACE OF WHITE HOUSE VETO THREAT

WASHINGTON – The Senate passed legislation Thursday approving the Keystone XL oil pipeline, setting up a looming veto showdown with the White House.

The legislation passed on a 62-36 vote, after lawmakers spent weeks considering amendments.

The House passed a similar bill earlier this month, though there are slight differences that have to be ironed out before the bill can go to President Obama's desk.

The vote nevertheless marked the first time the Senate has voted to approve the controversial Canada-to-Texas oil pipeline. Nine Democrats joined with 53 Republicans to back the measure.

“Constructing Keystone would pump billions into our economy,” Senate Majority Leader Mitch McConnell, R-Ky., said before the vote. “It would support thousands of good American jobs and as the president’s own State Department has indicated, it would do this with minimal environmental impact.”

Russ Girling, CEO of the company behind the project TransCanada, said in a statement Thursday afternoon the firm was "encouraged" by the "strong bipartisan" showing in the Senate.

Still, Republicans remain several votes shy of the 67 needed in the 100-member chamber to override a presidential veto.

And asked Thursday about the vote, White House Press Secretary Josh Earnest reiterated that Obama would veto.

It remains unclear whether majority Republicans could round up additional support to override.

Since they took over the Senate in January, Republicans have made approving the Keystone pipeline their top priority on the heels of big wins in the November elections.

The Senate vote capped weeks of debate that was often messy and on one occasion had the Senate in session into the early morning. Dozens of additions to the bill were considered, but only a handful, such as getting the Senate on the record that climate change is not a hoax, made it into the measure.

"The past few weeks have been a whirlwind. But the Keystone jobs debate has been important for the Senate and for our country," McConnell said. "The Keystone infrastructure project has been studied endlessly, from almost every possible angle, and the same general conclusion keeps becoming clear: Build it."

The bill authorizes construction of the 1,179-mile pipeline, which would carry oil primarily from Canada's tar sands to Nebraska, where it would connect with existing pipeline to Gulf Coast refineries.

First proposed in 2008, the \$8 billion project has been beset by delays in Nebraska over its route and at the White House, where the president has resisted prior efforts by Congress to force him to make a decision. In 2012, Obama rejected the project after Congress attached a measure to a payroll tax cut extension that gave him a deadline to make a decision. The pipeline's developer, TransCanada Corp., then reapplied.

Environmental groups have called on Obama to reject the project outright, saying it would make it easier to tap a dirty source of energy that would exacerbate global warming. The State Department's analysis, assuming higher oil prices, found that shipping it by pipelines to rail or tankers would be worse for the planet.

Supporters say the pipeline is a critical piece of infrastructure that will create thousands of jobs during construction and boost energy security by importing oil from a friendly neighbor.

The Associated Press contributed to this report.

Don Shaw

F. FORGET CLIMATEGATE: THIS 'GLOBAL WARMING' SCANDAL IS MUCH BIGGER

by [James Delingpole](#) 30 Jan 2015 1319

How can we believe in 'global warming' when the temperature records providing the 'evidence' for that warming cannot be trusted?

It's a big question – and one which many people, even on the sceptical side of the argument, are reluctant to ask.

<http://www.breitbart.com/london/2015/01/30/forget-climategate-this-global-warming-scandal-is-much-bigger/>

Bill Holliday

G. OBAMA SIGNS EXECUTIVE ORDER AIMED AT REDUCING FLOOD DAMAGE FROM CLIMATE CHANGE (BE SURE TO READ THE ABOVE ARTICLE FIRST) GHH

By [Ben Wolfgang](#) - The Washington Times - Friday, January 30, 2015

President Obama on Friday signed an executive order requiring all roads, buildings and other pieces of infrastructure paid for with federal money to be built in areas with less risk of flooding. With the order, Mr. Obama established the "Federal Flood Risk Management Standard," which makes the case that climate change will make floods more common and much more destructive. "These impacts are anticipated to increase over time due to the effects of climate change and other threats. Losses caused by flooding affect the environment, our economic prosperity, and public health and safety, each of which affects our national security," the president said in the order. "The federal government must take action, informed by the best-available and actionable science, to improve the nation's preparedness and resilience against flooding."

Moving forward, all federal agencies and departments must "use data and methods informed by best-available, actionable climate science," and build either two feet above the 100-year flood elevation or to the 500-year flood elevation, the White House said.

All critical buildings, such as hospitals and evacuation centers, must be built at least three feet above the 100-year flood elevation, the White House said.

The administration argues that the new steps are necessary because of climate change.

“As the planet continues to warm, impacts like rising sea levels, intensified storms, and heavy downpours are contributing to an increased risk of flooding. President Obama is committed to ensuring that American communities thrive in the face of a changing climate,” the White House’s Council on Environmental Quality said in a statement.

<http://www.washingtontimes.com/news/2015/jan/30/obama-signs-executive-order-aimed-reducing-flood-d/>

H. EPA MEMORANDUM ON INCREASED USE OF “NEXT GEN”

Compliance Tools in Settlements

On January 7, 2015, EPA released a memorandum detailing the Agency’s initiative to increase the use of Next Generation (“Next Gen”) compliance tools in administrative and civil enforcement settlements. Next Gen compliance tools are defined by one or more of three features: (1) use of a practice or requirement that is not yet commonly included in most settlements; (2) use of modern information technology and/or advanced technology so that information about pollutant releases and their qualitative levels is available closer to real time, is more accessible, and is more complete; and (3) use of approaches to provide an effective structure for the settling party to comply with settlement requirements without increasing EPA’s oversight burden. Specific examples of Next Gen compliance tools are advanced monitoring, third party verification of a settling party’s compliance with settlement obligations, electronic reporting, and public accountability through increased transparency of compliance data. According to the memorandum, EPA will incorporate Next Gen compliance tools into administrative and civil enforcement settlements whenever it is appropriate under the Agency’s legal and settlement authorities. For example, the memorandum states that “if elevated air emissions from a refinery or smelter are of concern to a nearby community, a settlement may include monitors at the facility fence line or in the surrounding community.” The memorandum also suggests that a settlement agreement could require the settling party to provide readily accessible, relevant and understandable compliance information on its website, via a mailer, or through the Enforcement and Compliance History Online database or other publicly available EPA websites.

The memorandum is attached. **Env150209-1**

B. SAFETY: A. FIVE DEAD IN CRASH IN SOUTH TEXAS OIL FIELD

<http://news.yahoo.com/five-dead-crash-south-texas-oil-field-205232338.html>

COMMENTS:

A. THE WEEK THAT WAS: 2015-01-31 (JAN. 31, 2015)

By Ken Haapala, President, Science and Environmental Policy Project (SEPP)

KEYSTONE XL: As promised by the Republican leadership, the Senate passed S.1 the bill authorizing the TransCanada Corp. to proceed in planning and building the Keystone Pipeline to

transport up to 830,000 barrels of crude oil per day from the oil sands in Alberta, Canada and shale oil from the Bakken formation in North Dakota to Steele City Nebraska. From there it will be transported by existing pipelines to Gulf Coast refineries. Once completed, the pipeline system would span 1,700 miles and cross six U.S. states. Nine Democrats voted with all Senate Republicans in approving the bill.

Once the details are reconciled with a similar House bill, it will go to President Obama who has promised to veto it. The Administration has had six years to study the pipeline, so arguments of time to study the issue are frivolous. So are claims that the pipeline is no longer economic because oil prices have dropped. As Trans Canada Chief Executive wrote in a statement:

“Keystone XL is a project that was needed when the price of a barrel of oil was less than \$40 in 2008, when we first made our application, at more than \$100 last year, and around \$45 today.”

The legislation was messy, with multiple amendments considered including two promoting energy efficiency and one declaring a sense of the Senate that climate change is real and not a hoax that passed. The press had a field day, making much of these amendments, but the legislation passed. Now the President has a choice. Does he anger the anti-fossil-fuel green groups whom he promised he would veto the measure, or does he anger labor unions and others who supported the bill and who traditionally support the Democratic Party?

As questionable polls are showing, the public is becoming increasingly aware that the science of global warming/climate change, as proclaimed by the UN Intergovernmental Panel on Climate Change (IPCC) and its followers, is overblown with a multitude of experts who cannot justify their earlier statements and the predictions/projections from their models that greatly overestimated 21st century warming. The pollsters term the products of models that have not been validated as science, which it is not. See Article # 3 and links under Communicating Better to the Public –Do a Poll? and Washington’s Control of Energy.

Cherry-Picking Temperatures: The January 24 TWTW used a quote from Richard Somerville, a climate scientist and professor emeritus at Scripps Institution of Oceanography. According to his web site, Somerville was a Coordinating Lead Author in Working Group I, Physical Science, for the 2007 Fourth Assessment Report (AR-4) of the UN Intergovernmental Panel on Climate Change (IPCC), report that expressed great certainty in global warming science and the models used. TWTW used the quote to assert that by ignoring superior atmospheric temperature data, both the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) are engaged of cherry-picking data. Further, TWTW stated that as criticism of the press release by NOAA and NASA intensified, Gavin Schmidt of NASA-GISS (Goddard Institute of Space Studies) presented a table by NASA stating there was a 38% probability that 2014 was the warmest year recorded. Apparently, both NOAA and NASA calculated such low probabilities prior to the press release but did not disclose them. A reader, who will remain nameless, wrote: “You are quite wrong that the 38 percent figure was not disclosed at the time of the first announcements. And you clearly don’t understand how to interpret the number. Every other year in the record had a much lower probability of being the warmest. Since one of them had to be the warmest, it makes good sense to pick the one with the highest probability. The next most probable year was only half as likely to top the others.” Quite to the contrary, the NASA press release dated Jan 16 contained no probability statements. Probability values were added later, particularly to the NOAA statement. Further, the probabilities used are not based on a frequency distribution. The paper used to justify NOAA’s

probability calculations is: “Uncertainty in annual rankings from NOAA's global temperature time series” By Arguez, Karl, Squires and Vose, *Geophysical Research Letters*, Nov 27, 2013. “Annual rankings of global temperature are an important component of climate monitoring. However, there is some degree of uncertainty for every yearly value in the global temperature time series, which leads to uncertainty in annual rankings as well. This study applies a Monte Carlo uncertainty analysis to the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center's global land-ocean surface temperature (NOAATMP) time series. Accounting for persistence between years does not materially affect the results versus presuming statistical independence. The highest probabilities for the warmest year analysis (1880–2012) are associated with the years 2010 (~36%), 2005 (~28%), and 1998 (~11%). The current separation among the warmest observed years is relatively small compared to the standard errors of the NOAATMP time series. However, each year between 1997 and 2012 was warmer than the vast majority of all other years since 1880 at the 95% confidence level.”

There are several major issues with this paper. One, the paper was not published in a major statistical journal; therefore one cannot assume that it underwent expert analysis for its statistical rigor. As seen in the Michael Mann “hockey-stick” debacle, a small group of like-minded researchers can agree on a statistical procedure –even if the procedure leads to a bias. Outside statistical expertise is needed.

A second problem is the time-frame. Prior warm periods are ignored. One cannot establish probabilities of temperatures by ignoring massive amounts of historical data. As Timothy Ball noted; amusingly, if the data record is the GRIP 2 ice core from Greenland, then 2014 would rank in the 3% of the coldest years in the record. Climate science has reached its current state of being ignored by the public (and its impending implosion) by ignoring climate history and the natural causes of climate change.

These issues are separate from the manipulation of the historic instrument record by making earlier 20th century measurements appear cooler than they were. This manipulation is a long simmering problem. These issues also illustrate why TWTW prefers using the satellite temperature record, independently supported by the records from weather balloons. The justification of NOAA and NASA of using surface temperatures in the space age is often stated as “That’s where people live.”The claim is weak. Surface temperatures are influenced by other human activities including urbanization, irrigation, agriculture, vegetation, etc. The surface instruments may be measuring these human activities, not emissions of carbon dioxide, which is the central issue in the study of global warming/climate change. If increased greenhouse gases are the cause of global warming, it should be measured where it occurs, in the atmosphere—with space-age satellites.

See links under Measurement Issues, <http://drtimball.com/2015/2014-among-the-3-percent-coldest-years-in-10000-years/>, and <http://www.nasa.gov/press/2015/january/nasa-determines-2014-warmest-year-in-modern-record/#.VLIARCVF98H>

Expanding the Orthodoxy: Numerous news reports have promoted the idea that the Pope will endorse the claim that human emissions of carbon dioxide endanger humanity. On his web site, Pierre Gosselin performs a valuable service by giving regular and very reliable translations of German news. TWTW links to some of these in virtually every issue. However, it appears one has to be careful about jumping to conclusions over a recent article in *Der Spiegel*. Tom

Sheahan, Vice President of SEPP, who follows religious affairs closely, made the following remarks on a recent posting by Gosselin.

“In the present case, it is obvious that *Der Spiege* really dislikes the Catholic Church and enjoys bashing it. The giveaway is the reference to Giordano Bruno, a certified heretic on religious-doctrine grounds, who dabbled in astronomy; Bruno's astronomy had absolutely nothing to do with his condemnation --but it's a mighty convenient club to wield by those who want to make the Catholic Church look bad.

“Reading the interview carefully, the president of the Pontifical Academy didn't really disclose anything, and it was the reporter from *Der Spiegel* who made up the rest of the speculations. Separately, his speculations might very well be correct, in that there is increasing evidence that the Pope is definitely on the political left and likely sides with the greens.”

See links under Expanding the Orthodoxy.

Executive Orders: The January 17 TWTW discussed suggestions for legislative correction under the new Congress. One area of concern is the *“tailoring of global models for regional analysis, without independent validation. Further, when models are inconsistent with data, data should take preference. For example, the budget of the US Global Change Research program is about \$2.5 billion and has remained at that level since 2010 (adjusted for inflation). The USGCRA states its mission as: “Thirteen Agencies, One Vision: Empower the Nation with Global Change Science.”*

On May6, 2014 USGCRP released its National Climate Assessment. The report contains 8 regional reports and one for the 48 states contiguous US. The regional report for the Southeast U.S. projects a major general warming of about 10°F for the region even though The report states: “The lack of mid-20th century warming in the Southeast is not simulated by the models. However, 21st century simulations of temperature indicate that future warming will be much larger than the observed values for the 20th century.” There is no logical reason for this assertion and the inconsistency between data and models.

According to reports, on Friday January 30, a slow news day, President Obama took the initiative to direct all federal agencies to factor-in rising sea levels when building infrastructure projects. TWTW has not yet obtained the Corps of Engineers (COE) report which 31,200 miles of north Atlantic coast have a flood risk caused by rising sea levels and climate change. If it is of the same quality as the 2014 National Climate Assessment it is closer to speculation than any meaningful science.

“Losses caused by flooding affect the environment, our economic prosperity, and public health and safety, each of which affects our national security,” the White House order states.

The new standards give agencies three options on how to prepare for floods and use them in the siting, design and construction of federally funded buildings, roads and infrastructure.

The three choices: Use data and methods provided by the "best-available, actionable climate science," build 2 feet above the 100-year flood elevation mark for standard projects and 3 feet for "critical" buildings like hospitals and evacuation centers, or build to the 500-year flood elevation. [Boldface added]/

“By requiring that Federally funded buildings, roads and other infrastructure are constructed to better withstand the impacts of flooding, the President’s action will support the thousands of communities that have strengthened their local floodplain management codes and standards, and will help ensure Federal projects last as long as intended,” the White House Council on Environmental Quality said in a fact sheet.

According to the National Climate Assessment issued by the White House last year, over \$1 trillion of property and structures in the U.S. are at risk of sea level rise.

Over 50 percent of Americans live in coastal counties susceptible to storm surges, rising sea levels and flooding, the White House said."

The order comes days after the U.S. Army Corps of Engineers released a post-Hurricane Sandy report on the flood risk posed to 31,200 miles of the north Atlantic coast.

In the report, the Army Corps specifically cited sea level rise cause[d]by climate change as a factor that "flood risk is increasing for coastal populations and supporting infrastructure."

In its fact sheet, the Council on Environmental Quality also noted data from the National Oceanic and Atmospheric Administration that put 2014 as the hottest year on record.

If the reports are correct, the coastal plains of the Atlantic and Gulf Coasts will be most affected. Florida, Louisiana, and the Carolinas are especially vulnerable. And officials might as well forget any improvements in the Norfolk-Newport News naval complex in Virginia.

Clearly, local officials must prepare for an array of outrageous demands from the 13 Federal agencies that make up the US Global Change Research Program. Local officials must be willing to vigorously challenge the Washington experts to provide the physical validation of the models on which they rely, and explain inconsistencies in studies. This Executive Order makes Washington climate establishment, and its culture focused on climate models, hostile to the prosperity of regions in the country where, according to the above quote, "Over 50 percent of Americans live in coastal counties susceptible to storm surges, rising sea levels and flooding the White House said."

The exaggerations present in the IPCC and the US Global Change Research Programs, and the excessive confidence in the science, are about to have a significant impact on the personal lives of many in the nation. The program will be discussed more fully as facts develop. See links under Changing Seas.

The NYC Blizzard That Wasn't: The forecasts that New York City would be hit by double-digit inches of snow and high winds was a dud. The City received about 3 to 6 inches. The failure of National Weather Service, an agency of NOAA, to accurately predict the storm resulted in unnecessary disruption to many people who expected the forecast to be accurate. Some meteorologists apologized for their failure to correctly predict the track of the storm. It went 50 to 100 miles east of the city. But, it would be proper to recognize that their equipment needs improvement and that uncertainty of such forecasts needs to be emphasized.

Although few mentioned it, if Sandy had taken a similar track as this storm, it would have received little publicity. This affair illustrates the need to prepare accurate predictions of weather events, and the need to convey the uncertainty involved.

There is a major lesson in this event, which is that you CANNOT take computer results as "absolute truth." The best models in the world are not perfect, because nature doesn't always do what nature normally does. The task is not simply to "prepare accurate predictions" but to "convey the uncertainty involved." People need to realize that no weather prediction is ever perfect. People need to be taught that both measurements and predictions come with error brackets.

A note about politics: IF this storm had struck where it was predicted to, both Cuomo and Christie would have looked downright Presidential for their foresight. The same could be said for climate predictions. See links under Changing Weather.

On the Attack: The January 17 TWTW briefly discussed a simplified climate model presented by Christopher Monckton, Willie Soon, David Legates and William Briggs, which, according to the authors out-performs the general climate models used by the IPCC in forecasting 21st century temperatures. Monckton states: “Our irreducibly simple climate model does not replace more complex models, but it does expose major errors and exaggerations in those models, such as the over-emphasis on positive or amplifying temperature feedbacks. ..”

Already the Climate Establishment is on the attack, not in providing critical analysis of the model but by demanding one of its authors, Astrophysicist Willie Soon, be fired from his position at the Smithsonian. Following the well-trod path established by Naomi Oreskes and Erik Conway, Soon is accused of receiving research money from the fossil fuel industry. No evidence is presented. An assertion by DeSmogBlog is “proof of guilt.” See links under Communicating Better to the Public –Go Personal.

Number of the Week: In an amusing post, Charles Battig, of the Virginia Scientists and Engineers for Energy and Environment (VA-SEEE), discusses the estimate by NASA that it is 38% likely that 2014 was the warmest year since 1880. [As discussed above, NOAA has a 48% likelihood and both cannot be right, but both can be wrong.] Battig suggests that the 38% may become a benchmark for government work. See link under Article # 3.

<http://www.sepp.org/twtwfiles/2015/TWTW%201-31-15.pdf>

B. POLL FINDS GAPING CHASM IN VIEWS BETWEEN U.S. PUBLIC, SCIENTISTS

By Will Dunham

(Reuters) - American scientists and the general public hold vastly different views on key scientific issues including the role of people in causing climate change, the safety of genetically modified food, and evolution, a poll released on Thursday showed.

Eighty-seven percent of scientists questioned by the Pew Research Center said human activity was the main cause of global climate change, compared with 50 percent of the public.

Twenty-five percent of the public said there was no solid evidence the climate was warming, up from 11 percent in a similar 2009 survey.

The issue has become increasingly divisive, with some leading conservatives expressing doubt that human activity like the burning of fossil fuels that release greenhouse gases is driving a global warming trend.

Scientists from two U.S. government agencies said this month that 2014 was the hottest year on record and blamed human activities for Earth's warming trend.

There was an even bigger chasm over genetically modified foods, with 88 percent of the scientists saying they were safe to eat, compared with 37 percent of the public.

On evolution, 98 percent of scientists said humans had evolved over time, compared with 65 percent of the public.

The findings were based on responses last August from 2,002 U.S. adults nationwide, with a margin of error of 3.1 percentage points.

The results were compared with answers last September and October from 3,748 scientists who are members of the American Association for the Advancement of Science, a leading scientific organization that also publishes the journal Science. The research was conducted in collaboration with the association.

Alan Leshner, the association's chief executive, told reporters that "science is being trumped" by factors including political views on climate change, religious beliefs on evolution and lack of scientific understanding about genetically modified foods.

"Speaking up for the importance of science to society is our only hope, and scientists must not shy away from engaging with the public, even on the most polarizing science-based topics," Leshner wrote in an editorial in *Science*.

Other areas with opinion gaps included:

- whether childhood vaccines such as those for measles, mumps and rubella should be mandatory (86 percent of the scientists said yes, compared with 68 percent of the public).
- using animals in biomedical research (89 percent of scientists favored it, compared with 47 percent of the public);
- the safety of eating foods grown with pesticides (68 percent of scientists said it was safe, compared with 28 percent of the public).

(Reporting by Will Dunham; Editing by Peter Cooney)

<http://news.yahoo.com/poll-finds-gaping-chasm-views-between-u-public-214238062.html>

Rob Taylor

C. NEW PAPER CLAIMS EXTREME LA NIÑAS TO BECOME MORE FREQUENT UNDER GLOBAL WARMING

[Bob Tisdale](#) / 5 hours ago

Guest Post by Bob Tisdale

"The new 2015 paper by Cai et al [Increased frequency of extreme La Niña events under greenhouse warming](#) has been getting a lot of alarmist attention recently. Examples: see the *CBS New* story [Climate change expected to bring more La Niñas](#), and the *BBC News* article [Study: Global warming 'doubles risk' of extreme weather](#), and, for those of you who are multilingual, see the German journal *Bild der Wissenschaft* post [Mehr Besuche der kalten Schwester von „El Niño“](#). [Thanks to bloggers Alec aka Daffy Duck, Paul Homewood and Werner Kohl for the heads-up.] Also see Paul Homewood's post [BBC – Global Warming Doubles Risk Of Extreme Weather](#) at NotALotOfPeopleKnowThat.<

Cai et al. (2015) 14 co-authors are a who's-who of climate scientists, including Michael McPhaden of NOAA's PMEL, who's written numerous papers about ENSO; and Eric Guilyardi, who's the lead author of Guilyardi et al. (2009) [Understanding El Niño in Ocean-Atmosphere General Circulation Models: progress and challenges](#).

We discussed Guilyardi et al. (2009) back in July 2012 in the post [here](#). As you may recall, it was a study of how poorly the CMIP3-archived climate models simulated ENSO...that the models basically simulated no ENSO processes correctly. Thus one of their conclusions was: *Because ENSO is the dominant mode of climate variability at interannual time scales, the lack of consistency in the model predictions of the response of ENSO to global warming currently limits our confidence in using these predictions to address adaptive societal concerns, such as regional impacts or extremes (Joseph and Nigam 2006; Power et al. 2006).*

Cai et al (2015) [Increased frequency of extreme La Niña events under greenhouse warming](#) is a companion paper to Cai et al (2013) [Increasing frequency of extreme El Niño events due to greenhouse warming](#). We discussed the earlier paper in the post [Our Climate Models Are Aglow with Whirling, Transient Nodes of Thought Careening through a Cosmic Vapor of Invention](#). It included a link to and discussion of [Bellenger et al. \(2012\)](#), which described how poorly the CMIP5-archived models simulated ENSO. Once again, the models simulate little if anything

correctly. The same arguments apply to the newer paper Cai et al (2015), so there's no need to repeat them, so please see the "[Climate Models are Aglow](#)" post.

The following is from an update to the "Climate Models are Aglow" post about the earlier paper. It should also apply to the newer paper:

Brian Kahn also covered Cai et al. (2013) in his ClimateCentral post [Climate Change Could Double Likelihood of Super El Ninos](#). (Thanks again Andrew for the link to the [post at HockeySchtick](#).) Brian Kahn's article included the following and a remarkable quote from Kevin Trenberth:

The core of Cai's results, that more super El Ninos are likely, was disputed by Kevin Trenberth, a senior scientist at the [National Corporation \[sic\] for Atmospheric Research](#).

He said some of the models used in the study overestimate the past number of El Nino events by a wide margin and do a poor job of representing them and their impacts.

"This seriously undermines the confidence that the models do an adequate job in ENSO (El Nino-Southern Oscillation) simulations and so why should we trust their future projections?" he said in an email.

Trenberth also said that some long-range climate models also fail to adequately simulate other natural climate patterns that influence El Nino let alone how they might also shift in a warming world.

Trenberth asked, "...so why should we trust their [climate models'] future projections?"

The obvious answer is _____ [I'll let you fill in the blank].

<http://wattsupwiththat.com/2015/01/28/new-paper-claims-extreme-la-ninas-to-become-more-frequent-under-global-warming/>

Don Shaw

D. SECRET EPA MEMO EXPOSED: HIDE THE SHIFT!

H. Sterling Burnett, The Heartland Institute

The Environmental Protection Agency is deliberately misleading the public about the basis for its efforts to restrict carbon dioxide emissions, according to a secret internal memo exposed by a Freedom of Information Act request filed by the Competitive Enterprise Institute (CEI).

According to the memo, written in 2009, senior EPA staff call for a "shift" from talking about climate science to pretending global warming is "about our neighbor with respiratory illness." In fact, actions to reduce carbon dioxide emissions can increase emissions of real pollutants! **READ**

MORE

<http://blog.heartland.org/2015/01/memo-reveals-bogus-epa-climate-strategy/>

E. TENTH INTERNATIONAL CONFERENCE ON CLIMATE CHANGE

Thursday & Friday

June 11-12, 2015

The Washington Court Hotel

525 New Jersey Avenue N.W. Washington, DC 20001

[\(register now open\)](#)

F. THE END OF SNOW? THIS IS A POOR WEATHER FORECAST.

By PORTER FOX FEB. 7, 2014

Read the entire article here: <http://www.nytimes.com/2014/02/08/opinion/sunday/the-end-of-snow.html?hp&rref=opinion&r=1>

"OVER the next two weeks, hundreds of millions of people will watch Americans like Ted Ligety and Mikaela Shiffrin ski for gold on the downhill alpine course. Television crews will pan across epic vistas of the rugged Caucasus Mountains draped with brilliant white ski slopes. What viewers might not see is the 16 million cubic feet of snow that was stored under insulated blankets last year to make sure those slopes remained white, or the hundreds of snow-making guns that have been running around the clock to keep them that way."

"Officials canceled two Olympic test events last February in Sochi after several days of temperatures above 60 degrees Fahrenheit and a lack of snowfall had left ski trails bare and brown in spots. Climatologist [Daniel Scott](#), a professor of global change and tourism at the University of Waterloo in Ontario, to analyze potential venues for future Winter Games. His thought was that with a rise in the average global temperature of more than 7 degrees Fahrenheit possible by 2100, there might not be that many snowy regions left in which to hold the Games. He concluded that of the 19 cities that have hosted the Winter Olympics, as few as 10 might be cold enough by midcentury to host them again. By 2100, that number shrinks to 6."

The planet has warmed 1.4 degrees Fahrenheit since the 1800s, and as a result, snow is melting. In the last 47 years, a million square miles of spring snow cover has disappeared from the Northern Hemisphere. Europe has lost half of its Alpine glacial ice since the 1850s, and if climate change is not reined in, two-thirds of European ski resorts will be likely to close by 2100."

"The same could happen in the United States, where in the Northeast, more than half of the 103 ski resorts may no longer be viable in 30 years because of warmer winters. As far for the Western part of the country, it will lose an estimated 25 to 100 percent of its snowpack by 2100 if greenhouse gas emissions are not curtailed — reducing the snowpack in Park City, Utah, to zero and relegating skiing to the top quarter of Ajax Mountain in Aspen."

Much of these environmental data come from a 2012 report, "[Climate Impacts on the Winter Tourism Economy in the United States](#)," by two University of New Hampshire researchers, Elizabeth Burakowski and Matthew Magnusson. The paper was commissioned by the [Natural Resources Defense Council](#) and a start-up advocacy group called [Protect Our Winters](#). The professional snowboarder Jeremy Jones started that group, known as POW, in 2007 when he realized that many of the slopes he had once ridden no longer held snow. It has since become the leading voice for those fighting to save winter, largely because few others are doing anything about it.

G. CLIMATE CHANGE WEEKLY #156:

UNINTENDED AND UNETHICAL CLIMATE POLICY CONSEQUENCES

National Weather Service forecasters have been tracking a low pressure area that moved from the Midwest into the Atlantic Ocean today, and is expected to become a strong nor'easter that will bring blizzard conditions to the northeastern U.S. The path of the system was captured in a NASA movie of NOAA's GOES-East satellite imagery. An

<http://wattsupwiththat.com/2015/01/26/tracking-the-blizzard-of-2015/>

H. CATASTROPHIC ANTHROPOGENIC VULCANOLOGY

Josh writes: Following the hilarious post on how Climate Change now causes volcanoes to erupt “everywhere”, Josh opines, “What next, anthropogenic sunshine?” Cartoons by Josh
<http://wattsupwiththat.com/2015/01/31/catastrophic-anthropogenic-vulcanology/>

I. TIME MAGAZINE’S JEFFREY KLUGER WRITES WHAT MIGHT POSSIBLY BE THE STUPIDEST ARTICLE ABOUT CLIMATE EVER – CLIMATE CHANGE CAUSES VOLCANOES

The stupid, it burns like a magnesium flare. Excerpt from the article: Now, you can add yet another problem to the climate change hit list: volcanoes. That’s the word from a new study conducted in Iceland and accepted for publication in Geophysical Research Letters. The finding is bad news not just for one comparatively remote...

<http://wattsupwiththat.com/2015/01/30/time-magazines-jeffrey-kluger-writes-what-might-possibly-be-the-stupidest-article-about-climate-ever-climate-change-causes-volcanoes/>

J. WHAT ARE YOUR FEARS ABOUT GLOBAL WARMING AND CLIMATE CHANGE?

Guest Post by Bob Tisdale

The title question is rarely, if ever, asked of people who are skeptical of human-induced global warming and climate change...for obvious reasons. If persons are skeptical of a future filled with climate catastrophes, regardless of whether they are caused by nature or by emissions of manmade greenhouse gases, then there...

<http://wattsupwiththat.com/2015/01/30/what-are-your-fears-about-global-warming-and-climate-change/>

K. A SIN OF COMMISSION

Guest essay by David Archibald

One Senate inquiry is addressing Australia’s drift towards a fuel crisis, a sin of omission on the part of the Rudd/Gillard government and the current Liberal one. Another Senate inquiry is investigating a sin of commission that started under Howard’s watch and continues to this day, namely the proliferation of...

<http://wattsupwiththat.com/2015/01/29/a-sin-of-commission/>

L. ABOUT THE CLAIMS THAT NORTHEAST U.S. BLIZZARDS HAVE BEEN AMPLIFIED BY HUMAN-INDUCED GLOBAL WARMING

Guest Post by Bob Tisdale

The media has been abuzz with claims that the January 2015 New England Blizzard was worsened by human-induced global warming. One of the outspoken activist members of the climate science community who has been quoted often on the storm is NCAR’s Kevin Trenberth. An example of Trenberth’s interviews can be...

<http://wattsupwiththat.com/2015/02/02/about-the-claims-that-northeast-u-s-blizzards-have-been-amplified-by-human-induced-global-warming/>

M. SUPER SOAKER ‘PINEAPPLE EXPRESS’ ORGANIZING FOR HEAVY RAIN IN CALIFORNIA THIS WEEKEND – AS MUCH AS 20 INCHES IN SOME AREAS

WUWT contributor Dr. Ryan Maue writes on his Twitter feed: Can't ask for better setup for enormous rainfall totals over NorCal & now into Bay Area in 5+ days Looking at the model output below, I tend to agree, if the pattern holds. It sets up Northern California for the perfect orographic lifting enhancement in...

<http://wattsupwiththat.com/2015/02/02/super-soaker-pineapple-express-organizing-for-heavy-rain-in-california-this-weekend-as-much-as-20-inches-in-some-areas/>

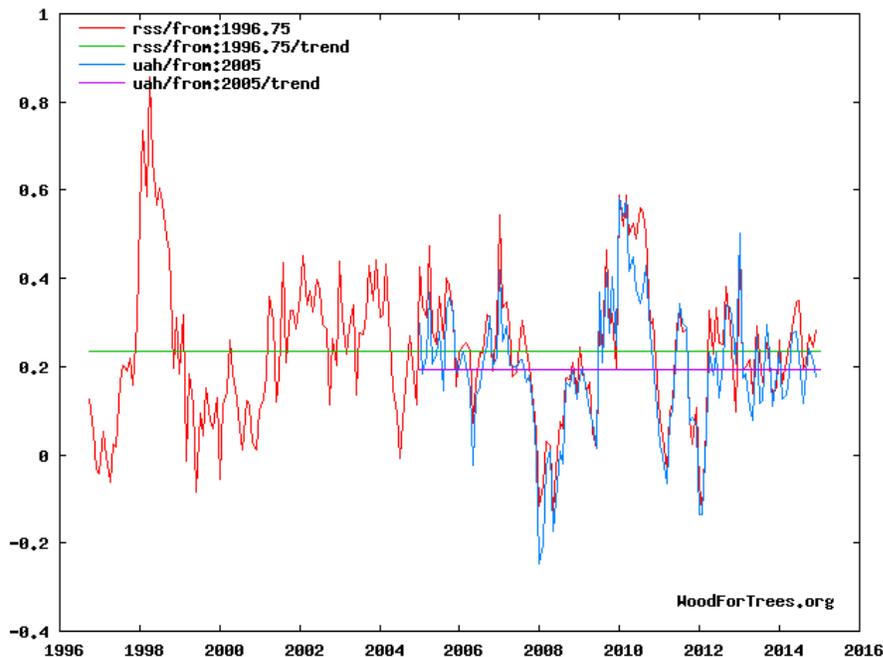
N. UNINTENDED AND UNETHICAL CLIMATE POLICY CONSEQUENCES

Should governments act now to prevent the possibility of dangerous human-caused climate change, even if the chances for future harm are exceedingly small? Those who say yes often base their answer on the idea of intergenerational equity: Present generations should not impose harms on future generations who will play no role in and have no control over the factors causing the harm.

<http://heartland.org/issues/environment>

O. ONLY SATELLITES SHOW PAUSE, WUWT? (NOW INCLUDES DECEMBER DATA)

Guest Post by Werner Brozek, Edited by Just The Facts: The above graphic shows that RSS has a slope of basically zero since October 1996, or a period of 18 years and 3 months. UAH, version 5.5 has a slope of basically zero for 10 years, since January 2005. I would like to thank Walter...

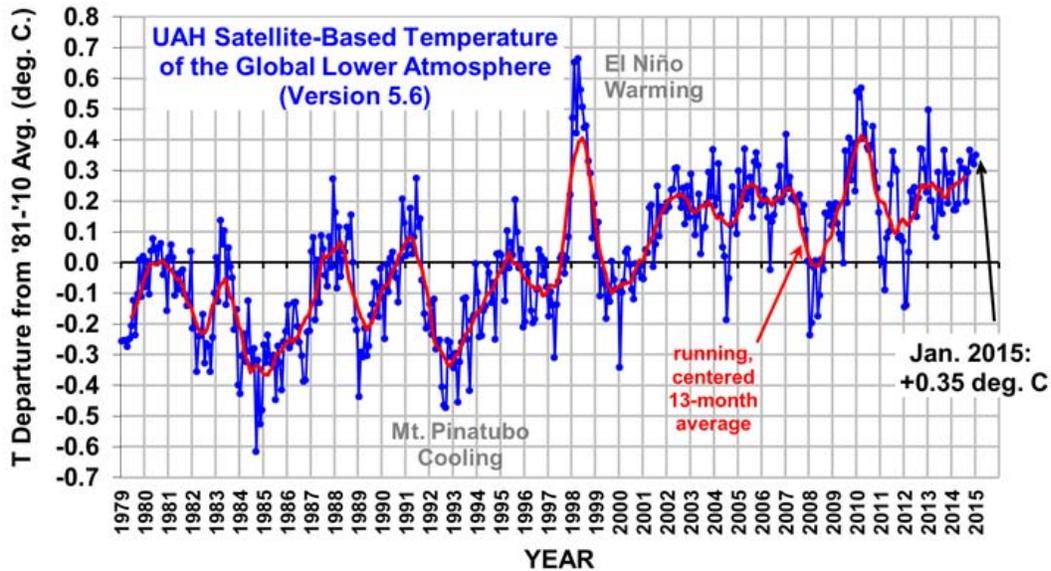


<http://wattsupwiththat.com/2015/02/03/only-satellites-show-pause-wuwt-now-includes-december-data/>

P. UAH GLOBAL TEMPERATURE UPDATE FOR JAN. 2015: **+0.35 DEG. C**

February 3rd, 2015

The Version 5.6 global average lower tropospheric temperature (LT) anomaly for January, 2015 is +0.35 deg. C, little changed from the December 2014 value of +0.32 deg. C (click for full size version):



The global, hemispheric, and tropical LT anomalies from the 30-year (1981-2010) average for the last 13 months are:

YR	MON	GLOBAL	NH	SH	TROPICS
2014	01	+0.291	+0.387	+0.194	-0.029
2014	02	+0.170	+0.320	+0.020	-0.103
2014	03	+0.170	+0.338	+0.002	-0.001
2014	04	+0.190	+0.358	+0.022	+0.092
2014	05	+0.326	+0.325	+0.328	+0.175
2014	06	+0.305	+0.315	+0.295	+0.510
2014	07	+0.304	+0.289	+0.319	+0.451
2014	08	+0.199	+0.244	+0.153	+0.061
2014	09	+0.294	+0.187	+0.401	+0.181
2014	10	+0.365	+0.333	+0.396	+0.189
2014	11	+0.329	+0.354	+0.303	+0.247
2014	12	+0.322	+0.465	+0.178	+0.296
2015	01	+0.351	+0.551	+0.152	+0.126

The global image for January, 2015 should be available in the next day or so [here](#).

Regards
George

File Name: 15a0014p.06

UNITED STATES COURT OF APPEALS

FOR THE SIXTH CIRCUIT

SIERRA CLUB,

Plaintiff-Appellant,

v.

ICG HAZARD, LLC,

Defendant-Appellee.

No. 13-5086

Appeal from the United States District Court
for the Eastern District of Kentucky at London.
No. 6:11-cv-00148—Gregory F. Van Tatenhove, District Judge.

Argued: October 8, 2013

Decided and Filed: January 27, 2015

Before: MERRITT, GIBBONS, and McKEAGUE, Circuit Judges.

COUNSEL

ARGUED: Benjamin A. Luckett, APPALACHIAN MOUNTAIN ADVOCATES, Lewisburg, West Virginia, for Appellant. Robert G. McLusky, JACKSON KELLY, PLLC, Charleston, West Virginia, for Appellee. **ON BRIEF:** Benjamin A. Luckett, Joseph M. Lovett APPALACHIAN MOUNTAIN ADVOCATES, Lewisburg, West Virginia, Stephen A. Sanders, APPALACHIAN CITIZENS LAW CENTER, Whitesburg, Kentucky, for Appellant. Robert G. McLusky, JACKSON KELLY, PLLC, Charleston, West Virginia, Kevin M. McGuire, Laura P. Hoffman, JACKSON KELLY, PLLC, Lexington, Kentucky, for Appellee. Karma B. Brown, HUNTON & WILLIAMS LLP, Washington, D.C., for Amicus Curiae.

GIBBONS, J., delivered the opinion of the court in which McKEAGUE, J., joined. MERRITT, J. (pp. 16–18), delivered a separate dissenting opinion.

OPINION

JULIA SMITH GIBBONS, Circuit Judge. This case, a citizen enforcement action under the Clean Water Act, requires consideration of the scope of the Act’s “permit shield” in the context of a general discharge permit. ICG Hazard, LLC, operating under a general permit, conducted surface coal mining in Kentucky. The company discharged selenium, a pollutant, into surrounding water. Although the permit did not specify effluent limitations for selenium, the discharge resulted in levels exceeding the threshold in the state’s water quality standard. The district court, finding that the permit shield protected ICG from liability, granted summary judgment in ICG’s favor. Through our analysis of the permit shield’s application in the context of a general permit, we also conclude that the permit shield covers ICG’s discharges in this case. We therefore affirm.

I.

ICG Hazard operates the Thunder Ridge surface coal mine in Leslie County, Kentucky. During the relevant time period, ICG’s running of Thunder Ridge was governed by a five-year Coal General Permit issued by the Kentucky Division of Water (“KDOW”) pursuant to the National Pollutant Discharge Elimination System (“NPDES”) under the authority of the U.S. Environmental Protection Agency. The general permit allowed ICG and certain other coal mining operations to discharge certain listed pollutants into the state’s water, within the conditions set out in the permit. The conditions included effluent limitations for several specific pollutants, but not for selenium, a naturally occurring element that endangers aquatic life once it reaches a certain concentration. But KDOW was aware of the potential for selenium discharges from the mines in the area. The general permit included a provision recognizing that possibility. KDOW used “one-time” monitoring—a single sampling during the five-year life of the permit—to determine whether selenium levels in surrounding bodies of water were within acceptable levels.

In August 2009, seeking to expand the reach of its surface coal mining at Thunder Ridge, ICG applied to KDOW to modify its coverage under the general permit. The renewal process required ICG to submit water samples from an existing discharge point. The samples showed that the selenium in the surrounding water exceeded the “acute” limit in Kentucky’s water quality standards. Those standards set the acute limit at twenty micrograms per liter.

In December 2010, Sierra Club notified ICG of its intent to bring a citizen suit based on the selenium levels. Sierra Club also supported a private citizen’s request for further testing. These further tests took place at six locations around Thunder Ridge. None of the tests revealed selenium levels above the acute limit. However, at two of the six sites, the levels exceeded the “chronic” limit of five micrograms per liter. Consequently, the Kentucky Department of Natural Resources (“KDNR”) took a “preventive enforcement action,” requiring ICG to test for selenium in the second quarter of 2011 and submit the results to KDNR. The U.S. Office of Surface Mining deemed KDNR’s response appropriate and notified Sierra Club that it would therefore take no further action.

Sierra Club brought this action in the Eastern District of Kentucky, alleging that ICG’s discharges of selenium violated the Federal Water Pollution Control Act (“Clean Water Act” or “CWA”), 33 U.S.C. § 1251 *et seq.*, and the Surface Mining Control and Reclamation Act (“Surface Mining Act”), 30 U.S.C. § 1201 *et seq.*, and seeking declaratory judgment, injunctive relief, and civil penalties. The district court awarded summary judgment in ICG’s favor on all claims. *Sierra Club v. ICG Hazard, LLC*, Civ. No. 11-148, 2012 WL 4601012 (E.D. Ky. Sept. 28, 2012). It determined that the Clean Water Act’s permit shield protected ICG from liability under the Clean Water Act. *Id.* The court held that, because the general permit did not set limits for selenium discharges, ICG could lawfully discharge provided it made proper disclosures. *Id.* at *6–9. As a result, ICG was also protected from liability for violation of Kentucky water quality standards under the Surface Mining Act; otherwise, the district court reasoned, the water quality standards would “supersede” the permit shield. *Id.* at *14.

On appeal, Sierra Club argues that the district court erred in finding that the permit shield applies. In Sierra Club’s view, the permit shield does not apply because the discharge of selenium was neither expressly authorized by the general permit nor reasonably contemplated by

KDOW when it issued the permit. Sierra Club further contends that the Surface Mining Act and the CWA are complementary regulatory schemes, and so holding ICG liable under the Surface Mining Act would not conflict with the CWA.

II.

We review a district court's grant of summary judgment *de novo*. *Keith v. Cnty. of Oakland*, 703 F.3d 918, 923 (6th Cir. 2013). Summary judgment is proper where no genuine issue of material fact exists and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a), (c). The initial burden of showing the absence of a genuine issue of material fact is on the moving party. *Bridgeport Music Grp., Inc. v. VM Music Corp.*, 508 F.3d 394, 397 (6th Cir. 2007) (citing *Celotex Corp. v. Cartrett*, 477 U.S. 317, 323 (1986)). We construe all reasonable inferences in favor of the non-moving party. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986). To support a genuine dispute, the non-moving party cannot rely on "the mere existence of a scintilla of evidence," and "must do more than simply show that there is some metaphysical doubt as to the material facts." *White v. Baxter Healthcare Corp.*, 533 F.3d 381, 389 (6th Cir. 2008) (internal quotation marks omitted).

III.

The Clean Water Act "is a comprehensive water quality statute designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *Ky. Waterways Alliance v. Johnson*, 540 F.3d 466, 469–70 (6th Cir. 2008) (quoting *PUD No. 1 of Jefferson Cnty. v. Wash. Dep't of Ecology*, 511 U.S. 700, 704 (1994)). The CWA seeks to achieve these goals through two principal mechanisms. First, it limits the discharge of pollutants through "a default regime of strict liability." *Piney Run Preservation Ass'n v. Cnty. Comm'rs of Carroll Cnty.*, 268 F.3d 255, 268–69 (4th Cir. 2001). The focal point of the regime is section 301 of the CWA, which provides that "the discharge of any pollutant by any person shall be unlawful," unless it falls within certain narrowly prescribed exceptions. 33 U.S.C. § 1311(a). The main exception to this blanket prohibition is the NPDES, contained in section 402 of the CWA, which provides for the issuance of permits allowing the discharge of pollutants within prescribed limits. 33 U.S.C. § 1342. *See Natural Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369, 1374 (D.C. Cir. 1977) ("[T]he legislative history makes clear that Congress intended the

NPDES permit to be the only means by which a discharger from a point source may escape the total prohibition of [§] 301(a).”). Second, section 303 of the CWA “requires each State, subject to federal approval, to institute comprehensive water quality standards, establishing water quality goals for all intrastate waters.” *PUD No. 1 of Jefferson Cnty.*, 511 U.S. at 704 (citing 33 U.S.C. §§ 1311, 1314). These standards “provide a supplementary basis . . . so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.” *Ky. Waterways Alliance*, 540 F.3d at 470–71 (quoting *PUD No. 1 of Jefferson Cnty.*, 511 U.S. at 703).

Our focus here is on the CWA’s first mechanism: the NPDES’s permitting scheme. Under the NPDES, the permitting authority may issue a fixed-term permit allowing a point-source discharger to discharge specific pollutants—set out in the permit—subject to limitations on “the quantities, rates, and concentrations” of the specific pollutants being discharged. *Arkansas v. Oklahoma*, 503 U.S. 91, 101 (1992); see 33 U.S.C. § 1342. A state may establish its own permitting authority which, once authorized by the EPA, is then responsible for issuing discharge permits within the state. *Id.* § 1342(b). Kentucky has authority to issue permits for waters within the Commonwealth, see *Approval of Kentucky’s NPDES Program*, 48 Fed. Reg. 45, 597 (Oct. 6, 1983), and does so through its Division of Water.

A permitting authority may issue individual permits, 40 C.F.R. § 122.21, and general permits, 40 C.F.R. § 122.28. While an individual permit applies to one specific discharger, a general permit covers an entire category of dischargers within a geographic area. It may be issued where, within that area, the “categories or subcategories of discharges . . . or disposal facilities all”:

- (A) Involve the same or substantially similar types of operations;
- (B) Discharge the same types of wastes or engage in the same types of sludge use or disposal practices;
- (C) Require the same effluent limitations, operating conditions, or standards for sewage sludge use or disposal;
- (D) Require the same or similar monitoring; and
- (E) In the opinion of the Director, are more appropriately controlled under a general permit than under individual permit.

40 C.F.R. § 122.28(a)(2)(ii)(A)–(E). If these criteria are satisfied, the permitting authority—on its own initiative or in response to an application—then “develops a draft general permit incorporating the necessary terms and conditions.” Office of Water Enforcement and Permits, U.S. Env’tl. Prot. Agency, General Permit Program Guidance 1, 20 (1988) [hereinafter “General Permit Guidance”]. Once the permit is in place, individual operators may “file a Notice of Intent . . . stating that they plan to operate under the general permit, and absent a negative ruling by the agency, discharges that comply with the terms of the general permit are automatically authorized.” *Tx. Indep. Producers & Royalty Owners Ass’n v. EPA*, 410 F.3d 964, 968 (7th Cir. 2005). This generally allows dischargers to avoid the “sampling and analysis associated with individual permit applications,” General Permit Guidance at 3, and—in the EPA’s view—carries several advantages for permitting authorities. *Id.* at 33–35.

If an individual prospective discharger is unable to operate under a general permit, it must apply instead for an individual permit. The application process for an individual permit takes place as follows:

The applicant discloses the nature of its effluent discharges to the permitting authority. The permitting authority analyzes the environmental risk posed by the discharge, and places limits on those pollutants that . . . it “reasonably anticipates” could damage the environmental integrity of the affected waterway.

Piney Run, 268 F.3d at 268–69 (quoting *In re Ketchikan Pulp Co.*, 7 E.A.D. 605, 1998 WL 284694 (E.P.A. May 15, 1998)); see also *Atl. States Legal Found., Inc. v. Eastman Kodak Co.*, 12 F.3d 353, 358 (2d Cir. 1993). A permit holder violates the Act by exceeding the discharge limits that the permit explicitly provides. But the statute’s “permit shield”—stemming from section 1342(k) of the CWA—insulates permit holders from liability for certain discharges of pollutants that the permit does not explicitly mention. The purpose of the shield is “to insulate permit holders from changes in various regulations during the period of a permit and to relieve them of having to litigate in an enforcement action the question whether their permits are sufficiently strict.” *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 138 n.28 (1977).

In *Piney Run*, the Fourth Circuit considered the scope of the permit shield in the context of an individual permit. Applying *Chevron* deference, the court found the language of section 1342 ambiguous. *Piney Run*, 268 F.3d at 266–68. The court therefore deferred to the EPA’s

reasonable interpretation of the shield, under which a permit holder is exempted from liability for the discharge of pollutants not expressly mentioned in the permit, provided the discharges meet two prongs. First, the permit holder must comply with the CWA's reporting and disclosure requirements. *Piney Run*, 268 F.3d at 268 (citing *Ketchikan*, 1998 WL 284694 at *11). Second, most importantly for the present case, the discharges must be within the permitting authority's "reasonable contemplation." *Id.* (citing *Ketchikan*, 1998 WL 284694 at *11). The Fourth Circuit explained:

Because the permitting scheme is dependent on the permitting authority being able to judge whether the discharge of a particular pollutant constitutes a significant threat to the environment, discharges not within the reasonable contemplation of the permitting authority during the permit application process, whether spills or otherwise, do not come within the protection of the permit shield.

Id. at 268.

The *Piney Run* court did not consider—and no other circuit has yet had the opportunity to consider—the applicability and scope of the permit shield when the discharger's operations are governed by a *general* permit. Given that a general permit covered ICG's operations at Thunder Ridge, we must consider those issues in this case.

IV.

Sierra Club first urges us to hold, effectively, that pollutants may only be discharged if they are explicitly listed in the general permit, thus severely limiting the impact of the permit shield. In support, Sierra Club points to an EPA policy statement stating that "general permits authorize the discharge of all pollutants within the *specified scope* of a particular general permit." EPA Revised Policy Statement on Scope of Discharge Authorization and Shield Associated with NPDES Permits, at 3 (1995) [hereinafter "EPA Revised Policy Statement"] (emphasis added). According to Sierra Club, the "specified scope" language makes clear that any pollutants not specified in the permit may not be discharged.

The district court rejected this argument and, for the same reasons, so do we. As the district court explained, the Second Circuit addressed and rejected this same argument in the individual-permit context in *Atlantic States Legal Foundation v. Eastman Kodak Co.*, 12 F.3d

353, 357 (2d Cir. 1993). *Atlantic States* is significant because the EPA later adopted the Second Circuit’s analysis in a formal adjudication proceeding in *In re Ketchikan Pulp Co.*, 7 E.A.D. 605, 1998 WL 284694 (E.P.A. May 15, 1998). Reviewing the regulatory framework as a whole, the district court explained, in line with the *Ketchikan* court: “[I]t is clear that the permit is intended to identify and limit the most harmful pollutants while leaving the control of the vast number of other pollutants to disclosure requirements.” *Sierra Club*, 2012 WL 4601012, at *8 (quoting *Atl. States*, 12 F.3d 353 at 357).

Applying *Chevron* deference, we hold that the EPA’s interpretation of the statutory scheme—allowing some pollutants to be discharged even though not specifically listed in the general permit—is “a sufficiently rational one to preclude a court from substituting its judgment for that of the EPA.” See *Chem. Mfrs. Ass’n v. Natural Res. Def. Council, Inc.*, 470 U.S. 116, 125 (1985) (quoting *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 75 (1975)). We must first ask whether “Congress has directly spoken to the precise question at issue.” *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842–43 (1984). If congressional intent is clear from the statute, “that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.” *Id.* at 843. If, however, the statute is ambiguous, we defer to the agency’s interpretation, provided that interpretation was promulgated via notice-and-comment rulemaking or a formal adjudication, *Christensen v. Harris Cnty.*, 529 U.S. 576, 587 (2000), and provided it is reasonable, *Chevron*, 467 U.S. at 843.

The statute’s permit-shield language is ambiguous because, while it states the exception to the other provisions of the CWA that “compliance with a permit issued pursuant to this section shall be deemed compliance” with the statutory scheme, 33 U.S.C. § 1342(k), it does not make the scope of that exception clear, see *Piney Run*, 268 F.3d at 267; *Atl. States*, 12 F.3d at 357–58. Turning to the second step of *Chevron*, we find the EPA’s interpretation in *Ketchikan* reasonable. The EPA explained the practical impossibility of identifying and limiting every potential compound or chemical in a given discharge. *Id.* (citing *Atl. States*, 12 F.3d at 257). Consequently, compliance would be impossible and the potential for litigation limitless. *Ketchikan*, 1998 WL 284964, at *9–10. This bolsters the EPA’s interpretation of what Congress

intended in the statute, at least enough to make that interpretation reasonable under *Chevron*. Thus, we defer to its conclusion.

Like the district court, we are not persuaded by Sierra Club's argument that this analysis should be confined to the individual-permit context and that the EPA's "specified scope" language limits the permissible discharges to pollutants listed in the permit. The EPA's interpretation is contained in its adjudication in *Ketchikan*, on which the *Piney Run* court heavily relied in formulating its two-pronged test. See *Piney Run*, 268 F.3d at 267–69. *Ketchikan* considered and synthesized the pre-existing policy statements, along with many other EPA adjudications and memoranda. See *Ketchikan*, 1998 WL 284694, at *10, 12 & n.34. And although the decision involved an individual permit, the EPA's language is not restricted to that context. On the contrary, it suggests that it relates to the permit shield as it applies to all permits, including general ones. The decision broadly refers to "NPDES permits," the "overall NPDES regulatory scheme," and the "NPDES permitting scheme." *Id.* at *11. It also provides the following policy support for the its rule:

Although in theory the Agency could structure permits to prohibit the discharge of all pollutants except those listed in the permit, such an approach would require the Agency to include in the permit a list of every pollutant or combination of pollutants that conceivably might be contained in the applicant's wastestreams, and to determine which of those pollutants the Agency considered appropriate for discharge. Since any given wastestream may contain hundreds of pollutants, such a permit-writing approach would be unduly burdensome and costly, and ultimately, impractical. As the Agency has acknowledged: "it is impossible to identify and rationally limit every chemical or compound present in a discharge of pollutants." Consequently, the Agency has determined that the goals of the CWA may be more effectively achieved by focusing on the chief pollutants and wastestreams established in effluent guidelines and disclosed by permittees in their permit applications, rather than by attempting to identify the hundreds or thousands of pollutants potentially present in permittees' wastestreams.

Id. at *9.

This reasoning applies with even more force when dealing with general permits. There, absent the permit shield, the permitting authority would not only need to identify the many pollutants that a single polluter could discharge, but all of the pollutants and combinations of pollutants that could be discharged by all polluters that may later fall under the general permit. It

would be anomalous for the EPA to impose a different standard for general permits. This is particularly so given the EPA's statement that "[a] general permit is identical to an individual permit regarding effluent limitation, water quality standards, monitoring and sampling requirements, and enforceability." General Permit Guidance, at 3–4.

Overall, the EPA's position, again entitled to deference as a reasonable interpretation of an ambiguous statute, suggests no desire on the part of the EPA to eliminate the permit shield in the context of a general permit. We therefore reject Sierra Club's contention that liability should exist for the discharge of any chemical or compound not specifically itemized in the permit.

V.

Having decided that the permit shield applies here, we must next consider the scope of the permit shield that applies to a general permit. Here, the first prong of the *Piney Run* test—whether the polluter complied with its reporting requirements—is clearly satisfied because ICG disclosed the selenium discharge when it requested modification of its permit. Sierra Club argues that this was not enough. In its view, ICG's failure to disclose the discharge at the beginning of the application process negates the protection of the permit shield. It compares this case to the earlier and more specific disclosures that were provided in *Alaska Community Action on Toxics v. Aurora Energy Services, LLC*, 940 F. Supp. 2d 1005 (D. Alaska 2013), *rev'd*, 765 F.3d 1169 (9th Cir. 2014). But the *Alaska Community Action* disclosures are beside the point. Under the first prong of the *Piney Run* test, the key is that the polluter complied with the disclosure requirements under the relevant permit. Those requirements of the permit in *Aurora Energy* were much stricter than they were in the present case. *See Aurora Energy*, 940 F. Supp. 2d at 1019–20. ICG complied by providing a one-time sample at some time during the life of the permit; it did not have to disclose at the time it applied. This satisfies the first prong under *Piney Run*.

This conclusion does not necessarily decide the issue, however. We must decide whether the second prong also applies in the context of a general permit and, if so, whether ICG's actions were within the ambit of KDOW's "reasonable contemplation."

In our view, the second prong does indeed apply in the context of a general permit, and polluters must therefore show that the discharge was within the reasonable contemplation of the permitting authority. We again defer under *Chevron* to the EPA's reasonable interpretation of an ambiguous piece of legislation. As stated, that legislation provides simply that "compliance with a permit issued pursuant to this section shall be deemed compliance" with the statutory scheme. 33 U.S.C. § 1342(k). But it is ambiguous as to the precise mechanism and scope of the permit shield, which requires us to defer to a reasonable agency interpretation. *See Chevron*, 467 U.S. at 843.

As discussed, the EPA spoke in broad terms in *Ketchikan* about the permit shield, not limiting its analysis to individual permits but referring to the "overall NPDES regulatory scheme." 1998 WL 284964, at *11. The EPA has also stated that the "[a] general permit is identical to an individual permit regarding effluent limitation, water quality standards, monitoring and sampling requirements, and enforceability." General Permit Guidance, at 3–4.

The EPA reasonably interprets the statute as imposing the same requirements on polluters under general permits as under individual permits. Specifically, it is reasonable for the EPA to require, even in the general-permit setting, that the discharges be within the agency's reasonable contemplation. The EPA's rationale for the scope of the permit shield is to more effectively administer the CWA by avoiding an unduly burdensome permit-writing scheme. *See Ketchikan*, 1998 WL 284964, at *9. In other words, it can police statutory compliance more effectively by not imposing liability for discharges that would be within the permitting authority's reasonable contemplation in any event but would overburden the authority to specifically include in the permit. If the discharge is within the authority's reasonable contemplation, it can determine in advance the steps necessary to protect the water quality, such as including an effluent limit for the specific pollutant. *See Piney Run*, 268 F.3d at 268 ("Because the permitting scheme is dependent on the permitting authority being able to judge whether the discharge of a particular pollutant constitutes a significant threat to the environment, discharges not within the reasonable contemplation of the permitting authority . . . do not come within the protection of the permit shield.").

By contrast, it would not help to administer the CWA's scheme more effectively if polluters, whether covered by an individual permit or a general permit, could escape liability for extraordinary discharges not within the authority's reasonable contemplation. The permit shield would be counterproductive, for example, if it would allow the discharge of arsenic—far beyond an authority's reasonable contemplation—to take place without consequences. This concern is equally present in the general-permit context, which likely explains the EPA's insistence that the general and individual permits be identical in their enforceability. Thus, the EPA's reasonable interpretation of the permit shield in *Ketchikan* does not evince any intention to abandon the second prong of the *Piney Run* test in the general-permit context.

The *Piney Run* court held that the individual permit holder was shielded from liability because the discharge of the pollutant was within the permitting authority's reasonable contemplation at the time of the application for the permit. *Id.* at 268. In the general permit context, of course, an authority cannot reasonably contemplate each specific facility's discharges when it first issues the general permit because the agency cannot know which specific facilities will seek coverage under the general permit. But the authority can contemplate the pollutants that may be discharged generally from polluters that may later be covered by the general permit. The authority can then set the effluent limitations necessary in order to protect the water quality.

This complements one of the principal purposes of the CWA and its permit shield, which is to allocate responsibility for discharges on the party that had the burden of gathering or disclosing information. As the district court correctly explained, “[t]he only significant difference [between an individual permit and a general permit] is that ‘a larger share of the responsibility for the information gathering process leading up to the development of a general permit falls on the permitting authority rather than on the permit applicants.’” *Sierra Club*, 2012 WL 4601012, at *7 (quoting General Permit Guidance at 33–34). As a result:

by virtue of being deemed eligible for a general permit, the permitting agency has held that it can properly regulate a class of dischargers without detailed information about individual [discharges], but the permitting agency also has flexibility to institute specific control mechanisms as necessary. Therefore, if a general permit is insufficient in some respect, the complaint should be directed at the permitting authority.

Id. (internal quotation marks omitted). It follows that an individual polluter should not be liable when it meets the disclosure requirements for a particular pollutant and the discharge of the pollutant at issue was within the authority's reasonable contemplation at the time the general permit was issued.

ICG's discharge of selenium was within KDOW's reasonable contemplation because KDOW knew at the time it issued the general permit that the mines in the area could produce selenium. Indeed, a provision of the permit recognized the possibility that any of the mines under its purview may discharge selenium. KDOW considered the possibility and included a one-time monitoring requirement as a condition of coverage under the general permit. In addition, KDOW's handling of post-issuance evidence of selenium discharges—requiring continued monitoring pursuant to a preventive enforcement action—demonstrates, by negative implication, that selenium discharges were within KDOW's reasonable contemplation, as it declined to otherwise impose additional selenium limits or conditions on ICG's Thunder Ridge operations. The permit shield therefore covers ICG's discharge of selenium. We affirm the district court's decision on this claim.

VI.

Sierra Club's third, fourth and fifth claims allege that ICG's selenium discharges also resulted in violations of its surface mining permit issued by KDNR pursuant to authority granted by the federal Office of Surface Mining under the Surface Mining Act. When the parties stipulated that these claims are premised on the same point source discharges that form the basis for Sierra Club's first and second claims for relief under the CWA, the district court awarded summary judgment to ICG on the third, fourth and fifth claims as well. The court concluded that enforcement of water quality standards promulgated pursuant to the Surface Mining Act would contravene § 702(a)(3) of the Surface Mining Act by effectively "superseding" the permit shield protection ICG is entitled to under the CWA.

The district court acknowledged that effluent limitations enforced under the CWA and water quality standards enforced under the CWA and Surface Mining Act are distinct concepts. The court also recognized, however, that the state water quality standards incorporated into ICG's surface mining permit—and said by Sierra Club to have been violated as a result of ICG's

selenium discharges—are essentially the same standards that Sierra Club asserted in support of its claims that the same selenium discharges violated effluent limitations under the CWA. Yet, because of the permit shield, ICG was deemed to be in compliance with the CWA and therefore not subject to enforcement action, by governmental agency or citizen suit. To hold ICG liable under the Surface Mining Act for violating the same standards, the court concluded, would contravene § 702(a)(3) of the Surface Mining Act, which provides in relevant part that “[n]othing in this Act shall be construed as ‘superseding, amending, modifying, or repealing’ the CWA or rules or regulations promulgated thereunder. 30 U.S.C. § 1292(a). In so ruling, the court relied heavily on *In re Surface Mining Regulation Litigation*, 627 F.2d 1346, 1366–68 (D.C. Cir. 1980). See *Sierra Club*, 2012 WL 4601012 at *12–14.

We agree. The D.C. Circuit’s decision in *Surface Mining Regulation*, here argued in support of each side’s position, is both instructive and illustrative. In *Surface Mining Regulation*, the court recognized that Congress intended regulation under the CWA and regulation under the Surface Mining Act to be complementary. Where regulation under the CWA is silent, regulation under the Surface Mining Act is permissible, but where there is regulatory overlap, § 702(a)(3) of the Surface Mining Act expressly directs that the CWA and its regulatory framework control, so as to afford consistent standards nationwide. *Surface Mining Regulation*, 627 F.2d at 1367. The court defined this “silence” in the CWA regulatory scheme as an “absence of regulation” or a “regulatory gap.” *Id.*

Sierra Club argues that this is precisely the situation we have here. Because operation of the permit shield bars enforcement of Kentucky’s water quality-based effluent limitations under the CWA, Sierra Club contends there is a regulatory gap that may and should be filled by enforcement of the water quality standards under the Surface Mining Act. Yet, as the reasoning of *Surface Mining Regulation* makes clear, enforcement of the permit shield prescribed in CWA § 402(k) is not an “absence of regulation.” Rather, the operation of the statutory permit shield is closely akin to the “variance from effluent limitations” and “exemptions from effluent requirements” under the CWA that were addressed in *Surface Mining Regulation*. The court held that such variances and exemptions are actually “substantive elements of regulation” under the CWA, not “regulatory gaps.” *Id.* at 1369. To permit regulation under the Surface Mining

Act in a manner inconsistent with the CWA or in conflict with regulatory practice under the CWA, the court held, would contravene the mandate of § 702(a)(3) of the Surface Mining Act. Id.

As the district court concluded, the operation of the permit shield in this case “mirrors” the operation of the variance and exemptions presented in Surface Mining Regulation. The permit shield is not an absence of regulation but a substantive element of regulation under the CWA that affords consistent treatment to NPDES permit holders nationwide. To hold, in connection with the very same selenium discharges, that ICG is in compliance with Kentucky water quality-based effluent limitations for purposes of the CWA but in violation of those same water quality standards under the Surface Mining Act would create an inconsistency or conflict in regulatory practice, in direct contravention of § 702(a)(3).

Hence, because Sierra Club’s claims under the Surface Mining Act are premised on ICG discharges of selenium that are violative of essentially the same water quality standards with which ICG is deemed to be in compliance for purposes of the CWA; and because the CWA regulatory framework controls over inconsistent regulation under the Surface Mining Act, it follows that Sierra Club’s claims under the Surface Mining Act are effectively barred by operation of the permit shield under the CWA. Accordingly, on de novo review, we find no error in the district court’s award of summary judgment to ICG on Sierra Club’s claims under the Surface Mining Act.

VII.

For the foregoing reasons, we affirm the decision of the district court.

DISSENT

MERRITT, Circuit Judge, dissenting. The majority allows the silence of local Kentucky environmental regulators to turn the Clean Water Act on its head. They do this, despite the undisputed fact that illegal toxic discharges of dirty selenium water occurred, because they believe we must assume that Kentucky’s “general permit” tacitly authorizes toxic discharges of selenium. In so doing, they extend to the one-size-fits-all “general” permit a presumption previously applicable only to custom-tailored, “individual permits.” Because I find neither the authority nor the intention to allow these flagrant and unlimited violations of the Clean Water Act in the general permit at issue here, I dissent.

Congress enacted through the Clean Water Act a “national policy that the discharge of toxic pollutants in toxic amounts be prohibited.” 33 U.S.C. § 1251(a)(3). Congress ordered the EPA to include selenium—an element toxic to human and aquatic life—in the early lists of prohibited toxic pollutants. *See* Publication of Toxic Pollutant List, 43 Fed. Reg. 4108, 4108–09 (Jan. 31, 1978) (codified and updated at 40 C.F.R. § 401.15). In compliance with the Act, the EPA promulgated and Kentucky adopted water quality standards that established upper limits on selenium concentrations for long-term discharges (5 µg/L for discharges exceeding 96 hours) and short-term discharges (20 µg/L for discharges exceeding one hour). That is the law, and my colleagues are turning a blind eye to its enforcement. With this opinion in hand, coal mines in Kentucky are at liberty to violate the Clean Water Act.

Congress allows neither Kentucky nor the EPA to issue permits approving discharges in excess of those regulations. 40 C.F.R. § 122.4. To the extent that the Act authorizes Kentucky’s regulators to issue permits, those permits’ “[l]imitations must control all pollutants” that in the agency’s assessment “will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.” 40 C.F.R. § 122.44(d)(1). Everyone agrees that the toxic discharges of selenium from this mine exceed those limits. *See, e.g.*, ICG Hazard Permit Appl. 6 (showing selenium concentrations of 29.2 µg/L at one of the mine’s discharge points). But the mine and my colleagues believe the mine’s compliance with a general permit

silent about selenium should exempt it from liability for its knowing violation of Congress's national policy against polluting the waters.

The “permit shield” invoked here functions primarily to protect permit holders’ reliance on valid permits by “shielding” them from liability if regulators promulgate more rigorous standards during the term of a valid permit. *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 138 n.28 (1977). In the context of an individual permit—a category of contractual permits issued after significant exchanges between a polluter and the issuing agency—the Fourth Circuit has interpreted this shield to protect polluters from liability for discharges tacitly approved by regulators. *See Piney Run Pres. Ass’n v. Cnty. Comm’rs*, 268 F.3d 255, 267–68 (4th Cir. 2001). Under the *Piney Run* approach, when an individual permit applicant discloses its expected discharges to a permitting authority, compliance with the terms of the individual permit may protect that polluter from liability for those disclosed emissions even if the permit does not specifically authorize those emissions. The polluter is thus permitted to rely on the regulators’ acquiescence to unproblematic emissions, just as contracting parties may sometimes rely on assurances provided during contract negotiations when interpreting a resulting ambiguous agreement.

The majority opinion suggests that if we decline to extend this interpretation to cover general permits “the permitting authority would not only need to identify the many pollutants that a single polluter could discharge, but all of the pollutants and combinations of pollutants that could be discharged by all polluters that may later fall under the general permit.” Maj. Op. at 9. It relies in part on a thirty-five-year-old EPA observation that “it is impossible to identify and rationally limit every chemical or compound present in a discharge of pollutants.” *Id.* at 9 (quoting *Ketchikan Pulp Co.*, 7 E.A.D. 605, 618 (EAB 1998)); *see Ketchikan Pulp Co.*, 7 E.A.D. at 618 n.29 (citing 45 Fed. Reg. 33,516, 33,523 (May 19, 1980) (grounding that impossibility in “regulatory gaps” that close when EPA establishes regulations for a particular pollutant)).

This concern was valid when it was expressed at the beginning of the permitting process in the 1970s. *See Ketchikan*, 7 E.A.D. at 618 & n.29 (quoting *Atl. States Legal Found., Inc., v. Eastman Kodak Co.*, 12 F.3d 353, 358 (2d Cir. 1993) (quoting an EPA memorandum from Apr. 28, 1976)). It is also likely valid when applied to chemicals not covered by clear EPA

regulations or state equivalents. *See Atl. States Legal Found*, 12 F.3d at 357–58 (rejecting a hyperbolic interpretation that would require explicit limits on all chemicals, including water). But neither a long-overcome dearth of validated standards nor an administrative prerogative to disregard the insignificant components of a polluter’s discharge justifies extending the permit shield to cover the knowing and otherwise-illegal discharge of one of the most clearly regulated toxic pollutants under the Clean Water Act.

The Clean Water Act prohibits the discharge of selenium without a permit. The EPA and Kentucky codified clear legal limits for those permits. Deference to a prior administrative choice to focus on the most dangerous chemicals and work with good faith applicants to advance the goals of the Clean Water Act does not require us to turn a blind eye to the knowing discharge of a notorious toxic pollutant. Kentucky’s agency lacked the authority to explicitly authorize a discharge of selenium in violation of the Clean Water Act. I see no reason to infer an *ultra vires* authorization for that illegal discharge from the state agency’s silence in its general permit. I would allow the plaintiff to proceed under the citizen suit provision of the Clean Water Act.



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

JAN 07 2015

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

MEMORANDUM

SUBJECT: Use of Next Generation Compliance Tools in Civil Enforcement Settlements

FROM: Cynthia Giles, Assistant Administrator

A handwritten signature in blue ink that reads "Cynthia Giles".

TO: Regional Counsels
Regional Enforcement Division Directors
Regional Enforcement Coordinators
OECA Office Directors
Office of Civil Enforcement Division Directors
Office of Site Remediation Enforcement Division Directors
Federal Facility Enforcement Office Staff Directors

I. Introduction

Next Generation Compliance is our initiative to increase compliance with environmental regulations by using advances in pollutant monitoring and information technology combined with a focus on designing more effective regulations and permits to reduce pollution. Next Gen consists of five interconnected components, including Innovative Enforcement, each of which is designed to move us forward toward higher compliance and more environmental benefits from our regulations and enforcement authorities.¹ This memorandum focuses on the use of Next Gen compliance tools in civil enforcement settlements, which is a subset of the Innovative Enforcement component.

While case teams must consider a number of different case-specific facts and factors in arriving at appropriate settlements that achieve environmental compliance and are consistent with relevant law and applicable EPA guidance,² case teams are expected to consider these Next Gen compliance tools in all cases other than expedited settlements, and to include them whenever appropriate in civil judicial and administrative settlements.³ These tools can be incorporated into settlements in a variety of ways, such

¹ For a full description of Next Generation Compliance see the *Next Generation Compliance: Strategic Plan*, October 2014, at <http://www2.epa.gov/compliance/next-generation-compliance-strategic-plan-2014-2017>.

² This memorandum is to be read and implemented in conjunction with other OECA civil settlements guidance. Guidance documents that are publicly available can be accessed at <http://www2.epa.gov/enforcement/policy-guidance-publications>.

³ This memorandum is intended for use by EPA personnel and does not create any right or benefit, substantive or procedural, enforceable at law by a party against the United States, its agencies, its officers, or any person. This memorandum is not intended to supersede any statutory or regulatory requirements or agency policy. Any

as injunctive relief, mitigation, or Supplemental Environmental Projects.⁴ The extent to which these tools are appropriate and how they are included in a settlement will depend on the particular facts and circumstances of each case.⁵

Next Gen compliance tools in settlements are often defined by one or more of these three key features: 1) use of a practice or requirement that is not yet commonly included in most settlements; 2) use of modern information technology and/or advanced technology so that information about pollutant releases and their qualitative levels is available closer to real time, is more accessible, and is more complete; and 3) use of approaches to provide an effective structure for the settling party to comply with settlement requirements without increasing the EPA's oversight burden.

More specifically, these tools include:⁶

- Advanced monitoring, including both point source emission/discharge monitoring and ambient monitoring (e.g., fence-line monitoring of air pollution at the border of a facility),
- Independent third party verification of a settling party's compliance with settlement obligations,
- Electronic reporting, and
- Public accountability through increased transparency of compliance data.

Including these tools in settlements can enhance compliance with settlement provisions and environmental requirements by: 1) helping regulated entities more easily identify and address environmental compliance problems and report compliance information to the EPA and 2) facilitating review and analysis by the EPA and the public of meaningful environmental compliance information. Whenever appropriate, the agency will use its legal and settlement authorities to find innovative and effective ways to incorporate Next Gen compliance tools in enforcement settlements.⁷

inconsistencies between this memorandum and any statute, regulation, or policy should be resolved in favor of the statutory or regulatory requirement, or policy document, at issue.

⁴ See policies on Supplemental Environmental Projects at <http://www2.epa.gov/enforcement/policy-guidance-publications#sep> and EPA's memorandum on "Securing Mitigation as Injunctive Relief in Certain Civil Enforcement Settlements (2nd Edition) (Nov. 14, 2012)" at <http://www2.epa.gov/sites/production/files/2013-10/documents/2ndeditionsecuringmitigationmemo.pdf>.

⁵ Next Gen compliance tools can be considered in settlements that require some form of injunctive relief but may also be appropriate to consider as SEPs in certain penalty-only cases.

⁶ This list of Next Gen tools is not exhaustive. There may be other Next Gen approaches that do not easily fit into one of these four categories, yet are equally effective at increasing compliance. For example, tools in which the settling party's actions will not only improve its compliance but are also directed at improving compliance among its distributors, vendors, contractors, or suppliers.

⁷ Fully consistent with the expectations set forth in this memorandum, EPA's FY2015 Action Plan for the Cross-Agency Strategy for Communities, states in section 3 that by September 30, 2015, EPA will seek to incorporate the use of monitoring tools into negotiated enforcement settlements or EPA-issued permits in 1-2 environmentally overburdened communities per region as appropriate. The Action Plans can be found at <http://www2.epa.gov/planandbudget/fy-2015-cross-agency-strategies-action-plans>.

II. Benefits of Next Generation Compliance Tools

All four types of Next Gen compliance tools discussed below have the potential to promote compliance and provide benefits to the EPA, the public, and settling parties when they are incorporated into enforcement settlements. Some are particularly effective when used in tandem (e.g., fence-line monitoring and transparency). Use of these tools can help the EPA conserve oversight resources by having settlement compliance information provided in a more readily available format and available to outside parties (such as the public) who can assist in monitoring compliance. Some tools allow individuals and communities that are impacted by a facility's environmental noncompliance to have real-time access to environmental information stemming from a settlement. The settling party could benefit from the use of these tools; for example, a more transparent demonstration of compliance with settlement obligations may help the settling party's relationship with its neighboring community. In some cases, the use of these tools may also be appropriate as future conditions in the regulated entity's upcoming permit, and thus the settlement document could specify that the settling party has agreed to such provisions being included in its next permit issuance or modification.

A. Advanced monitoring.

Advanced monitoring refers to a broad range of sampling and analytic equipment, systems, techniques, practices and technologies for better detecting and measuring pollution. Advanced monitoring technology is generally defined by one or more of these factors:

1. Not yet in widespread use in a particular sector or particular regulatory program.
2. Monitors pollutants on a real-time or near real-time basis, often without lengthy lag times for laboratory analysis.
3. Less expensive, easier to use, or more mobile compared to technologies currently in widespread use.
4. Provides acceptable data quality that is more complete or easier to interpret and can meet a specific need.
5. Is an existing technology but used in a new way to provide better information on pollutants, pollution sources, or environmental conditions.

Advanced monitoring includes 1) monitors that can measure emissions or discharges from a particular source and 2) those that monitor pollutants in the ambient environment (such as air, water, soil, products, or building). Advanced monitoring often provides more complete and timely data without lengthy laboratory analysis compared to traditional monitoring. It can also be used to provide communities and individuals with real-time information about pollution that impacts them. Enforcement settlements that include advanced monitoring, and in particular those that require collection of real-time data, may enable a settling party and the EPA to more efficiently and effectively prevent and/or remedy violations or even better identify and remedy pollution problems before they become violations.

A facility collecting real-time environmental data may be able to quickly remedy emissions or discharges over an allowed limit or identify problematic spikes in pollution that might not be as apparent with averaged samples. Advanced monitoring is likely to be most effective when the information is immediately available to the facility operators so they can quickly investigate and respond to elevated pollution levels. Further, advanced monitoring becomes a more powerful compliance driver when the information is also provided to the EPA, states, and/or the public. Facilities are more likely to take extra caution to self-police and ensure their operations are addressing pollution problems when the information is transparent.

Including advanced monitoring in settlements provides an opportunity to test new monitoring technologies and may help identify more-effective or less- expensive methods that may later become standard industry practices and included in subsequent regulations. Some of these monitoring tools are already in existence,⁸ while others are newly emerging. The agency is keeping abreast of these new technologies and actively identifying ways to incorporate them into our enforcement settlements. Many advanced monitoring technologies have been developed to measure air emissions, and similar advances are being made to measure water pollution. These and newly emerging technologies can be more powerful when they are connected to communications technologies such as email, smart phones, or the internet that notify a facility official, a regulatory agency, and/or the community of pertinent pollutant information. Several recent agency settlements require the use of advanced monitoring with such information being made available to the public.

Advanced-ambient monitoring, such as fence-line monitoring, has the potential to provide valuable information to impacted communities that are located near a facility. These technologies can allow for the collection of ambient air or water data, upstream and downstream of a facility. To be most useful, ambient monitoring should be coupled with tools that make the information transparent, as described below. For example, if elevated air emissions from a refinery or smelter are of concern to a nearby community, a settlement may include monitors at the facility fence line or in the surrounding community. Similarly, a settlement may require water quality monitoring to be conducted upstream and downstream of a discharger, allowing information to be shared with the public about the condition of a particular water body on a near real-time basis.

Enforcement settlements may also require point source advanced water monitoring that is coupled with informational tools where the data can be shared with the potentially impacted community. Such water pollution information may be communicated to the public by automated signal lights on the water body to warn users when a combined sewer overflow is happening or email, text or other electronic notices to the public of such events. Data derived from both advanced-ambient and point-source monitoring can be used to inform future permitting decisions and other regulatory actions. The availability of reliable advanced-ambient and point-source environmental data can also result in more constructive conversations between a facility and its neighbors.

B. Independent third party verification of a settling party's compliance with a settlement.

Independent third party verification can be included in a settlement as a resource-efficient way for the government, the settling party, and the public to obtain information about a facility's compliance with settlement obligations. For example, settlement agreements have used independent third party verification for the following functions:

- To certify as to the proper installation of pollution control equipment;
- To ensure the appropriate design of a landfill cap;
- To oversee the closure of a concentrated animal feeding operations lagoon; and
- To oversee compliance with various settlement requirements.

⁸ Examples of existing advanced monitoring technologies include infrared video cameras to “see” emissions, mobile monitors such as geospatial measurements of air pollution (GMAP), fence line monitors such as the ultraviolet differential absorption spectroscopy measurement (UVDOAS), continuous emissions monitoring (CEM), solar occultation flux, and differential absorption light detection and ranging methodology (DIAL), among others.

This type of tool is particularly valuable where settlements are complex and require long-term injunctive relief, especially in light of limited agency resources. The key requirement for establishing third party verification is ensuring that the verifier is independent and qualified. There is a growing literature on how to establish effective independent third party verification programs.⁹ Third party verifiers should be required to provide their findings and reports to the EPA at the same time as they provide them to the settling party, and the agency will then exercise its discretion to determine whether the defendant is in compliance with the settlement obligations. In general, if the third party is allowed to provide the settling party or its counsel with drafts of the reports prior to submission to the EPA, these third parties should be characterized as consultants to the settling party and not as independent third party verifiers.

C. Electronic reporting.

Electronic reporting is not simply emailing files to the government; rather, at a minimum it describes a system whereby a settling party electronically submits required reports and data in a searchable format. Electronic reporting generally requires that the EPA have systems in place to facilitate data submission from the settling party and tools for the agency to receive and analyze this information.¹⁰ For example, a settling party can electronically submit progress reports to the EPA with data showing how the settlement requirements are being implemented in a way that can be sorted or searched by the agency. When electronic reporting is combined with transparency, the submitted information can also be easily uploaded to an EPA database or website or provided directly on the settling party's website. Electronic reporting can ultimately: 1) provide more accurate, complete and timely information on pollution sources, pollution, and compliance; 2) save time and resources in overseeing compliance with settlement requirements; and 3) reduce paper transaction costs for the settling party associated with creating, mailing, and entering compliance information, as well as error correction.

D. Public accountability through increased transparency of compliance data.

Public accountability drives better compliance. Transparency as a settlement tool refers to providing meaningful information to the EPA and the public about a facility's compliance with specific settlement obligations and other environmental requirements. Settlement information coupled with information about a facility's compliance (or noncompliance) with specific settlement compliance milestones, including monitoring data, can provide valuable information to support the agency's compliance monitoring responsibilities. It also allows the public, impacted community members, neighboring facilities, and other agencies to play a role in assessing compliance. Ways to increase transparency include providing readily accessible, relevant and understandable information on the settling party's website, via a mailer, or through the Enforcement and Compliance History Online database or other publicly available EPA websites. As noted above, combining transparency tools with other tools, such as advanced monitoring, can tie data to geographic information which can provide insights to ambient environmental conditions and significant pollutant loadings.

III. Conclusion

⁹ Lesley K. McAllister, Regulation by Third-Party Verification, 53 B.C. L. REV. 1, 22-23 (2012). And see Esther Duflo, Michael Greenstone, Rohini Pande & Nicholas Ryan, Truth-Telling By Third-Party Auditors And The Response of Polluting Firms: Experimental Evidence From India, 128 Q. J. OF ECON. 4 at 1499-1545 (2013).

¹⁰ Electronic reporting usually begins with a smart form or web tool that guides regulated entities through the reporting process.

Many case-specific factors must be considered when arriving at an appropriate settlement to resolve environmental violations. Next Gen compliance tools have the potential to improve compliance and provide significant benefits to the EPA, the public, and the regulated community. As such, they should be considered in all civil enforcement cases and incorporated in civil and administrative settlements whenever appropriate.