



The Water Report™

Water Rights, Water Quality & Water Solutions in the West

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ENDANGERED SPECIES ACT, TAKE, AND WATER

THE ARANSAS PROJECT V. SHAW, ET AL.

by Kathy Robb, Hunton & Williams LLP (New York, NY)

INTRODUCTION

Among environmental statutes, the Endangered Species Act of 1973 (ESA) can be particularly challenging, both to the regulated and the environmental communities. It seeks to constrain private actions and public agencies without consideration of economic or social cost. Yet, as the National Research Council noted in its 1995 study of ESA, species at risk are typically so few in number that they are difficult to study, yielding little data on which to base sound scientific decisions. See “*Science and the Endangered Species Act*,” Committee on Scientific Issues in the Endangered Species, National Research Council (1995).

Under ESA, species designated as endangered or threatened are listed with the goal of protection and, ultimately, recovery. But while about 579 animal species are listed as endangered or threatened in the United States and its waters, only 23 domestic species have been deemed “recovered” and delisted. Thirty-seven others have been delisted to correct data errors or acknowledge extinctions, some of which occurred prior to listing. To be sure, recovery requires a long time frame and is a complex process. See U.S. Government Accountability Office, *Endangered Species: Many Factors Affect the Length of Time to Recover Select Species*, GAO-06-730 (Washington, DC: GPO, September 8, 2006). Still, the average time for even listing a species is 11 years from petition to final rule. Combined with the contradictory and ambiguous interpretations of ESA by the courts, ESA represents a challenging situation even before we add water to the mix.

On March 10, 2010, a citizens’ group filed a complaint in *The Aransas Project v. Shaw, et al.* in US District Court in the Southern District of Texas, alleging that the failure of State regulators to adequately manage the flow of fresh water into the San Antonio Bay ecosystem during the 2008-2009 winter resulted in a take of Whooping Cranes in violation of ESA. The Plaintiff argues that the reduced flow of fresh water increased salinity, reducing the food and water supply for the Whooping Cranes, weakening and ultimately killing Whooping Cranes. The case has been stayed pending an appeal to the Fifth Circuit by several parties who were denied intervention in the suit.

THE LAWSUIT UNDERSCORES TWO EMERGING LEGAL QUESTIONS UNDER ESA:

- 1) What is required to establish “take” under Section 9 of ESA?
- 2) Can State regulators, acting in accordance with State law, be the proximate cause of “take” under Section 9 of the ESA?

This article will provide an overview of key ESA aspects and legal findings and then discuss *The Aransas Project v. Shaw, et al.* and State water obligations within that context.

THE 1973 ESA

ESA & Water

Snail Darter

ESA Priority

Spotted Owl

Listing Process

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The ESA of 1973 has roots in the Lacey Act of 1900, the Bass Act of 1926, the Migratory Bird Act of 1918, the Endangered Species Preservation Act of 1966, and the Endangered Species Conservation Act of 1969. But the ESA of 1973 was seared onto the national consciousness through two famous cases.

The first was the Tellico Dam, which was begun before ESA was enacted. The US Supreme Court concluded that although \$53 million had already been spent constructing the dam, ESA required construction to stop in order to protect the Snail Darter, an endangered fish whose habitat was thought to be limited to the part of the Little Tennessee River that was going to be inundated by the reservoir behind the dam. *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978).

Tennessee Valley Authority v. Hill is often cited for the language that Congress intended to “halt and reverse the trend toward species extinction whatever the cost...to give endangered species priority over the primary missions of Federal agencies.” *Id.* at 183. It is worth remembering, however, that, faced with the *TVA v. Hill* decision, Congress subsequently exempted Tellico Dam from the Endangered Species Act and authorized completion of the project despite the threat to the Snail Darter. Energy and Water Development Appropriations Act for Fiscal Year 1980, Public Law 96-69, 40 U.S.C. 174(b)-1 and 43 U.S.C. 377a, 93 Stat. 437. In the meantime, populations of the Snail Darter had been transplanted to nearby rivers, and evidence of other natural populations was discovered. The Snail Darter was upgraded from endangered to threatened in 1984.

The second case that received national attention was the 1990 listing of the Northern Spotted Owl as threatened, resulting in millions of acres of Pacific Northwest forests becoming protected habitat. *See Robertson v. Seattle Audubon Society*, 503 U.S. 429 (1992). The resulting loss of timberlands and jobs for the timber, homebuilding, and real estate industries became the subject of a rancorous national debate. The Northern Spotted Owl remains listed as threatened. Over the past twenty years, the larger and more aggressive Barred Owl has been taking over spotted owl territory and is considered a significant threat to spotted owl recovery, despite the habitat protection put in place two decades ago.

LISTING AS “ENDANGERED” OR “THREATENED”

The ESA of 1973, 16 U.S.C. Sec. 1531-1534, protects plants and animals that are listed by the Federal government as “endangered” or “threatened.” Only plants and animals that have officially been listed as endangered or threatened under Section 4 of the ESA are protected. *See* 16 U.S.C. Sec 1533, 50 C.F.R. Part 424. Listing data from the US Fish and Wildlife Service (FWS) can be found at http://ecos.fws.gov/tess_public/pub/Boxscore.do A list of the designated endangered and threatened species, updated daily, can be found at 50e CFR 17.11, accessible at <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr>.

A species is “endangered” if it is “in danger of extinction” throughout all or a significant portion of its range. 16 U.S.C. § 1532 (6). A “threatened” species is one that is “likely to become endangered” within the foreseeable future. 16 U.S.C. § 1532(20). More detailed criteria for listing are in 50 C.F.R. § 424.14(b)(2). The decision to list is made solely on biological grounds, “without reference to possible economic or other impacts of such determination.” 50 C.F.R. § 424.11(b)

The listing process starts either with nomination of a species by FWS or the National Marine Fisheries Service (NMFS, also referred to as “NOAA- Fisheries”) or by a petition from anyone or any agency. 16 U.S.C. § 1533(b)(3)(A). How the FWS manages the listing petition process is described at www.fws.gov/endangered/what-we-do/listing-petition-process.html. The latest biennial report to Congress from NMFS can be found at www.nmfs.noaa.gov/pr/laws/esa/biennial.htm.

Once FWS or NMFS decides that a petition for listing is substantial, it undertakes a “status review” and within a year must decide to list the species, reject the proposal or petition, or reevaluate it annually because other species are of higher priority (referred to as “warranted but precluded”). 16 U.S.C. § 1533(b)(3)(B).

The listing agency is required to designate critical habitat for endangered and threatened species, 16 U.S.C. § 1533(a)(3), using the “best scientific data available” (*Id.* at § 1533(b)(2)). Critical habitat includes the areas within the geographic area occupied by the species on which are found physical or biological features “essential to the conservation of the species” and which may require special management considerations or protection. It also includes other specific areas, not presently occupied by the species, that are essential for its conservation.

A species may also be upgraded from endangered to threatened (16 U.S.C. § 1533(a)(2)(B)(ii)) or delisted (16 U.S.C. § 1533(b)(3)(A); 50 C.F.R. § 424.11(d)). Examples of delisted species include: the American alligator (1987); the peregrine falcon (1999); the bald eagle (2007); and the brown pelican (2009).

ESA & Water

Land Use Impacts

These listing, habitat, and recovery provisions at the core of ESA have broad land use planning implications. Eighty percent of listed species occur on private land. Listed species habitats are no longer typically separated from places where people live or work. Some estimates note that listed species are present in about nine out of every 10 counties in the United States. Thus, under ESA, a broad range of projects on millions of acres could be controlled to benefit a single species. Conflicts arise when the Federal government, rather than State or local governments, seeks to control use of private property.

At the heart of ESA, and of the intersection of endangered species and water, is the “take” provision.

Humpback Chub



Northern Spotted Owl



Snail Darter



SECTION 9:

“TAKE” OF ENDANGERED OR THREATENED SPECIES

Under ESA § 9(a)(1)(B), it is unlawful for “any person,” including an individual or a federal agency, to “take” an “endangered species of fish or wildlife.” ESA § 4(d). The regulations extend the take prohibition to most threatened animals. *See* 50 C.F.R. §§ 17.31(a), 17.40-17.46. The prohibition against “take” covers fish and wildlife but not plants. Under ESA § 9(a)(2), it is illegal to remove an endangered plant from federal land and reduce it to possession. 16 U.S.C. § 1538(a)(2)(B). Federal law also federalizes state law take prohibitions for plant species.

ESA § 11 provides enforcement actions available to punish or enjoin acts prohibited by ESA § 9 and ESA rules. These include civil penalty actions (§ 11(a)), criminal penalty actions (§ 11(b)), and suits to enjoin take or other ESA violations by the government (§ 11(e)(6)) or private citizens (§ 11(g)).

ESA defines “take” as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” ESA § 3(19). “Harm” for purposes of establishing “take” is defined by FWS to mean “an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impacting essential behavioral patterns, including breeding, feeding, or sheltering.” 50 CFR § 17.3. NMFS adopted a parallel rule. 50 C.F.R. § 222.102.

The “take” prohibition is both an extraordinary and a limited aspect of ESA. Violators of the take prohibition are subject to substantial civil and criminal penalties, including imprisonment, under § 9. 16 USC § 1540. A plaintiff must demonstrate the actual take of an individual animal — that a particular individual of the species has been harassed, harmed, pursued, hunted, shot, wounded, killed, trapped, captured, or collected. 16 USC §§ 1532(19), 1538(a)(1)(B). A plaintiff must also demonstrate that it is the defendant’s action that caused the take of that particular individual.

Take cannot be established absent specific facts demonstrating the specific take of an individual. Thus, an allegation that deer hunting using lead slugs should be enjoined, because bald eagles in a hunting area might die due to lead ingested from slugs, was rejected based on a lack of evidence that any eagles in the hunting area actually ingested lead slugs or ate deer carrion containing lead slugs. *American Bald Eagle v. Bhatti*, 9 F.3d 163 (1st Cir. 1993). And where a fish kill substantially increased during pile driving, but no injured or killed shortnose sturgeon were actually observed and no evidence of specific sturgeon injury or kill was offered, an allegation of take was rejected in *National Wilderness Institute v. Corps*, 2005 WL 691775 *19, 20 (D.D.C. Mar. 23, 2005). *See also Pyramid Lake Paiute Tribe v. U.S. Dept. of Navy*, 898 F.2d 1410 (9th Cir. 1990), where the court held that evidence failed to show that “any one year’s diversions of Project water” actually caused take.

ESA & Water

“Significant impairment” of essential behavioral patterns is required to establish “harm.” For take, habitat modification must be significant, must significantly impair essential behavioral patterns, and must result in actual injury. 46 Fed. Reg. 54,750 (Nov. 4, 1981).

ESA LISTED SPECIES REPORTS

Source: U.S. FWS, March 2, 2011

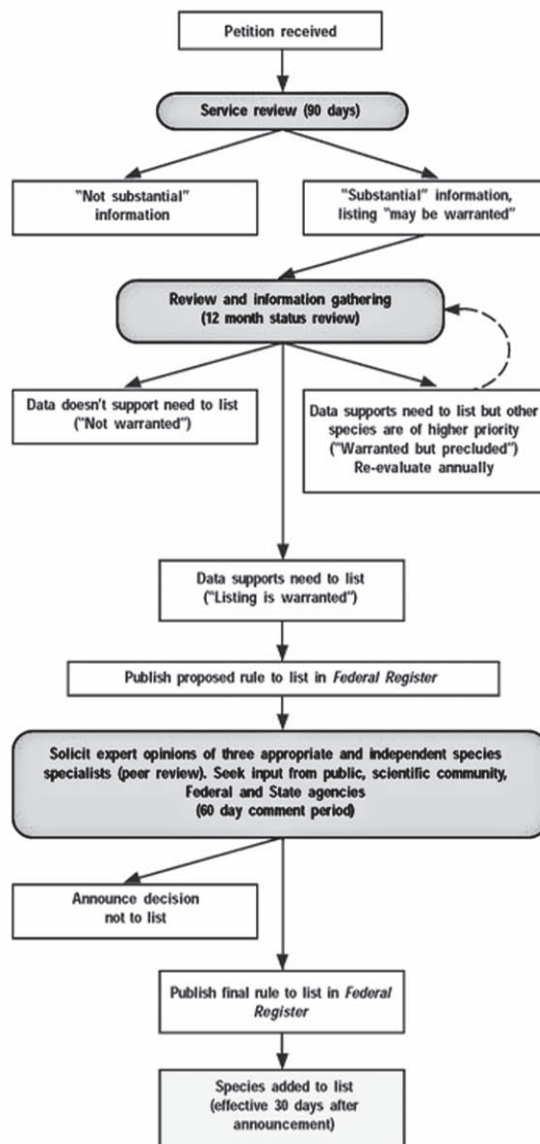
Total domestic endangered animals	415
Total domestic threatened animals	164
Total domestic listing animals	579
Total foreign endangered animals	541
Total foreign threatened animals	50
U.S. Listings with active recovery plans	469

Note: Domestic numbers include populations in which the United States shares jurisdiction with another nation.

ESA LISTINGS

The Petition Process

Petitions are formal requests to list a species that require published findings. We (or the National Marine Fisheries Service for most marine species) must make a finding within 90 days of receiving a petition (to the extent practicable) as to whether there is “substantial information” indicating that the petitioned listing *may be warranted*. If this preliminary finding is positive, a status review is conducted. Within one year of receipt of the petition, we must make a further finding that the listing either *is* or *is not warranted*. A positive one-year finding can be incorporated into a proposed listing or, if a prompt proposal is precluded by other listing activities, the proposal may be deferred. These “warranted but precluded” proposals require subsequent one-year findings on each succeeding anniversary of the petition until either a proposal is undertaken or a “not warranted” petition finding is made.



Adapted from US Fish & Wildlife website:
www.fws.gov/endangered/what-we-do/listing-petition-process.html

Difficulty in finding food does not constitute significant impairment. In *Greenpeace Foundation v. Mineta*, 122 F. Supp. 2d 1123, 1134 (D. Haw. 2000), plaintiffs alleged that the management of lobster fisheries was resulting in take of the listed Hawaiian monk seal. Plaintiffs alleged that the lobster fisheries depleted the food supply for the monk seal, requiring them to search for food. The court held that the fact that seals had to forage elsewhere for food, and for different types of food, was not sufficient to demonstrate harm. *Id.* at 1134. Similarly, in *Hawksbill Sea Turtle v. Federal Emergency Management Agency*, 11 F. Supp. 2d 529, 554 (D. V.I. 1998), the court held that allegations of a change in feeding patterns are not enough to establish take. In that case, although the court found that sediment-laden runoff was a “direct result” of construction of the project at issue, plaintiffs “provided no credible evidence that Sea Turtles had been injured or died as a result of starvation.” *Id.* at 539-540.

Harassment should not be mistaken as another form of harm. It is a specific form of take involving intentional acts to annoy wildlife to the extent that injury is likely. “Harass” is defined in FWS regulations as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.” 50 CFR § 17.3. To bring a claim of take based on harassment, a plaintiff must allege: 1) an intentional action; 2) creating the likelihood of injury; 3) by “annoying” wildlife; and 4) resulting in significant disruption to normal behavioral patterns.

When ESA was passed, the prohibition against take of listed wildlife was essentially absolute. ESA’s 1982 Amendments provide mechanisms in §§ 7(b)(4) and 10(a)(2) for “incidental take” of listed species due to certain land use activities. FWS may authorize take in limited circumstances provided certain conditions are met through an “incidental take statement” (ITS) for a federally authorized or conducted activity, 16 U.S.C. § 1536(b)(4), or through an “incidental take permit” (ITP) for non-federal activity, 16 U.S.C. § 1539(a)(1)(B), after preparation of a Habitat Conservation Plan. 16 U.S.C. § 1538 (b)(4), 1539(a)(2). FWS defines “incidental take” as ESA “takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or the applicant.” 50 C.F.R. § 402.02.

CAN STATE REGULATORS' ACTIONS BE THE PROXIMATE CAUSE OF TAKE?

ESA & Water

Causation

ESA makes it unlawful for any “person” to attempt to commit, solicit another to commit, or cause to be committed, any offense” defined in § 9. 16 U.S.C. § 1538(g). The concept of causation in the ESA take prohibition is a limiting factor.

The US Supreme Court has held that ESA take prohibition is subject to “ordinary requirements of proximate causation.” *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995). A “proximate cause” is a cause that is legally sufficient to result in liability[,] a cause that directly produces the event and without which the event would not have occurred.” *Black’s Law Dictionary* 213 (7th ed. 1999). In *Sweet Home*, a group of “small landowners, logging companies, and families dependent on the forest products industries” and organizations representing their interests, *id.* at 692, brought suit challenging the FWS regulation defining “harm” to include “significant habitat modification or degradation where it actually kills or injures wildlife.” The Plaintiffs argued that the definition was facially invalid, that is, that the regulation was invalid in every circumstance of habitat modification and should be struck. The Court determined that every term in the definition of harm, including “habitat modification,” is subservient to the phrase “an act which actually kills or injures wildlife” and upheld the regulation. *Id.* at 700, n. 13

“Harm”
Definition

Sweet Home still stands as the leading case articulating the limits on the meaning of harm under ESA rules. Under the U.S. Supreme Court’s 1995 *Sweet Home* opinion, the evidentiary burden to establish “take” under ESA § 9 is formidable — a plaintiff must show: 1) actual injury or death; 2) to an identifiable member of the listed species; and 3) that is proximately caused by the agency.

“Take”
Burden

In another decision by the US Supreme Court, *National Association of Home Builders v. Defenders of Wildlife*, 551 U.S. 644 (2007)(*NAHB*), the Court held that ESA does not give the US Environmental Protection Agency (EPA) authority to condition the transfer of Clean Water Act permitting to the State of Arizona on a determination, in consultation with FWS under ESA § 7(a)(2), that the transfer would not jeopardize any ESA listed species. The case sheds light on whether State regulators’ actions can be a proximate cause of “take.” [See Glick and Eyler, *Supreme Court Limits ESA: National Homebuilders v. Defenders of Wildlife*, TWR #41, July 2007]

CWA
Authority

In *NAHB*, the Court upheld the federal government’s interpretation that the provisions of ESA § 7(a)(2) at issue there did not supersede the plain language of the Clean Water Act. The Clean Water Act provisions require EPA to transfer permitting authority when nine conditions are met. The conditions do not include review of impacts to ESA listed species. *See* 33 U.S.C. 1342(b)(1)-(b)(9). The Court held that EPA lacked discretion under its Clean Water Act authority to deny the transfer of permitting authority once the nine conditions specified were met. *NAHB*, 551 U.S. at 669. The Court quoted from its decision in *Department of Transportation v. Public Citizen*, 541 U.S. 752: “Where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant ‘cause’ of the effect.” *Id.* at 667.

Authority
Limited

In addition, ESA language itself makes it is clear that Congress held only federal agencies accountable for the impacts of activities they regulate and not agencies and officials at the state level. ESA § 7 applies only to federal agencies and requires only federal agencies to ensure that their activities are “not likely to jeopardize” listed species or their habitats: “Each federal agency shall...ensure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species...” (16 U.S.C. § 1536(a)(2)). The federal agency consults with FWS or NMFS under detailed standards and procedures to comply with this requirement. If FWS or NMFS ultimately finds the proposed action is “not likely to jeopardize” the plant or animal (a “no jeopardy” opinion), it must specify the impact of any “incidental take” of the species, necessary mitigating measures, and conditions that should be imposed on the activity. If FWS or NMFS issues a “jeopardy” opinion, it must also propose reasonable and prudent alternatives that would not violate ESA. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.14(h)(3).

State
v.
Federal Action

ESA § 7 applies only to federal agencies and any activities they “authorize, fund or carry out.” The “take” provision of § 9 applies to “any person,” including federal, state, and local agencies, but not to activities they “authorize” or “fund.” Congress did not state an intention in ESA to govern every permitting and licensing activity of state and local regulators merely because take could result from the private actions the state or locality permits or approves, often called “vicarious liability.” The separate and distinct provisions of § 7 and § 9 underscore that § 9 applies only to actions that are the proximate cause of take. ESA does not have a provision akin to § 7 that applies to State and local regulators. *See* J.B. Ruhl, *State and Governmental Vicarious Liability Under the ESA*, 16 Nat. Resources & Env’t 70, 73 (ABA, Fall 2001). In addition, applying this sort of vicarious liability to State and local regulators raises Tenth Amendment and federalism issues that are beyond the scope of this article.

“Vicarious
Liability”

ESA & Water

Texas
Regulatory
ActionsWhooping
CranesAlleged
Deaths

THE ARANSAS PROJECT V. SHAW, ET AL

THE COMPLAINT

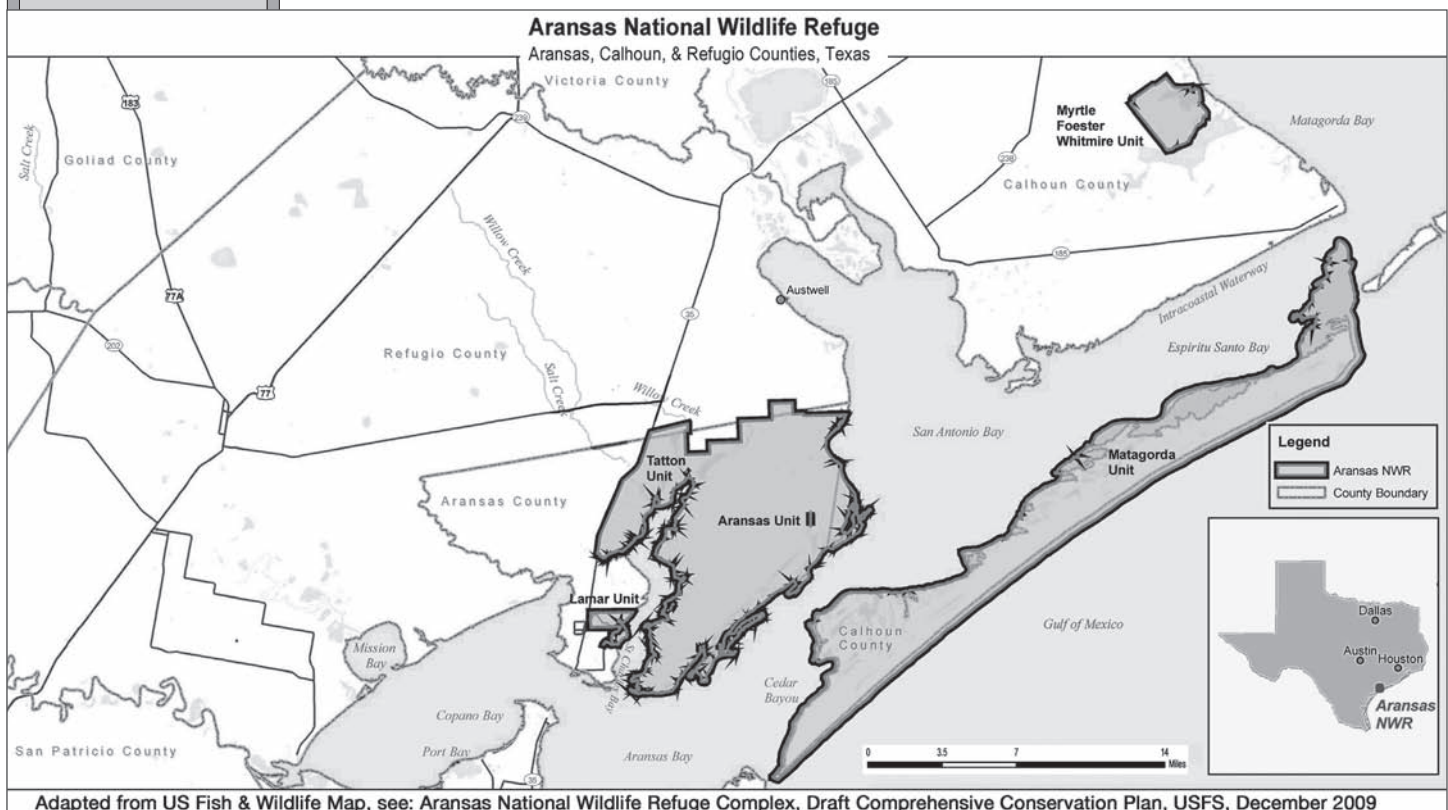
In *The Aransas Project v. Shaw, et al.*, the Plaintiff seeks declaratory judgments that Texas regulators' actions pursuant to State law in approving water rights and issuing water permits resulted in a take of Whooping Cranes, and seeks an order enjoining the defendants from approving or allowing the use of new and existing water rights in the San Antonio and Guadalupe River Basins. Plaintiff also seeks an injunction prohibiting the use of new and existing water rights until Defendants develop a Habitat Conservation Plan for the San Antonio and Guadalupe River Basins and San Antonio Bay, complete an analysis of all permitted and exempt withdrawals, and create a binding plan for water development and water use in the San Antonio and Guadalupe River Basins.

The Aransas-Wood Buffalo flock of Whooping Cranes winters at the Aransas National Wildlife Refuge (Refuge) in Aransas County, Texas, and summers in Canada's Wood Buffalo National Park. The Refuge, established in 1937, was designated critical habitat for the Whooping Crane in 1978. In the winter of 1938-39, the flock was estimated to number 18 Whooping Cranes. *U.S. FWS International Whooping Crane Recovery Plan*, p. 12 (3d Revision, March 2007), available at: http://ecos.fws.gov/docs/recovery_plan/070604_v4.pdf.

FWS historical population estimates establish a dramatic and increasing trend in the overall Aransas Wood-Buffalo population. This spring, a record 283 Whooping Cranes have been estimated to have wintered at Aransas Refuge.

Aerial counts or "flyovers" in Texas are relied upon for an annual estimate (census) of the arriving and departing population of Whooping Cranes. The numbers of Whooping Cranes stated in the complaint are estimates from these aerial counts. The aerial counts of live Whooping Cranes of course do not include Whooping Cranes that may be located in places outside the range of the viewer for a host of reasons — fog, inclement weather, trees or bushes blocking view, movements of the Whooping Cranes — or the potential for incorrect or incomplete identification of the Whooping Crane by an observer from an airplane.

While the Plaintiff alleges that 57 Whooping Cranes died between 2008 and 2009, it is clear from the text of the Complaint that 34 of these alleged deaths occurred outside of Texas. These 34 alleged deaths occurred despite normal rainfalls in Wood Buffalo National Park in Canada (where the Whooping Cranes summer before traveling to Texas for the winter), according to the document cited by the Plaintiff in the Complaint. The Plaintiff alleges that 23 birds died in Texas during the winter of 2008-09, the year of a severe drought in Texas. Of the 23 alleged deaths of Whooping Cranes in Texas, four are based on carcasses or remains found, and 19 from the aerial counting estimates. The Complaint alleges one Whooping Crane mortality the following year over the 2009-10 winter, also derived from aerial counting estimates.



ESA & Water

Kathy Robb is a partner at the law firm Hunton & Williams. Her practice focuses exclusively on environmental law, including litigation in federal district and appellate courts, regulatory issues, and compliance advice, with an emphasis on water issues under the Clean Water Act, the Endangered Species Act, NEPA, water-related CERCLA sites with PCB's and other contamination in sediments, and groundwater issues. She represents clients that include water districts, electric utilities, energy companies, investors, lenders, developers, chemical manufacturers, and paper mills. She has represented defendant-intervenors in litigation challenging the lining of the All-American Canal and the operation of the Glen Canyon Dam above the Grand Canyon; and has filed briefs on behalf of amici in the US Supreme Court in water-related cases, including the NAHB case.

FWS estimates that the population increased (in ten-year intervals) from 22 in 1939-40 to 34 in 1949-50; 33 in the winter of 1959-60; 56 in the winter of 1969-70; 76 in the winter of 1979-80; 146 in the winter of 1989-90; and 188 in the winter of 1999-2000. Recovery Plan at 12-13. The Plaintiff's population estimate of 263 in the Complaint for the winter of 2009-2010, the year after 57 Whooping Cranes allegedly died, is an all-time high up to that point for Whooping Crane estimates and represents an 80% increase of the Whooping Crane population over the past two decades. According to FWS, "it is likely that the [Aransas Wood-Buffalo population] will continue to grow" and the Whooping Crane is expected to be downlisted (reclassified from "endangered" to "threatened") in "approximately 2035." Recovery Plan at 19, 39, D-2. Reports for the winter of 2010-2011 put the Whooping Crane estimates at an all-time high of 283.

In the winter of 2008-2009, when the 23 Whooping Cranes allegedly died according to the Complaint, only four carcasses or remains were found. Two of the carcasses were the subject of necropsy reports. The first report noted that the Crane was a sub adult male with a bad left knee. It is noted that: 1) this may have been the same bird observed in fall migration with a severe limp having difficulty feeding; and 2) that further cultures from the knee were taken and that an infected knee could have made the bird sick, limiting food intake. The second report noted that the juvenile had been killed by a large predator. The bird was emaciated and the National Wildlife Center in Madison was able to isolate from it a virus very similar to infectious bursal disease (IBD). One of the symptoms of IBD is emaciation, even when the bird is receiving adequate food.

The other two deaths documented were described in reports but not necropsied (examined after death). The third juvenile carcass, according to the report, was found dead in the jaws of an alligator. The fourth and final set of remains documented was an old pile of white feathers discovered by volunteers and two Chinese biologists. The Chinese biologists, who said they had Cranes on their refuges in China, identified the feathers. The Whooping Crane had been dead for a long time and only a few shattered bones were found in the area of the feathers.

The complaint alleges that "in their roles to regulate water uses and flows," State regulators have taken and are taking Whooping Cranes in violation of the ESA. Texas is no stranger to ESA controversies involving water rights, having managed ESA issues surrounding the Edwards Aquifer for over 20 years. For a detailed discussion of the status of those issues, see Gully and Votteler, "Resolving ESA-Water Conflicts: The Edwards Aquifer Recovery Implementation Program," TWR #58, Dec. 2008).

Under Texas law, surface water belongs to the State, and the State authorizes its use by issuing permits, through certificates of adjudication representing adjudicated rights, and through a statutory exemption for domestic and livestock users. See Texas Water Code § 11.021, 11.023. Permits, once issued and perfected or adjudicated, are constitutionally-protected vested property rights under Texas law. See, e.g., *Texas Water Rights Commission v. L.A. Wright*, 464 S. W. 2d 642, 647 (Tex.1971). State regulators administer the permits by enforcing senior priority rights against junior rights, or otherwise administer them in accordance with permit conditions (Tex. Water Code § 11.136), and have responded in filings before the court that under Texas State law they do not have the authority to reallocate or diminish the existing water permits as contemplated by the Complaint.

The Plaintiffs seek declarations, injunctions, and an order that would establish, among other things, that:

- State water diversion regulations are preempted by Federal law
- State regulators are prevented from approving or allowing water diversions under the State law until the State provides reasonable assurances that the diversions will not take Whooping Crane
- State regulators are prevented from approving new water permits
- State regulators are directed to develop a process to account for domestic and livestock withdrawals, which currently are allowed under Texas State law without further State regulatory action
- State regulators must develop a plan that may include reduction of existing water uses or addition of special conditions to existing permits
- State regulators are to develop a plan including provisions to reduce all withdrawals under existing permits

CONCLUSION

The sweep of the Complaint in *The Aransas Project v. Shaw, et al.*, is outside the scope of permissible take claims under ESA. The remedies sought, if granted, would upend Texas's water regulatory scheme and profoundly affect the authority of States generally to issue water permits and regulate the use of their water. Further litigation of these issues awaits action from the Fifth Circuit to lift the stay on the District Court proceedings.

FOR ADDITIONAL INFORMATION:

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Hydraulic Fracturing Study

Lifecycle Study



HYDRAULIC FRACTURING & DRINKING WATER



EPA'S DRAFT PLAN TO STUDY POTENTIAL DRINKING WATER IMPACTS OF HYDRAULIC FRACTURING
NATIONAL DEBATE ON NATURAL GAS DRILLING INTENSIFIES

by Adam Orford, Marten Law Group (Portland, OR)

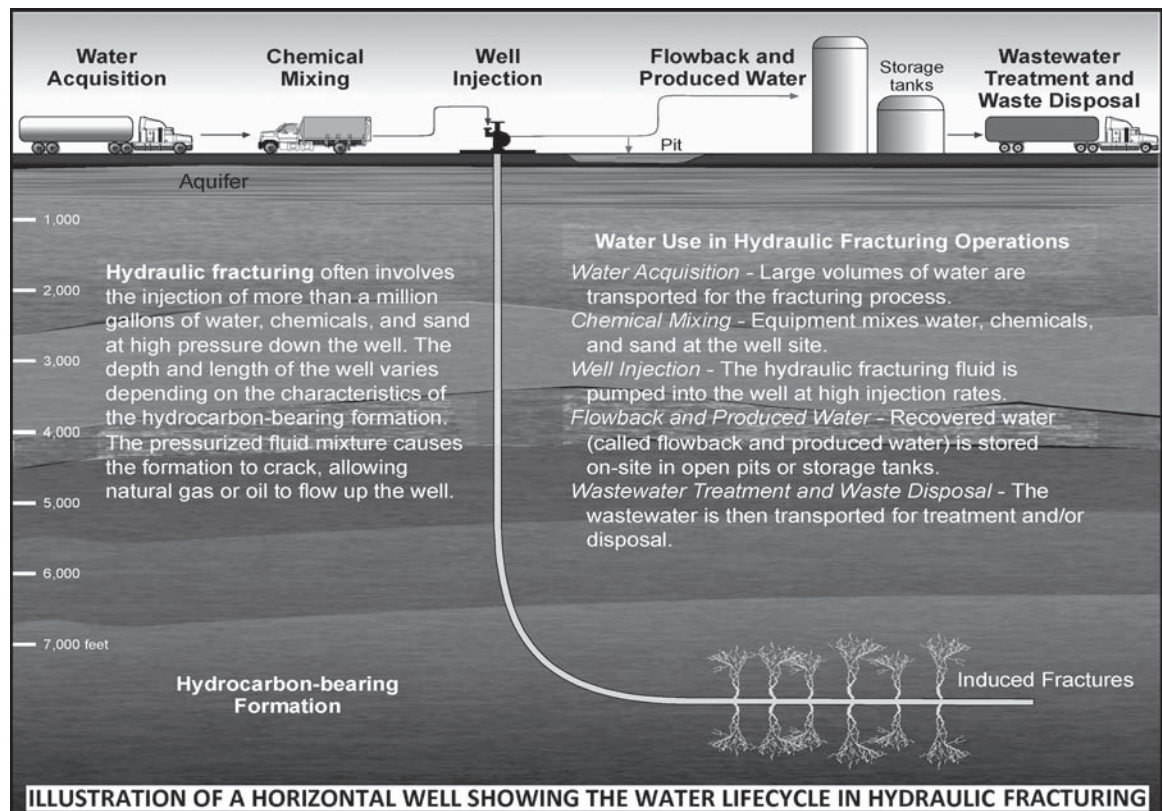
INTRODUCTION

The US Environmental Protection Agency (EPA) released its *Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources* (Draft Plan) on February 7, 2011, adding fuel to the national debate over the health risks posed by drilling for natural gas in vast portions of the country. EPA has set its sights on analyzing the complete “hydraulic fracturing water lifecycle” — from water withdrawals and storage, to the addition of fracturing chemicals, to the actual fracturing process, to retrieval, storage and disposal of the injected fracturing fluid — but will not address air or other potential impacts.

EPA's Science Advisory Board (SAB) held a public meeting to review the Draft Plan on March 7-8, 2011 in Washington, DC. The technical comment submission period for the proposed research plan closed on February 28, 2011.

SAB MEETING AGENDA AND SUPPORTING INFORMATION IS AVAILABLE AT:

<http://yosemite.epa.gov/sab/sabproduct.nsf/Meeting%20Calendar%20BOARD?OpenView>
(select “SAB Hydraulic Fracturing Study Plan Review Meeting”)



[Editor's Note: In 2005, fracking was exempted from regulation under the federal Safe Drinking Water Act (1974), leaving it up to the states to monitor and regulate fracked wells. The US Congress later passed the Energy Policy Act of 2005. Section 322 of that law amended the Safe Drinking Water Act (SDWA) to exempt all fracturing fluids except diesel from EPA regulation. That section was later dubbed the “Halliburton Loophole” — hydraulic fracturing was invented by Halliburton in the 1940's. It is projected that shale gas will comprise over 20% of the total US gas supply by 2020. Wells used for hydraulic fracturing are drilled vertically, vertically and horizontally, or directionally. Wells may extend to depths greater than 8000 feet or less than 1000 feet, and horizontal sections of a well may extend several thousands of feet away from the production pad on the surface. See: EPA: *Hydraulic Fracturing Research Study*, June 2010.]

BACKGROUND

Hydraulic
Fracturing
Study

Gas extraction through hydraulic fracturing — also known as “fracking” (a term EPA avoids) — has become one of the most publicly recognized environmental issues of the day. The debate over fracking has built quietly for some time, and became more heated last year as gas exploration expanded into the shale fields of the Atlantic seaboard. See Orford, *Fractured: The Road to the New EPA “Fracking” Study*, Marten Law Environmental News (Sept. 17, 2010) at: www.martenlaw.com/newsletter/20100917-new-epa-fracking-study; and Orford, TWR # 80.

Since last fall, most of the news has been on debates over whether to allow more drilling. For example, after both houses of New York state’s legislature passed a moratorium, then-Governor Paterson vetoed it and imposed more limited restrictions by Executive Order. More recently, Hollywood has taken over the narrative: even those who don’t follow these sorts of issues have likely heard that *Gasland* — an anti-fracturing documentary much maligned by industry — was nominated for an Academy Award.

Draft Plan

In the meantime, EPA has prepared its Draft Plan. Following a series of contentious public meetings regarding the study’s scope, the Draft Plan represents EPA’s announcement of *what* it plans to research. Everyone will find something to dislike. EPA has limited the study to drinking water resources, while many interest groups had called for an expansion into air and other impacts (see Draft Plan Chapter 11 for a list of research areas EPA declined to incorporate). On the other hand, EPA has included research on the impact of water withdrawals and other activities beyond simply the fracturing itself, which some in industry believe is beyond Congress’s study request.

Study
Methods

But putting aside the *what*, much of what EPA has just published is focused on the *how* — i.e., EPA’s proposed methods for undertaking the study in the areas of inquiry it has identified. It is this new information that must now be reviewed and digested, and for which EPA requested comments.

THE PROPOSED RESEARCH

Water
Lifecycle

The Draft Plan organizes EPA’s proposed research into five broader areas of inquiry based on EPA’s conception of the “water lifecycle” of hydraulic fracturing: 1) water acquisition; 2) chemical mixing; 3) well injection; 4) flowback and produced water; and 5) wastewater treatment and waste disposal. Each is discussed in turn below. However, although much of the proposed research is better explained in the context of EPA’s structure, EPA’s approach to “case studies” requires a bit of initial explanation.

Case Studies

In its proposed “case studies” program (described in Draft Plan Chapter 7 and elsewhere throughout) EPA says that it intends to study five-to-eight locations where hydraulic fracturing has been performed. This will include three-to-five areas where instances of drinking water resource contamination from hydraulic fracturing have been reported or alleged (“retrospective” case studies), along with two-to-three sites where hydraulic fracturing is newly deployed (“prospective” case studies).

Retrospective
Study

There has been much debate over whether hydraulic fracturing is actually responsible for some of the most widely reported purported water impacts (such as those featured in the film *Gasland*). The “retrospective” case studies are intended to “determine whether or not the reported impacts are due to hydraulic fracturing activities” (see Draft Plan Chapter 7.2). EPA selected five finalist sites from about 50 nominated by the public and prioritized based on the amount of data EPA concluded each would offer. The five finalists are counties in the Bakken Shale (ND); Barnett Shale (TX); Marcellus Shale (both northeast PA on the NY border, including Dimock Township, and at the border between PA and WV); and Raton Basin (CO). EPA will review existing data and conduct further sampling, monitoring, and modeling as it deems necessary to determine hydraulic fracturing’s contribution (if any) to drinking water pollution in these areas.

New
Operations

In the “prospective” case studies, EPA contemplates a different approach — “partnering with oil and natural gas companies and other stakeholders” to select several *new* drilling sites and observe their operations for one to two years. EPA’s purpose (less clearly explained) appears to be to understand and evaluate current industry practices and the impacts of these facilities over time. EPA also appears to have traded any element of surprise in its inspections in return for complete access to all aspects of the fracturing process.

With those preliminaries out of the way, the following five sections summarize EPA’s proposed study plan, based on EPA’s “water lifecycle” stages and guiding research questions.

Hydraulic Fracturing Study

Water Availability

Water Quality Impacts

WATER ACQUISITION

Possible Impacts of Large Volume Water Withdrawals from Ground and Surface Water on Drinking Water Resources (Draft Plan Chapter 6.1)

EPA's first inquiry involves water acquisition. Hydraulic fracturing in shale requires large amounts of water (an estimated two-to-four million gallons to fully fracture each well) to be withdrawn from a convenient source (ground or surface water) and shipped by truck or pipeline to the drill site. EPA intends to study how these withdrawals might impact water availability in the source area, and the water quality of source waterbodies.

To evaluate impacts on water availability, EPA intends to compile data on water use and hydrology in shale areas of North Dakota, Texas, Colorado, and Pennsylvania — intended to be a representative mix of arid and wet climates. Data will also be taken from at the “prospective” case study sites and analyzed to determine whether hydraulic fracturing is impacting ground and surface water flows there. In addition, EPA will construct models to examine the impact, in ten years, of “full exploitation of non-conventional natural gas” and “average annual conditions...based on sustainable water use in hydraulic fracturing operations.”

To evaluate withdrawal impacts on water quality, EPA intends to again compile existing data on water quality in existing source waterbodies, and additional data from source waterbodies at the prospective case study sites, and analyze these data to determine whether any changes in water quality over time are due to the large volume water withdrawals associated with hydraulic fracturing.

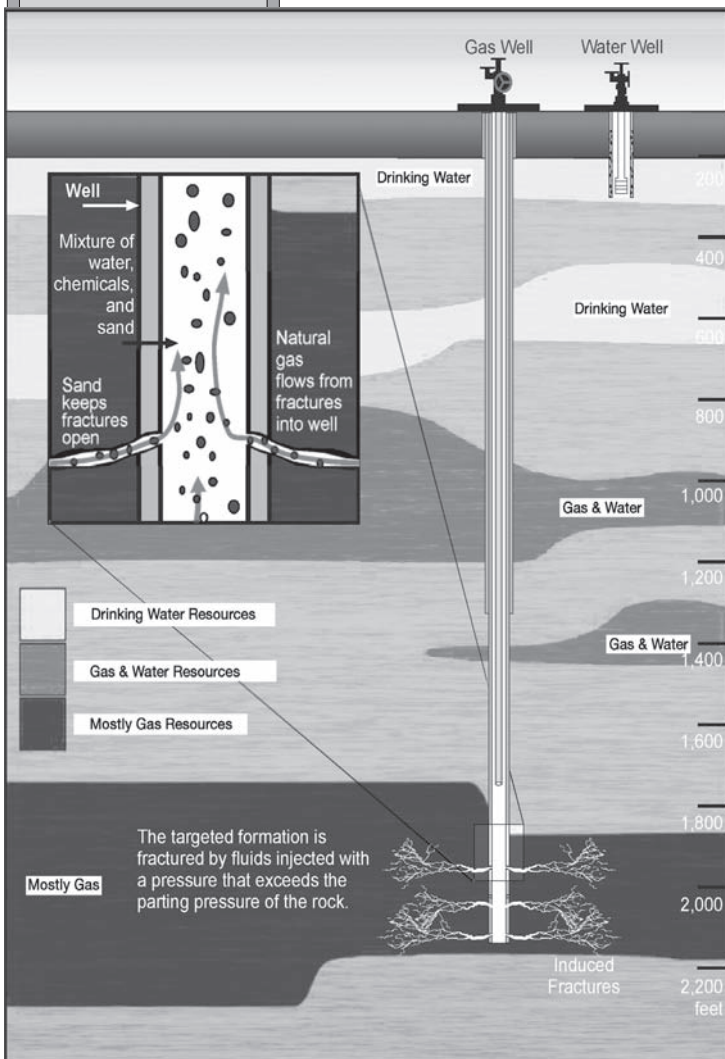
CHEMICAL MIXING

Possible Impacts of Releases of Hydraulic Fracturing Fluids on Drinking Water Resources (Draft Plan Chapter 6.2)

While there is no “Human Health Risks” chapter in the Draft Plan, this EPA inquiry focuses on the potential health threats if the chemicals that are added to the withdrawn water to create fracturing fluids are released into drinking water (to be studied under the “mixing” stage of the “water lifecycle”). Hydraulic fracturing involves the mixture of water with chemicals and “proppant” agents (e.g., sand or tiny ceramic beads) to create the fracturing fluid that will be pumped into the gas well. EPA estimates that 15,000 to 60,000 gallons of chemical additives are used (depending on site-specific geologic factors) in the average three million gallons of water needed to fracture a single well.

The primary uncertainty in this study is the chemical makeup of the fracturing fluid. Although proposed many times, no federal law has yet been passed to require disclosure of these chemicals. EPA consequently has compiled a list of over 600 chemicals (Draft Plan Appendix D) that publicly available information suggest have been or can be used in the process. EPA has also sent information requests to companies involved in the production of fracturing fluid (Draft Plan Appendix C), and expects to receive voluntary disclosure to fill out and firm up its list, and to clarify the relative concentrations of various chemical mixtures in use. Upon receipt of this information, EPA intends to review literature on the toxicity of the various chemicals identified, and, where available information is inadequate, perform its own toxicity studies (see Draft Plan Chapter 8).

[Editor's Note: The Wyoming Oil and Gas Conservation Commission, however, did adopt new rules on June 8, 2010, regarding the practice of hydraulic fracturing that require oil and gas companies to disclose the chemicals that they are injecting underground to stimulate oil and gas wells. Wyoming's new rules were the first, and apparently still the only rules, to require such disclosure. See TWR #79, Water Briefs (Sept. 15, 2010) for more details.]



**ILLUSTRATION OF A VERTICAL WELL WHERE
HYDRAULIC FRACTURING OCCURS NEAR AN UNDERGROUND
SOURCE OF DRINKING WATER**

**Hydraulic
Fracturing
Study****Release
Pathways**

EPA also seeks to better understand the potential for release and transport of the identified fracturing chemicals. EPA proposes to identify chemical markers that can be used to test for the presence of fracturing chemicals in drinking water, and will research and identify possible release pathways (e.g., leaking tanks), ground infiltration, and transportation characteristics. Finally, EPA will review, at the prospective case study sites, the effectiveness of current industry practices for responding to and addressing spills.

WELL INJECTION**Possible Impacts of the Injection and Fracturing Process on Drinking Water Resources
(Draft Plan Chapter 6.3)**

This inquiry focuses on the potential for releases to drinking water during the fracturing process itself. To fracture shale and other gas-bearing formations, mixed fracturing fluid is injected at high pressure into the gas well, breaking open the gas-bearing formation. It is the impact of this process that is the least understood, and most controversial part of the fracturing debate. Industry has consistently cited the great depth of shale gas — far from drinking water resources — as an important factor in the technique's safety, while landowners and environmental interests have argued that there must be some connection between reported drinking water contamination and nearby fracturing.

**Well
Malfunction**

To address this, EPA has broken its study out into a number of sub-studies. First, EPA intends to review the potential for accidental release of fracking fluids directly into drinking water resources. Such releases are assumed to require a well malfunction, since the wells are supposed to be tightly sealed to depths far below and sealed off from drinking water. Therefore, EPA proposes to review the well files (which discuss instances of well failure) from a number of wells constructed in the last year. EPA will also investigate well integrity at its retrospective and prospective case study sites. EPA will also deploy computer models to assess well failure under fracturing conditions.

**Migration
Pathways**

EPA also intends to examine the potential for fracturing fluids and naturally occurring substances (such as brine, heavy metals, methane, or other subsurface formation materials) to migrate through natural and unexpected man-made pathways created by the fracturing process, into drinking water resources. This study will include a review of the case studies for such pathways, and computer model studies. Ultimately, EPA hopes to identify “areas of evaluation” — areas around wells, both surface and subsurface — that might be susceptible to contamination migration.

**Unexpected
Toxics**

Finally, EPA plans to conduct laboratory testing to study the physical, chemical, and biological processes that occur in geologic formations subject to the chemicals and high pressures associated with hydraulic fracturing. EPA's purpose is to determine whether any reactions might lead to the formation of unexpected toxics that would not otherwise have been associated with fracturing.

FLOWBACK & PRODUCED WATER**Possible Impacts of Releases of Flowback and Produced Water
On Drinking Water Resources? (Draft Plan Chapter 6.4)****By-product
Water**

EPA proposes studying the potential for the water that comes out of the gas well after the fracturing to contaminate drinking water. In order to extract the gas, the fracturing fluids must first be extracted from the well — leaving the “proppant” (sand mixture) to hold open the fractures and allow gas to migrate up into the well. Furthermore, over the well's lifetime it will naturally produce a small amount of water (“produced water”) that contains chemicals. The extracted or produced fluids are then generally stored onsite for some period of time.

EPA first hopes to improve its understanding of the chemical composition of flowback and produced water. EPA has requested this data from industry, and will compile data from other sources and the prospective case studies. This investigation will be performed together with the US Department of Energy's National Energy Technology Laboratory, which is independently studying radionuclide and volatile organics in flowback waters, to determine whether any unique characteristics can be identified that would enable agencies to test for releases of flowback waters into other waters.

**Storage
Issues**

EPA also intends to examine the potential for various storage methods (e.g., tanks or open pits) to introduce recovered waters into drinking water resources. EPA will collect information on past leaks and releases, and on current management practices from its prospective case studies, and will develop computer models to evaluate potential release scenarios.

Hydraulic Fracturing Study

Disposal Process

Science Advisory Review

Timeline

WASTEWATER TREATMENT & WASTE DISPOSAL

Possible Impacts of Inadequate Treatment of Hydraulic Fracturing Wastewaters On Drinking Water Resources (Draft Plan Chapter 6.5)

Finally, EPA will examine the potential impact of the wastewater treatment and disposal process. Since direct release is regulated already, this study is limited to details such as the impact of various fracking chemicals on sewage treatment plants if flowback is disposed of through public systems. EPA will follow up on the existing research of the National Energy Technology Laboratory regarding the effectiveness of current treatment methods, and perform additional studies both in the lab and at the prospective case study sites.

QUESTIONS FOR EPA'S SCIENTIFIC ADVISORY BOARD Possible Plan Revisions

As discussed above, EPA has submitted the Draft Plan to the agency's Science Advisory Board (SAB) for review. The specific questions that EPA has asked the SAB to consider are available in EPA's request letter to that panel (*see* <http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/SAB-Review-Request-Final-2-8-11.pdf>).

GENERALLY, EPA ASKS THAT THE SAB COMMENT ON:

- the appropriateness of basing the plan on the "water lifecycle" concept
- whether the broad research areas that EPA has identified adequately cover the potential impacts of hydraulic fracturing on drinking water resources
- the adequacy of the proposed research approach, and particularly the use of case studies, existing data analysis, field monitoring, laboratory experiments, and modeling
- the adequacy of the specific proposed research activities (i.e., the activities shown in the above chart)
- whether the proposed study will enable EPA to meet its goals of identifying key impacts of hydraulic fracturing on drinking water resources, and provide relevant information on the risks associated with chemicals used in fracturing fluid

Upon receipt of SAB's comments, EPA intends to revise the study plan and commence the study.

EPA expects to report "initial research results" in late 2012, and to publish a final report in 2014.

FOR ADDITIONAL INFORMATION:

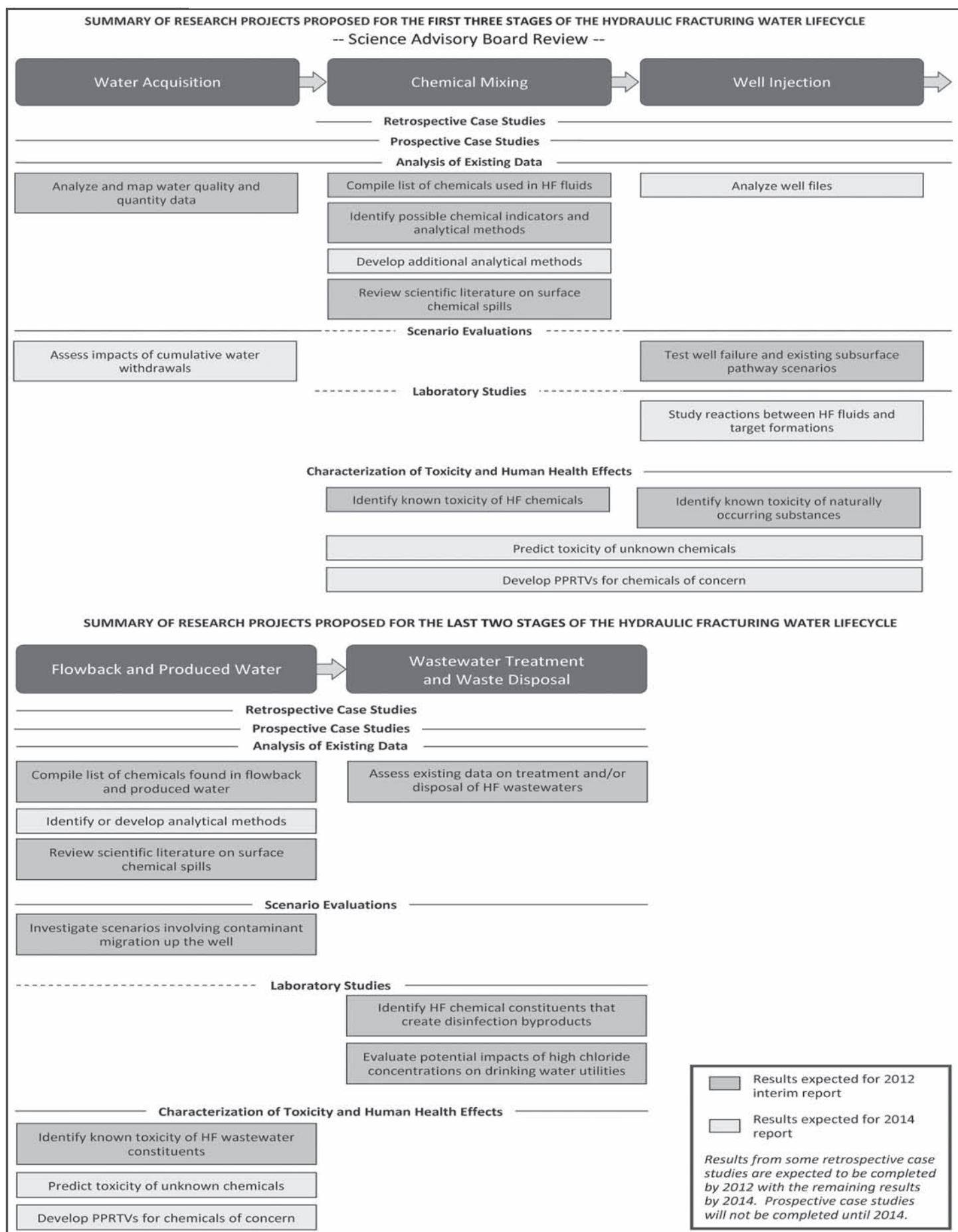
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All Graphics in this article were adapted from *Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*, EPA, February 7, 2011

Draft Plan available at: http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/HFStudyPlanDraft_SAB_020711.pdf

Adam Orford represents businesses in complex environmental litigation, administrative, and transactional settings. He has conducted both trial and appellate litigation in federal and state tribunals across the country, including the Oregon Office of Administrative Hearings, Eastern District of New York, Virginia State Corporation Commission and Ninth Circuit Court of Appeals, regarding all manner of environmental laws. He regularly works with regulators on compliance issues, and has in-depth experience with corporate acquisitions. Adam earned his J.D. from Columbia University School of Law, where he was a Stone Scholar, and served as Editor-in-Chief of the Columbia Journal of Environmental Law.



Stormwater & TMDL Allocations

EPA Memorandum

Water Quality Impairment

303(d) Lists

Pollutant Load Allocations

NPDES Origins

Point Sources

Stormwater Programs

BMP Reliance

New Stress on Numeric Limits

Potential Impacts

STORMWATER & TMDL ALLOCATIONS

EPA RECOMMENDS STORMWATER PERMIT NUMERIC WASTELOAD ALLOCATIONS

by Eric Strecker, Geosyntec Consultants (Portland, OR)

Introduction

The US Environmental Protection Agency (EPA) recently issued a memorandum titled “*Revisions to the November 22, 2002 Memorandum Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on those WLAs.*” The memorandum from James A. Hanlon, Director of EPA’s Office of Wastewater Management, and Denise Keehner, Director of EPA’s Office of Wetlands, was issued on November 12, 2010 to all of EPA’s regional Water Management Division Directors and is available online at: www.epa.gov/npdes/pubs/establishingtmdlwla_revision.pdf.

Editor’s Note

Total Maximum Daily Loads

Under federal Clean Water Act (CWA) section 303(d), a water body determined to be unable to meet water quality standards set to be protective of its designated beneficial uses due to pollution is identified as “water quality impaired” in terms of the associated pollutants and placed on a “303(d) list.” A Total Maximum Daily Load (TMDL) is subsequently set for the 303(d)-listed water body based on a determination of that water body’s capacity to assimilate a limited amount of each problematic pollutant and still provide for beneficial use(s). The TMDL allocates allowable pollutant discharge levels. These allocations are divided into two types: 1) Waste Load Allocations (WLAs) which aim at equitably distributing water-protective effluent discharge limits among “end-of-pipe” dischargers (point sources); and 2) Load Allocations (LAs), which are set for more diffuse “nonpoint” sources, such as runoff from agricultural lands. Typically there is also a “reserved capacity” set-aside to accommodate effluent from anticipated growth. WLAs have specific point-of-discharge effluent monitoring and compliance requirements which are written into a point source discharger’s National Pollution Discharge Elimination System (NPDES) permit. LAs, on the other hand, typically require only the implementation of **best management practices** (BMPs) by affected parties — though these BMP requirements may change over time in response to subsequent water quality assessments and determinations as to BMP efficacy.

NPDES permits

Originally developed separately from any TMDL process, NPDES permits were initially aimed at end-of-pipe discharges — for instance industrial and municipal wastewater effluent. These types of NPDES permits typically include numeric limits on the amount of regulated pollutants the permittee’s effluent can contain, which must be monitored for at end-of-pipe outfalls. When a TMDL is developed for the water body into which these permittees discharge a problematic pollutant, WLAs for that pollutant are applied to the numeric limits in their NPDES permits.

NPDES Stormwater Permits

1987 amendments to the CWA initiated NPDES stormwater programs, and permits were developed to regulate stormwater discharges from three types of sources: municipal separate storm sewer systems (MS4s), construction site activities, and certain industrial activities (10 categories). In part due to stormwater’s more diffuse origins, stormwater permits have relied on implementing BMPs and have not included numeric limits. Generally speaking, NPDES stormwater permits are designed to implement BMPs which control stormwater runoff to the “**maximum extent practicable**” (MEP). The MEP standard was purposely left flexible so as to be adaptable to local conditions and evolving BMPs.

The New EPA Memorandum

The new EPA memorandum revisits a 2002 EPA policy memorandum directive that supported the concept of compliance with NPDES stormwater permits through an iterative implementation of BMPs, including using BMPs as a strategy for meeting pollutant load allocations set under a TMDL. The new memorandum indicates that EPA water program staff expectations have changed as the stormwater permit programs have matured, and that **water quality based effluent limits** (WQBELs) should now be considered where feasible. Effluent limits expressed as numeric WQBELs, the new memorandum states, “create objective and accountable means for controlling stormwater discharges.”

If the recommendations in the new memorandum are implemented, there are a number of potentially significant impacts for municipal stormwater programs, others operating within municipal jurisdictions, and the States’ Departments of Transportation.

Stormwater & TMDL Allocations

Recommendation List

WQBEL Applications

Surrogates Use

Beyond MEP

“Reasonable Potential”

“NELs”

Municipality Impacts

MS4 Strategies

Problems With Surrogates

Since EPA issued the new recommendations in a memorandum — and not as an official policy, guidance, or regulation — these recommendations were not subject to any public notice/review process and there was (and is) no clear option for providing comments. However, a memorandum is not legally binding in and of itself. Provisions based on the memorandum’s recommendations will therefore be more open to challenge should such provisions be included in future TMDLs.

The new memorandum updates and revises the four elements in the 2002 policy memorandum “to better reflect current practices and trends in permits and WLAs for stormwater discharges.”

THE EPA MEMO RECOMMENDS:

- 1) Providing numeric water quality-based effluent limitations in NPDES stormwater permits
- 2) Disaggregating stormwater sources in a WLA
- 3) Using surrogates for pollutant parameters when establishing targets for TMDL loading capacity
- 4) Designating additional stormwater sources to regulate and treat load allocations as wasteload allocations for newly regulated stormwater sources

Each of these four recommendations is briefly discussed below.

Numeric Water Quality-Based Effluent Limitations in NPDES Stormwater Permits

EPA is now encouraging water quality agencies to include numeric WQBELs in NPDES stormwater permits, both as part of WLAs and in general. EPA states that numeric WQBELs in stormwater permits can “clarify permit requirements and improve accountability and enforceability.” The memorandum defines numeric WQBELs both as pollutant-specific numeric parameters (such as pollutant concentrations or pollutant loads) and as surrogates for pollutants (such as the percentage or amount of impervious cover, or stormwater flow volume).

The memorandum notes that under the provisions of CWA § 402(p)(3)(B)(iii), an “NPDES permitting authority” (i.e. an EPA-authorized state or tribal water quality agency or EPA itself) has the right to go beyond the MEP standard to include requirements for reducing pollutants in stormwater discharges as necessary to comply with water quality standards. Where the NPDES authority determines that certain stormwater discharges have a “reasonable potential” to cause or contribute to water quality standard excursions, EPA recommends that, where feasible, the NPDES authority include **numeric effluent limits** (NELs). The memorandum references “the procedures specified at 40 CFR 122.44(d)(I)(ii)” but does not further clarify how the NPDES authority should determine such “reasonable potential” and does not clearly define what would constitute feasibility (or unfeasibility) for including NELs in stormwater permits.

Under the CWA, Municipal Separate Storm Sewer System (MS4) permits address stormwater management at municipalities and certain other populated areas using a phased-in approach of increasing breadth and stringency. The inclusion of NELs in MS4 permits could have significant impacts for municipalities and others operating within MS4 jurisdictions. Such impacts include: requiring retrofitting of existing drainage systems; increased requirements for new development and re-development stormwater standards; and the potential for multiple NPDES permit violations and/or third party litigation for exceeding NELs.

There are a number of strategies (other than a legal challenge) that parties potentially impacted by the NEL recommendation can beneficially pursue.

USEFUL MS4 STRATEGIES INCLUDE:

- Working with regulating agencies and others to educate them on the value of simply continuing the iterative BMP approach recommended in the earlier (November 2002) memorandum.
- Working with regulating agencies on the definition of “where feasible” and/or to develop a policy on feasibility. It will be critical to include consideration of cost in the definition of feasible, as well as whether the actual causes and sources of pollutants are well enough known to justify setting an NEL.
- Evaluating and updating their State’s “Reasonable Potential” policies in light of EPA’s memo.
- Working with their NPDES permitting authority on:
 - Updating 303(d) Listings. In some cases better data may exist to ensure that the correct parameters are being listed.
 - Being more involved in TMDL development. TMDLs are developed for 303(d)-listed waters. Affected parties can involve themselves in TMDL development and implementation to help ensure that actual water quality limiting pollutant(s) are being regulated. This is important because using surrogates — such as volume control or the maximum percent of impervious surface — may not address what is actually limiting the beneficial uses of a water body.
 - Working with regulators to set realistic schedules for full compliance as well as interim NELs and schedules during TMDL implementation plan development.

Stormwater & TMDL Allocations

Source Differentiation

Proper Identification

Runoff Volume Control Shortcomings

Other Options

Non-Specific Parameters

Infiltration Considerations

Percent Imperviousness Considerations

- If NELs are going to be included in the permit, work to educate regulators on what the realistically “achievable” NELs are for stormwater. NELs should be set considering the actual effluent quality achievable through implementing particular stormwater BMPs (for BMP evaluations, see www.BMPDatabase.org). NEL compliance should also include variability factors and/or allowed exceedance frequencies to account for the variability in runoff and resulting variability in BMP performance. Whenever possible, potential permittees should begin working on this during the TMDL development period — as opposed to waiting until a TMDL has been issued.

Disaggregating Stormwater Sources in a WLA

EPA’s memorandum calls for “disaggregating” stormwater sources — i.e., identifying and distinguishing different stormwater sources to better enable the setting of appropriate NELs. Some current TMDL source designations are insufficiently targeted. For example, “Urban Runoff” has been used as a source category, wherein municipal sources are not distinguished from industrial sources. In other cases, only a “watershed stormwater source” is identified. MS4s and others facing WLAs should work to ensure that TMDLs and TMDL implementation plans properly disaggregate the WLAs set for “end-of-pipe” point sources and the Load Allocations (LAs) set for more diffuse “nonpoint” sources. Sources should be further disaggregated to distinguish between different land use types that are subject to different municipal, industrial, and construction permit regulations.

Using Surrogates for Pollutant Parameters when Establishing Targets for TMDL Loading Capacity

EPA’s memorandum cites the National Research Council’s 2009 report “*Urban Stormwater Management in the United States*” to support the use of surrogates (e.g., percent imperviousness, stormwater runoff volumes) to manage water quality impacts from urban land uses. The use of such surrogates can be very problematic.

While it is true that reducing volumes of runoff would likely reduce pollutant loadings in most cases, this result is not always the case. Many TMDLs are concentration-based because the impairment of concern arises from an over concentration of some pollutant. In some cases, the pollutants affecting a stream could be seeping in from groundwater contamination. A rain runoff volume reduction approach that focuses on infiltrating stormwater onsite into contaminated ground may, in fact, cause a higher release of contaminated groundwater. Reducing runoff or limiting percent imperviousness also has significant implications for urban density targets and other sustainability goals.

It should be noted that EPA’s usual regulatory approach for developing NELs is to not specify a specific solution when there are a number to choose from (e.g., see EPA’s Effluent Limitation Guidelines: <http://water.epa.gov/scitech/wastetech/guide/index.cfm>). Obviously there are other solutions besides reducing flow or volume, or limiting percent imperviousness to reduce pollutant loads and such options should be thoroughly researched.

There are a growing number of TMDLs — in Vermont and Missouri, for example — that have specified volume control or flow-duration control for water quality purposes for non-specific parameters — such as “unknown toxicity.” Flow-duration controls have been specified such that volume control would be required (i.e. all flow bins are included). It is not clear to your author whether merely reducing runoff volumes would reduce unknown toxicity. It is highly likely that it would be much more cost-effective to actually determine the specific source(s) of the toxicity and then explicitly address the source(s) via pollutant-specific TMDLs.

Volume controls assume that one can readily infiltrate stormwater runoff into soils. As noted in our earlier article (see Strecker, *Stormwater & Sediment Contamination: Minimizing Potential Sediment Recontamination & Associated Liability*, TWR #72), it is not always a good idea (or even possible) to infiltrate stormwater due to potential problems such as: below ground contamination; infrastructure or geotechnical issues; water table height; and other factors. In fact, in some cases increased infiltration could mobilize additional pollutants and discharge them to receiving waters. Moreover, evapotranspiration at developed sites will almost always be less than that occurring under greenfield conditions — especially in dense developments. Therefore, the choice is usually between more runoff than is natural or more infiltration than is natural (or a combination of both). As a result, specifying volume control is problematic and likely not achievable in many, if not most, cases.

Percent of impervious surface limits are also problematic. It is very difficult to reduce imperviousness in existing developments, especially when re-development goals usually include higher densities. For new

Stormwater & TMDL Allocations

Current MS4s

Permit Authority

Significant Sources

Additional Areas

Involvement Important

development, impervious limits can promote sprawl by pushing developments further out to accommodate the same use levels.

Thus, using either one of these measures as surrogates could be problematic for NPDES permit compliance as well as for actually addressing the receiving water impairment. It is important that municipalities and others responsible for stormwater management actively engage in TMDL development and implementation planning to help ensure that appropriate, effective, and achievable TMDLs are the result.

Designating Additional Stormwater Sources to Regulate and Treating Load Allocations as Wasteload Allocations for Newly Regulated Stormwater Sources

Phases I and II of the MS4 stormwater program included different levels of regulation and implementation schedules based on overall population and population density to specify which municipalities and other urban areas were required to be in the permitting program (along with certain specified industries). In many states, the Phase I and II programs currently do not include smaller municipalities or urban areas of 10,000 people or less.

However, EPA and the NPDES authorized States can also designate additional sources as requiring an NPDES permit based upon a number of factors, including whether the source discharges to a water quality impaired 303(d)-listed water body.

EPA'S NOVEMBER 2010 MEMORANDUM STATES:

Since 2002, EPA has become concerned that NPDES authorities have generally not adequately considered exercising these authorities to designate for NPDES permitting stormwater discharges that are currently not required to obtain permit coverage but that are significant enough to be identified in the load allocation component of a TMDL. Accordingly, EPA encourages permitting authorities to consider designation of stormwater sources in situations where coverage under NPDES permits would afford a more effective mechanism to reduce pollutants in stormwater discharges than available nonpoint source control methods.

EPA is thus recommending that additional areas be considered for inclusion in the stormwater permitting program and recommends that these new additions to the program have their LAs changed to WLAs — i.e., have numeric limits written into their NPDES stormwater permits.

Summary

In conclusion, the EPA memorandum serves to support the incorporation of numeric effluent limitations in stormwater permits as a means of enforcing compliance with water quality standards, WLAs, and TMDLs. It is important that municipal stormwater agencies and other entities that manage stormwater get more involved in the 303(d) listings and TMDL program as well as work with regulators to determine whether it is feasible or appropriate when setting numeric effluent limits in municipal stormwater NPDES permits.

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CERCLA CITIZENS SUITS PROVISIONS

“PREVAILING” PARTY DETERMINATION

THE AWARD OF FEES AND COSTS IN *PAKOOTAS V. TECK COMINCO METALS, LTD*

by Richard A. Du Bey, Leslie C. Clark, and Stephanie G. Weir, Short Cressman & Burgess PLLC

INTRODUCTION

Ongoing litigation is focusing on Teck Cominco Metals Limited’s liability under CERCLA (42 U.S.C. §§ 9601-9675 (2006)) for deposition of hazardous substances, in the form of slag and effluent, from the Trail Smelter in Canada into the Columbia River and the subsequent release of these hazardous substances in the United States (*Pakootas v. Teck Cominco Metals Ltd.*, U.S. District Court for the Eastern District of Washington, No. CV-04-256-LRS). The subject of this article is one of the claims in the original complaint, which is now on appeal before the United States Court of Appeals for the Ninth Circuit (Ninth Circuit). The Ninth Circuit will consider whether the district court erred when it awarded to Plaintiffs the costs of litigation for a citizen suit brought under §310 of CERCLA, 42 U.S.C. § 9659, to enforce an EPA Unilateral Administrative Order which was withdrawn after the execution of a non-CERCLA settlement agreement, to which Plaintiffs were not a party.

BACKGROUND

Teck Cominco Metals Limited (TCM), a Canadian corporation, operates a smelter in Trail, British Columbia, located approximately ten miles north of the US – Canada border. This smelter has been in operation for over one hundred years. In the 1930s and 1940s, the smelter was the center of litigation and the subsequent international arbitration between the US and Canada in one of the most famous transboundary pollution disputes, the Trail Smelter Arbitration. The Trail Smelter Arbitration focused on smoke and emissions, primarily sulfur dioxide, that were carried by prevailing winds from Trail, British Columbia, into Washington State where the alleged damage occurred. (*See Trail Smelter (U.S. v. Canada)*, 3 R.I.A.A. 1905 (Trail Smelter Arb. Trib. 1938); *Trail Smelter (U.S. v. Canada)*, 3 R.I.A.A. 1938 (Trail Smelter Arb. Trib. 1941).

From 1999 to 2003, pursuant to the 42 U.S.C. §9605 petition submitted by the Confederated Tribes of the Colville Indian Reservation (Colville Tribes), the US Environmental Protection Agency (EPA) conducted a site assessment of the Upper Columbia River (UCR) site. The UCR is defined as the “aral extent of contamination in the Upper Columbia River in the Upper Columbia River in the United States, and all suitable areas in the United States in proximity to the contamination necessary for implementation of response action,” EPA Order, *supra* note 4, at 2. Upon completion of the assessment in March 2003, EPA determined that the UCR was eligible for listing on EPA’s National Priorities List (NPL) but delayed listing while engaged in negotiations with TCM to establish a Superfund Alternative plan. *Id.* note 4 at 4. These negotiations proved unsuccessful and on December 13, 2003, EPA ultimately issued TCM a Unilateral Administrative Order (EPA Order) directing TCM to undertake the preparation of a Remedial Investigation and a Feasibility Study (RI/FS). *Id.* note 4.

However, TCM informed EPA that the Agency did not have jurisdiction over the Trail Smelter and refused to implement EPA’s order. EPA itself took no further action to enforce its own order. In light of the absence of EPA enforcement action, in July 2004, two enrolled members of the Colville Tribe, Joseph Pakootas and Donald R. Michel, filed a complaint under the “citizen suit” provision of CERCLA (42 U.S.C. §9659(a)(1)), against TCM seeking to enforce the EPA Order (Pakootas, *supra* note 2). In a “citizen suit” case, the plaintiffs “effectively stand in the shoes of the EPA. The citizen plaintiff’s role is to assert permit violations and to request that a fine be imposed; the citizen plaintiff does not personally benefit from bringing the action.” *Sierra Club v. Chevron U.S.A., Inc.*, 834 F.2d 1517, 1522 (9th Cir. 1987).

TCM filed a motion seeking dismissal of the suit, claiming TCM was not subject to United States law. The Court denied TCM’s motion. TCM lost on its subsequent appeal of the order denying TCM’s motion to dismiss, TCM’s petition for rehearing and rehearing en banc, as well as TCM’s Petition for Writ of Certiorari to the Supreme Court. *See Teck Cominco Metals, Ltd. v. Pakootas*, 552 U.S. 1095, 128 S. Ct. 858 (2008); *Pakootas v. Teck Cominco Metals, Ltd.*, 452 F.3d 1066 (9th Cir. 2006); *Pakootas v. Teck Cominco Metals, Ltd.*, U.S. Dist. LEXIS 23041 (E.D. Wash., 2004).

While the interlocutory appeal before the Ninth Circuit was pending, TCM entered into an agreement with EPA (TCM/EPA Agreement) that substantially implements the requirements of the EPA Order, though the TCM/EPA Agreement did not require TCM to submit to jurisdiction under CERCLA. Under that agreement, EPA agreed to, and did, withdraw the EPA Order. *Teck Cominco, Agreement for Remedial Investigation and Feasibility Study (RI/FS)* (June 2, 2006), available at <http://yosemite.epa.gov/R10/CLEANUP.NSF/UCR/Enforcement> [hereafter TCM/EPA Agreement].

Although the TCM/EPA Agreement is not subject to CERCLA, the TCM/EPA Agreement does draw heavily on CERCLA and the EPA Order.

Citizen Suits

Litigation Costs

Transboundary
PollutionSuperfund
Eligible

EPA Order

EPA Jurisdiction
ChallengedNo EPA
EnforcementCitizen Suit
ProvisionsSettlement
Agreement

Citizen Suits

Settlement Agreement Details

Prevailing Party Cost Recovery

Enforcement Goal Achieved

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Specifically, the TCM/EPA Agreement:

- incorporates definitions taken from CERCLA
- includes the agreed to "Statement of Work" (SOW) that was patterned after the EPA Order SOW
- notes that EPA retained the right to insist on its interpretation of the Statement of Work and application of the National Contingency Plan (NCP)
- provides that the RI/FS process will be "consistent with the National Contingency Plan (NCP), 40 CFR 300"
- specifies that the work performed shall be consistent with applicable EPA guidance
- provides that the RI/FS may be modified or finalized by EPA

In anticipation of the TCM/EPA Agreement and withdrawal of the EPA Order, the Plaintiffs moved for and were granted leave to file amended Complaints in which they withdrew their claims for injunctive and declaratory relief related to enforcement of the EPA Order. The Plaintiffs, however, maintained their claims, among others, for attorneys' fees and costs incurred in seeking enforcement of the EPA Order.

The history of the Site and the current litigation is extremely complex. For greater detail concerning the litigation and the other issues in the case, see the listing of references at the end of this article.

ATTORNEYS' FEES AND COSTS DECISION

Under CERCLA, 42 U.S.C. §9659(f) permits the court to award costs of litigation — including reasonable attorney and expert witness fees — to the prevailing or substantially prevailing party, when appropriate, for citizen suits brought under §9659. To be a "prevailing party" there must be some material alteration of the parties' legal relationship and a "judicial imprimatur" (i.e. judicial sanction) of that alteration. *P.N. v Seattle Sch. Dist. No. 1*, 474 F.3d 1165, 1170-71 (9th Cir. 2007).

In his recent opinion granting the Plaintiffs' attorneys fees, Judge Suko held that the legal relationship between the parties was materially altered when TCM agreed with EPA to perform an RI/FS that was modeled upon and substantially implemented the EPA Order. *Pakootas v. Teck Cominco Metals, Ltd.*, No. CV-04-256-LRS, 2009 (E. D. Wash. March 9, 2009), at 4-7 (order granting Plaintiffs motion for Award of Costs of Litigation Including Attorney Fees). The District Court (Court) reasoned that the TCM/EPA Agreement effectively satisfied the injunctive relief sought by the Plaintiffs. The Court found that the Plaintiffs did not need to be a party to the TCM/EPA Agreement in order for that agreement to constitute a material alteration of the parties' legal relationship. *Id.* at 7. The Court reasoned that by filing a citizens suit in the instant case, the Plaintiffs "stood in the shoes of EPA" to fill a gap in enforcement and that when TCM reached an agreement with EPA, the Plaintiffs' goal of enforcement was achieved. *Id.* at 7, 9.

To achieve "prevailing party" status, there must also exist a "judicial imprimatur" of the alteration of the parties' legal relationship. The Ninth Circuit has held that there must be "some" judicial sanction, without limiting what form the sanction must take, thus some uncertainty remains as to what may constitute "judicial imprimatur." *P.N. supra* note 12 at 1173. Accordingly, TCM urged the Court to narrowly read the Supreme Court and Ninth Circuit authority to require a judgment, order, or decree to constitute judicial imprimatur — as opposed to the settlement agreement. *Pakootas, supra* note 13, at 8.

The District Court (Court) declined to follow TCM's argument. Instead, the Court found that because the TCM/EPA Agreement specifically provides that the United States District Court for the Eastern District of Washington shall have jurisdiction to enforce TCM's obligations under the EPA/TCM Agreement, sufficient judicial sanctions exist to satisfy the Ninth Circuit's judicial imprimatur standard. *Id.*

CONCLUSION

The matter has been fully briefed and will likely be scheduled for oral argument before the Ninth Circuit by mid-2011. The Ninth Circuit has consolidated the attorneys' fees and costs appeal for consideration by the panel before which Teck Cominco's CERCLA §113(h) appeal is currently pending.

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Richard Du Bey, Michelle Ulick Rosenthal & Leslie C. Clark, *Upper Columbia River Contamination – A Transboundary Application of CERCLA*, The Water Report #15, May 15, 2005 at 1;

Richard Du Bey & Jennifer Sanscrainte, *The Role of the Confederated Tribes of the Colville Reservation in Fighting to Protect and Clean-up the Boundary Waters of the United States: A Case Study of The Upper Columbia River and Lake Roosevelt Environment*, 12 Penn St. Env'l. L. Rev.335, (2004);

Richard Du Bey & Michelle Ulick Rosenthal, *Tribal Water Quality Standards*, The Water Report, August 15, 2005, at 1.

Previous versions of this article were published in the ABA Toxic Torts and Environmental Law Committee Newsletter, Spring 2010, at 7, and in the WSBA Indian Law Newsletter, Winter 2010-2011, at 5.

Takings

WATER TAKINGS DECISION

KLAMATH PROJECT WATER USERS

by David Moon, Editor

INTRODUCTION

In a victory for Klamath Basin farmers and irrigators in Oregon and northern California, the US Court of Appeals for the Federal Circuit (Court of Appeals) has overturned a ruling by the US Court of Federal Claims that dismissed Plaintiffs' claims for \$100 million in just compensation from the federal government, and remanded the case for further proceedings. The Court of Appeal's decision emphasized that on remand, the federal government (Defendant) now "has the burden" of proving that delivering water to the Klamath Basin water users in 2001 was "impossible." The Defendant also has the burden of demonstrating "with specificity" how the water districts' repayment contracts redefined or altered the water users' water rights.

BACKGROUND

The case, *Klamath Irrigation District v. United States*, No. 01-591 L (Feb. 17, 2011), stems from a 2001 decision by the US Bureau of Reclamation (Reclamation) not to deliver water to Reclamation's Klamath Project from April 6 through July of 2001, after which Reclamation was able to release some water to its users, including plaintiffs. *Slip Op.* at 7-8. The water was withheld for the purpose of protecting three species of fish under the Endangered Species Act (ESA). Plaintiffs filed suit in the US Court of Federal Claims in 2001, alleging that the federal government had taken their constitutionally protected property rights without just compensation — in violation of the Fifth Amendment — or in the alternative, breached the Plaintiffs' water delivery contracts, by failing to deliver the water in 2001. Plaintiffs also alleged that that Reclamation's action impaired their water rights without just compensation in violation of the Klamath Basin Compact. In 2005, the U.S. Court of Federal Claims — relying on a 1905 Oregon statute — denied Plaintiffs' claims, holding that there was no equitable property right in their use of Klamath Basin water for irrigation. In 2007, the Court disposed of the remaining breach of contract claims, concluding that the federal government was shielded by sovereign immunity.

On July 16, 2008, the Court of Appeals certified three questions relating to the takings and Compact claims to the Oregon Supreme Court. The certification was pursuant to a procedure whereby unsettled questions of state law may be certified to the Oregon Supreme Court. The Oregon Supreme Court on March 11, 2010, rendered its decision, answering the certified questions. *See Klamath Irrigation Dist. v. United States*, 348 Or. 15, 227 P.3d 1145 (Or. 2010) (en banc) ("Certification Decision"). *See Moon, TWR #74* for additional information regarding the Oregon Supreme Court's decision. The Court of Appeals Slip Opinion also covers the issues and decision by the Oregon Supreme Court in detail (*Slip Op.* at 17-20).

ON REMAND

REMAINING ISSUES

Much remains to be decided, however, before the Plaintiffs can finally prevail in the case and lay claim to all or part of the \$100 million. The Court of Appeals specified that on remand, "the court is to (1) consider the takings and Compact claims in light of the Certification Decision; (2) determine whether, as far as the breach of contract claims are concerned, the government can establish that, for purposes of its defense based on the sovereign acts doctrine, contract performance was impossible; and (3) decide the breach of contract claims as appropriate." *Id.* at 4.

Determination of Property Interests

As noted by the Court of Appeals, on remand the Court of Federal Claims must first "determine, for purposes of plaintiffs' takings and Compact claims, whether plaintiffs have asserted cognizable property interests. In making that determination, the court should direct its attention to the third part of the three-part test set forth by the Oregon Supreme Court... As far as the third part of the three-part test is concerned, the court should address whether contractual agreements between plaintiffs and the government have clarified, redefined, or altered the foregoing beneficial relationship so as to deprive plaintiffs of cognizable

Federal Burdens

ESA Protections

Plaintiff's Claim

State Law Questions

Issues on Remand

Cognizable Property Interests

Takings

property interests for purposes of their takings and Compact claims. In that regard, as seen, plaintiffs assert that there are no such contracts. On remand, the Court of Federal Claims should give the government the opportunity to demonstrate how plaintiffs' beneficial/equitable rights to the use of Klamath Project water have been clarified, redefined, or altered. In that context, it will be the government's burden to demonstrate with specificity how the beneficial/equitable rights of one or more plaintiffs have been clarified, redefined, or altered." *Id.* at 27-28.

**Takings
Determination****Takings or Impairment**

If the court "determines that one or more of the Plaintiffs have asserted cognizable property interests, it then should determine whether, as far as the takings and Compact claims are concerned, those interests were taken or impaired. That determination will turn on existing takings law." *Id.* at 28-29. The Court of Appeals also noted that on remand, counsel for Plaintiffs should confirm which plaintiffs are asserting takings and Compact claims and which plaintiffs are asserting breach of contract claims.

**"Impossibility"
of
Performance****Breach of Contract Claims**

Concerning the breach of contract claims, the Plaintiffs had asserted "that the Court of Federal Claims erred in not holding impossibility of performance a threshold requirement the government must meet when asserting the sovereign acts defense." *Id.* at 29. Eventually, the Court of Appeals decided:

"In sum, the Court of Federal Claims erred in holding that impossibility of performance is not a factor to be taken into account in considering the sovereign acts doctrine. The Bureau's reduction of water deliveries in order to comply with the requirements of the ESA was a public and general act. However, in order to escape liability from breach of contract in this case based on the sovereign acts doctrine, the government has the burden of establishing that performance of the various contracts at issue was impossible. The case is remanded to the Court of Federal Claims so that the government may have the opportunity to carry that burden. Once the court determines whether the government is entitled to assert the sovereign acts doctrine in this case, it should proceed to resolve, in the appropriate manner, plaintiffs' breach of contract claims."

Id. at 33. In a footnote, the Court of Appeals added some explanation regarding "impossibility" by noting that "...the court should determine whether additional evidence should be received in order to give the government the opportunity to show that the Bureau lacked alternatives to halting water deliveries." *Id.*

**Damages Not
Addressed****Damages**

Finally, the Court of Appeals discussed the issues of damages, leaving that to the Court of Federal Claims on remand: "If the court determines that the government is liable for takings or for breach of contract, or both, it will be necessary for it to address the question of damages. Needless to say, we express no views on whatever issues may arise in the setting of a damages determination." *Id.* at 34.

FOR ADDITIONAL INFORMATION:

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Complete case available at: www.cafc.uscourts.gov/images/stories/opinions-orders/07-5115.pdf

David Moon has specialized in water law for over 30 years, practicing in Montana and Oregon. Mr. Moon is also a seasoned journalist, who for over twelve years has reported regularly on evolving water law issues. He is currently an Editor at The Water Report. Mr. Moon graduated from Colorado College in 1975 and received his J.D. from the University of Idaho in 1979. He is a member of the Idaho, Montana and Oregon BARs.

WATER BRIEFS

WATER UTILITY SALE MT**WAIVER OF REVIEW REQUESTED**

Mountain Water Company (Mountain Water), which supplies drinking water to 50,000 Missoula, Montana residents, is proposing a sale of the company to The Carlyle Group (Carlyle). Mountain Water is owned by California-based Sam Wheeler, as part of his holdings with Park Water Company (Park Water). Wheeler bought the utility from Montana Power Company in 1979. The Park Water portfolio also includes two water utilities in southern California. Park Water intends to sell all three water utilities to Carlyle, one of the world's largest global alternative asset managers with about \$98 billion in assets. The acquisition would be Carlyle's first foray into owning and operating a water utility.

On January 24, Mountain Water filed a petition with Montana's Public Service Commission (PSC) requesting the following: (1) a ruling that there is no basis for the PSC to claim jurisdiction over the sale of Park to Carlyle; (2) even if the PSC decides it has the power to review the sale, the PSC should waive that power and defer instead to the jurisdiction of the California Public Utility Commission; and (3) if the PSC decides it does have the power and does want to exercise jurisdiction, that the PSC approve the sale and adopt an expedited 3-month process and issue a decision by May 19, 2011, rather than the standard 9-month timeline.

Mountain Water owns the water rights and associated water distribution system for tapping the Missoula aquifer, which provides drinking water to the City and adjacent Missoula County residents. Mountain Water also owns the senior water rights on Rattlesnake Creek, and lakes and dams in the Rattlesnake wilderness that serve as a back-up water supply for the City.

The Clark Fork Coalition (CFC), a Montana environmental group, became concerned that PSC could disclaim jurisdiction on this sale, putting California in charge of a major decision about Missoula's water. CFC believes it is imperative to persuade

the PSC to assume jurisdiction and fully vet the sale with the public and thus has asked affected citizens to send public comments to the PSC. CFC has also asked the PSC for permission to intervene in the proceedings and Mountain Water has filed an objection to that intervention request. Carlyle, the City of Missoula, and Montana Consumer Counsel also filed Petitions to Intervene, all of which were granted by PSC on February 18.

One of the questions CFC plans on raising in the proceedings is what is the plan for repairing and upgrading old and leaking water pipes? Mountain Water has a 40 percent leakage rate, according to CFC. The Docket Number for the PSC case is D2011.1.8.

For info: Mountain Water's filing: http://psc.mt.gov/eDocs/eDocuments/pdfFiles/D2011-1-8_IN_20110124_AP1.pdf; PSC website: www.psc.mt.gov/; CFC website: www.clarkfork.org/

EPA REGULATIONS US**AGENCY IMPROVEMENT PLAN
COMMENTS SOUGHT**

EPA is inviting the public to provide input on a plan that will guide EPA's retrospective reviews of regulations as part of the agency's response to President Obama's January 18, 2011 Executive Order (EO) 13563, "Improving Regulation and Regulatory Review."

EO 13563 directs each federal agency to consider "how best to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome." Specifically, the EO calls on every agency to develop "a preliminary plan, consistent with law and its resources and regulatory priorities, under which the agency will periodically review its existing significant regulations to determine whether such regulations should be modified, streamlined, expanded or repealed to make the agency's regulatory program more effective and or less burdensome in achieving its regulatory objectives."

EPA will solicit public input regarding the design of its plan via the EPA website through March 20, 2011.

By late May, EPA will provide the public with its retrospective review plan, as well as the initial list of regulations it plans to review.

For info: EPA website:

www.epa.gov/improvingregulations

WATER CONTAMINANTS US**EPA INFORMATION TOOL**

EPA recently announced a major expansion and additional enhancement of the Water Contaminant Information Tool (WCIT). WCIT is a secure, on-line database profiling chemical, biological, and radiological contaminants of concern for drinking water and wastewater utilities. EPA has now added a compendium of 700 new contaminants with details on more than 212 analytical methods. EPA has also completed enhancements of the WCIT search feature. Expanding the range of data in WCIT enables water utilities, public health officials and federal, state and local agencies to better plan for and respond to an "all-hazards" contamination incident. To apply for free access to WCIT, please visit the website listed below.

For info: www.epa.gov/wcit

AQUIFER CLEANUP NM**COUNTY & CITY SYSTEM REQUIRED**

On February 25, EPA issued an order to Doña Ana County and the City of Las Cruces to clean a contaminated groundwater aquifer under the city. The aquifer has been used by the City of Las Cruces for drinking water and poses an imminent and substantial danger to anyone who drinks from it. The city and county will be required to build a system that will extract, treat, and remove the contaminant from the aquifer. The contaminant, perchloroethylene (PCE) — widely used for dry cleaning and degreasing — is above the maximum contaminant level under the Safe Drinking Water Act. On June 14, 2001, EPA listed the site on the National

WATER BRIEFS

Priority List (Superfund site), EPA's list of uncontrolled hazardous substance releases in the United States that are priorities for long-term evaluation and response.

In October 2009, EPA also ordered the county and city to develop a plan for the removal of the contamination. The current order directs the county and city to complete the remedial action according to the 2009 plan. The source of the contamination has been identified as historical releases that occurred at the site known as the Griggs and Walnut Ground Water Plume Superfund Site, named after two intersecting streets in Las Cruces. The releases were most likely associated with maintenance activities or waste disposal.

PCE in humans has been known to cause adverse neurological, liver and kidney effects following short-term and long-term inhalation exposure. Some people who drink water containing PCE in excess of the maximum contaminant level over many years could have problems with their liver and may have an increased risk of getting cancer. EPA continues working with the New Mexico Environment Department, the city, and county to address concerns about the contamination.

For info: Dave Bary, 214/ 665-2200, r6press@epa.gov or www.epa.gov/aboutepa/region6.html

TISSUE MONITORING CA DATA EXCHANGE NETWORK

Tissue monitoring data is now available on-line through the California Data Exchange Network (CEDEN). The California State Water Board and the CEDEN Regional Data Centers are working to facilitate the connection of scientists and other researchers with California's water monitoring data in a timely and easily accessible fashion. The release of tissue data on-line through CEDEN, in conjunction with other data already available through CEDEN will further help California manage its water resources.

Using the Advanced Query Tool, a variety of meta-data such as location, parameter, and time sampled can be

selected to tailor specific queries for the user. The Advanced Query Tool also includes interactive maps that help the user visualize where sampling has been conducted for various projects, or informs users what kinds of monitoring was conducted at specific locations.

For info: www.ceden.org; CEDEN data can be found at: www.ceden.us/AdvancedQueryTool

DOMESTIC GROUNDWATER WA ECOLOGY MITIGATION PROGRAM

The Washington Department of Ecology (Ecology) and Kittitas County have pledged to work together to develop a mitigation program that would allow landowners to drill wells in upper Kittitas County for domestic water purposes. Ecology Director Ted Sturdevant and Kittitas County commissioners signed an agreement establishing goals for a Domestic Water Reserve Program in Upper Kittitas County to provide relief in an area where new groundwater withdrawals have been curtailed unless they are backed by existing senior water rights.

"The creation of a Domestic Water Reserve Program in Upper Kittitas County will hopefully restore the certainty and predictability for property owners that has been missing since the current moratorium was imposed," said Kittitas County Commissioner Paul Jewell. "Combined with other options that the county is working towards...this program would help provide assurance that no landowner in Upper Kittitas County is left without a viable option when it comes to access to water for domestic purposes and protection of their investment."

A rule adopted by Ecology last December — which made permanent restrictions in place since July 16, 2009 — halts new unmitigated groundwater withdrawals until more is known about the aquifers in the upper county. Senior water rights are available through several new water banking programs along the I-90 corridor near Roslyn and Cle Elum, but land in some tributary areas lack such opportunities. Currently, new groundwater withdrawals cannot

occur unless mitigation is acquired through a water bank or another senior water right can be applied. Ecology has set up the Upper Kittitas Water Exchange as a service to help water users locate or sell water available for transfer (www.ecy.wa.gov/programs/wr/cwp/wtrxchn.html).

A study currently under way by the United States Geological Survey of the upper county bedrock aquifers will provide water managers information on how the aquifers interact with surface water tributaries and the Yakima River, and what impact new groundwater withdrawals will have on streamflows and senior water rights.

For info: Ecology website: www.ecy.wa.gov/programs/wr/cro/kittitas_wp.html

SOLAR POWER CLEANUP CA ENERGY CONSERVATION

EPA's Jared Blumenfeld, US Congressman Mike Thompson, and Linda Adams, Secretary of the California Environmental Protection Agency hosted a press conference and media tour on February 23 to provide details about recent exciting energy conservation and cleanup accomplishments at the Frontier Fertilizer Superfund site in Davis, California. An innovative electrical resistance heating system, partially funded by the American Recovery and Reinvestment Act, officially went online and is projected to reduce the timeline to cleanup the site from 150 years to 30 years. Frontier Fertilizer operations in the 1970s and 1980s consisted of storing, mixing, and delivering pesticides and herbicides. For years since, toxic chemicals including pesticides and herbicides leaked into soil and groundwater, the primary source of drinking water in the area.

"For the first time ever, solar will provide all of the power for a Superfund groundwater cleanup," said Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "Our goal should be to clean the environment in the greenest way possible — and this new treatment plant sets the benchmark for future

WATER BRIEFS

actions.” More than \$2.5 million dollars in stimulus funding has gone to recent improvements at the site. By installing the solar panels and starting the new system, the site will lower overall energy costs by \$15,000 a year and reduce CO2 emissions by more than 54 metric tons a year.

Electrical resistive heating is a technology sometimes used to cleanup sites when conventional methods will not work. The heating system includes 236 heating electrodes that will heat the soil and groundwater to the boiling point of water. Extraction wells strategically located in and around the heated areas will collect gas and liquids generated by the heating system. Extracted gas and liquids are treated with granular activated carbon. Twenty-seven temperature-monitoring wells will be used to monitor the below ground operation.

EPA first installed limited solar panels at the Frontier site in 2007. The initial system helped to partially offset the electrical power needs for the groundwater treatment system but could not fully power the site. In 2010, \$350,000 in Recovery Act Funds were used to expand the solar system, which now provides 100% of the power for the groundwater treatment system. The new solar panels cover half an acre. The project team is also evaluating options for the reuse of treated groundwater for irrigation of City and Caltrans properties.

For info: Mary Simms, EPA, 415/ 947-4270, simms.mary@epa.gov or www.epa.gov/aboutepa/region9.html

WATER RIGHT PURCHASES NE PLATTE RIVER ENHANCEMENT

Central Platte Natural Resources District (NRD) General Manager Ron Bishop provided an update to CPNRD's Board on February 24 on their Water Banking Program's goal to reach 1997 levels, announcing that “the NRD is now 15 years ahead of schedule.” NRD now has 3,000 of the required 3,400 acre/feet of water back to the Platte River and Bishop said he was confident that the NRD “would reach the 3,400 requirement by the end of the calendar year.”

The NRD's Water Banking Program began in January 2007 to try to reduce the need to regulate irrigators within the District. As part of the program, NRD purchases water rights as a solution to balance water that is being used with water that is available. The Water Bank holds permanent easements on land accepted into the program and pays landowners to convert the irrigated land into dryland.

Two major programs required the NRD to find a solution — the Platte River Recover Implementation Program (PRRIP) and Nebraska Legislative Bill 962 (calls for the integrated management of surface water and groundwater). Nebraska entered into the PRRIP in 2006 with the states of Wyoming and Colorado and the US Department of Interior. The program calls for no new depletions to US Fish and Wildlife Service “target flows” and a return to the 1997 level of depletions. New uses could be allowed, but any depletion must be offset with water.

To ensure that NRD is able to purchase water rights when available, the NRD Board of Directors on February 24 also approved a motion to allow Bishop to make an application for a line of credit up to \$4 million.

For info: NRD's website: www.cpnrd.org/Water_Bank.html

WASTEWATER INNOVATION HI REUSE & ENERGY SYSTEM

EPA and the Hawai'i Department of Health recently honored the County of Kauai with the 2011 Hawai'i Clean Water State Revolving Fund Project of the Year Award. The project, upgrading and expanding the Waimea Wastewater Treatment Plant with a photovoltaic system and a water reuse component, was financed by \$15.6 million in federal funding, a \$8.2 million loan from the Hawai'i Clean Water State Revolving Fund administered by the Hawai'i Department of Health, and \$7.4 million in American Reinvestment and Recovery Act (ARRA) funding.

The county's effort is a green project promoting water and energy efficiency that will increase the plant's capacity from 300,000 to 700,000

gallons per day. The wastewater will be treated to standards that will encourage its reuse on parks, school fields, and a future golf course. The county will install a photovoltaic system supplying about 70 percent of the power needed to run the expanded plant to offset the additional power demands, resulting in increased capacity while providing better reuse water using renewable energy.

The “Pisces Award” recognizes the most innovative and effective clean water loan projects. States could nominate one project for the award and the project needs to be in compliance with the Clean Water Act, demonstrates financial integrity by showing no financial problems with the project, and has high health benefits.

For info: Dean Higuchi, EPA, 808/ 541-2711 or higuchi.dean@epa.gov

SUPPLY & STREAMFLOW WA WATER MANAGEMENT AGREEMENT

The Washington Department of Ecology (Ecology), local irrigators, and Clallam County have reached an innovative agreement on steps forward for water supply and stream flow restoration in the Dungeness River Watershed. In conjunction with the “Dungeness Watershed Guiding Principles for Managing Water Cooperators' Agreement,” the Jamestown S'Klallam Tribe has sent a letter of support to Ecology, pledging participation in efforts to improve water supply and restore stream flows in the watershed.

Competing demands for a water supply that varies greatly through the year require a collaborative effort to manage water to benefit present and future users in the Dungeness watershed. While snowmelt on the north Olympic Peninsula is the main source of water in the Dungeness River in spring and early summer, flows drop rapidly, and by late summer streams and rivers are almost entirely fed by groundwater. Farm irrigation and lawn watering are at their peaks in the summer and early fall, the same time spawning fish need water in the streams. Four fish species in the Dungeness River

WATER BRIEFS

are threatened, and insufficient stream flow is a critical factor. Demands on the water supply are only expected to increase due to one of the highest population growth rates in Washington state.

Ecology is suspending rulemaking in the watershed through 2011. This new agreement emerged during the drafting of a Dungeness water management rule and is built on five goals: preventing permanent reductions in Dungeness River flows or small streams due to new uses; supplying adequate and reliable water for new uses; ensuring sustainable agriculture in the Dungeness Valley; restoring stream flows in the main-stem Dungeness and where feasible, in small streams; and putting an instream flow rule in place that protects instream resources and existing water rights within 18 months after the agreement is signed.

For Info: Dungeness Water Management: www.ecy.wa.gov/programs/wr/instream-flows/dungeness.html

CONTAMINANT MONITORING US DRINKING WATER - PUBLIC COMMENT

As part of its commitment to implement sensible protections of drinking water, and as required by the Safe Drinking Water Act (SDWA), EPA is proposing 30 currently unregulated contaminants for monitoring in water systems, and submitting this proposal for public comment. The comment period will allow the public and other stakeholders to provide input on the selection of new contaminants for monitoring, and will help determine the best path forward.

Under the authority of SDWA, EPA currently regulates more than 90 contaminants in drinking water. To keep drinking water standards up-to-date with emerging science, SDWA requires that EPA identify up to 30 unregulated contaminants for monitoring every five years. This current proposal is the third Unregulated Contaminant Monitoring Regulation and includes requirements to monitor for two viruses and 28 chemical contaminants that could be present in drinking water and do not currently have health-based standards.

EPA is requesting public comment on the proposed list of 30 contaminants until May 2, 2011. Following public comment, EPA will consider the input before the list is scheduled to be finalized in 2012, with sampling to be conducted from 2013 to 2015. Sampling will take place at all systems serving more than 10,000 people and at a representative sampling of systems serving less than 10,000 people. More information about the proposed list of contaminants is available on the website below. The proposed list of contaminants includes hormones, volatile organic compounds, synthetic organic compounds, metals, and perfluorinated compounds.

For info: Richard Yost, EPA, 202/ 564-7827, yost.richard@epa.gov or <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/index.cfm>

LANDOWNER RIGHT WEST 303(d) CHALLENGE ALLOWED

On February 3, the Ninth Circuit Court of Appeals in *Barnum Timber Co. v. EPA*, 2011 WL 383012 (9th Cir. Feb. 3, 2009) held that a private landowner who alleged that its property values were adversely impacted has “standing” to challenge EPA’s approval of a state’s “impaired waters” listing under Section 303 of the Clean Water Act (CWA). Once EPA has approved a state’s list of “impaired waters,” the state and EPA must develop maximum pollution levels for the impaired water bodies called “total maximum daily loads” (TMDL). 33 U.S.C. § 1313(d)(1)(C). The decision thus gives a private plaintiff the ability to challenge the listing decision, the step that occurs prior to the imposition of obligations on private properties through TMDL programs.

The decision includes a detailed discussion of “constitutional standing” under Article III of the US Constitution, including the three required elements of injury-in-fact, causal connection, and redressability.

For info: *Barnum Timber Co. v. EPA*: www.ca9.uscourts.gov/datastore/opinions/2011/02/03/08-17715.pdf

STORMWATER AGREEMENT UT UNPERMITTED DISCHARGES PENALTY

EPA and Holcim (US), Inc. (Holcim) have entered into a consent agreement in which Holcim will pay a \$50,000 penalty for unpermitted discharges to the Weber River at the Devil’s Slide Quarry in Morgan, Utah. “Stormwater permits are designed to prevent contaminated runoff from damaging rivers and streams,” said Mike Gaydosch, EPA’s enforcement director in Denver. “EPA notes that Holcim has developed a plan and secured a permit for its Devil’s Slide Quarry that will minimize the future release of pollutants to the Weber River.” The agreement resolves an EPA complaint alleging that runoff from the quarry entered the river without a required Clean Water Act (CWA) permit from the Utah Department of Environmental Quality (UDEQ). The complaint was a follow-up to an earlier order issued by EPA.

In May 2008, EPA inspected Devil’s Slide Quarry and found evidence of a discharge to the Weber River from an impoundment built to store stormwater and/or process water runoff from rain or snowmelt. At the time of the inspection, Holcim had not sought or obtained a permit from UDEQ to discharge stormwater from the facility. EPA has authorized UDEQ to implement the stormwater permitting program under the CWA.

In June 2009, a follow-up inspection by UDEQ found that the facility was discharging stormwater and/or process water from the impoundment to the Weber River. Pollutants entering the river would have been minimized or prevented if the quarry had implemented adequate control measures as required by a permit. In August, 2009, EPA issued an order which required Holcim to develop a plan to prevent and report any stormwater discharges to the Weber River, and to apply for a UDEQ stormwater permit covering discharges from the facility. UDEQ issued the facility an individual permit for their operations in early February.

For info: David Gwisdalla, EPA, 303-312-6193 or David.Gwisdalla@epa.gov; EPA’s stormwater program: http://cfpub.epa.gov/npdes/home.cfm?program_id=6

The Water Report

CALENDAR

March 16 CA
Ass'n of California Water Agencies
2011 Legislative Symposium,
Sacramento. Sacramento
Convention Ctr. For info: www.acwa.com/acwa_calendar

March 16 CA
Financing Renewable Energy Seminar,
Santa Monica. For info: The Seminar
Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

March 16-17 ID
Industrial Energy Efficiency Summit,
Boise. Boise Centre. Sponsored by
Western Governors' Association. For
info: Linda Davis, 303/ 623-9378 x107
or www.westgov.org

March 16-18 Vietnam
Water Tech Vietnam 2011: Energy,
Water & Wastewater Conference,
Ho Chi Minh City. For info: www.watertechvietnam.vn/index.php

March 17 OR
The Future of Oregon's Water Supply
& Management Seminar, Portland.
World Trade Center, 121 SW Salmon.
For info: The Seminar Group, 800/ 574-
4852, email: info@theseminargroup.net,
or website: www.theseminargroup.net

March 17 CA
Sustainable Water Resources
Management in Site Design &
Development Course, Sacramento.
Sutter Square Galleria, 2901 K Street.
For info: UC Davis Extension, 800/
752-0881 or www.extension.ucdavis.edu/landuse

March 17-18 NV
Law of the Colorado River 13th
Annual Conference, Las Vegas.
The Cosmopolitan. For info: CLE
International, 800/ 873-7130 or website:
www.cle.com

March 17-18 WA
Water Law in the Inland Northwest
Seminar, Spokane. Spokane Convention
Ctr. For info: Law Seminars Int'l, 800/
854-8009, email: registrar@lawseminars.com,
or website: www.lawseminars.com

March 17-18 DC
Climate Change Regulation
Conference, Washington. For info: Law
Seminars Int'l, 800/ 854-8009, email:
registrar@lawseminars.com, or website:
www.lawseminars.com

March 17-19 UT
40th Annual Conference on
Environmental Law, Salt Lake City.
The Grand America. For info: ABA,
www.abanet.org/environ/envlaw/

March 18 CA
Green Building Seminar: Legal &
Regulatory Realities, Santa Monica.
Annenberg Community Beach House.
For info: The Seminar Group, 800/ 574-
4852, email: info@theseminargroup.net,
or website: www.theseminargroup.net

March 20-23 DC
Ass'n of Metropolitan Water Agencies
Water Policy Conference, Washington.
The DuPont Hotel. For info: www.amwa.net/cs/conferences/future

March 21 CO
Fundamental Contaminant
Chemistry Course, Greenwood
Village. Wingate Hotel. For info:
EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 21-22 WA
Activated Sludge Process Control
Workshop, Port Angeles. Lincoln Ctr.
Sponsored by West Washington Water
Quality Lab Analyst Section of PNCWA
& Peninsula College. For info: Phone:
360/ 417-4845

March 22-23 CO
Applied Contaminant Chemistry &
Transport in Soil & Groundwater
Course, Greenwood Village.
Wingate Hotel. For info: EOS
Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 23 AZ
Arizona's Water Resources 101: How
Arizona is Planning & Investing in its
Most Important Resource - Brownbag,
Tucson. WRRRC, 350 N. Campbell
Avenue. For info: Jane Cripps, WRRRC,
520/ 621-2526, jcripps@cals.arizona.edu
or <http://cals.arizona.edu/azwater/programs/conf2011/index.html>

March 24 WA
Lake Tapps Water Rights: Hydrology
Behind Cascade Water Alliance's New
Regional Water Supply (Luncheon),
Bellevue. 500 108th Avenue, NE,
3rd Floor Conference. Sponsored by
AWRA-Washington Section. For info:
<http://earth.golder.com/waawra/ASP/Home.asp>

March 24-25 CO
Monitored Natural Attenuation
of Petroleum & Chlorinated
Hydrocarbons in Soil &
Groundwater Course, Greenwood
Village. Wingate Hotel. For info:
EOS Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 24-25 WA
Tribal Environmental Regulation
& Jurisdiction Course, Seattle.
Holiday Inn. For info: EOS
Alliance: www.eosalliance.org/schedule/calendar/courses-eos#

March 24-25 CA
Navigating Uncertain Waters:
Executive Briefing, Sacramento.
DoubleTree Hotel, Point West Way. For
info: Water Education Foundation, 916/
444-6240 or www.watereducation.org

March 25 ID
Native American Law Conference,
Moscow. UI College of Law. For info:
www.uidaho.edu/

March 25 WA
Storming the Sound Conference,
Seattle. Seattle Art Museum.
Environmental & Sustainability
Education. For info: Anne Butler, 360/
754-9177 or abutler@pugetsound.org

March 25 WA
The New Economic Alliance Between
Environmental & Business Interests:
Not Your Father's Environmental
Movement Conference, Seattle. West
8th. For info: The Seminar Group, 800/
574-4852, email: info@theseminargroup.net,
or website: www.theseminargroup.net

March 26 CA
Geothermal Energy Systems:
Overview Course, Davis. Da Vinci
Bldg., 1632 Da Vinci Ct. For info: UC
Davis Extension, 800/ 752-0881 or
www.extension.ucdavis.edu/landuse

March 28-29 WA
Clean Water & Stormwater Seminar,
Seattle. For info: Law Seminars Int'l,
800/ 854-8009, email: registrar@lawseminars.com,
or website: www.lawseminars.com

March 28-April 2 CA
2011 Membrane Technology
Conference & Expo, Long Beach.
Sponsored by American Water Works
Assn. For info: www.awwa.org/Conferences/content.cfm?ItemNumber=43708&navItemNumber=1544&showLogin=N

March 29 OR
A Steady State Economy (Brownbag),
Portland. Miller Nash LLP, 111 SW
Fifth, Ste. 3400, 12-1:15pm. Sponsored
by OSB Sustainable Future Section. For
info: RSVP to Robin Seifried, rseifried@cablehouston.com

March 30 OR
Niches, Models & Claimate Change:
Assessing the Assumptions &
Uncertainties Seminar, Corvallis.
OSU, 4-5:30pm. John Wiens, Point
Reyes Bird Observatory. For info: water.oregonstate.edu or 541/ 737-9918

March 30-31 NV
Global Mining Water Management
Initiative 2011: Benchmarking Best
Practice on Optimizing Water Usage
& Minimizing Impact on Water
Quality, Las Vegas. Rio Suite Hotel. For
info: www.mining-water-management.com/

March 31 CA
Sustainable Water Resources
Management in Site Design &
Development Course, Sacramento.
Sutter Square Galleria, 2901 K Street.
For info: UC Davis Extension, 800/
752-0881 or www.extension.ucdavis.edu/landuse

March 31-April 1 NM
Law of the Rio Grande Conference,
Santa Fe. Inn & Spa at Loretto. For info:
CLE International, 800/ 873-7130 or
website: www.cle.com

April 1-May 13 WEB
CEQA: A Step by Step Approach
Course, WEB. For info: UC Davis
Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

April 4-6 DC
National Water Resources Ass'n
Federal Water Seminar, Washington.
For info: NWRA, 703/ 524-1544 or
www.nwra.org/

April 6 OR
Citizen Suits for Enforcement of
Environmental Laws Brownbag,
Portland. Perkins Coie, 1120 Northwest
Couch Street, 12-1:15pm. For info: OSB
Environmental & Natural Resources
Section, www.osbar.org

April 6 OR
Water Futures & the Perfect Storm:
Implications for the Canadian Prairies
Seminar, Corvallis. OSU, 4-5:30pm.
Howard Wheeler, U of Saskatchewan.
For info: water.oregonstate.edu or 541/
737-9918

April 7 NV
Water Marketing Conference,
Las Vegas. For info: The Seminar
Group, 800/ 574-4852, email: info@theseminargroup.net,
or website: www.theseminargroup.net

April 7-8 WY
Wyoming Water & Natural Resources
Law Conference, Cheyenne. Little
America. For info: CLE International,
800/ 873-7130 or website: www.cle.com

April 8 WA
CERCLA & MTCA: Advanced
Sediment Conference, Seattle.
Washington Convention Ctr. For
info: Holly Duncan, 503/ 282-5220,
hduncan@elecenter.com or www.elecenter.com

April 8 MT
Natural Resources/Permitting CLE,
Helena. Holiday Inn. Sponsored by the
State BAR of Montana. For info: www.montanabar.org

April 8 CA
NEPA Overview & Refresher Course,
Sacramento. Sutter Square Galleria,
2901 K Street. For info: UC Davis
Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

- April 11-12** **WA**
Tribal Water in the Pacific Northwest Seminar: Water Allocations, Treaty Rights & New Case Law, Seattle. Crowne Plaza Hotel. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com
- April 11-13** **GA**
2011 Georgia Water Resources Conference: Sustaining Georgia's Water Resources, Athens. University of Georgia. For info: www.gawrc.org/
- April 11-14** **Austria**
Status & Future of the World's Large Rivers Int'l Conference, Vienna. For info: http://worldslargerivers.boku.ac.at/wlr
- April 12-13** **OR**
Oregon Future Energy Conference, Portland. For info: Sue Moir, NEBC, 503/ 227-6361, sue@nebc.org or www.nebc.org
- April 13** **OR**
Unanswered Questions in Predicting Hydrologic Impacts of Climate Change Seminar, Corvallis. OSU, 4-5:30pm. Dennis Lettenmaier, UW. For info: water.oregonstate.edu or 541/ 737-9918
- April 14** **WA**
American Rivers' 9th Annual Northwest Event & Dinner, Seattle. For info: Lynsey Knowles, 202/ 243-7031, lknowles@americanrivers.org or www.AmericanRivers.org/nwevent
- April 14-15** **CA**
Planning & Environmental Law Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse
- April 15** **ID**
One Source: Evolution of the Policies Surrounding Ground & Surface Water Management in the West, Boise. City Hall Council Chambers. 2011 University of Idaho Symposium on Water Law. For info: www.uidaho.edu/onesource2011/
- April 15** **CA**
Sustainable Water Resources Management in Site Design & Development Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse
- April 18** **WA**
2011 UW Water Symposium, Seattle. Kane Hall. For info: Joel Baker, Center for Urban Waters, urbanwatersinfo@cityoftacoma.org or www.tacoma.washington.edu/urbanwaters/
- April 18-20** **MD**
Managing Climate Change Impacts on Water Resources: Adaptation, Options & Strategies Conference, Baltimore. Sheraton Inner Harbor. Sponsored by American Water Resources Assn. For info: www.awra.org/index.html
- April 18-19** **OR**
HJ Andrews Experimental Forest 12th LTER Symposium, Corvallis. Memorial Union. For info: http://andrewsforest.oregonstate.edu/pubs/annlsymp/annlsymp.cfm?year=12&topnav=43
- April 19-20** **OR**
Protecting Natural Resources With Conservation Buffers Workshop, Portland. DoubleTree Hotel. Sponsored by Oregon Soil & Water Conservation Society. For info: www.swcs.org/index.cfm?nodeID=29025&audienceID=1
- April 20** **OR**
Streamflow, Floods & Climate Change Seminar, Corvallis. OSU, 4-5:30pm. Robert Hirsch, USGS. For info: water.oregonstate.edu or 541/ 737-9918
- April 21** **WA**
Carbon Credits Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net
- April 21-22** **AZ**
Water & Energy Conference, Phoenix. Hyatt Regency Phoenix Hotel. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com
- April 23** **WEB**
Environmental Crimes & Penalties WEBCAST, WEB. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net
- April 26** **FL**
TMDL in Florida Seminar, Tampa. Tampa Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com
- April 26-27** **AZ**
Salinity & Desalination in the Southwest: Challenges & Opportunities - WRRC 2011 Annual Conference, Yuma. Hilton Garden Inn. Sponsored by Water Resources Research Institute. For info: Jane Cripps, WRRI, 520/ 621-2526, jcripps@cals.arizona.edu or http://cals.arizona.edu/azwater/programs/conf2011/index.html
- April 26-28** **WA**
8th Washington Hydrogeology Symposium, Tacoma. Hotel Murano. For info: http://depts.washington.edu/uwconf/hydrogeo/index.php
- April 26-28** **CA**
California Rapid Assessment Method (CRAM) Part I Riverine Course, Costa Mesa. 3535 Harbor Blvd., Ste. 110. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse
- April 26-29** **MD**
National Mitigation & Ecosystem Banking Conference, Baltimore. Hilton Inner Harbor. For info: JT & A, Inc., 703/ 548-5473, cbahler@comcast.net or www.mitigationbankingconference.com
- April 27** **CA**
Santa Ana River Watershed: Working Together for a Sustainable Future Conference, Riverside. Riverside Convention Ctr. For info: Water Education Foundation, 916/ 444-6240 or www.watereducation.org
- April 27** **OR**
Mechanistic Framework for Projecting Riverine Ecological Responses to Hydroclimatic Change Seminar, Corvallis. OSU, 4-5:30pm. LeRoy Poff, CSU. For info: water.oregonstate.edu or 541/ 737-9918
- April 27-29** **BC**
Living Future Conference, Vancouver. Presented by Cascadia Green Building Council. For info: http://cascadiagbc.org/living-future/11
- April 28** **CA**
Sustainable Water Resources Management in Site Design & Development Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse
- April 28-29** **CA**
Investing in our Water Future: A Focus on California Seminar, Santa Barbara. Bacara Resort. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net
- May 1-5** **MD**
2011 NGWA Ground Water Summit & 2011 Ground Water Protection Council Spring Meeting, Baltimore. For info: National Ground Water Ass'n, 800/ 551-7379 or www.ngwa.org
- May 2-4** **TN**
FLOW 2011 - Instream Flow Valuation in Public Decision-Making Conference, Nashville. Sponsored by the Instream Flow Council. For info: www.instreamflowcouncil.org/flow2011
- May 2-6** **VA**
Water Quality Standards Academy - EPA, Arlington. Sheraton Crystal City Hotel. Presented by US EPA. For info: www.glec-online.com/WQSA_sessions/session1/course_info.php
- May 4** **CA**
Mitigation Measure Development & Monitoring Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse
- May 4** **OR**
Glacier Change & the Future of Alpine Water Resources, Corvallis. OSU, 4-5:30pm. Andrew Fountain, PSU. For info: water.oregonstate.edu or 541/ 737-9918
- May 4-6** **ID**
Just Add Water: A Recipe for Life - 2011 American Waterworks Ass'n (Pacific NW) Conference, Boise. Boise Centre. For info: www.pnws-awwa.org/Page.asp?NavID=236
- May 5** **AK**
Water in Alaska: The Changing Environment of Permitting & Enforcement Conference, Anchorage. Hotel Captain Cook. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net
- May 5** **NV**
Water Marketing Conference, Las Vegas. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net
- May 5-6** **OK**
Oklahoma Water Law Seminar - 3rd Annual, Tulsa. DoubleTree Hotel Downtown. TWR's David Moon is Speaking on "Water Supply, Storage & Tribal Issues (The Sardis Lake Controversy)". For info: CLE International, 800/ 873-7130 or website: www.cle.com
- May 5-6** **CA**
Carbon Credits Seminar, Los Angeles. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net
- May 5-6** **TX**
Complex Toxic Tort Litigation Seminar, Houston. Magnolia Hotel Houston. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com
- May 8-11** **DC**
2011 National Environmental Policy Forum, Washington. Westin City Ctr. For info: National Assoc. of Clean Water Agencies, 202/ 833-2672 or www.nacwa.org
- May 10-12** **MT**
"Working Together for a Better Future" - Joint Conference MSAWWA/MWEA/RMC-APWA, Bozeman. Holiday Inn & GranTree Hotels. For info: www.montana-awwa.org/2011-conference



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CALENDAR

(continued from previous page)

May 10-12 MT

13th Annual Water Summit: Watershed Management in Montana, Pray. Chico Hot Springs. For info: Kathryn Watson, kwatson@montana.edu

May 10-13 CA

ACWA 2011 Spring Conference & Exhibition, Sacramento. Convention Ctr. For info: Assoc. of California Water Agencies, www.acwa.com/events/acwa-2011-spring-conference

May 11 OR

Water Economics & Climate Change: California Experience Seminar, Corvallis. OSU, 4-5:30pm. David Sunding, UC Berkeley. For info: water.oregonstate.edu or 541/ 737-9918

May 12-13 WA

Brownfields & Land Revitalization 2011 Conference: Turning Liabilities into Assets in the Inland NW, Spokane. Spokane Convention Ctr. For info: Linda Moir, 503/ 227-6361, linda@nebc.org or www.nebc.org

May 12-13 UT

Restoration Monitoring: Geomorphic Change Detection Course, Park City. Intermountain Center for River Rehab & Restoration, USU. For info: Gentry Green, 435/ 850-9029, gentry.green@usu.edu or http://cnr.usu.edu/streamrestoration

May 13 WA

Environmental Challenges in Energy Project Development Seminar, Seattle. Washington State Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

May 16-17 MT

Water Quality in Montana Seminar, Helena. TENTATIVE. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

May 18 OR

Water Management, Knowledge & Adaptation: Tensions, Legacies & the Next Big Thing Seminar, Corvallis. OSU, 4-5:30pm. Maria Carmen Lemos. For info: water.oregonstate.edu or 541/ 737-9918

May 18-19 CA

Understanding Riparian Processes Course, Davis. 1632 Da Vinci Ct. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 19 WA

Water Right Transfers in Washington Conference, Seattle. Hotel 1000. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 19-20 FL

Regulatory Takings Conference, Tampa. Sheraton Riverwalk Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

May 19-20 OR

Eminent Domain: Current Developments in Condemnation, Valuation & Challenges Seminar, Portland. Embassy Suites Downtown. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 19-20 CA

Planning & Environmental Law Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

May 20 OR

Fisheries & Hatcheries Legal & Regulatory Frameworks Seminar, Portland. Oregon Convention Ctr. Live Webcast Also. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

Exempt Wells Conference Problems & Approaches in the Northwest May 17-18, 2011, Walla Walla, Washington

A conference for professionals engaged in groundwater development, water management, land planning, and water policy to discuss the impacts of exempt domestic wells.

Managed by Washington State University

Phone: 509/ 335-4194 or email: joythompson@wsu.edu
<http://conferences.wsu.edu/conferences/exemptwells/default.aspx>