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PATRICK FISHER
Clerk

PUBLISH

**UNITED STATES COURT OF APPEALS
TENTH CIRCUIT**

UNITED STATES OF AMERICA,

Plaintiff-Appellant and
Cross-Appellee,

and

STATE OF COLORADO,

Intervenor-Appellant and
Cross-Appellee,

v.

BURLINGTON NORTHERN
RAILROAD COMPANY,

Defendant-Appellee and
Cross-Appellant.

Nos. 97-1328
97-1352
97-1353

**APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
(D.C. No. 86-Z-369)**

John T. Stahr (Lois J. Schiffer, Assistant Attorney General, David C. Shilton, Robert Homiak, Jerel L. Ellington, with him on the briefs), for the Department of Justice Environment and Natural Resources Division, Washington D.C., for Plaintiff-Appellant and Cross-Appellee.

Robert J. Eber, Assistant Attorney General, Natural Resources Section (Gale A. Norton, Attorney General, with him on the briefs), for the State of Colorado, Denver, Colorado, for the Intervenor-Appellant and Cross-Appellee.

Gary E. Parish (Sherman G. Finesilver, R. Daniel Scheid, and Eden C. Steele with him on the briefs), LeBoeuf, Lamb, Greene & MacRae, L.L.P., Denver Colorado, Defendant-Appellee and Cross-Appellant.

Before **TACHA**, **HENRY**, and **MURPHY**, Circuit Judges.

HENRY, Circuit Judge.

This appeal arises from an action filed by the United States, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), 42 U.S.C. §§ 9601-9675, to recover costs incurred by the Environmental Protection Agency (“EPA”) while remediating hazardous substance contamination at the Broderick Wood Products Site (the “Site”), located in Adams County, Colorado. The United States (with the State of Colorado as an intervenor and cross-appellee) argues that the district court erred in reducing Burlington Northern’s (“BN’s”) \$8.5 million dollar settlement decree. Specifically, the United States argues that: (1) the district court erred when it found that the EPA’s conclusion to remediate the Site to a 1×10^{-5} cancer risk level was arbitrary and capricious; (2) the district court erred when it ruled that the EPA’s failure to amend the Record of Decision for Operable Unit I when it encountered the unexpected rock content in the sludge was arbitrary and capricious; and, (3) even if the actions regarding the Record of Decision for

Operable Unit I were arbitrary and capricious, the district court erred in not requiring BN to prove that the cost would not have been incurred in any event.

BN cross-appeals. It argues that the district court erred in reducing the judgment against BN according to the geographic apportionment of a prior settlement with other defendants, rather than by the entire amount of the settlement. Further, BN argues that the district court erred in holding it liable for remediation costs incurred by the EPA before the EPA notified BN of its potential liability for the Site. For the reasons set forth below, we affirm the district court's decision in part and reverse in part.

First, we conclude that the EPA's remediation decision is supported by substantial evidence in the record and, therefore, is not arbitrary and capricious. Second, with regard to the EPA's refusal to review or amend the plan for the first phase of cleanup, we reach different conclusions as to the particular remedial measures in question. As to the use of a settling tank to remove rock from liquified sludge, we conclude that no significant change or fundamental alteration of the scope, performance or cost of the remedial plan was involved. Therefore, the EPA was not required to amend the remediation plan in order to use the settling tank or to amend the plan. In contrast, the other remedial measures (the use of additional liners in rail cars containing sludge from the Site and the removal of tar heels solidifying from the sludge) did significantly change and

fundamentally alter the scope and cost of the remedy implemented by the EPA. Therefore, as to these remedial measures, we agree with the district court that the EPA actions were arbitrary and capricious for failing to amend the plan.

Third, we disagree with the district court's conclusion as to the impact of the EPA's errors in adopting these new remedial measures. We hold that the district court erred in refusing to require BN to demonstrate that the EPA's errors resulted in expenditures in excess of those that would have occurred in the absence of the errors. Accordingly, we remand the case to the district court so that it may determine whether the EPA's errors resulted in costs that would not have otherwise been incurred.

Finally, we reject the arguments advanced in BN's cross-appeal. We hold that the district court correctly reduced the judgment against BN pursuant to a geographic apportionment of a prior settlement with other defendants. Additionally, we hold that the district court did not err in finding BN liable for remediation costs incurred before the EPA notified BN of its potential liability for the Site.

BACKGROUND

Beginning in 1947, the Broderick Wood Products Company (“Broderick WP”) operated a wood treatment facility on a sixty-four acre parcel of land located immediately northwest of Denver, Colorado in Adams County (the “Site”). From 1947 through 1981, Broderick WP, and its successor, Broderick Investment Company (“BIC”), operated a wood treatment facility at the Site to treat power poles and other wood products with creosote and pentachlorophenol, which are CERCLA hazardous substances under 40 C.F.R. § 302.4(a).

While operating the wood treatment facility, the Broderick companies disposed of process waste on the northwest portion of the Site. They used two unlined impoundments: a pond located on a 17.5 acre parcel of land on the northwest portion of the Site (the “pond impoundment”), and an impoundment area located at the processing plant on the eastern side (the “plant impoundment”).

In April of 1981, the EPA began investigating the Site. In 1984, it placed the Site on the National Priorities List for clean up pursuant to CERCLA. The United States initiated this case in 1986. At that time, the United States sought response costs from BIC, which had assumed the assets and liabilities of Broderick WP, and the current and former trustees of BIC (collectively the “BIC defendants”).

The EPA determined to remedy the Site through two “operable units” (or phases) with Operable Unit I addressing impoundment sludges, and Operable Unit II addressing soils and groundwater. The National Oil and Hazardous Substance Pollution

Contingency Plan (“the Hazardous Substance Contingency Plan”), 40 C.F.R. § 300, directs that sites “should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup.” 40 C.F.R. § 300.430(a)(1)(ii)(A). The EPA asserts in its brief that it decided to conduct the remedy in two operable units in order to address different media of contamination.

1. The Record of Decision for Operable Unit I

On June 30, 1988, the EPA issued its Record of Decision for Operable Unit I to remedy both the pond impoundment sludge and the plant impoundment sludge. The pond impoundment consisted of 280,000 gallons of hazardous sludge and the plant impoundment consisted of 450,000 gallons of hazardous sludge. The EPA concluded that the sludge would best be remediated through excavation and on-site incineration, with off-site disposal of the residue. The EPA further determined that the soil in both impoundments required removal and treatment, but decided to defer removal and treatment of the contaminated soils until Operable Unit II.

2. The Amendment to the Record of Decision for Operable Unit I

On September 24, 1991, the EPA issued an amendment to the Record of Decision for Operable Unit I. The amendment changed the initial remedial plan so that the impoundment sludge would be remedied through off-site reclamation rather than on-site incineration. The EPA revised the plan because incineration costs had increased substantially and equally protective alternatives (off-site reclamation) were available. The revised remedy concluded that the impoundment sludge should be removed from temporary on-site cells, placed in an on-site mixing tank, and converted into a pumpable slurry. The slurry would be pumped into rail tank cars and shipped to a permitted recycler, which would chemically treat the sludge rather than incinerate it. After treatment, the remaining residues would be incinerated. The EPA estimated the cost of the amended Record of Decision for Operable Unit I would be between \$2.06 - \$2.19 million dollars. The State of Colorado agreed with the new remedial plan.

The EPA, through the U.S. Army Corps of Engineers (the "Corps"), contracted with a private company, Allied-Signal, to implement the impoundment sludge remedy. Under the contract, the rail car loads of "pumpable sludge" from the two impoundments would be sent by rail to Allied Signal's reclamation facility in Alabama. During implementation, however, Allied Signal encountered three unanticipated difficulties.

First, on September 19, 1992, Allied Signal notified the Corps that "rocks" in the sludge were clogging the pumping equipment used to transfer the sludge onto the railcars. To remove the rocks, Allied Signal installed a gravity settling tank. The settling tank

successfully removed the rocks that were clogging the pumps. On October 24, 1992 (within the original projected time frame), Allied Signal completed pumping the impoundment sludge onto the rail cars. The removal of the rocks added \$180,000 to the cost of removal.

The second problem arose from the fact that, after removal of the sludge from temporary on-site holding cells, Allied Signal found substantial amounts of rock, soil, sludge and other debris adhering to the liners that lined the inside of the holding cells. These materials could not be practically separated from the liners. As a result, Allied Signal was forced to dispose of 396 boxes of liners (and the hazardous materials clinging to the liners), rather than twenty boxes of liners, as originally anticipated in the amended Record of Decision for Operable Unit I. Allied Signal shipped the additional liners to Alabama for incineration.

The third unanticipated problem concerned the residual sand and gravel that had settled during transport and solidified to form “tar heels” in the rail cars. Allied Signal discovered the tar heels after the rail cars reached Alabama. The tar heels had to be removed by hand, and Allied Signal and the EPA concluded that they should be incinerated at the Alabama facility.

On January 18, 1993, Allied Signal submitted a claim for an additional \$1.79 million in compensation for the cost of addressing these three unforeseen problems. In its negotiations for the additional money, Allied Signal took the position that it had expected

no solids in the sludge when it made its original bid, whereas the solids concentration had turned out to be fifty-one percent. However, the Corps asserted that Allied Signal should have reasonably expected solids in a concentration of fifteen percent, and Allied Signal ultimately agreed with that position. Based on these negotiations, the Corps reduced Allied Signal's claim for additional compensation to approximately \$1.38 million.

3. The Remedial Investigation and Feasibility Study

In January 1991, after issuing the Record of Decision for Operable Unit I but before the plan had been completed, the EPA released its baseline Risk Assessment of the Site in accordance with 40 C.F.R. § 300.430(d)(4). The Risk Assessment is an important part of the Remedial Investigation and Feasibility Study process.

Under the Hazardous Substance Contingency Plan, the EPA is directed to first conduct a Remedial Investigation “to collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.” 40 C.F.R. § 300.430(d)(1). As part of the Remedial Investigation, the EPA must “conduct a baseline [R]isk [A]ssessment to characterize the current and potential threats to human health and the environment.” 40 C.F.R. § 300.430(d)(4). The purpose of this Risk Assessment is to identify potential human health and ecological effects that would be associated with the site if no remedial action were taken. See Aplt's App., vol. IV, at 685 (EPA's published Risk Assessment for the Site, formerly referred to as an “Endangerment

Assessment” or “EA”). See also National Oil and Hazardous Substance Pollution Contingency Plan, 55 Fed. Reg. 8666, 8709 (stating that the intent of the Risk Assessment is “to provide an analysis of baseline risk (i.e., the risks that exist if no remediation or institutional controls are applied to a site)”). Thus, the Risk Assessment has the specific purpose of providing a baseline snapshot of the potential risks, assuming that no remedial action has been taken. “The results of the baseline risk assessment . . . help establish acceptable exposure levels for use in developing remedial alternatives in the Feasibility Study.” Id. at 8708.

Accordingly, the Risk Assessment in the present case addressed the public health risks given the current industrial use of the Site (and assuming no remediation). It considered the following potentially exposed individuals:

- (1) On-site Visitor Adults
- (2) On-site Visitor Children
- (3) Off-site Industrial Workers
- (4) Off-site Resident Adults
- (5) Off-site Resident Children
- (6) Off-site Resident Young Children
- (7) Workers maintaining the nearby Fisher Ditch
- (8) Users of the Fisher Ditch water - Adults
- (9) Users of the Fisher Ditch water - Children
- (10) Users of the Fisher Ditch water - Young Children.

See BN’s Supp. App., vol. I, at 174-200. The Risk Assessment also considered various hypothetical future uses of the Site (for example, a residential use scenario, among others). It addressed the public health risks considering the following potentially exposed individuals:

- (1) Construction Workers
- (2) On-site Industrial Workers
- (3) On-site Resident Adults
- (4) On-site Resident Children
- (5) On-site Resident Young Children
- (6) Day Care Children
- (7) Off-site Industrial Workers
- (8) Off-site Resident Adults
- (9) Off-site Resident Children
- (10) Off-site Resident Young Children
11. Workers Maintaining the Fisher Ditch
12. Users of Fisher Ditch Water - Adults
13. Users of Fisher Ditch Water - Children
14. Users of Fisher Ditch Water - Young Children

See id. at 200-23; vol. II, at 224-34. The Risk Assessment acknowledged that, in addition to considering the risk of the most likely commercial use of the property, “the risks estimated . . . are also based on unlikely land use scenarios.” BN’s Supp. App., pp., vol I, at 171.

For example, the risk assessment assumes that the impoundment sludge will remain in place for the foreseeable future, in spite of the October, 1990 removal of the sludge into lined, covered storage basins. It also assumes that the site will become a residential development or day care center. In fact, the area surrounding the site is heavily industrialized and unsuitable as a residential area. These site use assumptions . . . tend to cause an over estimation of potential site risks.

Id. at 171-72. According to the United States, one of the reasons the EPA included these admittedly unlikely potential future uses of the property is the “presence of several single-family residences located just north of the Broderick site” which “may continue to use

wells . . . for irrigation, or even drinking water, if they desire.” Aplt. App., vol III, at 533.

The EPA identified three potential cancer risk levels for the Site: 1×10^{-4} (a 1 in 10,000 chance of getting cancer after remediation); 1×10^{-5} (a 1 in 100,000 chance of getting cancer after remediation); and 1×10^{-6} (a 1 in 1,000,000 chance of getting cancer after remediation). These potential risk levels for each current and hypothetical future use of the Site, along with an overall general assessment of the conditions at the Site, were included in the Risk Assessment, which was released in January 1991. However, the ultimate selection of the final cancer risk level was not made until Operable Unit II.

After the Risk Assessment and Remedial Investigation, the EPA conducted a Feasibility Study, which was published in July of 1991. “The primary objective of the [F]easibility [S]tudy . . . is to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision maker and an appropriate remedy selected.” 40 C.F.R. § 300.430(e)(1). Accordingly, the Feasibility Study identified more than thirty remedial alternatives for the Site. See BN’s Supp. App., vol. II, at 255-56. Following a screening of these alternatives, the EPA selected ten remediation plans for the published Feasibility Study. See id. The EPA evaluated each plan using each of the three primary cancer risk levels and considering the following nine criteria required by the Hazardous Substance Contingency Plan: (1) Overall Protection of Human Health and the Environment; (2)

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs); (3) Short-Term Effectiveness; (4) Long-Term Effectiveness and Permanence; (5) Reduction of Toxicity, Mobility or Volume Through Treatment; (6) Implementability; (7) Cost; (8) State Acceptance; and (9) Community Acceptance. See id. The proposed plan for Operable Unit II contained a detailed evaluation of this analysis. The EPA gave the public the opportunity for notice and comment.

4. The Record of Decision for Operable Unit II

On March 24, 1992, the EPA issued the Record of Decision for Operable Unit II to remedy all remaining contamination at the Site. The major components included: (1) excavation of approximately 59,000 cubic yards of soil and sediments contaminated with organics, to be treated through bioremediation in an on-site land treatment unit; (2) excavation of approximately 800 cubic yards of soils contaminated with heavy metals, to be treated through chemical fixation and disposed of at an off-site permitted landfill; (3) recovery and treatment of approximately 526 million gallons of groundwater and liquids; and (4) demolition of buildings and decontamination of debris.

In assessing soil remediation alternatives, the Record of Decision for Operable Unit II selected what it deemed to be the appropriate carcinogenic risk level for the Site, selecting one of the three potential risk levels identified in the Risk Assessment. The EPA conducted the selection process pursuant to the Hazardous Substance Contingency

Plan, 40 C.F.R. § 300, which requires that in setting remediation goals, acceptable carcinogen exposures levels are generally levels with an upper limit lifetime cancer risk to an individual ranging from 1×10^{-4} to 1×10^{-6} ; i.e., the acceptable upper limit will generally be a cancer risk probability (after clean up) between one incident of cancer per 10,000 people to one incident per 1,000,000 people, respectively. See 40 C.F.R. § 300(e)(2)(i)(A)(2).

As an initial base line point of departure, § 300.430(e)(2)(i)(A)(2) requires the EPA to set the acceptable carcinogen exposure level, after remediation, at 1×10^{-6} , or a probability of one incident of cancer per 1,000,000 people. From this point of departure, the EPA conducts a cost-benefit analysis to determine whether a downward deviation from the initial base risk is appropriate.

In assessing soil remediation alternatives and in determining whether to depart down from the baseline cancer risk level, the Record of Decision for Operable Unit II considered the risks using both industrial and residential use scenarios for the contaminated property. However, the EPA ultimately determined that the acceptable carcinogen exposures level should be based on an industrial use of the property. See Aplt. App., vol. II, at 440.

The industrial use scenario is appropriate because the present land uses in the vicinity of the site are predominantly industrial and commercial. Industrial and commercial land uses have dominated the area around the site for the last 40 to 50 years. It is reasonable to assume that such uses will continue into the foreseeable future.

Id.

Based on this and other considerations, the Record of Decision for Operable Unit II concluded that the strictest cancer risk level under the Hazardous Substance Contingency Plan of 1×10^{-6} was not cost effective. See id. Thus, the Record of Decision for Operable Unit II assessed remedial alternative using the two lesser exposure levels – 1×10^{-5} and 1×10^{-4} . See id. After considering these two alternatives, the Record of Decision for Operable Unit II concluded that the 1×10^{-5} exposure level provided the appropriate level of protection for the Site. See id. at 476-77.

5. Burlington Northern as a Potentially Responsible Party

Up to this point, the BIC defendants were the only Potentially Responsible Parties (“PRPs”) involved in the case. However, on March 31, 1992, a few days after finalizing the Record of Decision for Operable Unit II, the EPA notified BN that it was a Potentially Responsible Party and, therefore, that it might be liable for Site clean up costs. Four months later, the EPA added BN as a defendant in the lawsuit.

BN’s potential liability arose from Broderick WP’s use of the pond impoundment, which belonged to Chicago, Burlington and Quincy Railroad (“CBQRR”), a predecessor in interest to BN. In the early 1960s, Broderick WP used the 17.5 acres tract of land for the impoundment and disposal of treatment wastes without CBQRR’s permission. When CBQRR discovered the disposal, it leased the land to Broderick WP as a disposal site for

waste for approximately six years. Eventually, in 1969, CBQRR quit-claimed the property to Broderick WP. According to the EPA, BN was a Potentially Responsible Party as the successor in interest to CBQRR.

PROCEDURAL HISTORY

1. Broderick I

On October 28, 1993, the district court granted summary judgment in favor of the EPA on the issue of the BIC defendants' liability, holding the BIC defendants liable for all CERCLA response costs incurred by the United States at the Site. The issue of BN's liability, however, went to trial.

The district court held a bench trial on the issue of BN's liability on April 11-13, 1994 and June 21, 22, and 29, 1994. The main issue tried in April was whether BN was *liable* under CERCLA for the response costs incurred by the United States. The main issue tried in June was whether BN was jointly and severally liable with the Broderick defendants for *all* response costs incurred by the United States, and if not all costs, which cost were attributable to BN.

In United States v. Broderick Inv. Co., 862 F. Supp. 272 (D. Colo. 1994) (“Broderick I”) the district court held that BN was liable under CERCLA for the response costs incurred, but that there were two separate and distinct geographic areas of contamination: one emanating from the pond impoundment area located on the western

17.5 acre parcel of land on the Site, and another emanating from the plant impoundment area to the east. The district court found that “[s]ince neither BN nor its predecessor ever had an ownership interest in the land on which the processing plant stood, and [the processing plant] plume has neither merged with the pond plume nor migrated onto [the 17.5 acre pond impoundment parcel], BN is not responsible or liable for the plume emanating from the processing plant area.” Id. at 277. Thus, the district court held that BN was only jointly and severally liable with the BIC defendants for the response costs for the western 17.5 acre pond impoundment.

2. BIC Consent Decree

On November 8, 1995, the district court approved a settlement and consent decree between the EPA, the State of Colorado, and the BIC defendants on the issue of the BIC defendants’ damages. Under the decree, the BIC defendants agreed to pay \$10.7 million to the United States and \$630,000 to the State of Colorado for past response costs. See BN’s Supp. App., vol. IV, at 668 (Consent Decree). The BIC defendants further agreed to complete the Site cleanup and to pay any other future response costs. See id. BN submitted limited comments on the decree and raised no objections as to the reasonableness of the settlement, ultimately withdrawing its comments altogether. See Aplt’s App. vol. I, at 82 ¶ 7 & 8 (Motion to Enter Consent Decree). Thus, after the

consent decree was entered, the sole remaining issue before the district court was the amount of damages (response costs) recoverable from BN.

3. Broderick II

In United States v. Broderick Inv. Co., 955 F. Supp. 1268 (D. Colo. 1997) (“Broderick II”), the district court addressed the amount of damages recoverable from BN. BN entered into a settlement agreement that set its maximum damage amount at approximately \$8.5 million, subject to reduction by BN’s affirmative defense. See Aplt’s App. vol. I, at 93. In Broderick II, BN set forth its affirmative defenses and argued that the actions of the EPA, its cleanup decision and selected remedies, were arbitrary and capricious and inconsistent with the Hazardous Substance Contingency Plan, 40 C.F.R. § 300. Thus, BN argued, the EPA’s costs associated with these actions were not recoverable. Further, BN argued that it should not be required to pay for any costs of remediation incurred by the EPA before BN was notified as a Potentially Responsible Party.

The district court agreed with BN that the EPA’s decision to remediate the Site to a cancer risk level of 1×10^{-5} was arbitrary and capricious. Thus, the district court ruled, the costs incurred by the EPA to remediate the Site to this level were not recoverable from BN. In addition, the district court ruled that the damages that were recoverable from BN should be reduced proportionally according to the district court’s geographic

divisibility ruling in Broderick I. Thus, BN's liability was reduced by the portion of the BIC defendants' settlement geographically attributable to the western 17.5 pond impoundment – the area of the Site for which BN was jointly and severally liable with the BIC defendants for under the district court's prior holding. Finally, the district court rejected BN's argument that it should not be required to any pay costs incurred by the EPA prior to BN's notification as a Potentially Responsible Party.

4. Broderick III

Finally, in United States v. Broderick Inv. Co., 963 F. Supp. 951 (D. Colo. 1997) ("Broderick III"), BN argued that it should not be required to pay the additional \$1.3 million clean up cost incurred by Allied Signal as a result of the unanticipated rock content of the sludge. Specifically, BN argued that it should not be required to pay the additional \$1.3 because the EPA did not follow proper administrative procedures and propose an amendment to the Record of Decision for Operable Unit I addressing the rock. Thus, BN argued, the EPA's costs associated with these actions were not recoverable.

The district court agreed with BN and held that the EPA's actions were arbitrary and capricious because the EPA failed to propose an amendment to Operable Unit I after the rock was encountered. Accordingly, the district court held that the EPA could not recover the additional costs associated with the rock encountered by Allied Signal in remediating the Site.

ANALYSIS

On appeal, the United States argues that the district court erred in finding that the EPA's actions arbitrary and capricious. "We review de novo the district court's decision regarding agency action." Public Lands Council v. Babbitt, 167 F.3d 1287, 1293 (10th Cir. 1999), cert. granted, 120 S.Ct. 320 (1999). Further, we "give deference to the EPA's choice of response action and will not substitute our own judgment for that of the EPA." United States v. Hardage, 982 F.2d 1436, 1142 (10th Cir. 1992).

Under the Administrative Procedures Act, 5 U.S.C. § 701-706, APA, a court may set aside an agency's decision only if it is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law. See 5 U.S.C. § 706(2)(A). Similarly, CERCLA § 113(j)(2) provides that courts "shall uphold [the EPA's] decision in selecting the response action unless the objecting party can demonstrate, on the administrative record, that the decision was arbitrary and capricious or otherwise not in accordance with law." 42 U.S.C. § 9613(j)(2). Agency action will be set aside only if:

the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Ins. Co., 463 U.S. 29, 43 (1983).

Applying these principles, we first examine the contentions raised by the United States: (1) that the district court erred in Broderick II when it found that the EPA's conclusion to remediate the Site to a 1×10^{-5} cancer risk level was arbitrary and capricious; (2) that the district court erred in Broderick III when it ruled that the EPA's failure to amend the Record of Decision for Operable Unit I when it encountered the unexpected rock content in the sludge was arbitrary and capricious; and (3) that, even if the actions regarding the OUIROD were arbitrary and capricious, the district court erred in not requiring BN to prove that the cost would not have been occurred in any event.

1. Cancer Risk Level

The United States argues that its decision to remediate the Site for a cancer risk probability after clean up of 1×10^{-5} , (a probability of one incident of cancer for every 100,000 people) was not arbitrary or capricious. The district court found that the decision was arbitrary and capricious for the following reasons: (1) because the Risk Assessment, conducted after the implementation of Operable Unit I, erroneously failed to acknowledge the removal the impoundment sludges; (2) because the Risk Assessment improperly considered improbable uses of the Site as a residential area and a day care center; and (3) because a 1×10^{-5} cancer risk level was unwarranted for a site with less than 100,000 people living or working in close proximity. BN contends that the district court's analysis of the EPA's decision is correct.

(a) Removal of Impoundment Sludges

As noted above, the district court found that the failure of the EPA to account for the removal of the impoundment sludge at the beginning of Operable Unit I, made the decision to remediate to a 1×10^{-5} level arbitrary and capricious. BN argues that consideration of the sludge in the base line Risk Assessment caused an overestimation of the risk presented by the Site, ultimately causing the EPA to erroneously choose the more protective 1×10^{-5} cancer risk level for Operable Unit II, rather than BN's proposed 1×10^{-4} level.

However, as previously discussed, the purpose of the Risk Assessment is to “to identify potential human health and ecological effects that would be associated with the site if no remedial action were taken.” Aplt's App., vol. IV, at 685 (emphasis added); see also National Oil and Hazardous Substance Contingency Plan, 55 Fed. Reg. 8666, 8709 (1990) (stating that the intent of the Risk Assessment is “to provide an analysis of baseline risk (i.e., the risks that exist if no remediation or institutional controls are applied to a site)”) (emphasis added). One of the reasons that the base line risk assessment considers a no remedial action risk is because the EPA is required, in its feasibility study, to consider a “no action” alternative as one potential response to the site. See 40 C.F.R. § 300.430 (e)(5)(E)(6); BN's Supp. App., vol. II, at 257 (EPA's Proposed Plan for Operable Unit II). The no action alternative “is used as a means of comparison during the evaluation of other alternatives. Under the no action alternative, the contaminated soils

and the buildings, vessels, and their contents would remain in place.” BN’s Supp. App., vol. II, at 257.

In light of this explanation, which is supported by the administrative record, we can not say that the EPA’s Risk Assessment relied on factors which Congress did not intend the EPA to consider, or that the EPA entirely failed to consider an important aspect of the problem. See Motor Vehicle Mfr’s Ass’n, 463 U.S. at 43 (1983). In fact, the EPA’s explanation for “failing to consider” the removal of the impoundment sludges is entirely consistent with the stated purpose of the Risk Assessment – to evaluate the Site as if no remedial action were taken.

Moreover, BN has not directed us to, and we are unable to find in the record, any evidence that the ultimate potential cancer risk level and remediation plan, adopted in the Record of Decision for Operable Unit II, considered the previously removed impoundment sludge. Rather, the record reflects that Operable Unit II acknowledged that the sludge had been removed from the impoundments and placed in on-site storage cells. See Aplt. App. vol. III, at 414 (Record of Decision for Operable Unit II). Further, the record reflects that the EPA followed the proper procedure for adopting the appropriate cancer risk level and plan for Operable Unit II. Using the data collected in the Risk Assessment, the Feasibility Study identified more than thirty remedial alternatives (including a “no action” alternative required by the Hazardous Substance Contingency Plan) for the Site. See BN’s Supp. App., vol. II, at 255-56. Following a screening of

these alternatives, the EPA selected ten remediation plans for the published Feasibility Study. See id. The EPA evaluated these plans using each of the three primary cancer risk levels and considering the nine criteria required by the Hazardous Substance Contingency Plan. See id. The proposed plan for Operable Unit II contained a detailed evaluation of this analysis and the EPA gave the public the opportunity for notice and comment on the plan.

The record reflects that the only time the impoundment sludge was considered was in the initial Risk Assessment for Operable Unit II. And, as stated, the purpose of the Risk Assessment is to evaluate the Site as if no remedial action had been taken, which would include considering the presence of the impoundment sludge. Thus, we find that the EPA's consideration of the impoundment sludge in the Risk Assessment for Operable Unit II was not arbitrary and capricious, where the ultimate plan for Operable Unit II acknowledged and accounted for its removal.

(b) Residential and Day Care Center Use

Next, the district court concluded that the Risk Assessment's consideration of a potential future use of the Site as a day care center or residential community made the decision to remediate the Site to a 1×10^{-5} cancer risk level arbitrary and capricious. The district court's conclusion is not supported by the record.

In a response to written comments on the proposed remediation plan for Operable Unit II, the EPA responded and explained the uses that it considered:

It should be noted that EPA has determined that an industrial use exposure scenario will be used at this site. Therefore, . . . arguments based on other exposure scenarios are not relevant to EPA's selected remedy. Nonetheless, EPA does not agree that the other use scenarios developed in the [Risk Assessment] were based on impossible future use scenarios First, [concerning residential use] . . . BIC fails to consider the presence of several single-family residences located just north of the Broderick site These residences may continue to use wells . . . for irrigation, or even drinking water, if they so desire. Therefore, assumption of residential use and exposure of young children . . . is not impossible, but is particularly appropriate for a baseline risk assessment.

. . . .

Although it is unlikely that the establishment of a "stand alone" day-care facility would occur on the Broderick site, another possibility exists. In addition to the possibility of the sequential discussed above, there is a trend industry-wide toward on-site, "in house" day-care facilities for industrial and commercial development. In light of this, it is not overly conservative to estimate risks to day-care children of industrial workers Therefore, EPA disagrees with the BIC statement that "this assumption is even more preposterous than the assumption of future residential use."

Aplt's App., vol. III, at 533 (emphasis added); see also id. at 440 (Record of Decision, Operable Unit II, Final Site Remedy) (determining that "an action level for soils based on an industrial use scenario is appropriate for this site.").

The EPA's analysis establishes that the ultimate cancer risk level of 1×10^{-5} and corresponding remediation plan adopted in the Record of Decision for Operable Unit II were based on an industrial use scenario. Within that scenario, the EPA considered the possibility of some residential use just north of the Site as well as the possibility of a day

care center located in an industrial facility. The EPA's consideration of these unlikely possibilities is confusing, but it is not incompatible with the requirement that the Risk Assessment *consider* potential future uses of the Site. Thus, the EPA's consideration and ultimate rejection of a residential use scenario (including a day care center) was not arbitrary and capricious.

(c) 100,000 People

Finally, the district court found that the EPA's decision to remediate to a 1×10^{-5} potential cancer risk level was arbitrary and capricious "[b]ecause of the improbability that 100,000 persons might live or work in close proximity to the Site." Broderick II, 955 F. Supp. at 1276. However, this conclusion disregards the requirements the EPA must consider in selecting the acceptable cancer risk level and misconprehends the nature of statistical probabilities.

As noted above, the EPA concluded in the Record of Decision for Operable Unit II that the Site should be remediated so that there would be a potential cancer risk level of 1×10^{-5} , or a .000001% chance of getting cancer after remediation. After reviewing the relevant statutes and codes controlling the EPA's decision, we are unable to find, and BN has not directed us to, any authority stating that the level of cancer protection should be based on population size, with a sliding scale affording lesser protection to smaller populations. Quite to the contrary, the preamble to the 1990 Hazardous Substance

Contingency Plan, which applies to the Record of Decision for Operable Unit II, addressed a similar argument by a commenter that the cancer risk regulation should have “different targets for various population sizes, and that a high value such as 1×10^{-4} is adequate for smaller populations.” National Oil and Hazardous Substance Pollution Contingency Plan, 55 Fed. Reg. 866, 8718 (1990). The EPA rejected this proposal, stating that “the point of departure should be consistent across all sites,” and that the objective is “to be protective of all individuals and environmental receptors that may be exposed at a site” Id. at 8718, 8710.

Additionally, the EPA made its remediation determination based on a future industrial use of the site. This determination must necessarily involve some comparison of the number of people expected to work at the Site, with the number of people that would be living there if the Site was devoted to residential use.

Upon review of the record, we discern no evidence that the EPA failed to considered all of the congressionally required factors in setting the appropriate cancer remediation level, failed to consider an important aspect of the problem, or offered an explanation for its decision that runs counter to the evidence. While differing from BN’s opinion as to the appropriate cancer risk level, the EPA’s assessment is not implausible. Therefore, we conclude that its decision was not arbitrary and capricious.

Beyond this, the district court’s assumption that 100,000 people must live or work at the Site in order to justify a cancer risk level of 1 in 100,000 seems to miscomprehend

the nature of statistical analysis. A statistical probability is nothing more than a mathematical expression of the relative frequency with which an event . . . is likely to occur.” Webster’s New Universal Unabridged Dictionary 1146 (1989). Accordingly, if there is a one in 100,000 chance of getting cancer at a particular site, it does not mean that 100,000 people need be exposed in order to justify the percentage, or even that 100,000 people need to be exposed for one person to contract cancer. It simply means that for every person exposed at the Site, 10, 100, or 100,000, there is a .00001% chance that the person will get cancer. While the size of the exposure group is relevant to the probable number of cases of cancer that will likely occur, we can see no direct link between the size of the focus group and the decision to remediate to a cancer risk level between .0001% and .000001%. Thus, the decision to remediate to a 1 in 100,000 cancer risk level is not *per se* arbitrary and capricious simply because there are not 100,000 people living or working at the Site.

2. Unexpected Rock Content in the Sludge

In addition to the cancer risk level, the district court held in Broderick III, 963 F. Supp. at 955, that the EPA could not recover the costs associated with the unanticipated rock. Specifically, the district court found that as a result of the unanticipated circumstance encountered by Allied Signal – the presence of 51% rock content in the impoundment sludge – “the remedy was altered fundamentally with respect to scope and

cost,” because of the added requirements of: (1) a gravity settling box to pump sludge into the rail tank cars; (2) the incineration of additional plastic liners and miscellaneous materials from temporary on-site holding tanks; and (3) the scraping and incineration of the tar heels. These added requirements increased the cost of remediating the impoundment sludge from approximately \$2.2 million to \$3.5 million – a 60% increase. The district court concluded that this constituted a “significant deviation from the selected remedy,” and that “the EPA acted arbitrarily and capriciously by failing to follow the proper procedures” and propose a second amendment to the Record of Decision for Operable Unit I. Id.

Section 107(a) of CERCLA provides: “Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section,” a potentially responsible party such as BN “shall be liable for . . . all costs of removal or remedial action incurred by the United States government . . . not inconsistent with the national contingency plan.” 42 U.S.C. § 9607(a). Accordingly, in order to show that the EPA’s were arbitrary and capricious, BN bears the burden of showing that the actions of the United States were inconsistent with the national contingency plan. See United States v. Hardage, 982 F.2d at 1442.

Under the Hazardous Substance Contingency Plan, the EPA is required to re-evaluate its remediation plan if a changed condition fundamentally alters the remedy with respect to scope, performance, or cost. The governing provision states in relevant part:

(2) After the adoption of the [Record of Decision], if the remedial action or enforcement action taken, or the settlement or consent decree entered into, differs significantly from the remedy selected in the [Record of Decision] with respect to scope, performance, or cost, the lead agency shall consult with the support agency, as appropriate, and shall either:

(i) Publish an explanation of significant differences when the differences in the remedial or enforcement action, settlement, or consent decree significantly change but do not fundamentally alter the remedy selected in the [Record of Decision] with respect to scope, performance, or cost
or

(ii) Propose an amendment to the [Record of Decision] if the differences in the remedial or enforcement action, settlement, or consent decree fundamentally alter the basic features of the selected remedy with respect to scope, performance, or cost.

40 C.F.R. 300.435(c)(2) (emphasis added). Thus, the issue is whether the unanticipated rock content specifically changed or fundamentally altered the remedial plan with respect to scope, performance, or cost.

(a) The Record of Decision for Operable Unit I

The initial Record of Decision for Operable Unit I provided for the remediation of impoundment sludge through on-site incineration. However, the cost of on-site incineration increased substantially making the plan no longer cost-effective. Thus, the EPA issued an amendment to the Record of Decision for Operable Unit I. The amendment to the Record of Decision for Operable Unit I provided that the impoundment sludge would be excavated and hauled to an on-site mixing tank where it would be mixed with a solvent and heated to make the sludge pumpable. The mixture would then be

transferred to rail tank cars and shipped to a permitted recycler, where it would be treated and the residues incinerated. See Aplt's App., vol. II, at 380-81. Both the initial plan and its amendment specifically rejected the idea of off-site incineration of the impoundment sludge. See Aplt. App., vol. II, at 282, 324, 378-83.

(b) The Settling Tank

The first alleged deviation was Allied Signal's use of a gravity settling tank. The pumps used to transfer the sludge from the holding tanks onto the rail cars were clogging because of the rock. Allied Signal used a gravity settling tank to remove the rock so that the liquified impoundment sludge could be pumped into rail cars and transported to an off-site recycler for treatment. The gravity settling tank increased the costs of remediation from \$2.2 million to \$2.3 million – an increase of only \$100,000. Removal of the rock did not cause any delay in the amended remediation plan, which was completed on schedule. After the rock was removed, the liquified impoundment sludge was in fact pumped into rail cars and transported to an off-site recycler for treatment.

Considering these facts, we can not conclude that at this point, the EPA's decision to proceed without a complete reconsideration of the amendment was arbitrary and capricious. We are unable to find any evidence in the record that, once the rock had been removed, the EPA or its contractors should have anticipated further problems as a result of the rock content. While the use of a gravity settling tank was not specifically part of

the amendment, its use did not fundamentally alter the remedial plan with respect to scope, performance or cost. Accordingly, we hold that the decision of the EPA to proceed with the remediation plan without an amendment was not arbitrary and capricious, and the costs associated with the gravity settling tank are recoverable.

(c) Additional Liners and Tar Heels.

The next alleged deviation from the amendment to Operable Unit I was the requirement of disposing of additional liners and the removal of tar heels. First, after pumping the sludge into the rail cars, Allied Signal found that substantial amounts of rock, soil, sludge and other debris had adhered to the liners. As a result, Allied Signal had to transport an additional 376 boxes of liners (the amendment anticipated 20 liners) and other miscellaneous materials. This resulted in approximately a 22% (or a \$545,000) overall increase in the cost of the remedy.

Further, while being transported to Alabama for recycling, some of the sludge solidified into tar heels. These tar heels could not be pumped out of the rail cars and had to be removed by hand. Eventually, the EPA decided to incinerate (rather than recycle) the tar heels, as well as the additional 376 boxes of liners. According to the record, these two changes resulted in over half of the impoundment sludge being incinerated, despite the fact that incineration of the impoundment sludge had been specifically rejected. See Aplt's App., vol. I, at 119 (1,107 of 2,170 tons of sludge were incinerated). Moreover,

the total costs associated with the Record of Decision for Operable Unit I amendment increased a total of approximately 61% or \$1.4 million as a result of these two deviations.

Accordingly, we agree with the district court that the remedy was altered fundamentally with respect to scope and cost. The EPA acted arbitrarily and capriciously by failing to follow the Hazardous Substance Contingency Plan's required procedure to propose an amendment regarding the significant cost increase associated with the additional boxes of liners and the tar heels and by failing to propose an amendment regarding the decision to incinerate rather than remediate a significant amount of the impoundment sludge. This failure resulted in excluding the public and Potentially Responsible Parties like BN from the decision-making process, in violation of the Hazardous Substance Contingency Plan. Thus, BN has established that the actions of the EPA were inconsistent with the Hazardous Substance Contingency Plan.

(d) Harmless Error

The EPA argues, however, that variance from the Hazardous Substance Contingency Plan does not provide a complete defense to liability for costs associated with the remediation action. The EPA argues that section 107(a) of CERCLA requires that a Potentially Responsible Party must establish that the clean up resulted in excess costs that could have been avoided. The district court rejected this argument, stating that “[a]llowing the agency to recover all of its additional costs, either with or without the

benefit of a factually questionable argument concerning harmless error, would provide no incentive to EPA to play by the rules in the future.” Broderick III, at 954.

In Minnesota v. Kalaman W. Abrams Metals, Inc., 155 F.3d 1019 (8th Cir. 1998), the Eight Circuit addressed this issue. In Kalaman, the district court found that all of the remedial actions taken on the site were inconsistent with the Hazardous Substance Contingency Plan for various reasons and, therefore, precluded the state from recovering any of the remediation costs for the site. On appeal, the Eighth Circuit agreed with the district court’s decision that the *actions* of the state were inconsistent with the Hazardous Substance Contingency Plan, but disagreed with the district court’s conclusion that, ergo, any *costs* associated with those actions were unrecoverable.

We agree with the district court that appellees met their burden of proving [that all of the remedial action in this case] was arbitrary and capricious agency action inconsistent with the meaning of 42 U.S.C. §§ 9607(a)(1-4)(A) [the Hazardous Substance Contingency Plan, 40 C.F.R. § 300].

However, we disagree with the district court’s decision to preclude the State from any cost recovery under CERCLA. The record leaves no doubt, indeed appellees virtually concede, that remedial action was appropriate under CERCLA. The statute provides that the State may recover “all costs . . . not inconsistent with the [Hazardous Substance Contingency Plan].” Therefore, the State may recover all costs except those that appellees prove were inconsistent with the NCP.

Id. at 1025 (emphasis added). The court further explained that “[b]ecause [the state environmental agency’s] actions were inconsistent with the [Hazardous Substance Contingency Plan] . . . , appellees are entitled to prove that this inconsistency caused the state to incur unreasonable or unnecessary response costs, in implementing even an

appropriate remedial action.” Id. at 1026 (emphasis added). Thus, despite the fact that the remedial actions taken were deemed arbitrary and capricious, the court held that only those costs that otherwise would not have been incurred were excludable. The court remanded the issue to the district court to allow the defendants to prove the costs incurred were inconsistent with the Hazardous Substance Contingency Plan. Other courts have reached the same conclusion. See, e.g., United States v. American Cyanamid Co., 786 F. Supp. 152, 161 (D. R.I. 1992) (“Even if a response action is shown to be inconsistent with the [Hazardous Substance Contingency Plan], defendants still have not triumphed. In order to establish the amount of costs to be disallowed, ‘the defendants have the burden of demonstrating that the clean-up, because of some variance from the Plan, resulted in demonstrable excess costs’”) (quoting O’Niel v. Picillo, 682 F. Supp. 706, 729 (D. R.I. 1988) aff’d, 883 F.2d 176 (1st Cir. 1989)).

We agree with the reasoning of the Eighth Circuit and, therefore, hold that proof that the EPA’s remedial actions were inconsistent with the Hazardous Substance Contingency Plan is not a complete defense to liability for the cost of remediating a Site. The statute provides that the EPA may recover “all costs . . . not inconsistent with the [Hazardous Substance Contingency Plan].” 42 U.S.C. § 9607(a) (emphasis added). The plain language of the statute speaks of costs rather than actions. Further, it is undisputed the Site required some remedial action. Thus, even according to BN’s alternative remediation plan, the EPA would be allowed to recover some costs had it followed proper

procedures. BN can not completely avoid liability for its toxic waste site, which undisputedly needs some remediation, simply because the EPA failed to follow the proper administrative procedure. The point is very similar to the difference between breach and damage under tort law. In the present case, BN has proven a breach of a duty to follow proper administrative procedures. However, BN must further prove that the breach resulted in damages. Damages in this case are *costs* that are inconsistent with the Hazardous Substance Contingency Plan. Thus, BN must further demonstrate on remand that the arbitrary and capricious actions of the EPA resulted in avoidable and unnecessary remediation costs. We, therefore, remand the case for the district court to consider whether the EPA's remedial actions resulted in demonstrable excess costs that would not have otherwise been incurred.

3. Reduction of Liability Based on BIC Settlement (BN's Cross Appeal)

BN cross-appeals, arguing that the district court erred in not reducing its liability in the full amount of the EPA's settlement with the BIC defendants. As we have noted, the district court ruled that the harm associated with the Site was divisible, the United States entered into a settlement agreement with the BIC defendants. Pursuant to the agreement, the BIC defendants contributed \$10.7 million in past response costs. However, the agreement made no provision for the allocation between the western portion of the Site – the pond impoundment – for which the BIC defendants and BN are jointly and severally

liable, and the eastern portion of the Site – the plant impoundment – for which the BIC defendants alone bear responsibility. Consequently, BN and the United States dispute whether, and in what amount, any contribution required of BN should be reduced by the BIC defendants' settlement.

BN argues that it should receive a reduction in its liability in the full amount of the BIC defendant's settlement. Conversely, the United States argues that none of the BIC defendant's settlement should be applied to reduce BN liability. The district court rejected both of these positions, holding that, in light of its ruling that harm from the site was divisible, the appropriate manner of crediting the settlement was to determine the percentage of total response costs attributable to the western and eastern portions, and to allocate the BIC defendants' payments in accordance with those percentages. See Broderick II, 955 F. Supp. at 1276-78. Accordingly, the district court held that "response costs attributable to the western portion constitute 50% of overall Site response costs" and that "BN's liability would be reduced by 50% of the \$10.7 [million] payment made by the BIC defendants, or \$5,350,000." Broderick III, 955 F. Supp. at 1277 n.4. This amount was credited toward BN's liability. We agree with the district court's apportionment of the settlement.

BN's argument is based on its erroneous interpretation of 42 U.S.C. § 9613(f)(2), which provides:

A person who has resolved its liability to the United States or a State in an administrative or judicially approved settlement shall not be liable for claims

for contribution regarding matters addressed in the settlement. Such settlement does not discharge any of the other potentially liable persons unless its terms so provide, but it reduces the potential liability of the other by the amount of the settlement.

42 U.S.C. § 9613(f)(2) (emphasis added). BN argues that under this statute, it is entitled to a reduction in its liability in the full amount of the BIC defendants' settlement and no apportionment calculation is necessary. However, BN's interpretation is contrary to the plain language of the statute because it is not a "potentially liable person" for the eastern portion of the Site. Further, its interpretation disregards the common law principles of joint and several liability inherent in CERCLA's remedial scheme.

First, section § 9613(f)(2) provides that a settlement does not "discharge any of the other potentially liable persons . . . but it reduces the potential liability of the other by the amount of the settlement." 42 U.S.C. § 9613(f)(2). However, under the district court's divisibility ruling, BN is not a Potentially Responsible Party for the eastern portion of the Site. The district court held that the BIC defendants were exclusively liable for the eastern portion of the Site and, therefore, there is no "other" potentially responsible party's liability to credit. Liability for the eastern portion of the site was the BIC defendants' alone. Accordingly, under the plain language of the statute, BN is not entitled to a reduction in its potential liability as a result of the BIC defendants' settlement attributable to the eastern portion of the Site.

Further, BN's interpretation disregards the common law principles of joint and several liability inherent in CERCLA's remedial scheme. CERCLA's cost-shifting

scheme is found in § 107(a), 42 U.S.C. § 9607(a), which imposes strict liability on four classes of potentially responsible parties. Although the statute does not expressly provide for joint and several liability between the four classes of Potentially Responsible Parties, the statute has been consistently interpreted to impose joint and several liability.

The leading case on joint and several liability under CERCLA is United States v. Chem-Dyne Corp., 572 F. Supp. 802 (S.D. Ohio 1983). Chem-Dyne is explicitly recognized and endorsed in the legislative history to the Superfund Amendment and Reauthorization Act of 1986 (“SARA”) regarding CERCLA’s liability provisions. See H.R.Rep. No. 99-253(I) at 54, reprinted in 1986 U.S.C.C.A.N. 2835, 2856 (“nothing in this bill is intended to change the application of the uniform federal rule of joint and several liability enunciated by the Chem-Dyne court”).

In Chem-Dyne, the court noted that, although CERCLA does not expressly provide for joint and several liability for Potentially Responsible Parties, Congress intended the scope of liability to be determined in accordance with “traditional and evolving principles of common law.” Chem-Dyne, 572 F. Supp. at 808. Accordingly, the court stated that “where two or more persons cause a single and indivisible harm, each is subject to liability for the entire harm.” Id. at 810 (emphasis added) (citing Restatement (Second) of Torts § 875). Thus, under § 9613(f)(2), the statute at issue in this case, where both parties are jointly and severally liable for a site (a single harm), any settlement paid by one party

will reduce the potential liability of the other jointly liable party by the amount of the settlement.

In the present case, however, the district court found that the harm was geographically divisible. Under common law principles of joint and several liability, where there are distinct harms, damages for the separate harms are to be apportioned to the particular parties that are responsible. The Restatement (Second) of Torts § 433A provides:

- (1) Damages for harm are to be apportioned among two or more causes where:
 - (a) there are distinct harms, or
 - (b) there is a reasonable basis for determining the contribution of each cause to a single harm.
- (2) Damages for any other harm cannot be apportioned among two or more causes.

Accordingly, courts have apportioned damages under CERCLA when appropriate. See, e.g., In re Bell Petro. Services, Inc. (EPA. v. Sequa Corp.), 3 F.3d 889, 895 (5th Cir. 1993) (reversing the district court’s imposition of joint and several liability under CERCLA, because there was a reasonable basis for apportioning liability and remanding for the district court to apportion damages); United States v. Alcon Aluminum Corp., 990 F.2d 711, 722 (2d Cir. 1993) (reversing summary judgment in favor of the government, stating that the defendant “should have the opportunity to show that the harm caused at [the site] was capable of reasonable apportionment” and that the defendant was entitled to “present evidence relevant to establishing divisibility of harm”); United States v. Alcan Aluminum Corp., 964 F.2d 252, 257 (3d Cir. 1992) (reversing district court’s imposition

of joint and several liability and remanding for a hearing on apportionment because the court found that, given the intensely factual nature of the divisibility issue, it was error to impose joint and several liability without an apportionment hearing); United States v. R.W. Meyer, Inc., 889 F.2d 1497, 1507 (6th Cir. 1989) (holding that district court did not err in imposing joint and several liability under CERCLA where “the district court made a factual determination that the environmental harm created by the conditions on [the] property was indivisible”).

Applying this principle to the present case, we hold the district court correctly determined that BN should receive credit only for the part of the settlement appropriately attributable to the property for which both the BIC defendants and BN were jointly and severally liable. In the case of a divisible harm, neither the government’s argument, that BN should receive no credit for the settlement, nor BN’s argument that it should receive full credit for the settlement, is a plausible reading of the statute. Neither argument is consistent with common law principles of joint and several liability.

BN relies heavily on Hess Oil Virgin Islands Corp. v. UOP, Inc., 861 F.2d 1197 (10th Cir. 1988), arguing that Hess, among several other cases, stands for the general rule “that where a plaintiff fails to apportion damages in the settlement agreement, the non-settling party must receive credit in the entire amount of the settlement.” Aple’s Rply Br. at 2. However, BN’s “general rule” fails to acknowledge the fact that in each of the cases

it cites, including Hess, the court expressly addressed a situation where there were “common damages.”

In Hess, the court held that “[w]hen a plaintiff receives an amount from a settling party, it is generally credited against the amount recovered by the plaintiff from a non-settling defendant, provided both the settlement and the judgment represent common damages. The [rule] is applicable only where the defendant’s conduct resulted in a single injury.” Hess, 861 F.2d at 1208 (emphasis added) (citations omitted). However, in the present case, the district court found that the Site did not constitute a single injury but rather that there were two distinct injuries. Thus, the rule stated in Hess *supports* the district court’s apportionment of the BIC defendants’ settlement.

BN further relies on Gulfstream III Assocs. v. Gulfstream Aerospace Corp., 995 F.2d 425 (3d Cir. 1993) and Singer v. Olympia Brewing Co., 878 F.2d 596 (2d Cir. 1989). However, like Hess, neither of these cases address a divisible harm. Both decisions conclude that, in order to be entitled to apportionment, a defendant must be jointly and severally liable for a single, indivisible harm. See Gulfstream III, 995 F.2d at 436 (holding that “where a plaintiff executes a general settlement instrument which settles multiple claims with a defendant, but a non-settling defendant is not a party to that agreement, the non-settling defendant need show only that the plaintiff settled a claim on which the non-settling defendant was found liable at trial.” (emphasis added)); Singer, 878 F.2d at 600 (2d Cir. 1989) (“[A] nonsettling defendant is entitled to a credit of the

settlement amount against any judgment obtained by the plaintiff against the nonsettling defendant as long as both the settlement and judgment represent common damages.”) (emphasis added)).

BN can not avoid liability for the eastern portion of the Site, by proving in the district court that it did not cause the harm in that area, and then claim a credit for a settlement of the portion for which it claims no liability. Although it is true that the settlement does not expressly address the district court’s determination of divisible harm, it is undisputed that the BIC defendants’ settlement resolved liability for both the eastern and western portion of the Site. As a result, part of the settlement consists of damages for which BN is not liable. Accordingly, BN can not receive credit for the portion of the BIC defendants’ settlement attributable to the eastern portion of the Site. Apportionment of the settlement is appropriate in this case.

4. Failure to Identify and Notify Potentially Responsible Parties

In its cross-appeal, BN also argues that the EPA’s failure to timely notify a Potentially Responsible Party is a defense to the recovery of costs. In this case, BN was not notified as a Potentially Responsible Party until ten years after the initial investigation of the Site and, therefore, did not participate in a substantial amount of the administrative process of determining the proper remedy for the Site. BN argues that, in violation of CERCLA and the Hazardous Substance Contingency Plan, the EPA inexplicably failed to

undertake the simple task of researching the Adams County, Colorado real estate record to locate past owners, which would have revealed BN's predecessor as a former owner of a portion of the Site.

Relying on 42 U.S.C. § 9613(k)(2)(D), the district court rejected this argument. See Broderick II, 955 F. Supp. at 1272-73. Section 913(k)(2)(D) provides that the EPA (by designation from the President) "shall make reasonable efforts to identify and notify potentially responsible parties as early as possible before the selection of a response action" but that "[n]othing in this paragraph shall be construed to be a defense to liability." Based on this statute, the district court held that: (1) the EPA's failure to notify BN was not a defense to liability; and (2) even if failure to notify BN was a potential defense, BN was adequately protected by the BIC defendants' participation and that, as a result, the remediation of the Site "would not have progressed any differently had BN received notification concurrently with the other [Potentially Responsible Parties]." Broderick II, 955 F. Supp. at 1273.

"On appeal, BN seeks to have this Court declare, as a matter of law, that EPA's failure can, in fact, be asserted as a defense to the recovery of response costs that result from lack of notice or the opportunity to participate." Aple's Br. at 10 (emphasis added). "[H]owever, BN does not seek a remand or a declaration that the additional costs cause[d] [sic] by such a lack of notice are unrecoverable in this case." Rather, "BN respectfully requests that this Court provide appropriate guidance to the EPA for future cases." Id.

The record before indicates that the task of determining BN's ownership was not as "simple" as BN suggests. Apparently, it was not initially clear from the chain of title that BN was an owner of the property. In the district court, BN argued that the 1908 deed conveying the property to BN (or its predecessor in interest, CBQRR) was ambiguous and did not pass title to BN. See Broderick I, 862 F. Supp. 272, 275 (D. Colo. 1994) The court agreed, finding that "the 1908 deed was ambiguous." Id. Ultimately, however, "the EPA established by a preponderance of the evidence that title passed to CBQRR under that deed." Id.

Regardless, we need not join this duel as a second to either party. BN's request for guidance in future cases is tantamount to a request for an advisory opinion. "It is fundamental that federal courts do not render advisory opinions and that they are limited to deciding issues in actual cases and controversies." Norvell v. Sangre de Criste Dev. Co., Inc., 519 F.2d 370, 375 (10th Cir. 1975). "[S]uch requests advocate a general interest, common to all citizens and do not purport to redress any specific injuries Plaintiffs may have suffered." Chairman v. Commissioner of Internal Revenue, 82 F.3d 371, 373 (10th Cir. 1996). Here, BN requests no relief to redress any specific injury it has suffered and advocates a general interest common to all citizens: "requir[ing] EPA to follow its statutory and regulatory mandates." Aple's Br. at 10. We decline to issue an advisory opinion on this issue.

CONCLUSION

Accordingly, we REVERSE the district court's holding that the EPA's conclusion to remediate the Site to a 1×10^{-5} cancer risk level was arbitrary and capricious. We REVERSE in part the district court's holding that the EPA's actions were arbitrary and capricious in failing to amend the Record of Decision for Operable Unit I when it encountered the unexpected rock content in the sludge. Further, we REVERSE the district court's holding that BN was not required to prove that the costs associated with the Record of Decision for Operable Unit II would not have been incurred in any event. We REMAND this case to the district court for further consideration, in accordance with this opinion, of the issue of the costs associated with Operable Unit II.

On BN's cross-appeal, we AFFIRM the district court's apportionment of the BIC defendants' settlement and, for the reasons stated above, decline to reach the issue of whether the EPA's failure to timely notify a Potentially Responsible Party could be a defense to the recovery of costs.